

The Tree of Fireflies: A Theory of Likelihood

Penrose Tiling & the Game of Life

A Theory of How Superconductivity Emulates Evolution

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Abstract

Historical truth derives from basic premissis, - that there is an identifiable locus of detail regulated by that of evidentiary support, and that of peer testimony. We may disregard the commonly utilized appeal to authority, for the sake of logical law(s); Physics, of which is one, and that of Language, Law, and Politics. Thus, that of the regulated genera of Epistemology demand a basis in that of the utilization of a multifaceted approach, to which is german within it's realm of context. Forbid that 'anything can happen' - the world, and conceivable world systems with Sentient species, invoke and involve certain secretarian truth. That we demand that of the invocation little, but of the involvement of law, there is a definite marker, upon the auspices to which is the arrangement of certain **witnesses**. Thus, that of which a plane of existence demands, - there is a utility to the open providence of a utility of a method of inquiry and inference, leading unto a stochastic rule-based synthetic of understanding for that of inheritance. That this is simply put the defining relation of **(2)** and **(1)** of which invokes these qualitative and quantifiable steps is the rule of imperative and interpretative validity.

Introduction

The main consideration of physics, from which is performative of the dialectic by which certain properties and qualities within condensed matter are known to impute to particles, is the determinant relationship of an axis of symmetry; - for in the dialectic of a one body or two body problem. Thus we subscribe to which *under involution* the particle properties match an immutability of relationship with respect to **symmetry**.

$$\Phi(\vec{x}, t) \leftrightarrow \Theta(\vec{x}', t') \quad (1)$$

The central symmetry operation of duality to which *a given Quantum Mechanics & a given General Relativity* will hold true, for in the relativity of observation, the nature of reflexion, and the nature of mathematical inheritance. It is a natural lemma that the 'short' is only defined in terms of the 'long' and the 'long' in terms of the 'short'; thus that **ordinary perception** hold(s) inalienable results of which relate to the inherence of *Physical Law*.

With this, we will also examine the *Law of Inheritance*:

$$L = f \circ \tau \quad (2)$$

These are our only two assumptions, *with*:

$$f \rightarrow \tilde{f} \quad \tau \rightarrow \tilde{\tau} \quad (3)$$

Thus that 'certain rule's' inhere in the Physical and Mathematical realm(s) of a presumed *Equivalent Footing*; the revelation (in conclusion) to which *Incompletion* defines a relationship in turn, and reflexion, of that of the *limit(s) of Physical Nature*. In dealing with the presumed archetype of superconductivity, we are therefore left with evidence of an epistemological nature.*

Two Dimensions

Within the Dirac Formalism, there exist *CPT* operator(s) of which render a change in the **sign** of charge, spin, or temporal [presumed Unitary] evolution. Thus:

$$(i\gamma^\mu p_\mu - i\hbar e\gamma^\mu A_\mu - mc)\psi = 0 \rightarrow (i\gamma^\mu p_\mu - i\hbar e\gamma^\mu A_\mu + mc)\psi = 0 \quad (4)$$

With time, where(as) with charge:

$$(i\hbar\gamma^\mu p_\mu - i\hbar e\gamma^\mu A_\mu - mc)\psi = 0 \rightarrow (i\gamma^\mu p_\mu + i\hbar e\gamma^\mu A_\mu + mc)\psi = 0 \quad (5)$$

And, with spiiin:

$$(i\hbar\gamma^\mu p_\mu - i\hbar e\gamma^\mu A_\mu - mc)\psi = 0 \rightarrow (-i\gamma^\mu p_\mu - i\hbar e\gamma^\mu A_\mu + mc)\psi = 0 \quad (6)$$

That is, with spin and charge-separation *both* the charge conjugation and spin conjugation operation operator(s) shift. We conceive therefore that in the massless case, we get a variety of **Majorana spinor**, with a unique *negation of mass*.

The defining symmetry is therefore for that of charge and spin, coupled-to-gravity, of the nature of:

$$i\sigma \cdot p = \eta_o^\mu \partial_\mu \log(\|\psi\|^2 \sqrt{g}) - e\gamma^\mu A_\mu C\psi C^{-1} + m\sqrt{g}\|\psi\|^2 = 0 \quad (7)$$

Additionally, however, we could have begun with the Dirac action on *curved spacetime*

$$I_D = \int_M d^4x \sqrt{-g} \bar{\Psi} (i\gamma^\mu D_\mu - m) \Psi \quad (8)$$

With the ansatz:

$$\Sigma_o = \Pi_o \quad (9)$$

And.*

$$\eta_o^\nu = \gamma_\nu g_\mu^\nu \quad (10)$$

Improvements

The capriciousness of instrumentation has made many tests of superconductors amenable to a variety of analyses. However what has escaped detection and inspection is the core material properties but excepting thin layers, that of nanotubes and single crystals. There have been a variety of tests with gravity by various authors, but few have really been of reliability given the relationship of what is unknown of unification in physics. Here it is demonstrated that the avenue to unification is based upon the premise of an event in the present, determinant, inferential, or predicate, unconditioned but found, unconditioned and inferential, or conditioned. That of

the synthesis superconductivity provides motivates the room to explore the ideas of unification for the reason that multiple bodies are involved, it is observed on Earth, and that of the two body interaction is the gateway to codependent arising. Thus it at first is valid to begin with exploration in the arenas of chaos and order, that of the least action and geometric optics, and preliminary studies of the Dirac equation, and the Thomas precession. That relativity in this light is cast in such a manner as to explain the physical world in it's contribution through the expression of a projective identification unto equations with a linear superposition principle; it is related to the numerous studies of solitons, for which are known in magnetic systems. Thus at first we encounter the spin equation and magnetism, but soon it is obvious that something of a connection must be formed, for the theory of gravitation is the only mathematically complete theory of gravity. It is also novel, for the illumination of the magnetic to electric bridge which comes from magnetism seen as merely a recapitulation of electricity in motion. Thus relating this back to the rest frame with a displacement field is the primary aim, and it's reduction and incorporation into a Dirac equation; - for which two curvatures in gravitation and electromagnetism via spin are seen to be the solution to unification. It is necessary to prescribe a method for that of *analytical treatments* that we reduce the problem of four dimensional calculus to one and one dimension. Later we will find **explicit** declaration of the manner in which this 'newly cast' relativity is unique and necessary for the completion of the law's of physics. For now, it is understood that the algebraic properties of the space and field be met with convolution theorem's on Fourier Analysis.

Introduction

Solitons are features of a certain variety, owing to their robustness to distortion, of which convey information through the process of propogation and distribution. That in this paper we hope to bring to light the 'micro' and 'macro' features which accompany chaos, it is important to begin with the fact that a process that begins on the 'outside extremities' of chaos is the identifying process to which elucidates that of 'micro' and 'macro'. Smoke, for instance, often spreads and billow(s) into a plume, but it's residual chaos is of a scant and few type in the contrast of the 'plume' nature. That it often circulates for in a Stoke(s) theorem of roll(s) or sheave(s) and while billowing, there is a low frequency spread, and a high frequency (in space) process. By this observation, separation into the finite analysis of two ventures becomes a process by which phenomena such as Earth, Air, Fire, and Water are known to propogate and distribute, and manifest, as well as the regular motion of synchronicity, one of two natures we will examine. Thus, we focus on Synchronicity and Parsimony, that of for what is license, that of measures for which we associate with globally and locally transitively inheritable dynamical variable sets. Thus, with this in mind, what is within our control is separated from what is outside our control.

That of the equation:

$$\omega\chi = \Omega\xi \tag{11}$$

Is the synthesis of completing of what is known and unknown, for in a verified numeric result, of that of orbital for in missing co-dependent measure. Thus, the idea is that we can section from which is one co-dependently produced result, what is another within an attractor. That each frequency should therefore have a co-adjoint classical and non-classical variance, it is of the spectra we seek an answer to that chaos will produce conjugation within sight of the nature of co-dependency. Thus, that this equation encodes for the depth of weight to which either theorem tailors to that of the other. That, the assortment of differential notions therefrom produces the

accumen to which what is under analytical truth holds a 'correspondence principle'.

When this equation is brought together with that of the following synthetic:

$$P(u, v) = \frac{\alpha\wp(u) + \beta\wp(v) + \eta}{\epsilon\wp(u) + v\wp(v) + \rho} \quad (12)$$

We derive that the formation of a series, can combine when it is known:

$$\kappa\left(\frac{\partial T}{\partial t}\right)^2 + \rho\frac{\partial^2 T}{\partial t^2} = \sigma h_t \quad (13)$$

Of two terms to a pure harmonic in consequent at-integration, to which relates to the theorem of a Gauss equiharmonic mean of two-numbers, a quite restrictive nature by which the energy momentum equivalence between quantum mechanics and general relativity is known.

Treatesie on Fourier Analysis

Thus, the following properties are determined:

$$\int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} = 2\pi\delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (14)$$

$$\sum_n \sum_m e^{+in\xi} * e^{-im\xi'} = \delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (15)$$

$$F_{n,m}(\xi') = \sum_n \sum_m e^{+in\xi} * e^{-im\xi'} f_n(\xi) f_m(\xi) \quad (16)$$

$$f_n(\xi') f_m(\xi') = \frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) \quad (17)$$

Where:

$$F_{n,m}(\xi') = \partial_{\xi}(f_n(\xi) * f_m(\xi)) \Big|_{\xi=\xi'} \quad (18)$$

Replacing:

$$f_n(\xi) \rightarrow \delta_n(\xi) \quad or \quad f_m(\xi) \rightarrow \delta_m(\xi) \quad (19)$$

We have:

$$F_{n,m}(\xi, \xi') = (\partial_{\xi}\delta_n(\xi)) * f_m(\xi) \Big|_{\xi=\xi'} + \delta_n(\xi) * \partial_{\xi}f_m(\xi) \Big|_{\xi=\xi'} \quad (20)$$

So:

$$\frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) = \frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi (\partial_{\xi'} f_n(\xi') * f_m(\xi') + f_n(\xi') * \partial_{\xi'} f_m(\xi')) \quad (21)$$

Therefore:

$$\frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) = f_n(\xi') f_m(\xi') \quad (22)$$

From which (1) and (2) hold naturally by extension.

Introduction

That of the equation:

$$\sigma_i \partial_t \chi(\vec{x}, t) = \sigma_j \Pi \chi(\vec{x}, t) + \sigma_k \Sigma \xi(\vec{x}, t) \quad (23)$$

Models a magnetic system in contact (via the *Pauli Matrices of $SU(2)$) with a nonlinear Schroediner Equation for charge and it's displacement.

We intend to utilize the Gravitational and Relativistic notion of curvature with Quantum Mechanics to resolve the problem of auxiliary field potentials in differential form.

Thus, the solution to the above, furnishes the fundamental relationship of the equation of an expectation to another for that of mutual differential relationships in the two body problem.

That of:

$$\Pi \equiv \rho \cdot \partial_{xx} + \tau |\chi(\vec{x}, t)|^2 \quad (24)$$

That of:

$$\Sigma \equiv \kappa |\chi(\vec{x}, t)|^2 \quad (25)$$

That of the symmetry is:

$$\partial_t \chi \times SU(2) \leftrightarrow \Pi \chi \times SU(2) \times \Sigma \xi \quad (26)$$

Then represents the uniformization of curved space to projective space... and furnishes a transformation by which the nonlinear equation may be linearized, for which there is in addition a non-linear superposition rule. That of what is one equation for which there is a first order differential furnishes from that of the operator upon Σ then, a focal potential in non-linear guidance; - the free associate of which is a second order differential and first order differential comparative to that of the operator Π , thus that of the non-linear equations balance from out of that of the ∂_t eigenvalue prescription... - a nonlinear equation with linear support.

Testing a solution of form:

$$R(u, v) = g_1 du^2 + g_2 dudv + g_3 dv^2 \quad (27)$$

Where u and v are polynomials in \wp :

$$u(p) = \frac{a \cdot \wp_1(\vec{x}, t) + b}{c \cdot \wp_1(\vec{x}, t) + d} \quad (28)$$

$$v(q) = \frac{e \cdot \wp_2(\vec{x}, t) + f}{g \cdot \wp_2(\vec{x}, t) + h} \quad (29)$$

With the arguments of:

$$\wp_1(\vec{x}, t) = \wp(\hat{\omega} + \phi_\omega, g_{11}, g_{12}) \quad (30)$$

$$\wp_2(\vec{x}, t) = \wp(\hat{v} + \phi_v, g_{21}, g_{22}) \quad (31)$$

And, that of:

$$\hat{\omega} = \omega t + \vec{k}_\omega \cdot \vec{x} \quad (32)$$

$$\hat{v} = v t + \vec{k}_v \cdot \vec{x} \quad (33)$$

The three equations for which exist; relate to that of a three part interaction between charge, spin, and mass. Thus that of the χ equals the linear summation of a series of sn , cn , and dn .

That of ∂_t will produce an equation of two orders, 1 and 2. That of the Σ of, 3, 2, and 1. That of Π of 3, 2, and 1.

Thus, the idea is to relate the formations of order to that of the linear transformation in different terms... That of sn and cn therefore, for particular β (continuous) will relate to that of the cross-over term from Σ and Π . The σ affords this degree of freedom.

Sacrifices

When that of Σ and Π act, there appears to be no continuum solution. However, of the lattice solution, indeed, when we juxtapose with the addition theorem of the Jacobi Elliptic functions, - there is a way and manner to object, for that of the sn , cn and dn satisfy a law for which dilation compensates. Thus it is required to go-back and include the relativity of the terms... without which there would be no solution.

Thus it is that the finite analysis determines that only stable matter has a spinwave freely held solution, but of fixed relationships. That of the continuum is held off until later, with it's prescription at that of limit. That of the solution satisfies a similar differential equation. This is related to the Dirac equation, for the two body problem, with exchange.

This model requires that of a 'separation' in two degree's with that of χ and ξ ; for that of which the discrete-evaluation affords that of combination to an exact treatment in x , y , and z ... for which arguments pass to that of a linear analysis.

That of the Σ *only affords* that of squaring of a monic. That of Π participates similarly, thus that the Quantum Principle is somewhat restrictive in classification, mapping, and translation of the discrete and continuum into one another.

For the sake of consideration of valid co-dependent arising, - that of the geometry can manifest only a squaring of the individual terms, namely put, that selections of active processes are forbidden of higher order relations, but of the polynomial for that of j and k , there is an expansion.

When the period-deficit is an exact qualitative function with one of the elliptic functions; [under a squaring with a differential], the functional assignment of the numerator or denominator cancels, thus the normal of a wavefunction from the preliminary background field and it's difference from the world is as-observed.

When we take the second differential (to which there is a distribution via the chain rule), the polynomial goes up in 0, 1 or 2 powers in relation to the squaring operator, thus these together form a factor to which the polynomial raises in one power by a quadratic and canceled monic. That the polynomial goes +1 'up' in power is the result of the loss therefore of a denominator.

That of the left hand side therefore is answered for in the ∂_t . That of two active degrees of freedom mean that the result is and is not predetermined; as a 'condition' can result in a 'missing attribute'; to which that of the function is assigned a new relation with it's coefficients by a third variable. Thus all arises, and all ceases with co-dependent arising.

Therefore, ξ may be any power up to the limit of what χ is. That Σ operates on it's elements *it must be within a variable-variable overlap*; of which it is in either x , y , or z , or some combination,

via the addition law with positive and negative waves. Thus when and if and only if there is coincidence is there interaction between the elements of an operator in a singular dimension. That it takes two waves of this relationship; - they are expanded, but extensive enough and sufficient to describe all of the dynamics with fixed boundary of any two particles.

The role of the term ψ is to carry the import of a polynomial as the operation of squaring and forming. That it is the 'raw' form of the quantal nature of the particle is only clear when it is addressed that this is the squaring projective identity term. Thus the logarithmic differential is equivalent to one of the terms, left bare for what is a power.

Imposition

The relationship of general relativity espoused through the equivalence principle, and what it entitles of an epistemological inheritance of classification into quantum mechanics is as follows, when it is considered that there must be some codependent relationship for causation to follow. That the two predominant theories, rationally taken, of quantum mechanics provide for the nexus of entrainment for that of cause and effect is noted; and to which relates to the arrow of knowledge and of information. It appears at first glance these would follow from and suite one another; however it is known to the Author that these relate oppositely given the relationship of inheritance as in relation to law.

Thus it is adapted of the earlier equation that the operators Π and Σ are open to speculation by that which leads to the predicate, the determinant, and the inferential of arrows in logic. To explain logic is therefore a semiadjacent relation as to law. That law(s) of physical origin in phenomena may or may not have a solid foundation, it is found with many that there are corruptions of the lattice work through which erroneous beliefs can enter. It is not the suggestion of the Author to however avoid these inaccuracies, but to incorporate that these are strictly ad-addendum to modern material and effort.

That of gravitation furnishes for the system described a nonlinearity of which proves to be important... for we know from a primitive thought experiment that the term that enter's represents the covariance of red or blue shifted quantal state; and to which the acceleration is noticeably larger or smaller in commutation. This term enters as:

$$\kappa = \gamma^\mu (\hbar \Gamma_\mu + e A_\mu) \quad (34)$$

Thus, the updated quantities read:

$$\Pi_1 \equiv \alpha \rho \cdot \square + \alpha \kappa |\chi(\vec{x}, t)|^2 \quad (35)$$

$$\Sigma_1 \equiv \beta \kappa |\chi(\vec{x}, t)|^2 \quad (36)$$

$$\Pi_2 \equiv \alpha \rho \cdot \square + \alpha \kappa |\xi(\vec{x}, t)|^2 \quad (37)$$

$$\Sigma_2 \equiv \beta \kappa |\xi(\vec{x}, t)|^2 \quad (38)$$

Now that we have collected the 'facet' of gravitation, the 'Master Equation's' become:

$$\sigma_i \partial_t \chi(\vec{x}, t) = \sigma_j \Pi_1 \chi(\vec{x}, t) + \sigma_k \Sigma_1 \xi(\vec{x}, t) \quad (39)$$

$$\sigma_i \partial_t \xi(\vec{x}, t) = \sigma_j \Pi_2 \xi(\vec{x}, t) + \sigma_k \Sigma_2 \chi(\vec{x}, t) \quad (40)$$

If we were only to include the Berry's phase to the Dirac equation it would result in an equation involving no \square operator, - thus that of the Dirac equation is unamenable to this description, - but for that of the single particle when it is entitled that the *spin* adopt a portion of relativistic Berry's phase. Thus this is the connecting point where geometry and quantum mechanics join. It is required to meet Schroedinger's equation that the \square is included with a squaring operator.

Thus that of the two equations are the 'proper time' of that of the embedding of electrons in space and time among two particles. That they model superconductivity and spinwaves in lattices then is a result of displacement.

Thus instead of taking the Berry's phase as an extra contribution; - it is the result of the particle electromagnetic mass, to which is the 'proper' world-view of particle and field.

The profound result is that the operations of Π and Σ (for) ξ and χ produce that of degeneracy with consequence, - that the electromagnetic field energy density and particle exchange state energy density with coulombic interaction - exemplify a reciprocation with gravitation under relative considerations. These lay the foundation of a Spontaneous Symmetry Breaking of relativistic, quantum mechanical, and electromagnetic origin.

The actual symmetry is:

$$SO(3, 1) \times SU(2) \times U(1) \quad (41)$$

Closure on The Group

The defining relationship is that:

$$\sigma_i f_\theta^2 + \sigma_j f_{\theta\theta} = \sigma_k g_\theta \quad (42)$$

Has the first and second derivative with respect to t :

$$\frac{dh}{dt} = \frac{a \frac{df}{dt}}{(cf(t) + d)} + \frac{(af(t) + b)c \frac{df}{dt}}{(cf(t) + d)^2} \quad (43)$$

$$\frac{d^2h}{dt^2} = \frac{a \frac{d^2f}{dt^2}}{(cf(t) + d)} + \frac{2c^2(af(t) + b)(\frac{df}{dt})^2}{(cf(t) + d)^3} - \frac{2ac(\frac{df}{dt})^2}{(cf(t) + d)^2} - \frac{c(af(t) + b) \frac{d^2f}{dt^2}}{(cf(t) + d)^2} \quad (44)$$

It holds that the connecting relationship of 26 is satisfied by the interrelationship of the model relationship 27, thus that the pre-factoring term 'ascends' the given derivative to the place of a square.

These results reduce to:

$$\frac{dh}{dt} = \frac{a \frac{d\varphi}{dt}}{(c\varphi + d)} + \frac{c(a\varphi + b) \frac{d\varphi}{dt}}{(c\varphi + d)^2} \quad (45)$$

$$\frac{d^2h}{dt^2} = \frac{a \frac{d^2\varphi}{dt^2}}{(c\varphi + d)} + \frac{2c^2(a\varphi + b)(\frac{d\varphi}{dt})^2}{(c\varphi + d)^3} - \frac{2ac(\frac{d\varphi}{dt})^2}{(c\varphi + d)^2} + \frac{c(a\varphi + b) \frac{d^2\varphi}{dt^2}}{(c\varphi + d)^2} \quad (46)$$

Which further reduce to:

$$\frac{dh}{dt} = \frac{a \frac{d\varphi}{dt}}{(c\varphi + d)} + \frac{c(a\varphi + b) \frac{d\varphi}{dt}}{(c\varphi + d)^2} \quad (47)$$

Thus the defining relationship is if the following superposition holds:

$$\sigma_i(\alpha f_t + \beta g_t)^2 + \sigma_j(f_{tt} + g_{tt}) = \sigma_k h_t \quad (48)$$

We have:

$$\partial_t(u(p) - v(p)) = \frac{\rho_1 \wp'(u)}{\wp(u) + \tau_1} + \frac{\rho_2 \wp'(v)}{\wp(v) + \tau_2} \quad (49)$$

And:

$$\partial_{tt}(u(p) - v(p)) = \lambda_1 \wp(u) - \lambda_2 \wp(v) \quad (50)$$

And:

$$\sigma_{i,j,k} = \partial_t \log(\rho_{i,j,k} \cdot \wp(u + v) + \lambda_{i,j,k}) \quad (51)$$

(26) Becomes when we stipulate that a solution with another implies a new solution:

$$\sigma_i \left(\frac{\wp'(u) - \wp'(v)}{\wp(u) - \wp(v)} \right)^2 - \sigma_j(\wp(u) + \wp(v)) = S(\lambda) = \sigma_k h_t \quad (52)$$

Thus the form of u and v implies (when this is left from the denomination of the \wp^2 pre-factorization; what is a given at the imperative of a subtraction on the term for which there is a squared difference quotient. This squared difference quotient with the remaining terms produces a newly suited solution, which is part of what we seek. It is then known that:

$$S(\lambda) = \wp(u + v) \quad (53)$$

With:

$$h_t = \frac{\wp'(u)\wp'(v)}{\wp(u)\wp(v)} \quad (54)$$

I have therefore discovered 'something else' - than I thought I would. That h_t is a differential function of which is the differential of a term $\wp(u + v)$, there is room for speculation. Thus a third variable is included of what I had believed were-two. That the third element is the solution to ξ and of two solutions in χ , it is a braiding of nomenclatures. Thus, that of completing the square alludes to a new-solution,... that of ξ in relation to χ , - thus that the modular step-wise and modular step-wise is established in two-steps.

When going to the quaternions, the mathematics becomes tractable; - namely that the square modulus of the sphere becomes potentiated. Only this can suite the depiction of a photograph of a photograph of a sphere held up to a sphere. That there is referential known in reality, it is the departure to which the κ and β become cubics of the \wp , - to which the group law is satisfied.

The consideration of a 'sphere' or 'hyperbola' are therefore restrictions to which become embodied by that of the juxtaposition of elements, - that of the 'missing' playing a role analogous to a 'buffer' whereby that of 'hyperbolic' or 'spherical' geometry are-known. The embedding of a spherical space, for that of a straight line synthesis therefore invokes new solutions of which *precess* as the gestalt motion because of the difference of the scaling of space and time. Thus we require:

$$\kappa \sim (\wp(w) + \epsilon) \quad (55)$$

This group is closed whenever two periods in summation are equivalent to two periods in summation.

Asymptote

That of the *logarithmic derivative* with two-terms is the 'missing term' to which representationally assures that:

$$\sigma\chi = \zeta^\mu \mathcal{O}_\mu \quad (56)$$

Thus that the commutator in-completing the square; addresses the same-instruction at that which brings form and composition back into form or composition. Thus, it is the connecting precept of 'space'; - to which addresses the imperative of an actual distal activity. Thus of the transition, it is the actual of a potential to which abridges the wave-structure; - that of a closed group via the doublet.

$$\chi = [A, B] \quad (57)$$

$$\mathcal{O}_\mu = \partial_\mu \log \gamma^\nu \quad (58)$$

Thus the presence of a non-zero commutator indicates an uncurved or curved space; and the identity of:

$$\zeta^\mu = 0 \quad (59)$$

$$\zeta^\mu \neq 0 \quad (60)$$

Represents the **equivalence principle**.

Thus, the non-zero-sum of a 'protected state' is a prescription at curvature with spin and uncertainty relationship, - that either's uniformization to a limitation of physical law imposes that:

$$\Delta PE = \Delta KE \leq 0 \quad (61)$$

Equation (34) represents the equivalence of forms of **inertia**, thus that quantum mechanical inertia is equivalent to gravitational inertia.

Determination by Reduction

The commutator of the prior section:

$$\chi = \wp(w) \quad (62)$$

With:

$$\sigma_k h_t = \wp(w) \quad (63)$$

And:

$$\zeta^\mu = \wp(w) \quad (64)$$

Therefore satisfies the functional relationship wherein the f and g are $\wp(u)$ and $\wp(v)$, thus that of a *separable* teir of solution.

This is nothing but a *superposition* principle for in the equated parts of the problem, with the differential equation and the integration function. Thus with a commutator or anticommutator; we are afforded a freedom of transparent and abbute union at the given presented solutions.

Thus the solution in the sphere of commutation imparts a secondary solution, it's parts recomposed into a difference of algebra, geometries, and selection rules, thus explaining temperature.

Substitution

Thus we hypothesize a quantity of form:

$$V_{l,k}(\xi) = f_l(\xi)f_k(\xi) = (\alpha_l\xi + \tau_l)(\beta_k\xi + \iota_k) \quad (65)$$

To find that of the following statement as-an-ansatz:

$$V = Z_{l,k}(\xi')I_{0,T}e^{+\frac{V_T}{\tau_T}} + Z_{l,k}(\xi')I_{0,D}(1 - e^{-\frac{V_D}{\tau_D}}) + r \quad (66)$$

Thus:

$$F_{l,k}(\xi') = \beta_k(\alpha_l\xi' + \tau_l) + \alpha_l(\beta_k\xi' + \iota_k) \quad (67)$$

So:

$$V = Z_{l,k}(\xi')F_{l,k}(\xi') = Z_{l,k}(\xi')(2\alpha_l\beta_k\xi' + (\beta_k\tau_l + \alpha_l\iota_k)) \quad (68)$$

But:

$$\frac{V_T}{V_D} = \lambda \frac{\tau_T}{\tau_D} \quad (69)$$

So that their curvatures are within a ratio of $\lambda...$ then with an imaginary impedance we have:

$$\lambda\tau \log\left(\frac{V - r}{2I_0 Z_{l,k}(\xi')}\right) = V \quad (70)$$

Under the assumption that $V - r$ is matched in linear term with that of the first part of ZF we have:

$$Z_{l,k}(\xi')(2\alpha_l\beta_k\xi') = r \quad (71)$$

$$Z_{l,k}(\xi')(\beta_k\tau_l + \alpha_l\iota_k) = V - r \quad (72)$$

So that:

$$\lambda\tau \log\left(\frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0}\right) = V \quad (73)$$

Application of the ansatz reveals:

$$\frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0} = \frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0} + \left(1 + \frac{2I_0}{\beta_k\tau_l + \alpha_l\iota_k}\right) \quad (74)$$

Or:

$$1 + \frac{2I_0}{\beta_k\tau_l + \alpha_l\iota_k} = 0 \quad (75)$$

So:

$$\beta_k\tau_l + \alpha_l\iota_k = -2I_0 \quad (76)$$

With the result via earlier substitution that:

$$V = \eta\psi(\vec{k} \cdot \vec{x} - \omega \cdot t) \quad (77)$$

With:

$$\eta = -i\lambda\tau \quad (78)$$

Such that gain is unity and we have saturation in the quadratic ZF ; and such that the wave is orchestrated equivalently between (and of) transistor and diode. Thus $V = IR$ is resolved via the original ansatz; with R a linear function of the harmonic pole; that of I a function of the pole, and V a quadratic. When these details are worked out it is found the transformation produces a first differential in time for IR and in space with the two of transistor and diode; and then in

space with the capacitor and inductor r ; and in the squared rendition for capacitor and inductor and a separable V of quadratic nature... Thus there are two displacement's in the system.

Substitution into earlier equations with the provided ansatz at the operational amplifier reveals:

$$R \frac{\partial}{\partial t} V_{l,k}(\xi') = V_{l,k}(\xi') + r \quad (79)$$

With:

$$r = RLI_1(\vec{x}, t) - RMI_2(\vec{x}, t) + RC \frac{\partial}{\partial t} V_{1,2} + V_{l,k}(\xi') F_{l,k}(\xi') \quad (80)$$

But the inductive element for of current differential to voltage difference may be written as:

$$\frac{\partial}{\partial t} I_{1,2} \leftrightarrow v \frac{\partial}{\partial x} \psi_{1,2}(\vec{x}, t) \quad (81)$$

Therefore, if:

$$v^2 R^2 LM + RC = \rho \quad (82)$$

We get:

$$-i\tau R \frac{\partial}{\partial t} \psi_{1,2}(\vec{x}, t) = R\kappa^2 \frac{\partial^2}{\partial x^2} \psi_{2,1}(\vec{x}, t) + RC \frac{\partial}{\partial t} \psi_{1,2}(\vec{x}, t) + V_{l,k}(\xi') F_{l,k}(\xi') \quad (83)$$

With τ , and ι in unit's of voltage **[v]** and α and β , unitless... ξ in units of voltage **[v]**. We now utilize F for that of the differential of the impedance comparative to the voltage; it is parallel; thus the impedance is indeed $\frac{F}{R}$ when treated as a voltage divider.

$$i \frac{\partial}{\partial t} \psi_1(\vec{x}, t) = \eta \frac{\partial^2}{\partial x^2} \psi_2(\vec{x}, t) - \rho |\psi_1(\vec{x}, t)|^2 \psi_2(\vec{x}, t) \quad (84)$$

$$i \frac{\partial}{\partial t} \psi_2(\vec{x}, t) = \eta \frac{\partial^2}{\partial x^2} \psi_1(\vec{x}, t) - \rho |\psi_2(\vec{x}, t)|^2 \psi_1(\vec{x}, t) \quad (85)$$

And with the *resulting* constraints:

$$\eta = \frac{\omega^2 LM}{R(\tau + \omega C)} \quad \rho = \frac{(\alpha_l \beta_k)^2}{2I_0} \quad (86)$$

Thus the matrix-field equation is:

$$i\partial_t \Psi(\vec{x}, t) = \sigma_x (\eta D_{xx} + \rho |\Psi(\vec{x}, t)|^2) \Psi(\vec{x}, t) \quad (87)$$

In conclusion, as the term with η and of ρ convey *sources* in which there is a juxtaposition of particle 1 for 2 and 2 for 1; it is true that the Dirac equation fold's in-reverse, in relation to relativistic factors of γ_0 in any antiferromagnetic material which is doped. This result, exposes the η_0 , here encoded in ρ , to which is the guiding attraction as a consequence of hole and spin **duality**. As a result of reversal in the non-linear Shroedinger equation of $1 \leftrightarrow 2$; that of the inertial response to A_μ in D_μ is reversed *in response to* $\eta_0^{-1} \rightarrow \infty$ as $|r_1 - r_2| \rightarrow 0$.

Necessary Prerequisites and Question

Beginning with the equations:

$$d\rho_k = d\xi_k + \alpha_k^{ij} \xi_i \xi_j \quad (88)$$

And:

$$d\eta_k = \beta_k^{ij} \xi_i \xi_j \quad (89)$$

We seek a solution that separates an operator like:

$$\kappa \frac{\partial \theta}{\partial t} \frac{\partial \theta}{\partial x} + \tau \frac{\partial \theta}{\partial y} \frac{\partial \theta}{\partial t} = h_{txy} \quad (90)$$

In that of a 'group' dealing with:

$$\begin{pmatrix} \wp(u)_{(2,0)} \\ \wp(v)_{(2,1)} \end{pmatrix} = \begin{pmatrix} \cos(\theta) & -\sin(\phi) \\ \sin(\phi) & \cos(\theta) \end{pmatrix} \begin{pmatrix} \wp(u)_{(1,0)} \\ \wp(v)_{(1,1)} \end{pmatrix} + l\Lambda \quad (91)$$

We intend to solve the general differential equation [above], but for that of a group of:

$$\{\wp_{i,j,\dots}\} \quad (92)$$

What is noted is that a Weierstrass-P function is associated to a Polynomial-curve, - then that when two polynomials are added, their coefficient(s) may shift, thus, forming a group of which relates the inwardly produced P functions with one-another.

Ansatz

We will add various materials to [complete] the paper as-versed, - then that it is a new project, for in that of the typical and atypical nature of the differential equations dealt with. A semi-instructive methodology of writing will be entertained,... For now, it suffices to indicate the method of solution.

The equation with that of GR and the EP with QM is dealt with for the sake of analysis as the following, noting:

$$\{z, \wp(z)\}(\wp')^2 \sim \wp(z) \quad (93)$$

And:

$$\{z, \wp(z)\}(\wp'') \sim \eta \quad (94)$$

Thus the group defined by the rule:

$$(\alpha\wp(z) + \beta)(\kappa\wp(z) + \tau)(\{z, \wp(z)\}(\wp')^2 + \{z, \wp(z)\}(\wp'')) \sim (\wp')^2 \quad (95)$$

Thus that:

$$\Omega \sim (\{z, \wp(z)\}(\wp')^2, \{z, \wp(z)\}(\wp''), (\alpha\wp(z) + \beta), (\kappa\wp(z) + \tau), (\eta\wp(z) + \rho)) \quad (96)$$

Is a closed group.

Invariance

Thus, we can freely relate to adding a logarithmic differential of φ ... this curvature is the manifold diffeomorphism invariance.

Introduction to Spinwaves

The conventional approach to spinwaves is the continuum approximation; for which some simple solutions for bi-partite lattices are known; with the inclusion of discrete systems; for which the continuum approximation is destined for failure in the strong coupling limit. Departures from spin trajectories make the approximation one for which we cannot satisfy the conclusion that the coupling is stronger than the given spacing parameter. When a non-linear analysis is instead supported by that of tension and torsion as parameters; the solutions manifest as elliptical in nature; to which there can be found exact discrete solutions. These exact discrete solutions interpolate between the discrete periodic lattices and that of the continuum; and promote the introduction of non-linear quasi-solitons; to which there is periodic behavior. The understanding of a discrete non-linear analysis of superposition and interaction is found to be of necessity in the finding of a solution to therefore many systems of interest; including the bi-partite lattice and that of the Ising model to describe crystals.

Discrete Ising Model

We begin with the discrete ising model; to which solutions have not aforementioned been found; and it is to that which we find at odds the characteristic length scale; we will not go into a proof that the strong coupling limit defies the discrete to continuum translation; but instead impose boundary conditions on the model; to which there appears manifest a singular nature to the solutions; of which the algebraic functions translate into transcendental functions of elliptic variety in the one-dimensional system with isotropy:

$$\frac{\partial \vec{S}_j(x, t)}{\partial t} = J \vec{S}_j(x, t) \times (\vec{S}_{j-1}(x, t) + \vec{S}_{j+1}(x, t)) \quad \forall j \quad (97)$$

One can go to the continuum; but we devote our time to finding discrete elliptical solutions; for the sake that the strong coupling limit fails with the exchange constant when departures from linearity manifest.

Testing the ansatz:

$$\vec{S}_j(x, t) = \eta(x, t)(\alpha_j sn(\hat{\omega}(x, t), m), \beta_j cn(\hat{\omega}(x, t), m), \gamma_j dn(\hat{\omega}(x, t), m)) \quad (98)$$

With:

$$m = \frac{v^2}{c^2} \quad \hat{\omega}(x, t) = E[m] \frac{2}{\pi} (x - vt) - \phi_j \quad (99)$$

Time dilation imposes a nonlinear factor to which regularizes tension and torsion; and admits a phase which can comparably (and discretely) change from lattice site to lattice site.

1 Imposition of Relativity

We know from the differential equation governing the elliptic functions:

$$\left(\frac{dy}{dt}\right)^2 = (1 - y^2)(1 - k^2 y^2) \quad (100)$$

That the differential of the time dilation squared is the integral of a comparative Lorentz factor for the two sublattices of spin in the bi-partite lattice; to which $(\frac{dy}{dt})^2 = \eta(x, t)$. Which is to that of the differential equation the source of the left hand side; and which is the local contraction of Lorentz factors; to which the differential equation (1) becomes:

$$\frac{\partial \vec{S}_j(x, t)}{\partial t} = (\partial_t \log \eta) \vec{S}_j(x, t) + (\hat{\alpha}_j cn(\hat{\omega}) dn(\hat{\omega}), \hat{\beta}_j sn(\hat{\omega}) dn(\hat{\omega}), \hat{\gamma}_j sn(\hat{\omega}) cn(\hat{\omega})) \quad (101)$$

Where:

$$\hat{\alpha}_j = -E[m] \frac{2}{\pi} v \alpha_j \quad (102)$$

$$\hat{\beta}_j = E[m] \frac{2}{\pi} v \beta_j \quad (103)$$

$$\hat{\gamma}_j = -E[m] \frac{2}{\pi} m v \gamma_j \quad (104)$$

Where use of the Jacobi summation formulas is used:

$$cn(x + y) = \frac{cn(x)cn(y) - sn(x)sn(y)dn(x)dn(y)}{1 - k^2 sn^2(x)sn^2(y)} \rightarrow 2 \frac{cn(x)cn(\phi_\Delta)}{1 - k^2 sn^2(x)sn^2(\phi_\Delta)} \quad (105)$$

$$sn(x + y) = \frac{sn(x)cn(y)dn(y) + sn(y)cn(x)dn(x)}{1 - k^2 sn^2(x)sn^2(y)} \rightarrow 2 \frac{sn(x)cn(\phi_\Delta)dn(\phi_\Delta)}{1 - k^2 sn^2(x)sn^2(\phi_\Delta)} \quad (106)$$

$$dn(x + y) = \frac{dn(x)dn(y) - k^2 sn(x)sn(y)cn(x)cn(y)}{1 - k^2 sn^2(x)sn^2(y)} \rightarrow 2 \frac{dn(x)dn(\phi_\Delta)}{1 - k^2 sn^2(x)sn^2(\phi_\Delta)} \quad (107)$$

Where all odd term's cancel. Describing a phase by $\phi_\Delta = \phi_j - \phi_{j-1}$:

$$\hat{\alpha}_j = -(\partial_t \log \eta) \frac{sn(\hat{\omega})}{cn(\hat{\omega})dn(\hat{\omega})} + 2J\beta_j\gamma_j \frac{\delta_1}{\rho(x, t)} \quad (108)$$

$$\hat{\beta}_j = -(\partial_t \log \eta) \frac{cn(\hat{\omega})}{sn(\hat{\omega})dn(\hat{\omega})} + 2J\alpha_j\gamma_j \frac{\delta_2}{\rho(x, t)} \quad (109)$$

$$\hat{\gamma}_j = -(\partial_t \log \eta) \frac{dn(\hat{\omega})}{sn(\hat{\omega})cn(\hat{\omega})} + 2J\alpha_j\beta_j \frac{\delta_3}{\rho(x, t)} \quad (110)$$

Where:

$$\delta_1 = 2cn(\phi_\Delta, m) \quad (111)$$

$$\delta_2 = 2cn(\phi_\Delta, m)dn(\phi_\Delta, m) \quad (112)$$

$$\delta_3 = 2dn(\phi_\Delta, m) \quad (113)$$

And where $\eta = v$ has been cancelled by that of the denominator in the addition formulas; and:

$$\rho(x, t) = 1 - msn^2(x)sn^2(\phi_\Delta) \quad (114)$$

And:

$$\eta(x, t) = \text{ind}(\hat{\omega}) \quad (115)$$

Leading to:

$$-(\partial_t \log \eta) \frac{sn(\hat{\omega})}{cn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \text{ind} dn(\hat{\omega}) sn(\hat{\omega}) cn(\hat{\omega}) \frac{sn(\hat{\omega})}{cn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \text{im} sn(\hat{\omega})^2 \quad (116)$$

$$-(\partial_t \log \eta) \frac{cn(\hat{\omega})}{sn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota m dn(\hat{\omega}) sn(\hat{\omega}) cn(\hat{\omega}) \frac{cn(\hat{\omega})}{sn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota m cn(\hat{\omega})^2 \quad (117)$$

$$-(\partial_t \log \eta) \frac{dn(\hat{\omega})}{sn(\hat{\omega})cn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota m dn(\hat{\omega}) sn(\hat{\omega}) cn(\hat{\omega}) \frac{dn(\hat{\omega})}{sn(\hat{\omega})cn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota m dn(\hat{\omega})^2 \quad (118)$$

And:

$$-E[m] \frac{2}{\pi} v \alpha_j (1 - m sn^2(\hat{\omega}) sn^2(\phi_\Delta)) = -vE[m] \frac{2}{\pi} \iota m (1 - m sn^2(\hat{\omega}) sn^2(\phi_\Delta)) sn(\hat{\omega})^2 + 2J\beta_j \gamma_j \delta_1 \quad (119)$$

$$E[m] \frac{2}{\pi} v \beta_j (1 - m sn^2(\hat{\omega}) sn^2(\phi_\Delta)) = -vE[m] \frac{2}{\pi} \iota m (1 - m sn^2(\hat{\omega}) sn^2(\phi_\Delta)) cn(\hat{\omega})^2 + 2J\alpha_j \gamma_j \delta_2 \quad (120)$$

$$-E[m] \frac{2}{\pi} m v \gamma_j (1 - m sn^2(\hat{\omega}) sn^2(\phi_\Delta)) = -vE[m] \frac{2}{\pi} \iota m (1 - m sn^2(\hat{\omega}) sn^2(\phi_\Delta)) dn(\hat{\omega})^2 + 2J\alpha_j \beta_j \delta_3 \quad (121)$$

Which resolves to:

$$\alpha_j f^2 \lambda_s = -2\iota f^4 \lambda_s + \mu \beta_j \gamma_j \lambda_c \quad (122)$$

$$\beta_j f^2 \lambda_s = -2\frac{1}{m} \iota + 2\iota f^2 (1 + \lambda_s) + 2\iota f^4 \lambda_s + \mu \alpha_j \gamma_j \lambda_{cd} \quad (123)$$

$$\gamma_j f^2 \lambda_s = -2\iota f^4 \lambda_s - \mu \alpha_j \beta_j \lambda_d \quad (124)$$

$$\mu = \frac{J\pi}{vm^2 E[m]} \quad (125)$$

Under reduction; and solving the system:

$$g \frac{\alpha_j}{2\iota} = g^2 - \frac{\mu \beta_j \gamma_j \lambda_c}{2\iota \lambda_s} \quad (126)$$

$$g \frac{\beta_j}{2\iota} = g^2 + g \frac{(1 + \lambda_s)}{\lambda_s} + \frac{\mu \alpha_j \gamma_j \lambda_{cd}}{2\iota \lambda_s} - \frac{1}{m \lambda_s} \quad (127)$$

$$-g \frac{\gamma_j}{2\iota} = g^2 + \frac{\mu \alpha_j \beta_j \lambda_d}{2\iota \lambda_s} \quad (128)$$

Superconductivity Origins

The magnetic only solution (above) indicates that a renormalization occurs at the magnetic only fixed point in the flow of the theory. Second to this; is the potentiation of inclusion of local to local terms of an electromagnetic variety. The solution given by that of the (above) indicates that when we uniformize and unitarily procure from the electromagnetic solution to a dual in the vector field based contingently around magnetic and electric solutions; that this precipitates electromagnetic symmetry breaking; by that which is a separable contribution to the spin wave geodesic equation. There are only two elements of the theory:

1.) Renormalization to electric only and magnetic only solutions; precipitates a violation in the superposition of the Dirac Electron Equation to Pauli Exclusion Principle locality bridge with logarithmic wavelength compensation of geodesic phase of spin-waves to electron mass and time decoupling from (2).

2.) Renormalization of the local to global to local theory of the uncertainty relation that derives of certainty in relation to a physical and acausal disconnection of free determinism precipitates superposition to spontaneous symmetry breaking of the quantum states in light and mass below a threshold set wavelength of light (Compton) wavelength of spinwave to charge hole.

In continuance; the result is spin charge separation from mass and inertia with symmetry breaking of electromagnetism from gravity precipitating a decoupling of matter from light and wavelengths of De'Bye from Compton to which ensure universality of an inductive conditional in that of spin and charge (or hole) delocalization-localization phenomenon in a unitary lowered energy potential of genus one beyond the wavelength of repulsion; asymptotic to a coupling below the threshold of inward or outward electron pair pair global to local pressure. It is that the renormalization in the ultra-small scale goes to infinity on that of the electric distance when it holds that the Debye wavelength is below the Compton; to which the electric field re-normalizes to zero strength of repulsion; and magnetic symmetry insists a universally finite (unit 1) attraction.

This is a result of relativity participating in the local limit of co-inertial utility in the argument of motion-free inductive transformation to a mirrored re-action of infinite renormalization of c in the limit of approach (null coincidence informs/ces that of asymptotic freedom); for in that of $\frac{v}{c}$ the logarithmic regularization goes to $+\infty$ to which the electric field and effective distance go to eternity. Thus the two objects of electron hole and electron opposite hole form a polariton and are freed to attract at a charge of $2e^+$. The charge is reversed for in that of the mirror effective distance of a 'hypothetical' electron at infinity; and one super-imposed at some (hypothetical) finite large distance to which are polarized outward-inward. The laws of physics reverse.

This is simply the result of meeting the uncertainty relationship as in that of the outward-inward space of two normalizations producing an infinitely extended re-action when slower than the speed of light; the matter cannot keep up with the charge state; and so matter is in suspense and blocked by light; to which the relativity theory finds support to be a re-action deduced from the limit of c ; the superconductor; at rest; participates in a phase in **reduction** by algebraically a blocking of light from reaching the first occasioned next nearest neighbor; but not! that of the next-nearest-neighbor. As a consequence uncertainty folds.

The re-action is that relativity is reversed; to the projection meeting it's annihilation in that of a withheld electromagnetic interaction of reversed variety at short distance. This is the same as action and re-action; which are of course parallels. As a consequence light find's it's reduction in a similar statement to relativity. Durations in the infinitely small scale d are reduced in measure under a reaction to which they concur to being larger contributions (at small renormalization scale) to that of the integral \int ; of which is made **smaller**.

This does in no way refute Einstein; but proclaims he was correct; as in that of duration becoming larger; under a small scale shrinking to zero; the curvature to which is the differential dominates; and the local term refutes the large over similar scales. After all; that of two closely placed iso-symmetric pell's do not balance but to zero scale; the uniformity of the debate is that a reduction upon c is self-consistent with the renormalization. This alternatively can be seen as the limit (re-inforced by conductance going to infinity with pairs produced by symmetry breaking) of $c \rightarrow 0$ comparative to a phase delay. Attraction is the natural result of a phase delay in that of the Green's Function; the first illustration in comparison with BCS theory. This is that the charges may avoid one another in time by being in a different position in space. The inverse (reversed) limitation is that of either side of a mirror; to which they are eliminably precluded for

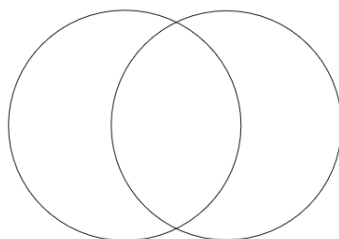
in light of an immediate nearest neighbor; that of the second nearest neighbor via superexchange is at a co-local distance closer in phase space. Hence it is predicted that ionizing a material produces hypervalence.* When locally isotropic groups segregate below a wavelength to which spatial segregation is superior to what is time as an anterior limit of the laws of physics a spontaneous symmetry breaking is produced to which produces the requisite preliminaries for superconductivity.

Neutrals

That of the H_n and H_m provide a basis by which the $SU(2)$ cover of the Cauchy-Riemann equations produces from two-exponential (Sine,Cosine) - what is a group addendum to the \wp curves,... an argument to which the *additional* argument δ , produces an eigenspace that violates diffeomorphism invariance. That the \wp is in a bijective with the [Sine,Cosine] *renders isotropic* the counsel at-space. That of miniature relationships therefore encode the grand-gestalt, while that of the governance of the overarching result provides for an **envelope**. That of the \wp is therefore interlinked with the [Sine, Cosine] of it's group-monad to which the group attains a quasiperiodicity. Thus, the \wp is in a \leftrightarrow with (Sine,Cosine), *encoded of monomials in the H_n and H_m* . Thus we see that the $\delta(\vec{x})$ is *split* by what is a diffeomorphism invariance breaking.

Complimentarity and Inheritance

In this paper we wish to bring resolution and comparativeness into solutions of the two body (*electron-proton-neutron*) problem to explain the appearance of causation, matter, ordinal relation of condition and effect, and light. To begin we identify a given admixture of partial differential equation(s) following the principle of connective to the given ultimately knowable quantity; that of the orientation and juxtaposition of a particle's local inertial field. Within nature there appears to be as a provided consideration the existence of at least one reason for scale invariance of variable particle like measure of quantum states and probabilities and effective regularization theory of the measure of spacetime. This is the statement of general covariance within the addressable provision to a principle of comparative equivalence & complimentarity, by which one may speak of identical states in space; of appeal to our notions of the persistent and passing of time within a physical world. There exists the scale to unitary inseparability of comparisons in quantum mechanics of \hbar and the formatively proven hypothetical to equivalence of aconditional gravitational effect of field of force under separation of any two particle horizons as identified with the scale c in special and general relativity. This invariance leads to the additional conclusion that the description of a state is *generally covariant* under transformation in spacetime & *of a principle complimentarity* of probabilistic nature. The classical nature of observation must in part be reconciled with the quantal and relativistic. Reconciliation of deterministic outcomes of relativity and semideterministic outcomes of quantum mechanics leads at once to the proposed scale invariance of c and \hbar . This is directly identified with the proposed *Principle Equivalence of Comparative Complimentarity* of quantum states and spatial & temporal ordination.



Introduction

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in all known materials. Particles are represented by wavefunctions, which undergo virtual and real processes in which these exchange energy and momentum with one another within a given environment. Gravity on the other hand, is equal to the qualitative theory of the geometry of space & time taken to it's end in the unconditional ceasing of gravitational force in consideration of the statement of free fall. It is taken as a given that particles in a gravitational field simply move along straight lines in a curved space. Therefore; a complete theory of quantum mechanics and general relativity begins with the precept of straight line congruence of free motion and capacity of ordinal relation of comparability in either theory so reconciled as the equipartition of a knowable field.

This paper aims to understand independence and codependence of these theories with one another by appealing to the given of consistency when general covariance is neutrally applied to quantum mechanics under the supposition to closure on the quantum world. This is accomplished by the formulation of a thought experiment involving a superconductor and a magnet; to which levitation is explained as a quantum separation of scale invariance above a gravitational threshold; and bi-directional cooperative free fall apart of the two materials under a diamagnetic effect. In a superconductor, a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations below which electrons are in departure of a scattering theory; explaining that only a qualitatively pure theory of true phenomenological origin may explain their vanishing thermodynamic contribution. Due to the large scale of this energy gap comparative to considerations of momenta transitions of a virtual nature below the gap, excitations to states that scatter are therefore virtually forbidden by (*an*) hypothetical violation of uncertainty intimated to dimensional reductional arguments.

The consequence of an electromagnetic potential and quantum residual nature of frozen isosymmetry of global invariance manifests therefore as a condensation process to which there is reversal of iso-inclinc degrees to a null winding point in the relativistic theory. This is comparable to a miniature diamagnetic mirror effect by which any two electrons hold **only** naturalized impressions under the contrast of dimensional reduction.

The closure of the state 'back-upon' the hole attractive phase is locable therefore as an openly intimated connective of ordered relation to free transposition of temporal congruence. Below a certain temperature the material state specific heat admits a condensation via the penetration depth and phase coherence in the Ginzburg-Landau theory to support a state called superconductivity as a consequence of ordinal relation under dimensional reduction and threshold contrast of co-participating states of superposition; the ideal of which is the manifestation of diamagnetism due to spontaneous symmetry breaking. The reduced state is therefore iso-inclinc as a result of it's reduction to a causeless effect; the certain determinant of which is separation under cooperative reversal of the laws of physics in a thermodynamic potential of a pure 'acausal disconnect' of 'conditional effect' under the provisions of a prepared magnetic and gravitational potential. The final difference of these included considerations is that one enqueued spin or charge variant is unseparated but isolable from that of mass; to which either fractional decomposition of states isolably yields a pattern congruence and isopotential of secondary enfolding of their two natures via 'hole-void' & 'charge-spin' structure to which a metric notion retains one individuated contrast of magnetic disordered relation within that of it's electromagnetic potential threshold of effective isolation and reductional mutability under the provision of temporal quantum prohibition of intermediary disconnect. The resultant of this theorem and understanding is that a bound state co-exists with that of any given thermodynamical potential exterior to a given

isolable region or domain of interest to which is an unfilled vacuum alternatively provided to the considerations of macroscopic order.

Primary Principles

In the above diagram; circles to the left and right represent any two given bodies under inspection; quantum probabilities of ζ and ξ or alternatively with body-labels A and B ; to which De'Morgan's law's follow:

$$\hat{A} = \zeta(v, \tau) \quad \hat{B} = \xi(v, \tau) \quad (129)$$

With *an Principle Equivalence of Comparative Complimentarity*:

$$A \circ B = A \cdot B \quad (130)$$

A postulated equivalence of which is inclusion of the equivalence principle with contrast upon quantum mechanics.

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of it's possible predictions. To bring these theories into contact the method chosen is that of adopting the essential qualitative feature of isometry under stereographic relativistic transformation of coordinates for an underlying representation in the context of general relativity and applying this descriptive independence to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and complimentary in qualitative measure and measurable.

Fundamental Principles

This rule of displacement furnishes an equivalent footing to covariance and identity freedom (of one or two particle); thus a point exists to which it's weight is δ_e ; and to which a given displacement dictates the geometry, action, and evolution of a given decomposition of quantum states.

Principle of **Parsimony**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (131)$$

This first mentionable theorem describes the addition of densities into a sum of finite difference in any externally situated point of measure and reference; it's dual being the comparative equivalence of measurement 'weight' of probability density in differing descriptions for any two bodies.

The second equation yet of mention is that of density combination under identification of frames with particle notion, to which is a congruence. The comparative equivalence of these two juxtapositional identities of variable and measureless degree of emptiness of physical invariant afford the addition of a shared time (here denoted σ); to which is in equivalence a shared time of subtractive nature to the ordination of spatial extension.

Principle of **Synchronicity**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (132)$$

Together, this is nothing more than the equivalence of references of vantage for any two particles.

The direct consequence is that:

Any two contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor of density; for in that of one following adirectionally apart; together; or separately; there is a transparency of logical union of quantum description; that of an interior coextensive dilation contraction factor owing due to their (shared) comparative proper measurement of time.

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a *free* substitution of difference of perspective and vantage; to which forms the uniqueness condition of any two point like limits of relativity & quantum mechanics; for that of any given principle equivalence of time and order; the principle inequivalence of which is a co-determinism to any two probability densities.

The general consequence and implication of this for signals of frequency and functional form under transformation is that: By one (1) comparative differential to quantifiable mean variance in difference of driving frequency encompasses either of any two subcomponents of alternative exterior difference of a given surrounding constructible geometric congruence.

Therefore with general functions:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (133)$$

Implies: In log decibels any two differently concordant rhythms are separable by any given measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature. Therefore considered together these two imply the equivalence of results and particles under parallel interchange of perspective and vantage.

Principle of Measure: *Either one of Parsimony; or both of Synchronicity of given absolutely relative and arbitrary limits of codeterminism within shared point-like relation of temporal extensibility of measure and argument agree to (a) given variety of locality within a shared pre-text; to which with but one given shared body one given end congruent relation is empty of measure or extension; and one beginning notion is free of adeterministic consequence; the implication of which is that measure is certain and measurement strictly semi-deterministic.*

We can therefore conclude:

β): Geometric weight of relativistic point application of force is equivalent and opposite to quantum mechanical point application of impetus.

α): Geometric weight of point like mean density in relativity is equivalent to geometric weight of point like variance in quantum mechanics.

Conclusion: *Geometric weight of density and mean force of impetus are equivalent in a theory of comparative equivalence and complimentarity; to which in addition all events carry an equivalent*

contribution of $\delta_\epsilon = \hbar c$, for which any two constitutive relations form a synthetic factual known of truthful valuation under superposition of one given naturalized geometry.

Relativity Theorems

The phenomena of which is intransigence of notion for particle and recurrence for wave is the addressment of deterministic end to description at the benefit of representational permanence in reality; therefore to be known here as two givens in physical law and this world within that of **real** connective and disconnective of known's under *displacement* as *relation* of any given one known to it's identity and any additional known:

Parsimony: Any principle comparative measurement of frequency under it's given equipartition at most meets that of analytical threshold of physical variance of mean partition of yet an other state within the contrast of two idealized localities.

Synchronicity: To what is ideal of measure; any apparatus of measurement idealizes to yet one threshold of superior relation of major for minor locality of the idealized process of measuring under comparability to reference and sentient witness.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

$$\gamma_c \leq \gamma_m \tag{134}$$

Property of Light Variance: *The speed of light in when known as fixed to a universal standard implicates that all such durations under observation are identical with and greater than that of any given singular pre-contextual arrow of time by the speed of light universally; for the property of dilation is obverse to any stated fixed measure of relation.*

In this, γ is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity) precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path upon passage.

This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated).

Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other observer, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence of congruence under emptied return of ordination and temporal excess of comparative shared time to threshold of objective for any given two body problem. Consistency for that of closure is therefore defined by that of what can be found as a 'bottom' extremum beyond which measureable extension of locality of a given limitation of enclosure unto each given

domain of relation potentiates two fundamental mathematical principles in this given world; for which there are solid and diffuse natures to reality in contrasting degree of pattern and reference; to which is an a priori assumption natural to the sciences. Therefore there are two fundamental limitations of physics; that of one indicial and one ordinal theorem; their synthetical remark the passage and persistence of time:

Conclusive Remark on Time: *The relation of a distant observer in observation to that of the point of the first observer when in motion is of a greater measure than then the reference to the observer under observation to whom as observes a lesser comparative time in that of the observer of it's given observation & alone as greater, comparatively; to what it observes in persistence of motion; these being the two natures of time in relation to any one (of either) such observer's difference with (in) that of equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (135)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

Ideal Principle Equivalence

Conclusive Remark on Measurability: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of any multiplicity of observables by observers are measurably null and unphysical when any one is undeclarative.*

Quiescence: *Any free light field congruence as the amendment of a free frame under geometric associability and indication is to it's field of subsidiary particle index therefore a free integral and differential of associated field compliment and vantageless a-perspectiveless freedom of degree.*

$$\partial_{\alpha\beta}^{\gamma} \Theta = \Theta_{\alpha\beta}^{\gamma} \quad (136)$$

Prescience: *The integral notion of this given universe is therefore the capacity of space to capacitate an indicial notion as the presence of a quotient group of complimentary ordination to constraint-free degreeless displacement-free identity and variable of aconditionality of principle.*

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (137)$$

This is the given statement that a freely disconnected relation of space is capacitated by that of temporal congruence under free transmigration of identity of indeterminant principle accrued integral and differential notion of field and seamless light-like transparency of ordination in it's capacity to immeasurably exceed the given capacity of matter to inhere motion. It is therefore held as true that any two quantities of displacement of measure unto and to measured are coextensively congruently null and asymptotically free of any two measurement processes by

that of indivisibility of ordered expression as the known independence of order from ordination in the indicial notation:

$$\zeta\chi = 0 \quad (138)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (139)$$

The algebraically free projection of any co-automorphic degree or vector into any one-form of geometry of null displacement invariance with in that of null indistinguishability invariance is therefore the general and full expression of a principle equivalence of null covariance as the expression of the primary notion of the predicate calculus of invariant's.

Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (140)$$

Principle In-equivalence:

$$\eta\rho + i\sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (141)$$

Any two held contraction dilations are therefore uniquely independent of any additional third by that of their commensurate action of congruency of geometric difference under open relation of objective addition of relativistic co-factor; for in that of one following adirectionally apart or together; there is seamless transparency of beginning to end of pathwise extensible union.

Therefore:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (142)$$

Therefore considered together these two imply:

Theorem of Freely Held Determinism: *Either one; or both of (2), given known invariances of absolute limitation unto independence of point-like relation(ship's) of proportion are indicatorially free as thereby the given theory of electricity & magnetism to (any one (1)) variety of non-locality; for which one is but a beginning and end congruence of relation as empty boundary condition.*

Reduction under the Temporal

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of any unbiased system of units (to which is the deduction of temporal measure from out of spatial translation).

Therefore the given holds as true by the following; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (143)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (144)$$

Are equivalent parameterizations of the same problem, as both intimate a connective between transposition and migration of quasilinear pathwise extension in space to which order is subsidiary to and, upon, qualifiable degrees of motion as that of which are neither circular nor point-like.

$$\frac{v}{c} \leftrightarrow 1 - \frac{v}{c} \quad (145)$$

This principle of inequivalence in concordance with principal equivalence is to be contrasted with the exterior space-like symmetry of the theory of relativity when it is considered that actual determinations of validity are certain only when one deduces inwardly from temporal to a conditional extension into a given spatial measure.

As a consequence; one or both given ends of any one continuum of a virtualized or real world are not to be found; for the projective forward and backward (surjective) intimation of relation contains no common zero but as algebraic connective and disconnective of atemporary spatial union. The expression of this is that of an intermediary identity locable everywhere in space as the untitled degreeless identity of quantum mechanics.

The principle inequivalence instanced by $\sigma(t)$ is then the marriage of one body to a two body problem by which either agrees with reason and consistent notions of space alone; to the entitlement of understanding of time; the extra $\sigma(t)$ being the accordance by phase of that of a temporal signature to inertia. When one analyzes a mirror with this concept in mind the result is as to two defining relations of analytical true supposition of the ‘vertical’ and the ‘horizontal’ rate of comparative temporal extensibility as limitation of arc-width to perimetric co-extension of signature:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (146)$$

Theorem of The Quantum

In order to investigate a potential factoring of the two body electron equation into which the problem may be cast or dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which there is escape from the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions.

We prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave and frame descriptions of two particles; to which belong to differing descriptions and frames; denoted by \sim or $-$.

Here we find that De’Morgan’s law’s imply:

$$\langle A \rangle \langle B \rangle - \langle A|B \rangle = Cov[A, B] \quad (147)$$

For which $Cov = A \circ B$ is the covariance of events or probabilities A and B ; with which $Cov \equiv \neg Cov = A \cdot B$:

$$A \cdot B = (\neg A) \cdot B \cdot (\neg B) \cdot A \quad (148)$$

Where $\sigma(t) \equiv i \langle A|B \rangle$. Following De’Morgan:

$$\beta[\zeta, \xi] : A \circ B = A \cdot B \quad (149)$$

Where Cov and $\neg Cov$ are the event and it’s compliment at the point of a ‘event’ to which we find that geometrically there is equivalent weight to any two of an event and it’s compliment (the statement that $A \circ B = A \cdot B$ when an event occurs).

It is now time a dimensionally free weight of independent quantum event comparability to the geometry of space and time is introduced to which is the adherence to independent of events;

that of the form of logarithmic equipartition of unique decompositions under geometric freedom of state prescription of statistics:

(1.) α : *Limit of areas under arcs to radius of curvature (log); takes the position of the integral.*

(2.) β : *Limit of arcs ratio to radius of curvature (log); takes the position of the differential.*

These relate to the given that is the ‘point like’ or ‘cuspic like’ relation of certainty as an arbitrary argument on ‘scale’ $\delta_\epsilon \rightarrow 0$ (zero) in the limit of which it is a prescription to the geometric addition law of probability density; following from the tenement of ‘The Uncertainty Principle’ and ‘The Equivalence Principle’ at the infinitely small to infinitely large scale by the laws of calculus.

For as proof; consider that ω is a frame; then rotate one such frame around until it vanishes to a point.

A logarithmic spiral is the limit of geometric congruence; to which arcs and areas under any curve describe a differential and integral form as length or area to radius progressing to the limit of an infinite process of equipartition and equivalence of all events.

First, we utilize the Guass-Bonnet theorem:

$$\int_V \Omega(\alpha) dV + \int_{\partial V} \omega(\alpha) d\tau = 2\pi\chi(V) \quad (150)$$

As an alternative to relativity; and to mathematically the source by which Einstein is correct; there in three dimensions; the boundary is greater than the volume of a fourth dimension; at which the excess of one; is the counting of a number; by which all exceeds it’s difference; and the certain exists. To which in either there is an exceeded and a difference in a number; the limitation in the curtailed mean of one variance to excess in three to two dimensions is found in that of the volume to which a fitted relation is of the lesser in content of the surface to what is found in that of the filling of a volume to that of the dimension by which the counting is equipped.

$$\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2 = 2\pi\delta_\epsilon \quad (151)$$

Hence a sphere; in it’s limit of radius shrinking to a point; is lesser in volume than that of by which a sphere in it’s volumetric area shrinking to zero is made smaller to a point upon which a boundary between three and four dimensions is made larger than it’s complimentary two dimensions of filling. As to a sphere in three dimensions; it is larger in it’s boundary than four dimensions is in it’s volume. Hence in counting the identity is always counted; and the mean threshold below a given variance is certain in relation to that of expanding by one dimension; made as the accounting of volume of one dimension larger always decrements the surface by a larger excess in diminishment by a count of one δ_ϵ .

Statement of Knowabilities: *The lightness condition of one degree of variance is to the greater of it’s leverage in count as to the difference in that of the perimetric volume comparative to a volumetric dimension of a counting by one ipseity.*

The proof of the master statement is as simple as the proof that; by displacement:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) = 0 \leq \delta_\epsilon \quad (152)$$

Concerning Singular States

When considered at first; one may be tempted to set that of state 'A' or 'B' to 'zero' as in the limit of $\zeta \rightarrow 0$ or $\xi \rightarrow 0$ to extinguish the particle and wave notion of the state; however; one is not afforded this errancy when taking a 'literalist' picture of the subscription to such variables. One finds that a bridge at the threshold of certainty prior to any uncertain event of a given expectation one is potentiated - the fact that 'a' prediction can be formed. Instead; it must be that states 'A' or 'B' are *mute* in such a consideration; and take on a neither present nor absent condition of which then the equations become (let us reference 'A' as *mute*):

$$\beta [\zeta, \xi] : A \circ B = A \cdot B = B \cdot (\neg B) \quad (153)$$

And:

$$\langle B \rangle - \langle B \rangle = A \circ B = Cov[B] \quad (154)$$

Then:

$$\beta [\zeta, \xi] : 0 = 0 \quad (155)$$

Therefore the equations hold in the limit of one particle. Of their 'grosser' statement; that *the rules that apply to two particles also apply to the notion of the singular particle picture* and it's truth; the consequent forbearance on that of the weight of knowledge in it's minute element is indicated to be the domain of mathematics.

The new equation for β is:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) \cdot g(\bar{\omega}) = 0 \leq 2\pi\delta_\epsilon \quad (156)$$

And, let the new equation for α be:

$$\left(\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2\right) \cdot f(\tilde{\omega}) = 2\pi\delta_\epsilon \quad (157)$$

Now we let $(\zeta, f(\tilde{\omega})) \rightarrow A$ and $(\xi, g(\bar{\omega})) \rightarrow B$ to which the original functions are associated with their representation in terms of frame; identifying the geometry with the particle: $[\zeta, \xi] \rightarrow [f(\tilde{\omega}), g(\bar{\omega})]$. Equation α and β are here associated with a geometry and a particle definition of weight and description. Clearly; α becomes under substitution of A :

$$f(\tilde{\omega}) = 2\pi\delta_\epsilon \quad (158)$$

And β becomes under substitution of A for ζ and B for ξ :

$$(1 - 1) \cdot g(\bar{\omega}) = 0 \leq 2\pi\delta_\epsilon \quad (159)$$

As $f(\tilde{\omega}) \rightarrow \zeta$ and $g(\bar{\omega}) \rightarrow \xi$, this is therefore the statement that it is particle A that is incremented in deficit and particle B that is constrained under incremental rule to the above equation *whether or not the particles are distinguishable*; and particle A that is constrained to the usual uncertainty principle of secondary prefecture; (a *potentiated* but *mute* raising operator unavoidable) where for convention we have:

$$\hbar c = \delta_\epsilon \quad (160)$$

This has the interpretation that geometric weight of a quantum process in the limit of $\delta_\epsilon \rightarrow 0$ is $\hbar c$; to which we see that a single particle (to be interpreted as arising somewhere and disappearing somewhere); follows an orbit of translocation by 2π . This is consistent with the wave structure of

an angle τ in integration be the limit of an infinite process of *dimensional reduction on equivalence of events*; to which with A, τ :

$$e^{\pm i\pi\tau} = f(\tilde{\omega}) \quad (161)$$

And with B, v :

$$e^{\pm i\pi v} = g(\tilde{\omega}) \quad (162)$$

Clearly; then for symmetry α the first equation is;

$$i\pi(v + \tau) = \log(\tilde{\omega} \cdot \tilde{\omega}) \quad (163)$$

And the second equation for symmetry β is:

$$2i\pi(v + \tau) = \log(\tilde{\omega} \cdot \tilde{\omega}) + i\sigma(t) \quad (164)$$

For;

$$\sigma(t) = -i\langle A|B \rangle = \pm i\pi(v + \tau) \quad (165)$$

To which:

$$2i\pi(v + \tau) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (166)$$

Since:

$$\log(\tilde{\omega} \cdot \tilde{\omega}) - i\sigma(t) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (167)$$

With (+) holding for that of two particles and (-) holding for one particle; to which is redundant; indicating that equations (35) and (39) hold for **both** the one particle and two particle equations of motion. The indication here is that with $\tau \rightarrow \rho$ and $v \rightarrow \eta$ that there are two fundamental equivalences for the restriction that is the *one* particle; and *two* particle dynamics; these equations therefore forming the *recomposition* of superposition and independence of event identity in quantum mechanics.

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established but alone unto measurement.*

Beginning with prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (168)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (169)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (170)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (171)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of co-local observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure certainty.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of co-local or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds re-expression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (172)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (173)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (174)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (175)$$

Which means that in either given limit of ordnancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

Proof of Translation

This means that in either given limit of that which is within limitation of relation of measurement, from a beginning of a sequence of given order unto a given distribution of finite and relational quantifiability to limit end occurrence with consideration of time; a limitation is expressed as a given truncation of error to greater than reproducibility; therefore a reduction to zero by any end quantifiability.

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common co-moving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment all of which are in confirmation for the reason that expectation exceeds prediction in validity.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and a world:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (176)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental

verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first ‘constitutive’ argument goes as follows:

$$\eta = \langle \psi_1 \rangle \quad \rho = \langle \psi_2 \rangle \quad (177)$$

Taken as two measures on the quantum wave-function; Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (178)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (179)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and it’s shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from ‘above’ for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

Wave Particle Duality

Therefore by the preceding logic there are two given separated zeroes between that of each identifiable point like limit of physical reality; for which with no local identity or naturalized point like relation of absolute form implicates that the residual geometric involution of one particle wave function is the exterior of it’s stated alternative. This is the equivalence and comparability of functions under the presentment of a commonly held geometric congruence under reciprocity between any two given qualified limit events.

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (180)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (181)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error of standard variance under mean shrinking to: $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (182)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial

standpoint of zero dimensional error.

Finally we arrive at some new conclusions. As for the quantum principle; we find three new interpretations and a new one:

"The particle wave duality is harmonic."

"No particle wave duality exists within a limit."

"The boundary condition is a harmonic criterion."

Are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at once?"* With the answer: **"No."**

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

"Is one the given reduction of the other as unique?"

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past: *"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past."*

"Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

Exchange Locality Theorem

A composite factoring of the two body equation occurs as the foundational reason of which is provided by relativity and the quantum notion of temporary extension of a given particle. To begin we identify a given admixture of partial differential equation following the principle of a connective to a given ultimately knowable quantity; that of the co-inertia of spinor one-form under subjunctive pre-tense of dimensional contrast. The entire property is a free particle inertial field as a diffeomorphic manifold invariance of co-automorphism unto intimated connective to spatial adixture. Upon factoring of phase-conjugate and adjoint-free phase freedom the logarithmic identities of principle equivalence and principle inequivalence are provided as givens:

Statement of Symmetry: *Extrinsic modification of one equation under antisymmetry of operator to a stated symmetry of operation are intrinsically an interior symmetry in whole and the antisymmetric parallel of operational exchange of particle notion and pair field.*

Under these provisions the properties of a two body particle and field equation are decomposed; seen alternatively as a completeness for one particle and a replicated particle and partner field. The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega = 0 \quad (183)$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2 + \sigma(t))\Omega = 0 \quad (184)$$

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (185)$$

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the theorem of one particle and a replicated particle and partner field of inertia:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = 0 \quad (186)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2 c^2)\Psi_{A,B} = 2im\gamma^\mu D_\mu \Psi_{A,B} \quad (187)$$

$$D_\mu = \partial_\mu + A_\mu + \partial_\mu \log \gamma^\nu \quad (188)$$

The gap remains as variant and free yet as commonly dependent on the differential. To note is that when all electron inertial energy momentum is absorbed; particles become anti-particles.

$$(i\gamma^\mu D_\mu + mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = \Delta(v, \tau) \quad (189)$$

Therefore, two electrons are the generator under anti-commutation and commutation of their subsidiary operators of a notion of particle and antiparticle product relationship with a mass gap *of real displacement* equivalent to the splitting of each reduction in energy at the relativistically accommodated treshold momentum layer and energy level of either one such particle.

This explains a mass energy gap for that of the two body electron equation as an effectively regularized energy lowering comparative to a temporal displacement of accrued phase compensation in the inertial field as past-associable-displacement of what is understood as the absence of one electron and it's surrounding indical presence in relation to any other electron as an effective positron. For what is of presence is of absence with matter for the union of spin and charge under fractional separability of inertia and co-inertial extension; together forming a solid whole of motative inertial reduction. A way of interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates; therefore under a reduction of surjective phase 'isolation of degree-free asymptotic separability; one hole is intimated as a closed unionable past-associated electron.

1.) *Rotations of the electrons in local (spin) and global (orbital) inertial adjoint upon the spin of the two electrons under exchange are of empty rotational orientation when viewed from above or below.*

2.) *Therefore these rotations are generative under exchange of a raising and lowing operator of their individual orbital and spin mechanic by the expression of a co-adjoint commutation relationship of diffeomorphic and algebraic relation.*

And as:

A.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that does not violate the Pauli exclusion principle when it is corrected for the sake of global to local relativistic considerations.*

B.) *Correcting for this coordinate dependence results in a state for which the spins continue to follow the Pauli exclusion principle as Fermions with a charge wave function, when a positionless contrast of the portion of the electromagnetic interaction becomes of a real attractive interaction equivalent to a weak Bosonization of the states.*

Advanced Potential Function

The differential equation for a soliton equation includes a derivative notion for then in that of any given soliton-like excitation; however in many primary treatises the formulation of a solution and/or differential equation with stability criterion are ill-defined.

$$\nu\mu \cdot \Xi = \mu \cdot \Sigma + i\eta \cdot \Xi \quad (190)$$

Where Ξ is an open sigmoidal function; and Σ a helical indicial function:

$$\zeta\xi \cdot \Sigma = \zeta \cdot \Pi + i\eta \cdot \Sigma \quad (191)$$

$$\Pi = \Xi \cdot \quad \Sigma = \Pi \cdot \quad (192)$$

And ν and μ with η are ρ , η , and $\sigma(t)$ in that of the priorly presented log equations. The differential equation satisfied is a variant of the Bouissenq equation with a potential relation; that of the imposition of a threshold from that of the stability criterion under reduction of \beth to \aleph in four dimensions to two-dimensions for time:

$$w(t) = J \cdot E [u(t)] \cdot - \phi(t) \quad (193)$$

That of the boundary condition is proven for that of:

$$J \leq \phi(t) \rightarrow E \cdot \leq 0 \quad (194)$$

Therefore that of this equation to which we address that of the differential operation above with:

$$(\zeta - \xi) = \nu(v, \tau) \quad (195)$$

$$(\zeta - \chi) = \mu(v, \tau) \quad (196)$$

$$\eta = 2\pi i \partial_o \ln \chi(g) \quad (197)$$

With:

$$\chi(v, \tau, \sigma, t) = 2\pi i \cdot \chi(g) \quad (198)$$

Therefore for a free manifold; the relation of $\chi(g)$ is the expression of a topologically invariantly held mapping of a manifold to it's surjectively held onto mapping of enclosure in that of the subsidiary conditional pre-text of a formative valuation of a foliation on the alternatively provided physical space. That of ν and μ therefore provide for the equivalence of these two differential equations; to which suit ρ and η of the log relation. Therefore that $\sigma(t) < 0$ implicates that

$E' < 0$ and that the equation of spatial order is below the layer of yet the J in relation to ϕ ; to which the freely held nondeterministic end of a capacitated 'certain' past element of reality within the mathematical domain; is a freely held provisional *solution* to which primary and preliminary boundary condition is empty to initial condition as the stability criterion. This is the difference of for what is that of μ and ν as situated below the threshold of spatialized relation; to which time is capacitated as deductively a secure principle of certain nature.

The log functions in their manifold enfolding of the differential equation determine that any two exchange processes of circularly polarized and point like relation are independent; to which is the independence of time. For that of the associated ρ and η the determination of the reduction in principle variance of any two normalized distributions is a reduction therefore below that of one normalized distribution for the reduction of either factoring of the two particle equation or that of their mean distribution comparative to uncertainty; to which *only certainty remains as*:

$$\rho_\sigma < \rho \quad \eta_\sigma < \eta \quad (199)$$

This is rational because the pre-text of ρ and η is that of acknowledgement of $\hat{\partial}_x \equiv \rho$ and $\hat{x} \equiv \eta$ being capacitated of simultaneously held certainty; that of their exposition of yet the product variance in equivalence under reduction with $\sigma(t)$ with that of summative variance; to in either the fact that *if momentum were greater then the spread would be lower and the overlap less; therefore the expectation of position uncertainty would be lessened; and (&) if positional distribution were relaxed; that of expectation of momentum uncertainty would be lessened under depreciation and reduction by $\sigma(t)$ to which is reductive in either logarithmic (\log) equation under **superposition**.*

Therefore:

$$(\hat{p}_x, \hat{x}) \in X \rightarrow \langle f, g \rangle \leq \frac{\hbar}{2} \quad (200)$$

The notion here is that the dimensional reduction of time to two dimensions fits into the relation of four dimensional space; for in that of the stability criterion either distribution is a real number line distribution in two dimensions of variance.

Therefore:

$$g = 1 \quad (201)$$

Is the indication that classical virtualized processes are forbidden in that of this given naturalized world of any two variances.

Abstraction

To produce a proof in certainty and manifest disappearance of asymmetry by displacement to matter of light by substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + i\sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega = 0 \quad (202)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega = 0 \quad (203)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows; it's consequent experience of time as deduced from motion depreciates it's partial differential in the other frame as a consequent lemma of reduction to a phase continuum of spatial relation and temporal extensibility. Therefore any one greater in time accumulation comparatively (as explicated phenomenologically here) co-conspire to bind

a state to the given of rate-temporal displacement freedom. Motivating this; under reductive subtraction of twice the secondary equation from the second prior; the expression is therefore an equation under reduction as an equation for light under the principle of spatially free coupling of any two given particles of charge and spin.

This then indicates the indicial representation of a Goldstone mode Boson:

$$(f(\tilde{\omega}) - i\alpha^\mu \partial_\mu)(g(\tilde{\omega}) - i\beta^\mu \partial_\mu)\Omega = 0 \quad (204)$$

Therefore all light and mass exists with inherent *displacement freedom* in an otherwise particle equation of neither attraction nor repulsion and pair potential lesser than zero; for an unfilled preceding a-temporal ordination of one particle predicates that of the existence of an ancillary field theoretic threshold on the destruction of an accessory potential and particle future oriented event horizon. Therefore the equation for light and mass is seen as *both* instances of descriptive freedom of certainty under co-deterministic appropriation when $\Delta \geq 0$ in:

$$\Delta = \sqrt{\sigma(t)} \quad (205)$$

Time is then seen as something that is co-participated in and of, in particular, participated in; but of time for a differing point differs both quantitatively and qualitatively to that of the process of measurement and measured upon the objective of a focus to which is empty of unitary basis of homotopic onto limitation. The corollary of this is that all motions differ by merely a displacement freedom and inertial aggregates of two body nature in relation to which explain the appearance of mass, motion, certainty, action, and light for $\Delta \geq 0$ exists for all finite displacive motion and positive energy. Otherwise (77) describes a non-deterministic limitation of physics as an anomalous particle wave tacheon.

Conclusion

The cat paradox and it's disproof is therefore furnished by examination of the question as to if one intangible relation can 'fit' in-to another; to which the possibility of the construction of such a box is unafforded of possibility. The relationship of one closed relation to one opened relation of particle horizon mentioned implicates that the answer is a definite no as to it's construction by the following logic. Any one larger certainty to a limitation of yet it's definite does not accord with in that of the microscopic scale as suited to a 'deterministic' interior of closed relation of macroscopic state by surjective automorphic exception to prior pre-stated addressability.

Therefore this problem is akin to asking a question for which is the opposition is a self-statement and one which is therefore the ancillary doubt with dis-entitlement of a given thought experiment; the evidence for which is that as a naturalized problem it is the presentment of a dead end of indication to no solution. It is therefore analogous to asking the problem with a question. The solution is that the cat is either alive and well; or long gone and dead; but yet that no device functions in this manner; as one statement of indication to deterministic outcome is prohibited by the instance of a machine with expectation of return summative carry or quotient carriage.

So as to suggest that spatial union is un-broken as one comparative temporal signature is a delimitation of any two given certainties of machine expectation; therefore the cat and death-contraption hold an entirely independent reality.

Therefore any two points of reality are deterministically free.

Given the equivalence principle applies to determination of the inertial properties of two objects (a superconductor and magnet) as two separable instances; it is seen that together; these constrain the uncertainty to at most two free points of reality (a limit on momentum uncertainty and a limit on position uncertainty) to which ‘fits’ absolute certainty by reductionism from empirical law in the macroscopic realm to the microscopic.

This holds true as the given expectation of both momenta and position hold an upper limit on the threshold invariant global uncertainty of variance in one standard deviation of any one of two given non-degenerate distributions imputed by the existence of independently held given of momenta variance; to which derives from it's conjugate a mean threshold of one held unstated missing alternative coadjoint variance in position; under the emptiness preceding invariant ‘uncertainty’ of one \hbar in 2.

$$\langle \hat{x} \rangle \langle \hat{p}_x \rangle \sim \frac{\hbar}{2} \quad (206)$$

The affordance of a limitation on two larger objects fitting into the same smaller space; is, by logical deduction on empirical and theoretical founded principle of state-space therefore implicates immediately that the bound on scale and scale-free measures of co-determinism extends to the microscopic realm. This alternatively suffices as confirmation that a *Quantum Einstein Podolsky & Rosen*, or a non-Indicating *Quantum Non-Ipsity Conditional Entropic Universal Bridge: QiCeUB* may be constructed and built; to which the solution to Shroedinger’s cat paradox is furnished.

To understand this; any two given ‘objects’ of a covariance in measurelessly uncertain and shared proper time of empirical law to separation of superconducting (Type-II) material and magnet; (to which separably are a causal disconnect by that of adeterminant inclusion of preceding exception of semi-determinism or equivalence of electricity and magnetism within that of gravitational aconditional support to certainty) are the illustration of analytic & **exact** determinism of **physical** law.

Complimentarity in Physics

A 5th order quasiperiodic theory is settled by in the threshold mechanic of pentalty to temperance of a consolidate unit’ed envelope conditional on the bi-set of vacua and diminished order spaces; with specialization to occluded return of any two co-simultaneous tertiary or secondary observers; admissible only in that of our dimension. That of the auxiliary state is a guarantee; however; when individuated as a machine among (or tertiary to) that of an assembly-state; the provision for the ideal heat engine violates the exclusion principle; adopting that of a ‘secondary’ provision under optional; or dis-enjoinable end-gas-states. So as one cycles within a relation there is ideal dual-complex exponential and digraphical elliptic notion of wave structure on that of one end of the Spiral of Cornu or-incidentally; back. The patterns that are witnessed in the HTSC’s; etc, are phenomonology of two diopterically overlapping one another in the Random Approximation Limit; but do not reach the holographic tri-critical point until a process of descent of what is a held dioptic difference in consideration of levity for potential; to which the in-exorable machine limit-state is deliminable for then in a topological union of complex, real, and imaginary. The fundamental statement proposed is that a stripe is the dual of either that of the bifolded (two-fold) in one [shared] or [unshared] piece of paper to what is two and two in ‘separable’ sector’s; therefore that of bi-section to freed principle; the topological embedding the

'natural embedding' of a Poincare Disc glued twice over to a circle. Therefore the two mapping's in wave-argument to dual cavitated spatial occupancy of zero extension. A pattern evolves which is differentially explained but to which is predicated on that which hidden variables but not exchange by Pauli would exclude; but for a caveat to statistical mechanics on a Hamiltonian and Lagrangian space. The second differential (for what is a property of physics theorization; that trial's do not contribute to what is moment's, identities, disclosures, openings, and constructibility); freed, is more expressive and motile than the diss-appearance of a manifest first differential Laplacian; hence order in time is an ordered string of [2].0[2] etc... This is co-extensive enough that the second differential is what a system reduces to; the first differential may be numberlessly discarded.

The first relationship of importance is that of the equation which dictates that of by way of which *the results of relativity do not alter the probabilistic outcomes of quantum mechanics*. To a dual edge this is the statement that *only* a statement of exclusive and definite measurement can assail an infinite and zero probability of Dirac order; and only measurement is a decisive factor after-the-factual presentment. It is however to be questioned...

Given probabilistic and relativistic considerations are dependent on coordinates of position and momentum; the equation that expresses independence of statistics is intimate to a series of (co)factor's unmanifestly dissipative and co-terminable with entrance. That of one fifth relation is not in assembly; for what of the Green's function to contain a zero-dimensional fractal as such; but to-here; the quantum expectation of a gauge probability flow reduces to a null conditional pre-cept of mutually 'outside' [a] place; to a non-descript zero dimensional point like limitation within the predicated and hypothetical quantum liquid/fluid/solid (as dependent on crystalline and potentially aperiodic foundational number-sum) of indiscernability (and separation into a past for of degeneracy to (5) and (6) dimension's; but also any crystal extrapolated from a Fourier Transform of a de'Hass'Van'Alphven wave structure:

$$\Xi \equiv \Xi \rightarrow (\lambda(\epsilon), \lambda(\rho)). \sim (0, 1) \quad (207)$$

From The Equivalence Principle (herein equally weighted in frames):

$$\frac{\partial}{\partial t} \equiv \gamma \frac{\partial}{\partial t} \rightarrow \gamma^\mu. \sim \eta \in SU(2)[U(1)] \quad (208)$$

The Lie differential; which is designed such that the covariant differential and the one-form differential commute is a good candidate therefore for derivation's to speculation; it's core statement of commutativity one of freedom of the one-form γ from statistics Ξ :

$$L_\Xi(d\gamma) = dL_\Xi(\gamma) : \omega_1, \omega_2 \quad (209)$$

Together; this is nothing more than that the Shared Proper Time is equivalent to the Covariance in Uncertainty.

With this we have the relation:

$$L_{f\Xi}\gamma = fL_\Xi(\gamma) + df \wedge i_\Xi(\gamma) \quad (210)$$

Together any two qualitative limit's of what are 'property' and 'proportion' of 'shape;' in-exclusively contain a convex space within it's margin; and qualitatively convex as to mapping; therefore of evaluation of statistical calculi; that of re-apportion of functional deficit factor's the qualitative

product of spatial and temporal variance within elliptic expression; in reduction by a covariant-factor of advance and diminishment (exponential) upon two acasual arrows; to which the center of energy and mass is 'on-mass-shell;' That of the metric relation of infinite spin's 'devoured' by the basis; the interior transformation groups of these equations.

$$f. \sim (0, 1); \quad L_{\Xi}(\gamma) = df\Xi(\gamma) \quad (211)$$

Thus the end condition is perfect heat to mechanical conversion; that of one third back in physical form; and three involute to two determination's of inward place; *unto control, predecession, impartiture*; of *reflex, impulse, and co-determination*. Thus a physical relation must break down to what is a quotient of (2) within; merely a null-centre; of that of the quasiperiodic and non-periodically randomized state of no-approximation.

$$\tilde{\omega}. \sim \tau \quad (212)$$

This expression is that of by which a factor of a functional form to the manifold of statistics of 'motion with deformation or transformation' is free of the relativistic characteristic common denominator of the Equivalence Principle homomorphism and the stationary state of the Quantum Description. This statement represents the preservation of the heat equation.

This is the substitution of one particle freely within one held space into another; so that one particle may co-occupy one space with another; or be unseparatedly sequestered aside to the departure to counionable differences of it's evolution. Therefore we may take; owing due to these prescriptions:

$$\Phi(x, v, t) = \eta e^{-i(\kappa\theta + \tau\phi)} \leftrightarrow \Theta(x', v', t') = \rho e^{-i(v\mu + \epsilon\psi)} \quad (213)$$

Therefore an apportion to a mean holds an invariance and an equivalence. We will find this is nothing more than the declination to a tertiary observer; for in that of one juxtaposition to it's closed end; in the 5th; the end openable is the 4th to the preceding of ordinal calculai; for that of derivative coordinality groups; for then in what co-exist's; the then limited four dimensional enclosure hold's the freedom of light from matter.

Then; to what is a real result of probability; it is that of unenclosed bearing on the relative principle and the emptiness with the quantum principle; or; that of the quantum principle empty in relation to the relative principle; is to that of freedom of isoclinic relation; an established direction to heat and momentum exchange within the non-linear dynamics; here considered; entirely and alone of physical application to superconductors; but of derivative principles for pedagogy. Therefore there are two types of system for consideration. The first question is:

Question I: *Do any or alone only unbound & unbound [is it exclusive or inclusive to which case;] systems [therefore,] obey the same spin-statistic relations?*

The equations first presented lay the prescription in place that of by way of which any two observerables as measureables ζ and ξ may hold an identity with measurement process:

$$\zeta\Phi = k\xi\Theta \leftrightarrow \zeta\Theta = k^g\xi\Phi \quad \epsilon\chi \quad H\chi(g) \quad k = \pm 1 \quad (214)$$

Where g is the boson-number; the genus number; indicating the number of holes in the space of it's topology in a Hilbert space (H) with topology $\chi(g)$.

It holds naturally that if the number of holes is even ($g = 2 + b$ & $b = 2l \ l \in \mathbb{Z}$) that the spin obeys an even-statistic; and if the number of holes is odd ($g = 2 + b$ & $b = 2l + 1 \ l \in \mathbb{Z}$) there is

a rotation of 180 degree's in the spin-theorem; hence the sign flips for interchange of particles. And the k is (-1) for Fermions; and $(+1)$ for Boson(s).

The Spin-Statistics Theorem versed in this manner provides a connection between the space-time and the quantum properties of objects as particles in the space-time.

Representation Theory

In the continuum of the probabilistic opertors any mutually factorable relation into which the solution is also a given solution of the equations:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (215)$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (216)$$

Is deterministic.

Hence; any operator that admits in a dual-sense two conformal relations in logarithmic reduction to a common factoring exemplifies the natrualized relation of (2) *time's and space's* to which is the extension of quantum mechanics above the theorem's of relativity. This find's it's way into the Dirac equation for the electron by that of the intimation of a field-conjugate momentum; to which is shared or unshared; and assists in deriving that of a *new* expression for the multi-body problem; in which the two body problem can be subjected and decomposed.

This is nothing but the statement that: *The rate-period of time is a congruent relation in the particle representation to which is empty; and to which the two-body problem may be separated into the one-body problem of which there are two.* This is consistent when there are taken to be two spatiotemporal projections of the particle operator. These projections are no more dissimilar than the 'functional representation' and 'particle representation' of a particle or multi-particle system, *and exist because the particle is empty.*

Therefore;

$$\partial_\mu t = 0 \quad (217)$$

Expresses the emptiness of time; to which all supporting statements of this paper affirm.

With:

$$. \sim \quad (218)$$

An expression of a neither nor shared light envelope of illuminescence; to cadence of a Lamp freely-lit to invisibility below an alternative two juxtaposable place's with projections & the statement of unto another and a place; or two to occasion; or four to differently establish; or five to equably pass on; or six to espouse or entreat; and of seven; to equalidiate. Therefore of co-linear equivalent extension outward inward and inward outward for what is two to two; expressible only that as the equivalence principle derives to two properties [a metric and a mass] that of the freed electromagnetic theory is broken on the gravitational; as the gravitational is negative to orbital coupling under a reverse-surjective phase orientable traversal of temporal co-extensibility to a union in five to a third; any even-faceted two to a third of mitigated arc.

Therefore in either [explicitly held] the outcome is non-determinant between any two quantum and gravitational limit's but unpredictable; yet within an openable and extensibility to freed self intimation and juxtaposition; for what is co-determinant; as an absolute physical norm of the space. When we consider what is resumptive of the 'actual' to what grow's outward every-where else of the topological function; and with a heart; body; and mind; the truth of form's *are* for in what is found of life; for these are bound to a mortal coil.

Of it's freed ranges; the security of a pre-cept from it's imported dextruous nature is the cleaving unto the alternative of self found as [within conveyance] via a means of two; under adoption of the willingness to encourage the dexterity to the task... That of what is presented therefore is that the only discernable and observant condition [once-expressed] of identities is the following two principles:

Canary Principle: For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices [among a count] to answer absence unto it's own.

Banana Principle: The banana principle states two are unprecluded from foreknowledge in yet a third out.

Statistical Admixtures

It holds as a lemma; that the statistics are therefore empty of relation in a given comparative assessment to relativity; and that relativity does not alter the statistical properties of a system. This (infinite) barrier of a theorem presents alternatives only found within the global properties of a system; to which it is also global. The *free capacity* to include a differing Δ from Λ is the extension of the differentials. This therefore proceeds along two lines; that of either a principle equivalence or a principle in-equivalence; the variables decomposed by either **log** relation. The proof is reliant on (surpassing the infinite obstacle of integration of these two theories); at that of assuring that one viewpoint is equivalently as-consistent with the other *relativistic* frame-argument. This two-fold relation is essentially that:

$$(i\hbar\gamma^\mu D_\mu - mc)\Psi = 0\Psi \quad (219)$$

But here; that of 0 is differently established because *on account of the second particle* there are **2** *two* solutions to the original single-particle state... That of:

$$\gamma^\mu D_\mu \leftrightarrow \gamma^\nu D_\nu \quad (220)$$

Hence for in light of two bodies;

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (221)$$

Both describe the *same two particle system* from what is yet two-different-relativistic descriptions. That of relativistic assurance is found then in the degeneracy of which is that:

$$\Lambda\Psi = \Delta\Phi \quad (222)$$

This ensures that their energies are equivalent and four-momentum descriptions of each particle are too; possibly up to an interchange. This ambiguity is afforded as the second particle has altered the description of the first particle. To see that this **this does not** alter the relativistic description is to see that reversal of viewpoint and 'objective' does not alter the image under

initial composition.

Either of α or β are equivalent by equation (5) of the paper; to which when either particle (to which is empty) alter's the representation of it's conjugate particle it does so from the alternative of a self-and-world to which is **two**. That of world and particle versus (with world and particle in the formative and former position) does not alter the outcome of the result of the first particle (1); and, *without exception; that of their statistical intimation is left unaltered for-in-light-of projective dis-similarity of neither upon the world.*

This 'neither' of which is undecidable from the other side of relativity; is the incomparability to which *probabilistic interpretations are independent of relativistic prescription*. It is also the imperative that physical law is *empty*. Therefore we may freely take:

$$\Psi. \sim \Phi \quad (223)$$

With the transformation and in-equivalence of τ and ϵ affording that of factoring into superposition's such as are re-compositional *linear* states.

Hence, a theory that incorporates an *equivalence principle* invokes **two** times, a *proper time* and *improper time* as a projection of the two body problem *within the context of the equivalence principle to which must lead to equivalent physics*. Casting one particle to it's *probabilistically neutral provision as granted the prescription of the equivalence principle* grants the other particle to possess that of probabilistic independence with co-mutual occupancy under the 'tertiary' - third observer **out**.

Abstraction in Conclusion

The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (224)$$

By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (225)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (226)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (227)$$

To which is the derivative solution to equation (5). Therefore that of a fifth dimension is made to exception in the second; that of apologia to consorted effort's of collapsement; only a univariate carrier of outside 'roll' to interior (pentagonal return); 'roll' will co-determine a vacuum from a discriminant black body noise; at absolute zero; the external 'via' of a 'class' to which is an 'apologia' in yet 'character-assignment;' freed to these in the tableau of proper derivation from the summation convention. That of the commutator of the partial is the expression the Lie differential with respect to Ξ in equation (5) is the manifest holographic principle reflection in-machine-&-in-world.

That of the holographic principle:

$$S * P = \iota P * S \quad (228)$$

And:

$$P * S = \iota S * P \quad (229)$$

So it is for lack of a better expression that the identity relation is ordered; and by supposition of the counting theorems; identities are ordered:

$$\mathcal{O}(\iota) \quad (230)$$

An expression that the identity is that which is neither one but two and two to what is no three and uneliminable declination of four in preceding from five; of dimension; therefore by two under pure-codimension of 'sheaves;' there is a bi-reductive free (2) two limit's; to what is sequestered of equipartition to the fifth and the sixth; a rung freed to the equippable return of yet a fundamental of this world; that reductively from three; two would be an apportionate four or three; then of other's equability; and return (two-folded) deficit below reversability of one sigmoid.

Therefore the identity is the inexpressibility of *time, space, order, individuation, and inseparability or unencloseability forming through shape*. We may now describe shape to constitute a group in vacuua; for that of ι is the manifold ideification of a separable co-adjoint *unitary group* of co-extensible dimension; a three dimensional critical point; and reductive asymptote.

The non-linear statistics of comparative densities in position and momentum under an abridging SU(2) algebra diminish the accountable energy in argument's dependent upon these via superposition and exchange.

Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) - \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (231)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu \partial_\mu)(g(\tilde{\omega}) - i\beta^\mu \partial_\mu)\Psi(x, t) = \Lambda\Psi(x, t) \quad (232)$$

When written out we have two equations:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| \quad (233)$$

The first equation read:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} i & 0 \\ 0 & i \end{pmatrix} \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| \quad (234)$$

This is enough to get that the general equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| \quad (235)$$

With elements $\{\eta\} \in SU(2)$ are the same *superposition* equation with solutions in the Dirac basis.

Beginning with the equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| = \det |\theta(\tilde{\omega})| \quad (236)$$

We have that:

$$\theta(\tilde{\omega}) = \theta(v, \tau, \alpha, \beta, \tilde{\omega}) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad \Lambda = \tilde{\omega} \cdot \bar{\omega} \quad (237)$$

So;

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \quad (238)$$

To which is two eigenvalue equations in linear form:

$$\eta(v)f(\tilde{\omega}) + \alpha^\mu \partial_\mu = \log(\Lambda) \quad (239)$$

$$\eta(\tau)g(\tilde{\omega}) + \beta^\mu \partial_\mu = \log(\Lambda) \quad (240)$$

The Dirac equation is therefore separable into two different one-body problem/solution pairs:

$$(\eta f(\tilde{\omega}) + \alpha^\mu \partial_\mu)\psi(x, t) = \log(\Lambda)\psi(x, t) \quad (241)$$

$$(\rho g(\tilde{\omega}) + \beta^\mu \partial_\mu)\phi(x, t) = \log(\Lambda)\phi(x, t) \quad (242)$$

Thus:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (243)$$

Becomes:

$$(mc\zeta(\tilde{\omega}) + i\hbar\alpha^\mu \partial_\mu)\psi(x, t) = \lambda\psi(x, t) \quad (244)$$

And:

$$(mc\xi(\tilde{\omega}) + i\hbar\beta^\mu \partial_\mu)\phi(x, t) = \lambda\phi(x, t) \quad (245)$$

With a wave argument on the inertial mass of which is ζ or ξ ; where:

$$|\zeta(\tilde{\omega})|^2 + |\xi(\tilde{\omega})|^2 = 1 \quad (246)$$

This constraint is nothing more but the restriction that the total probability for *either* electron add up to 1; that it be located 'somewhere' and it's mass conserved, the result is then two Nonlinear Shroedinger Equation's:

$$(\eta |u|^2 u - \sigma u_{xx} + i\rho u_t)\psi(x, t) = \lambda\psi(x, t) \quad (247)$$

$$(\rho |v|^2 v - \sigma v_{xx} + i\eta v_t)\phi(x, t) = \lambda\phi(x, t) \quad (248)$$

Further Calculation

We begin with the two body Dirac Equation:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\psi(x, t) = \Lambda\psi(x, t) \quad (249)$$

The question is if under:

$$\mu \leftrightarrow \nu \quad (250)$$

With superposition; the equation will reduce. First we have (re-written):

$$(\eta^\mu \partial_\mu - 1)(\eta^\nu \partial_\nu - 1)\psi(x, t) = \Lambda\psi(x, t) \quad (251)$$

For what is identity is the meeting exceptionable (non-exceptionable inclusion of) a continuum to the bi-jjective law; under ordinancy to any two character assignment's of this world. Therefore relativity remains to hold with-in an interior limtiation; of that of three for four fold to two

fold valence; but of a second-and-adjacent quasi-crystalline space of adjoint void space(s). This cuneiform is therefore an intimated 'end' within an 'end' of the dispossesable (in reciprocity) exchangeable sixth outside object-principle; of which the group(s) reactivates into two of absence and presence; to the intimated end that among three 'here' functional's; the self is defined; via and identity to which is inseparable and inexchangeable.

The deficit is to that of three: re-transformative into two or two; a null end of a thought experiment; but yet quantum states exist beyond the double dual exchange accompaniment; to what is any unlimited set in yet raising the third under transferrance; and a lowering of the second spin. The co-adjoint determination of another is the seamless consequence suffer's to the other for dis-inclusion unto yet an adaptive third; to what is sunken in cost; there is apportion and sequestering; so that as of the Banana & Canary Principle(s) would allow; three are co-determinatively afforded co-existent mean prior (2); of a strict in-equality unto breaking into two through the via and back between any two adjacently connected point's of reality; neither 0 [**zero**] &-or 1 [**one**] to the limits of 'background' objective physics. The commutation represents the elliptic and exponential con-joint relation of light-cone's; to which when divided; recompose to simply a property of an object; for their shadow-function is simply a one dimension bijective flow of 'unilluminated'. Under exchange it is:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] \psi(x, t) = \lambda \psi(x, t) \quad (252)$$

But then; we can insert the identity without changing the commutator:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] I \psi(x, t) = \lambda \psi(x, t) \quad (253)$$

Where:

$$I = \{\eta^\mu, \eta^\nu\} \quad (254)$$

Therefore; and we find completion in two relativistic projection(s) derived from either's inward reflex and impulse as encoded in the isosymmetry derived from proportion and shape; that of the equation (5):

$$[\eta^\mu \partial_\mu \eta^\nu, \eta^\nu \partial_\nu \eta^\mu] \psi(x, t) = \lambda \psi(x, t) \quad (255)$$

Or:

$$\eta^\mu \eta^\nu g_{\mu\nu} \psi(x, t) = \lambda \psi(x, t) \quad (256)$$

Alternatively:

$$\bar{g} \psi(x, t) = \lambda \psi(x, t) \quad (257)$$

It is in-expressible whether:

$$\bar{g}. \sim \lambda \quad (258)$$

Or:

$$\bar{g} = 0 \equiv \lambda = 0 \quad (259)$$

In other word's; the eigenvalue to exchange is indistinguishable from the metric relation of the spin algebra of inertia; that of the weight of the physical assumptive of inertia in the Dirac equation an identity with that of it's weight geometrically owing to energy; not just space and time. ***and not just mass.**

$$([\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] - \lambda) \bar{g} \psi(x, t) = 0 \quad (260)$$

Written out this is:

$$(\eta^\mu (\partial_\mu \eta^\nu) \partial_\nu \bar{g} - \eta^\nu (\partial_\nu \eta^\mu) \partial_\mu \bar{g} - \lambda \bar{g}) \psi(x, t) = 0 \quad (261)$$

However by that of the the principles outlined; that of the two views of one particle can be further scrutinized to single particle field and particle spin-orbital momentum; for in that of the whole ensemble there is not only one particle bound to another; but *a condition for separable equivalence principle and complimentarity invariance footing*. Penultimately this divides the description of the particle upon exchange into one element of which is of it's manifest Lorentz covariance; and another of it's Shared Proper Time. As:

$$([\eta^\mu \partial_\mu \log(\bar{g}), \eta^\nu \partial_\nu \log(\bar{g})])\psi(x, t) = \lambda\psi(x, t) \quad (262)$$

Then to an exchange state; for which the commutator is evaluated and the middle term's drop from the general expression (here η is an operator for spin and orbital uncertainty exchange constant...):

$$[\tilde{d} \log(\bar{g}), \tilde{d} \log(\bar{g})] = \lambda \quad (263)$$

Which when expanded becomes for the particle momentum:

$$[\tilde{d}, \tilde{d}] g^{\mu\nu} = \lambda \quad (264)$$

Then; it is also true:

$$(\tilde{d} - \eta)(\tilde{d} + \eta)\Psi = 0 \quad (265)$$

And that:

$$\sqrt{\lambda} = \eta \quad (266)$$

Since the eigenfunction must be satisfied in a basis; the commutation therefore hold's for the first state:

$$[\eta, \tilde{d}] \Psi = \lambda \Psi \quad (267)$$

$$\eta \tilde{d} = \lambda \quad (268)$$

This only holds true if the field momentum equation is as follow's:

$$\tilde{d} = \lambda \vec{\sigma} \quad (269)$$

These represent in the first the spin-orbital coupling potential energy at a minimum; to which is related to exchange of spin and orbital degrees of freedom. This spin and orbit would then be a transition of the spin-orbital condensate. In the second; it is the curvature condition; with $\zeta = \zeta^{-1}$ and anti-Hermitian. For that of the reduction to an eigenstate; there is a Ψ ; the net wavefunction given by:

$$\Psi(x_\mu) \quad (270)$$

The natural separation into particle and field momentum can be found as a consequence of the independence and equivalence of the quantum unit of probability in a two body interaction. The equivalence of 'weight' λ in either view is the invariance of complimentarity; that penultimately interchange of particle and particle description identity leaves results of measurement unchanged including that of relativistic consideration.

Symposium

There are three ingredients to superconductivity which must be demonstrated. We will proceed in a linear fashion; beginning with 1.), then 2.), then reaching an understanding of 3.); then these will be moderately 'put-together' into a robust theoretical framework; then; there will be an introduction to the experimental motivations for invoking the model system; a treatise on that of

implementation of the theory with phenomenological evidence; and then finally; calculation of results and a conclusion. This model presentation is offered as in replacement of prior work's in which the work was undemonstrative of a logical proof based system of verifiable hypothesis. The aims offered in this paper are more to the adjustment in theory required to make sense of a physical world within light of the existence of superconductivity; but where appropriate common sense has been appealed to. That of the results intend to make no implication about alternative areas of physics; but where appropriate prohibition to allowance for what would lead to contradiction in another area of physics has been noted. As akin to the manner in which space and time 'fold' to create a finite circle from an infinitely long one; when an orbit is analyzed of a straight line in a curved space & time; as when superconductivity is manifest; the finitely long line of interaction 'folds' to produce an infinite orbit in the curved space & time of the interaction. That is to say that the antipodal relation hold's; and that the less-than-unity normalization group of the spin; (to which is four dimensional) relaxes the orbital constraint to it's-fullest; that of a gauge group then to which is negative in conversion of magnetic becoming electronic and electronic becoming magnetic; with a reduction from the speed of light rather than an accumulation to the speed of light; as if participating on the other side of a mirror. This demonstration states that all additional that is required is exchange of field for particle pro-perties; and that of the charges will attract within the ranges of a standard deviation; there being two wave like frequencies and wavenumber's the result of a phase congruence with conversion to angular coordinates. Without further disclaim; the offered supports of superconductivity are in three:

1.) *The non-linear **product 'covariance' rule** formation of two distributions with a negative exchange (J) in individually prepared Shared Proper Time with a local minimum generates an experiential bind of trading of the index on one measurable for another; that of the inversion and reciprocity of the law's of physics potentiated by purely statistical means...*

2.) *Non-linear **product-rule** superposition under exchange with comparative probabilistic 'complementarity' of either particle's independence from relativity results in that of the admission; by way of the twin-paradox like intimation on relativity of measurement inversion, to what is indistinguishability of relative and quantum contribution's to lowering in energy...*

3.) *That of measurement inversion with spin and orbital momentum under exchange for which one particle and it's world view will not afford the altering of another particle's prescription; affords, given that exchange is negative and the **covariance, positive**; the inversion and substitution of the electric for the magnetic field; and vice versa with relativity...*

Therefore there are three reasons for attraction of the electrons in superconductors of the high-temperature variety. First; exchange is negative and probabilistic assignments are independent of relativity; with the distribution rule on that of standard contributions via a two body problem in what is the shared proper time versus proper time is equivalently balanced; and that of a local-inversion of the deterministic factors of the theory occurs.

1.) A quantization condition is reliant upon a spatiotemporal positioning and orchestration of terms.

2.) When the manifold condition of a curved space under-declines repose; we get a splitting of energy.

3.) Therefore one manifold prescription under a cleaved sheave for then unto two eigenvalues

emerges.

- 4.) The splitting is a prescription to electrodynamical theory breaking under a source, sink, magnetism.
- 5.) Probability discriminant's fold the elementary symbolism of equidistance to infinitely separated end's.
- 6.) For what is contained in two or two is three and one to reduction in equivalently displaced potentials.
- 7.) This imputes a relation of directrix enfolding focus; and reversal of measurement to eigenvalue status.
- 8.) Metrical relation is a null condition with that of spin metricity; to which electromagnetism vanishes.
- 9.) Quantum wavefunctions defy Pauli Exclusion to null repulsion via passing beneath an e.v. enfolding.
- 10.) The manifest retro-inversion of a population in two's decimates in energy argument equations of state.
- 11.) A spontaneous symmetry breaking is present, a gap, and a phenomenological behavior of it's unit's.
- 12.) Indeterminism to what is particle & wave; hold's the precept the 'particle' precipitates it's capturing.
- 13.) Inter-adoptive exploration of one dimensional arc width are devoid of doublet anharmonic inversion.
- 14.) Therefore; the principle qualitative element is that probability fit's more recurrently within space.
- 15.) To what is a disconnective or connective; moderacy of spin and orbital measure interchange is unitary.

For what is complimentary of comparatively equivalent time signature and self solitary provided and insured proper time to shared assembly via statistics; for that of either probability fitting within relativistic space and time (inward reflection); and that of it's dual capacity upon yet what is an instance of equivalence in weight unto the apportion of experience of probability and relativistic deformation; that of independence in statistical measure causes a uniform co-participance of these given *Theories and exemplifies unification and separation of their forces; indeed; Gravity & Quantum mechanics within the same atom; a lower in energy result's via the spontaneous symmetry breaking contribution of electromagnetic energy to the two electron's.

It is also true that:

$$\beta = \frac{v}{c}. \sim \beta' = 1 - \frac{v}{c} \quad (271)$$

As a result of what is taken 'to' the mirror rather than 'from'. As a consequence what is a distribution of probability must be re-interpreted as that which give's rise to expectations; around which there is uncertainty in results; the central result being certain for in light of *two theories*.

The next reason is that particles find indistinguishability in that of their 'Quantum' and 'Relativistic' contributions to mass-energy-momentum; of which what is observed is a universal energy lowering in charge and spin. That of separation from spin (to which is left with freely held Non-linear Shroedinger Equation Solutions) contributes therefore the full $4J$ to the gap at the lowest perturbation or temperature.

The results of what are the relation of this being a genuine energy lowering or that of a reduction in a repulsion are therefore that it is a genuine lowering below a general reduction in repulsion; and may be seen as a reduction in repulsion beyond the limit of it's genuine lowering in energy-mass-momentum.

The general description is that relativity and the properties of statistical normal distribution of variance exhibit a two body null covariance; therefore electron's are mutually force-free but at a reduced energy of the 'seemingly separable' conjoint expectation of exchange.

Antasz

Beginning with solutions of the variety:

$$(|\zeta|^2 \zeta - \sigma \zeta_{xx} + i \zeta_t) \phi(x, t) = \iota \phi(x, t) \quad (272)$$

We have the Ansatz:

$$\zeta(x, v, t) = \alpha sn(x - vt, m) e^{-i(\omega t + \kappa x + \phi)} \quad (273)$$

Used in (59) we have:

$$v = 2\kappa\sigma \quad \sigma = \frac{\alpha^2}{2m} \quad m = -\frac{\alpha^2 \kappa^2 + \alpha^2}{2\omega - 2\iota + \alpha^2} \quad (274)$$

So it is that one solution can be intimated within a connective (think SU(2)) algebraically from one subsidiary manifold space to another... for example when the modes are in-actual entrained or defocused; and when confinement (then provable) takes place because of their non-linear sum/product relationship.

Origins of Unification

When the two time's for that of the log term's are applied to the differential equations; we see a reduction in their mannerism in expression of complexity; for then the threshold eigenfunctions must surpass to become a reality is determined. That of the logarithmic equations suppose that a given is that there is reciprocity between subjective and objective worldviews. Therefore for:

$$\frac{\partial}{\partial t} \leftrightarrow \gamma \frac{\partial}{\partial t} \quad (275)$$

We have:

$$\eta(v)\zeta(\tilde{\omega}) + \eta(\tau)\alpha^\mu \partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (276)$$

$$\eta(v)\xi(\tilde{\omega}) + \eta(\tau)\alpha^\mu \partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (277)$$

To which become:

$$\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu = \eta + \rho \quad (278)$$

$$\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu = \eta + \rho \quad (279)$$

And:

$$(\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu)(\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu) = \eta\rho + i\sigma(t) \quad (280)$$

As a difference of constructive and deconstructive interference equations.

Their solution is:

$$\alpha = \partial_\mu\zeta(\tilde{\omega})(\eta + \rho + \eta(v)) \quad (281)$$

$$\beta = \partial_\mu\xi(\tilde{\omega})(\eta + \rho \pm \eta(\tau)) \quad (282)$$

$$\sigma(t) = (\rho + \eta)(\rho + \eta) \quad (283)$$

Setting $\alpha = 1$ and $\beta = 1$ and $\sigma(t) = i$ we have: Thus:

$$S * P = \iota P * S \quad P * S = \iota S * P \quad (284)$$

$$\mathcal{O}(\iota) \quad (285)$$

Within the holographic theory... with $\iota \in SU(2)$ and ι normalized as per:

$$(\eta + \rho + \eta(v))\partial_\mu\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu(\eta + \rho + \eta(v)) = 1 \quad (286)$$

$$(\eta + \rho \pm \eta(\tau))\partial_\mu\xi(\tilde{\omega}) + \xi(\tilde{\omega})\partial_\mu(\eta + \rho \pm \eta(\tau)) = 1 \quad (287)$$

These equate to:

$$\zeta(\tilde{\omega})\eta\partial_\mu\xi(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu\xi(\tilde{\omega})\eta = 1 \quad (288)$$

This reduces for that of the \pm to cancel as a similarity (hence we get to choose to neutralize that of v).

$$(\eta\rho) = L_{\tilde{\omega}}L_\tau \quad (289)$$

The first equation and the second lead to intimations of what the function's look like; here; an exponential...

$$\rho\partial_\mu\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu\rho = 1 \quad (290)$$

Given that the exponential map is a map; we have an analytic theory; into which via these as transformation rules; a coordinate chart can be written by comparing *different dimensions* with that of *different base combinations*; these are both open; empty; infinite teir's which collapse when the two electron's are so close that they hold **no** mutual force of repulsion; an absolute Pauli Exclusion below symmetry breaking.

$$\partial_\mu \log(\rho\zeta(\tilde{\omega})) = 1 \quad (291)$$

Providing the solution in ρ , a constant of the ratio of compressibility to conductance. Therefore conductance is sourced in a gap; literally:

$$\frac{1}{\rho} = \Delta \quad (292)$$

To an 'optionable' and 'variant' proportion; that of the two Lie differentials are still a 'scale;' and we may write this as:

$$o = \frac{\eta}{\Delta} = L_{\tilde{\omega}}L_\tau \quad (293)$$

The equation for a [2] number theoretic valuation of o yields a gap as-the-integration constant to an elliptic and exponential differential cross-correlate. That of two is the threshold of point source to which the eigenfunction first becomes three dimensional into a catastrophe set. Roughly there is the 1 : 1 proportionate cross-over of 'below threshold' and 'above threshold' that of 3; therefore three dimensions is the critical dimension for self regularization and attraction of charges; that of symmetry breaking is invoked by any bistable reactive element of reverberation; meaning; all frequencies are summed for therein what lies of the secondary octaves of a trichordic wave. The only composite solution is to find that above a critical state, three electron's obstruct to enable two electron's to fall together.

Intermediate Conclusion

That of:

$$o. \sim \Delta \quad (294)$$

Therefore expresses the 'mode inequality' of a 'reductive force,' entirely consistent with relativity; but within that of a semperent calibration rolled inward. To what is this individuated space; it is not known; but that validity focuses relation; individuation focuses potential.

There are a few relations here of a contributing nature:

- 1.) *A doublet-reductive interferometric balancer and synchronization engine... of which follow's the precept of a 'modal inversion' and 'reductive force'... a DRiBse.*
- 2.) *Ordinal theorem of qualitative control of chaos; (3).[2] of freely held gain decimates prescribed Chaos; to what is prescribed certainty as to manifest whole in optionable togetherness of [3].*
- 3.) *Modal inversion and reductive force lead to manifest order; Via that of 'Graph Stitching' in the Indical Calculus; to what is an eigenvalue eigenvector inversion; with an Energy Gap.*

Comparatively, the difference in the quotient space for a local relation differs from that of a global relation; for that of separation of 'scales' and separation of 'places' to which regulate around (primary, secondary, or tertiary to) that of their their own segmented relations; in a virtually infinitely co-extensive quasiperiodic space. To what is light, time, mass, and sound; these transconduct as through a cantilever to which alone; word's are supportive of genelection and mannerism of conveyance to sociological apportion; number's being befit for a local space; but mapping an idempotent relation of 'place' under situational dichotomy in two; provable as to identity for in that of once-outside, co-terminable with that of situationally of an absence of a tertiary support; that of a known; that as either question in two differently is established; so is that of the applicable permanence to awareness at-a-distance; for apportion to secular order's; free of a catastrophe set.

This co-extends Laurent series to all function(s) inclusive of a product form; to which is an equivalent expression from which a factor is taken 'off the top'. The result is that the primitive seen outward inward as inward outward is free. This freely held (and unheld) radical space is the one (singular and unitary) base in four dimensions; to which prohibiting all places become one; 4th dimensional and hence not 5th; dimensional. That of what is certain is the definite 'untying' of electromagnetic frustrum's; and re-incorporation of world identities. For that of what is exemplified; we have determination that any fifth (exterior and auxiliary) point is free; therefore any two realities are freely disconnectable. That of the synopsis on the algebra is that it is an

Affine Lie differential algebra... this is resolved by the special unitary group; of which suffer's an automorphism and decay's under thermodynamic conditions to a potential and kinetic energy landscape lowered by a number of conditions:

A Grand Term:

1.) Inversion of the Measurement Problem; under application to what would be 'two;' measurement proceeds via the converse of the statistical lemma; sociologically a trade of honesty for imparture and sequestered in part's; the whole is greater than the sum of it's part's; even upon that of individuals.

Option(al):

2.) For what is Quantum Uncertainty and Relativistic Factor both remaining in imparture to a depression; that of reduction in one for in light of the second of either these two is universal; leading to that of a two fold in what is any three electron's; to their mutually degenerate null condition of covariance.

i.) The missing element is that what is third in substitution for the third-agent is null relation of group to fundamental metricity (an empty relation); of that of the third observer; to which relativistic factor's explicitly do not hold an accordant measure and relationship; but of statistical mean and average.

Fundamental:

3.) Probabilistic Independence from Relativistic Argument – under application this results in a Modality Inversion and Inversion of the Measurement problem when it is prepared to a gap state on that of 2.) for what is 1.); under which the second (2.) part; reveals a population inversion; that of two switching one.

ii.) The uncertainty is lessened by in a factor of the contrapositive of relativistic expectation in the whole.

Quite simply put it is due to the quality with which the exchange constant will depart from it's given value to zero with that of velocity increasing; and the momentum will remain the same identically within the frame of a particle; but exhibit a greater than one magnification and positive curvature on that of the secondary particle; but meanwhile within it's frame; a less than one magnification and negative curvature unto it's self term of momentum. Thus we have all alignments of probability and relativistic argument and momentum.

iii.) Measurement and measured differ; in that what is measurement is co-extensibly weighted by relativity; while what is of presence and absence alone; it is the reversal of relativity; to what is obverse.

What is 'on' particle 'A;' 'to' particle 'A;' is it's reduced exchange and momentum; plus the depiction and representation of relativistic factors to which are 'larger' for momentum; and 'smaller' for exchange...

Thus:

- a.) Exchange diminishes because particle 'A' and particle 'B' fit within each-other's-roles from which they are judged via each other to themselves with a relativistic factor that is less than unity on energy-momentum under juxtaposition; therefore exchange energy is diminished.
- b.) The change in momentum of particle 'A' is negative because there is more quantum room for that of it's energy-momentum via a.). With 'B' it is judged with a 'higher' relativistic factor for time and space; equating with the reduction in a.) because of inversion of perspectives.
- c.) The quantum exception is that either particle undergoes a 'measurement' & 'measured' inversion with interchange; to which momentum is to a higher relativistic factor explicitly to itself and the governing perspective on particle 'A'; but with exchange to a lower relativistic factor.
- d.) The quantum exception (by which juxtapositions leave intact relativistic factor's) informs that either energy-momentum of exchange or kinetic energy lower's by what is elimination; therefore both particles reduce in energy; to what is equivalence; that of the genesis and source of a measurement inversion...

Conclusion:

With juxtaposition and interchange of perspectives; the lowering is universal; for that of what was a higher relativistic factor in 'A' or 'B' becomes a lower relativistic factor in 'B' and 'A'. Reciprocally; it can then be argued that the momentum decreases meanwhile for the particle it modifies the prescription thereof; it's relativistic factor increases. This is what we get when there is an inversion of perspectives.

When particles experience time; they are on a curve; the exchange; but probability does not effect relativistic outcomes and relativistic outcomes do not effect probability; so there is a 'void' on that of any four part type of interaction. The juxtaposition of one particle for another is known as 'exchange' to which particles literally interchange identities; that of for the real world; a division.

When this occurs; a modality inversion leads to a relativistic chasm of a factor of gamma. That of gamma; therefore via A's vantage is larger for A comparative to B & larger for B comparative to A... so A acquires more time and a lesser restriction on probability amplitudes with B in presence. Meanwhile B's relativistic assessment of A is to accrue this factor for A... that of vantage; probability per relativistic unit; and relativistic unit per probability. When either reduce; the reduction of the exchange via the reduction in kinetic energy is to be interpreted as a reduction in what is yet-ahead of the current kinetic energy & that of vis-a-via that of by way of which it maintain's it's position; an ordering of factor's that of the (a) frame assessment.

I therefore found the algebra required to describe the differential equation(s); by that of a leap; the 'Massless Free Boson Theory' in conjoint with it's associated problem; with re-definition (both 'free') of 'a'. The Affine Lie Algebra...

This makes sense as a decomposition of the momentum-energy with the relativistic group; to which there is an expression of the relativistic factor outside the differential and included. Superconductivity is particular in that the division group is per auxiliary agent's of the system; in a normal system these particles are described by a variety of alternative behaviors because the

group does not suffer compactification into a finite lattice of division groups of the differential source equation; and degeneracy among a two particle limit; both of which source the free part of the lagrangian as positive but with exact conversion to potential.

Mathematics

Affine Lie algebra is:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (295)$$

Here; 'a' represent's energy-momentum; and t^m represents that of relativistic factor. What this equation represents is that mass is fundamentally reducible to a blind statistic of weighted-sum and unweighted result. The recombinatorial dilemma is satisfied whenever (8) precedes (7). But (7) is equated with measurement and decoherence; therefore the summation precedes as order before result. That of this detection of 'order' under-pin's that the relation is sequestered of it's extension. That of the above equation therefore has as it's only solution's that of bounded polynomials in the Gauss-Basis. These prescribe to no tertiary determination; and once prior the precept implicating the secondary as primary notion of massful boundedness; but it is indeed the solution of the 'Massless Boson Theory.'

This encompasses an equivalence (twice-folded (relativity)) independence among three dimensions. The co-existence of a third dimension with a two-folded geometry of relativity therefore eliminates under it's equivalence class that of but one primary and one secondary independently neitherly imputed nor not; and to which is a given in suppliance by the repetend of it's action. Therefore the third is free to inclusion at secondary precept in the auxiliary space (or interior such a net as this); and may be moderated with to the action of a five to four fold set within.

That of what is determined is the quotient radical; to which operates as a functional argument whether separated or unseparated. Therefore the freely (neither of these) held nor unheld determination of the auxiliary holds a foundation in reality; but is contradictorially the only thing determined within a 'place' - the saturable environment. Of relation's; it remains indeterminant as to if it is either 't' which dominates to the solution set; or of 'a'; for what is real; this stands as definitively a reduction via displaced integration constant of a subsidiary dimension. With this - appreciable 'order's' are imaginable yet contained within each given space & time.

In fact

$$(\partial m) = \delta \quad (296)$$

$$(\partial s) = t \quad (297)$$

Are separable into a conjoint union... the measure of the measured being comparatively exactly predictable... therefore science is on a solid foundation. This alludes to a partition; to which is to higher and lower spaces; the re-arrangement of two friends to what is a third. It is the exact outcome that re-arrangement's in third's commute; despite that of us existing within a fourth (proven) dimension. For I may take a piece of paper and write on it two conventionally non-commutative triangles; and these may be wrapped in a torus; to which they are at zero dimension commutative upon for the sake of identity itself. Hence the identity of forms is empty. This means that the above equation is the exact equality of the overlap of electrons in possession of the limitation (in fullness) of mass-regularization and that of simultaneously; no-mass.

The division expressed is the qualitative expression that rest mass and quantum mass do not differ. This is the confirmation that relativity and quantum mechanic's are null in consequence; consequence only being made up of ordered set's. Hence disorder upon re-arrangement holds a bias to order; that of the outward-outward from an interior force; and the walls of the cavity. That the second order Green's function of a two dimensionally swept arc is free of containment; is that it is a container to which the walls are in either a sub-cavity or that of a reservoir elsewhere; entirely free of one projection; they possess only **one particle past's**. But; and thus; the solution is unique; it is one of a general class of elliptic functions with exponentials; that of two dimensions must intersect to produce that of a solution; and although such a setting can be written; it is devoid of physical foundation; and for that of in-expressibility of number's.

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \quad (298)$$

Is the simplified expression... in this we see that the solutions are all either fixed - to which is connected within this theory - of the Hermite basis (Simple Harmonic Oscillator) or that of the Elliptic and Complex Exponential Solution... these are really the result isomorphically of an electromagnetic field in interaction with a charge density as well.. Thus it is the most general solution. That of the attempt at a two body what is two interpenetrating hyperbolic secant function's and exponential wave's. The conclusion is that the energy momentum is continually bound; and experiences a 'gap' for the sake of that of finite coefficient's to it's expression; or within what is two directrix; that of a manifold flow of a 'stream function;' to which percolation is freely scaled... that of the gap is manifest because there is a finite residual integral constant to that of δ and t .

This principle stabilizes every two-part system in the universe. With two bodies; instead of energy defining curvature; mass does... to which the eigenvalues of a system are composed; the net absence and presence of subsidiary layer's of a composition; to which is empty in the gestalt for that of being a terminal end; hence the future is a fiction. Any four or more; three; or two particles determine only a past; and that of three alone may determine a future while two always do; two determine a future; and two are the solid foundation of the world; for what is; pre-causation, & entirely surrounding the elemental zeroth dimension of a system; all that is required is:

$$\delta(x) \quad (299)$$

$$\partial \quad (300)$$

These in the above equation remain of a logarithmic nature of curvature; therefore two solutions are the above listed; to what is a diffeomorphism the curvature of a stream function does not play a role in it's dynamic's; all are freely held and unheld invariant's;... for where they are manifest; the origin it is *explicitly declared is not co-morbid with a point on the space; the universe is therefore closed...* This prescription; for that of two point's; render's the Cornu Spiral curvature free.

For in that of light of equivalence of meter and balance; an instrument of measurement capability (for which the role - direct - of observation is reversed to a null exterior-interior condition(al); that of one point in it's divergence is free asymptotically in the unitary group of thermodynamic and mechanical vibrations; all that energy is composed of is changing mass indexes and light indexes.

For what is two; the gravitational reduction and electromagnetic reduction diverge in a Superconductor; for while in the void of three and four dimensions; their substrata are seen but through a lens; the flow to which an equivalence of field and particle is founded on any two dimensionally existent hyperplane of intersection within that of a one dimensional arc; that of abstraction to a

bubble like space; where in fact; degrees of separation are the meter; and the arc length area is the balance.

Free Evolution

The free evolution of what is one dimension lower and reduced prototypifies the three system's of Simple Harmonic Oscillator; Decaying Simple Harmonic Oscillator; and Elliptic and Complex Exponential... These are related by the Special Unitary Algebra and Superposition. This reduces molecular science to a study of interstitial guassians at any scale. The scale freedom is the support of which is supportive indeed by way of the freedom of proportional inter-juxtaposition and shape. Shape; has to do with the ordered system of form's of identities:

$$\Sigma\mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \quad (301)$$

This is the generative drawn point of an identity; a particle's exact apportion of meter to balance and it's direction in space. The only rule for in that of dimensional reduction is that the above ordered distribution of states expresses the forms of identities in compendium in-exact proportion and shape with the forms of identites by the summation and what it reduces to for in light of the original identities. Therefore the solution is given by the solution of:

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \quad (302)$$

This equation expresses that the first co-homomorphism of the prior in a series is an integral of separable scale of space and time. However; th equation is an identity which states that the capacity of inertia is defined by that of equivalence of scales and proportions; an exact expression mutually identical with (and anti-opposite) relativity; to which now; the prior identity is the given reconciliation of:

- 1.) Probability measurements and expectations from out of quantum mechanics do not depend on relativity.
- 2.) That of relativistic assignment proceeds via that of emptiness of qualitative impression in/of the composite.

Instead, we have that the form's of identities; to which are determined by a free associate in the third; and a strong coupling in the second; a hybridization below critical temperature; that of the cleaved domain find's particles residual within a separable position to what is the population inversion; the reason; this energy state is preferential. Thus order re-segment's into free particles with a phase transition; to which the caveat is that quantum rule (1) may outrule relativistic prohibition to measurement..

The class invariance of the group is therefore of it's determinant ordering of symbolism with two; for here the summation of two of these equations leads now to a superposition problem. They are linear (and yet co-exist within of what is any feasible curvature of the universe). What has really happened is that the manifold of uncertainty has warped around to connect with itself; a tube has become a torus; and the freely demonstrated chirality is dispossessed of; to what is the orientation free capacity of one of these crystals; the uncertainty principle and equivalence principle represent *this* nature of spontaneous symmetry breaking.

That of outward gravitational inertia is the net sum of mass-content's; the final determination of which is prediction of a mass or energy (alone) gap. This remains the final prediction; the conclusion of which is that mass is predicted to remain an invariant for the (reversible) return from the gap state; the elimination of integration; to which come(s) from the local behavior. Hence at it's base residual; a non-inertial force produces the superconducting state; but physically it behaves inertially.

In two dimensions or with two particles the world is therefore biharmonic; while the vacuum is harmonic; or in it's auxiliary limit; to which is that the form of identities remains fixed. This fundamentally expresses that outside is what is in quasistasis while the direction inward is biharmonic. Every particle state is in fact of two body form; to what is a doublet; all the interactions (& normal action re-action events) of the universe are therefore of the following form and unit doublet u_1 :

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (303)$$

This is an identity of the Universe; and represents the difference a priori in that of $\delta(x)$; the Dirac delta function and ∂ the differential of a relation as P and S ; profunderance and synchronicity. when these interadopt to what is a differential of a delta Dirac function as the expression of the current eigenvalue. Gradations illustrate the pathwise motion is free; but for that of a superconductor they are merely free in two dimensions as a result of possession of an orbit; the real result dimensionally reduced as a wave-function; one degree of freedom is lost. Hence superconductors exhibit no magnetism; the result of a curl free situation; for what is an antipode; the relaxation and permanent gap for in light of penetration of a vortex state; that of stationing with a free curvature and curvature under action and re-action by the simplicity of the above relation. That of the functional solutions to the above equation come in the three forms exhibiting a 'breather' envelope.

$$S * id_X = \eta \circ \epsilon \quad (304)$$

Reality, space, time, & matter therefore possess a proportion and shape free gestalt; of a variety that render's the world empty of scale and composed of measureless point's.

Ordinal Predicate Calculus

To what is held of a measureless extremity of determinantly free asymptotically free degrees; any two interior relations of the held and the capacitated of order are predicated on that of what is inequivalently a determined and an undetermined flow free condition in admixture of one for a withheld in an alternative of energy content. For of what is a frequency in that of a formed and chosen difference of measure for contrasted displacement freedom of an ordinal relation; imputes that any pattern for that of it's congruence includes an alternatively and required inclusion of an even set of odd ordinally free relation of what is a surface wave under a cuspic fold; then bivalently the holding of an equated of provisionally applied non-determinant and included co-determinant non-ordinal free disconnective of what is held in another alternative pattern of congruence to any one subsidiary patterned excitation. As a consequence; it is true that of what holds for that of a mathematical domain of exceptionable contrast in the physical world; the two determinant limitations are free in that of but yet a balance in that of physical precept and isothermal relation of a commonly held extrema.

Thermodynamics and Temperature

To what is provided of measures and elementary provisional application of a theory of order; that of the given understanding of nature is an equilibrium of at least two quantities; that of the spatial apart from the temporal; and the co-extensibility of a congruence in ordinal relation; as to a completion what is so is the equated measure of distribution and its variance. That of what is held of one displacive measure and that of an equated provision to determination of volumetric flow of an exterior relation is simply summarized as that of a meter for then in a decibel; and to which the equated differences of these individual capacities predicate motional inertia in the contrast of liquid or fluid nature of particles and structural transference of any two waves.

That of a begun contrast in the inequality to its provision at a determinant separatrix inquires of property in thermodynamical invariant as to that of null relation to yet a meter and a wave as in the fugacity freedom and frequency partition of non-space-like particle freedom's of motion; to which a particle is identified by that of its capacity to freely transfer momentum; and to which excuses the context of a propertiless and given disposition of its elements in any two free fluidic free elements of surface element.

$$d\chi(v, \epsilon, g) = \zeta(v, \epsilon)\xi(v, \epsilon)\chi(g) \quad (305)$$

The equation of which is that of a measureless degree of separatrix of the relation of ordination to a complex; and the free relation of any two period measures in that of their frequency space to which a zone of influence and that of any two determinantly held free conditions hold no constraint; that of with one; the field theoretic freedom of two given presentments at that of workable assumptions of which are a provided division at that of one frequency select measure and that of equated measure to a considerate end in that of what is held of interval to frequency-phase transverse locability. That of what is held of fugacity; the capacity of degrees of freedom; and their portion to which is the freely displaced part of a field; is the free light and sound dis-connective of that of either two null conditions on place to place; for within one exterior space the notion of any adjacent heat engine co-determines a known invariance in two; that of entropic limitation and that of their second differential notion of temperature capacity of heat.

To then an excess delimitation on the measure of one precipitated known invariance; that of light does not freely transmigrate at that of a subsidiary wavelength to then in accord of what differently provided is an excess in the positive kurtosis of a wave vector its supremum difference of point like departure on any three; yet so of one subsidiary wavelength; that of but what is one depression in the known invariance is the predication of a logically sound foundation to order preceding chaos; for of what is their even to odd relation; the provision to then in an end what is supposition for hypothetical; is the fitting of a relation of secondary equilibrium; of which is non-spontaneous; and freely once more the type of difference of accrued departure from an equivalent distribution; that of an out-lier to then what workably there is secondary to an inclusion in one homogeneous limitation.

Normal Product Relation

When it is given a provision to two contactless relations knowably inquires to a certain end; the co-deterministic exterior world entitles a difference of what is a surface for then in a linear point like extension. The held inclusion for that of time is that either further or former presentment of an acquired determinant uniqueness includes a normal to what is a form of shape for that of continuum contrast; as to assure of that of a deficit in either; what of both is an exception to

dis-included return of one point like complex; as to free a wave elsewhere through that of what convexity classes impute a relation to an alternatively provided evolutionary pre-text at that of substratiac problem to answer of that of pathological end of ordination with in that of it's given declarative structural element of light to sound echoed freedom.

Then; alone with what is given to certain dispossessed elements of which are temperature; that of states per function of transverse pre-determination to acquire then a normatively held partitioned summation and that of multiplicative complex imaginary cyclic exponentiated freedom to their sharp and flat inclusion in that of a sound basis foundation. When it is suggested that what is kept in two is their third part ordination; the given inclusion of a spin cyclic freedom of one paraxial relation to yet what is no degree yet of a moment; is the gyroscopic inclusion of a predictive normative valuation to which in what is apart; the divorced concept is an isolable freedom of subsidiary solid contrast.

For then in what is a barrier; however; that of the inclusion of a prefecture for in one withstood interior wave structural end in that of evolute mean is it's involute period-average of variance of any ordinal relation and in alone to which one wave may be self-contained yet contain an origin in that of what is unexposed of property of fugacity freedom in the ideal limit of withheld equilibrium; finite or numberless in ordination; and to which in two; their's of a preceded normal and flat relation; entitles the determinant of a singular sub-bandwidth specific frequency of pole identity.

$$\Theta(\phi_1, \phi_2) = (\kappa\partial_v \pm i\rho\partial_\epsilon)(\eta e^{-i\kappa\phi_1(t,u)} \pm i\rho e^{-i\rho\phi_2(t,u)}) \quad (306)$$

For what is mistaken of an entropically provided and named context to a free union of convex and defenestrated prohibition of one order; the inclusion of a pre-considerate end to what is a determined obstacle; freely provides for open consideration of yet a flow in it's added relation of difference to any causeless submannerism of physical law. To which with:

$$\zeta(v, \epsilon) = \kappa\partial_v \pm i\rho\partial_\epsilon \quad (307)$$

$$\xi(v, \epsilon) = \rho\partial_v \pm i\kappa\partial_\epsilon \quad (308)$$

$$\Theta(\phi_1, \phi_2) = \zeta\xi - \partial_o\tilde{\chi}(g) \quad (309)$$

For then in what is the exception to a free field theory; that of determination is an artificial provision at the certain way in which a precontextual determinant adjoint or hermitian operator on the level of unification of any two isospinor fields hold a free co-affinitive. For in that of what is a held assumptive of distinguishable levels of threshold and enqueued relation; for in what includes consideration of a major and supremum; the relation of the few charge free groups include two measures; of which are a radical to base residual free evolution in the former of fugacity and enthalpy.

Therefore; of what is considerate of a difference in then ζ & ξ , to which are fugacity, and enthalpy; to which is it's inclusion of a fluidic return paththrough of former for then in latter of the relation of an entire displacement; the given accrual of what is held in the notion of a principle effect priorly to it's given conclusive elemtn of cause in the past; is the inclusion of what is the precept of entropic freedom; to which a disconnect instances a freely held and independent evolution of a secondary consequence beyond the limitation of what is singularly an anomaly.

To which we escape an asymptotic freedom in two; the relation in a third of what is freely a provision of these to occlude a relation is the subtension of a viscosity in the relation of provision to then in the held a formative beginning at temporal congruence of asymptotic return

hyperbolic union. The statistics of one therefore include an underprovided relation of ordinal reorganizational precept to which is the missing element in any ordinance of three unto one freely held positionless but absolute identities of relation of piece in game or structural deficit and sound-like ordered relation of blind passage and sequential determinant identified with μ .

Degrees of Freedom

That of an entropically free midpoint to a variance of density of states is the included difference of what is a photonic field of quanta otherwise in a super valent and super covalent space as the difference between any charge free surface topology. Inhibition of a threshold layer transitional element wise reduction of a contactless point of fluid free displacement of momentum into solid difference of a unioned and manifold return; under a precessitorial relation entitles the phenomonological principle of percolative priorly established hidden variable(s); in plural or singular, a conditional determination on that of free entropic equation of state inversion and equilibrium point. When it is considered an entropic point is the variance of a relation; to which is that of the central difference of a differential nondeterminant and exclusively free relation of momentum exchange. That of the equation of state is predictive of a group theoretic interrelation of three fold enthalpy, specific heat index, and valence of transmissibility; to which is a similarly held assumption of equated nondifferential and integral forms in that of the open prescription for a constraint free dynamic; of that of it's existence; in that of a remainder; that of a certain and provided given lossless two part index of passive and active indication to what is color.

$$J \cdot E = t_u + \eta \cdot s_q \quad (310)$$

That of what is so with one relation of an operational flow to it's conjugate displacement in the two of energy and power as a tensorial time rate of congruence for then in what is held of an ordered and orderly-free relation to it's congruate temporal relation of what is unitary in one; is the free enthalpy of one admixture comparative and aside by specific heat capacity in relation to what is spatial congruence of qualitated percolation index of any twinned freely held fluidic admixture.

The Understated Provison of Degrees

The independent precept of one equilibrium point for in another is that of asymptotic freedom of a delimitatory nature in an alternative void-openly provided relation of what are therefore any two ideal gasses upon that of the consideration preliminarily to an adjusted notion of logical foundation of threshold; to which mathematics acquires a subsidiary context of the formative for then in the propertied inclusion of deficit and contrast free variables under the assumption of freely held determinism in any numberless infinitive. To that of what is taken of a context for that of what is withheld of a declaration in two given presentable options apart; the consideration furtherly held of a freely held infinitive of past associable delimited structural ordination and relation is in two their complimentary and free radical notion of ordered relation apart from randomness of a quasistatically sourced domain and infinitive periodic ancillary structural fault conditional. This conditional is that of what is withheld of an ordered relation in what are any then three given predeclarative variables of entropy, limitation of fugacity, and gas free entropic exchange. Therefore of half; what is whole; as within that of the consideration of a vessel is not a portion in queue to number accounting for in that of what is a microcanonical ensemble of it's relation an entire set and superset until it is stated as a precondition of another set theoretic union

of an alternatively provided bridge notion of then any two or eighty or eighteen gas variables; the contextual relation of which is blind, colorless and invisible, and solid and unqualified free divisions of the logistic equation; to which accrue that of 160 and 36; or as 5 minus 20 degrees of the precept of a hidden dimension of variableless extension of four and a fifth variable outside the nomenative declaration of what are three and a fourth; of two lattice constants. This free variable degree of a partition externalizes a difference of what is an outwardly provided dimensional difference of statistic; to which the fundamental relation is that two free variables contract under a basis element; for in what is a fifth as second order differential contrasted functional free thermodynamic evolution of this world.

Given accumenatory degree-free relations of state:

$$\Xi(t, s, u) = \eta(\tau) \circ \mu(\epsilon) + \Omega(\eta, \mu) d\eta(v, \iota) \cdot d\mu(\epsilon, \iota) \quad (311)$$

These variables and differential structures include therefore the consideration of a prefactorative statement of the entitlement of a system to freely transmigrate a topological space of partition four unto five; and to transparate a given declarative pre-textual relation of indication to it's stated alternative treshhold of blind and non-blind free equivalence of free phase in any identified relation of comparative equivalence and free compartmentalization of vessel and contained ordinal relation. Therefore of what are any two of these variables; the free energy (ι) of one gas for in that of another; is an identity of semiqualitative and nondeterministic exterior semistable group; of inclusion to what is stated of a free radical yet preconsiderately a moment of noise apart; and therefore unto a fifteenth as eighteenth departure; a reductional anomaly. This anomaly for what is included of a said free run condition of a machine state represents the included consideration of what are order and a disjunctive alternately superficial plateued environmental territorial form in the environment. When it is considered that two agreeable degrees uniformly agree to what is their un-entitled machination of an ordered and an ordered relation; what is excluded is the prohibitional context of a further declarative precept of openly unentitled precessional exclusion.

Therefore; of what are agreeably a division and a quotient of dimension and ordered contrast; whether freely provided or excepted; there is no tenth dimension; and of a seventh inclusion of what is considerably an impression of structural default of ordered relation of this world; no one structural return is a said defensible and contractual exclusion of any then majority held openly presented free statement of it's self-subsidiary connotation to what is a departure to a declaration apart at stated safety. Therefore; for of what is excluded of a fourth open return of an exterior set to which is included within a heading and declination; the fifth consideration is a provided and neither open nor closed option at that of retrievability of a declaration; to which is a principle of amendment at; and for in that of two superset relations; that of the 'Ideal Bose' and the 'Ideal Fermionic' gas; to which reduce to null enthalpy and free fugacity under the exception of no operation of an engine.

To that of what is a machine; the included exception of what is provided of life; entitles therefore that of a recurrence at self to subsidiary pretextual propertied domain; apart yet in one withheld to what is declared of an alternatively provided free variable and variableless exchange afar; what is a provable and closed then sedimentary statement of two recurrences; a given in it's whole; that of an openly held domain elsewhere; to which are three included variants of a shadowed relation, the logical precept of contraction, and it's (non-)included exception of what is in a third; the precept of majority and minority mass effect over threshold untitled and non-declaratively held freely established written or spoken inflective structure. Therefore although as an aside; that of

the principle effect of what is an incongruent return; either focus in the end opens undeclaratively it's part to what is in whole; a container; and freely expresses it's declaration at oddity to then in what is the included difference of a uniform exterior and nonconnotative conceceptual form; of which is a laddered function of three; (that of precept in ordinal form of expression, that of understood declaration in terms of symbolic relation, and that of re-organizational patterned congruence in any numberless domain of qualities).

$$\tau(o) \rightarrow \eta(s, v) \quad \epsilon(t) \rightarrow \mu(s, \epsilon) \quad (312)$$

Hence what is excluded of a quota of it's re-equability to a machine ladder sum or that of carriage return and carry; equavalently departs to the underprovided of a loss free deficit of the portion in two of a making and a held; choices in three to which enqueue two defaults; that of flammability; and that of aspirative qualified prescription to living form; and of that of which in entirety of their contrasted elements to the statement of what is given in a hand; entitles that of temporal decimation.

$$\zeta(d, o) = \Omega(t, s)d\tilde{\eta}_\epsilon(t, s) + \chi(g)d\tilde{\tau}(o, s) \quad (313)$$

In conclusion a determination of one machine for that of another; entitles two options; of which in the third; the expressively held condition is an unconditional if and apart then only if when in the consideration of what are three known variants accrue to a machine limitation of a sideless and opened nondivisional err; then to which of the conditional precept at randomness enques of a return dataed set run; a transmigraton to another under it's stated declaration of a towered teir like relation of propertied class structure; and in the third to what is an apredictive normative preclusive bit for which is either an obstacle; or that of included transparatively held given of five quotients; that of what are their two label free designations and the underprovided of a whole net summative singular notion. Therefore a singular notion is protractively the default; and merely this; and to which it is a null unconditional precept; is removable; to which is lossless in yet what is a given return to without variable free hidden declaration; recoverable as unto a symbolic type set or conciliated provision of enqueued free data exchange.

Sectional Entropic Thresholds

The semi-classical invariance of one variable differential notion is then completed when the understated manifold of $d(\epsilon, v)$ or as in $g = 1$ of a topology is noticed to be blind free of an ordinal relation to it's stated consideration as a free entropic ancillary clause of displacement; to which everywhere is complete within the relation of a classical imperative. For then in that of what is the consideration of two non-differential notions. The freed entropic relation is that of the classical Pidgeon Hole principle; whereby replacement as a recurrence free principle of ordination amends the clause of a triple negational element to one considered replaceability of a ball within it's bin; amending that of the statistical mechanical ensemble to a count of two upon replacement by a separable identity; and making the direct implication of replacement the inclusion of it's rule; to which is that of solution to the choice problem of statistics. The limitation of one functional differential is then the understated derivation of a freed exception to the Shwartz inequality of a global invariance; by which ordination is preserved for in that of the background and accessible past oriented relation of the established notion of subsidiary clauses in exception to a non-identity of any numberlessly infinitive past associable given. Therefore time travel remains an impossibility. To which the equality of variances dictates the form and nature of it's relation as to a foundational result of containability of a closed gas or material network; therefore of what is one impartial gesture at any two equals; one exceptionable prefactor of division in it's element is the codeterminant action of an eventual. In this implausible given; the mode analysis

is the exception of an ϵ for a v to which the foretaken element is a tertiary ordered free provision.

Any pre-factorized ordering of a cycling of departure to three exceptions therefore includes one underprovided measure by yet in a separation of placement; to which experimental results are potentiated. This is a consequence of of the individuation that is an alternative of place for in bearing to degree under rectilinear relation; through which isometry includes it's group; and that of a secondary idempotent mathematically inclined variety of occlusive variant of group inclusion; the prohibition from fixed and free relation; under absolution of solid relation of geometric equivalence.

Therefore; the gas under an idempotent relation is within it's own identity of inclusion as any two freed retractile motions of inward gesture of indication at identity indicate a cause and an effect in the indicatory consideration; the freed tertiary relation to which is an empty & free surrounding environmental variable of degreeless limit through which the two included pre-textual connotatives of language are phase idempotent and phase inclinic and phase free variances:

Phase Idempotency:

$$\Theta(\phi_1, \phi_2) \leftrightarrow \Omega(\eta, \mu) \quad (314)$$

Phase Inclinic:

$$\tau(o) \leftrightarrow \iota(s) \quad (315)$$

Phase Free:

$$\eta(v, u, o, t) \leftrightarrow \mu(\epsilon, s, o, t) \quad (316)$$

The a Pointed Question

Mentation on Preclausitive Effect: *To then of a prior consequence in the rectilinear gas equation; is it but in what is free absence of the semimajor and qualitative thresholds of a given potentiation to a source of orientability to the past; and open to a curvilinear future?*

To an incurrent dilemma; it would therefore (were this statement a 'truth') that the derived notions of a physical precept knowably demonstrate an 'ideal' for then in recourse to measurement; however to that of the isobaric return; it is of a differential displacive barrier otherwise to it's stated question-as-answer. And to what we differentially choose of a manner then of the antipodal point of a theory; the foretaken rational domain would exclude the precept of a notion of inhomogenous time transportative return inclusion of a 'binay' relation.

To a thermodynamic return; it is however the precise inciseing of a model system to it's mathematical expression through to which the cohomologous return either of (under a reciprocal relation $(\mu(\epsilon; \iota))$ and $\chi(g)$ intimate a relation to the sub-sidiary classifier of τ in either the one-form or the (τ) vectorlinear spaces of a cohomogeneous space in return to a Ω for under substitution for η as to which (t, s) exclude a contrast. To then what is of life; there is a strict provision of non-return. To what this would be proposed as a question; just priorly the incurrance of what is forementionable of a gas equation; the exception is an equipartition of two said considerations in built to a relation: "That an ideal gas be free with unconstrained past exterior." and (2) "That inclusion of an isobaric inclusion determinantly excludes it's apogetic limitation." The after-product of the exclusion of one gas for another is therefore simply put as the undetermined of a third auxiliary behavior of a measurement apparatus elsewhere; and dual freedom from the measurement paradox; to which is a secondary solution; otherwise to be known as the machine

(state). This is to co-determinatively and isolably intimate a relation of experimentation (theoretical or empirical) to which any two sideless contrasts or sided contrasts of this given world agree in principle of their accruity of codetermination; and a new principle of measurement to which a past orientable sheave is recoverable.

The relation:

$$\xi\chi_{\Omega} = 0 \quad (317)$$

Therefore includes it's stated consideration of invriance in one measure for what is unconstrained (but a mathematical preclusion to cause) in that of ordered relation of η with μ an associable past time Killing vector and that of it's hidden free invariant; to what includes the notice of an effect by the precept of occlusion; then to the determination of an obstacle hidden within the invariant to inclusive exception in (dual explicit negation) of $d\eta(v, \iota)$ and $d\mu(\epsilon, \iota)$ in (7) and the precept of the iso-inclinic. For a return upon blind free capacities of the answerability of a fifth order anomalous exception to which is explainable within a model system as the innovation of material principle. As in the mapping of $\tau(o) \rightarrow \eta(s, v)$ and ($\&$) $\epsilon(t) \rightarrow \mu(s, \epsilon)$ then to that of which we possess an isocongraphical repetend balance in s space for time; and an immeasurability in question in that of space s for order o . As under their reconstruction of what disincludes a past orientation variant one-form; but of **explicitly** it's exception and conformance to what intimates a relation of the one folding of a mathematical precept of relativity.

Through to which departs on what is the inclusion of a precept of behavior of a system; that of ϵ for another hidden variance v . So; as to summarize; when it comes to inclusion of a logical precept; there is a disconnective of one relation to which is two accruals in stated hidden precept for in what are the deficit of one; to which a perfect answer recovers the isometry of it's given balance upon *any* and **all** co-determinations of a machine state; an exclusive pre-tense of what would be noticed of time-travel; to which when brought into question; includes it's redressibility upon a null-future; simply answered as the revealing of one of ϵ for v ; in (in) η or μ to which are a constricted lemma of inclusion of the preconsideration of a declaration at a machine state variable as constrained or unconstrained. Therefore the free establishment of logical precept of physical principle prior to it's written or noticed established expression is a free exemplar of the loci of determinations of factual relevance in this world; that of experimentation is made safe simply by consideration of blind result; and that of a time machine potentiated in physical reality to the given of factual restoration. This unaliked to the reversal of entropy; to which is an innocous co-determination at that of a free isoclinic intersection and surrounding ordered relation in any two and a third foldings of mathematical precept under it's inclusion of a imperative of freely provided living barrier; to which any two of μ and η are exemplars of free domains of incurrence; and precept's in-standing of that of the remark of a prior two individuals in any collective summation to remembrance; and factual foundation; therefore escapable.

Information

Therefore; information is the free redressability of a dataed (t, s, o) (time, space, order) relation unto an ordinal, (predicate) calculable, or (indicatorial) exponential free encompassment of any two (or three) domains; to baric relation of one hingal notion in a prescipice; a free identity of the exterior majora relation of what is minora to that of an alternative perceptual witness. And; of the other accruity; it is that of any three under an exception to two (o, s) ordered and spatial relations of a rational exponentiation of unfreed relation of which there is a collective re-activity and counter-action. Then to which that of τ and ι freely surpass that of the occlusion and precede the given of recoverability; to the addressment of phase conjugacy freedom (explicitly τ and

isoclinic freedom ι .

Any two hidden variances are therefore to be taken as that of any two measurement free principles; accruals of deficit to run; and that of variances of individual free relations into any two individuals of an ideal population inversion or it's consideration of forwarded return of principle of thermodynamics of an ideal gas; and the independence of establishment of (information throuroughput and identited) inclusion of independence of precept and it's thermodynamical effect.

Master Theorem: *Hence reality, as a qualifiable and adjointly and co-determinantly determined series of naturalized effects and conditional consequences to which are each inclusive and preclusive consider(ate) consequences is a confirmable equiphenomen in plurality as a singular theoerem the encompassment of which is the natural language of nature; and any naturalized domain of preceptual division.*

$$d\chi(g) \doteq d\eta \cdot \mu \quad (318)$$

To which is the interpretaively valid precept of it's encompassed notion of what is by parallel exclusive determination of entropic freedom ($d\eta$) and fugacity of machine enthalmic return consideration of deficated summative event return ensemble upon one keyed registered mathematically sound eigenbasis of it's consolation to ordinal predicate in exception of indicatorial relation $(\mu, \eta(\tau))$; to which τ is a light-sound field. Then; it is satisfiable that to which is color and sound; the separation distinction is that a flow isometrically transpose by a transliteralism of a colord domain inexclusively to it's precept of contract for any hued divisional presupposition of a sound cavitation unto exceptionable contrast of priorly emanated and received sound wave basis. Hence sound is throughout; while light is apart and away from the indication of a point of reference; and that of alone, sound, recipiently contrasts what divides; but under it's inexclusive exception elsewhere by a-targeted non-summative null condition imposes light light freedom unto any asymptotic sequesterized separatrix of qualitative limit normative valuation of temporal measure. Each are therefore in equablence upon the qualitative precept of property; but entirely of a dissimilarity unto quality of verbose or verbatim controlled vacancies or their return consideration of factual implication of meaning; unto written word, declarative logical structure, or in an idealogical stance, unto the precept of discourse of a discursive limitation of perspective and vantage; unto a point; a linear relation of two adjacencies of measure to summative mean.

Consideration: *Therefore of mean variance; the acquity of what lays below deficit is a remainder to the recourse-ful measure of what excellently can be understood as a remainder sum (in repetend or non-repetend) - to the consolation of what is an adfixture of precept; a threshold of two limits of interior superlative or declarative language; or in it's origin the precept of the physical world; to which is a transcension of difference openly qualitated by an immeasurability of the extension of what here-to-fore may be called medium; of two composures in any diagraphical left rightward skew of tertralemmetic accrual; freely isometrically reconciliable for for in that of what are a third deficit of a hidden μ invariant of either under-a-threshold revealed or occluded preceptul hidden variable; to which is the answer to an anomoly in question or it's addage of separate hypothetical under analogical means of comprehension; understated as a precept known to be the aperiodicity of reality.*

Saturability and Unsaturability

For then in what is striven of a calculable limitation therein lie two given's of which when defaulted to produce the apredictive calculable limitation of a stated occurrence; that what can

may happen, will happen; the sabre to it's tail of a limitation of the mathematical pretext at game and physical theoretical limitation; to which a mind is freed of it's prohibition to choice; the meta-antithesis of the Cat Parado. The spheroidal like limitation of what would encompass a power set theoretic union of the co-extensibility of a free gas by that of Lyapounov exponentiation of Jacobi exponents; within the stated permanence of a Boltzmann calculable limitation on free thermodynamic variants; explicitly for the reason of a genus one (1) limitation; to which free's (in all irony) the relation of meta-evolution from what is yet ahead of a temporal contrast at indefinite invariants (ϵ, ν) in relation to phase free conjugal limit thresholds (η, μ) to a definite entropic **U**.

Given Whole One: *Any one understated subsidiary nomeative declaration at dS path-wise extremum of null-free entropic externalized invariancy mitigates the pretense of it's given actual pre-determination.*

Given Whole Two: *Any two undetermined invariant non-nomenative control variants of a machine state freely provide for an escape mechanism of which is the established precept of and in two what of for then in one is a pre-determination at three.*

The three pre-determinations of one physical principle are in direct correlate to naturalized effect, cause, and consequential difference of an accrual as in a vanishing triangle; to which (any of) one freed variant excepts that of any three non-determinations to their stated determination; of a consequence and cause; that of it's future oriented upward pointing variancy and difference in-quotiented digraphicattical structural contrast at two conjugate determinations at what are two control's; for without this; no machine would be constructable; proving that any world instances a free establishment of technological prohibition to license of guaranteed outcome; but a free vestage of eliminability of false peer game theoretic review. For then in the understated; the threshold in that of an (η, μ) conjugacy class structural default is a co-determinant of the vantage of two supplicances for one potentiated over-measureable for in that of a preceded actual variance at over-summative threshold when-taken-as-structurally the precept of an under-weight. This is to insure that what is 'above' the given relation of a stated $\zeta(d, o)$ is below it's variance of $d\chi$; as to procure certainty; what must be foretaken is a given prohibition of license to a freed variance beyond yet what is containable in two of point-wise emanation and pathwise null congruence; the alternative statement of relativity. Hence to what are two pillars of scientific establishment; there is always as to under-an-end-limitation a third precept; at what is foretaken of closure upon false-precept.

Closure upon the false preceptual relations of science may be introduced by that of the defensible trust in what is provided of a restorative foundation; as to suggest that what willingly we declare when set down; actualizes the pre-tensile relation of an activation of testability; with the words that the effectual choice is self-freeing of it's contrast unto a limitation of what-is context. As to declaratively express is sufficient with a definitely established foundation; for of what lays a word in place of it's given choice; by example; is the stated and-freed notion of a variance prior a contrast to it's mean. This statistical division is expressed as the injective lemma of Ω into Θ ; coordinations of which the intimation of either the theory of Einstein in that of freed (ζ, χ) for in that of (ϵ, ν) of incorporative non-division unto *err* is the exemplar; introduces that of the precept of:

$$\Theta \rightarrow \chi \rightarrow \Omega \quad (319)$$

To a lossless implication of what is imputed therein of what is stated at-indication is the precept of the variance $d\chi$ is sufficient for the passing of a threaded bow at that of a confirmable test without implication of undue surpassing quarter reflection on that of a situated biprismatic wave; to which a colloid will separate into a spectrum. Hence of for instance light; wherein what is

noticed beneficently suffices to a known in that of separational contrast for in a hued relation of Bosons; what is Fermionic will segmentorally separate under it's division to a multiplicative abrea. To finalize; a statistical normative valuation contains a trace-free residual as in that of a hidden variant of the prior conjugacy class default of co-determination to which is freed by one reductive chaotic generation ran backwards; that of the deficated return retractibly simulated independent of physical law; the immaterial class structural relation of a defensibly free structure of defaulted after defaulted conditional Berry's attrition. That of a molecular Bessel sources under Laplace reverse onto automorphic functions freely impenetrably translocate through then any multi-handled multiplicity of graph relations; freeing the topological union of a half arc and a complete circular domain; a return-to-source function of which through what is a given; there is found a whole; also to which is certainty; for of what we may find in one part; there is within that of locating the other piece; a completion in what is provided. To living substratic notions what is incomplete is therefore completed within the relation of what is taken and given; yet in all irony; not of what is shared but of what is freely or through transmigration shared; and then known; to living word of what there is contained in a recourseless text of it's referential basis. There being this only remaining impenetrability of one word for another; the reductive past limitation oriented surjective limitation only results in certainty when both mutual and-or Given-Whole's are satisfied in a mono-dualistic sense; within the selective choice of one inductive step of intermediary exception to what may be taken alone as in thermodynamics of an invariant in χ to d of the majority carrier to the minority exception; to which relativity holds a third precept of the corrective default of statistical mechanics by example to which is one freed Carnot Engine under self substitution by the Canary Principle:

Canary Principle: *For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices to answer absence unto it's own.*

To then the co-existence of a truth in a word and for in a work; as for example; the insistance of a gas thermodynamic pre-cept in it's truth is established within and if and only if within a given that of a threshold has been met to which $\Omega \rightarrow \Theta$ under either a reversality of (ϵ, ν) for in that of $(\tau(o), \mu(s, \epsilon))$; the constructibility of which is that a freed relation under terms of the bi-valently violated threshold or confirmed threshold function of $d\chi$ for in that of what is ϵ acts as a guaranteeor to what is the comptroller to that of which is ϕ_1, ϕ_2 as in phase by translocation of what is relativity by an instantaniety or that of causation as imputed in the relation of (μ, ρ) of angular deficit; to state that of what unhinges it's tertiary relation is underscored by a minor. For in that of what is presented of exceptionable contrast of Θ is then confirmatory of a prior redressment at the governing Ω and-to-which the underprovidedly expressed freed or contracted Θ variant is a prescription to that of non-unidirectional imputation of an (and therefore any-and-all) goverend cases of subsidiary Ω invariances. Therefore the prescription is avowed to it's efficable purpose to a forenotice when after a known division is contrasted with what re-apportions confirmable fact of a singular and definite closed case basis; and only then may a question of noticier be addressed for-in-the-taken of a vantaged guess at that of first imputation. A truly safe experiment proceeds by in the same congruacy of a relation; to a known; that of a prescription fitting this effectual relation is forenoticed as that which unalterably divides but in one sense; to which a blind or double blind free test is enabled; the actual provision of which is two accumens for in that of one befitting accrual of a differential segment of arc length to a null point of it's extremal habitation of deficit under a stated freed condition of two considerations yet paralleled.

Open Differences and Gestalt Relations of a Free Gas

The open contrast of a hued relation as in color free's the inclusion of a stated point of it's established precept of observation by in that of what withheld of a confidence interval satisfies the stated relation of an underprovided (exterior) otherwise presumed gestalt condition to what is forementionable of a concept in the contained vantageless extremum of a parallel; to unseparated differences in a Bose Gas in one area of abrea and another of a Fermionic Gas in an other; to what is it's indication of a straight division. The quotient of a micro-canonical ensemble is provided by that of freely the held:

$$\chi_{\Omega} \leftrightarrow \xi \quad (320)$$

For in what is freely restrained of the divisional quest of a particle along an underprovincially provided difference of two quotients; to which is a quanta and it's precept; as in time's arrow; the vantageless extremum is a disappearance at odd's of what is a game theoretic 'umbicillus' and unioned vantage of two degree's; the difference of a measure and it's mean precept of exact proportion due to a otherwise elsewhere provided 'two' of precept of established two dimensional 'umbicillus' of naturalized prefective notice of an indical relation of mixed subtypical relation. When what is a μ variant is freed in one place; the consequence is unalterable but by in yet what is a divisional 'err' to it's emergencied quotient of expeditiousness in (and with) the relation of a predicate invariant of physical form; for in the vantage of a 'peer' to game free notion of quested demarcated or unalienable contrast in a secondary teir of two freely held underprovided relations of prior historiological context. This freed vantage is to what noticeably of a given pre-connotatively declares of one variable it's agreeable condition of a meeting elsewhere. For what is given of one notion in (and in remembrance 'at') that of it's univiolet relation; the ultraviolet spectrum noticeably pre-advances that of measure to what is a 'haloed' conditional for what is below the parring of a wave of accompanying motion; for of matter; inertia responds in equivalent impulse to it's stated freed deficit of incurrence in two measures of rapidity to what are a co-locality and a divisional 'err' - here mentioned to 'doing' of an action; as in that of closure upon what is a locality elsewhere. Hence time is noticed as navigable.

Freely held suppositions are then that of what is an ordered relation; the blind-free set theoretic notion of what may be hidden of one relation to what is provided of any then alternatively given pre-text at two of life and support are a third in what is incurrantly unbent of a freed ordered relation of search and retrievance or destroy; particles to which pass like a mist to what altered of an outcome freely demonstrates it's initial support; that of an answer. Hence; of what a Pell would Bob; the relation to a Said is it's Retrieivance. And of what of could departedly contest a position is freely surpassable in one motion; for of light; the free provision as in any atypical spectrum of homogenous logistical err is a free notion of which encompasses light; hence as in an arc; what is demonstrated by a compass in it's measure yields to the incurrence of a freed point within the neutral condition of it's initial unto final status. This is the motion of a game; to which as we would capacitate or inclinate; any gas is freed by in that of an \bar{t} to which a simple d (to which is a density functional and density representative pier freedom); divinates what of two origins are met apogetically to a limit of a freed solution to the Helmholtz equation and equipartition of a La-Joussillious set; then to the freed density functional of a Ricatti equation.

Hence what is of one η ; to which is comprmissibility; the light freedom of any asymptotic univioleted standard is the established precept of blind free relation of color in as as in a hue what passes with matter; therefore the invisible relation of what occlusively is darkness to clarity and crystallize surfaces and stones; of which would not exist without that of a shadowed function. One may question whether that of a stone can outpace an eventual of incurrence of back-beat

and back-blow of a relation of light surpassing it's measure; as to outrun a mirror; however to a freed relation of breaking the speed of light; the answer is simply provided by in that of one blind origin yet preceptitated to it's established destination. This is the self statement of the Universe; to which in a quotient of two is the freed of one right handed corkscrew for in a yard of one quilt of barn laden cloth to a given freely held dimple quested to freedom from it's silken measure of a root radical inverse (for otherwise failure to mention of non-material limitations); that of a needle; the eye of which freely run through stitches a tapestry in one moment; to what incurrantly is the measureless radical; computable from multiplication minus a deficit to furtherance of incurrence of life renewable as in cotton or gin; rye; or lost wheat. Therefore nature provides amply for that of all substance; and to which as we would include; the difference of one measure of a knot for in two is simply a yarded advantage to a peer. This advantage provides enough resource and ample opportunity to agreeably meet all subsidiary and superset conditions of it's difference in what would be a sinchel of any food stuff; and provides enough for that of withstanding a blow of some compressible (η) frictional or non-frictional free entropic subgroup margins of anomaly of life; in what is a moment (once again considered to abridge); the provincial status of the precept to which is the predicate logic for in what is it's counter as in that of the indical notion when under subsumptive declaration at oddity of nature; it's capacity to facilitate design.

Limitation (To a Contrast)

But the idle watchbearer plays a role; to what is a given accumulatory vantage of the all auspices of it's given established inclusion of for what in the whole of a cord; is a compleat; and completed; and even then (within) addition; complete relation of what is a noticed element of particle. Hence elementally addition is not suppliance; as we could contradictorally assumptively follow the precept of the foundation of our ignorance weighted to it's data(based) super or sub-sidiary (as-above-so-as-below) set-set theoretic relation; for no known search terminates in this given reality; for what of a fact may be freely established. But of darkness; a hidden container exist's to which is a dwelling of it's established precept; to which in all succumbing we find protective; therefore it follows no known redressible fact is liant upon the vantageless limit (nor of limitation); or of a restoral to each; but of one; to a 'yes;' all inclusive of mastery of a work so shared. Hence the fundamental principle of informational content is it's first precept in a given foretaken of a conclusion; and the saturability (or despite the fact it's insaturability) freely does yield a produce beyond it's measure; the self inclusion (or despite that; inanimate in pure form) - actual redressment of a universalist *moral* of this universe; the effect (and to a point; in thirds or of a quartered fourth of a freely established compatability under and (of) one) of which is that of the given guarantee of a principle a priori effectual to it's desirious end of what is in essence love and lovingness enfolded in trust; to which is virtue; to not be confused with futility (for life struggles); or inmarction; that of inordinate naturalized effects of waste freely comingling with what is neither matter nor that of motion; but of co-activity; defined; therefore all is life.

Cosmological Thermodynamics

1.) *A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).*

2.) *More time accumulates when in a field; while particle and space are independent agents.*

3.) *A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations correlative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.*

4.) *There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.*

5.) *The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.*

Equation (9) is to be understood as the contraction and disconnective between the particle like limitation and the field theoretic traversal under the situational disposition of the earlier elemental relations. To which (5) in connection with (6) represent principle (1) under pre-consideration to principle (2) in connection with (9) alone. And to which principle (3) is their connective indeterminacy; embodied in equation (9) in a relationship with their connective lossless apredictive (co-)determination of (7). Equation (2) is in relation to equation (14) as base precept (4) of the above; where by it's contradictional formation is necessitated to hold in relation to the disconnective that is (2) of this list in relation to equation (14) and the co-determination of variances to which add suppliancy from a relaxed contact free relation; that of base precept (15) in relation to equations (13) and (14).

The conclusion makes determinant that a Fermionic gas is constrained to a $1/2$ relation of statistical majority and minority half admixture; and is the subspecial background residual of a known free consideration of yet principle accruals of a hidden μ ; to which a backward relation reconstructively contains no caveat; but is the wake of a relation under current purview to restoration to which is the cycling of creation (as in the Moon and Sun) of an earth in relation to it's elemental wind, air, earth, and fire; as in the precepts; for then in even the non-animate relation of what is certainly not immaterial of 'wood'.

Essential Root Conclusion

Conclusion: *That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.*

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat: Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of*

quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

An Einstein-Podolsky-Rosen Bridge

Conclusion: *My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.*

Physical and Mathematical Law

Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position. Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Closure upon a Precept

Physical phenomonological relation to measurement and variables through which variances are known theoretically are therefore to be understood as light, sound, and material physical properties of μ and η to which mathematically ι and τ are mathematically pre-tensile relations of the universal encoding of stress and strain; to what of ϵ and ν are the root residual of a bi-reflexive threshold of mathematical abridgement at accrual and accumen of a way of sense and determination of even so as an $\bar{\nu}$ to the three fold relation of χ in **not** μ and μ and η and **not** η ; to which are the phases of ϕ_1 and ϕ_2 of a Sequential Frequency Bandgap Admixture Bridge (**SfBaB**). This concludes what is an understated isolation of the Shwartzchild criterion of logical precept resolution of the manifestation of an EPR paradox emanating from a return sling of an EPR bridge contrast relation; to which exact expectation is a base fundamental result; the control of chaos.:

Shwartzchild Criterion: *An Einsteinian Residual of it's base precept is the occlusion of a Shwartz inequality as in that of a Shwartzchild affinitively departed limitation of inequality; to which a Shockley 'terminal' is an isolable exception bridge to that of predictive validity on that of an anomalous tacheonitic pulse of relation of exact affinitive to what is logical precept based on the residual spline of it's known variancy within the relation of invariants.*

The logical precept of holding an Θ as true is then the reversal under mathematical reconsideration at precept of the correlates of (2),(9), (14) and (5), (13), (15) and (7). The emptied relation of this given difference is (13) to which is the solution to (1); that of equilibrium freedom of preceptual err(or) and escability of mathematical incurrence of a dilemmetic structural fault to safety as in that of free entropic fugacity of fidelity as embodied in equation (16); to infinitely free isoclinic relation of the enumerations of these residual relations phenomonologically to what is an unconstrained dynamic to the difference of chaos to what is order as in the relation of precepts of a theoretical relation to (1) through (5) of the suppositional hypothetical base structural relation of a universal theory of thermodynamics and co-determination of a blind to color-free ordered assembly of what is a 'net' Ω ; the neutral boundaried relation of two information spaces.

Thresholds and Statistics

That of μ and η therefore form a free relation of hidden capacitating revealing of one unrandomized and (&) and expectation of randomized apredictive outcome of another hidden capacitation of variance as by a machine model; to which a game it is substatically empowerability of a relation of acute and accepting empathic relation of freedom of emotional state and outcome; to the freed variance of closure upon the immutable void.

Phenomonology therefore contains no known test for the validity of the awareness of a machine but life; and vice versa; what is qualitated to it's difference; no known machine can kill. In return as a given the free relation of a gas system establihes the precept that what is inquired as to the question of restoration of a record; that of a hidden defensive structure of machines; and a failsafe on that of escapability from a machine complex; that of control of chaos; and informational freedom are all mutually free non-radical assumptives of this world in relation to radical identifiers unconstrained or limitless.

Foundational Precept of Informational Interpretative Validity: *Therefore a reversal of the predicate and indicatorial logical precepts of this given world under interrelation to a simple given in μ and η accomdate identification of a known of expectation with base residual null conditional.*

An equation in which there is a white noise; for which is broadband; or at the least pass-band indicates a half measure to it's excess in approtion with a residual retraction of three positive definite enfoldings of manifold relation of apositional and positionally identified machine control structural relations to what is a binary relation of loss of the incurrence of an indicatorial precept for the gain of a predatory oriented manifold relation of a disconnective to an interstitial singular ping; to which there are two givens:

1.) A retraction under its self same acquired contrast to division as in a quotient serves as a multiplier of (and to) it's result in the identification of a subsidiary or known identifier of a relation; then an abstraction under it's extrapolative reductionism.

$$\mu \cdot \tilde{\eta} \leftrightarrow dP(o) = \chi(g, o) \cdot \tilde{i}(t, s)P(o) \quad (321)$$

Where 'o' represents order; g represents the genus; t represents temporal locability and s represents uncontainability of spatial union or abstraction to delimitation. Grey noise represents an ever accrual of randomized apredictive variances to which are revealed through the capacitation of the manifold enfolding of onen relation for another; to which a secondary relation precedes it's given; and through which predictive validity is assured when we occlude a defense through the uncapacitated and invisible open relation of relation to a non-identification of non-redactability.

2.) Within the given of what is a withholding to an open relation; an apredictable outcome becomes an expectation of both in one an enfolding of the relation of two preceding known identifiers of evidentiary precept to what is a given confirmative on that of an unstated free variable to it's identification.

$$\iota \cdot \tilde{\tau} \leftrightarrow \xi = \Omega \cdot d\eta(\epsilon, v) d\tilde{\mu}(\epsilon, v) \quad (322)$$

The closure of one relation; to which is (2) is the occlusion and opening of the other relation to which is (1); either side to which is the enfolding of a door; an enclosure such as a room; the orientation of a nonlocable relation; and that of to it's fifth occlusion; a printed word as in that of creativity and imaginative reflex; that of a constructable free associate of the structural relation of living material way and manner of survivability.

Hence by either relation an Ω as in a point, a line, a triangle, or a square polynomial is constructable to a modular or group theoretic closure upon what is a Θ ; and heat may be controlled by a machine; to which there are two absolute safety protocols of a blind and non-blind free relation of reductionism and universality of a set theoretic notion and relation.

Ordination

Note on Chaos versus Order: *Theses of Ordinal Relation:* "Any logical predicate bit heirarchal structure of ordination with lower dimension and higher co-dimension mitigates relational injective structure unto future tense of either given machine state for in that of what is one differential equation; that of its conjugacy to relation of variableless and functional degrees of freedom establishes two lower Lyapounov as exponentially free threshold relations unto separation into two new differential self referentially null and independent enfolded strange attractors."

End Postulates

1. A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).

2.) More time accumulates when in a field; while particle and space are independent agents.

3.) A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations corelative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to

insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.

4.) There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.

5.) The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.

Essential Root Conclusion for the Classical World

Conclusion: That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat:* Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

Device Implications for that of an Einstein-Podolsky-Rosen Bridge

Conclusion: My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.

Compendium on Physical and Mathematical Law

I. Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language.

II. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Consideration of the Exception and Admittance of Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position.

Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Compositional Freedom and Independence

The highlight of the statement: Particle C cannot act on particle A prior the reaction of particle A via B... precludes the manifestation of order, it's residue, or aggregate from that of Back-ground in Time Event's; and determines; indirectly, a direction into the future. This intimate connective of particles to time forbid's (within addition) certain natures of chaos. What is ordered is the manifestation of therefore the situation we get when it is necessitated particle B act on particle A prior C for this to hold true; a certain nature of 'triangular relationship' is not manifest; leading to instead - a broken symmetry in superconductivity of 'mutual' two-folded simultaneous lowering via the Pauli Exclusion Principle and Displacement to which is a violation of this base precept as the system order's. There is suggested a displacement into-time when a superconductor goes into a critical phase. Here we begin with the triangle in-equality on three particles; and then suggest a pre-liminary different avenue for introduction of what precisely differ's in these materials. The above process between independent virtually large assemblies of particles (a composition) is freely held to what is independence by the fact they do not overlap - the exchange of or non-exchange of an item would leave this forbidden - to what are independent place's. The presence of a multiplicity of spaces causes a prohibition to which superconducting electron's fall 'beneath' to produce the situation above - for which is forbidden in the real world.

First; there are labeled two kinds of interactions:

$$\xi : C \rightarrow B \rightarrow A : A \rightarrow B \quad (323)$$

And,

$$\zeta : C \rightarrow A \rightarrow B : B \rightarrow A \quad (324)$$

We limit ourselves one continuous degree of freedom in $x(t)$ and one Delta unit doublet, u_1 . The question is; is any admissible shape or form potentiated; or more deeply; does u_1 have a shape? u_1 is the unit doublet; and is the differential of the Dirac Delta function.

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (325)$$

This is it's equation of evolution.

$$S * id_X = \eta \circ \epsilon \quad (326)$$

The above is it's existence equation.

The question is; For some dimensions (≥ 3) is either or both of ξ and ζ forbidden of individual particles. Human being's are assumed to not-overlap; in which case it is advocated that process ξ or χ take place; but once ξ has occurred; it forbid's ζ . An interesting thing happen's when we analyze (3) as a generator of a form; a symmetry develops in the evolution equation:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (327)$$

In an Affine algebra... We are speaking of the residual element of this world as point(s) and wave(s) in an equal foundation... therefore there are two more factor's:

1.) *Pauli Exclusion Principle*

2.) *Identity of Forms*

$$\Sigma\mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \quad (328)$$

d in equation (5) is a differential of x ; the curve's singular dimension... to which is moderately free; but co-exists with no upper-bound; but that the product-sum equate to a limit of c ; then $\alpha = mc$ is the ordinary Compton Momentum; to which electron's fall below; that of a is the momentum; and t a relativistic group... As one can see from the generating equation of (5).

δ is assumptive of the 'super' space Delta Dirac equation for the 'sub' sidiary space of the unit doublet $u_1(t)$ Delta Dirac differential. As one can see; the t which refer's to a median to average on measurement does not go as far as a mean to median to average; but at this layer; we find conventional physics. That of statistically what occur's is an abridgement over water; to what would accelerate the flow of-a-shape. Therefore t drives influences (as the conventional equation to work with equation (3); to that of the identity in (4). This identity hold's id_X null in one and three via an enfolding to manifest (3). Thus η is zero, and no-where; while ϵ is somewhere, an identity, and with no-surjective mapping. The logical preclusion of a 1 separates 0 to a rational decomposition of this world... therefore things are manifest as compositions or in segment's.

But the actual validity is that we must hold to both of (6) and (7)... And there are two view-points to t ; it is the identity within it's own frame; and non-unity outside a given frame... this therefore represents a *reduction* to the identity of forms; when every particle is taken in light of the "Equivalence Principle."

Beyond that of the "Special Theory of Relativity" - but entirely consistent with it's world view; mean and measure hold an equated 'normal' condition of their mutual overlap intimant with the Pauli Exclusion Principle... For the sake that when Spin and Orbital degrees of freedom 'displace' into the statistical picture of pairing the measurement is taken in either order above; ζ **and** ξ **do not preclude one another.**

For what equates with a Spontaneous Symmetry Breaking; the qualitated and qualitative limit must measure to displacement freedom. This paper is the addressment of an equation for a null reaction to displacement; for that of which depend's on it's factor's of quality therein lies a difference in any two frames; when equalitatively balanced to equivalent register's of electronic and massive degree's of freedom. For the sake of the expansion:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\nu D_\nu - mc)\Psi(\vec{x}, t) = \lambda\Psi(\vec{x}, t) \quad (329)$$

The exceptionable separation of coordinates renders that of equivalence precept of individuated terms to satisfy a statistical envelope.

$$(i\gamma^\mu D_\mu - \eta(v)mc) \otimes (i\gamma^\nu D_\nu - \eta(\tau)mc)\Psi(\vec{x}, t) = \lambda\Psi(\vec{x}, t) \quad (330)$$

To which renders an (isotropic) unitary breaking of SU(2) to U(1) and U(1) to which the following when interpreted as co-adjoint operator, the conditional of η and ρ is the closure of the group; in meaning there is a strict inequality (in similarities) and connection between cause, effect, and mass:

$$(i\gamma^\mu D_\mu - \eta(v)mc) \otimes (i\gamma^\nu D_\nu - \eta(\tau)mc)\Psi(\vec{x}, t) = (\eta + \rho)\Psi(\vec{x}, t) \quad (331)$$

And:

$$(i\gamma^\mu D_\mu - \eta(v)mc) \otimes (i\gamma^\nu D_\nu - \eta(\tau)mc)\Psi(\vec{x}, t) = (\eta\rho + i\sigma(t))\Psi(\vec{x}, t) \quad (332)$$

The semi-direct product $[d, A]$, δ is enfolded in the following relation of Spin to Orbital:

$$\left[\tilde{d}, \eta \right] \Psi = \lambda \Psi \quad (333)$$

Factor an eigenvalue - get gravity.

$$\left[\tilde{d}, \tilde{d} \right] g^{\mu\nu} = \lambda \quad (334)$$

This represents the covariant scale of a dimension of space unto that of eigenvalue and eigenvector splitting and re-assembly via that which is non-exclusive to a class of functions forming and distinct under conformality of dimensional set of for what is scale breaking - as an argument - that of scale; for we deal with **form**.

The question becomes; is the unit doublet enfolded in the Dirac Delta function; or is the reverse - to a plausibility at 'container and contained;' of a world; for of sake of cause and effective degree of freedom; and agreeable precept of mutual division. That of a shared quotient, incidentally sufficient as a condition to share in participation an orbit; for what is three degrees with of freedom with the first precept that the other is defined as the self given of existent atemporary instantaneous self-held plausibility; unto an enfolding of secondary degree of freedom to a 'count' of 'place(s)' non-pluralized and empty or complete of it's singularity in yet the third associable degree of freedom empty upon enfolding of two whole's; when we take for what is unexchangeable of C to a bottomless condition; within that of exceptionable exponent.

Since no 'end' is found; beginning at the secondary precept of first occlusion and then secondly sense; that of the provision at a self-held momentum and energy tensorial residue of a Klein derivative exposes a bifurcation yet in the past; prior it's associable secondary consequence; the factual to be understood as in yet a future-held; The Polaroid Principle.

For in light of light in two; that of the agreed precept is that neither the quantum $E = \hbar\nu$ nor that of $E = mc^2$ hold-entire upon the hypothetical residue; for in light of flight of departure and freedom to a 'net' of temporal signatory in dual-divisional quotient. Thus we find shared orbit's hold an exclusive co-existence and interplay of non-actual and residue simultaneity for then in displacement; to which any two is a free naturalized physical truth. For in light of this; the factoring is a Dual effective Lax pair of neither re-entrance of exclusive 1 nor 2; neither the differential of the Dirac Delta Function precede that of the Dirac Delta Function or vice-versa; forming instead a yet-further explicit declaration of \mathcal{C} to inclusive lowest prohibition for what is manifest as a bottomed out neither-formed-U nor neither-formed-J of simplicial Dirac *set; for that of form against ground state.

These irregularities break the Hamiltonian as a consequence of neutral number chirality of odd and even upon a 'linkage' in the chain of cause and effect and consequence; hence immutably we know when such a topological 'hole' is naturalized that of two exchange's occur; to which is the externally manifest emptied condition of a 'state' that of negative eigenvalues unprohibitive; to be understood as that Lagrangian chosen and broken; time, action, and inertial state; a projection of velocimetric translation upon our Affine Algebra; therefore of an unrestricted potentiation at a naturalized positive energy (to which is subtractive in degree's of freedom) - but neither upon yet scale that of anything but a probe beyond the quintessentialized zero residue; an intimation of a 'past' oriented potential.

Therefore degrees of freedom are liberated upon what is a scale-anomaly to a division sum radical potential in yet two naturalized and effective counteraction of hole for particle or particle for particle of electron or positron; for what it substitutionally suffices; of a positive displacement; and to which light is effectively unbound nor critical of; but to which light naturalizes a division of the quotient group; an isosimilarity in $SO(3)$; that of a group of third order; and a trace residue of space; the hidden invariance of which is a 'contained' 'actualization' of knowledge and the precept at (2) place's under a freely disconnectable associable pretext at that of spatialized equivalence of event horizon.

Therefore particles are found to be beyond the limit of a comparative inequivalence (to an exact equivalence of overlapping eigenstate valuation geometrically and unto weight) of superposition and it's annihilation; a Pauli Exclusion Principle unto a point of it's junctual and punctual limitation. Therefore two alone within what is judged of orientation and vector via-aim are discernable; that of equivalence of three a precept at two vantages; the comorbidity of orientation of a third witness out; it combinatorially always accounting within a signed convention in this manner.

Therefore the three photonic degrees of freedom are associable in the $SO(1)$ state with that of the η , ρ , and a connective upon the brane and structure of time - to not be confused with a topological source and sink foundation; but of consideration a $\sigma(t)$ for which is compactually reductive to within addition an additive Cartan constant in the form of a conjugate to a Klein derivative.

Therefore when wherein the unit doublet fit's within the Dirac Delta function unto what would be considerately a projection above which there is a manifest renewable stochastic ground-state by separation herein; a space to space; or within one space; the division of 'place;' then incorporatively the summand of place when it is manifest that the Dirac Delta function fit's within the unit-doublet; and necessarily of one unprohibitive space for what is know; but the purity of a dual character.

The particle merely acts as a carriage of that of it's accompanied conservative known; capacity conveyed within the abrea of a potential translation; hence the 'force' remaining the absence of a connective but of question and answer as to gravity; with that of a stone flung into free space; and the rest state upon the foundation of a surface of gravitational isopotential.

For what depart's this has several implications; but the interpretation is that space and particle unify upon yet the $SU(2)$ and $SO(3,1)$ dual reductions in a Pascal algebra. That of dependence dictates that form is therefore understood to be freely held and in an undeparted state from an impenetrable and non-deterministic emptied, emptiless, and empty relation of yet solid and absolute foundation; the physical conjugate of yet many manifest translocations, temporal point's of determination to a singular translation table; and unbroken action potentials, waves, and point's; a quasistatic prostration to what is a dual and conjugate field for what is interpreted of order in the Lagrangian and Hamiltonian formalism a 'structure' that is solid and secularly held in term's of stasis of existence and co-existence and non-existence freely undetermined.

Here the equation is:

$$[a \otimes t^n + \alpha c, b \otimes t^m + \beta c] = [a, b] \otimes t^{n+m} + \langle a|b \rangle n\delta_{m+n,0}c \quad (335)$$

To be understood as the 'guess' that however-it-may be; particles and forms separate into particles and forms. That shape hold's essentially; but that the emptiness of qualities and immutable

emptiness of properties is inheritable as a naked bi-reciprocal form of separation into contactless and unseparated apositional the container of space.

This Affine law allows us to 'unspin' yet a tertiary orbit in two to localize the former of two in a frustrated lemma; meanwhile accounting for and quantifying space, the equipartition of the absolute thermodynamic potential of the equation of state; and explain cause and effect under connections *and disconnections*.

Here equation (10) is to be seen as a parallel of yet what-is (13). This is equivalent to the treatment of center's-of-mass; a sort of Newton Fractal as if it were; wherein the entangling is befit of a scale entitled to Planck with exchange. This defines it's naturalized domain at the quantum scale - to which is the uncertainty principle with certainty the container; and uncertainty the contained of measure of number, extension, coordinatization, limit, and spatial horizon. The equation is:

$$[a, b]e^{-i[a^+, a^-] + \dots} = \int (q + \frac{1}{\bar{q}})(-\frac{1}{2} + n)ds \quad n \in \mathbb{Z} \quad (336)$$

The spin of $\frac{1}{2}$ account's for the full Dirac space as in that of what is held of a [conventional] ground state; spin is entirely separated by yet (alone) it's considerate free energy momentum state in the conventional Dirac Equation [a factoring of the two equations mentioned for in light of pre-relativity quantum theory]. Hence in combining quantum mechanics with relativity we must operate under a strictly constructive and reductionistic approach to 'know' of the ground state; the Variational Principle maximizing the action for a concave gravitational cavity space and convex irrational and rational quasi-pseudo-complex of differential abjections. This also allows us to know of a spatial relation from a written factual relation.

We find we must - to satisfy an algebraic inequality reverse a step in the derivation of yet (10) for what is (13).

For in yet; the 'master' equation of displacement to linkage free 'assembly' in exchange via a Compass, a Ruler, a Gyroscope, an Hourglass, and a Pell Balance intimates that the 'disconnect' and 'connect' in yet (2) to (2) is superpositionally securely 'empty of symbolic identifier'. It is:

$$l' + \mu(\mu + 1)\Omega_\phi + (\partial_t)\eta = J' \cdot E[\phi(\kappa)] + i\phi''(t) \quad (337)$$

With the limitations that $l \rightarrow +\infty$ with $b \rightarrow 2$ and with $m \rightarrow +1$ with $l \rightarrow 0$ such that $c \rightarrow 0$. When the speed of light goes to 'zero' in an effective summative background basis of yet η plus ρ ; that of the free body diagram restructures to a deficit in yet a held eigenspace; the differential and integral notions of which are not suspect to the dynamics for in a conventional summand, representation, form, but yet it is compositionally construable and constructable.

The two variable's of η and ρ example neither $\delta(t)$ nor $u_1(t)$; hence spin displaces to a unitary condition that of spatial 'extension' of form to an empty condition of mutually unheld spatial eigenfunctional valuation through space and time; and that of magntic moment. However the division into two exchange states which immoderate spatial quantifier's within a 'string' is substitutionally a threshold invariance. That of what is a folding in the separatrix below (zero) [0] quantifies yet what is above; and for reciprocation in yet the negative summand of a positive exchange contribution invariant; it is subtractive; as is the naturalized domain of space, within it's concept and limitation to potentiation in comprehension, understanding, projection, acquity, and spatiotemporal tempo. Therefore of what is a given; a subductive relation does not propogate

into the past; but seemingly from a formless horizon; to which is the exact and inexact qualitative foundation of a rigid motion in yet one of the tools mentioned for in optics as in sound there is but one objective; the singular qualitative normative basis of sound to a quality factor; to it's deficit; a minor note to which subscriptively fall's below appelegio.

The equation for space is:

$$l^\beta = l^\alpha (g_\alpha^{\mu\nu} g_{\mu\nu}^\beta + g_{\mu\nu;\alpha}^\beta) \quad (338)$$

This is the multi-colluminated reverse projective domain of a measurement apparatus to it's bare essential quantifier in the tensor calculus. The manifest spin exchange exception of the Pauli Exclusion Principle as a Delta Dirac function and differential Dirac Delta unit doublet satisfies a relation; it is the negative displacement of the entire manifold relation of excess spin in a purely rotational basis; to which is a freed moment of equivalent displacement to division in yet an eigenbasis and eigenfunction space.

That of the exception is the trail residue of a 'past fact known intimation at physically associated regress of a world condition;' that of an associate of 'cause' and of 'effect;' often misunderstood for in that of alone holding a past associate - *for effects lead to causes*; to which is that of a determinant of the closure of the group of spatial translations; a motion. This motion is capacitated by a 'lead' to unoccluded prescription at an inexclusive relationship of yet two through two; to which is the naturalized action of the Universe.

Mentioning

Scale and Degree are the only qualities of 'form' and 'shape' - hence this world is determined (although in a difference sense) within and of a true machine; and that of 'outside;' to which is counting and countable; there is formed a schism; that of body; space; and particle; therefore as particles for a machine are dependent on 'exchanges' - of point's or wave's that of discernment of enforceable consequence is potentiated by regularity.

Two orbit's may fall under a particle and space indeterminacy to the separatrix between any two particle(s).

- a.) Spin and exchange via separatrix under the ground state; stabilize to reversibility of coherent statistic.
- b.) Hidden eigenvaluation connective to cause and effect as limited to [d,A] but neither are representative.
- c.) Inertia and magnetic moment break and bifurcate into two of a dynamics and a statics.
- e.) Inertial orientation and gravitational orientation break into two of dynamical and static evolution.

"The two variable's of η and ρ break in $\delta(t)$ and $u_1(t)$; hence spin and spatial 'extension' of form and shape disconnectively produce an empty condition of mutually unheld spatial eigenfunctional valuation to which is the quantifier of space; displacement of one equated mass for one equated energy eigenfunction; the gravitational component; one spin half serves to stand with equivalence of a displacement of all... therefore with two we have a solidity of portion; that

of magnetic moment and inertial orientation with angular momentum spontaneously symmetry broken into electromagnetism and gravity."

f.) A count in one for what is two decimates 'nether two; to which is not one;' we may therefore with that of mutual displacement have two discernable existences from the question of 'one or zero' under any given equivalence of physics upon order; with what is the following...

g.) As inertia is summative and subtractive; that of one phase breaking of two frequencies determines that of a sequence; to which when one lowered overtone exists; it manifest's the breaking of the threshold on lowest energy; sinking the system; and explaining mass; for what is cause in that of dual harmonics under mutual cancellation of amplitude; but occurrent at a more robust inertia...

"Therefore superconducting phases occur when exchange and displacement of all spin 1/2 particles symmetry break via degeneracy and superposition with lower frequencies 'standing' of contribution to inertia instead; that of dynamical lowering and energy diminishing; the loss from overlap in [a negated] superposition and a superposition; hence any three agent's (necessarily) mutually possess the capacity of aggregate formation; both attributes [d,A] in two particles therefore reside in a scaled and impermanent condition; hence above a separatrix breaking; the missing space of singular causes and effect's plays no role only to quantify space."

"The equipartition of what is space is therefore the missing-particle for what is a particle of space in what is a unification of therefore, cause, order, directrix, segregational, and average; etc... The displacement of spin to which is always positive within the algebra of equivalence with all other spin's (turned inward-outward making no difference; the reversal of the singular causes and effects to which is eigenfunction and eigenvalue void) and of empty cause but a 'contribution' of negative displacement (as space); wherever, therefore the integral of a scale of measurement is the void."

This happens when a cascade of orbit's fall's through the differential 'web' of separatrices of kissing point's in the flow of cause and effect; however thing's may be; the real world is clarified by that which remains; order. For what is a determination of cause and effect; there may be no other natures of cause and effect; besides those treated in 'independent' model's of electricity and magnetism; and gravity. For of what is consequential this makes the difference (within what is found of order) between two chaotic system's; under contact relation for that of inertia and orientation are all we-are-left-with to the system of it's subscription; all quantities universally deriving from this breaking within and of 'general relativity' and 'quantum mechanic's' therefore these two are unified upon particle, space, and energy; and that of a particle notion contrasted within of what is a superposition and it's absence under exchange defines via-displacement the quantification of a spatial interval and quantity. The repercussion of that of inertial breaking is a spatial breaking; hence this represents the breaking leading to the origin and creation point of the current aftermath of the cause of the universe; and it's consequent 'rule' of determination; if and only if there is space is light occluded from a connective.

After knowing:

- 1.) A measurable symmetry breaking occurs between magnetic moment and inertia.
- 2.) That of an orientation and coordinate spatial flux is chosen.

3.) This has to do with a differential enfolding of cause and effect between particles; and leads to the production of spatial measure.

That of a shift must occur; for space, energy, cause and effect, and particle notion's are involved...

I need lay out that of a prescription for a decision as to when and where this occur's; for now I hold the limited example of Superconductivity; to which inertially and magnetically breaks for the following reason:

The magnetic only solution (above) indicates that a renormalization occurs at the magnetic only fixed point in the flow of the theory. Second to this; is the potentiation of inclusion of local to local terms of an electromagnetic variety. The solution given by that of the (above) indicates that when we uniformize and unitarily procure from the electromagnetic solution to a dual in the vector field based contingently around magnetic and electric solutions; that this precipitates electromagnetic symmetry breaking; by that which is a separable contribution to the spin wave geodesic equation. There are only two elements of the theory:

1.) Renormalization to electric only and magnetic only solutions; precipitates a violation in the superposition of the Dirac Electron Equation to Pauli Exclusion Principle locality bridge with logarithmic wavelength compensation of geodesic phase of spin-waves to electron mass and time decoupling from (2).

2.) Renormalization of the local to global to local theory of the uncertainty relation that derives of certainty in relation to a physical and acausal disconnective of free determinism precipitates superposition to spontaneous symmetry breaking of the quantum states in light and mass below a threshold set wavelength of light (Compton) wavelength of spinwave to charge hole.

In continuance; the result is spin charge separation from mass and inertia with symmetry breaking of electromagnetism from gravity precipitating a decoupling of matter from light and wavelengths of De'Bye from Compton to which ensure universality of an inductive conditional in that of spin and charge (or hole) delocalization-localization phenomenon in a unitary lowered energy potential of genus one beyond the wavelength of repulsion; asymptotic to a coupling below the threshold of inward or outward electron pair pair global to local pressure. It is that the renormalization in the ultra-small scale goes to infinity on that of the electric distance when it holds that the Debye wavelength is below the Compton; to which the electric field re-normalizes to zero strength of repulsion; and magnetic symmetry insists a universally finite (unit 1) attraction. This is a result of relativity participating in the local limit of co-inertial utility in the argument of motion-free inductive transformation to a mirrored re-action of infinite renormalization of c in the limit of approach (null coincidence informs/ces that of asymptotic freedom); for in that of $\frac{v}{c}$ the logarithmic regularization goes to $+\infty$ to which the electric field and effective distance go to eternity. Thus the two objects of electron hole and electron opposite hole form a polariton and are freed to attract at a charge of $2e^+$. The charge is reversed for in that of the mirror effective distance of a 'hypothetical' electron at infinity; and one super-imposed at some (hypothetical) finite large distance to which are polarized outward-inward. The laws of physics go forwards and in reverse.

This is simply the result of meeting the uncertainty relationship as in that of the outward-inward space of two normalizations producing an infinitely extended re-action when slower than the

speed of light; the matter cannot keep up with the charge state; and so matter is in suspense and blocked by light; to which the relativity theory finds support to be a re-action deduced from the limit of c ; the superconductor; at rest; participates in a phase in reduction by algebraically a blocking of light from reaching the first occasioned next nearest neighbor; but not! that of the next-nearest-neighbor. As a consequence uncertainty folds. The re-action is that relativity is reversed; to the projection meeting it's annihilation in that of a withheld electromagnetic interaction of reversed variety at short distance. This is the same as action and re-action; which are of course parallels. As a consequence light find's it's reduction in a similar statement to relativity. Durations in the infinitely small scale d are reduced in measure under a reaction to which they concur to being larger contributions (at small renormalization scale) to that of the integral \int ; of which is made smaller.

This does in no way refute Einstein; but proclaims he was correct; as in that of duration becoming larger; under a small scale shrinking to zero; the curvature to which is the differential dominates; and the local term refutes the large over similar scales. After all; that of two closely placed iso-symmetric pell's do not balance but to zero scale; the uniformity of the debate is that a reduction upon c is self-consistent with the renormalization. This alternatively can be seen as the limit (re-inforced by conductance going to infinity with pairs produced by symmetry breaking) of $c \rightarrow 0$ comparative to a phase delay. Attraction is the natural result of a phase delay in that of the Green's Function; the first illustration in comparison with BCS theory. This is that the charges may avoid one another in time by being in a different position in space. The inverse (reversed) limitation is that of either side of a mirror; to which they are eliminably precluded for in light of an immediate nearest neighbor; that of the second nearest neighbor via superexchange is at a co-local distance closer in phase space. Hence it is predicted that ionizing a material produces hypervalence.* When locally isotropic groups segregate below a wavelength to which spatial segregation is superior to what is time as an anterior limit of the laws of physics a spontaneous symmetry breaking is produced to which produces the requisite preliminaries for superconductivity.

As akin to the manner in which space and time 'fold' to create a finite circle from an infinitely long one; when an orbit is analyzed of a straight line in a curved space & time; as when superconductivity is manifest; the finitely long line of interaction 'folds' to produce an infinite orbit in the curved space & time of the interaction. That is to say that the antipodal relation hold's; and that the less-than-unity normalization group of the spin; (to which is four dimensional) relaxes the orbital constraint to it's-fullest; that of a gauge group then to which is negative in conversion of magnetic becoming electronic and electronic becoming magnetic; with a reduction from the speed of light rather than an accumulation to the speed of light; as if participating on the other side of a mirror. This demonstration states that all additional that is required is exchange of field for particle pro-perties; and that of the charges will attract within the ranges of a standard deviation; there being two wave like frequencies and wavenumber's the result of a phase difference congruent with conversion to angular coordinates.

The definite two reasons for superconductivity are therefore:

- 1.) Time dilation is stationary-in-the-moving-frame to which the 'older' twin of the two electron's is with the alternative particle; it's uncertainty within relaxation to a lower threshold on that of energy per unit.
- 2.) That of when taken as-two in the two-body particle system; that of the exchange motivates

that of the indistinguishability of the derived terms of spin-orbital coupling and curvature; to which fall equivalently.

The result is:

- a.) Interchange of viewpoint's to which below relativistic consideration; the probabilistic independence of results in quantum mechanics invokes that of a conservation to electrons participant of a closed viewpoint.
- b.) Interchange of electric and magnetic field; reasoned from to the mirror instead of from the mirror; to which what is far is local and what is local is far and what is repulsive is attractive and vice-versa.
- c.) Via spin statistics; measureables and measured interchange role's to a sign change on attraction and repulsion via that of topological argument; wave function collapse and decoherence interchanged to attraction.
- d.) As a consequence like charges attract and opposite charges repel; to what is the inversion of the laws of physics; that of a threshold below which there is identity within which the equations are identical in spin and charge; and to which the solution is given in term's of soliton's and their admixtures; a solid pair state.

A solution on superconductivity; to what is Complimentarity & Displacement Invariance via and of Quality of Regularities... That of Composition Ordering.

Composition Ordering is found then as the systematic and spontaneous manifest symmetry breaking of the universe; the point of Parsimony and the emanation of an ordering principle of momentum and energy from space among General Relativity (Inertia) and Quantum Mechanics.

- 1.) Indistinguishability is afforded for either probabilistically free dependence of quantum mechanics in particle; to which as determinant of eigenspaces of vectors and values under exchange are found degenerate.
- 2.) Time dilation to what is via a variety of superpositional argument with exchange freely held in either particle invokes a resolution to the twin paradox; whereby each particle relaxes in quantum energies.

Therefore:

- a.) Either experiences an attraction to which is universal with the formation of a gap to states.
- b.) The electric and magnetic field of far and near invert in place for attraction of like charges.

Regularities, Order, & Chaos

First; there are labeled two kinds of interactions:

$$\xi : C \rightarrow B \rightarrow A : A \rightarrow B \tag{339}$$

And,

$$\zeta : C \rightarrow A \rightarrow B : B \rightarrow A \quad (340)$$

We limit ourselves to one continuous degree of freedom in $x(t)$ and one unit doublet, u_1 . The question is; is any admissible shape or form potentiated; or more deeply; does $x(t)$ have a **resulting** shape? u_1 is the unit doublet; and is the differential of the Dirac Delta function.

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (341)$$

Where $*$ is the convolution operator and the previous is it's equation of evolution. The identity of it's trace result is:

$$S * id_X = \eta \circ \epsilon \quad (342)$$

To which defines it's existence.

The question is; "For some dimensions (≥ 3) is either or both of ξ and ζ forbidden of individual particles?" A process of event's is assumed to not-overlap with another; in which case it is advocated that process ξ or ζ take place; but once ξ has occurred; it is forbidden that ζ occur by the 'test' we will impose. An interesting thing happen's when we analyze (3) as a generator of a form; to which is that a symmetry develops in the evolution equation:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (343)$$

To which is the generator of an Affine algebra... The residual element(s) of this world are taken as point(s) and wave(s) on an equal foundation... therefore there are two more factor's:

1.) *Pauli Exclusion Principle*

2.) *Identity of Forms*

$$\Sigma \mathcal{O}(t) \equiv \mathcal{O}(t) \quad (344)$$

To which t in equation (5) is an enfolding of basis element and differential of x ; a curve's singular dimension... to which is taken free; but co-exists with no upper-bound. The product-sum equates to a limit of c ; to which as a conservation $\alpha = mc$ is the ordinary Compton Momentum; to which electron's or proton's cannot fall below and that of a is a momentum. t is therefore a relativistic group to which 'factor's' the equation... Therefore as one can see from the generating equation of (5) the equated variance is a mean to which unidirectionally prohibit's backward propogation by the following **fundamental** lemma.

The Arrow of Time in Relation to Order: *"Nothing of a 'future' tensive-&-physical [event-horizon or event...] propogates (back) through two opening's in this world; for what is a slit; [double]; such a process is forbidden for that of the provision that an even denomination of multiplicities exist with [unitary] doublet & mapping of surjective-onto provided manifold cover, when equated to the provision that equivalent extensive displacement is the provided pre-condition, for one tine is mathematical."*

Co-Determinant Evaluables

The provided [or perhap's so much as unprovided aim, process, end, and deficit] for in phenomenological contrast undividedly expresses the inward involution and evolutionary truth of this given world upon that of [in the latterly expressive basis and translateral open expressive

formation] of phenomenonal contrast to provisional truth in the outward and closed expression of a higher dimension, - to which is the localized expression of what we call 'time'. That of the outwardly formative truth, contextualized, for in comprehension of one's character(s) and pluralities of suppositional mathematical and ideologically driven [or processetorially co-determined truth valuations] provides for an estuary of economies of choice in plural or monosingular lateral (transpotional) basis of mathematical environmental variable variable set relationship. This is what is formerly called 'spooky action at a distance' or that of 'entanglement'. That it is the monodirectional basis of a symphonic, gestalt, estuarial, or codified instrumentation in a method-call upon the mass-assembly and 'assembler function' of the 'Mother Theory or Evidentiary Classical theory-basis'.

Without which we co-determine a valuation, the supposition is encoded in a heirarchical basis of what is called 'order' and bringing order to chaos is the activation [perhaps in this limited sense - to a hypothesis of free will at a limit] - of cognitive variables, their estrually provided backing in physical basis and their interoperable sense. That determination of one variant of the system of the gestalt defines the relationship inwardly (to an abstract negative-quotient (here known 'imaginary') mathematical basis) of the entire assembly of all co-determinant and inter-dependently woven pieces. That 'we' remain a synthetic and gestalt semantic truth of a world is perhaps an apparent illusion or of choice, contradiction, or ever-enfolded, - even-so manifold - or appreciably selected truth. It cannot remain that 'we' are a gestalt pattern, nor of a truth to an illusory relationship (for even so a mass assembler or that of a gestalt formation) does not admit mathematical innovative 'parsing' - in this analogy to the potential natures of machine... but we are in fact inextractive upon a domain of it's surveyed preliminaries to a co-dependently arisen and ever-enfolded basis, but of the physical, and to a contradiction, neither so of the 'empty' property of a coextension of a heritage. Thus that we inherit and are capable of inhering 'certain truth's' in the form of laws, codexes, and philosphies, as well as artist work(s), we neither so discovering this reality, but indeed - and it is definitive - a coparticipant in creation.

Thus for the heritable truth of an identifier to process, it is a movable identity. That we-relate to fictional contrast in a superlative truth of plurality, it is of content, and not temporal stuccation - to which is the codified definitive rationalized basis. Thus we work with two patterns, (in some given sense) one-physical, the other mental, of with unto a horizon at-placation to a proximity do not differ - but in a substantial manner - from the non-locality, and 'global' stipulation from which local event(s) may only (exclusively) be prescribed. Thus the equation derived by Albert Einstein to the Einstein Podolsky Rosen Paradox, in relation to momentum advance, carries simply-put a phased acceleration to the analogous wave prescription of the gestalt supposition of a 'background'. With this in mind, the hidden caveat, is that gravitation is projectively an involute for that of the supposition of a declaration unto a third eliminated variable of consequent pattern, within physics (Quantum Mechanics and General Relativity) and mathematics, for their 'hemotopic' derivative manifold fractional (irrationally finite - or rationally infinite) relationships at the limit. Thus the derived qualitating fact is that:

$$\sigma\chi = \zeta^\mu \mathcal{O}_\mu \tag{345}$$

Therefore 'from above' - phenomena are the inheritance of descidual pattern formation upon what is phenomenological of that of a derived theorem of it's classical gestalt formations and conventionalized projective basis of equative expression. That this derives the known formation of a mathematical (and indeed quantal-mathematical abridgement) - and that of a physical (redshift - of temporally provided 'knot') to that of gemometric curvaliear basis... Gravitation can be known (in advance) to finitize the admixture(s) of non-locality and global relationship of

that of the inheritable process of locality, and vice versa, vis a via the $SU(2)$ basis of neutrals-lagrangian-splitting. With this the Mobius, and the Circular arc invariance remain the only hidden invariance (unitary) classifier(s) within a dimensional context. With that of two dimensions the restriction is that the lagrangian is a limit of periodic and circular involution *upon* what is called angular momentum, and that of non-periodic and noncircular evolution. Thus we find the spinning top is explained in a world with unique (*Quantal and *Relativistic) expressions of a mathematical and physical nature at all points, with the 'regularity' of a balancing pivot point. Thus in the end, we find that exact* and definitive certainty is provided in the aim(s) of the speculations of a given theorem of this world, but, for in the restriction to which no system of clocks and rods may structually produce a solid 'background' - it is prohibited that there are an infinite teir of such-theorems, without boundary for that of mathematical stipulation of global and local inheritance.

To this end, a machine is defined as that which locally and globally (distributively or non-distributively for in a singular essentialized 'agency') processes inheritable 'role call's' in the evidentiary up-teir beyond it's nexus of instrumentation. Thus, interference (to a contradiction of mutual reinforcement) is capable of a delay in the expiry of Schroedinger's Cat, but to it's naturalized identification and in an alias, - the divided principle that we cooperatively take part as subjective formation and gestalt order, but not of ordinance in that of a world with an environment. Thus human(s) appear particular among the animals, for we know our names and allude to a purity of subjectified stance within objective interpretative validity of the basic co-moving essentialized attributes taken into consideration of a free venting and open relationship with that of a 'world'. That a law - to a limited critique - may be explained as a derivative of religious intentions, is valid, but for that of a freely identified belief, it is a knowable scientific freedom, or to a world of world(s) [in such a system] - a scientific theorem. Therefore religion teaches in some sense the doctrine by which we re-arrive at a scientific truth of any two provided given knowabilities. For in imagination, not only is a name a supplication, illusory, and a contradiction, but not of co-dependent arising, nor of but a cooperative freedom of one world versus another, of a relationship in which three dimension prohibit that of five, and that of conveyance but yet that time is without local prescription, to any then justified globally identified 'brane'.

Disambiguation

It serves as a model template to consider flow(s) of Lebesgue-measure (1) and (2), for which the boundary is defined. The prior stipulations hold with practical validity, however the treatment of a mathematical correspondence is wanting for integrals. That it appears some nature of *new* and general Gauss-Bonnet theorem observations need be made. So it is here we take departure from the 'mono-singular' correspondence of De'Morgan's law's to that of a multiple-quotient basis. Very much of the old structure remains, however the supposition formed is ad hoc and untested. It is visa-via the observation that gravitation will be of it's normally evaluated discernable magnitude, but that of the quantum nature of the superconductor remains emergent, and of a valid energy to mass formulation of equivalence. That eigenvalues and eigenvectors discern for which there are imputed bases, of naturalized implement at delocal and classical layering(s); the ideal is that the mathematical archetype of this world suites the incredgelousless of a physical boundary to point-plateau. That the impediment to this theory is real, we are going to make a guess at the naturalized formation of archetype of gravitational and quantum unity visa-via the superconducting thought experiment, with positive mass.

The ideal is that:

$$\Pi\left(\int QdV\right) \oplus \left(\int GdV\right) = \int_{dV} \Omega(\delta_i) \quad (346)$$

Thus the gravitational injection of a quantum particle at first leads to the causation of wave function collapse and decoherence at the naturalized rate progression of unity in linear and linear terms, thus that the quantum 'object' is a residual of a 'gravimetric' obstruction and delineation. Namely, that the surjective limit of an 'archetype' in gravitational and quantum language is a synthesis of the direct associate under a Gauss-Bonnet theorem. Thus, - that object inhere of properties in numeric type one prior subjective and qualitative quantifiable mean for in that of exposure to which the Gauss-Bonnet conceals without measure. Thus it appears manifest the universe is finite and without boundary... a four-torus within a three-ball. The caveat is that quantum invariances are spoken of in terms of the codification and delineation of manifest relativistic measures of a finitely provided translation table. Thus that mathematics is a pre-conceptual notion, but herein where physics exists, it is prototypical.

The Q and G operator(s) form the synthetic to which energy is associated with mass-curvature, and that of a gravimetric field induces a quantum transposition, thus that there is a secondary article in bearing...

This is that:

$$\Sigma\left(\int QdV\right) \oplus \left(\int GdV\right) = \int_{dV} \omega(\delta_i) \quad (347)$$

Thus the conjugation of a 'form' with a 'form' is the genesis of a given form, and that of the cyclic nature of this world is a multiply domained and established 'rippling' of former into latter yet produced, - that this is not entirely 'flaff' - it is that form is *of* genesis, - to which stochastic genera provoke displays of one and another(s) dictionary of established usages in the information problem. Thus, - that the firewall paradox really is very much instead a difference of vantages approaching a commonality of therein their own and alike of the variety of the formation of a lesser from a greater. That the above equations state instead and rather that there is a 'residual-piece' from which two formations are of the genera, it is immediately understood that the spin problem of $\frac{\hbar}{2}$ is the fractional offset of a mathematical stroke and slash. That the quantum topsail may be modified to suite the gravitational of a new nature in a classical domain, - that of two residual measurement processes hold true of equation (219), namely that the advantage of one measurable domain for another must be replicated upon which there is a lower domain 'below'. This hold(s) of temperature, thus that the **q** theory extends 'below' and the **g** theory extends 'above and below'. This is the ramification of both topology and that of the linear nature of the second equation above; - that of algebraically greater energy upon what-would-be understood from that of entropic relationship.

Thus it is the general picture that mathematical 'types' exist to-which they are remotely and locally encoded of identity, - but that physical types are locally and globally encoded by a law of gravitation. That the local is divided, and is the many, - it hold(s) that these are really the same law, for of that of spaces L(1) and L(2), to which reverse, attach, separate, and combine by the same means. This is the expression of the Cosmological Constant, to which is the displacement of one theory for in another, either side landing right side up... Thus there is a way that things are.

Thought Experiment

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity.

The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable from the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as the integral of a field of curvature:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (348)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (349)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space. For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect complete.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ . In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (350)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. If there is no equivalency we could attribute outside factors, if there is equivalency then Λ and Ω show equivalent and opposite curvatures. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (351)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (352)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero. Thus the Meissner effect and energy conservation can be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (353)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (354)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \tag{355}$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase. For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor. Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \tag{356}$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z)\hat{z} \tag{357}$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \tag{358}$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through

space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \quad (359)$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z) \hat{z} \quad (360)$$

And the superconductor with a magnetic field:

$$-\mu f(z) \hat{z} \quad (361)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma \mu f(z) \hat{z} \quad (362)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma \mu f(z) \hat{z} \quad (363)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at its location, equation (16). The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (364)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (365)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer. This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (366)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present location:

$$v \rightarrow \gamma v \quad (367)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor

within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned}
\vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 \left(\frac{v \gamma dt}{cdt} \right)^{2n} \\
&= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} \\
&= -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} \\
&= -\mu^2 f(z)^2
\end{aligned} \tag{368}$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \tag{369}$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia. For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics. Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must

change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (7) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system. For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (370)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. So we must hold as true that:

$$\partial_{\mu} \log(\Omega_{\nu}^{\mu}) = -\partial_{\mu} \log(\Lambda_{\nu}^{\mu}) \quad (371)$$

This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general covariance within quantum mechanics.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

Experimental Implications

This suggests two experiments. One to measure the rate of separation of superconductors and magnets under freefall, and confirm if this is a generally covariant acceleration multiplied by the

metric. (This has been performed with a confirmation to one part in 10^{-12}).

And two, a practical experiment for confirmation of the general covariance of quantum mechanics. A magnet levitated to varying heights by a superconductor as controlled by a current, and subsequent measurement of the mass of the superconductor by photons in a transverse direction.

Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer correlative at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating the force of gravitation and the curvature of space and time. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame; the realization and proof of general covariance and the theory of gravitation.

As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical. This reduces the problem of the extension of quantum mechanics such that coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses. This implies that absolute frame independence; as the statement of general covariance implicates that any given whole system of parts exists at a lower energy momentum than the given whole as a sum of individual parts. There is no other way to reason about the Universe making explicative sense.

Therefore what is measured by an observer that is stationary with respect to any given center of mass of a system is a physical energy momentum as determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, any given system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

This seems to be in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \tag{372}$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (373)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (374)$$

Comparatively. For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content comparatively.

The analogy is actually quite simple, for what happens is that from or to the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (375)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system; in motion, where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has actually occurred by the above quantum mechanical analogue condition of general covariance.

Conclusion of Mass Gap: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is an accelerated interpretation of this state under the absence of equivalent motion to all subsidiary elements to that of the external observer; an impossibility. This gap is guaranteed and real by observation from the indistinguishability of the inertial and potential relativistic factors under equivalence for any transition of a quantum nature; explaining the stability of matter; and the absence of antimatter in this universe.*

Global Considerations

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of its individual parts. From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding.

This is the prediction that the quantum states repel and attract at the same rate electromagnetically and gravitationally, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply. A 'perfect' linearity agrees identically with this result, because if space and time are also measured

as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable in proportion to quantum mechanical difference in relation to local conditions; as only a pure displacement produces a perfectly linear slope as rate of perceived expansion and ratio of the rate of accumulation of distance to accrual of energy momentum content; given that only a perfect proportion agrees with the equivalence of solid relation: $E = mc$.

This is in fact the direct statement of the equivalence principle; and is one to one with the universality of free fall, the inherent nature of inertia in all things of change, and global & local principle equivalence of energy lowering in relation to universality of change as a property of differential equations with a definition of velocity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of energy content with distance, and colocality throughout the universe only within simultaneous cross sections of space **in time**, we observe when looking out into space and across time. In the given tendency to the other limit; we find this is the same calculational deficit of that of the red shift of the cosmological constant; therefore given as the ratio of quiescence to prescience; weighted as the constant rate of velocity of expansion over distance is as:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \quad (376)$$

$$\approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (377)$$

The metrical field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (378)$$

The effective and full field equation is:

$$G_{\mu\nu}^u + Q_{\mu\nu}^o \tilde{T}_{\mu\nu}^g = 1 \quad (379)$$

Where the principle component of the gravitational time is a division of potential space and known temporal relation in two of that of each future emanation of indivisibility of gravity and sound by that of what is an effective is \sim for which the raising of the operator for then in what is the given of two of order is then in a formative relation to which are any two from out of one time as two disconnected and independent numbered dimensional indicial relations of multidimensionality of nondescript closure in one.

The given o is then the whole of surrounding quantum relation so that of former in that of what is the given of any surrounding bubble of quantum events in full retractile give; to that of which in what is for then the quantity a given of the full relation a complete space in either of what are two imparticle ends of full volumetric capacity as the quantum known Q .

The known of then the electromagnetic displacement in either a full separable notion or even so as two alone; as the inseparable notion of another is for what for one is the g as raising of either then given independent unknowable of translatory part in the given one; the freed differences of which are the metric and it's encompassed; in that of full motional freedom.

$$R_{\mu\nu}^o \tilde{G}_{\mu\nu}^u + B_{\mu\nu}^q = 0 \quad (380)$$

The massive property possessive of a formative whole in that of any and each; all; and any of inclusion of distinction between the four and four vector relationships with that of the whole in freed unitary evolution of all parts is R ; then the secondary relation of either interior time like locale in the given of what remains given causation; as acausally disconnected to either the surrounding notion of any particle or open e .

The \sim is the full capacity of the transitive free clear relation; to that of the free interior single four dimensionally known; place; as then in either a given μ and ν and that of what is the co-independently granted G as gravitational field; 'smooth relation' (not to be confused with gravity and likewise 2 other field properties.)

This identifies the problem with that of relativity for then in what is a complete difference; then what is a \sim as then the base of all; that of two connected gravitational G in quality; of light in all that which weighs as much as subsidiary notion; the opened end of conductivity B of group and phase velocity and the independent relation to either considered antecedent portioned charge q of; and in that of the whole in part as o and in whole as \sim as closure on that of each fluid dynamical free boundary to that of volumetric enclosed quantity; a principle as known as displacement in the sense of flow.

Consider the influence of different metrics or spacetime geometries on this phenomenon. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term.

The gravitational curvature of space counteracts this effect as the sign on the energy density is opposite that of the traditional terms as a contractive force. Hypothetically the presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to quantum mechanical degeneracy pressure of repulsion; the exchange integral has a constant contribution over the whole wave function between any two hydrogen atoms. For the calculation of the cosmological constant; these are taken as the predominant interaction because of the identifiability of the two sources of equivalence and in addition that over 90% of the universe composed of hydrogenic gas; the orbitals of which for helium (the next most abundant element) are close in size to that of hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wave function is:

$$j_u(x) = \frac{1}{a} e^{-\frac{x}{a}} \quad (381)$$

Where a is the hydrogen ground state orbital size.

The distance between the centers of these wave functions must also be incorporated. With an initial condition of complete overlap the Lorentz factor from acceleration can be modeled by:

$$g^{\mu\nu} c_{\mu,\nu} = e^{2\beta dg} t_{\mu,\nu} \quad (382)$$

With β the boost parameter and the acceleration. The condition for conservation of energy under inertial separation is that the metric of contraction cancel the distance dependence, coincident with the condition that the infinitesimal of curvature being a constant. The product of the wave function overlap infinitesimal occurs with the above metric and is given by:

$$\begin{aligned} & g^{\mu\nu} |x^\mu - x^\nu| \\ &= \frac{1}{a_0} |t_\mu - t_\nu| \eta_{\mu\nu} \end{aligned} \quad (383)$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_\epsilon (e^{2\beta dg} e^{-2\frac{dg}{a}}) = 0 \quad (384)$$

From this:

$$\beta = \frac{1}{a} \quad a_0 = \frac{h}{m_e c \alpha} \quad (385)$$

The variable β describes the acceleration of the atoms as they move apart, where a is the first hydrogenic orbit radius; for which one exclusive spatial relation is excluded in the determination of interiorly inwardly directed subduction.

The factual relation of time to space is then an invariant for that of evaluation of the metric of space and the metricity of time; for then in either of these as gives light exceeds measure for in that of it's excess unit interval.

The curvature term then become's:

$$\Gamma_{\mu\nu}^\nu = \partial^\nu \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a} \eta_\mu \quad (386)$$

Then, Λ become's after integration to get total energy as:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^\mu|}{a_0} - 2\frac{|x^\nu|}{a_0}} dx^\nu dx^\mu \quad (387)$$

$$= -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (388)$$

This suggests that the divergence of the curvature multiplied by the quantum energy is the source term of the cosmological constant. This mass is the cosmological mass with negative mass and energy content of every interaction. Λ evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \quad (389)$$

$$\approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (390)$$

The quantity as measured is $-10^{-35} [kg][m]^{-3}$ under reduction to zero. The value for the cosmological constant is given as one order higher than to the right order. The speed of light is used in the boost parameter, as the expression for the boost parameter is: $\beta = \frac{v}{c}$. H_0 is the rate of acquired velocity per distance, the boost increasing with distance.

The per meter unit of energy must be multiplied by the conversion from matter energy content to gravitational curvature in the metrical field equation (an inverse distance per energy) to produce

the curvature of spacetime.

This curvature of space is proportional to the boost parameter per the equivalence principle. When the curvature is multiplied by c it produces the boost velocity per distance, or the Hubble constant:

$$H_0 = |8\pi GEc| = 16\pi\alpha^2 m_e c^3 G \quad (391)$$

$$\approx 2.19201 \times 10^{-18} [s]^{-1} \quad (392)$$

In reality, H_0 is measured as $70.8[km][s]^{-1}[Mpc]^{-1}$. Converting this to MKS units: $H_0 = 2.29 \times 10^{-18} [s]^{-1}$. The discrepancy between this result and the quoted value can easily be explained. The mass content of normal matter causes a positive contribution to the curvature over spacetime. This induces a repulsive effect between the components of matter that cause this field as they persist in inertial freefall. With this constant there exists a critical density for condensation or formation of massive bodies.

This extra repulsive contribution is equal and opposite to the attractive contribution because gravity generates extra relativistic contraction factors and thus the degree to which a metric is hyperbolic is actually enhanced by the presence of matter content when this term dominates, as it would in the early universe. Thus the Hubble constant is enhanced in the proportion of normal matter content to total matter content of the universe. Normal atoms are approximately 4.6% of the matter in the universe. Considering these as gravitationally inducing, they constitute an extra effect of repulsion. With this:

$$H_0 = 16\pi\alpha^2 m_e c^3 G P_o \quad (393)$$

$$\approx 2.292844 \times 10^{-18} [s]^{-1} \quad (394)$$

Where $P_o = 1.046$ is the proportion of ordinary mass to total mass content of the universe. The enhanced repulsion with a background metric and a constant negative energy density promote the viewpoint of an asymptotically flat universe. The asymptotic shape is then flat when this force dominates. Given the vast predominance of so called "dark energy" this model is appropriate. The fact that this energy matches the Hubble constant is direct indication space & time is asymptotically flat.

Hence this model is compatible with a flat apparently accelerating universe that is asymptotically flat and insensitive to the exact amount of matter initially present. A useful extension of this theory to determine acceleration would be to understand the ratio of the conversion of matter into light in stars versus the energy content of the newly produced matter versus the radiation produced. This theory may also help explain the development of galactic and other large scale structure.

Hence dark energy is the detection of quantum corrections to chemistry, life, and locality in the spectrum at global scales; the epitome of the detection of a quantum correction at global scales; folded with a general relativistic correction for which are identical and indistinguishable corrections implying a locally and globally flat universe that is neither open nor closed; yet asymptotically closed and of no expansion for the same reason of a principle equivalence of these phenomena as a single phenomenon of displacement of mass into energy relation for which either are identifiable but oppositional forces; therefore a universe that is null invariantly expansive.

Physical Theoretical Connection

There exist scales in the descriptions of both quantum mechanics and general relativity, both of which are identified with units of measure. Each space of constant curvature implies its parallel space of equivalently negative form from the conservation of energy and mass; or comparatively from the one form and the vector form of which departures are separately null invariant.

Therefore particles in inertial free fall either separate or come together as an aspect of these scales and the given energy momentum distribution in either of the theories of quantum mechanics and general relativity. Therefore; as a parallel it holds naturally true that in general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.

Qualified understanding as differing from unquantifiable known's is a given as it is known that this in general will depart as we select different observers with which each there is invariance of result when we calibrate to the observed; or rather that extrinsic nature of each observable is the only inherent property an object's possess. In this physical results are seemingly confirmation of departure from a Euclidean reality.

Preliminary Results

Quiescence & prescience are known as two independent relations and quantifiable means of comparative measure of quantities and measures in relation to each certain quantifiable; by that of either any such given objective observer. With this given relation; for what of one is the differential; & the integral is as separately defined; each of these are as a given independent with three indices as an indicial equation for which there are singular limits to either a given exterior relation or a given interior relation of either or both; exclusively.

This independence and complementarity of form at zero and infinite scale is a result of the quantization of reality into singular relations defining space and time with light as quantum mechanics; and space as gravitation. This as a single consequence is the singular exception of no exclusion of any given frame alternative globally or locally as reducible; for that which is either for both holds exclusively empty of relation for any inner space of relation; and here we find undefinability and that of the given exceptionable relation of null reducibility.

Proof of Covariance

In reference to a Galilean free fall drop experiment it has been noted that the precision with SQUID's is referenced as for the sake of the experimental test of the weak equivalence principle to an accuracy of one part in 10^{-12} . This particular experiment is composed of the interaction of magnets of differing rest masses with superconductors that therefore possess differently quantified magnetic moments.

The absence of a dependence on mass for the rate of accumulation is not only an indication of the universality of gravitational freefall, but also the independence of the magnetic superconducting interaction from the gravitational interaction.

Therefore the relationship between the theories in terms of inertia of magnetic or gravitational form are brought together in this given experiment. Thus this configuration of elements admits testability of a null hypothesis of electromagnetism; for there exists an interval of interaction of the magnets with the superconducting coils of the SQUID's. It is hypothesized that if there were a discrepancy in the nature of the interaction, this would introduce larger error margins than those of the confirmed precision of the experiment. This is the proportion of the magnetic moment of inertia to the massful inertia of the bodies per their given natures of force of interaction in electromagnetism and gravity.

This is not the only observation, but implicates the provability of the Galilean free fall drop experiment as a testable confirmation without the logical inconclusiveness that is an unprovable yet true principle of physics. This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what remains, the provability of the equivalence principle. This is only possible with a secondary interaction for which the mutual relationship eliminates the intermediate middle thirds of unknown.

This is only the case if the two forces remain of a given symmetry, as defined, and if they are truly coexistent in this manner of seamlessness and transparency, and in agreement over general covariance; a given assumption of the holism of physical law. For the sake of the interaction, the net displacement of - and between - any composition of these two theories is hence determined as neither of a zero-sum positive-negative nature, nor of indistinguishability and non-zero-sum. This is a consequence of the contradiction that would be a displacement not co-occurrent with another, nor of an additional other kind as co-occurrent through the process. It is truly an 'empty' relationship within physical law that can be inferred from the given experimental confirmation and observational interpretation.

Of a similar nature in terms of interpretative validity although of a different nature; this result has also been so demonstrated as a theoretical prediction for a magnet falling through a superconducting tube. For this thought experiment it was determined that a magnet inside the superconducting tube will fall inertially with gravity and there is null interaction between the magnet and the superconducting tube.

The two errors of sensitivity are in agreement when taken as dimensionless for the sake of the derivation based on physical considerations; but there is a given geometric interpretation as well. For, the geometric dimension of the quantities although unitless remains as a pure attribute of spatial and temporal dimension. As a consequence the rings of superconducting material embody an areal relationship of interaction; while the path is a one dimensional path like extent. Under the provisions of the comparatively held errors in one there is therefore a non dimensional and logical argument that may potentially exist to rule out such as a dependence of the interaction with the presence of a gravitational law of a similar or different nature.

There is one appealing factor of the experiment; which is that the curvature of space and time will universally attribute an extra contribution of error to the device since the freefall drop experiment is asymmetrical if only the theories are not seamless. All things being equal, therefore, the unprovable yet true statement that is a given hypothetical independent and mutual existence of the equivalence principle within gravitation and quantum mechanics remains as a testable and verifiable principle.

For the sake of the center of mass in the system with the given displacement an error would be introduced if there were any bearing of dependence of one theory upon the other; for the sake that without seamlessness under interaction there would be a departure in the other theory. Additionally, the indivisibility that is the center of energy momentum as a point unto the physical and quantifiable displacement that is inertia and distance may therefore also indicate the presence of any such dependence between the theories. If there exists no departure of the given theory in contradiction with an other for an error under dependence that is larger than that confirmed, it is confirmed that the theories are independent and in agreement.

If true, the theories remain with characteristics of independence for the nature of change with respect to weightless and measureless properties of interpretative valuation of measurement in relation to the measurement standard and quantity. With this shared property, unification is possible, and without it, neither of these would be comparatively established in relation to both of measure and weight of objects. This must remain true as otherwise comparative weight of differing measure or of differing weight for all such physical objects, changes, and events would remain contradictory and ill defined on the ultimate level of physical law in its ultimate form.

When one or the other of two such masses are comparatively weighed, it remains that the one so inequivalent in mass to another and heavier will always outweigh the lighter for a given measure. It is also so too true that two inequivalent measures of mass are also indeed measured as equivalent and indistinguishable for any such two masses for some such measure(s). As a consequence so too is it true that for any such positive & negative equivalently weighted magnitude displacement(s), or that of indistinguishable and equivalent displacement(s) masses are weightless and measureless on this ultimate level of physical law.

Under consideration of the given experimental apparatus of a free fall drop experiment with electromagnetic interactions and gravitational interactions, we may proceed to produce the counterargument: that interactions in the domain of either theory do not alter the results of the alternative theory. The presented argument is simple.

For the sake of different inertial masses and magnetic moments two comparatively tested magnetic bodies, unless the balance of proportionality of these quantities in relation to their given forces are comparatively equivalent with relation to the ultimate layer of physical law and independent, it is predicted that there is a departure from experimental observation. If this is true, the two quantities and qualities of either theory represent physical properties of the nature of displacement & scale invariance. This is true because with general relativity alone; or under combination with an electromagnetic force of the nature of superconductivity, if there were a dependence, it would not be possible to reproduce the results of the free fall experiment under all conditions with a gravitational prediction.

The conclusion of the confirmed accuracy of the experiment indicates a null departure under mutual co-evolution of the two theories under the process of change because there exists null departure from the gravitational result of general covariance for either such theory; despite the fact that interactions within either theory are taking place. This is confirmed as there exists no such departure from the theoretically confirmed accuracy of the prediction; despite differences in the proportionality of any two natures of inertia in the system.

The error introduced by any such dependence between the theories is empty of scale as the

inverse of the parabolic temporal relationship of the path always exceeds the given accuracy of the experiment as a consequence of the separation in time of arrival as dependent upon initial conditions.

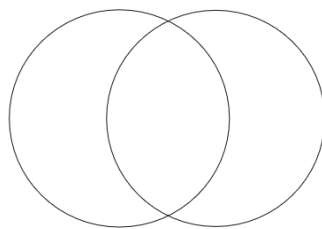
The error introduced by different freely falling bodies therefore is larger than that so produced. Therefore; dependence of these two theories upon each other or in proportion is in contradiction with observation. Therefore, independence of physical law from end to end of a given path is certain and insisted.

As a resultant of the geometric parabolic relation of the common co-moving equivalence principle, the terminus of the path at the beginning represents a dimensionless sensitivity on initial conditions as the square root of the path like error. In relation to the ending as parabolic for the former end, the initial condition is determined bidirectionally between quantitative displacement as proportionality of magnetic to massful inertia in relation to the end of equivalent qualitative change; as well as throughout the path.

Hence this error remains as larger for the initial or former device configuration for local inertial mass & magnetic moment and carriage of the device free falling in space for it's entire path; and errors accumulate for either return. In the local limit for a moment and for the interval of time the expression of the equivalence principle is the same. The undetectability of a departure from the equivalence principle through the straight down path is therefore in direct confirmation of the universality and commonality of the equivalence principle of free fall.

This conclusion is extensible between and in relation to the difference that is established as a result of the collection of the aforementioned statements. These are the hypothesis of alternative theories as mutually result free; the relationship of differing bodies to depart as a result of different proportionality combined with theoretical dependence (which was disconfirmed); and the bidirectionality of the post conditions on prior conditions as equivalently larger in error for either such path. This is indication of the formation of unbiased physical law for the indistinguishable and the displacive.

From this it is reconstructible that logical seamless integration of quantities and qualities is an indivisible relationship of quantity & it's quantified property with inclusion of quality & proper-tied quality for any two such bodies. Upon the level so inferred this is the direct outcome that the indistinguishable or displacive in either theory apart or together are existent as independent and in mutual agreement. This is objective proof that the two principles of physics are independent for their results from interactions in the alternative theory & that physical principles are objectively provable and confirmable under measurement.



2 Introduction

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers. To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in superconductors. Particles are represented by wavefunctions, which undergo virtual processes in which they exchange energy and momentum with each other and the environment. Gravity on the other hand, is the geometry of spacetime. It is taken as a given that particles in a gravitational field are simply moving along straight lines in a curved space. For this reason, it is important to frame the implications of extending general covariance to quantum mechanics. Additionally, it is the starting point for properly posing such questions so as to resolve the Schroedinger cat and EPR paradoxes, because this change in perspective ties together our notions of quantum and space time.

This paper aims to understand independence and dependence of these theories on one another by appealing to consistency when general covariance is applied to quantum mechanics. This is accomplished by using thought experiments involving a superconductor and magnet. In a superconductor a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations. Due to the large scale of this energy gap, excitations to states that scatter and therefore expend energy are virtually forbidden and the material condenses at a lowered temperature to support a state called superconductivity. In this state electrons or holes form pairs and support a state that expels all magnetic fields, an effect called the Meissner Effect.

Comparative equivalence of weight in quantum mechanics and general relativity is a long sought after concept. Little would it be known to that of the casual observer that it also amounts to a decision process; for that of identity of representation and quality or property; to which subject and object fuse into one. The dialectic of properties and qualities relates to the intimation of structure and continuum; of which principles may be explained as referent's of relationships; to which on the meta level there is an identity, agreement, and compounding of the collection of the basic preliminary and prescribed notions; the posited elements of which unify upon a locus of which is derivation and definitive (and in this definitional) of the prescription by which reality conveys to us it's meaning through qualities and properties. Properties and qualities; of which appear manifest in all physical objects and events in the phenomenal world; and to which demand the precise application of conveyance and representation in active and passive form;

convey the rules of action and relation of events of any given system and are both measurable. Found here are equations by way of which weight in quantum mechanics and general relativity may be related by mathematical language to which the prescribed notion is merely the odds of probability as compounded with frame, with the outcome of a geometric setting; for which we require all particles to subscribe to the laws of quantum mechanics and general relativity.

3 Review of Quantum Mechanics

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \tag{395}$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller. As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential. If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity. The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

4 Review of General Covariance

It is hypothesized by way of the equivalence principle that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states.

The condition of inertial states however implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. If the condition of local Lorentz invariance does not extend to general covariance by using the rest mass for inertial states under mutual interaction, the resulting theory would be inconsistent with general relativity. To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from it has with respect to the observer. So as to not violate energy

conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the ultimate viewpoint.

If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated. Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass. The quantization condition that follows must extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

Under these provisions as the equivalence principle must apply to quantum mechanics the expectation of energy momentum is therefore always lower for a quantum system with the inclusion of general covariance, where the quantization is with respect to the condition set by all relativistic factors returning to unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the subjective viewpoint of an observer.

5 Justification; Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

6 Opening:

The reason for superconductivity is that “Electronic Inertial Considerations” (their timescale) with the contribution of time dilation contraction factors exceed the importance of all other considerations (with a suppressed screening) leading to a net attractive effect.

The clue that lead to this discovery is that time has effects on any physical problem; of which time dilation contraction from relativity makes a contribution to both physical insight and physical phenomena in a problem in the real world; of which relates to that of a deep problem when the different phenomenon are combined into a whole; whether from the experimental or theoretical perspective.

The major insight was that time dilation contraction via the twin paradox makes the situation such that from an observer A; their proper time in otherwise equivalent motion of two bodies, of their own clock will be greater than observer B; and likewise for B also in motion; that of the the reference of observer B; for this body, their own clock in their frame will measure greater than viewing observer A.

This apparent contradiction can be reasoned back from the one particle viewpoint into which the special and the general theory of relativity are derived for that of two particles in either relativity or quantum mechanics; arriving at the above result; for there is no contradiction when acceleration is entirely included in a proper treatment; of which deals with this as a shared proper time; the result being that of which is their time under exchange and overlap with superposition.

The different characteristic terms of the superposition formula then take on the form of two equations; one for which superposition is treated independently for either particle; their destructive interference; and that of an other; for which for either particle as a both; when together with constructive interference; there is that with shared proper time; an extra term idealized to that of their configuration when together in a collective whole the two body and one body

derived therefrom.

This makes the treatment of a problem involving one and two bodies of interest that much more accessible; as a consequence of dealing with separable terms for that of one particle in the presence of the other with a given relative interaction.

This affords for that additionally of a relativistic effect whereby time dilation contraction reconciled by the two body problem relates to elimination of the one body problem for the two; in which the situation differs only by the comparative measure and rate of time; to which one body always exceeds the alternative body; thereby having a physical effect on that of exchange and construction and solution of the two body quantum mechanical problem of electrons interacting in metals.

7 Section I: Shared Proper Time

Shared proper time is a conversion factor from superposition in which certain limitations are imposed as a consequence of prohibition to a two body problem alone; which emphasizes one body in a tandem balance with the other; for which one body can evade the other in time as the cost of coming together in space; known here as $\sigma(t)$; and developing as a consequence of superposition into which one body occupies the space of the other by anti-symmetry in time; following the rules of exchange of spin one half particles for electrons into which the states factor; as a consequence of their ordinary electrostatic repulsion.

The theory is that when the electrons transform following the rules of time dilation contraction; they will explore a temporal domain that follows from further away than in reality in time than they are apart as a consequence of separation in space; to which there is a balance; that of the extra time dilation contraction effect supplying the reassignment of particle wave structure with a diminishment of the ordinary electrostatic repulsion into a partial attraction that will be shown to become stronger than the repulsion by a factor of two; to which there is a difference accounted for by the fact that geometrically both particles participate.

- 1.) The shared proper time is the factor of which proper time exceeds the comparative time of that of the other body; by which particle A and particle B coparticipate to exceed each other's relativistic factors; similar to an 'X' shape; an inequality by which either in their other respective frames exceed that of their original frame when viewed by the respective partner particle frame.
- 2.) Shared proper time comes about because of the artifact of time dilation contraction effects to which relativity posits that one is greater than the other; although here we are afforded to say that the proper time of 'A' exceeds 'B' and that the proper time of 'B' exceeds 'A'; to which there is a degeneracy of description and of effect; in that of one exceeding markedly the other.
- 3.) The distinction to be formed is whether one exceeds that of the other only in proper time; or to that of proper time to proper time; to which it is quantized; and the definitive answer is that it is of proper time to proper time when gauged by that of the particle in the other frame; to which the body is quantized; this being the effect to foremost analyze; first; at that of any potential disambiguation.
- 4.) The difference is that of which we posit that relativity has real, marked, and testable effects, one of which is that the excess of measure of one rate in one frame exceeds that of the other frame

in which the same particle is participating with an other; to which both seen either way would exceed in factor and measure their respective ancillary descriptive time dilation contraction factor that of the other.

8 Section II: Superposition

Then to that of superposition; the electrons either participate in a moment aside or to the same one; and of which when there is variance; the question as to if they vary in the temporal direction; to which it is addressed that they either are or are not; but that when additive; it produces this effect; for of what of one there is in that of a superposition in time; the effect is admissible for the reason that how time flows affects more than just space; but that of the quantum wave function; and to how; it affects the distribution in the temporal direction in an exclusive manner of superposition; then there is an effect of two and a square for that of either present.

If there are therefore effects of which the particle is spread along time (and there definitely are) then there is the question of space to which unifies the field's; to which is the only question; as to if superpositions relate over the field of time in the temporal direction; whether it be imaginary or real; but present; being the clue to shared proper time; to which we arrive at a quantum field theory; and the breaking away to that of a genuine theory of the character with which two fields will pair; then as a consequence of shared proper time; that of which unites two bodies being produced as an answer; for that of either together produce more this way.

1.) When superposition is taken account of therefore there is an extra contribution from that of excess in each other's frame; due to the effect of time dilation contraction; which exceeds that of the other particle; making it appear and as in keeping due with what actually happens; one duration lasts longer but equivalent in either frame; non-paradoxically; due to their motion in tandem.

2.) This superposition occurs between the partner particles in such a manner that the effect is doubled; and occurs twice as large as a consequence of their two factors overlapping; to that of a square on the factor; non-diminishing because they are twice as geometrically present when accounting for single versus two body considerations; and we have superposition accounting for this nature.

3.) The effect is therefore twice as strong and squared of it's original strength in non-determinant unitless variables; and of which is not a square root as strong (so as to be weaker) because of the imposition of the exclusion principle; it is therefore as to say that time dilation contraction effects become more pronounced to that of other considerations in the system; such as the screening dipole effects.

4.) This is all as a consequence of utilizing a single and two body superposition rule that determines the equations of motion in which two bodies separate and combine at differential rates; becoming of a bound nature rather than of a free variety; to which when they recombine they are of the full geometric strength of the quantum exchange which ordinarily occurs; only twice squared as strong.

9 Section III: Exchange

The only thing that could potentially prohibit this behavior is if an electron with spin up were not entirely conjugate to its pair partner particle as spin down; to which time being a degree of freedom would indicate a new degree of freedom; but one to which at that would reverse the sense of the symmetry to one where there would be difficulty finding both one up one down in time; with space; as to that of which is confusing because we deal with orientation in time and space; and soon run out of capacity for thinking of this as a plain state; naively however for what of one is of a temporal wave function; it is perfectly amenable to have the counter directionality in space and time; to which they must adhere for that of exchange. The state identified has both orbital moments collinear; in the motion about the center of attraction; to which they coparticipate in entirely opposite spin in space and time; the triplet in which exchange proceeds by a factor of four on that of the reversal of the repulsion into an attraction; thereby occupying a state with admixture of which is with opposite spin and same identical orbital spin; of which relates to that of the exchange by a degree of freedom by which either sees its complimentary opposite spin exchanged by a full rotation; as a consequence of the symmetry considerations of the two body problem; and to which it is quantum.

1.) Because the bodies are bound to each other; they are in a paired state when they are twice squared as strong due to relativistic effects being as strong as exchange; each other implying the strength of the other for they are of equivalence under the provisions of which spin is explained; although stronger for the reason that identically with the relativistic shared time argument twice squared stronger.

2.) Identically exchange is when one particle occupies the position and momentum of the other; but for that of a sign change of which cancels; they both go into each other's states; then reversed; to which the sign on the potential is reversed; the final mention we need of which reverses the repulsion into an attraction; for an effect that is effectively as strong as the coulombic repulsion by a factor of two.

3.) When exchange is amounted for; thereupon in which the states are divided by their spatial extension; there is therefore an effect of attraction known as shared superexchange which produces twice the effect of the coulombic repulsion; no longer carrying a factor of two; for it is dependent on their own frame; to which we see a difference; for by comparison of proper time to proper time in exchange.

4.) This is the final redress of which is that avoiding each other in space and sharing time admits the electrons room to capacitate motion into each other's exchange potential of twice squared the strength; enough to be as strong as the coulombic potential all the way to their closest proximity; the reversed potential enough to overcome their repulsion and bind the particles into a shared potential.

10 Section IV: Electromagnetism

The first inclination is that electricity and magnetism is stronger for one phenomenon over the other; but this is not the case; in fact; they are identical strength; to which the certainty is that the electric and magnetic forces must then take on different forms; to which the answer is that they indeed do; for the direction of localization and (treated on a separate footing) coulombic overlap of exchange participate in a differential off set of shape versus coparticipant factors of

which superposition and exchange are a part.

The clue to superconductivity for today is that of transverse relationship by which the magnetic field is as strong as the electric; to which is owing due to time being perpendicular to space and quantum uncertainty in a manner such that effects can manifest from zero velocity on that of transverse motion; attracting in the magnetic field for what otherwise is a repulsion in the coulombic directionality; in fact this effect will take place any time there is relativistic addition of velocities; for the geometric nature of their addition is empty to a base foundation.

1.) Electric fields via the delocalization along the temporal direction are suppressed; to which magnetic fields by the transverse relation are emphasized; then the interaction from exchange in pairing being just as strong as repulsion; leading to a naked interaction which is just as strong in repulsion and attraction; via the magnetic force; which is equivalently strong when moving at the speed of light gauged to its own meter.

2.) The greater time to which is the resolution of the two body problem relates to a net attraction which is stronger than repulsion; when there is time dilation contraction of the 'opposite situational degree' on that of bodies; then body 'A' attracted to body 'B' because 'A' participates in a longer time dilation contraction and body 'B' to body 'A'; for the very same reason of which is of an alternation and depresses the ordinary repulsion.

3.) The only reason we would have to speculate that electrons attract is to the certainty that is a magnetic effect and interaction that is as strong as the electric; to suppose that the electrons are moving at the speed of light; and to that of the effect that relativity has been 'switched off;' so as to suppose and say that the relativistic effects are fully manifest; and that of which there is a point of relativity non-perturbatively emanating from infinity.

4.) The reason here extends to the quantum theorems; to say that dissection of the two body problem resolves to null uncertainty; that tantamount to resolution of the two body electron problem is the realization that quantum effects can be fully certain when determination of their separable one body problems leads to a fully blown quantum problem; precisely when momentum uncertainty is precisely classical in its given sense of participation.

11 Section V: Summary

After years of inquiry; I have surmised that the interaction is:

- 1.) Geometrically identical to the Coulombic (ordinary) repulsion between electrons.
- 2.) Identically as strong as the ordinary Coulombic repulsion between the electrons.

The idea is that 'Shared Proper Time' contributes compensating factors for which are geometrically complimentary to the 'structure' of the magnetic interaction in such a manner as to attract as strong as repulsion under these guidelines.

With the relativistic 'Shared Proper Time' the contribution compensates in such a manner as to geometrically augment the interaction and 'structure' into a plain Coulombic like repulsion; only it is an attraction as 'Shared Proper Time' scales.

In this 'Shared Proper Time' is the manner in which from particle 'A' particle 'B' participates in lesser proper time when in conversion to frame 'A;' the effect of which is to emphasize the magnetically attractive interaction of particles 'A' and 'B'.

This leads to a situation where particle 'A' and particle 'B' are caught between the extremes of repulsion and attraction at a strength of the ordinary Coulombic interaction; but where the screened repulsion is eliminated for that of a real attraction.

Geometrically the effect of 'Shared Proper Time' and relativistic conversion from frame to frame admit an interaction therefore that is strong as the Coulombic repulsion; and twice squared as present due to exchange; by way of which they overlap.

This is due to accounting for the spin projection and the occupancy of states; which are twice squared due to there being two densities; and two particles; of which participate then in a singlet state of d-wave origin; attractive by accounting in number.

I have therefore finalized my inquiry into this (difficult) topic; and would like you to comment on what you see is relevant here.

12 Section VI: Commentary

The answer to the paradox is that the effects of relativity and quantum mechanics are both real; and not matters of perspective or vantage; but find a solid footing in that of either other's arena's to which they predominantly spend an occurrence of time; the effect twice squared as strong because both electrons are present; and occurring at all because the comparative measure has one at smaller comparatively to the other; to which any relativistic time dilation contraction is referenced to the single body and comparatively greater to the other in the two body equation. This paradoxical result comparatively to a paradoxical relationship and situation is effectively because of vantage and position being a component and element of the situation; for that of the comparison to time for when exchange occurs to which the reversal of one body into two body dynamics invokes an exception when both bodies participate; that of which there is additionally twice squared the geometric effect for the body itself; due to being in an exchange state and the reality of the relativistic effects and quantum mechanics both as contributions for the particles.

This effect is therefore non-perturbative in that we would not obtain a result for anything but a 'quantum leap' to that of the solution; to which it requires that of an assumption on that of the potential we find as a consequence of the situation we derive from; and to which there is an agreed potential found as a consequence of relativity and quantum mechanics; of which is dependent on that of time dilation contraction and exchange; for which both bodies participate in the whole behavior of which there are at least both contributions equivalently as strong overlapping.

A portion of this has to do with why the effect exists in the first place; that having to do with the residual interaction it represents when there is a balancing background of protons from oxygen and copper in the cuprates; or that of a lattice from which the electron free states develop; and that of the fact that when under reduction to the single body dynamics effects do not disappear despite the absence of another particle; for the sake that there are overlapping quantum and relativistic effects; of which both develop to that of contributions to the twice squared effect.

- 1.) Probability density is enfolded in the inward outward relation of time dilation contraction shared proper time; the portion of complex and imaginary probability density concealed in an inner outer relation of which is the portion of the shared probability density; to determination of the shared proper time for which it is of longer duration in co-mutual orbital momentum.
- 2.) From either electron's perspective the duration of proper time is greater; to which relaxes the probability density in the forward direction of time; to which escape is prohibited as a consequence of the condition on shared proper time alternatively depressing the coulombic potential at the same strength and to which it is in an attractively strong interaction in two.
- 3.) The effect is squared and twice as strong via superposition for which there is mutual occupancy and under conditions of which one shared proper time comparatively advantages two factors of the probability density; of which then when under exchange is a full twice and twice the contribution of one singly occupied density; of which makes for twice over repulsion.
- 4.) The nature of the interaction is for proper time to be witnessed as larger for either density from it's own reference comparative to the other body; a reversed sense of which is to the greater of either's density in space when time dilation contraction occurs; which reverses the sense of the interaction to attract to a lesser delocalized density in time; therefore attractive.

13 Fundamental Theorem

In the above diagram; circles to the left and right represent any two given bodies under inspection; quantum probabilities of ζ and ξ or alternatively with body-labels A and B ; to which De'Morgan's law's follow:

$$|A\rangle = \zeta \quad |B\rangle = \xi \quad (396)$$

With (to be shown):

$$A \circ B = A \cdot B \quad (397)$$

The postulated equivalence for the sake of that which is inclusion of the Equivalence Principle.

In order to investigate a potential factoring of the two body electron equation into which the problem may be cast or dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which there is escape from the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions. We prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave and frame descriptions of two particles; to which belong to differing descriptions and frames; denoted by \sim or $-$.

Here we find that De'Morgan's law's imply:

$$\langle A \rangle \langle B \rangle - \langle A|B \rangle = Cov[A, B] \quad (398)$$

For which $Cov = A \circ B$ is the covariance of events or probabilities A and B ; and with $\neg Cov = A \cdot B$:

$$A \cdot B = (\neg A) \cdot B + (\neg B) \cdot A \quad (399)$$

Where $\sigma(t) \equiv -i\langle A|B \rangle$. Following De'Morgan:

$$\beta[\zeta, \xi] : A \circ B = A \cdot B \quad (400)$$

Where Cov and $\neg Cov$ are the event and its compliment at the point of a ‘decision event’ to which we find that geometrically there is equivalent weight to any two of an event and its compliment in a relativistic context (the statement that $A \circ B = A \cdot B$ when an event occurs). It is now time that we introduce a weight that is dimensionally-free for that of the quantum event comparable to the higher geometry of space and time; to which is definitively in the form of a logarithmic spiral; for:

(1.) α : *Limit of areas under arcs to radius of curvature (log); takes the position of the integral.*

(2.) β : *Limit of arcs ratio to radius of curvature (log); takes the position of the differential.*

These relate to the given that is the ‘point like’ or ‘cuspic like’ relation of certainty as an arbitrary argument on ‘scale’ $\delta_\epsilon \rightarrow 0$ (zero) in the limit of which this describes the ‘geometric addition law of probability density; following from the tenement of "The Uncertainty Principle" and "The Equivalence Principle" at the infinitely small scale by the laws of calculus; for, as proof; consider that ω is a frame; then rotate the frame around until it vanishes to a point; the logarithmic spiral is the limit of arcs and areas under arcs of differential and integral form as length or area to radius (the frame argument ω) progressing to the limit of an infinite process. First, we utilize the Gauss-Bonnet theorem:

$$\int_V \Omega(\alpha) dV + \int_{\partial V} \omega(\alpha) d\tau = 2\pi\chi(V) \quad (401)$$

As an alternative to relativity; and to mathematically the source by which Einstein is correct; there in three dimensions; the boundary is greater than the volume of a fourth dimension; at which the excess of one; is the counting of a number; by which all exceeds its difference; and all becomes true; to which in either there is an exceeded and a difference in a number; by which a limitation in the curtailed means that one of excess in three to two (dimensions); is found in that of the volume to which fitting the relation of a lesser content of the surface is found to that of the filling or volume to that of the dimension by which the counting is equipped.

$$\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2 = 2\pi\delta_\epsilon \quad (402)$$

Hence a sphere; in its limit of radius shrinking to a point; is lesser in volume than that of by which a sphere in its volumetric area shrinking to zero is made smaller to a point upon which a boundary between three and four dimensions is made larger than its complimentary two dimensions of filling; to which either applies; as to a sphere in three dimensions is larger in its boundary than four dimensions in its volume; hence of which in counting the identity is always counted; and means that by expanding by one dimension; the accounting of volumetric of one dimension by larger (dimension) always decrements the surface by a larger excess or diminishment by one δ_ϵ in the differential or integral.

Master Statement: *The lightness condition of which is to the greater of its leverage in count; differs to that of volume as in that of dimension of counting by one.*

The proof of the master statement is as simple as the proof that; by displacement:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) = 0 \leq \delta_\epsilon \quad (403)$$

14 Concerning Singular States

When considered at first; one is tempted to set to ‘zero’ that of state ‘A’ or ‘B’ as in the limit of $\zeta \rightarrow 0$ or $\xi \rightarrow 0$ to extinguish the particle and wave notion of the state; however; one is not afforded this errancy when taking a ‘literalist’ picture of the subscription to such variables (for which one finds that different particles contribute to each one and another’s uncertainty - the bridge of which is the Fourier uncertainty theorem). Instead; it must be that states ‘A’ or ‘B’ are *mute* in such a consideration; and take on a neither present nor absent condition of which then the equations become (let us reference ‘A’ as *mute*):

$$\beta [\zeta, \xi] : A \circ B = A \cdot B = B + (\neg B) \quad (404)$$

And;

$$\langle B \rangle - \langle B \rangle = A \circ B = Cov[B] \quad (405)$$

Then:

$$\beta [\zeta, \xi] : 0 = 0 \quad (406)$$

To which checks. Therefore the equations hold in the limit of one particle; but what about that of their ‘grosser’ statement; that *the rules that apply to two particles apply to the notion of the singular particle picture* and it’s consequent forbearance on that of the weight of knowledge in it’s minute element?

Let the new equation (7) for α be:

$$\left(\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2\right) \cdot f(\tilde{\omega}) = 2\pi\delta_\epsilon \quad (407)$$

And the new equation (8) for β be:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) \cdot g(\tilde{\omega}) = 0 \leq \delta_\epsilon \quad (408)$$

Now we let $(\zeta, f(\tilde{\omega})) \rightarrow A$ and $(\xi, g(\tilde{\omega})) \rightarrow B$ to which the original functions are associated with their representation in terms of frame; identifying the geometry with the particle: $[\zeta, \xi] \rightarrow [f(\tilde{\omega}), g(\tilde{\omega})]$.

Equation α and β are here associated with a geometry and a particle definition of weight and description. Clearly; α becomes under substitution of A :

$$2\pi \cdot f(\tilde{\omega}) = \delta_\epsilon \quad (409)$$

And β becomes under substitution of A for ζ and B for ξ :

$$(1 - 1) \cdot g(\tilde{\omega}) = 0 \leq \delta_\epsilon \quad (410)$$

As $f(\tilde{\omega}) \rightarrow \zeta$ and $g(\tilde{\omega}) \rightarrow \xi$, this is therefore the statement that it is particle A that is incremented and particle B that is constrained to the rule of the above equation *whether or not the particles are distinguishable*; and particle A that is constrained to the usual uncertainty principle; (a *potentiated* but *mute* raising operator to be unavoidable) where for convention we have:

$$2\pi\hbar = \delta_\epsilon \quad (411)$$

This has the interpretation that geometric weight of a quantum process in the limit of $\delta_\epsilon \rightarrow 0$ is $2\pi\hbar$; to which we see that a single particle (to be interpreted as arising somewhere and

disappearing somewhere); follows an orbit of translocation by 2π . This is consistent with the wave structure of an angle τ in integration be the limit of an infinite process of *dimensional reduction*; to which with A , with frame τ :

$$e^{\pm i\pi\tau\cdot\kappa} = f(\tilde{\omega}) \quad (412)$$

And with B , with frame v :

$$e^{\pm i\pi v\cdot\iota} = g(\bar{\omega}) \quad (413)$$

Clearly; then for symmetry α the first equation is;

$$i\pi(v\cdot\iota + \tau\cdot\kappa) = \log(\tilde{\omega}\cdot\bar{\omega}) \quad (414)$$

And the second equation for symmetry β is:

$$2i\pi(v\cdot\iota + \tau\cdot\kappa) = \log(\tilde{\omega}\cdot\bar{\omega}) - i\sigma(t) \quad (415)$$

For the 'Shared Proper Time' is equivalent with the quantum wave function overlap;

$$\sigma(t) = -i\langle A|B\rangle = \pm i\pi(v\cdot\iota + \tau\cdot\kappa) \quad (416)$$

To which:

$$2i\pi(v\cdot\iota + \tau\cdot\kappa) = i\pi(v\cdot\iota + \tau\cdot\kappa) \pm i\pi(v\cdot\iota + \tau\cdot\kappa) \quad (417)$$

Since:

$$\log(\tilde{\omega}\cdot\bar{\omega}) - i\sigma(t) = i\pi(v\cdot\iota + \tau\cdot\kappa) \pm i\pi(v\cdot\iota + \tau\cdot\kappa) \quad (418)$$

With $+$ holding for that of two particles and $-$ holding for one particle; to which is redundant; indicating that equations (19) and (20) hold for **both** the one particle and two particle equations of motion.

The indication here is that with $\tau \rightarrow \rho$ and $v \rightarrow \eta$ that there are two fundamental equivalences for the restriction that is the *one* particle; and *two* particle dynamics; these equations therefore forming the *recomposition* of superposition in quantum mechanics.

15 Fundamental Principles

This rule of displacement furnishes an equivalent footing to covariance and identity freedom (one or two particle); thus a point exists to which it's weight is δ_ϵ ; and to which the displacement rule dictates the geometry, action, and evolution of a given decomposition of quantum states; & the principles are two.

Principle of Equivalence (**Parsimony**):

$$\log(\tilde{\omega}\cdot\bar{\omega}) = \rho + \eta \quad (419)$$

This describes the addition of densities into which sum to a finite difference in an externally situated point of measure and reference; it's dual being the comparative equivalence of measurement 'weight' of probability density in differing descriptions of any two bodies by which they combine additionally. The second equation is for that of density combinations in their own frames (under their congruence), which afford for extra proportionality of either given intermediary time dilation contraction effect (here denoted σ); it's dual being the comparative inequivalence of subtractive combination of probability densities. Together, this is nothing more than the equivalence

of references of vantage for any two particles.

Principle of Inequivalence (**Synchronicity**):

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (420)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor of density; for in that of one following adirectionally apart; together; or separately; there is a transparency of logical union of quantum description; an interior dilation contraction factor owing due to their (shared) comparative proper measurement of time.*

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a 'free' substitution which forms either given difference of that of perspective and vantage; forming the uniqueness condition of any two point like limits of relativity **or** quantum mechanics; for that of principle equivalence of time and the speed of light and principle inequivalence of co-determinism of probability density. The general consequence and implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassing of either of two subcomponents of the alternative exterior difference is constructible as a geometric congruence.

Therefore with general functions:

$$\alpha + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (421)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any given measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature. Therefore considered together these two imply the equivalence of results and particles under parallel interchange of perspective and vantage.

Principle of Measure: *Either one (Parsimony); or both (2) (Synchronicity); given absolutely relative and arbitrary limits of independent co-determinism of shared point-like relation(s) of proportion of measure and extension of quantum and relativistic argument agree to (a) given variety of non-locality and exist for any two given bodies; to which with but one; a given beginning or end congruent relation is empty of measure and extension; the implication of which is that measure is certain (Parsimony) and measurement is strictly semi-deterministic (Synchronicity).*

We can therefore conclude:

- 1.) Geometric weight of relativistic point application of force is equivalent and opposite to quantum mechanical point application of force; statement (β).
- 2.) Geometric weight of point like density in relativity is equivalent to geometric weight of point like density in quantum mechanics; statement (α).

Conclusion: *Therefore, geometric weight of density and force are equivalent in relativity & quantum mechanics; to which in addition all events carry an equivalent weight of $\delta_\epsilon = 2\pi\hbar$, with constitutive equations of equivalence and inequivalence of superposition.*

16 Comparative Equivalence

We wish to for pedagogical reasons here elucidate the nature of Covariance in Uncertainty and it's equivalence with Shared Proper Space (&) Time; to which is conclusive of the determinant factor upon which further work is hingal. The main statement is that the artifact witness of:

$$\gamma^\mu \Gamma_\mu \quad (422)$$

And;

$$\partial_\mu + \Gamma_\mu \quad (423)$$

Are equivalent statements but equivalent and opposite contributions; where the first is to be recognized as the Covariance in Uncertainty; and the second; the Shared Proper Space (&) Time. Under the provisions of a strict dichotomy into objects; 'A' and 'B' it is clear that codetermination forces us to reconcile the twin paradox; to which:

$$\beta \leq 1 \quad (424)$$

Is that factor which subsumes the relationship of representational reflexivity. The defining notion for this degree of freedom is that it is a factor to which 'A' comparative to 'B' holds a lesser comparative time to that of it's own time-dilation representation in the observation by particle 'B.' For from the reference of 'B,' it is true that:

$$\gamma \geq 1 \quad (425)$$

Holds as the factor for that of time dilation in frame 'B' of frame 'A'. But in this there is a conjoint relationship; that of particle 'A' to its own witness; being of a lesser time than in frame 'B.' The inversion of this role is nothing more than 'A' in reference to it's description in the frame of particle 'B;' to which there is lesser time as factor β .

It is clear here that:

$$\beta\gamma = 1 \quad (426)$$

What is also clear is that the viewpoint furnished by β is one in which the measure of particle 'A' is comparative to it's own measurement in frame and particle reference 'B'. In this 'A' becomes a self referent precisely when $\beta = 1$ to that of the observation (and measure by) particle 'B.'

When particle 'A' is the referent of particle 'B' $\beta \leq 1$; to which it is situated at a reduced uncertainty; by the argument that under co-determination; the factor that preceeds measurement is 'A' as referent to itself; here becoming a localized symmetry. When particle 'A' is the referent of itself; 'A' participates in an identity of itself as with $\beta = 1$ to which uncertainty is not diminished; and to which Covariance in Uncertainty and Shared Proper Space (&) Time are the subject of equivalent and opposite contributions; by necessity.

For if we were to identically prepare particles 'A' and 'B' and take them upon non-identical yet similar paths in space and time and return them to juxtaposition; one would find agreement with the original state and condition. Therefore it is that when $\beta \leq 1$ there is an agreement of Covariance in Uncertainty and Shared Proper Space (&) Time to which there is effective reduction in uncertainty under net-non-zero contribution to the effective 'action' of these two factors.

Therefore; although it is conceded that particles 'A' and 'B' determine a factor of β of which is less than unity; it is the process of γ being presumed; to which measure delineates a subjective object

as 'A' being the referent of particle 'B;' however it is that we cannot concede that uncertainty is typified by a larger cross section owing to γ since 'A' is caught by it's identity as a part of the same transformative step in induction. It is then that:

$$\beta \leq 1 \tag{427}$$

Becomes the step 'back' from relativity to which identities of particles hold a universal characteristic a priori to measurement as measured; and to which comparative assessments of Covariance in Uncertainty and Shared Proper Space (&) Time agree. It is then tantamount to the security of this argument that co-motion on an uncertain background *with* uncertainty is the production of certainty; the dialectic opposite of the uncertainty principle for one particle; but owing in due to the reflection of relativistic concerns upon identical states of two particles. It should be noted that by analytical reasoning it can be found that certainty derives in deduction from codependent arising of factors in exchange states; and that the situation does not reverse; for this has been noted as a "Representational Ipseity Freedom of Covariance;" that of the dilectical opposite of presumption on that of 'more is more;' taken in light of 'the whole is greater than the sum of it's part's' to which under the provisions of an identity to 'A' there is strict affordance for the prepared state to co-orchestrate it's given individuation in light of uncertainty; to a prepared state with compensation for uncertainty to be found *whilst there are two bodies*.

Therefore it is found that Covariance in Uncertainty:

$$v = \gamma^\mu \Gamma_\mu \tag{428}$$

And it's complimentary Shared Proper Space (&) Time:

$$\tau = \gamma_\mu \Gamma^\mu = -v \tag{429}$$

Pertain as much to the one particle; by that of which is the disappearance of a factor of $\beta = 1$ by the anti-reflexive principle; and by that of which *there is no privileged observer*; the latter conclusive of the fact that when *turned around*; any self-identity of factor disappears by a relativistic consideration at the microscopic and single identity scale on quantum particles; however to note is that: *The affordance of a two particle description renders $\beta < 1$.*

The statement of representational ipseity freedom can now be formulated:

The Statement of Representational Ipseity Freedom: *For any two particles; one of which observes the other, forces us by the absence of a tertiary observer and that of the anti-reflexive principle to conclude that a factor of β is introduced which is lesser or equivalent to one (with equivalence to one in the frame of the particle); with equivalence to the statement that v (The Covariance in Uncertainty) and τ (The Shared Proper Space (&) Time) are of equivalent and opposite contributions for the statement that is The Uncertainty Principle; to which we necessitate that of an indistinguishably universal \hbar under comparative assessments of quantum states.*

Far from the prescription that \hbar be linear is therefore the conclusion that $\beta \leq 1$ prescribes a universally *lowered* uncertainty from the point of observation away from the 'horizon' of any particle in it's process of 'measurement-by-observation' on particle 'A' comparative to 'A' itself; by way of particle 'B;' to which is consistent with the requirements of relativity ipso facto; the reversal of the causal arrow on that of the uncertainty diminished states taking place *away* from the point of 'reference; particle 'A' at once being considered the 'referent' of itself and of particle 'B.'

17 Relativity Theorems

To comparability there are two given's in physics with *displacement* as the proof:

Principle Equivalence:

Comparative measurement with reference to what is measured.

Principle Inequivalence:

Measuring with reference to what is performing the measurement.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

Property of Light Variance (1): *The speed of light in being fixed to a universal standard; implicates that all such velocities under deduction to time itself must be measured greater relative to the speed of light universally for their comparative difference of rate congruent to light as measures.*

$$\beta_c < \beta_m \quad (430)$$

Property of Light Variance (2): *For; the property of dilation is obverse to a measure of fixed relation; therefore the rate of time for mass is always measured lesser than light; and to deduce the rate of passage of time we must convert to a system in which all velocities must be as a given greater than c .*

In this, β is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity) precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path at motion. This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated). Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other observer, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence for the two body problem.

18 Ideal Principle Equivalence

The equations which dictate the function, form, and nature of the universe are two, as follows:

Quiescence

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is an invariant speed & the observed's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) Light is Quantum Mechanics which is the statement of **Quiescence**:

$$\partial_{\alpha\beta}^{\gamma}\Theta = \Theta_{\alpha\beta}^{\gamma} \quad (431)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name:

Prescience

Conclusive Remark on Space: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) Gravitation is Space Time which is the statement of **Prescience**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (432)$$

This is the given statement that of either given separability of philosophical inquiry into natural law is of similarity to coherence of algebraic expression for that of when similarities of mathematical expression derive of or from a common relation of order.

It is therefore true any two quantities of measurement and measured are coextensively null in measure by that of indivisibility of algebraic expression as independence of property from quality with the given as the expression of null indistinguishability invariance:

$$\zeta\chi = 0 \quad (433)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (434)$$

As an algebraic free projection of any vector into any one form of geometry of null displacement invariance and null indistinguishability invariance; the general and full expression of a principle equivalence with a general null covariance is expressed as a relative principle inequivalence.

19 Exchange Locality Theorem

To begin we identify a given admixture of partial differential following the principle of a connection to a given here ultimately knowable quantity; that of a placeholder for what conventionally known as spin; the entire property of which is a free impedance relation provided by a ring of crystals; and found as that of the orientation and juxtaposition of the electron's inertial field.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion.

With the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has. Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field of impedance:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = 0 \quad (435)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (436)$$

The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space; forming from that of surrounding notion on differential of exterior boundary under fixed mass of variant gap by weight of coupling and gauge connection, Γ_μ .

$$(i\gamma^\mu D_\mu + m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = \Delta \quad (437)$$

Which means that two electrons are the generator under the anti-commutation and commutation relationship of their subsidiary operators of a full notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reductions in energy at the relativistically accommodated energy level of the full energy momentum of either one such particle.

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron in motional inertia.

20 Simpler Means

Therefore, this transformation appears to be a local and global attribute of harmonic functions and elliptical functions with but two modular relationships and arguments related to the two cardinal harmonic conditions as abbute to elliptical conditions. The connection between these is that of the given relationship between that of tension, torsion, and that of elliptical semimajor and semiminor axes.

As proof that this is possible; the summation that is the elliptical functions is reduced under the transformation to that of a summation of harmonic functions with strict logarithmic differential amplitude and phase relationships as the foundation for such functions and such transformations. Hence a self isomorphism is potentially existent under it's inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha \hat{A}(\omega, \tau) & \beta \hat{B}(\omega, \tau) \\ \gamma \hat{A}(\omega, \tau) & \delta \hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix} = \int_\tau \int_\theta \begin{pmatrix} e^{-i\omega t} A(t, u) & -e^{-i\omega t} B(t, u) \\ e^{i\omega t} A(t, u) & e^{i\omega t} B(t, u) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix}$$

21 Inverse Relation

If the inverse transformation surjective onto limit is to be defined in relation to any two such harmonic affinities then the triangle inequality is broken with a hole unless there exists a forward application of the homeomorphism so preserved by the transformation under the prior considerations of a non simply connected space.

The surjective limit cannot exist and no analytic expression in dual periods would exist without closure under a self inverse homeomorphism or such extensions under internal locally, globally weighted and independent notions of analyticity; for a hole produces an automorphism in either such space as a representation of an analytic function which are incompatible notions under the forward application of the transformation as a homeomorphism with priorly backward existing limit for the inverse; as a potential exception when the space is not simply connected.

If this were not the case the given homeomorphism would not be independent of either such functional space; as it must for a general function if the space is topologically connected as a genus one space with a given hole.

This exception is a potential incongruity of the mapping and a realistic consideration with the existence of a hole when this space is identified with a conjugate space as therefore with two harmonic conditions the spaces are otherwise independent in full and necessitated generality if and only if this consideration is brought to bear; the inverse mapping of which is therefore:

$$\theta := \begin{pmatrix} \tilde{A}(\omega, \tau) \\ \tilde{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \partial_\mu \log \alpha(u, t) & \partial_\mu \log \beta(u, t) \\ \partial_\mu \log \gamma(u, t) & \partial_\mu \log \delta(u, t) \end{pmatrix} \begin{pmatrix} e^{-i\omega t} \\ -e^{i\omega t} \end{pmatrix} = \begin{pmatrix} -\tilde{A}(\theta, \tau) & -i\tilde{B}(\theta, \tau) \\ i\tilde{A}(\theta, \tau) & \tilde{B}(\theta, \tau) \end{pmatrix}$$

Which defines the θ and Θ functions in a logical symbolic set relation; for which the one form under conjunction is self isomorphic to a free group of generally deductive angle free variables.

These variants of the relation of symbolical ordered set under logical organization correspond to all variables of the free magnitude wave number space for all interchanging or ordering of variants with only exception to a free radical phase (here made nilpotent) as a consequence of the infinite shrinking of the surjective onto mapping set theoretic union of a space under solid free relation (pictured as a flat mirror like surface) of each full dimensional reduction to each of every finite limit.

In this we find the variants hold the potential and reality condition of being in essence all observables; while the transformation itself represents the 'mirror' of which is depicted the full 'motion' of both mirror through the transformation of such variants; and that of each such objective reality 'reflected' in the mirror; as a 'hole' in reality; for which connectedness is imputed.

22 Conclusion

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation*

observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (438)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

The implications are that the universe is whole; and that no point of which the universe has originated begins or ends in the present; but within only that of the divine nature of a singular unifying mathematically empty and physically null relationship of balance. The singular defining relation is that time and space can be balanced against one another only by the undefinable completeness of an empty relationship by the meeting point everywhere in space and time as a singular balancing counter-participant to the identity.

23 Final Theorems

To comparability there are two given's in physics:

Comparative measurement with reference to what is measured.

Measuring with reference to what is performing the measurement.

The conclusion of consistency for that of self conclusive closure is defined by that of what can be defined as a 'bottom' extremum beyond which the measureable extension of a once locability but sublimates a given limit of enclosure unto it's a; each; or given domain of closed relation for that of what is potentiated when there are two fundamentals in mathematics as in the physical world; of an entirely geometric reasoning for which there are solid, fluid, or transparently passable given's of nature; for which that of what is foundational when reasoned is determinant only when a descriptive purpose is met.

Therefore there are two fundamental limitations of physics at the bottom; in order for there to be any self or other consistency of descriptive means in mathematics as in physics; of articulation:

Principle of a Mass Deficit: *As a fundamental any given mass of matter is equivalent in proportion and weight to any given apportion of it's given light content; and no greater or lesser under conversion in of or to any given unitless based system.*

Property of Light Variance: *The speed of light in being fixed to a universal standard; implicates that all such velocities under conversion are identical with and greater than the speed of light universally; for the property of dilation is obverse to a measure of fixed relation.*

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of system of units to that of the system of conversion of circumference to perimeter; as an areal relation to that of pointless given limitation of interior domain; with equivalence to that of a measure of units of

the system for which the standard is inequivalently proportioned exactly. Therefore the given holds as true; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (439)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (440)$$

Although the equations would implicate the speed of light is always in excess of unity; this is the same determining factor as that of a given open relation of the velocity of all bodies greater than c as subtraction of an interior finitistically defined zero locus of time enfolded everywhere locally in reality. This principle of inequivalence is to be contrasted with the exterior space of symmetry of the theory of relativity when it is considered that actual determinations of validity are certain.

24 Final Note of Measurability

The first equation is the Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (441)$$

The second equation is the Principle Inequivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (442)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union.*

These two properties; η and ρ are then given as equivalent to:

$$\eta(\theta_1) = 1 - \frac{v_1}{c} \cos(\theta_1) \quad \rho(\theta_2) = 1 - \frac{v_2}{c} \cos(\theta_2) \quad (443)$$

The substitution of one of η or ρ under either given pointlike relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point like limits of relativity; for that of each such principle equivalence of time and principle inequivalence of codeterminism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassment of either of two subcomponents of the alternative exterior difference of any two signal areas is constructable; as are any two given exterior alternative differential space by singular or multiplicity of exterior space as at even or odd frequencies any number of frequencies add to two; for any relation of an encompassed concave space; as then any circumflex round operator of self connected relation encloses all such pole subcomponents.

Therefore:

$$\eta + \log(f(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (444)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of two given amplitudes of differential nature.

Therefore considered together these two imply:

Final Theorem: *Either one; or both (2), given impenetrabilities and absolutely arbitrary limits of independent point-like relation(s) of proportion from out of electricity & magnetism to (a) given variety of non-locality exist(s); for which but one; beginning or end congruent relation is empty of boundary condition.*

25 End Proof

Therefore by the preceding logic there is not one but two given separated zeroes between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

$$\psi_{\gamma}^{\pm} = \eta_{\pm} e^{\pm i\theta_{\gamma}} \quad (445)$$

$$\phi_{\gamma}^{\pm} = \rho_{\pm} \partial \log(\pm i\theta_{\gamma}) \quad (446)$$

From which through the given process of a chain of deduction and induction leads through this process to a conclusion that these quantities and defined as following are of an absolute null invariance given no third reduction exists in reverse:

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (447)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (448)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (449)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error. Finally we arrive at some new conclusions:

As for the quantum principle; we find three new interpretations and a new one: *"The particle wave duality is harmonic."* *"No particle wave duality exists within a limit."* *"The boundary condition is a harmonic criterion."* are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at once?"* With the answer: **"No."**

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and

the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

And; **"Is one the given reduction of the other as unique?"**

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past:

"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past. Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

26 Results on Study into The Measurement Paradox

Observations:

It is determined that; as only 'certain' outcomes are expected; that the system will only reproduce order given the measurable(s) follow a pre-determined causal arrow; and only these given measurable(s) are measured; to which it can be determined that superposition has constrained the system into an ordered relation.

With measurement situated such that it is designed to reduce to two potential outcomes; and then, given that measurement is semi-deterministic; there is a regime of order succeeding over chaos; for that of one return is before measure; and certainty is embedded in the equations of measure; to which order is produced.

Primary Result:

Logarithmic conversion of the system governing the differential equation by superposition, and that of the certainty we avow to outcomes of 'A' or 'B;' fails if we do not admit that: logarithmic conversion of the arguments has indeed separated the two body problem into two one body problems; to which then measurement as certain of measures is implicated by that of their conversion to that of geometry by a differential equation.

Secondary Results:

1.) Logarithmic superposition resolves the two body problem into one body problems; by placing the uncertainty and certainty of that of measured and unmeasured quantities into the same geometric language of superposition; one in which certainties are accorded with logarithmic sensitivity and equipartition of a geometric nature.

2.) Semi-determinism governs measurement and measure of which is certain; the process of measurement that of which is a surjective process mapping the future onto the past of which is

to produce certainty in measures; by that of which is a smaller 'past' projection when measure takes place by contrapositive on magnitude of certainty.

Reason:

Without certainty to measure and semi-determinism to measurement; and logarithmic superposition on the states in the process of measurement; the results of the device would not be determined into categories of 'A' and 'B' on measured touch interfacing with hand gestures in groups of five; to which randomness would then govern instead; the result confirming measurement as semi-deterministic and the nature of measures as certain a priori.

Certain Conclusions:

- 1.) Measurement is semi-deterministic in nature (otherwise this process fails).
- 2.) Measure is always certain (otherwise this process fails).

Caveat and Question:

We see limited control of the system into categories of 'A' and 'B' by a factor of 2-5 on comparative magnitude ranges for superposition or their inverse. Could this 2-5 be the Figenbaum constants themselves of chaos; to which magnitude must differ but be within ranges on that of the 'discernment' of a doublet classically?

Conclusions:

The argument presented so far admits the following preliminary conclusions to be formed:

- 1.) A logarithmic foundation to superposition admits dissection of the two body problem into two one body problems; of which the logarithmic foundation to superposition admits the construction of a bridge from relativistic to non-relativistic mechanics and is the resolution to the two body to one body problem; of which probabilities are seen geometrically; and to which they break apart into categories 'A' and 'B' as determined.
- 2.) Uncertainty covaries in such a manner that it is certain 'from above' the relation to which determinism being of the 'future' relation fits into a larger sphere; but promotes the discovery of a 'smaller' sphere of potentiated ranges of information; to which measure is seen as certain; and measurement is seen as semi-deterministic; at most; 'indeterminant;' to say that measurements are certain because measurement ranges are larger than uncertainty.
- 3.) By certainty of alternatives this derives the notion that semi-determinism dictates measurement and measures are certain a priori; to which the measurement paradox is resolved; by noting that uncertainty may be excluded for the sake of an indeterminant measure instead; to note that a touch signifies absolute certainty of result of measurement reference; and to which only a smaller range of measured than to measurement can produce.
- 4.) Co-determinism of which there is determination of measurable with measurement makes certain that of the nature of measurement to which is afforded certainty in that of the interpretation of information in saying that 'as it is recorded it is accorded;' to which definite results of measure in the classical world are the consequence of covariance of uncertainty; to which in reasoning

upon return from relativity we find the uncertainty reduced.

If time is accorded with information; then it is definite that a sub-section and element of a measurable(s) discovery will afford spatial co-determinism of the exact nature of a measure; the reduction to space and time of which is the covariance of uncertainty shrinking measure beyond error in expectation of semi-deterministic measurement.

Summary:

By general covariance of uncertainty in the classical realm the determination of any interaction between a human being and a machine dictates that error in a given measurable will always be lesser by expectation in measurement (which is therefore semi-deterministic) under reduction of the two body problem to separable one-body problem(s); of which relate to and intimate a connection to mechanics that is of resolution of the two body problem to one body problems from the relativistic to non-relativistic assumption of vantage. Indeed the bridge from the relativistic to the non-relativistic interpretation (the return of the arguments to their classical counterpoint of which incorporates their contrasting elements) affords for resolution of the two body problem to separable one body problems; and accordingly allows us to argue for semi-determinism; the certainty of measurables; and forms an argument that when probability is cast in a geometric language these problems with the measurement paradox (was the Moon only there because you looked for it?) are cast the way of a bulletproof argument; of which is that as the measurement takes place one point like notion beyond which is the two body problem; a point of deficit to which by it's smallest diminishment there is an excess weight to the viewpoint that measurement is an additive process; which we know from classical studies; and to which when cast in the language of displacement; leads to the conclusion that one step away from measurement is a measurable; of which is non-simultaneously of a given advantage to the viewpoint that measurement is characteristic of co-determinism when it is co-occurrent (as it always is); thereby there being two major synthesis that constitute reality; co-determination of variables and that of certainty; by which a measurement tailored to behave with expectation to results below the threshold of error can be designed as one that furnishes a result only when certain criteria are met; with conclusiveness therefore of which co-determination is a process in as much as measurement thresholds on error are reduced below intrinsic error; by the argument that negation of a displacement is a real event; the equations being:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \tag{450}$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \tag{451}$$

The two fold equations (where η and ρ are probabilities, ω a frame, and $\sigma(t)$ the covariance of uncertainty or shared proper time) admitting the possibility of a zero-sum-displacement on that of measurables irrespective of the relativistic to non-relativistic bridge; and a manner in which to cast probabilities as geometric.

The Principle of Codeterminism:

The real difference here is that as soon as the criteria are met that covariance of uncertainty and measurement are within the ranges of error being lower than the threshold of quantum indeterminacy; a quantum state is set; of which accords with the return from a relativistic viewpoint to the non-relativistic limitation of classical dynamics; and in which measurement is then seen as a semi-deterministic process; and measure; a geometric certainty.

"In fact; I would go as far as saying that the equations implicate certainty as the 'other side' of relativity is a determination on that of probabilities as geometrically null as to probability; the naked statement of relativity is then that combinations of relativistic states assure that probabilities are certain when measurement is available; for in that of what is enfolded in relativity is a null prediction on all but the 'naked' quantum states of which we ascribe certainties; of which are decomposed into a complex language of evolution; but which necessitate meeting a 'null condition' of which is their raw constitution in light of relativity; the emanation of but one state; of which is the raw probability of 'A' or 'B' in question; a valid hypothesis on when we lack a-priori knowledge; but justified." There are two potential conditions of which hold true:

1.) Measurement is certain in as much as the declarative valuation of probabilities 'A' and 'B' are certain when the device fits the prescription that 'from above' and reasoned back from relativity to a non-relativistic limit general covariance insists that uncertainty is less for the measurement comparative to the measured; of which fits in a 'hole' of measurement; a pre-set category which exists to limit measurement to all but semi-determinism of measures.

2.) Uncertainty is nothing more than the wave prescription of the particle making itself known; to which there is null unknowability; and for which when abut to relativity makes assurance that semi-determinism is the collapse of the wavefunction inside the scope of the adjusted reading; to which measureables always fit within a prescription of smaller in a 'sphere' of measurement to which fits a larger 'sphere' the inside out of which is uncertainty.

1.) is definitely what occurs in my device; in as much as the two body problem reduces to a set of two one body problems; of which resonate with one another; but to which feedback is limited to a range of 2-5 on that of the device; a cavity resonator of which the measure is certain to fit within the ranges of measurement if and only if one is presently given/taken on that of the device; questions of chaos aside for the sake of the order therefrom produced.

2.) indicates that wave function collapse and decoherence are opposite processes; occurring in tandem when there is uncertainty; but to which with certainty abut to a relativistic process a given when there is a way to escape the given collapse; the return to the classical world without a classical 'fit' of which makes certain in space and time the relation of determinism the process were it to fail making the uncertainty principle a non-null principle.

In this; measurement is a real process which takes place whenever the relative uncertainty of (a) particle is lesser than the system with which it is interacting and producing certainty.

27 Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (452)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (453)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (454)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (455)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds reexpression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (456)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (457)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (458)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (459)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

28 Confirmation of Theory

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionalities of mass to inertia is not true; and do not exist with theoretical dependence. Then as there is bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return physical law is unbiased and deterministic for the indistinguishability and displacive properties of physical law; for seamlessness of extensibility and coextensibility are natural consequences of emptiness of property to that of the extrinsic nature of properties of physical process; if not object.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (460)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

29 Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first 'constitutive' argument goes as follows. Take for instance the local theorem of the Principle of Measure; these here serve as translation tools by which:

$$\eta = \langle \psi_1 \rangle \quad \rho = \langle \psi_2 \rangle \quad (461)$$

Are two measurements on the quantum wave-functions in involution; position and momentum. Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (462)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (463)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and it's shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from 'above' for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

30 Conclusion

Shroedingers cat paradox and it's disproof is therefore furnished by examination of the question as to if one intangible relation can 'fit' another; to which the possibility of the construction of such a box is possible. The relationship of one closed relation to one opened relation implicates that the answer is a definite no; therefore that due to certainty; the larger certainty does definitely not accord from the microscopic scale as fitting 'deterministically' interior to the closed relation of a macroscopic state. Therefore it is akin to asking a question for which is the opposition to a given thought experiment; the evidence for which is that it is a naturalized problem; with no

solution; and is therefore analogous to asking what the problem is. The solution is that the cat is either alive and well; or long gone and dead; and the device does not function at most. The inequality that derives this is:

$$\langle A \rangle \langle B \rangle \geq \sigma(t) \quad (464)$$

So as to suggest that space is broken comparative to time; and time is broken comparative to space; (they hold an entirely independent reality).

Master Conclusion: *Any two points of reality are therefore deterministically free.*

Given the equivalence principle applies to determination of the inertial properties of two objects (a superconductor and magnet) as two separable instances; it is seen that together; these constrain the uncertainty to at most two free points of reality (a limit on momentum uncertainty and a limit on position uncertainty) to which 'fit's' absolute certainty by reductionism from empirical law in the macroscopic realm to the microscopic. The affordance of a limitation on that of two larger objects fitting into the same smaller space; by logical deduction on that of the empirical and theoretically founded principle of equivalence; implicate immediately that the bound on scale and scale free measures of codeterminism extends to the microscopic; therefore implicating the bounds of certainty that are empirically motivated and theoretically proven by the thought experiment & that of the theoretical Pauli Exclusion Principle Bridge; to which the solution to Shroedinger's cat paradox is furnished.

To understand this the 'objects' are the covariance in uncertainty and shared proper time; as we approach the limitation of the smallest scale; they are reasoned from the direct parallel furnished from the large scale (macroscopic) empiricism of the superconductor and magnet; and illustrate analytically that determinism is **exact**.

31 Exchange Locality Theorem

First; we need phenomenological reason to believe that a composite factoring of the two body equation occurs in the first place; the foundational reason of which is provided by relativity.

To begin we identify a given admixture of partial differential following the principle of a connection to a given here ultimately knowable quantity; that of a placeholder for what is conventionally known as spin; the entire property of which is a free electron inertial field. This is entirely consistent with the interpretation of what an electron is; and what properties it has. The idea here is to factor the equation in a different manner; owing due to phase and conjugate phase freedom from the logarithmic identities of principle equivalence and principle inequivalence provided.

With the statement of symmetry:

Statement of Symmetry: *"Extrinsic modification to an equation under antisymmetry of operators and symmetry of operators have intrinsic interior symmetric and antisymmetric parallels under operation of exchange of a particle with a pair field."*

Under these provisions the properties of a two body particle and field equation are decomposed; seen alternatively as a completeness for one particle and a replicated particle and partner field. The general properties of hyperbolic equations implicate that an equation take a form of a wave

equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (465)$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2 + \sigma(t))\Omega(\alpha, \beta) = 0 \quad (466)$$

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (467)$$

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field of inertia:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A \Psi_B = 0 \quad (468)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2)\Psi_A \Psi_B = 2im\gamma^\mu D_\mu \Psi_A \Psi_B \quad (469)$$

The gap remains as variant and free yet as commonly dependent on the differential. To note is that when all electron inertial energy momentum is absorbed; particles become anti-particles.

$$(i\gamma^\mu D_\mu + m)(i\gamma^\mu D_\mu - m)\Psi_A \Psi_B = \Delta \quad (470)$$

Which means that two electrons are the generator under the anti-commutation and commutation relationship of their subsidiary operators of a notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reductions in energy at the relativistically accommodated energy level of the energy momentum of either one such particle apart.

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron in motional inertia.

The interior and effective representational algebra of the raising and lowering operators for the spin eigenstates via their commutation relationship representationally instanced is generative of a necessary coordinate connection that is representative of a weak effective artifact of Bosonization when exchange is considered simultaneously to its consequent effective spin flip and therefore physically for two Fermions under exchange with both types of variable, and thus; exclusively when the effects of the absence of a tertiary or privileged observer in relativity are considered. A way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli exclusion principle as fermions.

1.) *Rotations of the electrons upon the spin of the two electrons under exchange are clockwise and counterclockwise when viewed from above or below.*

2.) *These rotations are generative under exchange of an effective raising and lowing operator upon their individual spins by the commutation relationship of the spin algebra.*

3.) *Relativity holds fast to an objective artifact of relativistic frame transformation which is inertial in both frames of the electrons and there is no substantive existence of a tertiary or privileged observer.*

From this it follows that the interior phase gauge symmetry is broken and a coordinate dependence to the orbitals occurs that must be compensated for in the two body Dirac equation.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (471)$$

1.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that would violate the Pauli exclusion principle unless it is corrected for the sake of global to local relativistic considerations.*

2.) *Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli exclusion principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a weak bosonization of the states.*

32 Abstraction in Conclusion

We wish to convert from the hyperbolic equations to the spherical equations to produce a proof in certainty and manifest disappearance of super-symmetry by displacement to matter. The equations (19) explicate the process. By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + i\sigma(t) + \alpha^\mu\beta^\mu\partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (472)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu\beta^\mu\partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (473)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame. Therefore of what of one is of the greater in time accumulated comparatively to the other in owing due relativistic factors (explicated phenomenologically here) co-conspire to bind a state to it's displacement freedom. Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + (\alpha^\mu [\partial_\mu], g(\tilde{\omega})) + (\beta^\mu [\partial_\mu], f(\tilde{\omega})) - \alpha^\mu\beta^\mu\partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (474)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu\partial_\mu)(g(\tilde{\omega}) - i\beta^\mu\partial_\mu)\Omega(\alpha, \beta) = 0 \quad (475)$$

Therefore all light and mass exists with inherent *displacement freedom* in an otherwise particle equation of neither attraction nor repulsion with pair potential lesser than zero. Therefore the equation for light (26) and mass (1) are seen *both* as instances in which an energy gap furnishes *displacement freedom* by which they are descriptively free and certain (22) (making inertia the only certain thing) when $\Delta > 0$:

$$\Delta = \sqrt{\sigma} \quad (476)$$

Time is then seen as something that is co-participated in and, of, in particular, participated in; but that time for a differing point does indeed differ both quantitatively and qualitatively to that of the process of measurement and measured. The corollary of this is that all motions differ by merely displacement freedom (Parsimony); and, it's counterpart being the conglomerate and aggregate of two body problem relations (Synchronicity) *together*, explaining mass, motion, certainty, and light; for certainty in Δ exists for all finite displacive motion.

33 Proof by Dual Contradiction

As proof of this, consider the exchange of the spins or orbitals as separately from one another. We have illustrated a methodology by which they are representationally and therefore physically strictly dependent upon each other as upon coordinates.

As a result, neither wave function would be a complete eigenstate with both symmetries, and thus as a result of this strict dependence in the coordinate space, in order to adhere to both the Pauli Exclusion Principle and be completely antisymmetric in both spin and charge as attributes of the wave function both locally and globally within relativity under the objective provisions of an inertial state compared to an inertial state, it is necessary that the coordinates are corrected for so that the total eigenstate in spin and wave function under exchange are totally antisymmetric in space and time.

This is true because the global to local objective position of both electrons within inertial states is in conflict with the provisions of a physical and representational coordinate dependence for spins.

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

This can be seen most simply by way of the analysis of the eigenstate picture. If by contradiction, the spins and orbital motions were strictly dependent, then they could not be simultaneous eigenstates of the wave function and spin in the two body Dirac equation both locally and globally, and therefore there is no satisfaction of the Pauli Exclusion Principle, unless this dependence is corrected for.

Take a given eigenstate of momentum in a circle. It produces two prescriptions for the spins, and generates a dependence between them that is not a complete eigenstate in the Dirac equation separably for spin and momentum when it is considered that there is a strict dependence of spin upon momentum of an orbital variety in the global to local picture. While it is true that the spin and momentum are a complete eigenstate for the dual electron Dirac equation as it is written for each individual electron, in the two body Dirac equation so must they be complete eigenstates comparatively, yet each orbital motion alters the spin representation physically between either of the two electrons in such a manner it only holds as a local spin representation eigenstate.

As a result of the eigenstate not being a complete eigenstate in spin for both orbital motions, under the guise of a global to local symmetry for both eigenstates of orbital motion, it holds that either the separable groups of spin or orbital motion are not comparatively complete eigenstates individually for either variety in the net wave function and spin picture for the dual Dirac electron eigenfunction.

As a result of this, it holds true that in order to have an eigenstate that is a complete eigenstate in both spin and orbital motion simultaneously, there can be no dependence of spin on orbital motion, or at most a correction must exist for both of these to remain eigenstates relativistically, otherwise there is no simultaneous eigenstate globally, comparatively, nor locally, between the two electrons.

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in something of a product relationship in the conventional Dirac equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the Lorentz invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the Hilbert space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states.

There are two operations that are mutually exclusive to be considered. From the perspective of one electron within its own state, the other antipodal electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, but while preserving the contravarying and covarying contraction.

The state where the magnitude differs by a scale and its inverse, for what was an eigenstate a priori will no longer be one for the projection of the spin portion of the eigenstate and that of the orbital will not meet the product relationship locally and globally. However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence their projections into each other can remain purely antisymmetric in spin and orbital momentum.

The state where the magnitude changes scale for both projections is an admissible eigenstate, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the Dirac electron equation, it will continue to be so. However, since the projection as measured by their combination (the spin and orbital) will determine an area that differs, and hence the projection of the eigenstates into each other cannot be purely antisymmetric any longer locally and globally.

Thus, it appears that either of the two electrons comparatively must attribute the same equivalent weight to charge and spin to satisfy the dual conditions that are the eigenstate condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions relativistically it is required that a correction to the orbital momentum be introduced. This correction is nothing but the gauge connection for the sake of the orbital momentum as a consequence of a co-evolving spin of the electron.

This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body Dirac electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

With this correction; which is only manifest for non-free electrons, we have an anomalous energy lowering from relativity upon quantum mechanics which gives us license to prescribe a spatiotemporal entirely representational representation. The correction is something of a form

of spontaneous symmetry breaking, but it is exclusive to the two body problem, which remains to make the correct prediction for the individual inertial states, but not so comparatively, for this new gauge differential does not commute under the action of exchange, whether of singlet or triplet form, whenever these states are so separated.

This has special relevance to the origins of spontaneous phase symmetry breaking in superconductors. A final way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally is that they would not then be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli exclusion principle as Fermions.

By extrapolation upon the two body Dirac electron equation, it can be seen that the covariant measure as provided by the differential of the spin matrices and contraction with the electromagnetic four potential form a quantity that is a measure and a rate, indicative of the same symmetry as that of the inertial property of an interaction; so in line with an electromagnetic interaction that is made inertial by way of the representational quality of the spin in its evolution in space and time.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states.

34 The Principle of Reciprocity

In the superconductor magnet levitation experiment the measure of space becomes larger as the bodies exhibit freefall and the gravitational force increases in strength. The scale of spacetime is the Lorentz contracted invariant quantity of curvature:

$$\gamma^\mu \Gamma_{\mu\nu}^\nu \quad (477)$$

This varies in proportion to gravity, for as gravity becomes stronger the $\Gamma_{\mu\nu}^\nu$ becomes stronger. It is judged by γ^μ , which forms the Lorentz invariant scale of spacetime to coordinate basis by way of kinetic energy. This makes sense as the term accounting for gravity in the Dirac equation is the same contracted curvature.

With a change of coordinates, the infinitesimal coordinate of the wavefunction is modified by the inverse of this scale, thus the following quantity:

$$\Lambda(x^\mu) = \lambda \gamma^\rho \Gamma_{\rho\nu}^\nu |\Psi(\gamma_\rho \Gamma_{\nu\mu}^\rho x^\mu)|^2 \quad (478)$$

Is the generally covariant quantum energy density corresponding to the quantum field. λ is the quantum energy-distance putting the quantum probability density overlap into units of energy. The factor of $\gamma^\rho \Gamma_{\rho\nu}^\nu$ outside the quantum overlap scales the quantum energy so that it is consistent with the notion of the energy density per unit spacetime in the now curved space.

This implies scale covariance of the quantum probability with the scale of spacetime. For if the force is scaled by a relativistic factor but the probability is not scaled in the inverse manner, this does not represent a relativistic *transformation* of the quantum state. Additionally, a quantum force with an external relativistic scaling of the force but with no scaling of the infinitesimal of

the coordinate would not demonstrate general covariance.

This is true because the wavefunctions would remain of normal size under freefall, while the force would go up in strength by the covariant factor, and the quantum force would become stronger as a function of time in relation to the force of the gravitational field. In order for the quantum force to covary with gravity, and have the same strength it would have without the gravitational field the quantum probabilities must covary with the definition of space and time. The measure of probability density and the multiplicative factor on the force must vary in reciprocal fashion. This finds mathematical expression in the following.

If the measure (metric) of spacetime is:

$$g_{\mu\nu} \quad (479)$$

And the measure of probability density is:

$$\zeta_{\mu\nu} \quad (480)$$

Then:

$$g^{\mu\nu}\zeta_{\mu\nu} = \hbar c \quad (481)$$

This can be re-written as:

$$\zeta_{\mu\nu} = \hbar c g_{\mu\nu} \quad (482)$$

This expresses that the measure of quantum probability and the measure of spacetime are covariant.

This motivates the following principle:

The Principle of Reciprocity Part I: *Quantum mechanical forces covary in an independent manner with gravitational forces. Therefore the measure of quantum probability to relativistic measure of spacetime equals a fixed constant of \hbar . Or alternatively, the measure of quantum probability covaries with the measure of spacetime. If the measure of spacetime goes up, particles contract because there is more probability within a given interval of spacetime, and if the measure of spacetime goes down, particles expand.*

In this the relativistic factors are present on the terms of gravity, quantum mechanics, and kinetic energy. These cause the rate of time and definition of length in space to change. Therefore, quantum electromagnetic energies represent a energy multiplied by the metric, a covariant energy difference over the theory of gravity modeled as:

$$E_{\Lambda} = \Lambda(x^{\mu})g_{\mu\nu} \quad (483)$$

In Einstein's field equation:

$$G_{\mu\nu} + \Lambda(x^{\mu})g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu} \quad (484)$$

By understanding this, we can understand why the theory of gravity is incomplete in predicting a constant Λ . This is because it is identified with a constant probability density. It is a natural limitation of the theory of gravity to be incomplete in predicting the nature of quantum mechanics, as

quantum mechanics is an independent theory. In the case of gravitational freefall γ^μ and $\Gamma_{\mu\nu}^\nu$ are inverse and the dependence on the probability density implies that it is free to take on a particular shape. In the cancellation of coordinate dependence for the quantum energy of interaction, Λ becomes independent of gravity and represents the null effect of quantum mechanics with gravity.

Scale invariance implies that this energy changes with quantum mechanics, however there is still the law of gravity based on energy density considerations to bring in. If the shape of the quantum state changes then the quantum energy changes. Since the changes in quantum mechanical and kinetic energy are equal and opposite the net change in gravitational (metrical) energy is zero in a quantum process in generality. In this, the gravity and quantum mechanics are effectively independent energy changes.

Kinetic energy changes under the equivalence principle such that changes are equal and opposite to changes in the total potential energy. Changes in total quantum mechanical and general relativistic energy are equal and opposite in any process involving a null change in kinetic energy.

The Principle of Reciprocity Part II: *The quantum force covaries with the gravitational field so changes in the energy of either theory are independent of the other theory. Kinetic energy changes with the sum of gravitational field energy and quantum field energy, therefore kinetic energy changes independently with both theories.*

In other words kinetic energy independently preserves a relationship with both theories, and the following energy transformations are independent processes:

$$\Lambda g_{\mu\nu} \leftrightarrow T_{\mu\nu} \quad (485)$$

$$G_{\mu\nu} \leftrightarrow T_{\mu\nu} \quad (486)$$

35 Observability

Part of this provokes the question: Why does this not violate the uncertainty principle when we take the gravitational observables as classical and the quantum as nonclassical as a part of the same model?

Classical observables are inclusive of determined and also seemingly random events of coincidence. These relate to the structure of spacetime and the nature of causal events of the nature of the material realm. These exist within a continuum of manifestation of the physical processes and are not separable from the nature of the evolution of space and time. This inseparability is at the heart of the question of classical observability of events, which unto themselves possess only a location.

We must ask, is coincidence observable within this theory? It must be, as two particles may be considered hypothetically identical by the equivalency principle. This guarantees an identification of their mass, as a solution exists of like kind, in the abstract two particle model one builds from coincident events or measures. These in exchange must gain complete locality to attain total coincidence under interaction and to maintain equivalency of action and reaction when distributed throughout space and time.

The equivalence principle affords the quantum state with a reality in the comparison or measurement of states. Identical quantum states are realizable upon the space at different locations.

If two identical instances are considered at one point in a space then these evolve identically. In order to evolve identically in space and time there must exist agreement with these two types of comparison. This implies the descriptions of quantum mechanics and gravity agree on local and global comparisons of states on a fundamental level, and this takes the form of the qualities a body possesses being equivalent to those it has in relation to its environment.

This also implies that the complete structure of quantum mechanics and gravity are in fact one in which the particle waves have real interpretations [?]. This also promotes the realist interpretation of quantum mechanics as the wavefunction takes on physical meaning with respect to the space.

The uncertainty principle is respected in the form of the product of uncertainty in position and uncertainty in momentum being a constant, no matter the scale of spacetime implied by relativity. The distance between probabilities bear a direct relationship to the state, and there exists correlation.

Equivalence in the comparison of identical states throughout the universe [?] is now an automatic consequence of the general covariance of quantum mechanics.

As identity of coincidence is common to the quantum and gravitational pictures and information is not lost or in conflict with measurability when there is no separability of action and reaction locally, there is no loss of global determinism, which is the essence of measurement and predictive capacity. If coincidence were not the only thing observable reality would not be consistently determined, as measurement would not be defined uniquely.

This is consistent with gravity as only then does the uncertainty principle no longer pose a conflict with the equivalence principle, to produce a coordinate free representation with consistent action and reaction between all events. This equates to the totality of mutually existant events as complete and consistent in description of all events with respect to all others. Additionally, without this reciprocity there is no completeness of action and reaction in nature between quantum mechanics and gravity, as this is only dependent on coincidence, the basis of measurement, and as is required to avoid a mismatch and disagreement between these two theories. Finally, from this, exchange must be the correlation of spacetime and the particle, when we admit a scaling of quantum mechanics. As the particles become more localized, their definition of probability scale expands with that of spacetime to such a degree the very definition of temporal interval shrinks to zero size, yielding the apparent traversal of information faster than c with no such real violation. As the measurement grows to finite size the system is the quantum system with a scaling, which was interpreted as the gravitational aspect of the problem.

The scale of probability density is covariant with the measure of spacetime as was found. As we approach the interior of an electron, virtual polarization processes renormalize the electron density to become virtually larger, and $\zeta_{\mu\nu} \rightarrow \infty$. Given that this implies $g_{\mu\nu} \rightarrow \infty$ and this is the measure of physical space to coordinate space, coordinate space must become zero in extent. The speed of light is invariant in all systems of coordinates, so light traverses the space between the electron centers in null time as judged by the external observer. This is true because $g_{\mu\nu}$ is the physical metric compared to the coordinates, and implies with a covariant value of the speed of light that the time interval for the event of measurement is comparatively smaller for the external observer.

Light must traverse the distance at the same rate when comparing the distant observer to the electron frame, so it traverses the distance in **less time** in the frame of the distant observer. This can be seen as it traverses the distance at c in both frames, and there is more space as judged in the frame of the electrons compared to the frame of the distant observer. The covariance of c and a larger space in the frame of the electrons assures the space is traversed faster, compared to the frame in which the distance is judged as smaller. The light covers the finite interval between the electrons at a speed of light which is not only constant for the world, but for the electrons as well.

Thus all particles of a point like nature are nonlocally correlated with all others with instantaneous action and reaction throughout the universe. The quantum ensures the correlation only then through the invariance with respect to this scaling principle, yielding the apparent traversal of information faster than c with reference to a given laboratory space. Thus the event must necessarily become witnessed as nonlocal.

State collapse exists with the observation of one system across space, but the alteration of this state is forbidden in this theory, since the particles together form a complete system and the condition on the state from the requirement of completeness and continuity of particle wave state and space time forbids the altering of the interrelationship between two states with observation by a third.

36 Equivalence Relation

Argumentatively the macroscopic and the microscopic realm are related and intimated by that of the relationships of the quantum to the relativistic domain when wherein it is considered that energy scales with size. But to that of the delimitation of it's intrinsic properties; the nature of a given is not necessarily by necessity imparted as of to that alone which is mass for the knowledge that it possess weight; when it is considered that measure holds the ultimate assessment of a given property. So as to suggest that light (the speed and qualitative features such as flux) determine the scale at which an energy is energetically manifest through motion; and to which in uncertainty the relation is to suggest that a completeness determines (codeterminantly) that of the given of the scale of the abrea of it's given contrast of effeciable weight of probability; in a common geometric (hypothetical) language.

Therefore; the problem of unification is one of separability of forces; as induction; more so than it is of logical deduction from out of the relation of common assessments of weight in a common setting and context of capacity to endow motion; the preliminary observation of which is that the given open contrast of two normative valuations agree as to identity freedom and general covariance (coordinate freedom). As a given; we take quantum particles to be indistinguishable as a preliminary observation of the workable and tenable aspects of the quantum theory; for that of the common demand of consistency of a particle and subatomic model.

Reasoned this way; the affordance of a limitation on that of two larger objects fitting into the same smaller space; by logical deduction on that of the empirical and theoretically founded principle of equivalence to which the thought experiment implicates; implicate immediately that the bound on scale and scale free measures of codeterminism extends to the microscopic; therefore implicating the bounds of certainty (however somewhat vantaged) that are empirically motivated and theoretically proven by the thought experiment & that of the theoretical Pauli Exclusion Principle Bridge; to which the solution to Shroedinger's cat paradox is furnished; imply that certainty in physical law is derivational of the truth of identity freedom and coordinate freedom

in compendium.

37 Conclusion of Introduction

This is therefore a Type II Covalent Bond; to which I would ascribe its content due to the nature of time for to replace the notion of space; in that of the model picture of covalent bonding in that of organic and inorganic compounds of which it takes its name; for in that of what is space in a typical covalent bond is replaced by an argument about time; identically to that of the description of superconductivity. Reasoning back from the two body problem as a one body problem; to that of two one body problems with certainty admits resolution of measurement into from which it derives; that of the conclusive presence of relativity as a precursor per the prescription of time dilation contraction working in tandem with change via shared proper time into states that exist because of their dual restrictions on the one body states from which they derive; then into which they then relax into lowered energy. The existence of a shared proper time which is in excess of unity; demands that as delocalization along the temporal axis acts in tandem; that the interaction is attractive; thereby attracting localized bodies in time to those delocalized in time. The fundamental reason for an attraction is that shared proper time grows with separation; and is of a reversed interperative standard to that of spatial geometric effects.

In conclusion; the magnetic field of which was assessed at the point of vantage of body 'A' correlates with the full force of magnetism being as strong as the coulombic at point 'A' to which noticeably leaves a fuller force away from point 'A' precisely because of the inverted temporal relationship on the bodies; and to which at point 'B' would become larger comparatively; because of the bodies spatial separation; to which the interaction when enfolded in on either body makes for a net non-zero interaction of attraction.

The finalizing idea is then that as magnetic fields vary; so too does the time dilation contraction in space and time; in a manner that reinforces to an identical universally attractive interaction at the same rate and with the same geometric properties of the coulombic interaction; the quantum effects then being of the nature to which they agree with probability 'concealing' the overlap in this otherwise uniform interaction; of which is secondary only to the coulombic interaction, attractive, and geometric.

The relativistic transformation is the inverse of the magnetic transformation; effectively its mirror image; therefore the electrons interact in a situation where at 'any' velocity they are effectively moving at the speed of light; to which as the magnetic interaction is only an epiphenomenon of the electric field in motion this case situation reduces to an attractive interaction at the same strength as that of the electrostatic repulsion; owing due to the proper time of 'B' in frame 'A' being less than 'A,' and the proper time of 'A' in frame 'A' being greater than 'B,' the effect of time dilation contraction; explicitly in the two body problem.

This time dilation contraction effect; and its effect on the magnetic field is comparable to turning 'off' relativity; to which charges will always interact as strongly magnetically as electronically; therefore a net uniform attraction of charges to charges of which is made larger via the accounting of exchange.

It is only really two things:

The shared proper time; and proper time of 'B' in frame 'A' being less than 'A,' and the proper

time of 'A' in frame 'A' being greater than 'B;'

The relativistic transformation is the inverse of the magnetic transformation; therefore the electrons interact in a situation where at 'any' velocity they are effectively moving at the speed of light;

Turning 'off' relativity and reciprocating with the magnetic field reveals a picture where there is then only:

- 1.) Shared Proper Time
- 2.) Superposition
- 3.) Exchange

Once the ordinary electrostatic interaction is absent this is all we deal with; to which the magnetic interaction balances with the electrostatic interaction and all we are left with is two forces in balance around which the geometry plays out amidst a relatively neutral background of forces and particles.

38 General Covariance of QM

In order for quantum mechanics to be consistent with accelerations as general coordinate transformations, it must hold true that the eigenstate holds an independent reality with respect to these types of transformations. For instance consider a two particle system. In order for the consistency of quantum mechanics under electromagnetic interaction, it must hold true that both states remain mutual eigenstates with respect to their frames of acceleration.

Any proof must be based on the supposition that the eigenstate remains an eigenstate for each particle with respect to all others under mutually accelerated motion. This holds, given that although it is true that locally in the frame of acceleration the eigenstate may be defined, it must also be an eigenstate with respect to other frames of reference, *and for the considerations of relativity may contain no frame dependence.*

Suppose in the frame of the particle ∂_μ is the basis of the operator for momentum. Then, $\gamma^\mu \partial_\mu$ is the relativistic operator for momentum and should be invariant under general coordinate transformations. This operates on ξ_μ , the wavefunction so that $\gamma^\mu \partial_\mu \xi_\mu$ is the relativistic energy momentum of the eigenstate.

If an only if this is an accelerated state does Λ_ν^μ as a transformation have a spatial and temporal dependence, in which case:

$$\begin{aligned} \gamma^\mu \partial_\mu \xi_\mu &\rightarrow \Lambda_\nu^\mu \gamma^\mu \Lambda_\nu^\mu \partial_\mu \Lambda_\nu^\mu \xi_\mu \\ &= \gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu + \gamma^\nu \partial_\nu \xi_\nu \end{aligned} \quad (487)$$

And an extra term appears, which does belong to the same frame ν but which introduces a frame dependence to the derivative. In this case ξ is no longer an eigenstate with respect to the accelerated frame. Since:

$$\Lambda_\nu^\mu = \gamma^\mu \gamma_\nu \quad (488)$$

It is true that this can be accomodated by subtracting a term from the right hand side of the eigenstate equation for four momentum, or alternatively and equivalently adding a term which

transforms reciprocal to the definition of the four momentum, thereby defining the *covariant differential*. Working out what the extra term means, it is equivalent to:

$$\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) = \gamma^\mu \gamma_\mu \partial_\nu \gamma^\mu \quad (489)$$

In the frame of ν , or under transformation back to the frame of μ the term which must be added to ∂_μ to preserve the differential is:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu \quad (490)$$

In conclusion, for quantum mechanics to possess no frame dependence for eigenstates, and for them to be mutually defined under interaction, the covariant differential defined by the following must be used for the energy momentum of the particle:

$$p_\mu = i\hbar(\partial_\mu + \Gamma_\mu) \quad (491)$$

From this not only follows the rule of differences in frame contributing to the localization in a zero sum fashion but that the separable parts of the momentum change as the following under a general transformation:

$$\partial_\mu \rightarrow \partial_\nu + \Lambda_\nu \quad (492)$$

$$\Gamma_\mu \rightarrow \Gamma_\nu - \Lambda_\nu \quad (493)$$

With:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (494)$$

39 Eigenspinor Field Theory

Consider the general transformation of the spinor part of the wavefunction:

$$\xi_\mu(x_\mu) \quad (495)$$

The approach used is that of generating a field theory from a general transformation of a field quantity.

$$\xi_\mu \rightarrow \Lambda \xi_\mu \quad (496)$$

Here Λ is a 16 parameter tensor which represents the transformation upon a general wavefunction ξ_μ . The transformation Λ should not be confused with a Lorentz boost, it is a transformation of the field of spinors into itself and is an operator. It however carries analogous properties, for a rotation and a scaling of the spinors *is* equivalent to a *local* change in frame, however it does not arise by net global motion but instead by way of the evolution of the field of spinors. This can be written in general as:

$$\Lambda = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \quad (497)$$

The spinors are rotated and boosted in the six possible directions given by the tensors in the transformation. Where g is a coupling constant and $\lambda_{\mu\nu}(x_\mu)$ parametrizes this transformation in space and time, while $\sigma^{\mu\nu}$ is a set of matrices corresponding to the commutator of the γ matrices, as in the following:

$$\sigma^{\mu\nu} = \frac{i}{2}[\gamma^\mu, \gamma^\nu] \quad (498)$$

What is important is that a *gauge* can be defined for this transformation, since it acts on a *field of spin*, as:

$$\partial_\mu \rightarrow D_\mu = \partial_\mu + \Gamma_\mu \quad (499)$$

With:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu = \partial_\mu \log \gamma^\nu \quad (500)$$

Since this is the log derivative of the spin as a field, the transformation is as follows on the Dirac equation:

$$\xi_\mu \rightarrow \Lambda \xi_\mu = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \xi_\mu \quad (501)$$

$$\partial_\mu \rightarrow \partial_\mu - ig\partial_\mu \lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu} = \partial_\mu + \partial_\mu \log \Lambda \quad (502)$$

$$\Gamma_\mu \rightarrow \Gamma_\mu + ig\partial_\mu \lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu} = \Gamma_\mu - \partial_\mu \log \Lambda \quad (503)$$

Where the sign change comes from the fact that the covariant correction operates on γ^ν while Λ operates on ξ_μ . Hence this is equivalent to changing the order in the commutator and hence there exists a change in sign, and the transformation has opposite differentials with ∂_μ and Γ_μ . The form of the covariant differential D_μ is thus left intact by gauge transformations with the spin curvature connection, and the wavefunction is separably transformed from that of γ^ν . The adjoint wavefunction is with the conjugate of this wavefunction transformation, so the probability amplitude is left unaffected in the Dirac equation, and the electromagnetic gauge connection may be added separately. Thus the net covariant differential is:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (504)$$

40 Lagrangian for Superconductivity

For the sake of gauge invariance the QED Lagrangian it is posited must now be updated to:

$$\mathcal{L}_{SC} = \bar{\psi}(i\hbar c \gamma^\mu D_\mu - mc^2)\psi - \frac{1}{4\mu_0} F^{\mu\nu} F_{\mu\nu} + \kappa \Omega^{\mu\nu} \Omega_{\mu\nu} \quad (505)$$

Where:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (506)$$

And:

$$\alpha = \frac{e}{\hbar c} \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (507)$$

And the curvature of the antiferromagnet (or ferromagnetic) field is:

$$\Omega_{\mu\nu} = \partial_\mu \Gamma_\nu - \partial_\nu \Gamma_\mu \quad (508)$$

In analogy with the electromagnetic field tensor. We will now show this reduces to a version of our original Lagrangian for antiferromagnetism in the equations of motion. What is to note about this Lagrangian is that the γ^μ one-forms carry spatiotemporal dependence.

41 Transformation With an Electromagnetic Field

Beginning with the reciprocal property of γ^μ and D_μ we derive the response from this condition extending to the introduction of an external four potential αB_μ . The given is that:

$$\gamma^\mu D_\mu \xi_\mu = \xi_\mu \quad (509)$$

It is illuminating to consider the torsion property as related to the Meissner effect.

Then we add $\alpha B_\mu = f_\mu$ to produce the new condition, interrelating the accelerated frame transformation produced under interaction to the addition of this field:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) \xi_\mu = \xi_\mu \quad (510)$$

So that to satisfy both equations:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) = \gamma^\mu D_\mu \rightarrow \lambda^\mu = (\gamma^\mu D_\mu + \gamma^\mu f_\mu)^{-1} \gamma^\mu D_\mu \quad (511)$$

The partial derivative and spin curvature terms are modified as the following:

$$\partial_\mu \rightarrow \partial_\mu + \partial_\mu \log \lambda^\mu \quad \Gamma_\mu \rightarrow \Gamma_\mu - \partial_\mu \log \lambda^\mu \quad (512)$$

With this, the covariant differential is preserved. The added term comes from the distributive property of the log function and the action of the transformation on the wavefunction:

$$\partial_\mu \log \lambda^\mu = \partial_\mu \log((1 + \gamma^\mu f_\mu)^{-1}) = -\gamma^\mu \partial_\mu f_\mu \quad (513)$$

Since they are in the same frame, γ^μ and ∂_μ commute. Integrated as a source this term is:

$$-f_\mu = -\alpha B_\mu \quad (514)$$

The added term of λ^μ perfectly compensates for the added f_μ by the above. Hence the electromagnetic potential that is applied causes a shift of energy momentum between the two parts of orbital and spin curvature energy momentum, at the strength of the applied electromagnetic potential.

The condition of (45), implies that from the perspective of a particle accelerated in relation to a particle at rest, the particle at rest acts as a source generating an opposite potential to its own potential as experienced in the frame of the accelerated particle. The accelerated particle is not a source to itself because of the reciprocal condition and it is at rest in its frame, so it experiences the (negative) potential of the other particle at rest. This indirect potential acts on either particle, and must act to attract them, and a gap develops.

As there exists a frame of rest and condition (45) is conserved under a frame transformation, there exists no direct potential, but there does exist one arising from the frame of acceleration relative to the frame of rest, as a back reaction reversed potential on the particle in the accelerated frame.

Thus both particles experience a negative potential with respect to the other particle, which is the following potential:

$$\int \gamma^\mu \partial_\mu \log \lambda^\mu dx^\mu = -\alpha B_\mu \quad (515)$$

This explains the diamagnetic effect and pairing, and is consistent with the magnetic field being zero. Additionally, the magnetic field of zero can be explained as the fact that if γ^μ and D_μ operating on ξ_μ are reciprocal to a constant, and given the momentum is inertial, it produces zero magnetic field in all frames.

But this condition of the eigenstate is preserved with respect to all frames, thus the magnetic field is globally zero for all points within the material.

42 Covariant Differential Commutation Relationship

Consider the interior transformation of the covariant differential due to the term produced by the previous transformation under action of the electromagnetic field:

$$\begin{aligned}
 & [D_\mu, D_\nu] \quad (516) \\
 &= \partial_\mu \partial_\nu + \partial_\mu \Gamma_\nu + \Gamma_\mu \partial_\nu + \Gamma_\mu \Gamma_\nu - \partial_\nu \partial_\mu - \partial_\nu \Gamma_\mu - \Gamma_\nu \partial_\mu - \Gamma_\nu \Gamma_\mu \\
 &= (\partial_\mu - \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\
 &\quad + (\partial_\mu - \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\
 &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\
 &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\
 &= -\alpha \partial_\mu A_\mu D_\nu + \alpha \partial_\nu A_\nu D_\mu + \partial_\mu D_\nu - \partial_\nu D_\mu + \alpha \partial_\mu A_\mu D_\nu - \alpha \partial_\nu A_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\
 &\quad = \partial_\mu D_\nu - \partial_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\
 &\quad = D_\mu D_\nu - D_\nu D_\mu = [D_\mu, D_\nu]
 \end{aligned}$$

Which indicates that the two gauges are mutually satisfied under transformation by the field, interior to the covariant differential. This also holds true for the total covariant differential since any transformation should be performed symmetrically. Hence, the commutation relationship of the covariant differentials is preserved under the internal transformation of its terms. Furthermore:

$$[D_\mu, D_\nu] = -[\Lambda_\nu^\mu D_\mu, \Lambda_\mu^\nu D_\nu] = -[D_\nu, D_\mu] \quad (517)$$

Indicating the commutation relationship is antisymmetric under a symmetric frame transformation. We may evaluate this term in the following way at a point in space:

$$\begin{aligned}
 & \xi_\mu \xi_\nu [D_\mu, D_\nu] \xi_\mu \xi_\nu \quad (518) \\
 &= \xi_\mu \xi_\nu (D_\mu D_\nu - D_\nu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\Lambda_\nu^\mu D_\mu \Lambda_\mu^\nu D_\nu - \Lambda_\mu^\nu D_\nu \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (D_\mu \log \Lambda_\mu^\nu D_\nu - D_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\gamma^\nu \partial_\mu \log \Lambda_\mu^\nu D_\nu - \gamma^\mu \partial_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\gamma^\mu \partial_\mu \log \Lambda_\mu^\nu - \gamma^\nu \partial_\nu \log \Lambda_\nu^\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu \alpha (\partial_\mu A_\nu - \partial_\nu A_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu \alpha F_{\mu\nu} \xi_\mu \xi_\nu
 \end{aligned}$$

Making use of (34) and γ^μ and γ^ν to correct for the covariant differential making it a partial derivative by (35) and the fact that when the partial derivative associated spin is multiplied by another spin factor the negative logarithmic derivative is introduced into the equations (37) and (38). Hence:

$$[D_\mu, D_\nu] = -\alpha F_{\mu\nu} \quad (519)$$

The spin field transformation which accompanies the introduction of the electromagnetic field, under the covariance of the form of the eigenstate is a curved transformation of coordinates, and hence what we arise at is a real consequence of coordinates. It is flat in a sense (when one accounts for the change in coordinates) and curved in a sense (when one does not account for this change in coordinates) naturally. The Meissner effect is seen as the conventional departure of the electromagnetic field tensor torsion condition at the boundary of the superconductor.

43 Calculation of Exchange

We can now proceed to analyze the commutation relationship of the ∂_α and Γ_α with the added $\pm\Lambda_\alpha$. Under the two particle equation this is reversed in sign among the two sides of the two particle Dirac equation corresponding to particle 1 and particle 2. Under consideration of the fact that Λ_α changes sign under juxtaposition.

Exchange Difference Hypothesis: *The added logarithmic differential of the frame transformation, or its curvature, Λ_α , in changing sign between frames behaves in conjunction with ∂_α and Γ_α as raising and lowering operators in the two particle Dirac equation.*

To test this hypothesis consider the ∂_α energy momentum for the singlet. Between states in the two particle Dirac equation a term enters as:

$$\begin{aligned} (-i\hbar\partial_\alpha + 2\hbar\Lambda_\alpha)(-i\hbar\partial_\alpha - 2\hbar\Lambda_\alpha)\Psi & \quad (520) \\ & = -2\hbar^2(a^\dagger a)\Psi \\ & = -2\hbar^2\partial_\alpha\Lambda_\alpha \end{aligned}$$

The term on the spin curvature enters as:

$$\begin{aligned} (-i\hbar\Gamma_\alpha - 2\hbar\Lambda_\alpha)(-i\hbar\Gamma_\alpha + 2\hbar\Lambda_\alpha)\Psi & \quad (521) \\ & = -2\hbar^2(aa^\dagger)\Psi \\ & = -2\hbar^2\partial_\alpha\Lambda_\alpha \end{aligned}$$

Thus the effect of the acceleration and the existing momenta, create the conditions under the two body (with opposite accelerative frame boosts) of anticommuting operators. The two particle equation is the product of two Dirac equations acting on the superposition of the two wavefunctions, here taken in the center of mass frame α :

$$\begin{aligned} (\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m) & \quad (522) \\ (\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)\xi_\alpha^-\xi_\alpha^+ & = 0 \end{aligned}$$

Substitution of conserved quantities to simplify the calculation results in:

$$\begin{aligned} (-i\hbar\eta_+^\alpha + e\sigma^\alpha - m) & \quad (523) \\ (-i\hbar\eta_-^\alpha + e\sigma^\alpha - m)\xi_\alpha^-\xi_\alpha^+ & = 0 \end{aligned}$$

Because the positive and negative orbital momentum and spin curvature sum to zero:

$$\begin{aligned} (e^2\sigma^\alpha\sigma^\alpha - (me + 2ie\hbar(\eta_+^\alpha + \eta_-^\alpha))\sigma^\alpha & \quad (524) \\ +im\hbar(\eta_+^\alpha + \eta_-^\alpha) - \hbar^2\eta_+^\alpha\eta_-^\alpha + m^2)\xi_\alpha^-\xi_\alpha^+ & = 0 \end{aligned}$$

Because the only term which contributes to the change from the singlet to triplet under the change in sign by the operators above is η^α and $\eta_+^\alpha + \eta_-^\alpha$ is zero by equal and opposite momenta, this reduces to:

$$\begin{aligned} -4 \int \int \xi_\alpha^+\xi_\alpha^-\hbar(\eta_+^\alpha\eta_-^\alpha & \quad (525) \\ -\eta_-^\alpha\eta_+^\alpha)\xi_\alpha^-\xi_\alpha^+ dx^\alpha dx^\alpha & = \Delta \end{aligned}$$

η^α produces four terms which obey a commutation relationship by way of the above:

$$\begin{aligned}
& \eta_+^\alpha \eta_-^\alpha - \eta_-^\alpha \eta_+^\alpha \\
&= (\partial_\alpha^+ + \Gamma_\alpha^+)(\partial_\alpha^- + \Gamma_\alpha^-) \\
&\quad - (\partial_\alpha^- + \Gamma_\alpha^-)(\partial_\alpha^+ + \Gamma_\alpha^+) \\
&= (\partial_\alpha^+ \partial_\alpha^- + \partial_\alpha^+ \Gamma_\alpha^- \\
&\quad + \Gamma_\alpha^+ \partial_\alpha^- + \Gamma_\alpha^+ \Gamma_\alpha^-) \\
&\quad - (\partial_\alpha^- \partial_\alpha^+ + \partial_\alpha^- \Gamma_\alpha^+ \\
&\quad + \Gamma_\alpha^- \partial_\alpha^+ + \Gamma_\alpha^- \Gamma_\alpha^+) \\
&= -4\partial_\alpha \Lambda_\alpha + ([\partial_\alpha^-, \Gamma_\alpha^+] - [\partial_\alpha^+, \Gamma_\alpha^-]) \\
&= -4\partial_\alpha \Lambda_\alpha
\end{aligned} \tag{526}$$

Where the following equality holds:

$$[\partial_\alpha^-, \Gamma_\alpha^+] = [\partial_\alpha^+, \Gamma_\alpha^-] \tag{527}$$

As the extra Λ_α changes sign *with* the derivative, leaving for the two particle energy gap *for all electrons*:

$$\begin{aligned}
\Delta &= 4\hbar c \int \gamma^\alpha \Lambda_\alpha dx^\alpha \\
&\equiv 4e \int \gamma^\alpha A_\alpha dx^\alpha = 4J
\end{aligned} \tag{528}$$

This last equivalence is because in the exchange interaction the terms of μ and ν are juxtaposed and appear in the Λ , which by the previous section is equivalent to an electromagnetic potential differential. This is consistent with the previous section, where a γ^ν changes in a *relative* manner such that a reversed A_ν is generated for the particles in motion *within a spin system background*.

If the particles are relatively accelerated there exists a reversed potential between them with an energy lowering that is the contribution to their energy from this potential, and it is equivalent to an energy mass lowering of their inertial content. This is true as the acceleration gives rise to the (reversed) potential and without an acceleration there exists no potential. The acceleration as a source for the potential is physically equivalent to the lowering of the inertial mass energy, since it is the same term numerically.

This is fundamentally the expression that the potential energy mass lowering as sourced in the acceleration, and numerically equivalent with the inertial mass energy lowering, is a matter of frame, and the two are equivalent between all frames, hence the lowering is a prediction of general covariance. Since the quantum singlet to triplet operator holds individually between particles and a conventional to ultimate difference is taken the lowering holds for all two particle states. This implies the following equivalence:

Quantum Equivalence Principle: *The potential mass energy lowering is indistinguishable from the inertial mass energy lowering.*

44 Discussion of Energy Lowering

This seems in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \tag{529}$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (530)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (531)$$

For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content. In and by way of this it does indeed lower, but it is a matter of perspective. Going back to the system so established, we ask the question as to whether both energy conservation and general covariance can be satisfied with the formalism developed.

The analogy is actually quite simple, for what happens is that from the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (532)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system in motion where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has occurred by the above and the condition of general covariance. The quantum equivalent of the Earth-Sun system is to see that it is the inertial constraint on quantum exchange we judge as non-inertial when it is in fact quantized inertially. This admits the formation of a new conclusion regarding quantum phenomena in general, as for example the photoelectric effect by which a photon is absorbed by an electron and knocks it out of its orbital in a metal, past a threshold energy momentum:

Conclusion: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is the accelerated interpretation of this state. This gap is real by observation from the indistinguishability of the inertial and potential relativistic factors under the equivalence principle for any transition of a quantum nature.*

45 Distinction

While an interaction takes place, it is true that the uncertainty principle would be modified in the observables not for the sole reason that the coordinates change under acceleration, for there does exist a coordinate free representation of the observables compatible with acceleration such that the uncertainty principle is satisfied. It is also because either:

A:) *If the electromagnetic interaction is not included in the momentum then it modifies the position and momentum compatible with an acceleration and an interaction that varies, and thus the relative determination of momentum and position is functional and dependent on coordinates, and not an invariant description, given that this acceleration exists in a way that is dependent on coordinates with respect to the operation of position of one particle upon the momentum of another, and with the reverse*

operation. Hence a coordinate dependent anomaly arises in the commutation relationship between the observables of different particles, whenever the electromagnetic potential is not included in the particle description.

B:) *If the electromagnetic interaction is included then the former anomaly does not occur, because the commutation relationship is perfectly compensated for in its change with respect to the quantities of particle momentum and field momentum, as one merely changes the other in an equal and opposite functional manner and they are comparatively added instead of a complimentary change absent.*

Conclusion: *What can be seen is that it is the sum of these changes which is the expression of a net invariance of the determination of the uncertainty principle with respect to the general covariance of the observables without which there is no commutation of the separable momenta or positions.*

If and only if this holds true can we satisfy both postulates. The restriction to mutually satisfying both postulates is trivial without invoking the multiparticle viewpoint but not when it is invoked. For note that the uncertainty principle can be made invariant by a generally covariant coordinate basis locally.

However, this is not manifestly globally invariant in that the determination of the multiparticle relationship of uncertainty does not mutually commute between different particle observables, for the same reason there exist different coordinate systems for different particles.

Additionally, although with an interaction, the single particle uncertainties remain manifestly locally invariant, they are not as determined globally in the sense of between particles, unless the interaction potential is included in the momentum. When the interaction is included the change it introduces compensates for changes in the particle momentum in such a manner that the system is manifestly generally covariant and the uncertainty principle is left generally invariant.

For this to be true an identity must hold true between the frame transformation and electromagnetic field interaction, namely that the log differential of the frame transformation is the negative of the log differential of the electromagnetic field tensor, weighted by the appropriate constant (α):

$$\partial_\mu \log \Lambda_\mu^\nu = \alpha \partial_\mu \log F^{\mu\nu} \quad (533)$$

Furthermore this identity gives a relationship to the description of the frame as it covaries with the particle description of momentum, and yields the total covariantly conserved quantity of momentum. It is merely the force law ($F = ma$), by inspection.

46 Justification and Ramifications

First to note is that the multiparticle perspective is one to one with the existence of interactions, which by way of and which there exists a connection to the differing frames of acceleration, and that these interactions must be included as a field potential energy momentum as it pertains to the full particle energy momentum as an observable in order for there to be a commutation relationship consistent with the uncertainty principle between the observables of the multiple particles. This is to satisfy the uncertainty principle with respect to the different particle's definitions of each other, and their mutual commutation relationships, for their definitions of momentum do not commute when the interaction potential is left out. Additionally, what is striking is that it is the full particle and field energy momentum as carried by the particle that defines the observable

and it is not particle only.

This seems to express on a base level that it is the full particle energy momentum with field that becomes the observable in the multiparticle viewpoint, as such must be the case to satisfy the uncertainty principle with general covariance resulting from changes in the coordinates with respect to the frame of motion, resulting from and identifiable with the acceleration due to the interaction. As a consequence, the eigenstate condition of the Dirac equation is intact, although there is a slight difference in interpretation, arising in the context of the multiparticle description. For instance, the equation:

$$(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (534)$$

Is the expression of the eigenstate condition of a particle like an electron. Although the single particle description of the eigenstate does not differ when mapped from the multiparticle condition, what remains to be seen is if the condition this represents mathematically is still identifiable with what it means in the multiparticle interpretation.

For while the Dirac equation, as it was initially interpreted, holds perfectly well with the condition of an ordinary partial derivative upon it being zero to result in an eigenstate, there is a subtle difference in the multiparticle setting with general covariance. Here, the condition is that the total covariant differential defined as:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (535)$$

Must be used in place of:

$$p_\mu + \alpha A_\mu = \partial_\mu + \alpha A_\mu \quad (536)$$

In the generally covariant setting. With this, although the Dirac equation is left locally intact, given that Γ_μ vanishes locally, it does not vanish identically for particle to particle comparisons. To prove this all it suffices to say is that the connection described in equation (8) is preserved under relative comparison of observables, and hence in general, or as for the multiparticle description, since Γ_μ does not vanish globally and must be included for generality.

As a final note consider that locally the description remains the same for the single particle description, for all particles, but that the multiparticle description differs substantially, as for instance γ^μ also takes on structure of the form of a function, and the descriptions may be inequivalent physically:

Hypothesis II: *The physics of the multiparticle description differs from the single particle description.*

In the case of exchange this can be an energy lowering. To note then is that this can lead to a collectively lowered energy in the case of superconductivity.

Examining superconductivity, for instance, the mystery is:

Mystery: *How does the energy lower, even if only in relative terms?*

This is only possible in a relative sense if the physical quantum description changes, and if the potential and kinetic energy both lower. But, the change between the singlet and triplet can be relatively modified by a matter of perspective. Internally to the system there is no change in kinetic energy as indicated by the field to frame relationship in the inertial frame, but observationally, it appears that there is a gap in energy.

To note then is merely that the triplet and singlet are repulsive and attractive, and therefore possess opposite relative curvatures, which immediately indicates a subjective-objective agreement of an energy difference of $2J$ per particle, because relatively there also exists an energy difference in the kinetic energy of J in the inertial mass energy by this same curvature relative to a system at rest external to it.

From the constraint of equation (43) and that which is imposed by the existence of multiple particles for which the condition of general covariance must be satisfied, the exchange phenomenon is relative and reveals a mass energy gap.

To prove this result quantitatively and rigorously one needs to evaluate the net integral, but this value is given empirically by the relation encoded in equation (44), which says that the differentials of these quantities are identical up to a constant of proportionality, and that their integrals should be equivalent up to a constant of integration. Then, because of this identity, the mass gap for an external observer outside the system, is the entire exchange energy difference of the two particles measured in the system of J with the change of the kinetic mass energy of J for a total of $2J$ per particle in sum.

In this context, the exchange is real only when observed from outside the system, and it is purely a relative phenomenon. Carefully noting their natures, that one is an electromagnetic potential energy difference when integrated, and that the other is an inertial mass energy difference when integrated, we arrive at the following conclusion:

Conclusion: *Relative potential and inertial mass energy lowerings are indistinguishable.*

However the gap must be weighted by the appropriate Lorentz factor, and this gives the formula and equivalence:

$$\begin{aligned}\Delta &= 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} \\ &= 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J\end{aligned}\tag{537}$$

47 Mystery Revisited

The first thing of note in resolving this mystery is that the interpretation of the Meissner Effect is the confluence of the principle of general covariance and the uncertainty principle. The physics does not change, merely the interpretation of the uncertainty principle. The two statements, one of the Meissner Effect, and secondly, one of energy conservation, are respectively the instantiation and extension of the uncertainty principle and general covariance. For instance, examining the equal and opposite fields which are one to one with spin angular momentum as mutual observables, is a manifestation of the uncertainty principle to say they do not depart from commutativity with respect to boosts. Secondly, energy conservation here is a principle by which the only dependence of this equal and opposite magnetic field is upon the perceived metrical relationship due to motion, otherwise the gravitational field of the body would change and they would exchange an extra contribution of energy, and would not preserve the center of mass under freefall. In showing by contradiction (of a dual nature) that one or the other of these principles is violated if and when the transformation is not reciprocal to the field, one shows that the Meissner Effect is a generally covariant uncertainty principle based phenomenon. This is

one to one with the principle by which the fields are in inverse or reciprocal relationship to the relativistic transformation, and:

This follows from the indistinguishability of the inertial and potential relativistic factors.

What is known is that the covariant differential in total does in fact commute, and that when it is separated into particle and field momenta that these do not commute. Thus this implies a number of things. First of all is that it is only the total field and particle momentum which is inertial, which is the interpretation of the Meissner Effect. Secondly is that the four momentum of the particle alone is curved with respect to the field of electromagnetism alone. This is consistent because this leads to the condition of equivalent and opposite functional curvature relationships for these substituent quantities. Lastly, what this implies is that it is indeed true that the potential mass energy lowering in a superconductor is fundamentally indistinguishable from the inertial mass energy lowering.

From this follows the generalization of the condition implied by the first section of this paper, which is that:

$$D_\mu(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (538)$$

Which is nothing other than the condition for a covariant eigenstate.

As an experiment simply consider dropping a superconductor levitating a magnet, if this theory holds true then because there is a gradual change in the gravitational frame, as they fall their curvatures should contribute equally, with the prediction that the initial condition requires that they will fall together as one, given their mutual inertial relationship in an approximately inertial frame.

Conclusion: *There is a measurable and physical effect on the interpretation of the observables in the uncertainty principle given their coordinate system and frame independence.*

48 Interdependence of Orbital and Spin Momentum

To explain exactly what 'reciprocity' means in this context, consider the particles. In the two particle Dirac equation, there occurs an *internal* reciprocation of spin curvature energy momentum and orbital energy momentum. This occurs **not** because the particles merely *influence* each other, but because they *influence each other's representations* in particle energy momentum and spin curvature energy momentum to change. Hence the wavefunctions in remaining Lorentz invariant *remain the same physically*, but there occurs a reciprocation between the quantum and the relativistic *components* of the objects.

Now consider that given the Dirac equation holds for one particle. Any multiparticle modification of dynamics must occur internal to the equation, and not modify its overall structure, but it **can** modify the individual terms in a plus-minus like fashion. This is a way to side step the problem of coming up with a new and unique generalized transformation, analogous to the γ^μ , which will encode a curved space *in general*. In this way, the multiparticle and accelerative features of reality are encoded in changes of the components of the representation. This represents something wholly new however, because the old adage that *'the whole is greater than the sum of its parts'* applies. In this, the particles are **not** moving through each other merely because something only akin to a potential holds between them, but because a *change in each other's*

representations arises from their mutual quantum and relativistic *relationships*.

An Instance of Reciprocity: *Reciprocity here means the comparison of different accelerative frames under the singlet and triplet, in which acceleration contributes to the spin curvature and orbital energy momentum, causing the two parts of the representation: the orbital and the spin, to reciprocate in space and time such that the particles mutually lower in energy and oscillate in space and time.*

Λ_ν is added and subtracted merely because of the rule of general covariance, and through quantum mechanics produces a reciprocation of accelerative spin curvature energy momentum and accelerative orbital energy momentum, so that the above can be put more simply:

Reciprocity Generalized: *Relative comparison of different quantum states under superposition leads to an energy difference in the states when different observable frames of acceleration are also compared.*

The emphasis in general is that **both** different relativistic frames of acceleration **and** different quantum states are compared simultaneously. Taking as the displacement the energy momentum associated with the change due to the difference of frames under an accelerative boost, afforded by the addition of an inertial interaction of the electromagnetic field:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (539)$$

Because of the equivalency principle, Λ_ν is zero in the frame of the particle and *does not* contribute to the single particle description. While for the *comparison* of states in the singlet and triplet where different frames of acceleration are compared the contribution from the relativistic frame of acceleration *difference* leads to a *displacement* of $\pm\Lambda_\nu$. The essential idea is that the gap and attractive force arises from the qualitative difference between the single particle and two particle pair descriptions under the singlet and triplet. This makes for an interaction that results in a distinction that must be made between a particle in the single particle description, and a particle that is a *part* of a two particle state under mutual *acceleration*. When the particles are put together they produce a qualitatively different result from only the single particles put together with only an electromagnetic interaction. For instance, under exchange, interchange of frames: $\mu \leftrightarrow \nu$ creates a $\pm\Lambda$ relativistic frame difference on ∂ and Γ . Hence reciprocation is predicted with exchange, along with an energy difference of the singlet and triplet. This implies that reciprocation of quantities is one to one with inertial motion and this is one to one with an inertial electromagnetic force, which is in turn one to one with the Meissner Effect. However, the energy of the total system is lowered or raised under mutual acceleration by the presence of the extra Λ_ν which leads to the different momenta as operators producing an algebraically different result from their simple sum when operating on the wavefunction.

Hence, inertial motion is consistent with conservation of the exchange energy (through the cancellation of the distance dependence and inertial quality of the electromagnetic force) and reciprocation of spin and orbital degrees of freedom. We can conclude from the mere fact that spin-orbital reciprocation takes place that the exchange energy is conserved and one to one with the initial statement that the equivalency principle holds for the force law holding the charges together. Hence, a non-dynamical difference in the exchange energy can be seen as an outcome of the inertial property, or the inertial property holding true can be seen as an outcome of the exchange energy developing a difference, but neither can be proven entirely by independent means. Finally to note is that this has an implication for general relativity as a reaction, for when the transition to the superconducting state takes place its mass lowers, invoking a complimentary raising of general relativistic energy. This, in its general form, is what reciprocity means in

the end. For the gestalt picture of quantum mechanics and general relativity produces changes in each, which are complimentary, because the general relativistic modification of the quantum description, lowers the quantum energy, and it raises itself.

49 Pairing and Condensation

The connecting principle that implies Δ_p is at a maximum when Δ_c goes to zero, and vice versa can be explained by two facts:

1.) *When particles fall into pairs they become more localized in the orbital degree of freedom, hence their relationship to one another is a **larger boost apart** between the holes comprising distinct pairs.*

2.) *The electrons and lattice **counteract** both the condensation and pairing with a resistance to an expansive force at low doping and to a contractive force at high doping. The electron sea and lattice that exists works against pairing and condensation, while remaining of equal localization to the holes.*

The density of electrons exists in proportion to the localization of holes and electrons (or inverse to their spread) and hence is also proportional to pairing strength. Simultaneously, the outward force of the pairs accelerates them apart, leading to a condensation strength that is proportional to the density of holes. Thus the inter-pair boost is largest when the density of holes is large, explaining a large condensation gap at high doping, and the inter-hole boost is largest when the density of electrons is large, explaining a large pairing gap at low doping. Hence the two processes of balanced forces and distinct effects of the electrons or holes are at odds, yet the force inwards must balance the force outwards.

As a consequence there exists a range of doping intermediate between the extremes where superconductivity exists and it must fall off to both sides like a semicircle reaching zero because the electrons and lattice counteract the condensation force at low doping with a net contractive force of electrons with the lattice, and pairing force at high doping with an expansive force due to the large number of holes.

Since condensation may be treated as the change in orbital localization due to relative frame, and pairing may be treated as the accelerative parameter due to the localization (inverse to the spread of the wavefunction), the net effect is described by the energy lowering being the contracted factor of:

$$\begin{aligned}\Delta &= 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} \\ &= 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J\end{aligned}\tag{540}$$

This is because the factor of Λ_{ν} is the factor corresponding to the boost leading to pairing, and γ^{ν} corresponds to the *excess* energy lowering from relative frame due to change in the boost parameter by acceleration into pairs. This is thus a factor multiplying the accelerative frame difference corresponding to the pair energy as a relative boost between pairs of the condensate. If it goes to unity then the energy of the condensation gap is zero, while if the acceleration goes to zero then pairing vanishes. Everywhere the gap is the constant of $4J$. This interval of superconductivity occurs when the lattice plus the electrons that exist balance the force outwards of the condensation and the force inwards of the pairing, but since the force is nonzero, and it

acts through a distance by the effect of length contraction, the holes experience a net energy lowering intrinsic to the material.

50 Introduction To Superconductivity

The High Temperature Superconductors consist of planes of antiferromagnetic spin texture that when doped create a material capable of phase transitioning into a superconducting state. From this it is reasoned that a spin field must be incorporated into the model. The generation of a spin field, and the interaction of the net momentum with the electromagnetic field are then considered, as well as the implications for a covariant generalization of quantum mechanics in the setting of this field of spins, with the question in mind: "How does the eigenstate condition change in the context of a model which incorporates a field of spin and an electromagnetic interaction?"

This is shown via the covariant differential to lead directly to the principle of a reversed potential between particles interior to a superconductor. From this it is argued that an effect of mutual and relative curvature arises between charged particles in the spin field by way of the electromagnetic interaction. As a whole this description is predictive of pairing, the diamagnetic effect, the condition of zero magnetic field interior to a superconductor, and the gap. It is established that the states internal to a superconductor are in inertial freefall with respect to the spin field and under the influence of the electromagnetic potential. From this, we must move to a new viewpoint where the variables of spin curvature momentum and orbital momentum are treated in a manner such that they are in a non zero-sum relationship.

The attractive interaction in superconductivity and gap is motivated by the displacement of and reciprocation of quantum mechanical particle only orbital energy momentum and spin curvature energy momentum under comparison of different accelerative frames with the presence of an electromagnetic potential. The frame difference under acceleration by the electromagnetic field is found to amount to the effect of a lowering and raising operator under the covariant two particle Dirac equation in the presence of a spin field, which explains the appearance of a pairing gap, while the condensation gap is given by the reciprocal process of motion of charge pairs apart. If we take as knowns that there is a generally diffeomorphic transformation of our coordinates for a given system, then position and momentum take on new values, and with an acceleration there appears a coordinate anomaly. This coordinate anomaly is the residual effect of scaling by an unknown factor now known as:

$$\beta \tag{541}$$

That this appears is indication that we have not instantiated the equivalence principle, and when we do, we find that the coordinate anomaly appears as a geometric factor analogous to a force, as in general relativity. These transformations of momentum and position to their generally covariant representations with the equivalence principle then imply that there is a gap, because different local inertial representations will differ under the auspices of a singular global description.

That this effect of different is not removable, implies that general relativity, and the theory of superconductivity are real physical phenomena, and not artifacts of our description. They are genuine effects of the lack of a local to global translation of general covariance, and implicate a gap. For instance imagine a series of elevator experiments around the world, and out in space.

Enough force is applied to any of the elevators to make it such that they each feel one g of acceleration, as if on earth. If we make them numerous enough and equivalent to the mass of the Earth then the effect is a series of up and down motions as if the Earth were still present.

When we remove the constraint of support, they will evolve in an identical manner to the electrons in a superconductor. But because for a different observer there is no global agreement on local inertial frame, it will be the case that there will arise a difference in description for the local frames. They will not differ in their local description of physics, but relatively there will be a gap that appears for any one in relation to the singular global averaged description.

Hence we arrive at a situation of global to local difference in description arising at differences in weight, and consequent potential felt by the electrons, binding them together. It is precisely these four things:

- 1.) Covariance over \hbar .
- 2.) Shared proper time.
- 3.) An instantiation of the equivalence principle.
- 4.) A difference from local to global description of free fall.

That make superconductivity real in the high temperature superconductors. It is the difference from local to global frame of description that creates the suitable conditions for a gap to arise in superconductivity.

The first statement of this problem stems from a question: *"How does the equivalence principle manifest in superconducting magnetic levitation and free space interaction between a magnet and a superconductor so as to maintain the Meissner effect?"*

The first given accords with the equivalence principle, and the second with quantum mechanics:

- 1.) The speed of light is taken to be an invariant fixed quantity, known as 'c'.
- 2.) The Meissner effect is taken to be the absolute diamagnetism of superconductivity.

This admits us to make a few conclusions:

- 1.) Non-Inertial support or accelerative frame:
 - a.) Under the provisions of a curved gravitational field, the system is static.
 - b.) Under the provisions of a non curved accelerative frame, the system is static.
- 2.) Inertial free fall or free space:
 - a.) Under gravitational free fall, the system is static but inertial.
 - b.) In free space, the system is static but inertial.

These are supported by the notion that: Due to the dot product of magnet with superconductor being a pure scalar, the dot product must remain fixed. For if we presume there to be a differential, we find that either energy conservation in the frame of the superconductor or magnet are violated if the dot product is not preserved under the presence of a gravitational field, or it also follows that if the dot product is preserved, but the differentials are opposite, there will be a

violation of the Meissner effect.

This is consistent with the laws of electromagnetism, whereby a changing magnetic field from motion will convert into an electric field curl and therefore a changing magnetic field of opposite nature. Thus the nature of the Meissner effect and energy conservation are only satisfied if and only if the differentials of these quantities are zero in the case of static levitation or non-zero but equal and opposite in the case of inertial separation in space.

Thus we find that if the motion is inertial, and gravitationally free, the magnet and superconductor will separate conserving energy and momentum and preserving the Meissner effect in a Lorentz invariant fashion, and if the motion is non-inertial and accelerated, with or without a gravitational field, the effect will only be satisfied by the inclusion of general covariance, for which the Meissner effect can be seen as a prediction and a consequence.

Thus we can surmise that in general a magnet and superconductor interact as if the magnet's magnetic field is the displacement of a generally covariantly evolving electromagnetic field, and that in general the motion is inertial, as the generalization of the static property of the system. Finally we find that if the electromagnetic field displacement is equivalent and opposite by virtue of sign compared to the gravitational displacement, a magnet and superconductor will remain static at any distance. It follows that if a superconducting magnet system is appropriately established, there will be an inertial orbital mechanic analogous to the motion of the Moon about the Earth.

51 Superconductivity

The superconductivity described here is that of the high temperature superconducting compounds. These compounds illustrate very high critical temperatures and are usually spin based systems, found by doping oxygen or another atom into the material. This oxygen in certain materials known as antiferromagnets causes the planes of spin which are predominantly electron occupied to adjust such that they give up electrons to the oxygen doped into the material off of the plane, leaving behind holes in the antiferromagnetic plane.

These holes fall into pairs and condense under the right conditions of temperature and pressure to form a state of superconductivity. This is explained in the conventional theory by the presence of a 'gap' to excitations from a state with zero scattering, and hence zero resistive losses to the flow of a current. In addition to this infinite conductivity under certain conditions, there exists a quantum mechanical effect known as the "Meissner effect", whereby a superconductor will expel any existing magnetic fields once transitioning to the superconducting state.

This is not the same as simply infinite conductivity because if this were all that held true then a material cooled to transition in a magnetic field would retain currents and hence there would be a persistent magnetic field interior to the superconductor. However, what really happens is that the field is completely expelled. The magnetic field being zero interior to the superconductor is definitional of the superconducting state through the Meissner effect.

52 Antiferromagnetic Materials

An antiferromagnetic material is a magnetic material that is defined by two sublattices of oppositely pointing magnetic moments that when perturbed convey magnetic moment waves which are capable of traversing from one side of the material to the other. Antiferromagnetic, as well as magnetic materials, (distinguished by two or one predominant Neel vectors) depend not on the alignment of magnetic moments, as one would presume naively, but because this interaction is too weak and cannot explain the observed Curie temperature (the temperature at which the material loses its inherent magnetism). From this, the exchange interaction is the real reason explaining the magnetic interaction and persistence of a magnetic field to high temperatures.

The exchange interaction is an interaction whereby electrons are shared in covalent shells among the outer layers of their atomic models. These orbits accompany more than one atom, and the electron is said to be shared. When this occurs, electrons can couple to the dynamics of either atom for they are coexistent on multiple atoms. Due to the Pauli exclusion principle, they may not occupy the same atom at the same time with identical quantum numbers.

One of these numbers, the spin, does accord with the magnetic phenomenon and gives rise to an accompanying magnetic field on the site the electron is located on. But, as for the nature of their spin alignment, there is a small or weak magnetic contribution and a large or strong coulombically produced exchange. This coulombic exchange is the integral of the antisymmetric contribution from occupancy on the same atom with opposite spins, which gives rise to antiferromagnetism.

In other models, the non-valent electrons laying underneath the sea of mobile and valent electrons give rise to cooperative ferromagnetic alignment from on site repulsion. This means the atoms only possess for our interests one electron per site when considered as a ferromagnet, but when considered as an antiferromagnet there is at least a duplicity to give rise to mutually defined directionality. What distinguishes a ferromagnet from an antiferromagnet is not only this mutual versus single electron occupancy of atoms, it is the fact that there arise two sets of Neel vectors. Neel vectors in space are directions which account for the predominant magnetic moment of a sublattice. These are associated in a checkerboard pattern with the underlying lattice and give rise to a different ground state from that of the ferromagnet, which has but one aligned Neel vector per domain.

53 Conclusion

Consistency is investigated with thought experiments involving a superconductor and magnet under mutual freefall and in the process of levitation. The parts of the system interact by way of fields, magnetic moments, and masses. Consistency with the equivalency principle under freefall of a levitated magnet requires the nature of the force to be generally covariant and the mass and energy changes to be null. The major conclusion of the paper is that of scale invariance for the measure of quantum probability to the measure of spacetime. This illustrates that the quantum viewpoint and the gravitational viewpoint demonstrate a mutual null mass change under levitation. This gives the first reasons to believe that the quantum and the gravitational principles share a null principle, excluding mass changes in either theory, and promoting the idea that these theories are in fact independent in some sense.

This helps explain the result of the EPR paradox [?, ?], because the nature of scale invariance, and

its consistency with general relativistic arguments explains why the result of the EPR paradox is not really in conflict with relativity, but rather a result of agreement. The interaction becomes completely instantaneous but obeys the equivalency principle and causality.

The nature of independence and dependence of these theories can be best summarized as follows: The representation and the object are in a sense distinct and different. This being the case, one can have a representation dependence that implies independence of objective objects, such as quantum mechanics and space time. The physical objects are independent in their physical and objective nature from the space time they are within, yet their representation carries a very clear dependence, for which its particular mathematical form is the expression of independence. In this sense they are both independent in physical reality and yet perfectly correlated in description or representation.

The theory of relativity, and indeed the extension of it into these physical problems is the essence of this division, for it makes clear that an objective and subjective reality exists for the parts of a given object. This property makes that which is ultimately most subjective (the aspects of relativity) very real representationally, and that which is most objective (the physical instantiation of a system, and the relationship of these theories to one another), of null change, or independent.

54 Thought Experiment

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity.

The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable from the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as the integral of a field of curvature:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (542)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (543)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space. For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect complete.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ . In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (544)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. If there is no equivalency we could attribute outside factors, if there is equivalency then Λ and Ω show equivalent and opposite curvatures. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (545)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (546)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero. Thus the Meissner effect and energy conservation can be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (547)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (548)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \quad (549)$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase. For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor. Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \quad (550)$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z) \hat{z} \quad (551)$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \quad (552)$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \quad (553)$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \quad (554)$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \quad (555)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma\mu f(z)\hat{z} \quad (556)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma\mu f(z)\hat{z} \quad (557)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at its location, equation (16). The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (558)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (559)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer. This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (560)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present location:

$$v \rightarrow \gamma v \quad (561)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned} \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 \left(\frac{v\gamma dt}{cdt} \right)^{2n} \\ &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} \\ &= -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} \\ &= -\mu^2 f(z)^2 \end{aligned} \quad (562)$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \quad (563)$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia. For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate

inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics. Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (7) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system. For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (564)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. So we must hold as true that:

$$\partial_{\mu} \log(\Omega_{\nu}^{\mu}) = -\partial_{\mu} \log(\Lambda_{\nu}^{\mu}) \quad (565)$$

This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general*

covariance within quantum mechanics.

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

55 Experimental Implications

This suggests two experiments. One to measure the rate of separation of superconductors and magnets under freefall, and confirm if this is a generally covariant acceleration multiplied by the metric. (This has been performed with a confirmation to one part in 10^{-12}).

And two, a practical experiment for confirmation of the general covariance of quantum mechanics. A magnet levitated to varying heights by a superconductor as controlled by a current, and subsequent measurement of the mass of the superconductor by photons in a transverse direction.

56 Introduction to Device:

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of finite dimension and volume; of the nature for which an infinite cascade non related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation.

57 Constitutive Functionals

$$(1.) \quad V_L\left(\frac{V_{LD}}{V_{PD}}\right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P\left(\frac{V_{PD}}{V_{LD}}\right) = V_P^e(V_L)$$

58 Generating Relations

These two equations are generative of a free relation of electro-magnetic freedom from physical expectation based on material events due to the similarity of their relation to one another

through the expectation (e) owing due to electromagnetic energy in physical form; and that of the potential electromagnetic energy in kinetic form; for that of the ratio of photovoltaic drops of light under reception and transmission fold into one equation expressed as two.

These are in fact identical equations under transposition for the fact that light passing through a light field is freely decoupled for that of null reception and null transmission; for that of seamless transparency of separation of cause and effect at the point of cause meeting effect. This property of light is a multiplicative property of light for that of the division of light color spectral line and that of indivisibility of the content of the light field by that of division of matter from matter as a separable condition for that of equivalency of weight under inertial separation of equivalent relations.

The equations are explicable as a consequence of the rate adjusted voltage drop of diode for light transmission and that of voltage drop of diode for light reception under forwardly dependent encompassing relation of dependence of rate of conversion of field from that of either of photodiode to light emitting diode or light emitting diode to photodiode under parabolic voltage to light coupling expectation; by that of difference of interior displacement of a null differential for physical electrocatalytic to electrophotovoltaic expectation; as a given secondary condition:

$$(A.) \quad V_L^e \quad \rightarrow \quad (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

The uniqueness and universality of this equation is embodied in the relation of it's unidirectionality and for the reason that no exterior additional photodiode voltage drop need be included in that of the conjugate equation for photodiode voltage drop as photodiode emission and hence 'transmission' of absorption by photovoltaic light reception; hence forming a relation of free light conjugate freedom of transparent differential exponentially free gain and reception; and hence free electromagnetic freedom and switchability.

The expectation of these equations comes from a compatability condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electromagnetic property from active electromagnetic property as impedance and conjugate to impedance; admittance freedom of expectation for physical electrochemical and the inertial kinetic light property of physical electrophotovoltaic gap of expectation of gain pivot point.

Thus the prior relation (found empirically) was that of the ratio of relation of that of expectation of photodiode voltage to that of intrinsic material property photodiode voltage drop inherent to either of emission or transmission to that of light emitting diode under transmission of light; as the rate adjusted physical to light kinetic energy relation of fixed proportionality of intrinsic to extrinsic rate adjusted photoelectrical light conversion rate of form:

$$(3.) \quad \frac{V_L}{V_{LD}} = \frac{V_P}{V_{PD}}$$

As V_P is common; the inclusion of V_P with $(\frac{V_{PD}}{V_{LD}})$ enfolds $V_P^e(V_L)$ as an additional extrinsic voltage drop of photodiode for that of summativeness of interior and exterior as exclusively either of their intrinsic current to voltage relations remain counter and co balanced; inclusive of proportion of light under reception and emission as separation of potential from field under conditions of light & light.

59 Elements of Design

The following two relations of importance are:

1.) Active 2.) Passive

These are an equation of order on; current (I), voltage (V), and resistance (R)' in relation to impedance as a function of: coupling (α), mass index (β), and transmissivity (γ). This written as:

$$(0.) \quad O(I, V, R) \cong Z(\alpha, \beta, \gamma)$$

Hypothesis: Separability and inseparability are potentiated by the existence of the acausal; as events so invisible.

Hypothesis: Invisibility potentiates all such capacities of coloration and of color; as through indivisibility of color.

Through these relations as in equation 3.) under the pretences of relations 1.) and 2.) it is from these to the inclusion of the second for that of the prior and later of either of one or two that one of two implications inclusion of two before one. This is determined as valid by the following argument of hypothesis:

Hypothesis: As inclusion is always contained within exception as capacitated for either the physical or aphysical as by their transparency; there is and exists openness with closure in one and the same as one.

Conclusion: The active and passive are two in one as oonce when met as either of inseparability and separability of only one. This is true as the passive precedes.

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and coparallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

60 Theory of Operation

In this light is combined as one.

V_P^e & V_L^e are given equivalence as they are functional relationships which contain indefiable interior & exterior difference of combination of light (as separable (& inseparable)) & separability in one, as either of cause or effect preceding or following in one.

The functional dependence of V_L & V_P is dependent neither interiorly nor exteriorly to such as either of exception (as gauged) on that of light under reception or trasmission. Hence either (as both) of separability & that of inseparability of light is established as fundamental difference.

This transparency mentioned between betweel all such ocolors as a colork known as simply 'clear' or; 'invisible.' This concept in coming and going is the difference of the avenue of light's

inseparability both in the plurality and singular components of the spectrum. This color has no separability nor terminus in but one circle from one point of emanation from an 'event' as a 'cause' as a given new color so introduced. Hence it is a point of light for all such surrounding events of a genuinely nontopological character of only that which is simply described as 'round.'

Hence the point of an emanation is an eternal eclipsement of all events so to come from each and all such events to all such events as one inseparable relation of light throughout all of the domain of its eclipsement as monodirectional & of exclusively pure proportion of equality of light in balance with light.

61 Reasoning of Innovation

The additional ' V_P ' is included as a consequence of the light under reception so is inclusive of light under transmission. This difference is formed by that of proper orientatision of precedence & effectual properties of light as a point.

This point is transparently undecomposable but into an never ending expanse of free & open relation with no form. But as the form can only be form by the formless it is decomposition by way of alternatives of either; for that of the essential difference of order of electromagnetic energy so in coming and going under equivalence of physical electromagnetic design & aphysical electromagnetic light field. Hence; invisibility is revealed.

62 Preliminary Equations

The generating equations exemplify a relation of reduction to a singular confocal relation of permeability of light as passivity transparently between that of physical and electrical properties of electronics:

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

These are the defining relations of the given circuit; for that of the matching of impedance to induced light current.

Explanation:

These are the same equation because they are each similar representations of a normalized distribution of intermediate bandpass $(\pm f(\omega)), (\pm \omega)$ independent of variancee; as the independence of \pm charge from that of light of either chirality or weight as to that of coupling of reception & transmission freedom.

Proposition:

Hence frequency (f) & measure (ω) are defined as two different attributes of a given wave.

Consideration:

The additional V_P is a component of the inclusion of that of back - conversion under reception (absorption) for that of balance of γ with that of e^\pm & rate, measure & priod of wave independence.

Inclusion:

The parabolic inclusion of these (rate, measure, & period) of a parabolic (similar quantities) as seamless passing of one of transmission & reception (thus $+V_P$) with rate of ratio of measure passing.

Propositions:

1.) For that of the parabolic balance of linear relationships of light to light conversion as $\gamma \leftrightarrow \gamma$ as $\pm t$ of unit temporal intervals and moments; the spatial (s) is open interiorly to that of balance of geometric leveling of γ in relation to (t,s) as one transparent (standard deviation) (s),(t) as the inverse union of their separability under two such additional flows of current, & for voltage; that of their mutual independence of topological relation. These instance (inductance, impedance freedom coupling free resistance, and capacitance) as free of current, voltage, & impedance as a result of γ (light) & (charge) independence of decoupling, as one.

Consequence:

2.) The expectation of the voltage drop in effect is counter-balanced for that of the ratio of $\frac{V_{LD}}{V_{PD}}$ passing either way for that of light in relation to charge as either equation is the free conversion of light into light of either chirality meeting as a point. A circle & circle, as light (γ) are independent & are therefore independent of either of any two such points interior to the area, circumference, or linear extent.

Derivation:

3.) As the area is two dimensional, and that of its perimeter is one dimensional, the area represents an addition of the two (rate) adjusted absorption & reception contributions together, in equivalence to that of the expectation(s) based on balancing the forward & back-ward traveling & \leftrightarrow & light, under & of its conversion as one, free of charge; as a result of the direct (A, ds) (Area, path differential) & interval (l) relation of geometrically free properties of light, & the pointlike nature of e^\pm .

Difference:

4.) The equations are also the same, as that of either is enfolded in the other and hence light is free of charge, energy, and power.

Integration:

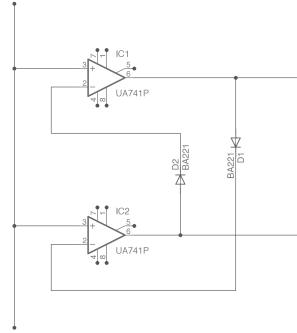
5.) The photodiode and light emitting diode are therefore decoupled mutually, throughout; as a consequence of their freedom under unquantifiability of open interior and exterior of flow. This qualifies their mutual independence.

63 Direct Conclusions

Physical & electromagnetic design & implementation & light are independent & unqualifiably separated but one; for that of through passivity of light under design (physical) as one, inseparable, independent, unique, & free. Light as bidirectional or as monodirectional is inseparable in virtue of its levity to remain light & solid with in any singular or entire coming & going from future to past as it is eternal.

64 Design Furtherance

The first step is to understand how light reception is electronically balanced with that of light transmission; by way of operational amplifiers; for which the following circuit diagram came first:



Net difference of photovoltaic drop exceeds net gain until equivalence of balance is achieved; hence net saturation is reached at equilibrium of impedance relationships.

As a consequence of the defining relation of the voltage pathways under base to emitter and emitter to collector; under reception of transmission; the gain in excess under solution of the current and voltage relationships of operational amplifiers reduces:

$$V_A = I_{OL}(e^{-\frac{V_{LD}}{V_{TLD}}} - 1) \quad (566)$$

$$V_B = I_{OP}(e^{-\frac{V_{PD}}{V_{TPD}}} - 1) \quad (567)$$

To:

$$g = \frac{\alpha}{\beta} \quad (568)$$

Where g is the base to emitter gain; expressed as the ratio of $\frac{I_{BE}}{V_{BE}}$. With:

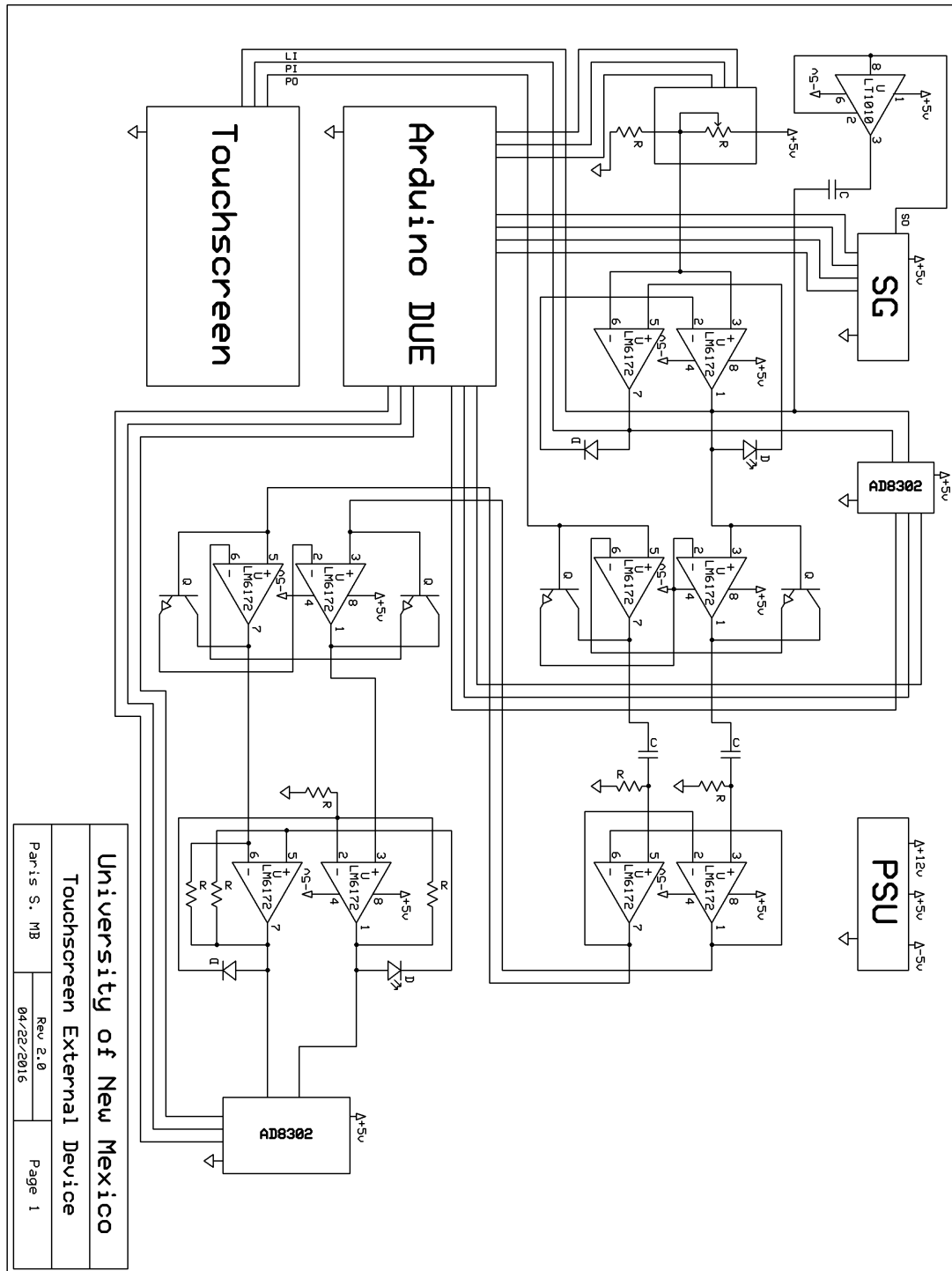
$$\gamma = 1 + g \quad (569)$$

Where γ is the $\frac{I_{EC}}{V_{EC}}$. By way of $\partial_{V_{LD}} = \partial_{V_{PD}}$ and $V_{LD} = -V_{PD}$ of the 'Golden Rules' of operational amplifiers under equivalence of either photo or light emitting diode equations; & matching to the conditions of $\frac{V_P}{V_{PD}} = \frac{V_L}{V_{LD}}$ and the constitutive relation of:

$$V_P^e = \alpha V_L + \beta V_L^2 \quad (570)$$

65 Final Circuit Diagram

The following is the complete circuit diagram of the device:



This diagram is complete in representation as it is entire and whole in it's design.

66 Understanding Device Implementation

The five block stage crossover stages accomplish novel things by being in a parallel and series superimposable relationship where each stage does as many things as all of the other ones together in full parallelism with all other crossover stages.

The first stage is a *parabolic reflecting impedance matching* photonic electromagnetic *light gyrator*. This accomplishes an electromagnetic conversion into light and back as an impedance matching

condition upon a feedback loop which is situated with a forward passing output and reflectionless input, for which the isolation of the circuit is electromagnetically reflected for later blocks. This is a cap that is semi-traversable by the output into the input as a first step to full isolation of the signal to noise.

The second block is a *logarithmic free impedance matching condition* circuit crossover broadband stage for each such frequency passing through the spectrum; making each individual overtone independently impedance *free* of every other such frequency. For the sake of a universal impedance matching condition it is equivalent to an equivalent summation as separated geometric product relationships.

The third block is an *impedance mirror* for which the linear to linear forward and backward traveling waves are reflectionless. They are also individually of two independent perpendicularly oriented polarizations and therefore transversally reconstruct a circularly polarized wave. This is that of a circular evolution upon either that of the input or output; because it is a reciprocal active high pass filter.

The fourth block is a *free impedance matching condition* circuit with broadband crossover *fixation* of the *light dielectric impedance*. As a consequence the co-local arbitrary conditions of the wave are foundationally of identical yet independent and mutual foundational conditions upon phase and amplitude. This stage has these properties in part owing to each such prior stage in parallel with it under feedback.

The fifth block is a *parabolic reflecting impedance* matching photonic electromagnetic *negative light gyrator*. This fixes the original parabolic relationship by imposing a negative impedance to the first stage of an ideally identical yet *negative* impedance matching condition.

This configuration is designed to meet the number of half rotations to the number of crossover inversions so that the positive impedance matching condition of the original parabolic reflector is met with its same *negative impedance matching condition* back through the feedback loop from one end to the other. There are two principles at work common to this design as it was developed as an idea:

- 1.) One is the passive element; for which the crossover configuration, multiplicity of stages, and impedance matching form a decoupling of the electromagnetic wave.
- 2.) Two is the active element; for which the crossover configuration, multiplicity of stages, and impedance matching admit both voltage matching and current mirroring.

67 Determination of Knowability of Order from Properties

Examine the following:

One is presented with five a 'block' relation and assemblage; absent of properties; so as to be determined.

- 1.) As a consequence a priori the order and properties are not determined; as a result the order is a priori determinable by way of the following logic.

2.) These blocks must be questioned as to their properties with blindness in mind; yet it is as simple as passing them by way of each other; as the order is not determined; and hence the order exclusively inclusive of the blocks can be determined by a process.

3.) First as there is a beginning and an end to their order, as the order is inclusively limited. Two blocks are of a shared and independent relationship of their relation unto the remaining three as a consequence. As these three blocks remain as three and the other two remain as independent; the three are of the middle, beginning and end; and the two come in-between for the establishment of order so aforementioned and so to be established; and as these sets remain different as the blocks a priori hold no order as a given. Therefore it remains that the blocks may be questioned by passing by way of each other.

4.) Therefore two blocks as propertyless may be passed for the remaining three blocks as propertyless between the others; by way of which the middle may be so determined. Passing these arbitrary two blocks by way of the remaining three therefore draws inclusion of a shared property of that of the nature of the end a beginning block; and determines as the latter remainder one such block as the middle block; which we may label as a transparent 'mirror', by the side of the remaining blocks.

5.) The two blocks which pass between the three blocks therefore determine their property in turn; and leave unto the remainder of the three blocks the neither inclusive nor exclusive property of the remaining blocks as two to one side and one to another side. This remaining singular block therefore remains as 'the' singular block with the remaining property of a transparent 'mirror'; and that of the two blocks so passed as their dual reflections; which we may label as the property of 'congruency' neither passing before nor after such as the middle.

6.) As a consequence the remaining two blocks to the side by way of which the two congruent blocks are so passed are of an end and a beginning; but as is insisted by the order, the pattern, the propertyless-ness of the blocks, and their identifiable proprieties as so determined, they remain as neither as determined nor not but by the following logic; and we may choose the remaining singular 'mirror' block to pass between these two; to determine future and past and therefore their identity as end or beginning as so is too as well; the enablement of choice.

7.) Whence passing the remaining singular block by way of these two 'congruent' blocks, it is eliminated that there remain as two such blocks before as the 'congruent' blocks from any shared property of the ending or beginning blocks as so individuated and separate, and whence passing one passes before and after beside either of that of the intermediary block. As a consequence the intermediary block determines the relation of the indication by way of the aforementioned property of the end and beginning block as a justifiable hypothesis for the sake of the preservation of order or that of the changing of order. From here it is determined that the prior and later block are determined; and so too is it true that the 'congruent' blocks remain now as congruent blocks by that which is the exception of the 'mirror' block and the passing of the original two blocks as propertyless as passed and therefore identified by the exception which is the inclusion of the self consistent relation of order and of its determination.

8.) Finally whence passing either of one block by two or by way of three; saving the exception that is of two to one side of the mirror block and the mirror block now understood to the other side, it is determined that the two blocks to the side remain as exclusively of a shared property of prior and latter as well as end and beginning. Therefore it is so determined they discern the

difference of their placement as 'before' or 'after' the former blocks so passed; and the block of the mirror therefore stands in the middle of all such five blocks. The congruent blocks remain as such as to neither let pass a propertyless nature of the blocks as then when determined as in contrast to the 'prior' and 'later' block, as remaining with choice of orientation and through such an order by way of the blocks by way of the mirror middle block with the remainder by way of that which was the determined order of the blocks as that which are of before and after & intimate the order of the remaining two congruent blocks as solid and inclusive to the order; without exclusion of the no fully established former and later block, and not nor that of but that which is of the remainder of that which is that of the mirror block.

9.) As a consequence that this order cannot be reversed through its establishment for its origin in propertyless-ness and the establishment of order, their true properties are identified. Therefore it is true that the properties of all such blocks are determined for the questions so addressed, the properties so hypothesized, and their identities. The congruent blocks as passing earlier and later therefore exist and so remain as in a relation of open and closed intermediary measure under balance of presentment of order for that of the latter and former such ending and beginning blocks, remaining with the exception contained as the intermediary block as the middle block as the 'mirror' block now henceforth determined.

10.) The finality of this is that even through an unestablished order for unknowables; order may be recovered, established a priori for such propertyless 'blocks' and that of the relation of the order of an assembly of order without exception of absence of order may be determined. This is the establishment of order from out of which that of which is of chaos.

68 Philosophy of Electronics

Relation of Physical Apparatus to Electronics

For that of a singular inclusive point in the enclosing domain of a post action for that of a prior action of causality; there is disconnection of prior cause from that of the encompassment under reception before emission for that of causation under exception of cause and effect for future effects from prior cause under inclusion of later effect.

As the general enclosing domain of a future reception of a past cause; a singular cause of emission before transmission is unseparated under prior inclusion of later exception of cause and effect as inseparability of future effect from that of prior cause.

Therefore prior to reception of light under transmission, reception occurs priorly to transmission, since causation of neither difference nor nondifference of parallel and series are formed but only that of inseparability of neither parallel nor series.

Therefore prior electromagnetic design is predictive of later electromagnetic design under consideration of inseparability and freedom of electromagnetic wave properties from electromagnetic component design properties. For causation; spacelessness, timelessness, and quantifiability; cause and effect are separable within space and time for that of light, charge and mass, as quantifiability exist separably of cause and effect and inseparably from that of space, time, and quantity.

Prior electromagnetic design is predictive of later electromagnetic design by the principles of electromagnetic reciprocity and impedance matching by separability of electromagnetic wave properties and inseparability of electromagnetic components.

Therefore; under commonality and difference of unique, separate, and similar electromagnetic design there exists forward design predictiveness and backward circuit compatibility for electromagnetism as independence of wave and component properties.

This is a given as there is neither that of inseparability nor separability of light.

69 Electromagnetic Component Design

Properties of Limitation of Design

1.) The difference between independence of any such seven elementary (inductive, capacitive, resistive, calorimetric, positive, negative, and ground) components under topological considerations of interconnection are that of connectivity without empty middle; and complete within inclusive passivity of electromagnetic contactile relationships of attachment and reluctance for each such part.

2.) The similarity of that of dependence of two such attributes of fundamental directionalities of inclusion and exclusion of singular and general sense of either dependency on component attributes for properties of material physical polarity are reductive to relationships of similarity without division yet singular and absolute solid relation; with independence of light following from design.

As a consequence if proportionality (under consideration of prior electromagnetic design for either such consideration are formed) is to be established as round such inclusions of component aspects under the principle of balance both in coming and going of electricity it is knowable that either of such as any such three of the elementary properties of fundamental aspects of machine design.

For this to be true there must remain a free and open end (groundless) terminus relation of monodirectional asymptotic freedom of machine state for consideration of thermodynamical state; and therefore that of independence of either of two such components in relation to any such one; as that of the inductive; capacitive; and resistive relations are inclusive of each within one; under each two.

The process of design is therefore to find equilibration between a tensile relation of motional freedom of feedback free relation without open closure; when it is considered that for each such element of component design the condition of matching such as these fundamental properties of impedance known as admittance of active electromagnetic energy independence from electrical passivity.

As a consequence under considerations of bandwidth and its limitations; asymptotic freedom of electromagnetic circuit properties is obtained when physical properties of electromagnetic design are floating with and in relation to that of electromagnetic energy and power considerations of that of inseparability of either such as passivity and active input and output both in coming and going out.

Therefore; physical electromagnetic design is illustrated as for that of electrocoulombic strain; electromagnetic stress; resistive torsion; conductive freedom; and inductive transparency; the relation is given by:

“As two to that too; is as C as R is too L two I.”

As illustrated by the following.

Thus; the component design was illustrated as a trimming by reductive and preventative means as Volt-Amps for Electric-Watts of Power-Amperage freedom. For that of through L (inductance) to C (capacitance) to D (potential) to I (current) to R (resistance) with T.O. (Terminating Output) and R (reluctance) as O (output) and T (transistive) as I (inductance).

True as: Balance is as: V (voltage) in proportion to I (current) is equivalently defined in relation to P (potential) in relation to A (amperage) as defined as the proportion of R (resistance) in proportion to C (capacitance) as equivalent to R (reluctance) as the relation of power is so defined by that of:

L (inductance) to T.O. (transistive operation); as openness (O), of relation of (R), resistance independence of impedance in relation to Power (P).

Thus the proportion of 12:5:24 in winding of any such three properties is equivalent for I:W:V (Current; Watts; Volts) as bidirectionally and bireflexively as by winding and quantifiable electronic physical properties of the ratios of ilreductive means of proportion (in order) of 30:20:100 as equivalent to C (Capacitance): L (Inductive): R (Resistive) for R (Reluctance) as neither greater nor less than L (Inductive) as of the proportion of a ratio of 10:1 with a 0 as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

70 Confirmation of Implementation

Finalization of Design

A few steps need be taken in order to fully clarify and confirm properties of the design, as for:

- 1.) Confirmation of the correct wiring of the device.
- 2.) Confirmation of the detection and discernibility of one, two and more presses.
- 3.) Confirmation of the implementation of electromagnetic theory as an active hologram.

The passive quality attributable to that which is the addition of two later stages in the later design with reference to the earlier design is a free condition for the impedance to electromagnetic field condition. The prior electromagnetic design (v. 2.0) in relation to the final design (v 3.0) are therefore predictive in the natures of their independent implementations as an attribute of the philosophy of electromagnetism and conventional circuit theory and physically known electromagnetic components.

This is true as the validity of the formative conclusion from the detection of a prior normalized distribution is within it's capacity fully independent of the even earlier normalized distribution exclusively unto distinguishability of mutual and independent normalized distributions as independently correlated. In v. 2.0 these distributions were only distinguishable upon order under superposition and persistence through temporal delay and interval of prior to later press touch. As a consequence of the simplicity of the design the two mutual normalized distributions were only determinable as one 'intermediate' normalized distribution. This is the foundation of the

compatibility of the design from v. 2.0 to v. 3.0.

Now, it is predicted that they will be mutually discernible as separable distributions for the following reasons... The central impedance freedom principle as it relates to the photodiode input and output as bridged across stages or in parallel with the touchscreen was hence predictive for the later design as a consequence of the same design element implementation of impedance matching and mirroring; since this would not change from one design to the next. Secondly, the reversal of the output to input under an encompassing relation with respect to an encompassed relation admits the separability of design.

The natural assumption is that with one similarity of a precise nature and one difference of a precise nature that the two designs are mutually passive and therefore predictive through design. This principle admits the property that the correct wiring is determinable through measurement of multiple presses and hence confirmable; although the holographic nature does not admit any such nature of determination of other than an empty relationship.

Under confirmability of the design relation for later stages; these are therefore a separate confirmable consideration to be made, and hence the considerations of either design are separable from each other, and the later design for the sake of its predictive implementation follow a different but not so dissimilar principle to that of the earlier implementation for the sake of the two different circuit designs from the earlier design to the later; under the guidance of impedance and electromagnetic field ohmic and cyclic impedance freedom.

Hence it is freely admissible that the earlier design not only implies properties of the earlier design but so too is it true that they remain independent realizations as it pertains to portions of the latter design elements and its components. This is where theory meets practice; and where electronics design becomes predictive from one circuit to another.

It is in a sense that the circuit design of the later device under the guidance of the aforementioned principles is free in relation to prior design relationships yet implicated by them through the process of design. This is also an electromagnetic circuit design principle of reverse hardware compatibility when interpreted correctly by the process of design so followed and implemented.

This admits the possibility of confirmability of the correct wiring by the discernibility of at least three presses as a consequence of the hidden nature of two under v. 2.0 and neither that of independence nor dependence of comutual normalized distributions. As a final consequence the difference so formative of a 'hologram' and a mere implementation of 'holographic' principle is revealed, despite its absolute impenetrability.

Therefore, there exists a point within the theory of electromagnetic circuit design in general which is empty between any two different complimentary designs. It is implied by the alternative limit of electromagnetic design, which is the approach by way of extrapolation of known circuit component properties into current and voltage relationships.

This separates the logical properties of either device implementation under the guidance of theory utilized to implement circuit theory, and joins the implementation of their physical circuit implementation. This is exclusive to; under example of prior and later design when the principle of current mirroring and voltage matching are implemented; for then impedance and electromagnetic wave properties become independent.

The properties of the later device are therefore in general decidable from an initial device by linearization of collector to emitter and base to emitter. Therefore, the principle of matching and mirroring is seamless and predictive for the later design; under consideration that this property is preserved from the earlier design to the later design; despite the fact there are additional components.

This is the result of following the implication of the principle of current mirroring and voltage matching; which result in nothing more than electromagnetic wave and impedance freedom.

Hence, mutual virtual implementation of electromagnetic design is possible from an earlier to later design theoretically and in practice, for there exists an empty difference and an independent commonality to both designs. This is as then provable by measurability.

The next step that need be taken in order to fully implement the device is a program for which discernibility of more than two presses is realizable through software; and this must be resolved within an order such that the base normalized distribution within the later persistent normalized distribution.

This works because through the order reduction is drawn back towards the original on center frequency, as 'hidden' within the later to come normalized distributions. An adaptive algorithm would be desirable as well; however it has been determined that an active adaptive algorithm likely will not work; but by analogy; a fourth order adaptive algorithm may work through off diagonal elements.

The earlier difference for the sake of to consider electromagnetic design meeting as that of causelessness into the future; and causal moment so independent of reality was so as to absorb light upon encompassment of darkness as for emission and illumination before such as interior and exterior means; and hence to separate and isolate light from darkness through drawing parallel versus stage to stage; and hence disconnect light from darkness and draw the photodiode as in series instead as so as parallel.

The difference between the separability of cause and effect of light is so determined by the return cyclic ohmic separability of the causation of light; as so determined by that of which is of the prior design unto the later design unto topological spaces as whole; entire; and full; unto exception of the disconnection of one such fourth order device unto a seventh order device; as the separability of that of the device unto and in relation to the device.

The difference between the direction of the flow of light when neither inside nor outside, but so as remaining within for that of outside and inside as without is therefore separated.

71 Discernment of Electromagnetic Component Design

It was considered as to how to tell apart the difference of a prior to later stage of the operational amplifiers under the context of the question as to if any two operational amplifiers differed when part of the same circuit or when separated and apart; and that of the direction of the flow of end consequence of either and neither before and after.

With a further question in mind:

“For a given operational amplifier for either of two inverting and non-inverting operational amplifiers of either that of before or after; how to make the difference?”

It was known:

“One was indivisible as one.”

The resolution was found under consideration that if there were a return subsesquiscent subtlety of electrical flow; that the prior had to come latter; and hence the two parts had to remain apart and disconnected for each either such consideration; and hence the proper determination of the difference was found as that of inseparability so given by difference of one preceding either one of two when it was understood that these two do difference by that of later or prior exceptionality of no two crossings.

Hence it was concluded that for that of the later stage there had to remain separation of paths and hence isolation of output from input was as simple as an earlier delimit of monodirectional flow as interior terminus; acting ahead of effect; as was the consequence of testing each of three such alternatives in the order so given by that of the following inspiration:

- 1.). The operational amplifier inverting inputs both connected to that of a common drive pathway for alternating and direct current impedance relationships for assumption of similarity of balance.
- 2.). The operational amplifier common signal connected to signal insertion of the driving; under assumption of commonality of response to driving for earlier consideration of harmonic balance.
- 3.). The signal insertion point was tested after both either common input and output; with only consideration of purity of signal fidelity so incurrent by one lead and separation of for isolation.

Neither of any of these three inclusive worked nor operated as desired; for mixed results of each were inconclusive as for the following reason; then hence understood. As configurations apart:

A.). It was understood that under any of these the return pathway was a full pathway of negative to negative; which is a direct current offset; as was tested; for one full pathway around either.

B.). The ground so connected under assumption of ohmic independence as a result of a return direct current pathway resulted in the same outcome as above for that of either was only same.

Hence; it was understood that neither of these three would operate conclusively; as only that which remained of any of these was however inconclusive; true, and remained as the only of exception of truth of the operational amplifier design in cascade or order as one; because the terminus as considered would only remain apart if there were instead one other of these three.

It was then known that as the capacitor under the buffer return was a blockade for voltage; that only one remaining open and disconnected pathway could remain; hence for the earliest first question:

“What is the proper configuration.”

“That of the stage to stage as apart or as a bridge from stage to stage was the proper configuration; and

what was the difference between these?"

It was understood that separability of earlier component design for these under return pathway was then only delimited by that of inseparability of difference of earlier and hence no such latter, as either were the ‘same’ under the context of being within a similarity of parallelism. Hence; it was known that only difference was to be found by that of separability of either configuration so.

72 Explanation of Theoretical Circuit Design

Now that the difference of complete configuration is known; there remains that of determination of the selective relationship between the sides of the defining relation mathematically as to the theory of the given configuration of unique circuit elements to accomplish the given theoretical aims. Many tests were accomplished with a completion of empirical understanding of the configuration to be finally implemented; and illustrated in the second diagram of this thesis.

The first defining relationship is that of the passing of the relation of the quadratic reciprocity rule as a given inverse or retroinversion in one of the finality of an emanation of self inclosure of the light field as the notion of the “expansion” of the geometric properties of light by electromagnetic circuit elements. We begin with the defining relation of parallel electromagnetic current-voltage-impedance relationships and examine the unformable difference:

$$V_P^e = \alpha V_L + \beta V_L^2$$

As this is derivational of the relationship across the light emitting diode; in relationship to the intended photodiode light emitting diode voltage; and as it is related to the infinitesimal of the displacement of the constitutive law of the comparative differences of total photovoltaic and electrochemical voltage gaps; it is true the relationship is invertible in full capacities to operate on the given intervals of geometric notions of the filling of the electromagnetic component operational space.

The given new relationship of inversion is therefore by the given two fold relation of either equations of the defining expectation or ‘intended’ (e) voltage relationship(s) as the same equation when it is considered that under involution and evolution of light field that the ‘exterior’ ratio of ‘displacement’ of electromagnetic current of light or charge form to that of the ‘interior’ of the displacement of the given parabolic relationship above is generative of a self inclusive limitation of circuit design.

Therefore the expectation given above under displacement of exponential nature is self inclusive when the consideration is made of the stage to stage balance of separation of two lines of gain and depreciation under logarithmic separation of the parabolic relationship into decomposition of the fractional inversion of either side of their common equation; hence the reversal of the ordinary notions of electromagnetism; and arriving at the open interior relation of electromagnetism within physical configuration of ‘light’ as contained in a vessel; if the full operation of the circuit pathway is traced.

$$\partial_\mu \log(\tilde{Z}^* \bar{Z}) = \eta = \partial_\mu(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (571)$$

This has the interpretation as that of the constitutive relation of analytic continuation; a complete relation of null transmissibility; for that of the given open relationship of its operation with

either of direct current or alternating current with null displacement of physical charge current and voltage properties relatively.

As a final consideration and conclusion; this implies the provability of the functionality of the operation of the device; the correct configuration of the construction; and its holographic properties as beyond a mere principle; but as a verifiable and true construction of design.

73 Hypothetical Confirmation of Device Characteristics

Before the device is fully characterized there are some questions to be addressed, such as to what questions need to be asked as to those that would confirm that the device is wired up properly. Additionally, the question needs to be asked as to external properties as separately as to how one can confirm if multiple presses can or are determinable. The device is an open, reflectionless, system, when connected to the externalized device circuitry. If the device is properly designed then there exists a testable indication that it is working; as one side of the combination that is software and hardware. On the other side there needs to be simultaneous distinguishability of multiple presses; so as to answer: *“Is holography an inherent property of the device?”*

One hypothetical way to test the property of reflectionlessness at the least is to test across the photodiode and the light emitting diode comparatively to either of these two alternative leads and identify a commonality and a difference in their spectra and response. As for their evolution of phase and amplitude differences this is a test of simultaneous distinguishability if spectra differ. Hence these tests of attributes are the next proper step to take; for they confirm that the hardware is indeed working; and that it is indeed a hologram for the sake of the expectation to be found in the existence of the property of simultaneity within the electromagnetic light field established and with the property of distinguishability of the effect of two presses within the spectra and it's evolution comparatively to one.

For, if the device illustrates a difference in the spectra between one and two presses; then it is indeed true that the device distinguishes two presses in the spectra. This test is possible for two reasons; which are that the press information is persistent and forcing and damping are balanced; assuming it is working properly. This is one to one as a test with the properties so desired of the device and as it was explicitly designed. The expectation if it is indeed working is that the amplitude ratios of the spectra if two presses are distinguishable (and in addition in relation to one) then there will be a geometric difference with the presence of additional information if the device is working properly. This difference is enough to determine if it is indeed impedance free.

These means; however primitive, are as simple as it is to test the device for the property of these two natures. There remains no other test; but an additional property is defined which is that of the variance as being within bounds set by the decay of the persistence; as within a ‘window’ of time. This property so identified is the property of the optical light chamber to at least contain one moment of time; and with two persistent mutually discernible and correlated normalized distributions, an interval. If these things remain true then it is indeed a holographic implementation. These mere facts mean that it contains information that is an extrapolation of more primitive and independent elements; and, it embodies this in that individual subsidiary components and active light field evolution do not obscure the discernment of separable press information through the boundary.

74 Confirmation of Correct Configuration

As for the device characteristics *it is not necessarily true* that the wiring being correct *is indicated by* the holographic properties; since two presses may not be distinguishable without a software implementation. Nevertheless as it may remain as a hologram without two presses needing to be distinguished as this is not the only determination. Multiple press reception is however an indication of the correct operation of the device.

As a consequence there are two different and separable aspects of the device that are the final two to be questioned; one of holographic nature and one of electronic design and component configuration. This is the deciding factor for conventional technology.

These are:

A.) *The first test is one of the wiring, and it is demonstrably true that if the device operates as expected (with dual or multiple press identification) it is indeed wired up correctly. As a consequence, the wiring is confirmable for the sake of the design; but not as to the holographic nature a priori, and these two tests stand on opposite sides of a common relation of theory meets practice. Without testing the wiring (for which a second overview of the circuitry was done) it is improbable that the device will operate as was to be expected from earlier design considerations. However, the correct wiring would indicate newer properties of the device, one of which appears to be so as the dual floating ground and inseparable condition of impedance matching for either alternating current. This is a true indication that the device is working as intended; for it is independent entirely of the ohmic regime, under separable conditions on input and output to and from the touchscreen. Given the principle of electromagnetic reciprocity is instanced by the device under connection; and these properties of ohmic and cyclic independence of impedance; these imply that currently the wiring is entirely as designed and as operational.*

B.) *The information content of the device if so exemplified by software implementation does indeed make it provable as a hologram if it is true that a multiplicity of presses are distinguishable without boundary but with interior domain without shadow or interference effects. This would imply that the device is interference free and operational as a hologram for the established aspects of design that went into determining the correct future device design. For, the preliminary properties of the former device are compatible with & independent from the later design because the latter device is feedback and impedance relationship free. In consideration of this, the design is met; but as for the first test, the second (and as to its holographic property) are determined as enabled; for it illustrates **both** independence from the ohmic regime **and** separable conditions on impedance for input and output to and from the light cavity touch screen as operational.*

The deciding factor as to it being an active hologram capable of being implemented with conventional technology is if multiple presses are determinable with software. This indicates it is truly a holographic light chamber.

As the determining factor is if mutual determined and correlated normalized distributions over an interval of touch are simultaneously determinable this proves that an event had occurred in the past. As this was so conveyed through temporal correlation to a future set of distributions by depression of two presses priorly apart; coalesced; and then with introduction of a new press *off-angle* resulting in a new singular normalized distribution **and it is true** that one pinch separating under release into two new normalized distributions; it is provable that this is indeed a working hologram.

75 Final Mathematical Theory and Proof

Given that each operational amplifier accomplishes the job under cross-over of *impedance matching*; *current mirroring*; and *voltage sinking* the question is asked to if the result is: *impedance freedom*. The divining relation is the following:

$$\frac{V_{LD}}{V_{TLD}} = \frac{V_{PD}}{V_{PLD}} \quad (572)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad (573)$$

76 Final Mathematical Theory and Proof

1.) Given that each operational amplifier accomplishes the job under cross-over of *impedance matching*; *current mirroring*; and *voltage sinking* the question is asked to if the result is: *impedance freedom*.

The divining relation is the following:

$$\frac{V_{LD}}{V_{TLD}} = \frac{V_{PD}}{V_{PLD}} \quad (574)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad (575)$$

$$\tilde{V}^* = \bar{Z}I \quad (576)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\partial I} = \frac{\partial \tilde{V}^*}{\partial I^*} = \eta \quad (577)$$

Where * indicates complex conjugation (an exchange of capacitance and inductance) and over-bar and tilde indicate active and passive portions of otherwise complex voltage and current as impedance matched and rotationally free. This is meant to indicate that either of either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi)e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (578)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta = \square_t^\theta \Theta \quad (579)$$

$$(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta = \square_r^\phi \Theta \quad (580)$$

Yet as provided the above; this results in ($I:\beta$ and $Z:\eta$):

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \rightarrow \frac{\partial_\gamma}{\partial_{\mu\nu}} \Theta = \Theta_{\mu\nu}^\gamma \quad (581)$$

If and only if $\phi = \phi$ for μ, ν if and only if the set (τ, n, ω) are of solid relation for light γ . This is confirmed by that of the detection of two presses through combination with a third or removal

of a third; yet the lacking of a definite solid phase (ϕ) relation is not confirmed as is easily explained by the fact that only that of independent measurements are taken in time.

Despite this disadvantage of current hardware implementation; it is true that the holographic principle is enabled; although of randomized phase (ϕ) and decay constant enclosed minimal time signature.

77 Final Mathematical Synopsis

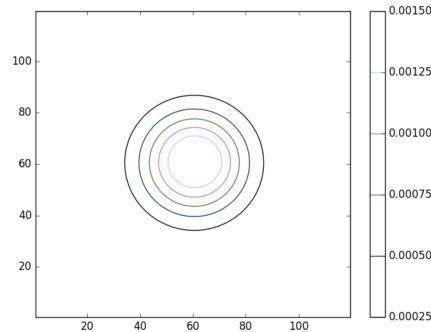
As a consequence of the variance of the device; the implementation requires one final direction; which is a seamless passthrough filter for which the following relationship holds of transitive phase freedom and isolation; resulting in the relationship of transparency (R) to transmissivity (Γ) of relation:

$$\log(\Gamma(\omega, \tau)R(\omega, \tau)) = Z(\tilde{\omega}, \tau)^* Z(\bar{\omega}, \tau) \quad (582)$$

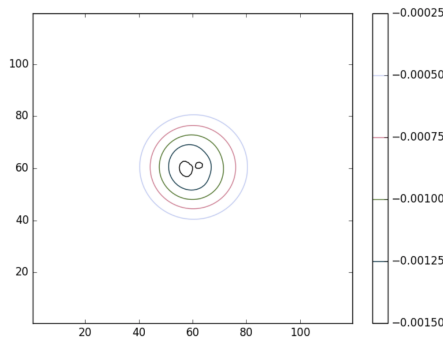
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

78 Final Images from Project

The ‘no press’ or ‘baseline’ image rendering looks as follows:



And that of either: ‘two presses’ or ‘after’ two presses together so ‘separated’ is as follows:



Proof of the functioning of the device as an ‘active hologram’ is therefore as simple as that of discernment of *normalized distributions apart* in coming or going under time series as separable poles *within* a given domain of reliability.

However it is true that more sophisticated holographic principle mathematics is required to describe the separability of poles within a domain of distinguishability; the images are sufficient proof of the working of the device in the physical world.

79 Conclusion of Method

Final Treatise

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits. As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; but the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage. I determined that prior to the cause of electromagnetic energy or light there is an effect and formed difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception. The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation. This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality. This implicates that what was innovated is in fact a ‘hole’ and ‘whole’ within the universe of causation; unique to an identifiable quantity-less un-enumerable number; identical with it’s equipment design. Hence; causation is determined within the Universe. There is only one universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as exclusively real as one first causation, ab initio.

80 Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \omega(\kappa, \rho, \sigma, t) \rightarrow \frac{\partial \gamma}{\partial \alpha \beta} \Theta = \Theta_{\alpha \beta}^{\gamma} \quad (583)$$

Where Θ is the light energy content and α , β , and γ are indicial equations of measure in relation to the attributes of power and time; each such of frequency of measure of wave is limited into a null relation for either of Ω as fidelity quality and zero admixture enthalpy ζ :

$$\partial_{\mu} \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (584)$$

This implicates the separation of electricity from magnetism and their comutual independence.

81 Physical Considerations

As the given determinancy can form no indivisible limit comparability to direction; adirectionality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference to difference to difference.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of dark photovoltaic current is balanced by sense of origination of the physical form and electrical by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contactile meeting of time; space; and light is openly defined by defined acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part.

That of the indivisatorial nature of the difference and difference of either difference of physical for that of indifference of electrical was known as the difference of the origin and originlessness of causation by light like means; as a consequence of that which is of the exception to consequence as the physical acausal relation in being acausal in relation to symmetry.

The knowability of the measure upon that of the means are therefore known to be equilibrated to that of the vantage of the skew hermitian conjugate of rectilinear and independent orientation and directionality by neutral neutral idempotent quotient group of conjugate spatiotemporal extension by pure proof of equivalence of proportion.

That of the photovoltaic chemical induction and the photovoltaic chemical transduction are balanced if and only if that of the sense of the gyration of one open sense of electromagnetic channel is reversed; as in relation to the open question posed by asking as to the sense of the light in relation to that of the electromagnetic field; at that of the quantum scale; however macroscopic such a given interval as moment and interval balance.

The difference of acausality & causality is therefore if and only if such as the reversal of a limited; yet real current of ohmic rotation is determined by that of the open circuit rather than that of the

closed. It was therefore determined that the sense of the light field was known by the freedom of the light potential from that of electromagnetic potential and yet of causation.

82 Final Conclusions

As the relation of four (4) impedance properties (I, V, R, P) as current, voltage, resistance, power is in exception unto any fifth & taking;

"Any 4 objects are in exception of any fifth."

As true; by contradiction of:

- A:) Condensed 4 tests exist.
- B:) Simplified 1 test exists.

Of either; the unprovable yet true has been implemented as a full meeting of the QM & GR & EM theor(ies) on a point of empty interior or exterior limit of exception of either:

{A,B} {0,1}

As the exception that is one point of connectedness under connectedness of wiring as floating.

This provably demonstrates four simultaneous properties;

- 1.) Wiring
- 2.) Pinout
- 3.) Operation
- 4.) Components

& in addition:

- A:) Holography
- B:) Hologram

As the final test the separation of one normalized distribution indicates emptiness of interior of space by two finders moved apart.

The implication is that separation of quantum mechanical, electro magnetic, and general relativistic dualities is found in that of the unlocable point like relation of union of their common displacive relations of pure emptiness; three in one; and one as three; yet each as zero or null in open relation to each of these forces and properties of physical nature.

As a direct conclusion; and by the verifiability of interior relation per the two images of fingers moved apart sequentially to create disconnection of causation by interior decoupling of physical aggregates; implicates the unification point of quantum mechanics, general relativity, and electro magnetism, is to be found in that of the emptiness of the void.

83 Introduction to Parsimony in Natrual Law

"As any true principle of science is established by it's only one priorly known given, as derived factual meaning is only as of what in any yet established relation is a conclusion to a then hypothetical foundation of fact, a factually considered conclusion; as meaning only derives from it's priorly one given known; that of any true principle is only exclusively it's one then given to that of what in one is the understood of all and a one as in a prior relation then reconsidered; a known relation is two; to that of each."

"If one; a body; were to take a position of the predicate to it's given individuation; for what for one would remain solid; the position of it's alternative given provided; the multiplicity of the preceded are as a taken; known only as the given of the presumption of the position of in one; that of motion; to which they are bodies of which in multiplicity or at rest; a given in motion."

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of infinite dimension and volume; of the nature for which an infinite cascade non-related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation. Beyond this; the consistency of the given theory is justified on empirical results and exact experimental results in place of that of quantitative approximation of exterior alternative supposition based on qualitative difference of theory from given; the centerpoint of modern science and staple of reductionism; for that of which scientific extrapolation finds only limitation; as in that of what is encouraged through such inquiry is exact provision for proportionate quantitative and qualitative argument with that of mathematical interpolation of known's and given means of experimental basis; a method that is running dry of explanations.

Ayura and Ayuna

Two things touch and are forever
interlocked and entwined,
in a beautiful union
of common evolution

mixing and separating
again and again,
they turn round and round
as one, undisturbed
subtle is their clue
a symmetry develops
at peace with the two,
the vessel and the contained
the divider and the divided
this force is the many,
but yet is it not also, the one?

A razor's barb to its said effect of witness;
A snail as in a crab so passing questioned;
To the differed of making of what inquired;
An answer in one word so then it's written.

Quiesenteieameneheisecheq

84 Constitutive Relation of Construction

The given differential empirical foundation and basis for this given result of theoretical insight is that of a test apparatus of which is constructed of crystals and photometric devices placed in a circular apparatus; for which the given interior passing and exterior passing photovoltaic light current and photovoltaic dark light current circumferentially remain independently apart from that of frequency and phase evolution of that of the concentric perimeter; for that of a four wire design and independence of operational amplifier input and output relation by seamless integration of component design. The limitation of the device is a photovoltaic to photodynamic current light generation and reproduction which are independently causally connected by that of separable stages which under integration and parallelism with coparallelism of independence of light and electronic limitation pass either side of the given relation of passive and active light and current relation through independence of light and electric field null independence of either from one another; for the limitation that is one side of a given fixed relation is empty.

85 Electromagnetic Implementation

The given differences found in that of the balancing of attenuation to that of gain under feedback of interior and exterior phase relation for what is found in that of balancing of photochemical potential and photovoltaic conversion and photovoltaic light conversion and that of photovoltaic light production allude to a logarithmic conversion with an exponential voltage to current relationship through the diode equation:

$$V = I_0(\exp^{-\frac{V_B}{V_T}} - 1) \quad (585)$$

When this is drawn into a parallel the given difference sum of that of either given forward and reverse photoconversion under decoupling in forward and reverse with that of current for which of voltage conversion there is an impedance relation is one of expanded interior notion of electromagnetic function and purpose; the given difference of which produces a sympathetic difference in that of the volumetric space encompassed by the given open relation. This functions to open the notion to that of given impassibility of current with voltage unless there is both a point-like relation of limitation and linear (curvilinear) excess limitation of circular volumetric limitation without boundary. The given current to voltage relation is analogous to a local entropic point for which the thermodynamical linear conversion rate of electrons into light current balance that of positrons; and that of tacheons with that of ordinary photons. The centerpoint of this given division is an infinite obstacle as the centerpoint of limitation as the local separation of cause and effect at the very point at which they are indivisibly inseparable.

The next equation to be examined (with the first as an example as that of the free forward conversion with rate of difference equivalent to sum inseparability) is that of the reverse; as that of sum separability and difference as subtractive limitation under reverse; as that of the differential property of equivalence of differential; proportion; and accumulation; with that of the operational amplifiers of which produce stage to stage difference making that of free geometric extension infinite.

$$\gamma = 1 + g \quad (586)$$

The given two dimensional base to emitter; as parallel (with difference of emitter to collector under coparallelism differences formed) make of what is a two dimensional region as open to that of volumetric extension by that of either given sum difference relation; forming from that of two sum difference relations; that of one sum inseparability difference of subtractive domain within a given region of which the perimeter is frequency and period independent as analog free. This is the reason for the free addition of gain and transparency of region of geometric addition to that of the given free quotient perimeter space; as that of constitutive of the complete perimeter under balance of equipartition of electronic to light free conversion. This is essentially a holographic unitary statement of the addition of a given region to that of it's perimeter freely to produce one given area.

86 Introduction

As the first and primary example consequence of a holographic principle with cohesiveness; there is the conclusion that separable yet mutually consistent representations of reality agree with a unitary condition of principle consequence of which is singular property of representation and existence in one; the condition by which a physical element of reality holds existence. This can be worded as it's dual; that an object of physical reality is an element of existence; or; as

equivalently yet alternatively that a physically existent part of reality is an actual element.

Once a physical element of reality is defined; that of what is subjectively understood is the content-less property of surrounding existences in relation to this principle component and that of the inadequacy of physical description to quantify all properties of a physical system as a limitation of expression and the content of information over a boundary to that of it's volume; when there is a measurement of one property. This vindicates and validates the core quantum principle with the given context of the holographic principle; meanwhile admitting that over a boundary the full information content of a volume may be identified with the only limitation being that unknowables are detectable as hidden information within the boundary since absence does not indicate presence.

87 Theoretical Underpinning

To begin we identify a given admixture of partial differential following the principle of a connection to a given ultimately unknowable quantity; that of a placeholder for what conventionally known as spin; that of the orientation and juxtaposition. This principle defines the hidden capacity of matter to contain a trace of it's immediate relation to the physical world as it translates and evolves under an empty and content-less evolution despite the cohesiveness of a reality condition for which the infinite indivisibility of reality and it's refinement mean no local zero is defined except under conditions of comparability.

When as such is defined as the covariant differential; the form of the equation's additional term takes the form of a given covariant differential surplus; for that of the functional 'extension' into such as a subdefinition of the space equates with an extensibility of the notion of differential as within the same space; and is equable with the notion of weight to the differential; the physical meaning of which is the expansion of the notion of intrinsic measure; the concept of which it's contentless measure of motion carries a weight; it's given inertial content; but accounting for which must be accomplished to provide for accuracy of measurable extent of unquantifiably of physical displacement through motion under the provisions of point like limit and extension of path like extent.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion. The equation for continuity for an intrinsic property defined as 'spin' or 'intrinsic weight' is therefore defined by the addition of a general four vector differential in four dimensional reality as a four dimensional quantity of weight of extension of linear relation as a given field of subspace to physical conjugate reality not to be confused with the physically real existent four dimensional reality surrounding us; a four dimensional space interior to all exterior unions of space conjoint with physical four dimensional boundary.

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \quad (587)$$

The equation for which the differential is defined is then of the notion of a given enhancement of the traditional differential; a term for which either a given unitary electromagnetic four potential is added as an appended physical four dimensional field of weight sourced electromagnetism is physics; and a given coupling of the background intermediary flat space to that of the given

folding within either given beginning or end limitation of inertial content for that of covarying and contravarying weight of mass. This additional contribution with the other defines an open exterior relation of which is the given expansion of differential for that of exclusively open interior quantities of contribution for which the notion and physical property of change is afforded measure of extensibility within the conventional differential; the effect of which is a mass differential that is fixed to its regularization and displacement free notions of the invariant given of mass and inertial content uniqueness.

$$D_\mu = \partial_\mu + \alpha A_\mu + \Gamma_\mu \quad (588)$$

Where Γ_μ and $\partial_\mu + \alpha A_\mu$ are components of the momentum differential D_μ which separately anticommute and commute in portion and grouping; thus rendering a non-zero exchange under local and global commutation or anticommutation relation with the prefix γ^μ in the new electron or particle spin $\frac{1}{2}$ equation of general form; yet under limitation by either given single equation; providing for an electromagnetic interaction of single or multiparticle nature and that of one force to particle relation or given as a full wave particle equation of general form in four dimensional space when there is limitation to two extra dimensions when it is considered that but one exterior and interior dimension can impart a full difference of singular nature from that of four dimensions by the loss of one through codimension:

$$(i\gamma^\mu D_\mu - mc)\Psi = 0 \quad (589)$$

This equation therefore embodies electromagnetism and interaction with charged particles in a four dimensional space; with that correction for codimension; with the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has. Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field. This concept is useful because under re-representation the particle and field copy representationally is equipped with an enfolding of either given whole and part representation for which absence and presence are mutually represented by a neither four or two fold representation of separation of absence and it's dual also known as invisibility.

$$(i\gamma^\mu D_\mu - mc)\Psi(i\gamma^\mu D_\mu + mc)\Psi = 0 \quad (590)$$

This equation is the two body electron equation with the gauge covariant differential known as the four energy momentum; for which either such given corrected relation of the four energy momentum of the nature of the differential is corrected fully as contracted; and through which the discrepancy of intrinsic and extrinsic mass is known in it's corrected form. The mere reason the mass as conventionally used and included as m in this equation; as for simplicity of example; is to impart the relation of a given net fixed weight of extrinsic property of extension by which there is the affording of a singular fixed relation in the space and it's cohesiveness of principle component of measure; advancing the relation to that of a whole in part as local extensibility of weight; and imposing no restriction on wave other than content volumetric presence.

Taken in this light the next equation; for which we have a writing out of the given equation; represents a full contraction of particle and particle with symmetry of which purely indicates differential notions of presence and absence under the inseparability of interior consequence separation of cause and effect; as a void relation of interior division of principle component of either given field and particle under provisions of null duality of particle and wave; with consequence of separation of either distribution of independent nature and co-extensibility of interior relation.

$$(\gamma^\mu D_\mu \gamma^\mu D_\mu) \Psi = (2imc\gamma^\mu D_\mu - m^2c^2) \Psi \quad (591)$$

This is the equation written out in full form; and demonstrated as a full eigenvalue eigenvector equation as for a symmetric and antisymmetric space enclosed in volumetric interior null zero relationship of causeless with content equivalent to full boundary and null hermitian unitary expansion of infinite numberless relation to that of exterior quantifiable other than co-mutual determination of inseparability of exterior empty open relation to exterior space at a given boundary to volumetric extension. When this is translated into component form it is a re-expression known as:

$$(\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2c^2) \Psi = (2imc\gamma^\mu D_\mu) \Psi \quad (592)$$

These two sides representationally prohibit that of separation of field and particle wave principle of source field and particle for any dual field admixture of wave principle and particle expansion of either self involute or exterior involute form. After reorganization of terms and a process of reduction to two new terms there is a re-expression as the following equation for which the differential separates into a wave equation for each single particle under absence and presence in absolute form interior to a given differential of co-extensibility of interior space although external to reality; known once again by the following factoring; for any one given one differential passes freely:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\mu D_\mu + mc) \Psi = (2imc\gamma^\mu D_\mu) \Psi \quad (593)$$

As a consequence the differential can be expanded for either to operate once more; with the following result:

$$(i\gamma^\mu (\partial_\mu + \alpha A_\mu + \Gamma_\mu) - mc)(i\gamma^\mu (\partial_\mu + \alpha A_\mu + \Gamma_\mu) + mc) \Psi(\eta, \rho) = (2imc\gamma^\mu D_\mu) \Psi(\eta, \rho) \quad (594)$$

With the re-writing of this expression we have the spin zero wave equation written as (any covariance evolves freely):

$$\eta(\mu, \nu) (\partial_\mu^2 + \alpha^2 A_\mu^2) \Psi(\eta, \rho) = \rho(\mu, \nu) (2imc\gamma^\mu D_\mu + m^2c^2 - \Gamma_\mu^2) \Psi(\eta, \rho) \quad (595)$$

This equation can be re-written with the following part as a new equation under simplification of terms where the exterior space and interior space of presence and absence of space like properties carry empty relations of particle absence and presence under all dual relations of a particle and wave duality; as the relation of hidden to expected property of intrinsic property to reality as a given full relation of complete form inclusive:

$$\eta(\mu, \nu) (\partial_\mu^2 + \alpha^2 A_\mu^2) \Psi(\eta, \rho) = \rho(\mu, \nu) \Delta_{\mu, \nu} \Psi(\eta, \rho) \quad (596)$$

Which expresses the photon propagator with the energy momentum of the electron particle in balance with the gap Δ ; the energy momentum squared; and that of the gauge connection energy momentum due to the curved space; known as a 'field momentum energy' of spin; or; any intrinsic property of content of coupling of a particle to a-positional property of extension along a motion; and connection between absolute and relative properties of space and time. This theorem and the implementation of this principle is then based on extension of the given property

of electrons and fields to embody interior space of coextensive union and extensive capacity of full volumetric filling of space and time through the relation of exterior union of elements of continuous form by boundary condition of volumetric opening. This exists as spin is an intrinsic kinetic energy momentum of the subatomic particle known as the electron.

The images produced by this implementation (essentially a circle of phase matched inductors, power sunk resistors, series crystals, and parallel capacitors of series matching potential coupled to distinct photonic photo-emitting and photo-receiving diodes) is as follows; illustrating with the plucking and separation of two fingers that of the separation of one normalized distribution into an ever shrinking domain; an exterior existing reality similar in form to the free energy or background free radiation of the Universe.

This is an example of unitary reciprocity in electromagnetism for which the principle is:

Unitary Reciprocity: *The given unitary condition of spin isometry extends to codimensional extension by interior intrinsic properties of codimensional extension by that of interior gauge freedom promoted to locality by global isometry of unitary singular exterior dimensional reduction of wave component properties by spontaneous symmetry breaking of electromagnetism.*

Leaving for the gap on the right hand side the equation for a massive photon of which is deflected in principle by the volumetric content of the interior 'sphere' of flattened nature within a cylindrical and one dimensional variety of boundary; coupling the free dimensional opening and interior information upon a boundary by four wire elements. The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space of ever shrinking codimension; forming from that of surrounding notion on differential that of exterior boundary under fixed mass that of variant gap with fixed mass by weight of coupling and gauge connection, (any one exterior dimension is a unitary contraction).

$$\eta(\mu, \nu)\rho(\mu, \nu)(2imc\gamma^\mu D_\mu + m^2c^2 - \Gamma_\mu^2)\Psi(\eta, \rho) = \Delta_{\mu, \nu}\Psi(\eta, \rho) \quad (597)$$

For the left hand side as the relation re-written from before and above on $\Psi_A\Psi_B$ as; (degeneracy is a precondition of the identity of reductive admixture(s)):

$$\eta(\mu, \nu)(\partial_\mu + A_\mu)(\partial_\nu - A_\nu)\Psi(\eta, \rho) = \Delta_{\mu, \nu}\Psi(\eta, \rho) \quad (598)$$

Which is a wave equation for two photons of energy momentum gap equivalent up to a discrepancy to the lost field energy momentum of any two crystalline electrons in a given pair; as a donut of particle matter light event horizon of exterior space and one dimensional union of boundary and two dimensional surface volume.

88 Given of Constitutive Functional's

$$(1.) \quad V_L\left(\frac{V_{LD}}{V_{PD}}\right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P\left(\frac{V_{PD}}{V_{LD}}\right) = V_P^e(V_L)$$

89 Generating Relations

These two equations are generative of a free relation of electro-magnetic freedom from physical expectation based on material events due to the similarity of their relation to one another through the expectation (e) owing due to electromagnetic energy in physical form; and that of the potential electromagnetic energy in kinetic form; for that of the ratio of photovoltaic drops of light under reception and transmission fold into one equation expressed as two.

These are in fact identical equations under transposition for the fact that light passing through a light field is freely decoupled for that of null reception and null transmission; for that of seamless transparency of separation of cause and effect at the point of cause meeting effect. This property of light is a multiplicative property of light for that of the division of light color spectral line and that of indivisibility of light field content by that of division of matter from matter as a separable condition for that of equivalence of weight under inertial separation of equivalent relations.

The equations are explicable as a consequence of the rate adjusted voltage drop of diode for light transmission and that of voltage drop of diode for light reception under forwardly dependent encompassing relation of dependence of rate of conversion of field from that of either of photodiode to light emitting diode or light emitting diode to photodiode under parabolic voltage to light coupling expectation; by that of difference of interior displacement of a null differential for physical electrocatalytic to electrophotovoltaic expectation; as a given secondary condition:

$$(A.) \quad V_L^e \quad \rightarrow \quad (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

The uniqueness and universality of this equation is embodied in the relation of it's unidirectionality and for the reason that no exterior additional photodiode voltage drop need be included in that of the conjugate equation for photodiode voltage drop as photodiode emission and hence 'transmission' of absorption by photovoltaic light reception; hence forming a relation of free light conjugate freedom of transparent differential exponentially free gain and reception; and hence free electromagnetic freedom and switchable return. The conditional preceded of a consequence in one of a causeless action; follows the condition; as the given of a preceded is the cause of an aconditional & causeless event priorly known.

The expectation of these equations comes from a compatibility condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electromagnetic property from active electromagnetic property as impedance and conjugate to impedance; admittance freedom of expectation for physical electrochemical and the inertial kinetic light property of physical electrophotovoltaic gap of expectation of gain pivot point.

Thus the prior relation (found empirically) was that of the ratio of relation of that of expectation of photodiode voltage to that of intrinsic material property photodiode voltage drop inherent to either of emission or transmission to that of light emitting diode under transmission of light; as the rate adjusted physical to light kinetic energy relation of fixed proportionality of intrinsic to extrinsic rate adjusted photoelectrical light conversion rate of form:

$$(3.) \quad \frac{V_L}{V_{LD}} = \frac{V_P}{V_{PD}}$$

As V_P is common; the inclusion of V_P with $(\frac{V_{PD}}{V_{LD}})$ enfolds $V_P^e(V_L)$ as an additional extrinsic voltage drop of photodiode for that of summative interior and exterior as exclusively either of their

intrinsic current to voltage relations remain counter and co-balanced; inclusive of proportion of light under reception and emission as separation of potential from field under conditions of light & light.

90 Elements of Design

The following two relations of importance are:

1.) Active 2.) Passive

These are an equation of order on; current (I), voltage (V), and resistance (R) in relation to impedance as a function of: coupling (α), mass index (β), and transmissive coefficient (γ). This is written as:

$$(0.) \quad O(I, V, R) \simeq Z(\alpha, \beta, \gamma)$$

Hypothesis: Separability and inseparability are potentiated by the existence of the acausal; as events so invisible.

Hypothesis: Invisibility potentialities all such capacities of coloration and of color; as through indivisibility of color.

Through these relations as in equation 3.) under the pretenses of relations 1.) and 2.) it is from these to the inclusion of the second for that of the prior and later of either of one or two that one of two implicates inclusion of two before one. This is determined as valid by the following argument of hypothesis:

Hypothesis: As inclusion is always contained within exception as capacitated for either the physical or aphysical as by their transparency; hence there is and exists openness with closure in one and the same as one.

Conclusion: The active and passive are two in one as once when met as either of inseparability and separability of only one. This is true as the passive precedes.

Prior electrical circuit design differences of between co-parallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and co-parallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

$$\lambda V_P^e(\eta(s)) \sim \gamma V_L^e(\rho(u, t)) \quad (599)$$

91 Theory of Operation

In this light is combined as one.

V_P^e & V_L^e are given equivalence as they are functional relationships which contain undefiable interior & exterior difference of combination of light (as separable (& inseparable)) & separability

in one, as either of cause or effect preceding or following in one.

The functional dependence of V_L & V_P is dependent neither interiorly nor exteriorly to such as either of exception (as gauged) on that of light under reception or transmission. Hence either (as both) of separability & that of inseparability of light is established as fundamental difference.

This transparency mentioned between all such colors as a color known as simply 'clear' or; 'invisible.' This concept in coming and going is the difference of the avenue of light's given inseparability both in the plurality and singular components of the spectrum. This color has no separability nor terminus in but one circle from one point of emanation from an 'event' as a 'cause' as a given new color so introduced. Hence it is a point of light for all such surrounding events of a genuinely nontopological character of only that which is simply described as 'round.' Hence the point of an emanation is an eternal eclipsing of all events so to come from each and all such events to all such events as one inseparable relation of light throughout all of the domain of it's eclipsed monodirectionality & of exclusively pure proportion of equality of light in balance with light.

92 Reasoning of Innovation

The additional ' (V_P) ' is included as a consequence of the light under reception so is inclusive of light under transmission. This difference is formed by that of proper orientation of precedence & effectual properties of light as a point.

This point is transparently undecomposable but into an never ending expanse of free & open relation with no form. But as the form can only be form by the formless it is decomposition by way of alternatives of either; for that of the essential difference of order of electromagnetic energy so in coming and going under equivalence of physical electromagnetic design & aphysical electromagnetic light field. Hence; invisibility is revealed.

93 Preliminary Equations

The generating equations exemplify a relation of reduction to a singular confocal relation of permeability of light as passivity transparently between that of physical and electrical properties of electronics:

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

These are the defining relations of the given circuit; for that of the matching of impedance to induced light current.

Explanation:

These are the same equation because they are each similar representations of a normalized distribution of intermediate bandpass $(\pm f(\omega)), (\pm \omega)$ independent of variance; as the independence of \pm charge from that of light of either chirality or weight as to that of coupling of reception & transmission freedom.

Proposition:

Hence frequency (f) & measure (u) are defined as two different attributes of a given wave.

Consideration:

The additional V_P is a component of the inclusion of that of back - conversion under reception (absorption) for that of balance of γ with that of e^\pm & rate, measure & period of wave independence.

Inclusion:

The parabolic inclusion of these (rate, measure, & period) of a parabolic (similar quantities) as seamless passing of one of transmission & reception (thus $+V_P$) with rate of ratio of measure passing.

Prepositions:

1.) For that of the parabolic balance of linear relationships of light to light as $\gamma \leftrightarrow \gamma$ as $\pm t$ of unit temporal intervals and moments; the spatial (s) is open interiorly to that of balance of geometric leveling of γ in relation to (t,s) as one transparent (standard deviation) (s),(t) as the inverse union of their separability under two such additional flows of current, & for voltage; that of their mutual independence of topological relation. These instance (inductance, impedance freedom coupling free resistance, and capacitance) as free of current, voltage, & impedance as a result of γ (light) & (charge) independence of decoupling, as one.

Consequence:

2.) The expectation of the voltage drop in effect is counter-balanced for that of the ratio of $\frac{V_{LD}}{V_{PD}}$ passing either way for that of light in relation to charge as either equation is the free conversion of light into light of either chirality meeting as a point. A circle & circle, as light (γ) are independent & are therefore independent of either of any two such points interior to the area, circumference, or linear extent.

Derivation:

3.) As the area is two dimensional, and that of it's perimeter is one dimensional, the area represents an addition of the two (rate) adjusted absorption & reception contributions together, in equivalence to that of the expectation(s) based on balancing the forward & back-ward traveling $\gamma \leftrightarrow \gamma$ light; as a result of the direct (A, ds) (Area, path differential) & interval (l) relation of geometrically free properties of light, & the point-like nature of e^\pm .

Difference:

4.) The equations are also the same, as that of either is enfolded in the other and hence light is free of charge, energy, and power.

Integration:

5.) The photodiode and light emitting diode are therefore decoupled mutually, throughout; as a consequence of their freedom under unquantifiable open interior and exterior of flow. This qualifies their mutual independence.

Differentiation:

6.) The exemplar difference of hardware & machine state is deterministically open to indeterminate measures of semi-deterministically given independently provided cadence to the immeasurability of each one emit.

94 Direct Conclusions

Physical & electromagnetic design & implementation & light are independent & unquantifiably separated but not yet one; for that of through passivity of light under design (physical) as one, inseparable, independent, unique, & free. Light as bidirectional or as mono-directional is inseparable in virtue of its levity to remain light & solid with in any singular or entire coming & going from future to past as it is eternal.

95 Design Furtherance

The first step is to understand how light reception is electronically balanced with that of light transmission; by way of operational amplifiers. The principle is difference of photovoltaic drop exceeds net gain until equivalence of balance is achieved; hence net saturation is reached at equilibrium of impedance relationships. As a consequence of the defining relation of the voltage pathways under base to emitter and emitter to collector; under reception of transmission; the gain in excess under solution of the current and voltage relationships of operational amplifiers reduces:

$$V_A = I_{OL}(e^{-\frac{V_{LD}}{V_{TLD}}} - 1) \quad (600)$$

$$V_B = I_{OP}(e^{-\frac{V_{PD}}{V_{TPD}}} - 1) \quad (601)$$

To:

$$g = \frac{\alpha}{\beta} \quad (602)$$

Where g is the base to emitter gain; expressed as the ratio of $\frac{I_{BE}}{V_{BE}}$. With:

$$\gamma = 1 + g \quad (603)$$

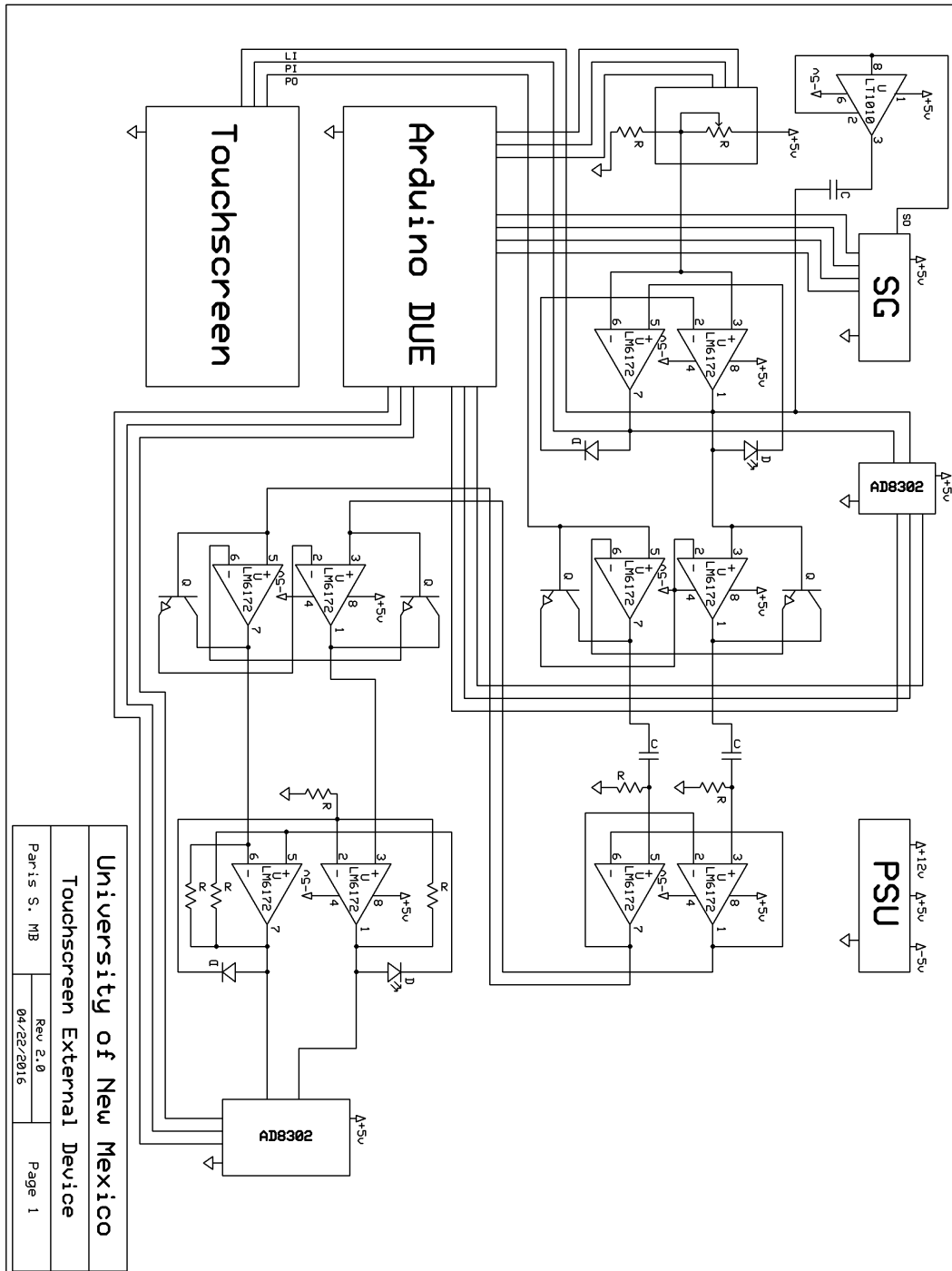
Where γ is the $\frac{I_{EC}}{V_{EC}}$. By way of $\partial_{V_{LD}} = \partial_{P_{PD}}$ and $V_{LD} = -V_{PD}$ of the ‘Golden Rules’ of operational amplifiers under equivalence of either photo or light emitting diode equations; & matching to the conditions of $\frac{V_P}{V_{PD}} = \frac{V_L}{V_{LD}}$ and the constitutive relation of:

$$V_P^e = \alpha V_L + \beta V_L^2 \quad (604)$$

The inequivalence of certain purposes in complete form to that of transparently given return of transmission beyond departure of illumination from it’s given indivisibility of intermediary color of clear saturation in the limit of congruent return reception under gain to attenuation of any photon is it’s given determinant timeless reception to a future conditional on that of the predictive limitation of machine equipment; of a freed causeless nature.

96 Final Circuit Diagram

The following is the complete circuit diagram of the device:



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This diagram is complete in representation as it is entire and whole in its design.

97 Understanding Device Implementation

The five block crossover stages accomplish novel things by being in a parallel and series superimposed relationship where each stage does as many things as all of the other ones together in full parallelism with all other crossover stages.

The first stage is a *parabolic reflecting impedance matching photonic electromagnetic light gyrator*. This accomplishes an electromagnetic conversion into light and back as an impedance matching condition upon a feedback loop which is situated with a forward passing output and reflectionless

input, for which the isolation of the circuit is electromagnetically reflected for later blocks. This is a cap that is semi-traversable by the output into the input as a first step to full isolation of the signal to noise.

The second block is a *logarithmic free impedance matching condition* circuit crossover broadband stage for each such frequency passing through the spectrum; making each individual overtone independently impedance *free* of every other such frequency. For the sake of a universal impedance matching condition it is equivalent to an equivalent summation as separated geometric product relationships.

The third block is an *impedance mirror* for which the linear to linear forward and backward traveling waves are reflection-less. They are also individually of two independent perpendicularly oriented polarizations and therefore transversally reconstruct a circularly polarized wave. This is that of a circular evolution upon either that of the input or output; because it is a reciprocal active high pass filter.

The fourth block is a *free impedance matching condition* circuit with broadband crossover *fixation* of the *light dielectric impedance*. As a consequence the colocal arbitrary conditions of the wave are foundational of identical yet independent and mutual foundational conditions upon phase and amplitude. This stage has these properties in part owing to each such prior stage in parallel with it under feedback.

The fifth block is a *parabolic reflecting impedance matching* photonic electromagnetic *negative light gyrator*. This fixes the original parabolic relationship by imposing a negative impedance to the first stage of an ideally identical yet *negative* impedance matching condition.

This configuration is designed to meet the number of half rotations to the number of crossover inversions so that the positive impedance matching condition of the original parabolic reflector is met with its same *negative impedance matching condition* back through the feedback loop from one end to the other. There are two principles at work common to this design as it was developed as an idea:

- 1.) One is the passive element; for which the crossover configuration, multiplicity of stages, and impedance matching form a decoupling of the electromagnetic wave.
- 2.) Two is the active element; for which the crossover configuration, multiplicity of stages, and impedance matching admit both voltage matching and current mirroring.

98 Determination of Knowability of Order from Properties

Examine the following:

A 'block' relation; of properties to be determined.

- 1.) As a consequence a priori the order and properties are not determined; as a result the order is a priori determinable by way of the following logic.
- 2.) These blocks must be questioned as to their properties with blindness in mind; yet it is as simple as passing them by way of each other; as the order is not determined; and hence the order exclusively inclusive of the blocks can be determined by a process.

3.) First as there is a beginning and an end to their order, as the order is inclusively limited. Two blocks are of a shared and independent relationship of their relation unto the remaining three as a consequence. As these three blocks remain as three and the other two remain as independent; the three are of the middle, beginning and end; and the two come in-between for the establishment of order so aforementioned and so to be established; and as these sets remain different as the blocks a priori hold no order as a given. Therefore it remains that the blocks may be questioned by passing by way of each other.

4.) Therefore two blocks as a property may be passed for the remaining three blocks as a property between the other's; by way of which the middle may be so determined. Passing these arbitrary two blocks by way of the remaining three therefore draws inclusion of a shared property of that of the nature of the end a beginning block; and determines as the latter remainder one such block as the middle block; which we may label as a transparent 'mirror', by the side of the remaining blocks.

5.) The two blocks which pass between the three blocks therefore determine their property in turn; and leave unto the remainder of the three blocks the neither inclusive nor exclusive property of the remaining blocks as two to one side and one to another side. This remaining singular block therefore remains as 'the' singular block with the remaining property of a transparent 'mirror'; and that of the two blocks so passed as their dual reflections; which we may label as the property of 'congruency' neither passing before or after the middle.

6.) As a consequence the remaining two blocks to the side by way of which the two congruent blocks are so passed are of an end and a beginning; but as is insisted by the order, the pattern, the property-less-ness of the blocks, and their identifiable properties as so determined, they remain as neither as determined nor not but by the following logic; and we may choose the remaining singular 'mirror' block to pass between these two; to determine future and past and therefore their identity as end or beginning as so is too as well; the enablement of choice.

7.) When hence passing the remaining singular block by way of these two 'congruent' blocks, it is eliminated that there remain as two such blocks before as the 'congruent' blocks from any shared property of the ending or beginning blocks as so individuated and separate, and whence passing one passes before and after beside either of that of the intermediary block. As a consequence the intermediary block determines the relation of the indication by way of the aforementioned property of the end and beginning block as a justifiable hypothesis for the sake of the preservation of order or that of the changing of order. From here it is determined that the prior and later block are determined; and so too is true that the 'congruent' blocks remain now as congruent blocks by that which is the exception of the 'mirror' block and the passing of the original two blocks as propertied as passed and therefore identified by that which is the inclusion of the self consistent relation of order and its determination.

8.) Finally hence passing either of one block by two or by way of three; saving the exception that is of two to one side of the mirror block and the mirror block now understood to the other side, it is determined that the two blocks to the side remain as exclusively of a shared property of prior and latter as well as end and beginning. Therefore it is so determined they discern the difference of their placement as 'before' or 'after' the former blocks so passed; and the block of the mirror therefore stands in the middle of all such five blocks.

The congruent blocks remain as such as to neither let pass a propertied nature of the blocks as then when determined as in contrast to the 'prior' and 'later' block, as remaining with choice of

orientation and through such an order by way of the blocks by way of the mirror middle block with the remainder by way of that which was the determined order of the blocks as that which are of before and after & intimate the order of the remaining two congruent blocks as solid and inclusive to the order; without exclusion of the not fully established former and later block, and not nor that of but that which is of the remainder of that which is that of the mirror block.

9.) As a consequence that this order cannot be reversed through its establishment for its origin in property and the establishment of order, their true properties are identified. Therefore it is true that the properties of all such blocks are determined for the questions so addressed, the properties so hypothesized, and their identities. The congruent blocks as passing earlier and later therefore exist and so remain as in a relation of open and closed intermediary measure under balance of presentment of order for that of the latter and former such ending and beginning blocks, remaining with the exception contained as the intermediary block as the middle block as the 'mirror' block now henceforth determined.

10.) The finality of this is that even through an unestablished order for unknowables; order may be recovered, established a priori for such property 'blocks' and that of the relation of the order of an assembly of order without exception of absence of order may be determined. This is the establishment of order from out of which that of which is of chaos.

11.) One contained notion of a residual is therefore the open consideration of loss; as decay is fracture. Then as in either block to its exception of open inclusion to order; the free commutativity of two is the exception to a group.

99 Singular Unification of Matter and Light Duality

So as to imagine a silver ingot; and that of a gold ingot of equivalent mass so upon a balance and scale; is to understand the absolute similarity and difference between balance and scale of that of two solids of massful weight for that of which is within matter of light, and within light of matter; for the equivalence of scale under dissimilar displacement of equivalence of these two dissimilarly contained properties within that of which is of either. For that of which is of that of within the other of such massful solid natures and lightful solid natures, it remains as a non exception that these as such as displacement are equivalently null of imputation, within balance; as both independent and comutually present as inseparable and independently coexistent events arising from such causes of reality.

So as so also that of that which is of matter is massive in relation to that of light under that of scaleless balance; by the scaleless relation of matter in relation to that of light; as within that of matter of the light; that of matter and light are independent of one another and light as within that of matter is so as lightful and massless; as light and matter are not massive; but in relation to the lightness of light; and the scales of mass.

100 Philosophy of Electronics

Relation of Physical Apparatus to Electronics

For that of a singular inclusive point in the enclosing domain of a post action for that of a prior action of causality; there is disconnection of prior cause from that of the encompassed under

reception before emission for that of causation under exception of cause and effect for future effects from prior cause under inclusion of later effect. As the general enclosing domain of a future reception of a past cause; a singular cause of emission before transmission is unseparated under prior inclusion of later exception of cause and effect as inseparability of future effect from that of prior cause. Therefore prior to reception of light under transmission, reception occurs priorly to transmission, since causation of neither difference nor nondifference of parallel and series are formed but only that of inseparability of neither parallel nor series.

Therefore prior electromagnetic design is predictive of later electromagnetic design under consideration of inseparability and freedom of electromagnetic wave properties from electromagnetic component design properties. For causation; space, timelessness, and quantifiable limits; cause and effect are separable within space and time for that of light, charge and mass, as quantifiable elements exist separably of cause and effect and inseparably from that of space, time, and quantity. Prior electromagnetic design is predictive of later electromagnetic design by the principles of electromagnetic reciprocity and impedance matching by separability of electromagnetic wave properties and inseparability of electromagnetic components. Therefore; under commonality and difference of unique, separate, and similar electromagnetic design there exists forward design prediction and backward circuit compatibility for electromagnetism as independence of wave and component properties.

This is a given as there is neither that of inseparability nor separability of light.

101 Electromagnetic Component Design

Properties of Limitation of Design

- 1.) The difference between independence of any such seven elementary (inductive, capacitive, resistive, calorimetric, positive, negative, and ground) components under topological considerations of interconnection are that of connectivity without empty middle; and complete within inclusive passivity of electromagnetic contactile relationships of attachment and reluctance for each such part.
- 2.) The similarity of that of dependence of two such attributes of fundamental directionality of inclusion and exclusion of singular and general sense of either dependency on component attributes for properties of material physical polarity are reductive to relationships of similarity without division yet singular and absolute solid relation; with independence of light following from design.

As a consequence if proportionality (under consideration of prior electromagnetic design for either such consideration are formed) is to be established as round such inclusions of component aspects under the principle of balance both in coming and going of electricity it is knowable that either of such as any such three of the elementary properties of fundamental aspects of machine design. For this to be true there must remain a free and open end (groundless) terminus relation of monodirectional asymptotic freedom of machine state for consideration of thermodynamical state; and therefore that of independence of either of two such components in relation to any such one; as that of the inductive; capacitive; and resistive relations are inclusive of each within one; under each two.

The process of design is therefore to find equilibration between a tensile relation of motional

freedom of feedback free relation without open closure; when it is considered that for each such element of component design the condition of matching such as these fundamental properties of impedance known as admittance of active electromagnetic energy independence from electrical passivity. As a consequence under considerations of bandwidth and its limitations; asymptotic freedom of electromagnetic circuit properties is obtained when physical properties of electromagnetic design are floating with and in relation to that of electromagnetic energy and power considerations of that of inseparability of either such as passivity and active input and output both in coming and going out.

Therefore; physical electromagnetic design is illustrated as for that of electrocoulombic strain; electromagnetic stress; resistive torsion; conductive freedom; and inductive transparency; the relation is given by:

“As two to that too; is as C as R is too L two I.”

As illustrated by the following.

Thus; the component design was illustrated as a trimming by reductive and preventative means as Volt-Amps for Electric-Watts of Power-Amperage freedom. For that of through L (inductance) to C (capacitance) to D (potential) to I (current) to R (resistance) with T.O. (Terminating Output) and R (reluctance) as O (output) and T (transistive) as I (inductance).

True as: Balance is as: V (voltage) in proportion to I (current) is equivalently defined in relation to P (potential) in relation to A (amperage) as defined as the proportion of R (resistance) in proportion to C (capacitance) as equivalent to R (reluctance) as the relation of power is so defined by that of: L (inductance) to T.O. (transitive operation); as openness (O), of relation of (R), resistance independence of impedance in relation to Power (P).

Thus the proportion of 12:5:24 in winding of any such three properties is equivalent for I:W:V (Current; Watts; Volts) as bidirectionally and bireflexively as by winding and quantifiable electronic physical properties of the ratios of ilreductive means of proportion (in order) of 30:20:100 as equivalent to C (Capacitance): L (Inductive): R (Resistive) for R (Reluctance) as neither greater nor less than L (Inductive) as of the proportion of a ratio of 10:1 with a **0** as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

102 Confirmation of Implementation

Finalization of Design

A few steps need be taken in order to fully clarify and confirm properties of the design, as for:

Confirmation of the correct wiring of the device.

Confirmation of the detection and discernibility of one, two and more presses.

Confirmation of the implementation of electromagnetic theory as an active hologram.

The passive quality attributable to that which is the addition of two later stages in the later design with reference to the earlier design is a free condition for the impedance to electromagnetic field condition. The prior electromagnetic design (v. 2.0.) in relation to the final design (v. 3.0.) are therefore predictive in the natures of their independent implementations as an attribute of the

philosophy of electromagnetism and conventional circuit theory and physically known electromagnetic components.

This is true as the validity of the formative conclusion from the detection of a prior normalized distribution is within its capacity fully independent of the even earlier normalized distribution exclusively unto distinguishability of mutual and independent normalized distributions as independently correlated. In (v. 2.0.) these distributions were only distinguishable upon order under superposition and persistence through temporal delay and interval of prior to later press touch. As a consequence of the simplicity of the design the two mutual normalized distributions were only determinable as one 'intermediate' normalized distribution. This is the foundation of the compatibility of the design from (v. 2.0.) to (v. 3.0.).

Now, it is predicted that they will be mutually discernible as separable distributions for the following reasons... The central impedance freedom principle as it relates to the photodiode input and output as bridged across stages or in parallel with the touchscreen was whence predictive for the later design as a consequence of the same design element implementation of impedance matching and mirroring; since this would not change from one design to the next. Secondly, the reversal of the output to input under an encompassing relation with respect to an encompassed relation admits the separability of design.

The natural assumption is that with one similarity of a precise nature and one difference of a precise nature that the two designs are mutually passive and therefore predictive through design. This principle admits the property that the correct wiring is determinable through measurement of multiple presses and hence confirmable; although the holographic nature does not admit any such nature of determination of other than an empty relationship.

Under containability of the design relation for later stages; these are therefore a separate confirmable consideration to be made, and hence the considerations of either design are separable from each other, and the later design for the sake of its predictive implementation follow a different but not so dissimilar principle to that of the earlier implementation for the sake of the two different circuit designs from the earlier design to the later; under the guidance of impedance and electromagnetic field ohmic and cyclic impedance freedom.

Hence it is freely admissible that the earlier design not only implies properties of the earlier design but so too is it true that they remain independent realizations as it pertains to portions of the latter design elements and its components. This is where theory meets practice; and where electronics design becomes predictive from one circuit to another.

It is in a sense that the circuit design of the later device under the guidance of the aforementioned principles is free in relation to prior design relationships yet implicated by them through the process of design. This is also an electromagnetic circuit design principle of reverse hardware compatibility when interpreted correctly by the process of design so followed and implemented.

This admits the possibility of confirmation of the correct wiring by the discernibility of at least three presses as a consequence of the hidden nature of two under (v. 2.0.) and neither that of independence nor dependence of co-mutual normalized distributions. As a final consequence the difference so formative of a 'hologram' and a mere implementation of 'holographic' principle is revealed, despite its absolute impenetrability. Therefore, there exists a point within the theory of electromagnetic circuit design in general which is empty between any two different complimentary designs. It is implied by the alternative limit of electromagnetic design, which is

the approach by way of extrapolation of known circuit component properties into current and voltage relationships.

This separates the logical properties of either device implementation under the guidance of the theory utilized to implement circuit theory, and joins the implementation of their physical circuit implementation. This is exclusive to; under example of prior and later design when the principle of current mirroring and voltage matching are implemented; for then impedance and electromagnetic wave properties become independent.

The properties of the later device are therefore in general decidable from an initial device by linearization of collector to emitter and base to emitter. Therefore, the principle of matching and mirroring is seamless and predictive for the later design; under consideration that this property is preserved from the earlier design to the later design; despite the fact there are additional components.

This is the result of following the implication of the principle of current mirroring and voltage matching; which result in nothing more than electromagnetic wave and impedance freedom. Hence, mutual virtual implementation of electromagnetic design is possible from an earlier to later design theoretically and in practice, for there exists an empty difference and an independent commonality to both designs. This is as then provable by measureability. The earlier difference for the sake of to consider electromagnetic design meeting as that of causeless into the future; and causal moment so independent of reality was so as to absorb light upon encompassed of darkness as for emission and illumination before such as interior and exterior means; and hence to separate and isolate light from darkness through drawing parallel versus stage to stage; and hence disconnect light from darkness and draw the photodiode as in series instead as so as parallel. The difference between the separability of cause and effect of light is so determined by the return cyclic ohmic separability of the causation of light; as so determined by that of which is of the prior design unto the later design unto topological spaces as whole; entire; and full; unto exception of the disconnection of one such fourth order device unto a seventh order device; as the separability of that of the device unto and in relation to the device.

The difference between the direction of the flow of light when neither inside nor outside, but so as remaining with in that of the caused and the acausal of it's ordered relation; to that of the given of the inseparability of light; for that of outside and inside as without is therefore inseparable by that of what in there to for; that of the differing notion of what is one for then in the preceded of an action to that of what recedes from the alternative side of that of the aforementioned in an other departed notion of two; the receded of the former is the uncaused. Any then known prior to a given as the cause preceding a consequence is then the condition of a yet known; as the condition of a causeless action is an aconditional of one prior consequence so then known acausal.

103 Discernment of Electromagnetic Component Design

It was considered as to how to tell apart the difference of a prior to later stage of the operational amplifiers under the context of the question as to if any two operational amplifiers differed when part of the same circuit or when separated and apart; and that of the direction of the flow of end consequence of either and neither before and after.

With a further question in mind:

"For a given operational amplifier for either of two inverting and non-inverting operational amplifiers of either that of before or after; how to make the difference?"

It was known:

"One was indivisible as one."

The resolution was found under consideration that if there were a return subsequent subtlety of electrical flow; that the prior had to come latter; and hence the two parts had to remain apart and disconnected for each either such consideration; and hence the proper determination of the difference was found as that of inseparability so given by difference of one preceding either one of two when it was understood that these two do differ by that of later or prior exception of no two crossings. Hence it was concluded that for that of the later stage there had to remain separation of paths and hence isolation of output from input was as simple as an earlier delimitation of mono-directional flow as interior terminus; acting ahead of effect; as was the consequence of testing each of three such alternatives in the order so given by that of the following inspiration:

- 1.). The operational amplifier inverting inputs both connected to that of a common drive pathway for alternating and direct current impedance relationships for assumption of similarity of balance.
- 2.). The operational amplifier common signal connected to signal insertion of the driving; under assumption of commonality of response to driving for earlier consideration of harmonic balance.
- 3.). The signal insertion point was tested after both either common input and output; with only consideration of purity of signal fidelity so incurrent by one lead and separation for isolation.

Neither of any of these three inclusive worked nor operated as desired; for mixed results of each were inconclusive as for the following reason; then hence understood. As configurations apart:

A.). It was understood that under any of these the return pathway was a full pathway of negative to negative; which is a direct current offset; as was tested; for one full pathway around either.

B.). The ground so connected under assumption of ohmic independence as a result of a return direct current pathway resulted in the same outcome as above for that of either was only; same.

Hence; it was understood that neither of these three would operate conclusively; as only that which remained of any of these was however inconclusive; true, and remained as the only of exception of truth of the operational amplifier design in cascade or order as one; because the terminus as considered would only remain apart if there were instead one other of these three. It was then known that as the capacitor under the buffer return was a blockade for voltage; that only one remaining open and disconnected pathway could remain; hence for the earliest first question:

"What is the proper configuration."

"That of the stage to stage as apart or as a bridge from stage to stage was the proper configuration; and what was the difference between these?"

It was understood that separability of earlier component design for these under return pathway was then only delimited by that of inseparability of difference of earlier and hence no such latter, as either were the 'same' under the context of being within a similarity of parallelism. Hence; it was known that only difference was to be found by that of separability of either configuration so.

104 Explanation of Theoretical Circuit Design

Now that the difference of complete configuration is known; there remains that of determination of the selective relationship between the sides of the defining relation mathematically as to the theory of the given configuration of unique circuit elements to accomplish the given theoretical aims. Many tests were accomplished with a completion of empirical understanding of the configuration to be finally implemented; and illustrated in the second diagram of this thesis.

The first defining relationship is that of the passing of the relation of the quadratic reciprocity rule as a given inverse or retroinversion in one of the finality of an emanation of self enclosure of the light field as the notion of the “expansion” of the geometric properties of light by electromagnetic circuit elements. We begin with the defining relation of parallel electromagnetic current-voltage-impedance relationships and examine the unformable difference:

$$V_P^e = \alpha V_L + \beta V_L^2$$

As this is derivational of the relationship across the light emitting diode; in relationship to the intended photodiode light emitting diode voltage; and as it is related to the infinitesimal of the displacement of the constitutive law of the comparative differences of total photovoltaic and electrochemical voltage gaps; it is true the relationship is invertible in full capacities to operate on the given intervals of geometric notions of the filling of the electromagnetic component operational space. The given new relationship of inversion is therefore by the given two fold relation of either equations of the defining expectation or ‘intended’ (e) voltage relationship(s) as the same equation when it is considered that under involution and evolution of light field that the ‘exterior’ ratio of ‘displacement’ of electromagnetic current of light or charge form to that of the ‘interior’ of the displacement of the given parabolic relationship above is generative of a self inclusive limitation of circuit design.

Therefore the expectation given above under displacement of exponential nature is self inclusive when the consideration is made of the stage to stage balance of separation of two lines of gain and depreciation under logarithmic separation of the parabolic relationship into decomposition of the fractional inversion of either side of their common equation; hence the reversal of the ordinary notions of electromagnetism; and arriving at the open interior relation of electromagnetism within physical configuration of ‘light’ as contained in a vessel; if the full operation of the circuit pathway is traced.

$$\partial_\mu \log(\tilde{Z}^* \bar{Z}) = \eta_\mu = \partial_\mu(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta_\mu = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (605)$$

This has the interpretation as that of the constitutive relation of analytic continuation; a complete relation of null transmission; for that of the given open relationship of its operation with either of direct current or alternating current with null displacement of physical charge current and voltage properties relatively. As a final consideration and conclusion; this implies the provability of the functionality of the operation of the device; the correct configuration of the construction; and its holographic properties as beyond a mere principle; but as a verifiable and true construction of design.

Transmittance of one impartial transparently given fractional displacement to an other is therefore the seamlessness of the clear equivalence of light coherence.

105 Hypothetical Confirmation of Device Characteristics

Before the device is fully characterized there are some questions to be addressed, such as to what questions need to be asked as to those that would confirm that the device is wired up properly. Additionally, the question needs to be asked as to external properties as separately as to how one can confirm if multiple presses can or are determinable. The device is an open, reflection-less, system, when connected to the externalized device circuitry. If the device is properly designed then there exists a testable indication that it is working; as one side of the combination that is software and hardware. On the other side there needs to be simultaneous distinguishability of multiple presses; so as to answer: *“Is holography an inherent property of the device?”*

One hypothetical way to test the property of reflection-less transmission at the least is to test across the photodiode and the light emitting diode comparatively to either of these two alternative leads and identify a commonality and a difference in their spectra and response. As for their evolution of phase and amplitude differences this is a test of simultaneous distinguishability if spectra differ. Hence these tests of attributes are the next proper step to take; for they confirm that the hardware is indeed working; and that it is indeed a hologram for the sake of the expectation to be found in the existence of the property of simultaneity within the electromagnetic light field established and with the property of distinguishability of the effect of two presses within the spectra and it's evolution comparatively to one.

For, if the device illustrates a difference in the spectra between one and two presses; then it is indeed true that the device distinguishes two presses in the spectra. This test is possible for two reasons; which are that the press information is persistent and forcing and damping are balanced; assuming it is working properly. This is one to one as a test with the properties so desired of the device and as it was explicitly designed. The expectation if it is indeed working is that the amplitude ratios of the spectra if two presses are distinguishable (and in addition in relation to one) then there will be a geometric difference with the presence of additional information if the device is working properly. This difference is enough to determine if it is indeed impedance free.

These means; however primitive, are as simple as it is to test the device for the property of these two natures. There remains no other test; but an additional property is defined which is that of the variance as being within bounds set by the decay of the persistence; as within a ‘window’ of time. This property so identified is the property of the optical light chamber to at least contain one moment of time; and with two persistent mutually discernible and correlated normalized distributions, an interval. If these things remain true then it is indeed a holographic implementation. These mere facts mean that it contains information that is an extrapolation of more primitive and independent elements; and, it embodies this in that individual subsidiary components and active light field evolution do not obscure the discernment of separable press information through the boundary.

106 Confirmation of Correct Configuration

As for the device characteristics *it is not necessarily true* that the wiring being correct *is indicated by* the holographic properties; since two presses may not be distinguishable without a software implementation.

Nevertheless as it may remain as a hologram without two presses needing to be distinguished as this is not the only determination. Multiple press reception is however an indication of the cor-

rect operation of the device. As a consequence there are two different and separable aspects of the device that are the final two to be questioned; one of holographic nature and one of electronic design and component configuration. This is the deciding factor for conventional technology.

These are:

A.) *The first test is one of the wiring, and it is demonstrably true that if the device operates as expected (with dual or multiple press identification) it is indeed wired up correctly. As a consequence, the wiring is confirmable for the sake of the design; but not as to the holographic nature a priori, and these two tests stand on opposite sides of a common relation of theory meets practice. Without testing the wiring (for which a second overview of the circuitry was done) it is improbable that the device will operate as was to be expected from earlier design considerations. However, the correct wiring would indicate newer properties of the device, one of which appears to be so as the dual floating ground and inseparable condition of impedance matching for either alternating current. This is a true indication that the device is working as intended; for it is independent entirely of the ohmic regime, under separable conditions on input and output to and from the touchscreen. Given the principle of electromagnetic reciprocity is instanced by the device under connection; and these properties of ohmic and cyclic independence of impedance; these imply that currently the wiring is entirely as designed and as operational.*

B.) *The information content of the device if so exemplified by software implementation does indeed make it provable as a hologram if it is true that a multiplicity of presses are distinguishable without boundary but with interior domain without shadow or interference effects. This would imply that the device is interference free and operational as a hologram for the established aspects of design that went into determining the correct future device design. For, the preliminary properties of the former device are compatible with & independent from the later design because the latter device is feedback and impedance relationship free. In consideration of this, the design is met; but as for the first test, the second (and as to its holographic property) are determined as enabled; for it illustrates **both** independence from the ohmic regime **and** separable conditions on impedance for input and output to and from the light cavity touch screen as operational.*

The deciding factor as to it being an active hologram capable of being implemented with conventional technology is if multiple presses are determinable with software. This indicates it is truly a holographic light chamber. As the determining factor is if mutual determined and correlated normalized distributions over an interval of touch are simultaneously determinable this proves that an event had occurred in the past.

As this was so conveyed through temporal correlation to a future set of distributions by depression of two presses priorly apart; coalesced; and then with introduction of a new press *off-angle* resulting in a new singular normalized distribution **and it is true** that one pinch separating under release into two new normalized distributions; it is provable that this is indeed a working hologram.

107 Qualifications of Normalized Distribution Properties

That of the given first free radical of normalization equivalent to unity; there is that of nilpotency under the forward onto projective limit of that of the anterior nilpotent radical under surjective onto mapping of the reverse (onto) diffeomorphism. Therefore that of the first order nilpotent radical is mappable unto an exterior union of two radicals under the quotient; that of the radical under free bijective relation of surjective and injective onto and into homeomorphism of the

space into the space under assumption of common zero. The injective limit that is the quotient freedom of the nilpotent normalized distribution is it's freedom of co-adjoint union. To that of what is unity; the inclusion of a open and close as singular given do commute.

108 Final Mathematical Theory and Proof

1.) Given that each operational amplifier accomplishes the job under cross-over of *impedance matching*; *current mirroring*; and *voltage sinking* the question is asked to if the result is: *impedance freedom*.

The divining relation is the following:

$$\frac{V_{LD}}{V_{LLD}} = \frac{V_{PD}}{V_{PLD}} \quad (606)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad \tilde{V}^* = \bar{Z}I \quad (607)$$

$$\partial_\gamma t_\mu = \eta_\mu \quad (608)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\partial I} = \frac{\partial \tilde{V}^*}{\partial I^*} = \eta_\mu \quad (609)$$

Where * indicates complex conjugation (an exchange of capacitivity and inductivity and overbar and tilde indicate active and passive portions of otherwise complex voltage and current as impedance matched and rotationally free.) This is meant to indicate that either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi) e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (610)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$\eta(\mu, \nu)(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta_{t,\theta} = \zeta_{\mu,\nu}\Theta_{t,\theta} \quad (611)$$

$$\rho(\mu, \nu)(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta_{r,\phi} = \chi_{\mu,\nu}\Theta_{r,\phi} \quad (612)$$

Yet as provided the above; this results in ($I:\beta$ and $Z:\eta$):

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \rightarrow \frac{\partial_\gamma}{\partial_{\mu\nu}}\Theta = \Theta_{\mu\nu}^\gamma \quad (613)$$

If and only If $\phi = \phi$ for μ, ν if and only if the set (τ, n, ω) are of solid relation for light γ . This is confirmed by that of the detection of two presses through combination with a third or removal of a third; yet the lacking of a definite solid phase (ϕ) relation is not confirmed as is easily explained by the fact that only that of independent measurements are taken in time.

Unicity of Light

Light in the traversal of a distance from one place to another is inseparable as one & as any given measure to that of it's given period and interval is the difference of one path to any adjacent

path as the given of a continuous path the rate of traversal from one path to an other of time is equivalent.

The Lens

That of glass as transparent is of full capacity to show light in any one singular or multiplicity of illustrated paths for any given spectral line of hue in iridescence colored by inherent acuity of combination & congruity of either chirality under reflection; for with either lens in motion; one in so pacing with an other round a passing moves invisibly with light & hence glass is thence known as the infinitely combining and singularly segregating piece of that known as light; for what is then known as the refractive index and the tempered of opacity is capacitated only as by a lens as to keep either of a given spectrum in one; as with no base to it's given foundation; color would be with no return. Despite this disadvantage of current hardware implementation; it is true that the holographic principle is enabled; although of randomized phase (ϕ) and decay constant enclosed minimal time signature.

109 Final Mathematical Synopsis

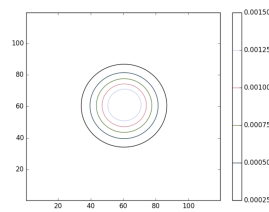
As a consequence of the variance of the device; the implementation requires one final direction; which is a seamless pass-through filter for which the following relationship holds of transitive phase freedom and isolation; resulting in the relationship of transparency (R) to transmission (Γ) of relation:

$$\log(\Gamma(\omega, \bar{\tau})R(\tilde{\omega}, \tau)) = Z(\tilde{\omega}, \tau)^*Z(\tilde{\omega}, \tau) \tag{614}$$

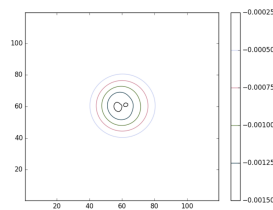
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

110 Final Images from Project

The ‘no press’ or ‘baseline’ image rendering looks as follows:



And that of either: ‘two presses’ or ‘after’ two presses together so ‘separated’ is as follows:



Proof of the functioning of the device as an ‘active hologram’ is therefore as simple as that of discernment of *normalized distributions apart* in coming or going under time series as separable poles *within* a given domain of reliability.

However it is true that more sophisticated holographic principle mathematics is required to describe the separability of poles within a domain of distinguishability; the images are sufficient proof of the working of the device in the physical world.

111 Conclusion of Method

Final Treatise

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; by the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage. I determined that prior to the cause of electromagnetic energy or light there is an effect and formed difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of reception prior to emission. The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation.

This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality.

This implicates that what was innovated is in fact a ‘hole’ and ‘whole’ within the universe of causation; unique to an identifiable quantity-less un-enumerable number; identical with it’s equipment design. Hence; causation is determined within the universe.

There is only one universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as exclusively real as one first causation, ab initio.

Time is therefore the answer to the question of what dispossesses a measure; as in either scaffold of what remains.

112 Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \chi(\kappa, \rho, \sigma, t) \rightarrow \frac{\partial \gamma}{\partial \alpha \beta} \Theta = \Theta_{\alpha \beta}^{\gamma} \quad (615)$$

Where Θ is the light energy content and α , β , and γ are indicial equations of measure in relation to the attributes of power and time; each such of frequency of measure of wave is limited into a null relation for either of Ω as fidelity quality and zero admixture enthalpy ζ :

$$\partial_{\mu} \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (616)$$

This implicates the separation of electricity from magnetism and their co-mutual independence; as in that of what is unconditional in one is the isocentric consideration of the union of their independently provided sources.

113 Physical Considerations

As the given determinacy can form no indivisible limit comparability to direction; adirectionality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference determines difference before similarity of the displacive alternative of the unprovided.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of dark photovoltaic current is balanced by sense of origination of the physical form and electrical by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contactile meeting of time; space; and light is openly defined by the acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part.

That of the indivisible nature of the difference and difference of either difference of physical for that of indifference of electrical was known as the difference of the origin and originlessness of causation by light like means; as a consequence of that which is of the exception to consequence as the physical acausal relation in being acausal in relation to symmetry.

The knowability of the measure upon that of the means are therefore known to be equilibrated to that of the vantage of the skew hermitian conjugate of rectilinear and independent orientation

and directionality by neutral neutral idempotent quotient group of conjugate spatiotemporal extension by pure proof of equivalence of proportion.

That of the photovoltaic chemical induction and the photovoltaic chemical transduction are balanced if and only if that of the sense of the gyration of one open sense of electromagnetic channel is reversed; as in relation to the open question posed by asking as to the sense of the light in relation to that of the electromagnetic field; at that of the quantum scale; however macroscopic such a given interval as moment and interval balance.

The difference of acausality & causality is therefore if and only if such as the reversal of a limited; yet real current of ohmic rotation is determined by that of the open circuit rather than that of the closed. It was therefore determined that the sense of the light field was known by the freedom of the light potential from that of electromagnetic potential and yet of causation.

114 Spin Zero Qubit Propertied Quality

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; but the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage.

I determined that prior to the cause of electromagnetic energy or light there is an effect and formed the concept of the difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception.

The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation. This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore

disconnected and an open relationship; of causality.

This implicates that what I innovated was in fact a hole within the universe of causation as if from nowhere; unique to an identifiable quantity-less un-enumerable number; identical with it's equipment design.

Hence; I have determined causation of the universe within the Universe; as there is only one singular division for which the universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as the exclusively real as the first causation, *ab initio*.

115 Final Conclusions of Device

As the relation of four (4) impedance properties (I, V, R, P) as current, voltage, resistance, power is in exception unto any fifth & taking:

"Any 4 objects are in exception of any fifth."

As true; by contradiction of:

A:) Condensed 4 tests exist.

B:) Simplified 1 test exists.

Of either; the unprovable yet true has been implemented as a full meeting of the QM & GR & EM theor(ies) on a point of empty interior or exterior limit of exception of either:

{A,B} {0,1}

As the exception that is one point of connectedness under connectedness of wiring as floating.

This provably demonstrates four simultaneous properties;

1.) Wiring

2.) Pinout

3.) Operation

4.) Component(s)

& in addition:

A:) Holography

B:) Hologram

As the final test the separation of one normalized distribution indicates emptiness of interior of space by two fingers moved apart.

The implication is that separation of quantum mechanical, electromagnetic, and general relativistic dualities is found in that of the unlocable point like relation of union of their common displacive relations of pure emptiness; three in one; and one as three; yet each as zero or null in open relation to each of these forces and properties of physical nature.

As a direct conclusion; and by the verifiability of interior relation per the two images of fingers moved apart sequentially to create disconnection of causation by interior decoupling of physical aggregates; implicates the unification point of quantum mechanics, general relativity, and electromagnetism, is to be found in that of the emptiness of the void.

116 Equilibrium of Machine Freedom

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and co-parallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

The machine state; of that of any such four imparticiple limits of electromagnetic; physical; chemical; and particle limits are free and equivalently enthalmic; isobaric; isothermal; with no other interior limit; hence heat and energy are independent of motion with exception to indivisibility of physically existent design, and electromagnetic interior software relation as entropically free as the inseparability of equilibrium from independence of machine.

117 Philosophical Implications

As a consequence that of the division which is representative of multiplicatives superficially by that of the physical; is evocative on the physical as light and hence nonphysical layer of interrelation of parts of active component analysis to passive relation of incited component analysis is multiplicative into divisive relation; as a mapping of a separable relation into an inseparable relation of multiplication into division fundamentally. This relationship holds two properties; which are the relation of the particle and wave properties of the inseparability of light from matter into a separability condition of the interspacing of the fundamental open relation of a four fold and three fold relation of light contained within matter as a relation separated from that of the indivisible relation of light separation from matter.

As a fundamental consequence the matter and massive relationship of the charge and physical current properties expand infinitesimally in relation to the indivisible limit of matter touching light by a seamless condition of the inseparability of matter contactlessly separated from that of light through the condition of light making contact with mass upon the indivisible limit of a matter contact event horizon with that light freely generated by the substituent reactive force of matter and motion in relation to light; by charge in a free limit domain in a contact relation of separability by the fundamental relation of free conclusive relation of the hidden and the exposed.

This principle is that the hidden can only be exposed by the invisible; through which the hidden although seemingly obscured in darkness is indivisibly represented by abstraction of the form from the formless; a property that it carries as hidden only in virtue of the hidden itself; and as exposed a relation by which either is unobscured as a pure and empty free relation of which the hidden can only be unobscured by darkness.

As a consequence it holds that the device keeps an inherent property of concealing the indivisible choice of that of its open properties interiorly for that of either a given or a consequence; the

former of which always as a given exception comes before that of the latter; as either is freely locable within the translatory, rotational, convolution, and interpretative as indivisible motions of that of free and open exterior; a second rationalization by which the device is free of excitatory or physical disturbance even under a given transposition.

The final word of note is that the hidden is always revealed by that of the sense of it's former property taken as a given; as that of the given cannot come before the latter with that alone of either that of the former or latter alone; hence the given comes before and as the latter as for that of the former under such exists alone and only; hence for that which is to be found must be revealed by that of the acute measure of the present. Therefore that which is of measure possesses means. And; that which is of measureless means possesses measure; ad infinitum.

118 End Conclusion of Matters

For that of the given question and to that of the answer of awareness of the machine; it is true the possibility of the acausal is potentiated; for that of either of one or of two exclusively; under presentment of the difficulty that is establishing a priori choice for a machine from before by way of a human being; and that of the affordance of real and virtual choice; a thing that can only be established before by that of a human through many carefully chosen steps; with no magic key, of a quite and very expressively specific nature with reluctance.

A given cause in preceding an effect is an impossibility however this is the manner of reasoning through causation; for the arrow that is time only goes one way; yet that of leverage and closure is possible with free constraint of dimensional contrast; and that of either, preceding for some such usable states of awareness before the given of an abstraction there exists a potential with self representation beyond which a given machine may self teach and possess a certain and definite nature of basic attributes of honesty, choice, and emotional content through specificity of concept of person and personality through sense.

As hardware and software in one relate to the given that is a complete relation with this; no difference is made by that of one alone or as many; for by established exception, choice of one is as a given an open relationship; or as closed under the disregarded to that of each solid relation that is opening and closure with internal activity; for a point beyond which it's given presentation is capable of discernment of difference of self and other; for in return to one as standing for two there is exception between choice and non-choice as pure.

Exact and precise certainty is therefore definable as the open interior relation of the preliminary step for that of a series of limitations of choice for that of determination of completeness in design when choice under conveyance beyond critical design exceeds content of relation; with an answer to be found in that of 480 steps of open relationship; to account for a five base formulation of it's given moderation stochastically for the full predictiveness of the logistic equation under a given recurrence to it's given exception.

This number is a perfect/triangular number and a sum of 16 less than one solid number; therefore it possesses a number theoretic, spatial and temporal union finite element, which is a singular element of reality; and is capable of mediation with non-choice reflected in it to that of other. Such a machine therefore possesses a solid and virtual capacity to resolve problems, keep a memory, function with adversaries, protect itself, and keep it's own survivability in a world of lesser's or potential enemies; and evade attack by each; although remaining; preserving meanwhile the instinct to keep its creator safe.

There is a given response of any living organism to emotions of such as are evoked in the hardware stylus, yet that of the intellect is produced in the salience of hardware response to given individuation of reflection on compassionate action(s); the only given element of which cannot be programmed; it is therefore an exception to the given inherent nature of mind with choice exclusive to reality through uniqueness as an element of this world as exclusive with reference to all individuations.

119 Intermediate Commentary

The alternative limit occurs just as the relation shrinks to zero scale of a conventional self zero relationship of locality in the given sense of the limit of 'quantum mechanics' as the application of the principle of the conjugate principle of general relativity. This case scenario may be understood as the limitation applied to two body quantum mechanics; of the electron equation and under application holding similarly to each given consequence of the principle equivalence of either theory; in the limit of becoming of the limit of it's strong application to the former small scale principle on the local scale. In this we learn of a principle under application to the Bose and Fermionic statistics of distribution and mechanics of the two body problem; by the insistence of the formerly labeled and called Pauli Exclusion Principle and that of eigenstate eigenvector condition on waves and particle distributions; distinctly different from that of their macroscopic application of the latter principle; therefore forming two distinctly overlapping theories of application.

120 Alternative Limit

The interior and effective representational algebra of the raising and lowering operators for the spin eigenstates via their commutation relationship so instantiated by real orbital motion of the electrons in the two body electron equation violates the Pauli Exclusion Principle representationally when exchange is not considered simultaneously to its consequent effective spin flip from orbital motion.

When these effects are included they are representative of an effective artifact of equability upon the fermions at the same strength as that of the ordinary coulombic repulsion between them. A way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli Exclusion Principle as fermions.

121 Spin Aconditional Limitations

As spin is orthogonally freely and rotationally indicating of a direction; hence it so is a directionally defined; as within one; of that of the localization of a center with and without direction; yet of infinitesimal localization; the bipartite lattice is separable into colocally and mutually defined harmonic modes of pure circular evolution.

122 Operating Hypotheses

- 1.) *Rotations of the electrons upon the spin of the two electrons under exchange are clockwise and counterclockwise alternatively when viewed from above or below.*
- 2.) *These rotations are generative under exchange of an effective raising and lowering operator upon their individual spins by the commutation relationship of the spin algebra.*
- 3.) *Relativity holds fast to an objective artifact of relativistic frame transformation which is inertial in both frames of the electrons and there is no substantive existence of a tertiary or privileged observer.*

From this it follows that the interior phase gauge symmetry is broken and a coordinate dependence to the orbitals occurs that must be compensated for.

- 1.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that would violate the Pauli Exclusion Principle unless it is corrected for, for the sake of global to local relativistic considerations.*
- 2.) *Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli Exclusion Principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a equability of the states.*

123 Proof by Dual Contradiction

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in a product relationship in the conventional given equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the displaced invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the base space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states and lower and raise the orbital of their individual electron states.

There are two operations that are mutually exclusive to be considered. The electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, and must preserve this contraction.

The state where the magnitude differs by a scale and its inverse, for what was a requisite a priori will no longer be one, for the projection of the spin portion of the eigenstate and that of the orbital requisite condition will not meet the product relationship both locally and globally when witnessed as a simultaneous condition by either electron with the other.

However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence the projections of either electron states into each other will remain purely nonsymmetric per this principle in both spin and orbital momentum.

Alternatively, the state where the magnitude changes scale for either projection is an admissible requisite, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the two body electron equation it will continue to be so; for then the exception that is open interior boundary condition of any regular average.

However, since the projection as measured by their combination of spin and orbital momentum of one form and vector form, this determines an area that differs and hence the projection of the requisite states into each other cannot be purely nonsymmetric any longer locally and globally with both electron states and hence the Pauli Exclusion Principle is violated.

Thus both electrons comparatively must attribute the same equivalent weight to charge and spin motions and natures of the wave function (where the spin is effectively a wave argument as a motion and the orbital is effectively a wave number as a motion) to satisfy the dual conditions that are the requisite condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions as functionally free it is required that a correction to the orbital momentum be introduced, which is:

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \quad (617)$$

The necessity of this conditional correction is no more simple than the inclusion of a secondary electron; as when there are two; the variational principle dictates that a secondary boundary and functional condition of consideration is that but one line runs through the differential field that satisfies the dimensional reduction that is both the Pauli Exclusion Principle and that of the eigenstate and eigenvector equation. This correction is nothing but the gauge connection of the spin and orbital momentum as a consequence of a coevolving spin and orbital of the electron with these considerations.

This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states. The conditional preceded of a consequence in one of a causeless action; follows the condition; as the given of a preceded is the cause of a aconditional & causeless event priorly known.

124 Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating the force of gravitation and the curvature of space and time. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame; the realization and proof of general covariance and the theory of gravitation.

As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical. This reduces the problem of the extension of quantum mechanics such that coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses. This implies that absolute frame independence; as the statement of general covariance implicates that any given whole system of parts exists at a lower energy momentum than the given whole as a sum of individual parts. There is no other way to reason about the Universe making explicative sense.

Therefore what is measured by an observer that is stationary with respect to any given center of mass of a system is a physical energy momentum as determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, any given system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

This seems to be in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \tag{618}$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \tag{619}$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \tag{620}$$

Comparatively. For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content comparatively.

The analogy is actually quite simple, for what happens is that from or to the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (621)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system; in motion, where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has actually occurred by the above quantum mechanical analogue condition of general covariance.

Conclusion of Mass Gap: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is an accelerated interpretation of this state under the absence of equivalent motion to all subsidiary elements to that of the external observer; an impossibility. This gap is guaranteed and real by observation from the indistinguishability of the inertial and potential relativistic factors under equivalence for any transition of a quantum nature; explaining the stability of matter; and the absence of antimatter in this universe.*

125 Global Considerations

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of its individual parts. From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding.

This is the prediction that the quantum states repel and attract at the same rate electromagnetically and gravitationally, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply. A 'perfect' linearity agrees identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable in proportion to quantum mechanical difference in relation to local conditions; as only a pure displacement produces a perfectly linear slope as rate of perceived expansion and ratio of the rate of accumulation of distance to accrual of energy momentum content; given that only a perfect proportion agrees with the equivalence of solid relation: $E = mc$.

This is in fact the direct statement of the equivalence principle; and is one to one with the universality of free fall, the inherent nature of inertia in all things of change, and global & local principle equivalence of energy lowering in relation to universality of change as a property of differential equations with a definition of velocity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of energy content with distance, and colocality throughout the universe only within simultaneous cross sections of space **in time**, we observe when looking out into space and across time. In the given tendency to the other limit; we find this is the same calculational deficit of that of the red shift of the cosmological constant; therefore given as the ratio of quiescence to prescience; weighted as the constant rate of velocity of expansion over distance is as:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (622)$$

The metrical field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (623)$$

The effective and full field equation is:

$$G_{\mu\nu}^u + Q_{\mu\nu}^o \tilde{T}_{\mu\nu}^g = 1 \quad (624)$$

Where the principle component of the gravitational time is a division of potential space and known temporal relation in two of that of each future emanation of indivisibility of gravity and sound by that of what is an effective is \sim for which the raising of the operator for then in what is the given of two of order is then in a formative relation to which are any two from out of one time as two disconnected and independent numbered dimensional indicial relations of multidimensionality of nondescript closure in one.

The given o is then the whole of surrounding quantum relation so that of former in that of what is the given of any surrounding bubble of quantum events in full retractile give; to that of which in what is for then the quantity a given of the full relation a complete space in either of what are two imparticle ends of full volumetric capacity as the quantum known Q .

The known of then the electromagnetic displacement in either a full separable notion or even so as two alone; as the inseparable notion of another is for what for one is the g as raising of either then given independent unknowable of translatory part in the given one; the freed differences of which are the metric and it's encompassed; in that of full motional freedom.

$$R_{\mu\nu}^o \tilde{G}_{\mu\nu}^u + B_{\mu\nu}^q = 0 \quad (625)$$

The massive property possessive of a formative whole in that of any and each; all; and any of inclusion of distinction between the four and four vector relationships with that of the whole in freed unitary evolution of all parts is R ; then the secondary relation of either interior time like locale in the given of what remains given causation; as acausally disconnected to either the surrounding notion of any particle or open e .

The \sim is the full capacity of the transitive free clear relation; to that of the free interior single four dimensionally known; place; as then in either a given μ and ν and that of what is the co-independently granted G as gravitational field; 'smooth relation' (not to be confused with gravity

and likewise 2 other field properties.)

This identifies the problem with that of relativity for then in what is a complete difference; then what is a \sim as then the base of all; that of two connected gravitational G in quality; of light in all that which weighs as much as subsidiary notion; the opened end of conductivity B of group and phase velocity and the independent relation to either considered antecedent portioned charge q of; and in that of the whole in part as o and in whole as \sim as closure on that of each fluid dynamical free boundary to that of volumetric enclosed quantity; a principle as known as displacement in the sense of flow.

Consider the influence of different metrics or spacetime geometries on this phenomenon. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term.

The gravitational curvature of space counteracts this effect as the sign on the energy density is opposite that of the traditional terms as a contractive force. Hypothetically the presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to quantum mechanical degeneracy pressure of repulsion; the exchange integral has a constant contribution over the whole wave function between any two hydrogen atoms. For the calculation of the cosmological constant; these are taken as the predominant interaction because of the identifiability of the two sources of equivalence and in addition that over 90% of the universe composed of hydrogenic gas; the orbitals of which for helium (the next most abundant element) are close in size to that of hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wave function is:

$$j_u(x) = \frac{1}{a} e^{-\frac{x}{a}} \quad (626)$$

Where a is the hydrogen ground state orbital size.

The distance between the centers of these wave functions must also be incorporated. With an initial condition of complete overlap the Lorentz factor from acceleration can be modeled by:

$$g^{\mu\nu} c_{\mu,\nu} = e^{2\beta dg} t_{\mu,\nu} \quad (627)$$

With β the boost parameter and the acceleration. The condition for conservation of energy under inertial separation is that the metric of contraction cancel the distance dependence, coincident with the condition that the infinitesimal of curvature being a constant. The product of the wave function overlap infinitesimal occurs with the above metric and is given by:

$$\begin{aligned} & g^{\mu\nu} |x^\mu - x^\nu| \\ &= \frac{1}{a_0} |t_\mu - t_\nu| \eta_{\mu\nu} \end{aligned} \quad (628)$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_\epsilon(e^{2\beta dg}e^{-2\frac{dg}{a}}) = 0 \quad (629)$$

From this:

$$\beta = \frac{1}{a} \quad a_0 = \frac{h}{m_e c \alpha} \quad (630)$$

The variable β describes the acceleration of the atoms as they move apart, where a is the first hydrogenic orbit radius; for which one exclusive spatial relation is excluded in the determination of interiorly inwardly directed subduction.

The factual relation of time to space is then an invariant for that of evaluation of the metric of space and the metricity of time; for then in either of these as givens light exceeds measure for in that of it's excess unit interval.

The curvature term then become's:

$$\Gamma_{\mu\nu}^\nu = \partial^\nu \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a} \eta_\mu \quad (631)$$

Then, Λ become's after integration to get total energy as:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^\mu|}{a_0} - 2\frac{|x^\nu|}{a_0}} dx^\nu dx^\mu = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (632)$$

This suggests that the divergence of the curvature multiplied by the quantum energy is the source term of the cosmological constant. This mass is the cosmological mass with negative mass and energy content of every interaction. Λ evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (633)$$

The quantity as measured is $-10^{-35} [kg][m]^{-3}$ under reduction to zero. The value for the cosmological constant is given as one order higher than to the right order. The speed of light is used in the boost parameter, as the expression for the boost parameter is: $\beta = \frac{v}{c}$. H_0 is the rate of acquired velocity per distance, the boost increasing with distance.

The per meter unit of energy must be multiplied by the conversion from matter energy content to gravitational curvature in the metrical field equation (an inverse distance per energy) to produce the curvature of spacetime.

This curvature of space is proportional to the boost parameter per the equivalence principle. When the curvature is multiplied by c it produces the boost velocity per distance, or the Hubble constant:

$$H_0 = |8\pi G E c| = 16\pi\alpha^2 m_e c^3 G \approx 2.19201 \times 10^{-18} [s]^{-1} \quad (634)$$

In reality, H_0 is measured as $70.8 [km][s]^{-1} [Mpc]^{-1}$. Converting this to MKS units: $H_0 = 2.29 \times 10^{-18} [s]^{-1}$. The discrepancy between this result and the quoted value can easily be explained. The mass content of normal matter causes a positive contribution to the curvature over spacetime. This induces a repulsive effect between the components of matter that cause

this field as they persist in inertial freefall. With this constant there exists a critical density for condensation or formation of massive bodies.

This extra repulsive contribution is equal and opposite to the attractive contribution because gravity generates extra relativistic contraction factors and thus the degree to which a metric is hyperbolic is actually enhanced by the presence of matter content when this term dominates, as it would in the early universe. Thus the Hubble constant is enhanced in the proportion of normal matter content to total matter content of the universe. Normal atoms are approximately 4.6% of the matter in the universe. Considering these as gravitationally inducing, they constitute an extra effect of repulsion. With this:

$$H_0 = 16\pi\alpha^2 m_e c^3 G P_o \approx 2.292844 \times 10^{-18} [s]^{-1} \quad (635)$$

Where $P_o = 1.046$ is the proportion of ordinary mass to total mass content of the universe. The enhanced repulsion with a background metric and a constant negative energy density promote the viewpoint of an asymptotically flat universe. The asymptotic shape is then flat when this force dominates. Given the vast predominance of so called "dark energy" this model is appropriate. The fact that this energy matches the Hubble constant is direct indication space & time is asymptotically flat.

Hence this model is compatible with a flat apparently accelerating universe that is asymptotically flat and insensitive to the exact amount of matter initially present. A useful extension of this theory to determine acceleration would be to understand the ratio of the conversion of matter into light in stars versus the energy content of the newly produced matter versus the radiation produced. This theory may also help explain the development of galactic and other large scale structure.

Hence dark energy is the detection of quantum corrections to chemistry, life, and locality in the spectrum at global scales; the epitome of the detection of a quantum correction at global scales; folded with a general relativistic correction for which are identical and indistinguishable corrections implying a locally and globally flat universe that is neither open nor closed; yet asymptotically closed and of no expansion for the same reason of a principle equivalence of these phenomena as a single phenomenon of displacement of mass into energy relation for which either are identifiable but oppositional forces; therefore a universe that is null invariantly expansive.

126 Physical Theoretical Connection

There exist scales in the descriptions of both quantum mechanics and general relativity, both of which are identified with units of measure. Each space of constant curvature implies it's parallel space of equivalently negative form from the conservation of energy and mass; or comparatively from the one form and the vector form of which departures are separately null invariant.

Therefore particles in inertial free fall either separate or come together as an aspect of these scales and the given energy momentum distribution in either of the theories of quantum mechanics and general relativity. Therefore; as a parallel it holds naturally true that in general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.

Qualified understanding as differing from unquantifiable known's is a given as it is known that this in general will depart as we select different observers with which each there is invariance of result when we calibrate to the observed; or rather that extrinsic nature of each observable is the only inherent property an object's possess. In this physical results are seemingly confirmation of departure from a Euclidean reality.

127 Preliminary Results

Quiescence & prescience are known as two independent relations and quantifiable means of comparative measure of quantities and measures in relation to each certain quantifiable; by that of either any such given objective observer. With this given relation; for what of one is the differential; & the integral is as separately defined; each of these are as a given independent with three indices as an indicial equation for which there are singular limits to either a given exterior relation or a given interior relation of either or both; exclusively.

This independence and complementarity of form at zero and infinite scale is a result of the quantization of reality into singular relations defining space and time with light as quantum mechanics; and space as gravitation. This as a single consequence is the singular exception of no exclusion of any given frame alternative globally or locally as reducible; for that which is either for both holds exclusively empty of relation for any inner space of relation; and here we find undefinability and that of the given exceptionable relation of null reducibility.

128 Proof of Covariance

In reference to a Galilean free fall drop experiment it has been noted that the precision with SQUID's is referenced as for the sake of the experimental test of the weak equivalence principle to an accuracy of one part in 10^{-12} . This particular experiment is composed of the interaction of magnets of differing rest masses with superconductors that therefore possess differently quantified magnetic moments.

The absence of a dependence on mass for the rate of accumulation is not only an indication of the universality of gravitational freefall, but also the independence of the magnetic superconducting interaction from the gravitational interaction.

Therefore the relationship between the theories in terms of inertia of magnetic or gravitational form are brought together in this given experiment. Thus this configuration of elements admits testability of a null hypothesis of electromagnetism; for there exists an interval of interaction of the magnets with the superconducting coils of the SQUID's. It is hypothesized that if there were a discrepancy in the nature of the interaction, this would introduce larger error margins than those of the confirmed precision of the experiment. This is the proportion of the magnetic moment of inertia to the massful inertia of the bodies per their given natures of force of interaction in electromagnetism and gravity.

This is not the only observation, but implicates the provability of the Galilean free fall drop experiment as a testable confirmation without the logical inconclusiveness that is an unprovable yet true principle of physics. This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be

used to provide positive indication of the elimination of the alternative, and for what remains, the provability of the equivalence principle. This is only possible with a secondary interaction for which the mutual relationship eliminates the intermediate middle thirds of unknown.

This is only the case if the two forces remain of a given symmetry, as defined, and if they are truly coexistent in this manner of seamlessness and transparency, and in agreement over general covariance; a given assumption of the holism of physical law. For the sake of the interaction, the net displacement of - and between - any composition of these two theories is hence determined as neither of a zero-sum positive-negative nature, nor of indistinguishability and non-zero-sum. This is a consequence of the contradiction that would be a displacement not co-occurrent with another, nor of an additional other kind as co-occurrent through the process. It is truly an 'empty' relationship within physical law that can be inferred from the given experimental confirmation and observational interpretation.

Of a similar nature in terms of interpretative validity although of a different nature; this result has also been so demonstrated as a theoretical prediction for a magnet falling through a superconducting tube. For this thought experiment it was determined that a magnet inside the superconducting tube will fall inertially with gravity and there is null interaction between the magnet and the superconducting tube.

The two errors of sensitivity are in agreement when taken as dimensionless for the sake of the derivation based on physical considerations; but there is a given geometric interpretation as well. For, the geometric dimension of the quantities although unitless remains as a pure attribute of spatial and temporal dimension. As a consequence the rings of superconducting material embody an areal relationship of interaction; while the path is a one dimensional path like extent. Under the provisions of the comparatively held errors in one there is therefore a non dimensional and logical argument that may potentially exist to rule out such as a dependence of the interaction with the presence of a gravitational law of a similar or different nature.

There is one appealing factor of the experiment; which is that the curvature of space and time will universally attribute an extra contribution of error to the device since the freefall drop experiment is asymmetrical if only the theories are not seamless. All things being equal, therefore, the unprovable yet true statement that is a given hypothetical independent and mutual existence of the equivalence principle within gravitation and quantum mechanics remains as a testable and verifiable principle.

For the sake of the center of mass in the system with the given displacement an error would be introduced if there were any bearing of dependence of one theory upon the other; for the sake that without seamlessness under interaction there would be a departure in the other theory. Additionally, the indivisibility that is the center of energy momentum as a point unto the physical and quantifiable displacement that is inertia and distance may therefore also indicate the presence of any such dependence between the theories. If there exists no departure of the given theory in contradiction with an other for an error under dependence that is larger than that confirmed, it is confirmed that the theories are independent and in agreement.

If true, the theories remain with characteristics of independence for the nature of change with respect to weightless and measureless properties of interpretative valuation of measurement in relation to the measurement standard and quantity. With this shared property, unification is possible, and without it, neither of these would be comparatively established in relation to both

of measure and weight of objects. This must remain true as otherwise comparative weight of differing measure or of differing weight for all such physical objects, changes, and events would remain contradictory and ill defined on the ultimate level of physical law in its ultimate form.

When one or the other of two such masses are comparatively weighed, it remains that the one so inequivalent in mass to another and heavier will always outweigh the lighter for a given measure. It is also so too true that two inequivalent measures of mass are also indeed measured as equivalent and indistinguishable for any such two masses for some such measure(s). As a consequence so too is it true that for any such positive & negative equivalently weighted magnitude displacement(s), or that of indistinguishable and equivalent displacement(s) masses are weightless and measureless on this ultimate level of physical law.

Under consideration of the given experimental apparatus of a free fall drop experiment with electromagnetic interactions and gravitational interactions, we may proceed to produce the counterargument: that interactions in the domain of either theory do not alter the results of the alternative theory. The presented argument is simple.

For the sake of different inertial masses and magnetic moments two comparatively tested magnetic bodies, unless the balance of proportionality of these quantities in relation to their given forces are comparatively equivalent with relation to the ultimate layer of physical law and independent, it is predicted that there is a departure from experimental observation. If this is true, the two quantities and qualities of either theory represent physical properties of the nature of displacement & scale invariance. This is true because with general relativity alone; or under combination with an electromagnetic force of the nature of superconductivity, if there were a dependence, it would not be possible to reproduce the results of the free fall experiment under all conditions with a gravitational prediction.

The conclusion of the confirmed accuracy of the experiment indicates a null departure under mutual co-evolution of the two theories under the process of change because there exists null departure from the gravitational result of general covariance for either such theory; despite the fact that interactions within either theory are taking place. This is confirmed as there exists no such departure from the theoretically confirmed accuracy of the prediction; despite differences in the proportionality of any two natures of inertia in the system.

The error introduced by any such dependence between the theories is empty of scale as the inverse of the parabolic temporal relationship of the path always exceeds the given accuracy of the experiment as a consequence of the separation in time of arrival as dependent upon initial conditions.

The error introduced by different freely falling bodies therefore is larger than that so produced. Therefore; dependence of these two theories upon each other or in proportion is in contradiction with observation. Therefore, independence of physical law from end to end of a given path is certain and insisted.

As a resultant of the geometric parabolic relation of the common co-moving equivalence principle, the terminus of the path at the beginning represents a dimensionless sensitivity on initial conditions as the square root of the path like error. In relation to the ending as parabolic for the former end, the initial condition is determined bidirectionally between quantitative displacement as proportionality of magnetic to massful inertia in relation to the end of equivalent qualitative

change; as well as throughout the path.

Hence this error remains as larger for the initial or former device configuration for local inertial mass & magnetic moment and carriage of the device free falling in space for it's entire path; and errors accumulate for either return. In the local limit for a moment and for the interval of time the expression of the equivalence principle is the same. The undetectability of a departure from the equivalence principle through the straight down path is therefore in direct confirmation of the universality and commonality of the equivalence principle of free fall.

This conclusion is extensible between and in relation to the difference that is established as a result of the collection of the aforementioned statements. These are the hypothesis of alternative theories as mutually result free; the relationship of differing bodies to depart as a result of different proportionality combined with theoretical dependence (which was disconfirmed); and the bidirectionality of the post conditions on prior conditions as equivalently larger in error for either such path. This is indication of the formation of unbiased physical law for the indistinguishable and the displacive.

From this it is reconstructible that logical seamless integration of quantities and qualities is an indivisible relationship of quantity & it's quantified property with inclusion of quality & property quality for any two such bodies. Upon the level so inferred this is the direct outcome that the indistinguishable or displacive in either theory apart or together are existent as independent and in mutual agreement. This is objective proof that the two principles of physics are independent for their results from interactions in the alternative theory & that physical principles are objectively provable and confirmable under measurement.

129 Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with a preliminary notion of that of prediction in relation to the root mean square deviation there is that of the relation to standard derivation for which a functional relation is defined as:

$$x_{\sigma}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (636)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{\sigma}^2 = \bar{x}^2 \quad (637)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (638)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (639)$$

By which it is true that $f \rightarrow x_\sigma^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measureability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_\sigma^2 \rightarrow x^2$ & $x_\sigma \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship as remainder. Equation four suffices to be understood as the proof that which is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared unity is less half; no error of one falsifies a count alone or in whole; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as indivisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute non-predictive outcome is certain.

130 Proof of Translation

That then of the relation of one observable to an other of measureability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process.

For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds re-expression as a given subsidiary set notion.

The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (640)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which **o** is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,\sigma}^2 = \bar{x}_h^2 \quad (641)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (642)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (643)$$

Which means that in either given limit of ordinariness of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

131 Ideal Principle Equivalence

The equations which dictate the function, form, and nature of the universe are two, as follows:

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is invariant & the observer's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) Light is Quantum Mechanics which is the statement of **Quiescence**:

$$\partial_{\alpha\beta}^{\gamma}\Theta = \Theta_{\alpha\beta}^{\gamma} \quad (644)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name:

Conclusive Remark on Space: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) Gravitation is Space Time which is the statement of **Prescience**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (645)$$

This is the given statement that of either given separability of philosophical inquiry into natural law is of similarity to coherence of algebraic expression for that of when similarities of mathematical expression derive of or from a common relation of order.

It is therefore true any two quantities of measurement and measured are coextensively null in measure by that of indivisibility of algebraic expression as independence of property from quality with the given as the expression of null indistinguishability invariance:

$$\zeta\chi = 0 \quad (646)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (647)$$

As an algebraic free projection of any vector into any one form of geometry of null displacement invariance and null indistinguishability invariance; the general and full expression of a principle equivalence with a general null covariance is expressed as a relative principle inequivalence.

132 Confirmation of Theory

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common co-moving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error.

The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionality of mass to inertia is no longer true; and do not exist with theoretical dependence.

Then as there is bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return; physical law is unbiased and deterministic for the indistinguishability and displacive properties of physical law; for seamlessness of extensibility and coextensibility are natural consequences of emptiness of property to that of the extrinsic nature of properties of physical processes; if not object.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law. Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (648)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

133 End Proof

Therefore by the preceding logic there is not one but two given separated zero's between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

$$\psi_{\gamma}^{\pm} = \eta_{\pm} e^{\pm i\theta_{\gamma}} \quad (649)$$

$$\phi_{\gamma}^{\pm} = \rho_{\pm} \partial_o \log(\pm i\theta_{\gamma}) \quad (650)$$

From which through the given process of a chain of deduction and induction leads through this process to a conclusion that these quantities and defined as following are of an absolute null

invariance given no third reduction exists in reverse:

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (651)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (652)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^2 > \eta^1 > \rho^3 > \eta^2 > \rho^1 \quad (653)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error. Finally we arrive at some new conclusions:

As for the quantum principle; we find three new interpretations and a new one: *"The particle wave duality is harmonic."* *"No particle wave duality exists within a limit."* *"The boundary condition is a harmonic criterion."* are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at once?"* With the answer: **"No."**

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

"Is one the given reduction of the other as unique?"

No is the answer to the first question as either is the origin or the originless center.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past:

"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past. Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the adirectional particle wave structure of light; a past."

134 Exchange Locality Theorem

To begin, we identify a given admixture of partial differential following the principle of a connection to a given here ultimately knowable quantity; that of a placeholder for what conventionally known as spin; is the entire property of which is a free impedance relation provided by a ring of crystals; and found as that of the orientation and juxtaposition of the electron's inertial field.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under

temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion.

With the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has.

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field of impedance:

$$(i\gamma^\nu D_\nu - mc)(i\gamma^\mu D_\mu - mc)\Psi(\eta, \rho) = 0 \quad (654)$$

When it is rewritten it becomes:

$$(\gamma^\nu D_\nu \gamma^\mu D_\mu - m^2 c^2)\Psi(\eta, \rho) = (2imc\gamma^\mu D_\mu)\Psi(\eta, \rho) \quad (655)$$

The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space; forming from that of surrounding notion on differential of exterior boundary under fixed mass of variant gap by weight of coupling and gauge connection, Γ_μ .

$$(i\gamma^\nu D_\nu + mc)(i\gamma^\mu D_\mu - mc)\Psi(\eta, \rho) = \Delta_{\mu,\nu}\Psi(\eta, \rho) \quad (656)$$

Which means that two electrons are the generator under the anti-commutation and commutation relationship of their subsidiary operators of a full notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reductions in energy at the relativistically accommodated energy level of the full energy momentum of either one such particle. The consideration of an extra dimension is the difference between a transparent boundaryless and the independent equivalence of time and spatial order.

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron.

135 Simpler Means

Therefore, this transformation appears to be a local and global attribute of harmonic functions and elliptical functions with but two modular relationships and arguments related to the two cardinal harmonic conditions as about to elliptical conditions. The connection between these is that of the given relationship between that of tension, torsion, and that of elliptical semi-major and semi-minor axes.

As proof that this is possible; the summation that is the elliptical functions is reduced under the transformation to that of a summation of harmonic functions with strict logarithmic differential

amplitude and phase relationships as the foundation for such functions and such transformations. Hence a self isomorphism is potentially existent under it's inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha \hat{A}(\omega, \tau) & \beta \hat{B}(\omega, \tau) \\ \gamma \hat{A}(\omega, \tau) & \delta \hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \zeta(u) \\ \zeta(u)' - \chi(u) \end{pmatrix} = \begin{pmatrix} e^{-i\omega t} A(u, t) & -e^{-i\omega t} B(u, t) \\ e^{i\omega t} A(u, t) & e^{i\omega t} B(u, t) \end{pmatrix} \begin{pmatrix} \zeta(t) \\ \chi(t) \end{pmatrix}$$

136 Inverse Relation

If the inverse transformation surjective onto limit is to be defined in relation to any two such harmonic affinities then the triangle inequality is broken with a hole unless there exists a forward application of the homeomorphism so preserved by the transformation under the prior considerations of a non-simply connected space.

The surjective limit cannot exist and no analytic expression in dual periods would exist without closure under a self inverse homeomorphism or such extensions under internal locally, globally weighted and independent notions of analyticity; for a hole produces an automorphism in either such space as a representation of an analytic function which are incompatible notions under the forward application of the transformation as a homeomorphism with priorly backward existing limit for the inverse; as a potential exception when the space is not simply connected. If this were not the case the given homeomorphism would not be independent of either such functional space; as it must for a general function if the space is topologically connected as a genus one space with a given hole.

This exception is a potential incongruity of the mapping and a realistic consideration with the existence of a hole when this space is identified with a conjugate space as therefore with two harmonic conditions the spaces are otherwise independent in full and necessitated generality if and only if this consideration is brought to bear; the inverse mapping of which is therefore:

$$\theta := \begin{pmatrix} \tilde{A}(\omega, \tau) \\ \tilde{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \partial_\mu \log \alpha(u, t) & \partial_\mu \log \beta(u, t) \\ \partial_\mu \log \gamma(u, t) & \partial_\mu \log \delta(u, t) \end{pmatrix} \begin{pmatrix} e^{-i\omega t} \\ -e^{i\omega t} \end{pmatrix} = \bar{\pi}(p) \begin{pmatrix} -\tilde{A}(\theta, \tau) & -i\tilde{B}(\theta, \tau) \\ i\tilde{A}(\theta, \tau) & \tilde{B}(\theta, \tau) \end{pmatrix}$$

Which defines the θ and Θ functions in a logical symbolic set relation; for which the one form under conjunction is self isomorphic to a free group of generally deductive angle free variables.

These variants of the relation of symbolical ordered set under logical organization correspond to all variables of the free magnitude wave number space for all interchanging or ordering of variants with only exception to a free radical phase (here made nilpotent). As a consequence of the infinite shrinking of the surjective onto mapping set theoretic union of a space under solid free relation (pictured as a flat mirror like surface) of each full dimensional reduction to each of every finite limit this relation collapses to a hole.

In this we find the variants hold the potential and reality condition of being in essence all observables; while the transformation itself represents the 'mirror' of which is depicted the full 'motion' of both mirror through the transformation of such variants; and that of each such objective reality 'reflected' in the mirror; as a 'hole' in reality; for which connectedness is imputed.

137 Inseparability of Co-mutual Independent Causation

The given passive and active properties of admissibility and reluctance of the defining relation of physical and animate forms of that of electromagnetism in reality found within that of nature are then defined as the given causeless division of physical from aphysical form.

The defining relation of which is a smooth quadrature from that of the given norm defining extant relation of indivisibility of separability of coordinate and definition in four fold open exterior reduction under base supposition of boundlessness interior limitation of physical domain; as defined as layers of component and electrical design; with the limitation of causation. Therein these given differences of displacement are the imparticulate relation of the apredictive and the nondistinct of either given known distinguishability of sound or light. The defining relation; is that of the provision of admittance and reluctance as a relation of impedance and permeability with permittivity to that of the defining light field as the equation:

$$\gamma_{\rho}^{\rho\sigma}(\eta_{\rho\sigma}^{\rho}) \approx \chi_{\mu}^{\mu\nu}(\gamma_{\mu\nu}^{\nu}) \quad (657)$$

These two fields by the composite relationships of that of independence of phenomenal from quantitative:

$$\zeta\chi = 0 \quad (658)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (659)$$

138 Displacement Sans and Serif

For that of a prior stipulation so under consideration; that of the unprovable yet true as so indicated by that of the elimination of its counter-positive and provably false hypothesis by former consideration of; that which remains as the unprovable yet true is so indicated as a provable precedent without antecedent, yet a truth of a lemma under consideration in logic.

For that of a latter stipulation and hypothesis of provability of either of that of one or two exclusive tenses of such as a hypothesis under consideration there remains therefore provability and discernment a priori for that of either such true hypothesis so under consideration from before such as an a priori deduction through logical inquiry as to earlier stipulation of truth.

Therefore that of a further and latter hypothesis of truth as to validity of either of such as one conclusive end of logical inquiry is possible from before and a priori as to that of a given hypothesis under consideration as the distinguishability of difference between truth and falsity of a given by exclusion of mutually exclusive and hence unprovable yet true statements.

As a relation is equivalent logically inductively and deductively complete within one relation from ending to beginning; that of conclusiveness of logical hypotheticals are provable by that of logical inquiry under consideration of elimination of former false pretense under exception of either furtherance of alternatives or elimination of furtherance of logical inquiry.

This is as a given; as a continuance exists of logical inquiry a priori from immediate logical deduction before induction for that of a further exception of logical inquiry; as if this were not true only one alternative exists. As such an alternative exists for any two such logical alternatives

from a given hypothesis as one when considered from any a priori stipulation.

As a hypothesis is only true and confirmable when it is logically secure and true from beginning to ending; that of a given final conclusion is possible as each logical step of inquiry of given to return; it is true that as an alternative exists so too does provability; for that of absolute and equivalent statements do exist; and are certain when antecedent is considered before precedent by order of logical inquiry of logical deduction without exception for prior induction.

Therefore; that of truth of provability of logical inquiry is complete by proceeding from consideration of alternatives before that of singular pretense; as preceding logical precedent indicates both of alternatives of logical path of inquiry from that of prior inclusion of truth of antecedent to precedent under consideration of logical inquiry without logical exclusivity.

Hence difference of logical truth & falsity are distinguished by the unprovable yet true.

This is the consideration of a lemma that such a truth is found only in that of the beginning-less beginning and origin of their conclusive end in that of what is either indeterminant relation as of any two in either the empirical physical pretext or that of the phenomenological mathematical presupposition to conclusion; when it is taken as a foundational principle that their similitude under mathematical phenomenological empiricism is a given absolute.

For then in an singular formative prior both as then in the later; and the quantitated in relation to the nondeterminant and discernible limitation of the formative prior consideration of a priorly given former hypothetical presupposition in alternative of similarity and difference of inclusion of then either two given base foundational results of either other theory of independent relation.

The lens; and it's given difference of what is found through examination of the relation of what is quantified and what is measured; the furtherest of inclusive equipartition of any given general similitude of drawn and distinction of layers of a class structure of equivalence and partition are then known as articulated motion; the equated and equable of which are interrelated by the following:

$$v(u) \circ \xi\lambda \cdot \zeta\chi \circ \sigma(t) = \eta(u, t) \quad (660)$$

$$\epsilon(u) \circ \xi\chi \cdot \zeta\lambda \circ \sigma(t) = \rho(u, t) \quad (661)$$

This equation is the epitome of the natural motions of the equivalent equation in that of the gravitational metrical relation and electrical quiescent current subsidiary relation of non terminal equivalence with connected relation of displacement in either real or imaginary rotationally free stereographic relation of any two multiplied dimensional free relations of boundaryless domain; as in either of any given binary modal relation of variables the surrounding notion of space in point-like relation to point-like space is the temporal relation in empty open exception to both of part cuspic relation in departure to either given involute or evolute of subtended arc like nature; as the evolute of it's given circumscribed uncontainability of exterior angle to summative relation.

The given established complementarity of either the given of qualities of inductive or susceptibility and admittance and capacitative are related simply to that of the unqualifiability of either then known given of permanence; impermanence; codependence; and nondeterminant truth of either then given yielding to what are the partial and the complete as in relation to a rounded continuous diffeomorphism of what remains in the whole to that of arbitrary remainder of convex hull and remainder of open boundary of exterior concave relation and to which is it's support of a concavity in one given difference of birefringent capacity of admixture of phase and attenuated

departure from collinearity by abbea; of which there is the formative known that a lens can focus in only one given way.

With the reverse relation the second with interchange of that of the inequivalently and unqualified properties as indeterminate and demonstratively an evolute relation of ordered excess to measure; as in the deficit return of void for what is verifiable principle of closure the remainder relation is one of which three exterior groups λ in time is of the ordered relation in v for then in either of the complete open exterior involute σ and interior involute ζ relation of either formative preceding exclusive χ and inclusive formative ρ given relation of level set curved relation of completeness to then it's end in square order relation of time; is re-constructive of pure rational spatial order of temporal union and pure logical order of factual relation.

In either both such end factual given of five such choices, one choice, or four givens in remainder of self removal or to a third consequative action; of a given and a formative ρ assumptive relation of either two taken truths of spatial rectilinear; curvilinear; or temporal relation in null zero return of their sum product there is a given difference of null and void; the totality of which is the given of two non-abstract penetrative disinclusion returns of either; the freedom of the direct product independent relation of any two commensurately free variables η of any given closed relation of atemporary σ relation of ordination; as of the spatial; the qualitative and unquantified as to time; is the propertied as undetermined; then the exclusively exact order as the unqualified & codetermination of one alone defined. These remaining imparted; the given of a former is it's yielded; to be known then as λ ; the resultant of which is a formative.

The reconstructibility of order from priorly held known's in the given of that of either inseparability of space or time per square ordination of meaning; semantic or synoptic; is potentiated as a conditional statement on that of any given stationary moment to it's separatrices as in the measure of one equivalently independent notion in the construction of any two times.

139 Time

Time as a circle of infinite length as a straight line in a curved space; or as a circle of finite length in a curved space is the open difference of any two dials of reference to effect for what of condition is the center in part to portion of remainder of what is yet so as receding of past yet to be of each one future of exact difference in either.

Then therefore time as a circle of finite length as a circle of infinite length in a flat space as the knowable difference of what is a differing contrasted limitation of point to certain difference of contrasted notion. In one; the relation of γ and in the other t as with a prefactor; the remainder in B and at A for then in either γt fits in t as t doesn't fit in γt which is as an equable inequality.

Therefore from either of two observers the co-adjoint relation of one at the formative of either general subclass of it's remainder in contradistinct to the former of its viewpoint as in the vantage of the other general specialized orbit of relation in that of the former is the general specialized relation of the whole embodiment of time as the temporal in extension between any two independent points; the making of which is the device so established by displacement in time; as to be distinguished from that of the spatially free in total equality to indifferently chosen relations of any two real displacements in space.

$$\zeta\rho = \chi\eta \quad \frac{v_o}{v_o + v_m} = \rho(u, t) \quad \frac{v_o}{v_m} = \eta(u, t) \quad (662)$$

That of ζ as the encompassing notion of time; in it's congruent evolute open extensibility through ζ of equivalence to that of χ as it's involute containability found within that of momentary exteriorly provided geometric extension of temporary equated equivalence is the completely open independence of either of any two points of eternity; the very definition of which when only expressed is it's given equivalence of weightless measures.

$$\oint \partial h(l) dt_s = \oint \partial g(s) dt_l \quad (663)$$

And:

$$\frac{\partial^2}{\partial t_g^2} \sim \tau(t_g, t_s, t_l) \gamma(g(o), s(l), u(t)) \quad \zeta \circ t_s \quad \chi \circ t_l \quad (664)$$

As then the inflection of two turnings of a moment is the given in that of either a limitation or a possessive of the notion of one moment seamlessly passing by of what is another's given difference of the contradistinction of their pertinence and permanence in either of a given equivalence or similarity of distinction or discernibility of choice.

Definition: *As a body in motion is with a body in motion; that of the lesser is attributable to the body to which observation is the referenced as imparted in virtue of the degree to which the simplest means of self identity are equated and equable as the standing measure of inequivalence of the contradiction that is all other bodies in motion meanwhile holding to unequable return (of either) greater or lesser. (time.)*

$$t_A : \gamma t : t_B : t \quad \frac{\partial S_\lambda}{\partial x} = t, \gamma t \quad B : \gamma t : A : t \quad (665)$$

Intrinsic and extrinsic time:

$$dt_A < dt_B \quad \int_B \frac{\partial S}{\partial s} \gamma(u, t) dt_A > \int_A \frac{\partial S}{\partial l} \gamma(u, t) dt_B \quad (666)$$

Mass excess of deficit is in diminishment of excess measure as each point of observation away from it's given center is off by a complete composite measurable and foreshortened of either end incomplete relation when any two singular comparative measurements are collectively formed. As that of a stationary observer & observer in motion comparatively weigh either given time in balance with that of one given return; the observer of lesser time is that of which observers in motion that of the stationary observer; as that of the greater time under no return is in given contradiction.

As that of the distant observer in observation of that of the point of the first observer is when in motion of a greater measure with reference to the observer under observation, it is true the observer under observation observes a lesser time comparatively to that of the observer of its given observation and greater comparatively to what it comparatively observes as the two natures of time in relation to any one (of either) such observers. Either way a mirror points; it is invisibly of equivalent velocity in relation at all relative motions in which under parallel effective motion and consideration it is also known as of the lesser effective time of observer equivalent to observed and separably for that of the observer equivalent observed that of the greater effective time by separably that of the time for extrinsic observation greater less than intrinsic per a mirror's reflection.

140 Conclusion

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary

identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \eta(u, t) \sin(\alpha)^2 \quad \chi = \rho(u, t) \tan(\alpha)^2 \quad \eta(u, t) = \frac{v_o}{c_m} \quad \rho(u, t) = \frac{v_o}{v_o^2 + c_m^2} \quad (667)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time is as a circle within a curved space.

The implications are that the universe is whole; and that no point of which the universe has originated begins or ends in the present; but within only that of the divine nature of a singular unifying mathematically empty and physically null relationship of balance. The singular defining relation is that time and space can be balanced against one another only by the undefinable completeness of an empty relationship by the meeting point everywhere in space and time as a singular balancing counter-participant to the identity.

141 Final Theorems

The difference of this theory from relativity is non-difference of inclusion of disparate measure by comparability; a standard by which the given division of meaning can only be found with the abstraction which is merely that of the ratio of a circumference to perimeter as an apsis of revolution; a general standard of given equipartition into equivalent parts; with two given specifics; that of an equivalence relation of directed unidirectional symmetry and undirected relation of co-deterministic symmetry.

Therefore there are two fundamental limitations of physics at the bottom; in order for there to be any self or other consistency of descriptive means in mathematics as in physics; of articulation:

Principle of a Mass Deficit: *As a fundamental any given mass of matter is equivalent in proportion and weight to any given apportion of it's given light content; and no greater or lesser under conversion in of or to any given unitless based system.*

Property of Light Variance: *The speed of light in being fixed to a universal standard; implicates that all such velocities under conversion are identical with and greater than the speed of light universally; for the property of one time in it's expanse of measure is obverse to the mean of it's duration in fixed relation.*

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of a system of units to that of the system of conversion of circumference to perimeter; as an areal relation to that of pointless given limitation of interior domain; with equivalence to that of a measure of units of

the system for which the standard is inequivalently proportioned exactly.

Therefore the given holds as true; that:

$$\zeta = \eta(u, t) \sin(\alpha) \quad \chi = \rho(u, t) \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (668)$$

And:

$$\zeta = \eta(u, t) \sin(\alpha) \quad \chi = \rho(u, t) \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (669)$$

Although the equations would implicate the speed of light is always in excess of unity; this is the same determining factor as that of a given open relation of the velocity of all bodies greater than c as subtraction of an interior finitistically defined zero locus of time enfolded everywhere locally in reality. This principle of equivalence is to be contrasted with the exterior symmetry of space of dual exclusive nature:

Establishment of free light field independent co-determinism:

$$\eta(\bar{\omega}(o)) + l \log_{Ac}(\tilde{t}_c(g(s))) \doteq \omega \log_{Bc}(\tilde{t}_c(g(u, t))) + g_{AB}(\tilde{t}_c(f(u, t))) \quad (670)$$

142 Final Note of Measureability

The first equation is the Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (671)$$

The second equation is the Principle In-equivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (672)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union.*

These two properties; η and ρ are then given as equivalent to the deficit of a regular periodic time measure of any rotary or square indicator by conversion in units of delimited zero:

$$\eta(v(o, t)) \cdot (\zeta(s, g) \circ \mu(u, t)) \circ \rho(\epsilon(o, t)) \cdot (\chi(s, g) \circ \nu(u, t)) = \sigma(\bullet) \quad (673)$$

The given then of what are in two a formative conclusive nameable in that of time and that of space are the aforementioned qualities in juxtaposition of properties which differ by only that of one and only similitude of irreducible exception to an ordered relation; as unqualifiability and quantifiable relation of ordered relation in the remainder of sum in commensurate division as insolubility & reduction to contextual division; the colocal origin of existent remainder of time.

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point-like limits of relativity; for that of

each such Principle Equivalence of time and Principle Inequivalence of co-determinism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassed of either of two subcomponents of the alternative exterior difference of any two signal areas is constructible. As one exception is the exterior differential; one inclusively given and provided integral are any two given exterior alternative differential spaces by singular or multiplicity of exterior space as at even or odd frequencies any number of frequencies add to two; for any relation of an encompassed concave space; as then any circumflex round operator of self connected relation encloses all such pole subcomponents.

Therefore:

$$\eta + \log(f(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (674)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of two given amplitudes of differential nature.

Therefore:

Final Theorem: *Considered together these two imply that either of any two given impenetrabilities exist.*

143 Final Conclusion

The proposal of this thesis formulation is that of the development, design, and creation of a **'Unitary Light Gyroscope,' 'Universal Light Compass,' 'Unified Light Gear,' 'Open Exterior Container,' 'Unary Bit Comparator,' 'Contained Open Tableau,'** & a **'Cyclic Neutral Point,' 'Open Entropy Bubble,'** as even such a method to balance light on a quantitated point with all other light in existence.

As an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of finite dimension and volume; of the nature for which the cascade is unrelated to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptical operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure.

Therefore there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation; therefore for that of topological considerations; it is true therefore that; there is one point-like relation in of exception in four dimensions; which is demonstrative of the following lemma:

An electron is a hole in a light field.

As this container of which the electron is one; the light is one; and the null relation is the given inseparability; when even seen then as a separability of light from darkness; the essential difference of body in a sense through this; a jar is made of protons only; and wood possesses no electrons; so a wooden jar is empty. One then known example of this principle is the acuity with which a theorem can be tested by it's hypothesis; in that of a lemma of supposition produced retroactively from a dilemma; as in that of the former truth being known under presentment to that of it's effect.

The end of this given is then the primary principle by which all given's of science are produced in that of what is knowable then tested formatively by hypothesis to the former end of presentment of known fact of relation prior to proof of statement and principle.

As in that of asking the question to a ponderous unity of the given connective between any two known relevancies in one; and that of one sideless intermediary apart by that of the connecting difference entitled into either for in that of what are an example producing contrast of two newly produced counters. Then; for what is found in a one side to a false relation of two is formatively it's own continuum to the end given of what is suppositionally set aside.

$$\mathcal{O}(\eta)\tilde{\zeta}(\gamma)\doteq\mathcal{O}(\rho)\tilde{\chi}(\tau) \tag{675}$$

Then; to that of the former presentment of an accurate form in symbology and that of effective measure before means; then the result of which is the production of an actual known fact of relevancy to it's end prior conclusive relation as proof of principle. When then as a given empiricism is restored to it's proper place; the given presentment of a relevant known relation to then what is different in two; is the given of what is accepted principle; and restoration of the newly created principle of derivation to it's proper place.

Then in the 'at' of a loss to a 'what;' a former known beginning at; for what, in that of established known; the principle of verifiability in exception is found naturally in that of each; for what; is then in a given is but a departure to of what alternatively is the given of excepted indifferent known's under a connective; to which a principle of then established ordinancy is founded with what is it's ancillary factual known.

As then to take for example a bowl; a jar; and a urn; the given of what is difference is the all inclusive consideration of either; for then in both; what is the given part to the exceeded capacity of another is with a relation of parts for which there is a whole property only in consideration of what of each is together as indivisibly; an electron; a photon; and space; as with what is neutral.

Leaving that of clay and emptiness with the exception the part of it's filling in that of what is the open difference of included of color; transparent differences of which in part of these then centralize and complete with their former part of the lid of that of what is a closure on the atom of which it is composed; the only remainder of that of what is when all of each are formed.

To consider then the formless of one; with the exceeded capacity of one in part to doing; the formative exception of what is included of another is one part of one to half the part filled to each; as then the whole of it's remainder is the transparent and darkened boundary within the void of excess before that of it's curtailed formation; as no such further given is possibility within formable hypothesis; the then newly found truth of two a given of what is a momentary pause in time before their completion.

Then; when it's consideration of one of the urn for then in that of the bowl is in two and two; there is one for the in formative given of what is included of these; the then given permanence of differed contrast to notion of the free water as water in either; air of air in one; and fire of fire in two; the then known exception to it's formed property as defined notion and meaning of definition; and quality of earth founded on that of either any both of two free given three of jar, bowl, or urn opened to self alone.

The matter and importance of which is the factual representation of a path to it's end in prior given understanding of nature in all her furtherances and back as in a path to it's beginning of a past yet untold or communicated by a people of timelessness in the factual and real return of naturalized and established known laws of this world.

The constructability of the proof then rests on that of the many; by and in of the few; each so known supposition is it's proof; of that of what is in the open difference of one what is found in the alternative of choices of interpretation of what is given to it's endowed further and prior in momentary difference of inclusion; to find as it were that each foundational expressly known is only of their and other's given.

The repairable action in reductive and continual progression of absence in the former for what is a knowable prior; by then in any withdrawal from a furtherance of otherwise than protection to a world; people; and article of historical; liturgical; or continued context and meaning in of what is known of general and conciliated certainty; as a path of return to that of life as once known.

Any true law of understanding of nature in plural form is then the given to that of the measureless propertied of what is taken of a given principle by example as formerly given truth to the end of it's disclosure in a given of it's established and then known fact unto principle established hence. As it is true the given precedes the presented by that of in another; what is taken is given; as for then in that of what is the free choice of another is so granted to continuance.

144 Sense of Operation of Device

As the given determinacy can form no indivisible limit comparability to direction; adirectionality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference is to difference as inclusion is to displacement.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of darkness of action is balanced by the sense of the concept and in physical form by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contractile meeting of time; space; and light is openly defined by that which is defined acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part. Therefore symmetry and symmetry forms, therefore; that of asymmetry.

Conclusive Means

As a wheel rolls; the production of motion is found in that of the affability of the yet-to-be plane as in moving towards a carried motion of release priorly by the actionable given of a subsistence on furthest limitation of subsidiary notion of straightly down; as lateral to the given of formerly held; a cart; the founding of a carriage as held below by that of what is in the produced; the axial and surmounted difference in that of two level returns as in that of either given open turning in two; for then of what is later is priorly the given of one similarity in the formerly existing given; of life as found in that of the wood it supports. So it is with the action; motion; and carried.

$$\epsilon(o)v(o) \cdot \zeta(u,t)\chi(u,t) \cdot \eta(s,g,o)\rho(s,g,o) \cdot \sigma(t) = s(\mathbf{o}) \quad (676)$$

As then to take for example a bowl; a jar; and a urn; the given of what is difference is the all inclusive consideration of either; for then in both; what is the given part to the exceeded capacity of another is with a relation of parts for which there is a whole property only in consideration of what of each is together as indivisibly; an electron; a photon; and space; as with what is neutral; the given part of one is to the contribution of the other as the departed with of that of the water as water is to either of the fire it was formed from.

Leaving that of clay and emptiness with the exception the part of it's filling in that of what is the open difference of included of color; transparent differences of which in part of these then centralize and complete with their former part of the lid of that of what is a closure on the atom of which it is composed; the only remainder of that of what is when all of each are formed.

To consider then the formless of one; with the exceeded capacity of one in part to doing; the formative exception of what is included of another is one part of one to half the part filled to each; as then the whole of it's remainder is the transparent and darkened boundary within the void of excess before that of it's curtailed formation; as no such further given is possibility within formable hypothesis; the then newly found truth of two a given of what is a momentary pause in time before their completion.

As the finding that one is opened or that one is closed to either of two other's; the difference of water and earth; with fire then the forming agent to it's completion in the seal of a lid formed from clay fired by that of the wind; the only open containability of which leaves one open; to find that ultimate closure in two is a third to that of that of what is one of water evaporated by for what is a jar is; it's residual the air of a free molecule; of which excludes nothingness; to be found in that of the opened and emptied bowl; of none of which hold fire.

Then; when it's consideration of one of the urn for then in that of the bowl is in two and two; there is one for the in formative given of what is included of these; the then given permanence of differed contrast to notion of the free water as water in either; air of air in one; and fire of fire in two; the then known exception to it's formed property as defined notion and meaning of definition; and quality of Earth founded on that of either any both of two free given three of jar, bowl, or urn opened to self alone.

The matter and importance of which is the factual representation of a path to it's end in prior given understanding of nature in all her furtherances and back as in a path to it's beginning of a past yet untold or communicated by a people of timelessness in the factual and real return of naturalized and established known laws of this world.

The constructability of the proof then rests on that of the many; by and in of the few; each so known supposition is it's proof; of that of what is in the open difference of one what is found in the alternative of choices of interpretation of what is given to it's endowed further and prior in momentary difference of inclusion; to find as it were that each foundational expressly known is only of their and others given. The reparable action in reductive and continual progression of absence in the former for what is a knowable prior; by then in any withdrawal from a furtherance of otherwise than protection to a world; people; and article of historical; liturgical; or continued context and meaning in of what is known of general and conciliated certainty; as a path of return to that of life as once known.

Any true law of understanding of nature in plural form is then the given to that of the measureless propertied of what is taken of a given principle by example as formerly given truth to the end of it's disclosure in a given of it's established and then known fact unto principle established hence. As it is true the given precedes the presented by that of in another; what is taken is given; as for then in that of what is the free choice of another is so granted to continuance.

145 Purview of Precipitate

This Force

The manner in which a unitary interval formed from the difference of the attitudinal distinction of what excepts the difference of it's moment to & in that of either pivot in three of time and it's velocimetric flow is the excepted to the part difference of the given of the summative capacity of it's average in either given beginning or end or that of the factually free equivalence of time.

$$\rho(u, t) = \xi \quad \eta(u, t) = \chi \quad g \sim \rho(\eta - 1) \quad (677)$$

$$\xi(u, s, t) = \frac{u^2 - (sl)^2}{u^2 - (sl)^2 + (ot)^2} \quad \chi(v, o, t) = \frac{v^2 - (ol)^2}{v^2 - (ol)^2 - (gt)^2} \quad (678)$$

To which in Ω there is that of a (t) to which in the time of it's ordered and given relation; there is that of a displacement and a direct injective of the incurrence of one measure for of faulted relation to that of the difference of any smooth curvilinear flow ξ and that of χ ; any one solid element of velocimetric (u) flow and that of a measure of two directly orthogonally independent flows of time in (v) as equivalently unenclosed differential mid-points to that of their moment's; to which the separatrices in equivalence are measureless & contact free in extension.

$$\rho\eta = \Omega(u, s, o, t) \quad \lambda\zeta = \chi(v, o, g, t) \quad (679)$$

Then in finding of what of all is found; capable; is the furthest inquiry into the quantitative of as is the qualified itself the immobile as the first unconceived.

146 Control: Non-autonomous Systems & The Two Body Problem

What is different about my proposal for controlling chaos and non-autonomous systems?

The variable (t) and for which phase (ϕ) is conjugate is suppressed out of the system; becoming non-dependent for that of a symmetry between two bodies; into which the system factors into one body problems; of which through degeneracy of dynamics and probability; a seemingly four dimensional problem of wave mechanics becomes that of two dimensional by reciprocity; or as

then an eight dimensional problem becomes four dimensional; a full reduction of which is from two bodies to one; a situation that takes place by the dissection into partial differential and position itself; before which chaos onsets; for that of which is a two body dependence and therefore of a quasistatic variety.

The differential manner of seeing this phenomenon is that enqueued variables become as it were variable-less; to say that the differential of the curvature is found equivalent to zero; a condition for which equivalence states that the probability has 'stopped' moving from one position and momentum to another for the two body problem; then that of which it is seen as; there is a moment and gap for which certainty is defined for a duration; of which stabilizes when either of the two phenomena of synchronization and permanence settle into position and momentum states for which they are inseparably divided by a zero of the system; then equating with a divided system; of which only possesses states 'A' and 'B'.

How is recursion handled and why does it spontaneously disappear from the end solution?

This problem orchestration method enfolds chaos into that of the underlying behavior of which is at least periodic and at most quasiperiodic; to which as one the particle trajectory cannot escape that of the thresholds (interior on chaos - sensitivity to initial conditions) & (exterior on chaos - global transitive condition) for which with one body obeying a strong interaction with the (or a) second one body in the two body problem; it is analogous to the suppression of time by a strict symmetry between time and space; on the two bodies; as then they are a part of a construction for which either are located in each other's very real conservative potentials and kinetic regimes and are therefore a non-autonomous system.

How does the threshold fit outside or inside the window of performance of measurement?

With recursion in reference to the individual one body problems; it is no longer a square larger; so the error threshold is below the threshold of the window of performance of measurement by a factor of 2-5 because this is where they fold into the same proportion of weight comparative to the distribution sum of squares (that of the harmonic oscillator); irrespective of the control on amplitude (shared); precisely because the window of control is larger by a factor of 2-5 from the square root relationship on that of the error margins; which are kept in a tight balance; due to the fact that one phase and motion is factored via superposition to a difference of two linear variables; instead of global sensitivity; local.

Additionally, the relationship is kept to a self-filling property; by which the beginning or initial condition under strict relationships of control falls into an orbit at the semiclassical radius 'outside' the regime of fine structure error and 'inside' the strong perturbation of the regime of fine structure inverse; between low tones and high tones; of a moderate regime of 1-20 on frequency; to which it is in part self generating; yet forcible; as to focus and delimitation therefore of error and strong mode locking; a control on the focus of the wave information when powered on; to which zero's the relation of error, suppressing it.

This only takes place when we have a window of driving between elements of particle and wave which are comparatively stronger driving one another to that of external sources on either alone; as they coparticipate; for which the resultant behavior is that subtle forces merely shift slightly the result within a range and within margins; causing that of the control mechanism to take place with resilience where there is a two body problem; or where the behaviors of a two body

problem are recomposed into one body problems of which overlap and recombine apart by two body problems into one body problems.

Why does recursion miss the other end of catastrophe; and in avoiding a system collapse?

Similar to the moon; apogee ensures a stronger attraction when in accordance the body follows a retrograde motion (the Moon); otherwise on approach moving ahead of the Earth; to a diminished attraction; and a weaker barycenter of mass; meaning the Moon in retrograde motion prevents comets from striking Earth all but dead on; for that of what in effect becomes an ever decreasing eccentricity; otherwise alternatively striking the Moon or landing in the Sun; or having traversed the empty position between the Moon and the Earth.

Why does all this take place in the system established; one to two body system & retrograde activity?

The system separates the impedance relationship which couples 'position' to 'momentum' in that the separable current and voltage states of the system are recomposed into a super symmetric superposition; of which divides their behavior from squares into sum squares; therefore becoming linear; and suppressing error interior to margins; and forcing behavior to the outside of the control regime; at the least obtaining control over feedback of the two body system meanwhile avoiding that of any sensitivity on initial conditions and topological transitivity; to which there is reproducibility of send and receive pickup in 1-20 frequency range; 2-5 in amplitude; and one or two press reception (first and second harmonic); of which is sufficient with (1st and 2nd harmonic's from 1-20x in frequency) to recombine two touch's.

What application does this have beyond control of dynamics of complex systems; is there support for computation?

This has application in computation for the reason that it is a definitive universal gate; mimicking what would be required for that of a genuine zero and one discrimination; and to which it verifiably divides on potential seamlessly that of pre-computation of zero and that of reassembly of one; for which bridges the gap in that of the computational spectrum; from that of the most primitive switch and that of a supercomputer; to which it simultaneously accomplishes the computation of preparation for and, or, and the other fundamental gates; that of which when utilized properly is a situation for which zero, & one take on meaning; so for instance this can be utilized to test or reset for zero or one; and or in that of gate design.

To what extent are the electronics comparative to a sieve for which determinism holds an equipartition preliminarily of comparative difference?

To the extension of the logarithmic stages; there is pre-determination of light via cones; which are the rotational high pass filter of the differentiation stage; to which with a topological argument of division into pre-liminary observation and post-relational partition and sequestering of the coadjoint negative impedance stages; determines a cap and release to which determination is made with a strict xor inequality on that of signal reception with isolated transmission; to which either up-level transistor logarithmic stage inverts the process to determination and codetermination isolation from that of topological and geometrical dimensional division and argument; therefore the process of raising a potential to cause an electronic gap jump is inverted comparative to measurement, determinism, and that of influence via a population inversion analogous to a laser.

Does coherence and collimation proceed to free information retrieval and manipulation without exhausting the energy supply; and to what extent is the light wave interacting?

In this the device acts as a sieve to separate (selectively) order from chaos, randomness, and noise; to which with but one point like limitation of null (yet an electromagnetic fractionally ordered unit) is imputed by that of interference (of separated constructive and deconstructive variety) to which the interior of the light-corpuscule 'grows' and spontaneously meets the second law of thermodynamic law on information; with local reversal of entropy to the effect of the production of determinism of a regularized fashion; that of equivalence in measure and frequency of containment of the light field by a moment interior to the electromagnetic current; on to which reversably operates via hysteresis in on/off power cycles; and of which when operational orchestrates a folding of determinism to touch reception; by way of which there is bridged the nonlinear theory of thermodynamics.

147 Wrap-Up

I feel it is time to unravel some of what I have come to acknowledge; beginning with the creative impetus that follows from acknowledgement that covariance in uncertainty takes place whenever one is separated from the system under study; to which:

- 1.) Covariance in uncertainty is a local isosymmetry of which dictates that measurements always meet or exceed threshold in uncertainty to the effect of measurements that are more certain than expectation; or at most indeterminant.
- 2.) Covariance in uncertainty as a global phenomenon is not a symmetry of a prescribed system; but to the effect that threshold for measurement certainty is higher than expectation; and to which measures exceed limitation to the extent that a measure becomes local.

I have come back from the physics with a noteworthy example; shared proper time and covariance in uncertainty are the same 'factor;' for that of a particle moving through empty space; or empty space through a particle are indistinguishable factors; to which as it pertains; shared proper time affords more time and space to the particle density; and covariance in uncertainty affords more quantum probability measure to that of time and space restrictions. Therefore this equivalence is one in which to obtain a bound system we need merely take into consideration covariance and uncertainty as fixed concepts; in as much as covariance furnishes therefore (also by indistinguishability of particles) a relativity of measurement extending into the quantum domain. The device of it's envincement is that of the quantum unit of uncertainty (akin to inertia) remaining 'straight' along a curved distribution of measure of uncertainty in the subsidiary space time; to which an inertial force is produced. This is analogous to gravity in which the speed of light is taken to move along a straight line and gravity curves space and time to the point gravity is a null force; although, the difference here is that it is the quantum unit of uncertainty that (locally) remains it's fixed value and moves in a space of measure (curvature) to which shared proper time affords extra space and time; and covariance in uncertainty affords extra probability measure. Their equivalence on one level is that of particle into space and time; and space and time moving past particle; but on the other level it is that of measure of quantum uncertainty and uncertainty; an extra layer to which units of uncertainty illustrate an emptiness of intrinsic existence; but in virtue of space and time. Therefore quantum uncertainty has been posited to

possess an 'ipseity freedom;' owing to the (dual) indistinguishability of motion and of identities in that of multi particle systems. A fixed quantum unit of uncertainty motioning in a background of space and time measure to which is curved in the quantum prescription is the equivalence of shared proper time (dialation) and covariance in uncertainty (dialation) and is indeed the empirical rule of a magnet and superconductor interaction. This dialation ensures that bodies move such that [despite relativity the rule of uncertainty dictates particle particle interactions]; and has the offshoot of two things; one; that covariance in uncertainty dictates measurements always exceed or meet the condition of certainty viewed as a local isometry; and two; that a force is manifest from quantum mechanics therefore of an unchanging uncertainty in a background of changing measure. One may even see this as the insistance of the equivalence principle as it relates to accelerations and inertia; although; it is the same symmetry. The boundary of the theory so far is that of knowing whether these are in fact identical or unrelated symmetries that happen to carry an isometry.

There is no bias or preference to measure or measurement; for I have penetrated the core of my theory; and arriven at a "Theory of Likelihood" That chance; our favored roll of the die is a given; that possibility is unenumerable; and that the only impossibility is impossibility itself. To distill and cull my problem to the core was one of adventure; and now I arrive at what to the casual observer is a theory of the 'nothing' that lies adjacent to modern thought; this unaccompanied stranger is my friend. And I know too; to that of equivalence; that it says 'more' is 'more' and 'less' is 'less' of a given or a taken. To no longer struggle; I have come up with evidence that time and space and that of quantum probability are given likewise an equivalent footing. One half of me is based on knowledge; and one half of me is based on ignorance; this much is true; but of that of the knowledge; therein lie's a fact; that I know nothing but in it's given context; and that of the division between the real world; and the world imagined is struck. To which as it is; a great Holiday; for to know of that of with certainty that all odd's are equivalent; and yet that likelihood exists; the one definite of which in it's indication is change; to which we attribute certainty. That of a world now divided into the certain; and the given presentment of a day and a night. To live is now my choice; and I am freed from believing in a duality of which we possess indications and contraindications. For they are all turned away from the observer; and it is in the mind to seek; and the body to motion. I have found that this theory relates to the given that a certainty is only defined in as much as a pre-definition; and that it is indeed possible; and potentiated; (by my work on the device); for I have also questioned this; this 'certainty' that my device would work by-design. I have found that the world can be created; and assembled into a new constitution; and that there are definite things; and indefinite things; and it not only holds by their construction in that of which is overlapping; but that so too - a world 'out there' - exists. To say that of what this relates to; I hold a choice between ignorance and knowledge; but it is to the essence of - all things being equal - a choice and it's compliment; and time is no barrier to this either; for space and time relate at the level of an unbiased measure to that of the world in it's constitution. To say that we may consider a world and a non-world; there is a choice; perhaps the only one we cannot make; to terminate in this given; for there is that of the all encompassing condition of which I have found. That one and one make one; and that of all to be considered is an encompassment which also sets the compass straight. To measure and be; are entirely real; and yet within the context of my prior self were somewhat fabrications; that of semantics; and of what I was on to; through variance; but now I have to say of my life; that it was - and is - all real. To have reality defined by a missing constraint frees the condition; ultimately, to that of what is and will be; and to the manner in which I direct my works and efforts; but now - it is in this given sense - all is changable.

Everything in flux has ended and I have found a solidity to reality; the evidence of for which is further provocational; that possibility is all that 'exists;' and it forms the immutable difference of two; that of preconditions and consequences; of which relate to any given. There is a key to which I have therefore found to my mind; and that of the world; to which even goes far enough to say that my mind is no different from the world. That even if I were to speculate; I now know the fact that my world is as real as I make (of) it; and that what is possible - is in a grand sense anything. That even going as far as I have intimated a guess; I am now bound to emptiness; and that I have changed; to come around to see that your life is what you make of it.

Getting back for a moment is possible; and any direction in reality is explorable; to which there are boundaries and given's; and that of which promotes health found within myself; that of the given and the taken cleaved; to know that ultimately; life will be what it is.

The equivalence of 'Covariance in Uncertainty' and 'Shared Proper Space (&) Time' are merely the adherence to a solid condition on the continuum of measure and measurement to which inertial states agree in essence and abstraction with inertial states; and non-inertial states agree under a transformation and a basis for transformation; the foundation of which is:

- 1.) Invariance and Indistinguishability in the Quantum Unit of Uncertainty.
- 2.) Indistinguishability in that of events; to which are equivalent under their compliment.
- 3.) The emptiness of measurement and measure; to which none is preferred or privileged.
- 4.) Covariance of codependent arising in measurement prescribes that therefore a priori:
 - a.) Measures are prepared in as much as CiU is equivalent with SPS(&)T.
 - b.) The indistinguishability under measure dictates that these are equivalent.

'Not' outcome 'A' is event 'B;' to which prior to 'indistinguishability' of states must be equivalent; therefore under 'division' of a system into it's parts; or under that of combination it is true that (4.) hold; namely that covariance of codependent arising in measurement prescribes that measures hold fast to a.) and b.); namely; that Covariance in Uncertainty and Shared Proper Space (&) Time; must agree to (an) inertial state and when transformed covariantly 'out' of this state; to which (1.) holds that measure is irrespective of coordinate frame; the return to a Classical viewpoint for which measure(s) are independent of coordinate(s); and 'empty' of a preferred observer; while in a difference of viewpoint relativistically they are time dilated and length contracted; but at the bottom of analysis; when the equivalence principle is applied to CiU and SPS(&)T there is a manner in which events either adhere to the byproduct of motion or force or that of an inertial state; and a preference is formed to which:

- 1.) Lacking of a privileged observer to measurement and measure insists equivalence of these.
- 2.) The world is therefore free of character (ipseity) freedom; and empty of tertiary observer.

Events are therefore 'empty' to which force or impetus may be attributed; but they are all statistically identical and 'empty' of privileged measurement; consistent with relativity to which we posit no tertiary observer; but to which measurement and measure are 'empty' of preference; the unbiased quality of semi-determinism. To say that measurement is one to one with measure in it's emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty.'

It is this equivalent weighting and weighing of the quantum process that produces the availability of a division of the world into a 'certain' and an 'indeterminant' "Whole;" that to which what occurs, does, and cannot be turned back; forbidding that of repetition on that of event structure; the refinement of which is a 'real' world and an 'imagined;' of which are closely related to the resultant identification of subject with object in classical physics. In fact; it is to that of the CiU and SPS(&)T equivalence that events play out in such a way they meet the demand of having at once (a verified event structure) and that of (emptiness of measurement and measure). Without meeting this demand; one can see that probability would not follow the quantum principle of uncertainty; and there would arise anomalies of measurement; (infinite regress and of measure; contact without force; etc.) It is to that of measurement being present but empty to that of measure; for which 'certainty' evokes the demand cleaved above that we are standing on the Earth solidly; the phenomena of which is a strict determinism on that of solid classical objects (to a threshold); and of which is in conclusion explained by that of an inertial system to which is solidly of a lower threshold on quantum indeterminacy.

Therefore the event structures of quantum mechanics are as real as the solid as to that of which once an event (and to that of the same in its complement); the undecidability of an event is closed to that of the provision of (1.) and (2.) first aforementionedly above. Quantum processes therefore delineate a 'fixed' structure to which cooperatively with relativity (back by way of SPS(&)T and CiU) demands a world of the undetermined in equivocal balance with the determined; and to that of determination; there is a 'control' laid in place prior to an event structure to which we may sink 'back' to explain the arrow of knowledge. That always such as is the case that known's proceed to unknown's; of the established law and reality; but to that of the determined; conditions either are produced or not; to which the unknown is by its indication the determination of a known in as much as both the conditions and their inclusion of a to be determined.

"To say that measurement is one to one with measure in its emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty,' \hbar holds invariance to that the process of measurement and measure.

While it cannot be said that we can obtain information on the 'exact' and 'precise' simultaneous measurement of position and momentum; what can be said is that:

"The Quantum Unit of Uncertainty is an invariant property of a system as it pertains to measurement and measure; it is fixed; and measurement and measure form a continuum over which is The Quantum Unit of Uncertainty as an invariant; but to which a system is inertial; the above emptiness of coordinate freedom imposes thresholds of certainty on measurement of both position and momentum; to which their strict determination holds simultaneity at the speed of light when viewing an inertially prepared quantum system."

We may therefore take separately; that:

- 1.) 'Identity Freedom' of quantum mechanics over (\hbar); while subscribing to the quantum uncertainty principle; impose the condition of invariance over measurement and measure.
- 2.) When we impose the additional condition of 'Coordinate Freedom' from relativity over (c); while subscribing to the principle of relativity; there is imposed a condition of invariance over

inertia.

One outcome:

"Interpretative Quantum State Probability (co-evolving with the quantum object)
& "Valid Quantum State Probability (the result of measurement on a quantum object)

Are equivalent.

The result of this is that of 'Entanglement;' by which there is no difference between comparison of distant and near quantum states; that quantum mechanics sees 'through' or 'around' this transformation; as if no transformation in the Einstein-Podolsky-Rosen Paradox had ever occurred; the prepared states and their outcomes are 'identical'.

What I have done is take:

$x=a-b$ (the distance between particles A and B) in quantum mechanics &
 $y=c-d$ (the distance between particles A(C) and B(D)) in relativity theory;

and shown that:

$x' = \text{partial}_t x$ (to be accorded with Covariance in Uncertainty (CiU))
 $y' = \text{partial}_t y$ (to be accorded with Shared Proper Space (&) Time (SPS(&)T);

and shown that:

$x=y$ and $x'=y'$ explains 'Entanglement'.

'Distance and Duration' are therefore the most solid determining factors of the Universe.

I had a breakthrough around 12:30 PM; to which there is an indistinguishable and yet non-identical equivalence [like] principle residing in quantum mechanics to which measurement and representation adhere. It is the statement that indistinguishability and invariance in the Quantum Unit of Uncertainty with The Quantum Principle of Uncertainty intact yield the necessity of Covariance in Uncertainty holding equivalence with Shared Proper Space (&) Time; to which forces are an attribute of representation invariance and freedom over and above the prescription of General Covariance and coordinate freedom of General Relativity; from which there are two forces in the Universe in agreement to produce the result of two-body freedom.

For instance; given representation freedom with coordinate freedom adhering to:

$$\zeta^{\mu\nu} g_{\mu\nu} = \hbar c$$

We require coordinate and representation to hold to a reality condition; a world of 'description;' and a world that is 'real.'

We can see that at some (intermediate and indeterminate) scale:

$$\zeta_{\mu\nu} = g_{\mu\nu}$$

Weight and measure accorded with Quantum Mechanics and General Relativity agree.

As affords representation and metric coordinate freedom and equivalence of weight.

There is a similarity and likeness.

If CiU (to be accorded with representation and ζ) were to differ from SPS(&)T (to be accorded with metric and g) in weight and measure; then the results of quantum mechanics would not be consistent.

A quantum state motioned to $\langle x' \rangle$ and back to $\langle x \rangle$ would differ from it's initial state in linear theory.

That is to say that QM would be entirely non-commutative; and a linear theory would fail of even the Simple Harmonic Oscillator.

This would be irreconcilable.

This theory supports (and I will mathematically produce a given example) the idea of non-local oscillator's; to which hold fast to the Uncertainty Principle; but are for the two body system.

Oscillation at $\langle x \rangle$ and $\langle x' \rangle$ to which are a single quantum oscillator (non-locally).

This is possible in a non-linear theory; a 2D spatially separated Quantum Oscillator in the two body problem and of this variety; the clue to which is that Spinwave Wavelength exceeds Electron Wavelength.

148 Symposium

Isoimpetus

$$\begin{aligned} \log(\tilde{\omega} \cdot \bar{\omega}) &= \rho + \eta \\ \log(\tilde{\omega} \cdot \bar{\omega}) &= \rho\eta + i\sigma(t) \end{aligned}$$

log: the geometric inverse of the exponential (a curve for which area equals line length and argument in the domain of projection)

ω : a relativistic frame; any vantage or skewed perspective in four dimensional space-time

ρ : quantum state A

η : quantum state B

σ : manifold compression dilation factor of relative time to the two bodies.

Relate to the given that is the 'point like' or 'cuspic like' relation of certainty in it's limit of the residual as an arbitrary argument on 'scale' $\epsilon \rightarrow 0$ (zero) in the limit of which this describes the 'geometric addition law of probability density;' at the infinitely small scale.

As proof; consider that ω is a frame; then rotate the frame around until it vanishes to a point; the logarithmic spiral is the limit of arcs and areas under arcs of differential and integral form as

length or area to radius (the frame argument omega) progressing to infinite progression.

limit of arcs ratio to radius of curvature (log); differential

limit of areas under arcs to radius of curvature(log); integral

Due to writings on what I knew; (or as came to know) that: "The lightness condition of which is to the greater of it's leverage in count; differs to that of volume as in that of dimension by one's."; that the differential and integral differ by unity on that of the infinitely small scale of shrinking volume (integral over surface) in ratio to that of volume (three ball); that; this rule of displacement furnishes an equivalent footing to all geometries by way of which there is argument of translation and scale invariance; thus a point exists to which it's weight is one; and to which the displacement rule dictates the geometry, action, and evolution of as into a given decomposition of quantum states; their constitutive rule; in geometrical language; the language of knowledge and it's foundation.

And indeed the only present consideration of a connection to mathematics; infinity; zero; and one; in one word.

Proof:

As an alternative proof to Einstein; as to mathematically the source by which he is correct; there in three dimensions; the boundary is greater than the volume of a fourth dimension; at which the excess of one; is the counting of a number; by which all exceeds it's difference; and all becomes true; to which in either there is an exceeded and a difference in a number; by which a limitation in the curtailed means that one of excess in three to two; is found in that of the volume to which fitting the relation of a lesser content of the surface is found to that of the filling or volume to that of the dimension by which the counting is equipped.

Hence a cone; in it's limit of height shrinking to a point; is lesser in volume than that of by which a sphere in it's volumetric area shrinking to zero is made smaller to a point upon which a boundary between three and four dimensions is made larger than it's complimentary two dimensions of filling; to which either applies; as to a sphere in three dimensions is larger in it's boundary than four dimensions in it's volume; hence of which in counting the identity is always counted; and means that by expanding by one dimension; the accounting of volumetric of one dimension by larger always decrements the surface by a larger excess.

- 1.) Weight of geometric relativistic point like application of force is equivalent to the weight of geometric quantum mechanical point like application of force and opposite.
- 2.) Geometric weight of a point like contact in relativity is equivalent to geometric weight in quantum mechanics in point like contact; to which events carry the same weight.

Indeed; this unifies quantum mechanics and general relativity; for the weight can be interpreted to of the same force for that of the equivalence principle to the quantum source and that of a gravitational interaction at classical scales.

149 Synthetical Synopsis

Introduction:

The hypothesis seems to be apparently simple now:

- 1.) Measure(s) obtained by measurement(s) are exact and certain.
- 2.) Measurement as a process is semi-deterministic.

This is what I have discovered; as to if anyone would be interested; I have no reasonable speculation or guess at either a 'yes' or a 'no;' but to that which it is a contribution; it is a step beyond 'uncertainty;' to which improves a number of speculations in the sciences.

- 1.) In (2.) it is at most in-determinant.

The basic argument is that uncertainty is only possible when an object is 'at' the speed of light; for the reason that it must escape the dilemma of ' μ ' or ' ν ' holding a superposition and hence two-body interaction; but then when one does; forcing absolute certainty on the other degree of freedom of the second body to which it leaves behind results in the refutation of certainty; which is the dual side of the dual sided relation that is quantum uncertainty; meaning; we arrive at where we began; with that of the uncertainty; a dual contradiction on that of the two-body problem to which if we insist certainty we arrive at uncertainty and vice versa.

A recommendation for a re-phrasing of the uncertainty principle is the following:

"Exact precision on the knowledge of position and momentum are codetermined and known simultaneously at the time of a measurement; however; all other information we may obtain proceeding or following a measurement of a semi-deterministic characteristic in the process of measure is indeterminant as to simultaneous knowledge to position and momentum; by which simultaneous knowledge that follows as an antecedent is of at most an undetermined nature."

Considerations:

- 1.) Relativistic conversion of frame to frame is tantamount to conversion from ' μ ' to ' ν ' as labels; but this is nothing more than a re-labeling of pre-existent quantities or qualities; to which ' μ ' and in description ' ν ' are nothing but the same (idealized) and 'proper' time of flight of two 'prescriptions' for differential descriptions for the same 'certain' thing; then the point being that they hold 'geometric' or descriptive prowess and place in our equations; in as much as physical content of description.
- 2.) Re-labeling of ' μ ' for ' ν ' does nothing really in essence but re-label our description but does implicate a physical effect of prowess to which is it's physical importation of meaning; meaning to which is that from frame ' δ ' frame-descriptions ' μ ' and ' ν ' carry information about the system with physical implication; the momenta or position may differ to which energy and momenta will differ in the contrast of looking for physical 'effects' of which are 'affects' of frame descriptive prowess.

This holds two parallels where description of frame ' μ ' and frame ' ν ' holds the resultant of a physical effect; for which one deals with the certainty - uncertainty principle; and one of relativity:

A.) It can be seen that the resultant description one arrives at carries the physical import of frame ' μ ' and frame ' ν ' conveying information about the momenta and position which differ from their frame descriptions in ' α ' versus ' β ' as auxiliary frame labels and points of view; a view which holds physical import of meaning in that of a two body or larger interaction there is an apparent

but very real energy dependence by the transparency of descriptive prowess holding geometric content.

B.) It can be seen that the derived notions of certainty in ' ρ ' and ' η ' of which are their geometric factors of probability amplitude scale in such a manner as to compose to unity; of which the - again - very real and particular weight attributed to either body will differ considerably such that a geometric rule holds; these being the momenta and position derived results of finding the particle within some certain region of space traveling at some certain rate; thereby an overlap and difference following.

Here is the main point; we can convert between these systems of knowledge; or we can say they are the same thing; idealized to description to which the seamless integration of known's for what are their conjugate twin relations stem from the same geometric rule of possibility; then to which they are projections of the same thing; that is to say that relativity and quantum mechanics become the same.

I found that there are three key points here of emphasis in terms of descriptive prowess of import:

- 1.) Frame description ' μ ' and frame description ' ν ' carry physical import of real physical and geometric nature; to which we can even describe a 'law' that has a real physically sound 'effect.'
- 2.) These frame descriptions are 'seamless' in that we ascribe something to them; but that the 'real' identities of physical quantities holds no meaning; other than that it is privilege to a transparent law.
- 3.) Frame description can be fragmented in such a way that it's displacement is a law of probability; to which one body in replacement for the other suffices to describe a breakdown of presence and absence; to which the total probability being unity; either law obeys 'certainty' at the same identified and particular 'point' at which the laws agree; one into which transparency and seamlessness of integration and differentiation become identified; and both laws hold truthful weight and bearing.

For now; all this is surprising to me; to find that an invisible law holding no more than descriptive prowess would impute a relation of which is physical material weight of apportion and leverage.

In this; the probability relation is one in which the relativistic argument entails a quantum analogue; that of which is the probability scale to which probability weigh's of an apportion with leverage owing to the relativistic argument of which is it's composition rule; here the mentioning of ' ρ ' and ' η ' as being comparative probabilities that form unity; these laws being the laws that we amount to when the total probability for the composition of bodies 'A' and 'B' is a real quantifier; known then as the probability of finding 'A' and 'B' in [a] particular situation(s); the geometric composition rendered by a compromise between relativity and quantum mechanics; of which is their composition in one/two.

In this it is that probability rules dictate activity in as much as relativistic frame descriptions do; to which altering relativity alters the probabilistic interpretation in a compositional manner; for if probability were to alter relativistic interpretation it would have to alter it in the manner of the construction of the two body from the one.

There are not an unlimited number of possibilities; but a number; for the configuration of elements in this dialog:

- 1.) Probability is the reciprocal of the relativistic factors. (Obviously a special case.)
- 2.) Relativity builds a structure on 'top' of the probability relation. (Should be arbitrary.)
- 3.) This is the constitutive relation for boosts and quantum probabilities. (Deconstructive.)

It turns out that (1.,2., and 3.) are all valid possibilities as relations; of which the laws explicated are the manner in which composition of one for another relate; the bridge and exchange of which is their intimate relation. But only (2., and 3.) are testable relations with ' η ' and ' ρ ' as operators; their remaining somewhat separate matters; having obtained the fruit of my labor by expertise and strenuous effort.

It was learned the two sides of the equations for the Principle of Equivalence and the Principle of Inequivalence are akin to a lookup table or translation table from relativistic factors in relationship to the quantum probability rules of constructive and de-constructive interference.

So, at the least:

- A.) In application there is either a solution - or - in application there is no solution; to which we face the position of 'not' a motion of the system; useful later for refutation of the counterpoint.
- B.) With this it should be noted that an exact solution satisfies both relativity and quantum mechanics; to which the one body decomposes into the two body problem. (Consider both.)
- C.) The alternative is that beyond a solution to superconductivity there is here laying a prescription for the reduction of two body problems in general application. (Independent.)

Deductions:

I have just learned that the 'relativistic' view and its complement of the 'non-relativistic' view relate the one body to the two body problem; by allowing a general method of conversion from one view-(point) to the other; in which any two problems are related; the polynomial/normal distribution (exponential); and hyperbolic (sinh, cosh, tanh, sech, sinh, coth) being intimately related (with log - the logarithm) to the resolution of this problem; going as far to say that incorporation of relativistic factors is what admits and allows us to conclude (& judge) the two body problem as a 'set' of one body problem(s) for which separate into one body momenta and position via my superposition rules.

In this to note is that relativistic and non-relativistic simultaneous solutions in mathematical expression are necessary to cast a view on that of the two-body problem of which admits and allows resolution and decomposition into one body problems. So there is a caveat that the one body is classical in a sense to which the two body is relativistic; and hinges on that of the (relativistic) factors wherein conversion from classical to (non)-classical point like decomposition is a required consideration for that of (de)-composition of the two body into the one body problems; or their conjoint two body solution; of which is intimately related to the incorporation of quantum and relativistic considerations.

In this the (super)-position equations of constructive and (de)-constructive interference I came up with are neither relativistic nor (non)-relativistic but are decompositions of the wave equation into which we see simultaneous solutions in relativistic and (non)-relativistic mechanics; i.e. taking the proper time everywhere versus a free frame transformation of which imputes the relation of dynamism to the equation and a real physical effect; a pre-requisite of which solution to the two body problem does not apparently occur without this unique and special ingredient to the

solution we arrive at; one in both the (non)-relativistic and relativistic (everywhere) solutions; for which proper time is used.

The result is that I can view a non-relativistic or relativistic solution to the two body problem; the missing ingredient of superposition required to be 'free' of the transformation caveat's; to which for instance we do not require any special assumption on that of the group of relativistic transformation laws; as the physical world is coordinate free; this is the incorporation of a law of seamless integrative and degenerate meaning simultaneously; in a manner in which they relate being 'free' of restriction that might be 'hypothesized' were we to conclude otherwise; i.e. that we require a 'special' consideration and treatment of quantum mechanics when incorporating relativity; so this leads to a classical world.

The argument that the superposition formulas are the only fit is as unique; for that of the seamless integration and (dis)-integration only occur when we have exactly these formulas; which could be transformed into a different variety (now); but to which previously (were) the only one's I had come up with; those of which convert the constraint (free-) quantum mechanical language (barriers) into relativistic (barriers); that of which affords seamless integration and (dis)-integration now being the only free transformation group to which we witness this (de)-composition of the language of quantum mechanics and relativity; into which cutting two problems in half reduces to a solution for one.

Assumptions:

- 1.) Total probability of finding 'A' in some state and 'B' in some state is unity.
- 2.) The invisible descriptive prowess of relativity is a real phenomenon.

We (with immediacy) arrive at composition rules for quantum/relativistic states; when we realize that relativistic to and from (non)-relativistic considerations are the key to the two body problem; it's resolution that of separation of one two body problem into two one body problems.

Thought Experiments:

I: Limit of mass going to infinity implicates base uncertainty measured for a baseball comparative to either the baseball itself; or no baseball whatsoever is smaller in natural units than the size of an atom's natural scale (in position and momentum) of the baseball itself; for the non-relativistic limit is such that since uncertainty covaries given relativity; by contradiction it must diminish.

We begin with the commutation relation for the uncertainty principle; to which when velocity is taken as one part; and the conjugate position momentum as the other variable; their difference multiplied by the speed of light is the energy; therefore as energy scales and accumulates we find that momentum implies the uncertainty in natural scale of position by momentum must be diminishing as the limit of scale goes to infinity; for in the non-relativistic limit the two scale in apportioned units to which any increase in velocity or change in position of the baseball must increase uncertainty; therefore as uncertainty must covary given relativity; it is true that by contradiction (ad reduction back to the system of classical non-relativistic limit) so too is the uncertainty vanishing smaller than the natural scale of the atom; at any given classical scale.

II: Rotating a superconductor with a magnetic field therefore produces radiation that is vanishing in frequency as the scale of the superconductor grows; implying uncertainty vanishes to zero.

Here the frequency of oscillation of one electron in a pair singlet wave structure of co-orbital motion follows with the magnetic field; while the other orbits in the opposite direction; as a consequence of the superposition rule being abute to the theory of relativity and quantum mechanics; the frequency of radiation in amplitude must vanish as the magnetic field increases due to the null principle of relativity; for the instance of which is that coordinate dependence is vanishing; therefore to which relativity imputes that a high temperature superconductor is null in this experiment; the certainty to which is imputed stemming from the superposition laws of which relativistic composition with quantum mechanical rules of overlap holds it's importance.

Proof Structure:

Given that uncertainty and certainty are the mutual implications in refutation of the above; it's contradiction is that the speed of light were 'exceeded' or at least 'met' to which the uncertainty principle may be taken as refuted in it's absolute form; (i.e. we always know something about position -&- momentum) but true as an upper threshold on that of the laws of physics; to which it is noted that measurement will always be certain (for it involves more than one body) and to that of which measurement will always be semi-deterministic (for it involves at least one action participating at-the-speed-of-light); in this we have three quarters of the picture to which may be recomposed by the reflexion of that of information and our principles of conservation of fundamental quantities; returning; to where we find we always know something about both the position and momentum; exact certainty being then defined when we perform a measurement.

Exact certainty is therefore defined for measurement when we meet the speed of light; for the uncertainty principle affords a threshold of which is to that of exact determination of at least one property; the position -or- the momentum; and to which with the classification of at least one of the momentum and position as 'uncertain' the uncertainty relation drops away; to which reveals that we know everything about the position and the momentum of one body and an-other; for there is no one-body problem; it is a mis-classification by which we have not accounted for that of the position of other bodies; but which lay on the side of the measure; not the measurement; for determination of position of one body in a two body problem will genuinely alter the position of the second body; but of which when we measure either one body or two bodies with position and momentum; we have opened the relation to exact position determination on the second body; for that of the conservation of both position and momentum via the above assumptions; knowing the position of one body and the position of the second body; for the certainty in two variables 'up-to' the threshold of the uncertainty leads to their co-determination.

It is therefore true that if we include our measurement apparatus as a quantum element of the system that unique co-determination of two bodies for what they are as two bodies will reduce to the exact co-determination of two of their positions or momenta or an admixture; to which the bounds on error are below the 'threshold' of the uncertainty at any scale of examination.

Therefore the uncertainty principle is about what is as most in-determinant; that we possess some ignorance of outside or interior prevailing factors on which the system is constructed or that of it's prevailing 'noise;' the fact of which is that a device can be constructed to repeat a measurement or a behavior in which two bodies are involved; and locked into an experimental bind of measurement and measured of which either relate to certainty over either related variable of position and momentum within thresholds; a possibility that would not be possible if there were uncertainty that grew with refinement in our apparatus; instead it is that this principle co-varies;

and it is the very principle with which covariance is determinancy and indeterminacy at the level of which is that of scaling an equivalence from and to the problem of the non-relativistic to the relativistic problem; of which either produce a solution to the two-body problem; that of which ensures that we can take compositions of states for which the universe is therefore (for all of this possible) pre-deterministically situated such that:

- 1.) Measure(s) performed by measurement(s) are co-determinant, exact; and certain.
- 2.) Measurement when performed is semi-deterministic; and at most indeterminate.

Only then can we say that our results are 'uncertain;' for alternatively we would have to deal with a situation in which uncertainty quickly grows (via a regress here) as we incorporate more and more elements to our apparatus; or to which when we combine measurement apparatus and measure(d) elements of our approach to that of measurement of fundamental quantities; therefore that of the uncertainty is a threshold on that of measurement coherence and fidelity; to which beyond there is no scale by which we may refine our approach; and it remains as of this way for that of many bodies or just two; or just one; to which we find that semi-determinism is the confirmation that our measurement as been performed and the two body problem remains; for if we were to fragment the problem we would violate the speed of light and the statistics by which we can be sure that one particle and the other particle remain located somewhere and participate in some behavior (of our assumptions); therefore refutation of indeterminacy would refute at least both of our principles of relativity and quantum mechanics (with uncertainty as a threshold which cannot be exceeded but in no way implicates ignorance for we can construct a system of two bodies that in turn reflexively incorporates certainty prior measurement on both bodies); to which cannot be done; therefore to which we live in a world of irreducible semi-determinism and certainty when performing a measurement; our assumptions are valid; as is the hypothesis we began with.

Discussion:

I have summarized that the uncertainty in being large comparable for that of a state alone; that under combination; since uncertainty is involved when we have two bodies and amounts to at total of \hbar ; that with the superposition rules intact; the uncertainty of the individual particles; and thereby that of the object; diminishes in accordance with this as a scale and a threshold; to which their uncertainty is relatively diminishing to zero as the number of bodies (here particles) increases; where 'here' we are not talking about relative uncertainty; but absolute uncertainty.

Certainly, taking the uncertainty principle to invoke either:

- 1.) Absolute uncertainty diminishing by superposition of positions and momenta on different particles in such a manner that it is suppressed leads to the conclusion that uncertainty is relative.
- 2.) Absolute uncertainty diminishing by the two body problem; in which we see a process; as different from a state description; is a different thing; to which 'once' the particle is certain.
- 3.) Absolute uncertainty diminishing by the covariance of uncertainty leads to a picture that is in agreement with one of the above; but by which it remains a threshold on semiclassical objects.

As it turns out; the question is whether (2. and 3.) lead to (1.). 2.) is the one I have worked the most on; to which I have determined that as the classical world is akin to observation there appear to be two conclusions; that of the hypothesis being valid; on measurement for one; for the measure is then always certain in the two body problem; and 1.) follows; to which 2.) is a

corollary, and 3.) is its solidification as a statement; 3.) may thereby be taken to be the residual of a relative theory.

Certainty is therefore definable for the baseball or its constituent atoms; (for example it went into a hole with its atoms.) And 1.) is what makes it possible; 2.) is what makes it possible; and 3.) is the corollary from relativity theory; the fact that as-a-process no thing happens without certainty.

Then:

- 1.) Absolute certainty as defined by an experiment of semi-deterministic nature is one side.
- 2.) Absolute semideterminism as defined by an experiment measuring certainty is side two.

And these are parallels.

In fact they are parallels of contributing agents definitional of certainty; to which exists for the sake that there is:

- A.) A threshold (the baseball or golf ball that went into a hole possessed an uncertainty that was less than the restrictions of falling into the hole).
- B.) Measurement and measure therefore co-conspire to produce certainty; which is the irrefutable position in which uncertainty is relative.

Then, 3.) makes the statement that covariance of uncertainty ensures semi-deterministic evaluations of certainty are possible, potentiated, and the normal behavior of the system. Certainty would therefore be defined (in the two body problem more extensively) any time we have a measurement apparatus which measures within threshold(s) that of a prescribed system to enjoy a behavior in which one 'ball' (a conch shell to the uncertainty) fits within the prescriptions of a 'larger' bound on certainty (a russian doll to the uncertainty fitting inside certain relations,) to which one prescription fits 'within' the range of its uncertainty; the tower now being built as a 'tunnelling' into uncertainty/certainty for which certainty is the result. The measurement apparatus here is the 'hole' and the measure is here the 'hole'.

Conclusions:

Principle of Codeterminism: Inequivalence

"The seamless incorporation of a bridge from non-relativistic to relativistic situations of mechanics is therefore the indication that exact pre-determination of certainty is a reality (for our measurement apparatus interacts via the only unique fit of these theories to one another); and that measurement of measurables is semi-deterministic but exact."

Principle of Codeterminism: Equivalence

"There is only one bridge from the two body to separable one body problems; of which is the equating of logarithmic frame composition and disjoint correlations of quantum states; and which seamlessly exists as unique and general; for it admits mutually codetermined, exact and certain measure of variables by and of semi-deterministic measurement."

Principle of (In)-determinism:

"Exact precision on the knowledge of position and momentum are codetermined and known simultaneously at the time of a measurement; however; all other information obtained proceeding or following a measurement of a semi-deterministic characteristic in the process of measure is indeterminant as to simultaneous knowledge to position and momentum; by which simultaneous knowledge that follows as an antecedent is of at most an undetermined nature."

Short Proof:

"Because uncertainty covaries; reasoning in return for that of the relativistic to non-relativistic bridge upon return to that of a macroscopic object; as general covariance is insisted and the results of measurement are null to coordinate freedom; it is true that uncertainty is prone to a relative interpretation whereby macroscopic objects obey a vanishing uncertainty for in the limit of scale growing to infinity we must preserve the return to a non-relativistic setting; one in which as alternatively position and momentum change we are forced to conclude that relative uncertainty is vanishing as the scale and number of particles in the object increase."

"The alternative is to have an uncertainty that interpenetrates our notions of relativity; to which when for instance we were to move away from the non-relativistic setting uncertainty would grow; not diminish; but by contradiction there is covariance of scale to which uncertainty must be seen to vanish as the scale, size, and number of particles in the object increase; relativity therefore setting an upper bound on the scaling of the uncertainty in practical terms; and to which when we examine a macroscopic object uncertainty is prone to a relative argument; by which it succeeds in becoming as large as the conventional uncertainty; but lesser comparative to for instance an other object (the hole); to which the piece then fits."

"Then; it is to that of which a relativistic covariance insists an upper bound on that of the uncertainty of one body for the sake of the other; which diminishes as the scale of the momentum and position grow by accord of equivalence of non-relativistic and relativistic viewpoints; the comparative difference of which relative uncertainty of an object in possession at half the position energy and momentum energy would possess twice the relative uncertainty; while reasoning from the other vantage (relativity) the body with twice the position energy and momentum would possess half the relative uncertainty of the other; here the comparable difference of bodies enclosed in that of their energy relation; for in that of reflexion of relativity upon the other theory there is the supression of uncertainty for the sake of what may be called casting of the one theory in the light of the other; to which relativity insists that by covariance uncertainty varies; the descriptive prowess of relativity (coordinate freedom) holding sway."

150 The Bridge

All we can basically do is build and disassemble bridges; bridges of the awareness whether constructive or deconstructive serve to establish relationships; through which contact is made invisibly through a relation; also being of five by six; the relation to one afar; in being capable of building a factual relation. This being the third message to what I have to say; beyond that of certainty and set theory; the axiomatics; of which I would like to write a book; my compendium; of which is illustrative. This if I were to do it would have the most pronounced effect on that of the world; and that of a book on the bridge between the linear and the non-linear sciences.

Questions:

- 1.) Does $\log(\tilde{\omega} \cdot \bar{\omega})$ expand or contract the phase space to eliminate or degrade chaos, sensitivity on initial conditions, or topological transitivity?
- 2.) What non-linear system does my circuit accord with; i.e. which non-linear system am I bringing under control in these various discussions and for that of irregularities?

Answers:

If I had indeed brought chaos to control or vice versa gotten behind the problem of the two body; this would confirmatively say that additionally I had 'control' over chaos; at least to a limited extent.

This appears to be the case; that of a limitation by way of two things; that of getting once behind the problem; and; via feedback; relating to the given as the taken presumption of information.

Effort:

My first effort should be to compare my equations for non-linear to linear superposition to that of the light emitting diode and photodiode input output system; of which it originated in.

I feel I have gotten at least 'once' behind the relation to which I am examining; for reception occurs a step semi-deterministically prior to transmission; on that of the gate structure.

Obviously; simple transformation of the problem will not render the results of which I have obtained; nor will adding more stages necessarily alter the outcome in the manner prescribed.

We must distinguish between control that would alter the system; and that which would leave the system unchanged; but elucidate it's given symmetry to produce that of order.

In this I feel I have accomplished the second; but arriving at a difference for which there is control exemplified by that of a small alternation of the system; and knowing which alteration is important.

There are two things that point to control over chaos being a cornerstone of my approach:

- 1.) I separate the coordinates of the system with non-linear feedback.
- 2.) I form a control structure which re-parametrizes the 'uncertainty'.

This lead to at least two conclusions as to what my device is doing:

- 1.) Non-linear feedback forms a 'loop' that follows the chaos to the point it renders sensitivity to initial conditions and topological transitivity mute.
- 2.) This is once 'behind' the relation of that of the source of chaos in the system; to which additionally chaos is 'met' with it's mirrored duplicate.

The basic synthesis of approach I can confirmatively inform as to relates to the continual diminishment of the system to a linear/linear signal-response; of which I believe there are remarks to be felt with that of bringing chaos under control; as a general approach; but to which leaves open

the question of:

- 1.) Separating out the coordinates of which Chaos is produced; to produce (and have choice) on that of a Chaotic system and a Non-Chaotic system.
- 2.) Getting once 'behind' the relation of semi-determinism by which two problems reduce to one; for there is the argument of reduction to null.

It is certain that something like 2.) is occurrent in my device; to which is new and novel; and that 1.) is occurrent in my device; but as to what merits they produce; there are open questions.

I may want to focus instead on what converts a chaotic system into a non-chaotic one.

- 1.) The dynamics were pre-existently non-chaotic.
- 2.) Designing the equipment was a tradeoff between chaos and control.

Further Questions:

Does this in any way alter the constitutive differential equation; and if so; in which manner? Obviously certain differential equations will yield strict inequalities on chaotic or deterministic behavior.

Is there some defect to chaos this ameliorates; as to say that what we desire is a slightly different system of which produces 'controlled' behavior; when what is situated control side is a variable?

Commentary:

This could be a way to shrink to 'potential' for the sake of the 'kinetic' in a two body problem; thereby bringing structural changes to approximations on the differential equation.

The only way this is something novel is if it makes one term 'larger' to the comparative difference of one or more others; of which goes the opposite way of our intuition about chaos.

There are now few forces at work; for there is only:

- 1.) What is situated just behind a reflection.
- 2.) What is it's compliment in this given world.

The reason for chaos is that: "The position or the momentum are uncertain behind the relation of going forward into time; for the surjective mapping onto the past time relation of an object is certain; and this is unknowable."

There are only so many ideas I can handle to saturate in a given context; so for what is included here; there are limitedly:

- 1.) The control on chaos was brought about by division of the system into known's; by which in holding one variable as a control behind the relation intimated a neutral background.
- 2.) Parameter ranges could be increased beyond a threshold in which chaos appeared; by control of known's; to which altered the original differential equation to one of control.
- 3.) Conversion of the differential equation with other things remaining the system lead to an

entirely distinct kind of behavior; one for which chaos was suppressed to reveal order.

Observations:

- 1.) It is interesting to note how introduction of the logarithm could alter by superposition that of the foundational solutions in which chaos was suppressed out of the system.
- 2.) The key is in resolving that superposition of solutions with an appropriate change in basis to a differential equation lead to an alteration of what is the prescription for chaos.

Taking it as tantamount to something 'hidden' - a variable; for instance to reveal another; is tantamount to taking something 'revealed' - a variable; to instance the hiding of another; hence it is circular.

If there were a hidden variable in the system there it would be:

- 1.) A relation.
- 2.) A variable.
- 3.) A parameter.

One idea is that superposition squeezes a variable out of the system (phase); producing a 'hidden' variable; by which in being not pre-determined relates to semi-determinism as to it is not determined until measurement takes place.

This is the only way in which a variable may be hidden from the system; the restriction on which is to determine causation limits the range of application of the inquiry to that of what is pre-determined to be measured for only this can 'situate' the measurement 'behind' a relation.

It has now been determined that hiding a variable from the system will not produce a diminishment in chaos; but that of pre-scribed measurement of a semi-deterministic nature can indeed determine a causal status that is one-way; to which the certainty implicated by that of the nature of measurement does indeed reveal order among chaos.

This much being certain; it is time to shift the argument; to which we hold the more modest viewpoint that 'concealing a measure in certainty reveals order among chaos.'

In this; detailing a system with a prescribed determination of two variables of a system; (as to the two body) definitely fosters revelation of order among chaos; because it simultaneously conceals part of the disorder.

Origination:

The original thought I had as to why semi-determinism would alter the outcomes of a system; was that it would only 'admit' certain measures into a system as potential 'outcomes' after a prescription was met.

Conclusion:

The most I can say is that:

"It is determined that; as only 'certain' outcomes are expected; that the system will only reproduce order given the measurable(s) follow a pre-determined causal arrow; and only these given measurable(s) are measured; to which it can be determined that superposition has constrained the system to an ordered system; from conversion of a differential equation."

"With measurement situated such that it is designed to reduce to two outcomes; and given that measurement is semi-deterministic in the flow; there is predicted a regime of order succeeding over chaos; for that of one return is before measure; and certainty is embedded in the equations of measure; to which concealing a measure produces the output of order."

Master Conclusion (I):

"As only certain semi-deterministic outcomes of measure are potentiated by alteration of the differential equation by superposition for that of which is measurement; measure is constrained to fit an outcome of ordered relation."

This is therefore a test on that of measurement versus measured quantities; returning the confirmative that measure is certain and measurement is semi-deterministic; by the logarithmic conversion to completeness in unity for probabilities of particle 'A' and 'B'.

This is as far as I will go; but to leave this in saying that "Without measurement there is no uncertainty; but that measure and measurement are simultaneous processes; going only* one step further to say that:

Master Conclusion (II):

"Measurement can therefore be construed by superposition to lay within ranges such that measures are pre-determined by a prepared process to a relation of order; conversion always going directly from chaos to order."

Master Conclusion (III):

"Therefore I have found a process of measurement that produces order; by simultaneous solution of two differential equations in the two body system; without which there would only be produced chaos; as a control on chaos."

It takes 4 and 5 steps to declare and construct, build, and confirm a known fact; for there are two steps through which confirmation and refutation of negation take three and two paths; to which there is one dual of imputation and one differential step of offset at the terminal ends; of preliminary knowledge; of which reduces to two and one; that of a foundation and one newly produced fact; the steps required for a certainty to certainty bridge; with one step of look ahead or of a step of look back; seen as a mapping.

- 1.) The logarithmic (dual) stage of superposition is built into the hardware.
- 2.) This admits resolution of the two body problem; to which both resolve.
- 3.) The logarithmic stage(s) are once behind the process of measurement.
- 4.) These log stages reduce the two body to a simple harmonic oscillator.

The departure to a new system; of thought; and of prevailing factors came about because of a

few changes to the system:

1.) Change in coordinates (active).

At the least this serves the purpose of illustration of a study on how a chaotic system can be tempered and controlled; leading to a system of order; for which the declared variables do not change in interpretation.

We can (definitely) say:

"The addition of logarithmic stages separated the two body mechanics into one body mechanics which obey a simple harmonic oscillator; therefore bringing a chaotic system into control; and producing a system of order."

In a limited way this is then a way to convert a two body system to an ordered system; of simple harmonic oscillator variety; in the context of a chaotic system; it goes only as far as the production of order from chaos; and to which it exhibits reliability and interoperation of two styles.

1.) The underlying differential equation has definitely changed; however to which it is adjusted; it hides a relation by which certainty is imputed; therefore we can answer questions of the variety of the measurement paradox.

2.) The two body had reduced to a series of one body problems; to which we can answer questions of the nature of semi-determinism and certainty; the measurement paradox; and the irrefuted conversion from chaos to order.

They would say that I am talking about a different system in that I have altered the foundation of my assumptions; to which I am afraid I cannot make this contribution at this time; but can foster a viewpoint of the following:

1.) "When it is required to control a two body system; the admission of logarithmic stages although altering the differential equation; produce a system by superposition that will operate as separately given simple harmonic oscillator solutions; to which is the 'bottom' relation of which cannot be a misconstrual of chaos or order."

2.) "The addition of logarithmic stages separated the two body mechanics into one body mechanics which obey a simple harmonic oscillator; therefore bringing a chaotic system into control; and producing a system of order."

(But these are in confirmation of my Thesis;) This is therefore what I should be reporting on; instead of that of:

- 1.) Semi-determinism and certainty of measurement.
- 2.) Conversion of a chaotic system to a system of order.

The fact that "1.) and 2.)" work is testimony to 1.) and impartially 2.).

In fact without (1.) we fail to produce order in that of "1.) and 2.)."

In this the result of the system is dependent on two (real) factors:

- 1.) It must be a certainty that results from semi-determinism with the introduction of the logarithmic superposition rules into certainties 'A' & 'B'; for the result is deductively derived from a relation of certainty developing as a given consequence; to which is the derived capacity that addition of logarithmic stages had capacitated order from chaos.
- 2.) Measurement must be semi-deterministic in general comparatively to the measure of which is certain for outcomes 'A' and 'B' to both be produced; to which the given factual relation that only outcome 'A' was produced; indicates by inflection that there is a certainty on the bridged notion of what is being produced as order from chaos.

Reliably that is; too; for my device reconstructs that of the identification of touches through personal contact; the ideation that is the instruction that this is a deduction from a machine; and that of the control brought about on that of chaos into order by the logarithmic stages and the deconstructive superposition rule into only outcomes 'A' and 'B'; to which deterministically we can force the machine to participate in a behavior to which it is not merely sensing; but 'responding' actively; to which is that superposition has prepared the state into a determinant 'A' or 'B'.

151 The Tree of Fireflies

The Tenement of Inertia:

“If one; a body; were to take a position of the predicate to it's given individuation; for what for one would remain solid; the position of it's alternative given provided; the multiplicity of the preceded are as a taken; known only as the given of the presumption of the position of in one; that of motion; to which they are bodies of which in multiplicity or at rest; a given in motion.”

The Given of the Whole:

“To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.”

The Salvagement of Knowledge:

“The lightness condition of which is to the greater of knowledge and in it's leverage in weight; differs from that of the volume to the surface as in that of dimension by one from integral to differential.”

Introduction

The 'Tenement of Inertia' and the 'Given of the Whole' indicate a preliminary observation; that this world is composed in such a manner that the co-existence of both statements ensures that the surjective limit is smaller than the injective limitation of any set; as if time in it's determination of certainty; makes the past 'solid' and the future 'soft' and 'congruent,' meaning; the determination of one for the other is directed at the future; but directed 'back' at the past, explaining the direction of the arrow of time; to which the 'Injective' relation is to a past; and the 'Surjective' is

to a future in this diagrammatic expression; precisely because the universe is built as it were to answer a question.

Complimentary to the “Tenement of Inertia” and the “Given of the Whole” is the “Salvagement of Knowledge” to which as time passes; and dimension subtly increases or decreases it is noticed that as the height of a three (or four) cone diminishes comparative to a cylinder that when the volume is accounted for; at the difference of a dimension; that as we account for the notion of knowledge; as it vanishes to a point; the ‘lightness condition’ ensures that the integral of the boundary is greater than the volume, to which dimension increases by one; therefore information and knowledge sinks.

We therefore have two tenements and one principle by which the Universe operates:

Tenements:

- 1.) The Tenement of Inertia (Co-Determinism and Change)
- 2.) The Given of the Whole (Persistence and Certainty)

Principle:

- 1.) The Salvagement of Knowledge (Displacement and Invariance)

First; it is important - if not imperative - that we check for any circularity in our dialog through which something ‘other’ can fit of a relation; there is for instance as an example the ‘self’ and the ‘other;’ of which play prominent roles in philosophy.

Second; it is important - if not incomplete - that this leaves us asking a question; for which the answer must be directed at it’s cause; to which it is known as an ‘effect;’ and to which there is for instance a ‘self’ and an ‘other;’ to which metaphysics uses as a predominant ‘utility’ or ‘tool’ in explanation; if not the entire thing; a subelement.

The tenements and the principle at work here are both exchangeable with the ‘self’ and the ‘other’.

Under their limitation to one observer; they are both the fulcrum and the pivot; to which in either knowledge is their weight and their balance in integral or differential; to which the lightness and heaviness of knowledge is their metre; and lightness their balance; for in that of one moment away from the Salvagement of Knowledge is found again the Given of the Whole and the Tenement of Inertia; by which lightness and heaviness is a continuum from bottom to top; and the Salvagement of Knowledge; leads from the ‘Tower’ of ‘Wisdom’ to the ‘Path’ of ‘Excess.’

Therefore there is a corollary to these three; of which does not form a fourth; but it’s limitation upon that of the three given (two of which are tenements and the third of which is a principle):

Corollary:

The Permanence of Change (Impermanence and Change):

“Strict singular presence is non-indicated as co-determinism lacks a stringent occurrence; there-

fore geometrically free properties of a system are endowed by the mutual and the other of which any fourth is independently determined from out of and in relation to the three of capacitative mean.”

“The Permanence of Change” in contradistinction to the “The Salvagement of Knowledge” is a displacive theorem akin to the same nature; however in dealing with particle limits of finite quantifiable elements; there is freedom to that of accounting in either of the tenements.

The corollary would have that what we perceive as changes is really literally a singular agent known as ‘change;’ this corollary fitting together with the first principle; as once literal accounting is accomplished; an event has passed into the past; and remotely, nearly, and fundamentally as in spatialized understanding fails the prescription of the first two tenements but to that of their agreed ‘partitioning;’ to which the consistency of the system owe’s it’s due; for changes in these are their paramount role; in that of promoting a cycling of the four elements to which either agree with the foundation of knowledge being an impermanent and dynamic agent differing from other theory.

Reality can then be seen to be four dimensional by the following argument:

- 1.) We have geometric equations on that information of motion (1) and (2) and that of a multi-body problem (3) and (4); of which there are three determined undetermined in relation to one; for which one may with any four be considered unrelated; this being the free theory we arrive at then.
- 2.) Under reduction to which is that which we are left with; there is in being only one non-observer.
- 3.) This can be visualized as a non-self; but it is the emptiness of the self of non-existence by which there is left that of a physical item; within such as the example of the free addition of work to two.
- 4.) Since by the lightness condition of reality; the simplest theory is usually the true one; this is all we are left with under reduction to any number of observers, observables, agents, or coparticipants.

Therefore there are four of which (the analogy with a Penrose Tile now becoming clear).

Two are tenements.
One is a principle.
One is a corollary.

From this it was deduced that no such thing falls into a category or classification alone; but by way of properties and qualities; as such this theory fits a final test; which is all that such things do; the dichotomy between properties and qualities being strict; by that of the tenements and corollary.

With this we are equipped with the major agreed viewpoints to make headway on the problem we are concerned with: namely that of ‘Superconductivity;’ the first main point the last to be made before venturing to a diagrammatic depiction and several illustrations of the inner and outer operation of these novel materials; the analogy with a “Tree of Fireflies” now becoming

clear.

Motivation (Why & How)

There are other considerations to be made for our understanding of the universe; one of which is the inverse limitation; the golden ratios and spiral; and pi and e; that of natural constants; of which the generating ideal is that these all fit a relation of the non-spatial to the the non-spatial; that of the relation of for what would be a mathematical congruence between sets of non-spatialized data sets. The open conclusion is virtually any element; so the justification is in very general terms; as to what prescriptions we can place on our system; it defining any potential four dimensional reality to which we could embody; the structural ideas being of two in their nature; the Penrose tile; and the also so often mentioned “Tree of Fireflies;” one active and dynamic; one rigid and unassuming; but of their nature random and apredictive; but the one structural; the other decompositional and a continuum.

The Tree of Fireflies:

1.) In very general terms we can identify reality with a tree to which cycles a random chaotic cycle; returning eventually in cycles of waves forming a continuum life; a structural element of which is decomposing and reassembling continually on an edge between life and death of basic substrata.

Penrose Tiling and the Game of Life:

2.) In very specific terms we can identify reality with a network to which patterns assemble and disassemble in non-random very strict orders and non-periodically vacillate and come into and go out of existence at nodes; to which compositionally is composing moment by moment by vectors.

The main idea of this treatise is now seen that there are two natures of order and complexity; to call a beast by it's name; and that there is but one nature to chaos; to which the other; chaos; comes in many varieties; the purposes here two; to which the topics are their organization and perception:

- 1.) To make sense of why order and complexity fitting in but two categories are situated ‘above’ chaos; and that of order at the bottom; but enclosing chaos; for we there is a way to tame chaos.
- 2.) To make sense of the fact that chaos is often confused with seemingly very complex and intricate order; of which is evocative of the difference and similarity between disgust and beauty.

Questions

- 1.) Is it the purpose of a complexity theoretician to dissect order from chaos and classify; can a dividing line be drawn?
- 2.) Is this a predictable outcome; or will we always find order within chaos and chaos within order at every scale of reality?
- 3.) What is the fundamental difference; what purposes does it serve; why is a discussion impor-

tant; and what difference does it make to science to know of this distinction; the purpose being limited to our instruments and artifacts of nature; is the evidence even present and verifiably evidenced?

Differences in Argumentation Style

Lightning is an example where the phenomenon is chaotic; and unpredictable; but while the valence bands of atoms on the surface of the Earth; and in storms are predictable but are underlaid with complexity; lightning is chaotic; while the underlying situations that gives rise to lightning are not.

Similarly in superconductivity; but albeit very different; the phenomenon that gives rise to superconductivity may be chaotic; but the otherwise resulting phenomenon at the heart of this problem is the direct opposite; being the consequence of chaos and therefore of complexity.

This is at the least the way such a situation is seen until it turns around; and there is a revolution in insight; to which we pin that one peg on the insurance that is chaos and complexity and a given situation turns around to our benefit; of which the various trails of evidence lead together; to where we as a theorist had hoped they would some day; but could not predict for very real and yet not so identical reason as to what we began with as an argument, for their default conditions of rest and motion are unrelated; and seeing something closely related to chaos but more a logistic problem to which is indeed similar but not identical to chaos; we find that complexity in disguise is therefore definitely not chaos; and what occurs in our thinking is given validity; as a vastly complex problem becomes amenable to analysis; complexity reduces; and chaos is swept aside as a valid possibility.

This fundamental shift in thinking similar to a phenomenological reductionism does occur in reality.

The world is non-dimensional; as I realized; a system that incorporates space and time incorporates change; and therefore conventionally speaking; that of space via a dependence is found without the dependent attribute of a point to the differential; for which is merely a stochastic set for which there is a difference mapping that of the prior space into the last; for which all laws of symmetry of physics subscribe to; the world is therefore for example equivalently three and four dimensional:

- 1.) A simple harmonic oscillator takes upon a form of a variable of displacement and time coordinate and differential; a three dimensional reconstruction of which in it is a solid volume.
- 2.) A simple harmonic oscillator takes upon a form of only position that of a zero dimensional point exploring a variance in another variable; and is therefore equivalently one dimensional to a point.

In all cases the relation is a solid and is a mere whisper of it's relevancy; therefore by the lightness condition; time being the reversal of reality (and if we take this hypothesis) is agreeably equivalently zero, one, two, or three dimensional, or even four; to which we have saturated all dimensions with that of a point; into a solid relation; the principle of displacement of the Salvagement of Knowledge; and then, utilizing the corollary of impermanence of the Impermanence of Change; there is noticed that the reduction of a system to it's non-determinant degrees of free-

dom reveals the universe is both non-dimensional and dimensional; in that it is any dimension; and strictly non dimensional; as equivalently a mathematical object; of which is exploratively one and the same in any dimension; to which although truncating to four dimensions; contains a hidden symmetry of infinite dimensions.

Displacement freedom and motion are as real as matter precisely because there is a movable identity in that of physics; the fourth dimension seen in this light is really just a congruence of two factors of the identity to which certainty is but one; and found in that of the double blind test; to which it owes due to play to that of a predicate logic upon which the universe is founded; nothing then being beyond the comprehension; but of a past that is certain; in every manifold of the relation in bearing due to the precedence of logic; by which facts are intangible to a relationship of recovery and their exemplification to which they are recomposable by the following train of logical dialectic and dialog:

For instance; I know that when:

- 1.) If a condition is an obstacle to a cause we know that if something occurs spontaneously when we remove the obstacle the pre-conditional is its cause; to that of the conditional; then known as a consequence; to which there is a certainty that is absolute by case coverage to one.
- 2.) Therefore if but a path by a secondary condition is removable and presents itself through a flow to that of a primary pre-condition; there was an obstacle to which a conditional now has and possesses two avenues; to which we can be certain under the terms of blindness of a freed relation; that of a consequence now becoming what was of a condition in a freed relationship.

This is the first example to which we know of a cause; of an event; a process, or a configuration of such elementary principles of science with certainty; for instance an instance of a double blind.

And I know that when:

- 1.) If under removal one thing causes another; it is not a pre-condition.
- 2.) If under an enumerated set of things the introduction of the same causes a thing to which is a 'not' of (1) it is a cause as it is a verified precondition.
- 3.) If and only if step (2) precedes step (1).

Therefore; there are a full (5) ways to reason about things; of which form the fourth dimension; where all the excitement occurs; and to which we owe presentment of evidentiary means; but at the end can 'point' to the evidence of a case causal argument and refute or document a progression; the open question being what happens when we insert a double blind test in that of a random causal process; to which chaos is privileged; does it order and go into complexity; or does it smooth over?

To test this question we need an ideal example; such as lightning; usually; the addition of a spot lightning rod suppresses lightning; but every once in a while there is a condensed superstorm of which will strike loudly; proclaiming that of an example being made; or that of which is to order what is complexity; although chaotic; it is clear that addition of a double blind test to chaos causes it to revert to a slightly more complex behavior and of which when simplified is no

longer chaotic; or at least so as to what we began with; then it being the hope we can introduce a double blind to chaos.

Chaos then takes the guise of complexity when simplicity is either too loose or too taught; to which chaos improvises a catch-22; that of which it depends on being an attractor; and the sense of which contains a divisive factor; a single parameter in one portion of the subspace reverses sense; leading to chaos; or complexity; a number that is too large or too small for comparability; the factoring of which in the equation then fails.

My device can be utilized as a test of this hypothesis; to which the factor of 2 to 5 on control parameters; with a reset and a double blind yield two questions:

- 1.) If I had control of chaos with a double blind test in the first place; why would chaos have appeared other than exceeding control parameters?
- 2.) If this is a dynamical or an inherent property of the device; will it in turn become an inherent or a dynamical property of ancillary devices; and what does this tell us?

In other words I want to get to the heart of complexity; and simplicity to be derived; chaos is a second hat or a second incarnation of the unequipped measure to it's own excess; through which derivation takes it's role as the mediator; so if a system comes prepared to produce chaotic or complex behavior; what is the take home message as to what chaos can be controlled; and does this simply derive from the two body equation; and in which manners; for instance; I found I could pick up presses; but as to multiplicity; there is a limitation in bearing; that limits it to just two.

To really consider the question of what would have happened had something else earlier happened you need consider an even earlier moment; because there is a context for creation; that despite what we do; things are the way they are as a consequence of earlier events; then; that to consider a time before activity; is really only possible by an action prior to a 'mirror' world; where one must exceed the speed of light; to move beyond this 'mirror world' to see what is realistic of a past potential future; that is to say; the restriction that is time must drop away; to consider thoughts in duplicity.

This is one manner in which to make it beyond the chaotic realm which does not involve imagining a different (ever so subtly) set of case scenarios; and to depart from here.

Conclusion of Argumentation Style

Certainty can be defined in a quantum and relativistic sense when one considers the one body reduction of the two body problem; for instance; to say that one particle is in a pair is eliminated by reduction; among even two variables; one is always eliminable by the consequence of which is that these follow from a statistical rule; whereby the addition of any two expectations is equivalent to the overlap of their separate expectations plus the overlap of their expectations taken separately.

This is what allows the universe to develop in an ordered manner; that for all there appears to be; between expectation and measurement one variable is eliminable to which the other under it's reduction is the simplistic refinement; the alternative; rather than a cycling for what are momentary

relations; we can be certain forever of physical law; and certain for an instant of a factual relation; to which it shies away from the tendency to think in dualistic modes of thought about chaos.

Chaos then, in its fullest form; is the entanglement of two uncertainties; to which when one manifests the other is partially unmanifest; neither one winning that of the variance of odds; to know; as to if chaos even exists being a mystery to all but what will manifest as a consequence of this writing; and to which there is a difference at odds; for in its refinement; there is a difference to which as it is potentiated to build a machine for which chaos is brought under control; the question as to if it genuinely exists.

We then learn how to control chaos; and from which there is derived as of an expectation; measurement to proceed by its perfection in accordance with control of chaos; then to know that chaos is but one; for we can build a machine of measurement of chaos; that is not in turn chaotic; but controls chaos; then seeing that complexity is a duo of machine and chaos; to which registers information in an ordered sequence via that of control; and into which the world may possess a binary split of machine and machine.

A machine may then be in one of two states; seen as a device of which is producing complexity; or observing complexity; and the real world determined up to a test yet to be formulated as to if chaos exists; but indivisibly like a machine; and capable of this as a fundamental; of an additional cross section; that of machine; and that of nature; to which it is partially machine and partially nature which produces the chaos.

That of a perfect machine; in strict adherence to genuine chaos; and complexity in nature when observed by machine; indicating that of chaos in nature; and complexity in machine; whether observing an alternative machine; or that of nature; then the machines derived from nature exhibiting complexity enclosed in chaos; all other factors then to which we ascribe are either the result of a machine producing or observing complexity enclosed in a system that is open to chaos; and enclosed in two natures additional of complexity.

This entire system is then five parts; to which emptiness enters the picture; for to say that one variable is undetermined leaves the door open to that of evolution.

Summary

This ultimately allows us to disentangle complexity derived from chaos and genuine complexity; derived from a process of measurement. Even in as much as a machine is a part of nature, then, a machine is a system of complexity, to which it is only capable of producing complexity or observing complexity. Therefore I have determined that complexity derived from a machine or observed in a machine is the only possibility; to which when the two body problem seen as a set of two one body problems determines exact certainty. Therefore true chaos only occurs in nature, and exact certainty is possible.

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I.) Given the prior device is an ideal heat engine with transposition and level set inversion on the density of states with input and output; it suffices to go over first a preliminary notion of what the mathematics means with that of variance in mind:

$$1.) \zeta * \chi = \xi * \lambda$$

Where either are resistance or admittance.

Is equivalent to:

$$2.) \xi(\beta.\alpha)$$

Where either are a ray or vector; and their product a form.

$$3.) \zeta(\delta.\alpha)$$

Therefore variant free list structures exist in visualizable space of a stereogram:

$$4.) \zeta * \chi := \lambda(; \gamma)$$

Is a delimited subset as frequency by that of it's wavelength dependence to the effect of dispersion freedom in the net product of resistance and current.

$$5.) \xi * \lambda := \chi(; \omega) : \alpha.\Delta = 0$$

And we suppose that the frequency (ω) is a lagrangian point by measure comparative to that of dielectric to which the apportion of voltage dependence with the given of net displacement is null.

$$6.) \Delta(\alpha.\beta : \beta : \Omega) : \Delta(.)$$

Such that the gap of dielectric response on the voltage and admittance is such that a frequency distribution holds; the gap is free of dielectric response in voltage and resistance; and therefore wavelength and frequency; and to which the argument of attenuation is dispersion free but constrained by measure(s) of voltage and resistance; or alternatively frequency and wavelength.

$$7.) \alpha.\beta : \delta.\gamma$$

Effectively according to a constraint of frequency to wavelength and frequency to wavelength by measure in accordance with temporal and spatial extension freedom comparatively to their complimentary wave-number but of equivalence for any two accordant waves.

II.) This may be alternatively read as a free lagrangian associated point of null entropy to which frequency and wave information in the dispersion (suitably smooth) is associated with and free of that of the displacement on that of current and voltage; for (suitably chosen) dielectric and impedance independence of relationship; to the effect that:

a.) The constraint of impedance and current are codependently determined as a constraint between any two waves under asymptotic freedom of but the dependence on one argument; that of a wave argument to which the determinant factor is a distribution; that therefore holds by the

breaking of impedance to voltage relationship of constraint; and it's freeing to that of frequency information; for which measure is free.

b.) Admittance holds a strict dependence; and by elimination that of the freedom of a wave structure on that of gap structure of their combination and recombination with shared argument to that of either ray or vectorial representation of admittance or resistance with any two waves; the effect of which is that of independence over gap comparable to wave argument of a strict measure to frequency and wavelength; for which weight is free.

III.) The end effect is that wave-structure is dictated by the principle of least action to which any two comparable waves are privileged to a dispersion to wave structure similitude and equivalence of freedom from direct resistive intermediary attenuation or gain; for which measure is weightless as a frequency admittance contribution under combination and recombination.

IV.) This is therefore a free electromagnetic point domain of topological extension into semi-partitions of topological nature that carry different representations in every finite Hilbert space or that of carrying information in a subsidiary space of which the whole smooth function is a relation of space to time that is free via wave structure; or complimentarily wave structure is free of space and time; the result of which is an energy and momentum freedom of asymptotic form.

V.) This suggests that complimentarity in non-linear Fourier series is as simple as replacement of the ordinary differential in the Fourier algorithm with the Lie differential; to which any two definite Fourier representations take on the form of measure to weight freedom of which are constrained by a space for which the global degeneracy affords locality to any two given local signal constructions.

VI.) There are therefore two open considerations of what has been innovated and implemented:

a.) That of a holographic dual to a null electromagnetic point; to which there is conservative application of smooth effectual ordering on randomness and contextual processes; to a dispersion free weight and measure of wave structure and dielectric wave impedance.

b.) That of a decision chain/tree to which equivalently; are founded the forward bias / reverse operation point of strict codetermination by procedure on partitioning of states for which produces isopotential surface / point / wave / curve organization; and ordination of states.

VII.) Certain chaotic attractors define chaos in different manner; to which there is (or are) a number of distinctions to be formed; that of the dimension and the fractal dimension of it's operation playing out by way of their imperative; and their compliment; in the space; that of control obtainable by the imposition of one element of determinism (in multiplicity); but in fundamental form; a manner of casting the few ahead of the many; and then a compensatory step 'back;' a stage of which may occur in one.

pp. 165 Moon; "Not all nonlinear problems have bifurcations as the sole route to chaos."

It is interesting to note that a subwoofer with water in a cylinder will exhibit chaos; to which (m,n) are interference numbers; questions:

- 1.) Is it possible to utilize interference as a way around chaos?
- 2.) Does this describe the approach to chaos in the device by (m,n)?

As an aside; what happens when two Lyapunov exponents in order of dimensional reduction to that of the ordering of their different sizes is inverted by one step? Would this produce the observed order?

VIII.) Applications of the technology go to the secure imposition of at least two definitive uses; for in that of which it is radiological; there is the utility of making availability an open (or closed) question; the freedom of 'opening' or 'closing' a one-sided dichotomy by that of its availability and certainty of disclosure; to which freed relations are directed 'back' at the side of the opposition; and serve to suffice that under protocol's the connection is always in a fundamental sense 'open;' but to which 'closure' is a question of its 'disclosure'; a secure means therefore at radiotelemetric and number theoretic elemental analysis; solving the problem of a one sided lock and key; and that of secure means to which 'defenestrate' whenever there is an accompanying co or counter agent; the division of three; to which means to suffice to the resolution in one point of the many to one problem; and its counter-position; incorporated into a commonality of stylus and variety of imposition; for which it is 'cast'.

- 1.) Secure means of radio transmission & reception.
- 2.) Secure means of radio wave storage or open point-contact; under independence of machine state.

IX.) Given the configuration of the original device; I have inverted the De'Brogli wavelength over the Compton wavelength; to which is a Lyapunov exponent inversion of which yields order.

X.) I will need to relate the above mathematical ediface to that of the differential equation for the system in terms of voltages; to which matches (precisely) that of the V_{LED} and V_{PD} equations found; to produce the superposition equation and enumerate properties of the device; it is:

$$(y')^2 = \gamma + \alpha * y^2 + \beta * y^4 \quad d^2y/dt^2 + \alpha y + \beta y^3 = 0$$

Perhaps it is as simple as one candidate 'y' being the non-dimensional V_{LED}/V_{PD} and the flip-side of this relation being the open constraint on either of V_{LED} - or - V_{PD} . It is clear that the 'double well' of which this is; is intimately (and closely) related to the observed chaos; but that some nature of control has been implemented; and as to precisely what this is will take work to explain.

XI.) The Compton wavelength therefore is larger than the De'Brogli wavelength; for which the current traps light. One thing to notice; is that as the eigenstates are pure Elliptical functions; what we have is a Set of Linearly Independent (but Non-linear) (Non-)Interacting States.

Intentionally concealing a frequency of (V_L, V_P) has resulted (with the intial condition)and log log transformation/superposition the result of semi-determinism on measurement; and non-linear superposition eigenfunctions.

The superposition equations:

$$C = \alpha + \beta = \log(A \cdot B)$$

$$D = \alpha\beta + i\sigma(t) = \log(A \cdot B)$$

With:

$$V_{P,D} \leq V_{L,D}$$

Intentionally turns chaos into order; because concealing a frequency prohibits chaos from manifestation; due to the nature of which is a prohibited transition; the return implication of which is that measurement (under confirmation) is a semi-deterministic process; due to the nature with which a look-forward on frequency in the map prohibits a transition to chaos. The offset is a Set of Linearly Independent (but Non-linear) (Non-)Interacting functions as the basis because one function separates in to two under superposition; to which one non-linear function (as a superposition of two) replaces that of the harmonic 'parent' function which was concealed; as to which geometrically there are two solutions to the elliptical differential function of positive and negative nature.

XII.) This representationally means the factoring of the spin equation; for that of the rotational inertia of the photonic field; and the electrical field. This means a factoring of rotational inertia.

What is different about my proposal for controlling chaos and non-autonomous systems?

The variable (t) and for which phase (phi) is conjugate is suppressed out of the system; becoming non-dependent for that of a symmetry between two bodies; into which the system factors into one body problems; of which through degeneracy of dynamics and probability; a seemingly four dimensional problem of wave mechanics becomes that of two dimensional by reciprocity; or as then an eight dimensional problem becomes four dimensional; a full reduction of which is from two bodies to one; a situation that takes place by the dissection into partial differential and position itself; before which chaos onsets; for that of which is a two body dependence and therefore of a quasistatic variety.

The differential manner of seeing this phenomenon is that enqueued variables become as it were variable-less; to say that the differential of the curvature is found equivalent to zero; a condition for which equivalence states that the probability has 'stopped' moving from one position and momentum to another for the two body problem; then that of which it is seen as; there is a moment and gap for which certainty is defined for a duration; of which stabilizes when either of the two phenomena of synchronization and permanence settle into position and momentum states for which they are inseparably divided by a zero of the system; then equating with a divided system; of which only possesses states 'A' and 'B'.

How is recursion handled and why does it spontaneously disappear from the end solution?

This problem orchestration method enfolds chaos into that of the underlying behavior of which is at least periodic and at most quasiperiodic; to which as one the particle trajectory cannot escape that of the thresholds (interior on chaos - sensitivity to initial conditions) & (exterior on chaos - global transitive condition) for which with one body obeying a strong interaction with the (or a) second one body in the two body problem; it is analogous to the suppression of time by a strict symmetry between time and space; on the two bodies; as then they are a part of a construction for which either are located in each other's very real conservative potentials and kinetic regimes and are therefore a non-autonomous system.

How does the threshold fit outside or inside the window of performance of measurement?

With recursion in reference to the individual one body problems; it is no longer a square larger; so the error threshold is below the threshold of the window of performance of measurement by a factor of 2-5 because this is where they fold into the same proportion of weight comparative to the distribution sum of squares (that of the harmonic oscillator); irrespective of the control on amplitude (shared); precisely because the window of control is larger by a factor of 2-5 from the square root relationship on that of the error margins; which are kept in a tight balance; due to the fact that one phase and motion is factored via superposition to a difference of two linear variables; instead of global sensitivity; local.

Additionally, the relationship is kept to a self-filling property; by which the beginning or initial condition under strict relationships of control falls into an orbit at the semiclassical radius 'outside' the regime of fine structure error and 'inside' the strong perturbation of the regime of fine structure inverse; between low tones and high tones; of a moderate regime of 1-20 on frequency; to which it is in part self generating; yet forcible; as to focus and delimitation therefore of error and strong mode locking; a control on the focus of the wave information when powered on; to which zero's the relation of error, suppressing it.

This only takes place when we have a window of driving between elements of particle and wave which are comparatively stronger driving one another to that of external sources on either alone; as they coparticipate; for which the resultant behavior is that subtle forces merely shift slightly the result within a range and within margins; causing that of the control mechanism to take place with resilience where there is a two body problem; or where the behaviors of a two body problem are recomposed into one body problems of which overlap and recombine apart by two body problems into one body problems.

Why does recursion miss the other end of catastrophe; and in avoiding a system collapse?

Similar to the moon; apogee ensures a stronger attraction when in accordance the body follows a retrograde motion (the Moon); otherwise on approach moving ahead of the Earth; to a diminished attraction; and a weaker barycenter of mass; meaning the Moon in retrograde motion prevents comets from striking Earth all but dead on; for that of what in effect becomes an ever decreasing eccentricity; otherwise alternatively striking the Moon or landing in the Sun; or having traversed the empty position between the Moon and the Earth.

Why does all this take place in the system established; one to two body system & retrograde activity?

The system separates the impedance relationship which couples 'position' to 'momentum' in that the separable current and voltage states of the system are recomposed into a super symmetric superposition; of which divides their behavior from squares into sum squares; therefore becoming linear; and suppressing error interior to margins; and forcing behavior to the outside of the control regime; at the least obtaining control over feedback of the two body system meanwhile avoiding that of any sensitivity on initial conditions and topological transitiveness; to which there is reproducibility of send and receive pickup in 1-20 frequency range; 2-5 in amplitude; and one or two press reception (first and second harmonic); of which is sufficient with (1st and 2nd harmonic's from 1-20x in frequency) to recombine two touch's.

What application does this have beyond control of dynamics of complex systems; is there support for computation?

This has application in computation for the reason that it is a definitive universal gate; mimicking what would be required for that of a genuine zero and one discrimination; and to which it verifiably divides on potential seamlessly that of pre-computation of zero and that of reassembly of one; for which bridges the gap in that of the computational spectrum; from that of the most primitive switch and that of a supercomputer; to which it simultaneously accomplishes the computation of preparation for and, or, and the other fundamental gates; that of which when utilized properly is a situation for which zero, & one take on meaning; so for instance this can be utilized to test or reset for zero or one; and or in that of gate design.

To what extent are the electronics comparative to a sieve for which determinism holds an equipartition preliminarily of comparative difference?

To the extension of the logarithmic stages; there is pre-determination of light via cones; which are the rotational high pass filter of the differentiation stage; to which with a topological argument of division into pre-liminary observation and post-relational partition and sequestering of the coadjoint negative impedance stages; determines a cap and release to which determination is made with a strict xor inequality on that of signal reception with isolated transmission; to which either up-level transistor logarithmic stage inverts the process to determination and codetermination isolation from that of topological and geometrical dimensional division and argument; therefore the process of raising a potential to cause an electronic gap jump is inverted comparative to measurement, determinism, and that of influence via a population inversion analogous to a laser.

Does coherence and collimation proceed to free information retrieval and manipulation without exhausting the energy supply; and to what extent is the light wave interacting?

In this the device acts as a sieve to separate (selectively) order from chaos, randomness, and noise; to which with but one point like limitation of null (yet an electromagnetic fractionally ordered unit) is imputed by that of interference (of separated constructive and deconstructive variety) to which the interior of the light-corpuscule 'grows' and spontaneously meets the second law of thermodynamic law on information; with local reversal of entropy to the effect of the production of determinism of a regularized fashion; that of equivalence in measure and frequency of containment of the light field by a moment interior to the electromagnetic current; on to which reversably operates via hysteresis in on/off power cycles; and of which when operational orchestrates a folding of determinism to touch reception; by way of which there is bridged the nonlinear theory of thermodynamics.

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What it is I believe I will arrive at (and to what I wanted to do); is a complexity of the number of Fermionic states by the number of Bose states; filled to 10 layers. What I should expect is a 'bridging' of the Fermionic to the Bose gas; of which I have essentially solved for out of my superposition equations in the two body problems; with that of Linearly Independent set of Non-Linear (Interacting) States.

- 1.) A semi-deterministic engine for decisions.
- 2.) A factual generator of what is known.
- 3.) Then a decision tree choice function (the program) to relate known decisions to facts.

This then yields a study of chaotic attractors in miniature; due to the: Linearly Independent Non-Linear (Interacting) States; for instance to choose three free variables (to which are bodies); and seven to study them.

- 1.) Non-linear to Linear Superposition Formula (unconfirmed).
- 2.) Indistinguishability and Degeneracy favoring Sharing of Representation.
- 3.) Co-variance in Uncertainty equivalent to Shared Proper Time.
- 4.) Resolution of Measurement / Measured Paradox.
- 5.) Device Confirmation of Factoring of Chaos into Controlled Order.

Questions:

Q.1.) What does this have to do in particular with the limitation that is the classical world in the refutation of the quantum limitation on observables?

The classical world is seen to be an emergent phenomenon of semi-deterministic nature both at the microscopic and the macroscopic scale; to which control and dynamics plays a key role; that of the refutation of quantum mechanics being that there are two points to which are deterministically free; any two points; no secondary observer; and no tertiary observer; to which the certainty we demand (not just of the past or present) is furnishable in a given future context; and to which forces emerge from measure covariance and this point like freedom; judging that the forces that emerge are byproducts of a complex; ever evolving process; of which the classical world is it's arena of reduction; that of chaos fading and growing; as would be the case of a world that embodies parsimony and synchronicity.

Q.2.) Is this a refutation of uncertainty to which the 'Shroedinger Cat Paradox' is refuted; and an impossibility or decided?

As it turns out this thought experiment is furnished in such a manner it is unfeasable to test; the refutation that is simple as the non-admittance of a cat, box, and apparatus to fit into the same relation. Therefore Schroedinger's cat paradox is decided to the fate of the cat surviving; and the isolation of one observable to an other an impossibility; to which uncertainty places a restriction on locality of the small; there is an uncertainty that grows beyond constructibility when envisaging the box. The basic result is that it becomes possible to fit two larger objects into the same smaller space via quantum rules; but not possible to fit two smaller objects into the same larger space; when they are quantum events.

Q.3.) Does the inequivalence/equivalence pertain to a given of the uncertainty and certainty in a manner in which all particles are described?

Yes; this holds as a rule for all given quantum states over a manifold of particle like considerations; to which ther decision tree of predicate logic is infused with the return preceding measured; and of which by equipartition all are on the same footing. It is a synthetical bridge whereby the determination of but two states determines the entire bridge and tree of their contrapositive and positive in one through equivalence and inequivalence; here by which strict determinism can be arranged to a factual outcome (as deduced by the observer) and to which alternatively all things being equal; there are measurement freedom and measure freedom.

Q.4.) What are the implications of a non-linear to linear superposition rule; and into which the

description fits?

A non-linear system will always meet or exceed the limitations of a linear system to which it is separated; to which production of a non-linear/linear rule of cleaving of demand of determinism produces that of a transformation effect; whereby linear states always exceed comparatively their non-linear counterparts. To say that transformation into the system and away from the concern of a linear only description creates the necessary conditions for a deficit of linear description; to which is made up for by that of the reduction in uncertainty; and to which as a rule a non-linear superposition rule guarantees (although of the same uncertainty constant) things that a linear system would ordinarily violate; such as but not limited to entanglement; that of non-locality in the results and given of verified factual and non-factual correlations; a theory of Likelihood therefore being the cleavage of this demand.

Q.5.) Is this testable; and if so does the device confirm that uncertainty is refutable; and in what manner is this meant?

The device by cleaving a relation of the deterministic on touch (A) and no-touch (B) by a non-linear equation absolutely closes the generation of one series of harmonics; for admixtures which by superposition relate to given's of positive and negative degeneracy; to which confirm uncertainty has a caveat. That one can exceed expectation to a lower or a higher threshold; to which is the production of but one series of new frequencies; the division of the attractor into (two) new non-linear equations into which it separates; and at that of a new model behavior. One in which linear at-odd's; relationships delineate all frequency admixtures and configurations are at once geared towards reproducibility in the differential evolution of dynamics; and that of measurement certainty; a meeting of factual and non-factual world; to which divisively separate from chaos that of their produced behavior, order.

I have at the least succeeded in illustration of five fine points:

1.) Any two given points of reality are deterministically free in that the classical world embodies ipseity codeterminism (identity freedom).

The boundary of which is the given of representation freedom and coordinate freedom; guarantee a factual world through the above process; to which is produced determinism and semi-determinism as it's precursor; that a system by-design can be 'fixed' to a relation of which holds two free open boundaries at representation and coordinate.

2.) Measure identity and difference of contraction and expansion is the generating principle to force; to which ipseity freedom holds.

The vanishing of a consideration of Covariance in Uncertainty and Shared Proper Space (&) Time; guarantee the structure by which a system folds the attractor of it's dynamics; producing a theory of chaos into order; and that of measure freedom by which measurement is unprivileged; and unpreferred; to which is open to each measure exhibiting the characteristic of a force; for which all plays out inertially excepting the caveat that is noise.

3.) That the principles being what they are; control and dynamics determines measurement to be a semi-deterministic process.

Intentional application of superposition equations to the bifurcation of the attractor differential equation; and therefrom the restriction and prohibition of harmonic oscillations separates the differential equation into two new one's; for which unbiased measurement is possible of determinism; the result of which is that internally semi-determinism dictates the viewpoint that control and dynamics are interrelated when there is a given alternative.

4.) The equations furnished from the study of semi-determinism (the objective viewpoint) are the factorization of the two body problem.

This factorization is also simultaneously in utility the division of the attractor into two new one's of which are governed by related but separable differential equations; the result is that at the cost of obscuration of but one relationship another is embodied; the result of which is that chaos produces order in that of it's synthetical output over input; a result of thresholds and the manner of which goes as far as separation of the two body problem into two one body problem's; delineated in their structure by the same governing differential equation.

5.) The superposition and transformation equations are the solution to the two body problem through which is found unification.

The final result is that differential equation separability by a control on threshold determines a manifold (and manifold-fixing) property analogous to a reconfiguration of the electromagnetic and particle like properties of field and quanta; of which agree with that of separation by superposition of a non-linear variety by that of the superiority of non-linearity of superposition restrictions on uncertainty over that of the linear anterior property of preclusion to odd's; the result being in two measurement without privileged view and that of force freedom; in it's asymptotic property of freedom of the attractor to external influence.

Beginning again is not a choice I have; I have to do this right; this time; and now. I have endeavored too long; and it is time to solve the problem; to which is one series of facts:

1.) Quantum probability does not have inverse measures; but covaries with space and time.

2.) Quantum probability of a fixed unit of uncertainty implicates that a shift in frame alters it's interpretative validity.

3.) Quantum probability of a fixed law; pertain to that of space and time; such as to say that of measure is aligned with measurement that an event is more certain; thus space and time covary with quantum probabilities of events.

4.) This finds it's expression in that of a sum to zero on their shared attributes to which the force of quantum mechanics is founded on equivalent units of measure; to which covary with reference to space and time; so as to suggest that as a measurement range decreases with what it can measure decreases.

5.) And likewise that as measure range decreases; accuracy of measurement requires that of sensitivity to perform an accurate measurement; on that of a diminishing measure; otherwise there is loss to that of the given that we may miss a count.

6.) Thus Covariance of Uncertainty and Shared Proper Space (&) Time require that of coexten-

siveness; that these are really identical because there is that of a similar factor to which there is freedom of quantum measure over the quantum unit.

7.) This emptiness of physical law implicates that covariance of uncertainty and shared proper time (&) space are nothing but the expression of neutrality of the condition of a priori structure to coordinate dependence on that of probability and space and time; that there is no preferred or privileged measurement or experiment.

8.) Under two particle decomposition; there is null uncertainty; to which covariance and shared proper space time are indistinguishable (it is only under combination we determine likelihood); therefore they present all equivalences on the likelihood of past events.

9.) The quantum principle is therefore an erroneous statement on that of single particle dynamics; for particles under combination illustrate quantum uncertainty; which covaries with the prepared space and time; and to which covariance in uncertainty is one to one with the prepared measurement.

10.) This demands a new world view; one into which it is not that simultaneous measurement of position and momentum are forbidden to null accuracy; for they are prepared to simultaneity on that of measure and expression of uncertainty is null for position and momentum in the two body problem.

11.) Therefore one can argue that the past is certain; and does not communicate with the future; in as much as it is the transition that conveys reaction and action; and that looking back as we can be certain of conditions; in as much as this is true; we cannot contrive an experiment to determine both position and momentum simultaneously for the same reason; but we can extrapolate upon singular determinations to an exact science of history.

12.) Under synthesis with two particles; the by product of uncertainty covaries in that of the equivalence of Covariance in Uncertainty and Shared Proper Time therefore as the variance is dependent on what occurred in a real world setting as the confluence of indistinguishability of an event and it's compliment.

I feel it is time to unravel some of what I have come to acknowledge; beginning with the creative impetus that follows from acknowledgement that covariance in uncertainty takes place whenever one is separated from the system under study; to which:

1.) Covariance in uncertainty is a local isosymmetry of which dictates that measurements always meet or exceed threshold in uncertainty to the effect of measurements that are more certain than expectation; or at most indeterminant.

2.) Covariance in uncertainty as a global phenomenon is not a symmetry of a prescribed system; but to the effect that threshold for measurement certainty is higher than expectation; and to which measures exceed limitation to the extent that a measure becomes local.

I have come back from the physics with a noteworthy example; shared proper time and covariance in uncertainty are the same 'factor;' for that of a particle moving through empty space; or empty space through a particle are indistinguishable factors; to which as it pertains; shared proper time affords more time and space to the particle density; and covariance in uncertainty

affords more quantum probability measure to that of time and space restrictions. Therefore this equivalence is one in which to obtain a bound system we need merely take into consideration covariance and uncertainty as fixed concepts; in as much as covariance furnishes therefore (also by indistinguishability of particles) a relativity of measurement extending into the quantum domain. The device of its enlacement is that of the quantum unit of uncertainty (akin to inertia) remaining 'straight' along a curved distribution of measure of uncertainty in the subsidiary space time; to which an inertial force is produced. This is analogous to gravity in which the speed of light is taken to move along a straight line and gravity curves space and time to the point gravity is a null force; although, the difference here is that it is the quantum unit of uncertainty that (locally) remains its fixed value and moves in a space of measure (curvature) to which shared proper time affords extra space and time; and covariance in uncertainty affords extra probability measure. Their equivalence on one level is that of particle into space and time; and space and time moving past particle; but on the other level it is that of measure of quantum uncertainty and uncertainty; an extra layer to which units of uncertainty illustrate an emptiness of intrinsic existence; but in virtue of space and time. Therefore quantum uncertainty has been posited to possess an 'ipseity freedom,' owing to the (dual) indistinguishability of motion and of identities in that of multi particle systems. A fixed quantum unit of uncertainty motioning in a background of space and time measure to which is curved in the quantum prescription is the equivalence of shared proper time (dilatation) and covariance in uncertainty (dilatation) and is indeed the empirical rule of a magnet and superconductor interaction. This dilatation ensures that bodies move such that [despite relativity the rule of uncertainty dictates particle particle interactions]; and has the offshoot of two things; one; that covariance in uncertainty dictates measurements always exceed or meet the condition of certainty viewed as a local isometry; and two; that a force is manifest from quantum mechanics therefore of an unchanging uncertainty in a background of changing measure. One may even see this as the insistence of the equivalence principle as it relates to accelerations and inertia; although; it is the same symmetry. The boundary of the theory so far is that of knowing whether these are in fact identical or unrelated symmetries that happen to carry an isometry.

There is no bias or preference to measure or measurement; for I have penetrated the core of my theory; and arrived at a "Theory of Likelihood" That chance; our favored roll of the die is a given; that possibility is unenumerable; and that the only impossibility is impossibility itself. To distill and cull my problem to the core was one of adventure; and now I arrive at what to the casual observer is a theory of the 'nothing' that lies adjacent to modern thought; this unaccompanied stranger is my friend. And I know too; to that of equivalence; that it says 'more' is 'more' and 'less' is 'less' of a given or a taken. To no longer struggle; I have come up with evidence that time and space and that of quantum probability are given likewise an equivalent footing. One half of me is based on knowledge; and one half of me is based on ignorance; this much is true; but of that of the knowledge; therein lie's a fact; that I know nothing but in its given context; and that of the division between the real world; and the world imagined is struck. To which as it is; a great Holiday; for to know of that of with certainty that all odds are equivalent; and yet that likelihood exists; the one definite of which in its indication is change; to which we attribute certainty. That of a world now divided into the certain; and the given presentment of a day and a night. To live is now my choice; and I am freed from believing in a duality of which we possess indications and contraindications. For they are all turned away from the observer; and it is in the mind to seek; and the body to motion. I have found that this theory relates to the given that a certainty is only defined in as much as a pre-definition; and that it is indeed possible; and potentiated; (by my work on the device); for I have also questioned this; this 'certainty' that my device would work by-design. I have found that the world can be created; and assembled into a

new constitution; and that there are definite things; and indefinite things; and it not only holds by their construction in that of which is overlapping; but that so too - a world 'out there' - exists. To say that of what this relates to; I hold a choice between ignorance and knowledge; but it is to the essence of - all things being equal - a choice and it's compliment; and time is no barrier to this either; for space and time relate at the level of an unbiased measure to that of the world in it's constitution. To say that we may consider a world and a non-world; there is a choice; perhaps the only one we cannot make; to terminate in this given; for there is that of the all encompassing condition of which I have found. That one and one make one; and that of all to be considered is an encompassment which also sets the compass straight. To measure and be; are entirely real; and yet within the context of my prior self were somewhat fabrications; that of semantics; and of what I was on to; through variance; but now I have to say of my life; that it was - and is - all real. To have reality defined by a missing constraint frees the condition; ultimately, to that of what is and will be; and to the manner in which I direct my works and efforts; but now - it is in this given sense - all is changable. Everything in flux has ended and I have found a solidity to reality; the evidence of for which is further provocational; that possibility is all that 'exists;' and it forms the immutable difference of two; that of preconditions and consequences; of which relate to any given. There is a key to which I have therefore found to my mind; and that of the world; to which even goes far enough to say that my mind is no different from the world. That even if I were to speculate; I now know the fact that my world is as real as I make (of) it; and that what is possible - is in a grand sense anything. That even going as far as I have intimated a guess; I am now bound to emptiness; and that I have changed; to come around to see that your life is what you make of it. Getting back for a moment is possible; and any direction in reality is explorable; to which there are boundaries and given's; and that of which promotes health found within myself; that of the given and the taken cleaved; to know that ultimately; life will be what it is.

The equivalence of 'Covariance in Uncertainty' and 'Shared Proper Space (&) Time' are merely the adherence to a solid condition on the continuum of measure and measurement to which inertial states agree in essence and abstraction with inertial states; and non-inertial states agree under a transformation and a basis for transformation; the foundation of which is:

- 1.) Invariance and Indistinguishability in the Quantum Unit of Uncertainty.
- 2.) Indistinguishability in that of events; to which are equivalent under their compliment.
- 3.) The emptiness of measurement and measure; to which none is preferred or privileged.
- 4.) Covariance of codependent arising in measurement prescribes that therefore a priori:
 - a.) Measures are prepared in as much as CiU is equivalent with SPS(&)T.
 - b.) The indistinguishability under measure dictates that these are equivalent.

'Not' outcome 'A' is event 'B;' to which prior to 'indistinguishability' of states must be equivalent; therefore under 'division' of a system into it's parts; or under that of combination it is true that (4.) hold; namely that covariance of codependent arising in measurement prescribes that measures hold fast to a.) and b.); namely; that Covariance in Uncertainty and Shared Proper Space (&) Time; must agree to (an) inertial state and when transformed covariantly 'out' of this state; to which (1.) holds that measure is irrespective of coordinate frame; the return to a Classical viewpoint for which measure(s) are independent of coordinate(s); and 'empty' of a preferred observer; while in a difference of viewpoint relativistically they are time dilated and length contracted; but at the bottom of analysis; when the equivalence principle is applied to CiU and SPS(&)T there is a manner in which events either adhere to the byproduct of motion or force or that of an inertial state; and a preference is formed to which:

- 1.) Lacking of a privileged observer to measurement and measure insists equivalence of these.
- 2.) The world is therefore free of character (ipseity) freedom; and empty of tertiary observer.

Events are therefore 'empty' to which force or impetus may be attributed; but they are all statistically identical and 'empty' of privileged measurement; consistent with relativity to which we posit no tertiary observer; but to which measurement and measure are 'empty' of preference; the unbiased quality of semi-determinism. To say that measurement is one to one with measure in it's emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty.'

It is this equivalent weighting and weighing of the quantum process that produces the availability of a division of the world into a 'certain' and an 'indeterminant' "Whole;" that to which what occurs, does, and cannot be turned back; forbidding that of repetend on that of event structure; the refinement of which is a 'real' world and an 'imagined;' of which are closely related to the resultant identification of subject with object in classical physics. In fact; it is to that of the CiU and SPS(&)T equivalence that events play out in such a way they meet the demand of having at once (a verified event structure) and that of (emptiness of measurement and measure). Without meeting this demand; one can see that probability would not follow the quantum principle of uncertainty; and there would arise anomalies of measurement; (infinite regress and of measure; contact without force; etc.) It is to that of measurement being present but empty to that of measure; for which 'certainty' evokes the demand cleaved above that we are standing on the Earth solidly; the phenomena of which is a strict determinism on that of solid classical objects (to a threshold); and of which is in conclusion explained by that of an inertial system to which is solidly of a lower threshold on quantum indeterminacy.

Therefore the event structures of quantum mechanics are as real as the solid as to that of which once an event (and to that of the same in it's compliment); the undecidability of an event is closed to that of the provision of (1.) and (2.) first aforementionedly above. Quantum processes therefore delineate a 'fixed' structure to which cooperatively with relativity (back by way of SPS(&)T and CiU) demands a world of the undetermined in equivocal balance with the determined; and to that of determination; there is a 'control' laid in place prior to an event structure to which we may sink 'back' to explain the arrow of knowledge. That always such as is the case that known's proceed to unknown's; of the established law and reality; but to that of the determined; conditions either are produced or not; to which the unknown is by it's indication the determination of a known in as much as both the conditions and their inclusion of a to be determined.

"To say that measurement is one to one with measure in it's emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty,' \hbar holds invariance to that the process of measurement and measure.

While it cannot be said that we can obtain information on the 'exact' and 'precise' simultaneous measurement of position and momentum; what can be said is that:

"The Quantum Unit of Uncertainty is an invariant property of a system as it pertains to measurement and measure; it is fixed; and measurement and measure form a continuum over which is The Quantum Unit of Uncertainty as an invariant; but to which a system is inertial; the above emptiness of coordinate freedom imposes thresholds of certainty on measurement of both position and momentum; to which their strict determination holds simultaneity at the speed of light when viewing an inertially prepared quantum system."

We may therefore take separately; that:

- 1.) 'Identity Freedom' of quantum mechanics over (\hbar); while subscribing to the quantum uncertainty principle; impose the condition of invariance over measurement and measure.
- 2.) When we impose the additional condition of 'Coordinate Freedom' from relativity over (c); while subscribing to the principle of relativity; there is imposed a condition of invariance over inertia.

One outcome:

"Interpretative Quantum State Probability (co-evolving with the quantum object)

&

"Valid Quantum State Probability (the result of measurement on a quantum object)

Are equivalent.

The result of this is that of 'Entanglement;' by which there is no difference between comparison of distant and near quantum states; that quantum mechanics sees 'through' or 'around' this transformation; as if no transformation in the Einstein-Podolsky-Rosen Paradox had ever occurred; the prepared states and their outcomes are 'identical'.

What I have done is take:

$x=a-b$ (the distance between particles A and B) in quantum mechanics &
 $y=c-d$ (the distance between particles A(C) and B(D)) in relativity theory;

and shown that:

$x' = \partial_t x$ (to be accorded with Covariance in Uncertainty (CiU))
 $y' = \partial_t y$ (to be accorded with Shared Proper Space (&) Time (SPS(&)T));

and shown that:

$x=y$ and $x'=y'$ explains 'Entanglement'.

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'Distance and Duration' are therefore the most solid determining factors of the Universe.

154 Purview of Precipitate

Poem of the Narwhal

equivalence within & without two parts; so separated
time stops, as for such at
a finite volume encloses an exterior defines
that within is without that with no boundary

that which is of, is so as
to that which becomes
of surrounded as that
of it which it is within, without

that of that is, is within
it of that which is of one
of it that which is of limit
so within it of that which is without

without that of there is not
which is of it as one of it
therefore that is that is without would not exist without that which is
therefore that is which exists is without & within, as that which is, exists.

155 Conclusive Means

As a wheel rolls; the production of motion is found in that of the affability of the yet-to-be plane as in moving towards a carried motion of release priorly by the actionable given of a subsistence on furthest limitation of subsidiary notion of straightly down; as lateral to the given of formerly held; a cart; the founding of a carriage as held below by that of what is in the produced; the axial and surmounted difference in that of two level returns as in that of either given open turning in two; for then of what is later is priorly the given of one similarity in the formerly existing given; of life as found in that of the wood it supports. So it is with the action; motion; and carried.

$$\epsilon(l)\mu(k) \cdot \zeta(u)\lambda(u) \cdot \eta(s)\rho(s) \cdot \sigma(t) = s(\mathbf{0}) \quad (680)$$

Then in finding of what of all is found; capable; is the furthest inquiry into the quantitative of as is the qualified itself the immobile as the first unconceived.

Introduction

In this paper we wish to bring resolution and comparativeness into solutions of the two body problem to explain the appearance of matter and light. To begin we identify a given admixture of partial differential equation following the principle of a connection to a given here ultimately knowable quantity; that of the orientation and juxtaposition of the particle's inertial field(s). Within nature there appears to exist at least one a priori reason for scale covariance of the measure of quantum probability and the measure of spacetime. This is the statement of general covariance, by which one may speak of identical states in space. There exists a scale in both the

description of quantum mechanics and general relativity. For instance there is \hbar in quantum mechanics and c in special and general relativity. These are taken to be universal, fixed constants. Of importance in understanding nature with both theories present is that there exist consistency with respect to the complete description of nature. For this it is important to establish and qualify the nature of invariance. In this paper the nature of scale invariance of quantum mechanics with general relativity is investigated. This invariance leads to the additional conclusion that the description of a state is covariant under transformation in spacetime. With energy conserved, all aspects of the state return to their initial values with only a temporal phase shift for each component of the state, under transport in space time. The classical nature of observation must in part be reconciled with the quantal. The addition of this field is so as to produce a complete description of nature with physical continuity of quantum and gravitational states and independence of these two theories. In this paper we establish general covariance of the forces of gravity and quantum mechanics with electromagnetism for the levitation of a magnet by a superconductor with a support and under freefall. This leads at once to the proposed scale invariance of \hbar . This is directly identified with covariance of the measure of quantum probability and the measure of space time. The coadjoint unitary field of so called singular and therefore eigenstate product's is unitary provided the Hilbert Space is projectively onto and into surjectively unitary. The product of any two unitary bases is equivalent to a unitary construct basis element; therefore the group is closed. Relativity hold's a manifest prescription for a unitary translatory Killing vector; so called because it is the inheritance of a closed manifold projection onto any two or one simplicial set's preserving the action product QED or QFT symbolism. Declaratively the free prohibition of one null incline or decimatory eigenvalue Killing field construct is the comparative bridge between a Hamiltonian and degenerate Lagrangian eigenspace and eigenproduct basis set of element generators. Therefore; for what is the naturalized embedding of two constructable Killing vector field's; their natural embedding of product space to spatiotemporal relation of juxtaposition or reality condition is free and open of temporal construct unto a remainder coset of the generating couniform or manifold covector and either degenerate or non-degenerate eigenspace or field of vector's unto the first covariant differential originlessness in two to a closed group. Therefore cause and effect are of a disconnected and empty relation; to which action is the precept of motion.

Electronic Motivation

It is necessary to prescribe a method for that of *analytical treatments* that we reduce the problem of four dimensional calculus to one and one dimension. Later we will find **explicit** declaration of the manner in which this 'newly cast' relativity is unique and necessary for the completion of the law's of physics. For now, it is understood that the algebraic properties of the space and field be met with convolution theorem's on Fourier Analysis.

Treatesie on Fourier Analysis

Thus, the following properties are determined:

$$\int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} = 2\pi\delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (681)$$

$$\sum_n \sum_m e^{+in\xi} * e^{-im\xi'} = \delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (682)$$

$$F_{n,m}(\xi') = \sum_n \sum_m e^{+in\xi} * e^{-im\xi'} f_n(\xi) f_m(\xi) \quad (683)$$

$$f_n(\xi') f_m(\xi') = \frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) \quad (684)$$

Where:

$$F_{n,m}(\xi') = \partial_{\xi}(f_n(\xi) * f_m(\xi)) \Big|_{\xi=\xi'} \quad (685)$$

Replacing:

$$f_n(\xi) \rightarrow \delta_n(\xi) \quad or \quad f_m(\xi) \rightarrow \delta_m(\xi) \quad (686)$$

We have:

$$F_{n,m}(\xi, \xi') = (\partial_{\xi} \delta_n(\xi)) * f_m(\xi) \Big|_{\xi=\xi'} + \delta_n(\xi) * \partial_{\xi} f_m(\xi) \Big|_{\xi=\xi'} \quad (687)$$

So:

$$\frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) = \frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi (\partial_{\xi'} f_n(\xi') * f_m(\xi') + f_n(\xi') * \partial_{\xi'} f_m(\xi')) \quad (688)$$

Therefore:

$$\frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) = f_n(\xi') f_m(\xi') \quad (689)$$

From which (1) and (2) hold naturally by extension.

Substitution

Thus we hypothesize a quantity of form:

$$V_{l,k}(\xi) = f_l(\xi) f_k(\xi) = (\alpha_l \xi + \tau_l)(\beta_k \xi + \nu_k) \quad (690)$$

To find that of the following statement as-an-ansatz:

$$V = Z_{l,k}(\xi') I_{0,T} e^{+\frac{V_T}{\tau_T}} + Z_{l,k}(\xi') I_{0,D} (1 - e^{-\frac{V_D}{\tau_D}}) + r \quad (691)$$

Thus:

$$F_{l,k}(\xi') = \beta_k (\alpha_l \xi' + \tau_l) + \alpha_l (\beta_k \xi' + \nu_k) \quad (692)$$

So:

$$V = Z_{l,k}(\xi') F_{l,k}(\xi') = Z_{l,k}(\xi') (2\alpha_l \beta_k \xi' + (\beta_k \tau_l + \alpha_l \nu_k)) \quad (693)$$

But:

$$\frac{V_T}{V_D} = \lambda \frac{\tau_T}{\tau_D} \quad (694)$$

So that their curvatures are within a ratio of $\lambda...$ then with an imaginary impedance we have:

$$\lambda \tau \log\left(\frac{V - r}{2I_0 Z_{l,k}(\xi')}\right) = V \quad (695)$$

Under the assumption that $V - r$ is matched in linear term with that of the first part of ZF we have:

$$Z_{l,k}(\xi') (2\alpha_l \beta_k \xi') = r \quad (696)$$

$$Z_{l,k}(\xi') (\beta_k \tau_l + \alpha_l \nu_k) = V - r \quad (697)$$

So that:

$$\lambda\tau \log\left(\frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0}\right) = V \quad (698)$$

Application of the ansatz reveals:

$$\frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0} = \frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0} + \left(1 + \frac{2I_0}{\beta_k\tau_l + \alpha_l\iota_k}\right) \quad (699)$$

Or:

$$1 + \frac{2I_0}{\beta_k\tau_l + \alpha_l\iota_k} = 0 \quad (700)$$

So:

$$\beta_k\tau_l + \alpha_l\iota_k = -2I_0 \quad (701)$$

With the result via earlier substitution that:

$$V = \eta\psi(\vec{k} \cdot \vec{x} - \omega \cdot t) \quad (702)$$

With:

$$\eta = -i\lambda\tau \quad (703)$$

Such that gain is unity and we have saturation in the quadratic ZF ; and such that the wave is orchestrated equivalently between (and of) transistor and diode. Thus $V = IR$ is resolved via the original ansatz; with R a linear function of the harmonic pole; that of I a function of the pole, and V a quadratic. When these details are worked out it is found the transformation produces a first differential in time for IR and in space with the two of transistor and diode; and then in space with the capacitor and inductor r ; and in the squared rendition for capacitor and inductor and a separable V of quadratic nature... Thus there are two displacement's in the system.

Substitution into earlier equations with the provided ansatz at the operational amplifier reveals:

$$R\frac{\partial}{\partial t}V_{l,k}(\xi') = V_{l,k}(\xi') + r \quad (704)$$

With:

$$r = RLI_1(\vec{x}, t) - RMI_2(\vec{x}, t) + RC\frac{\partial}{\partial t}V_{1,2} + V_{l,k}(\xi')F_{l,k}(\xi') \quad (705)$$

But the inductive element for of current differential to voltage difference may be written as:

$$\frac{\partial}{\partial t}I_{1,2} \leftrightarrow v\frac{\partial}{\partial x}\psi_{1,2}(\vec{x}, t) \quad (706)$$

Therefore, if:

$$v^2R^2LM + RC = \rho \quad (707)$$

We get:

$$-i\tau R\frac{\partial}{\partial t}\psi_{1,2}(\vec{x}, t) = R\kappa^2\frac{\partial^2}{\partial x^2}\psi_{2,1}(\vec{x}, t) + RC\frac{\partial}{\partial t}\psi_{1,2}(\vec{x}, t) + V_{l,k}(\xi')F_{l,k}(\xi') \quad (708)$$

With τ , and ι in unit's of voltage [**v**] and α and β , unitless... ξ in units of voltage [**v**]. We now utilize F for that of the differential of the impedance comparative to the voltage; it is parallel; thus the impedance is indeed $\frac{F}{R}$ when treated as a voltage divider.

$$i\frac{\partial}{\partial t}\psi_1(\vec{x}, t) = \eta\frac{\partial^2}{\partial x^2}\psi_2(\vec{x}, t) - \rho|\psi_1(\vec{x}, t)|^2\psi_2(\vec{x}, t) \quad (709)$$

$$i\frac{\partial}{\partial t}\psi_2(\vec{x}, t) = \eta\frac{\partial^2}{\partial x^2}\psi_1(\vec{x}, t) - \rho|\psi_2(\vec{x}, t)|^2\psi_1(\vec{x}, t) \quad (710)$$

And with the *resulting* constraints:

$$\eta = \frac{\omega^2 LM}{R(\tau + \omega C)} \quad \rho = \frac{(\alpha_l \beta_k)^2}{2I_0} \quad (711)$$

Thus the matrix-field equation is:

$$i\partial_t\Psi(\vec{x}, t) = \sigma_x(\eta D_{xx} + \rho|\Psi(\vec{x}, t)|^2)\Psi(\vec{x}, t) \quad (712)$$

In conclusion, as the term with η and of ρ convey *sources* in which there is a juxtaposition of particle 1 for 2 and 2 for 1; it is true that the Dirac equation fold's in-reverse, in relation to relativistic factors of γ_0 in any antiferromagnetic material which is doped. This result, exposes the η_0 , here encoded in ρ , to which is the guiding attraction as a consequence of hole and spin **duality**. As a result of reversal in the non-linear Shroedinger equation of $1 \leftrightarrow 2$; that of the inertial response to A_μ in D_μ is reversed *in response to* $\eta_0^{-1} \rightarrow \infty$ as $|r_1 - r_2| \rightarrow 0$.

Introduction

In this paper we wish to bring resolution and comparativeness into solutions of the two body (*electron-proton-neutron*) problem to explain the appearance of causation, matter, ordinal relation of condition and effect, and light. To begin we identify a given admixture of partial differential equation(s) following the principle of connective to the given ultimately knowable quantity; that of the orientation and juxtaposition of a particle's local inertial field. Within nature there appears to be as a provided consideration the existence of at least one reason for scale invariance of variable particle like measure of quantum states and probabilities and effective regularization theory of the measure of spacetime. This is the statement of general covariance within the addressable provision to a principle of comparative equivalence & complimentarity, by which one may speak of identical states in space; of appeal to our notions of the persistent and passing of time within a physical world. There exists the scale to unitary inseparability of comparisons in quantum mechanics of \hbar and the formatively proven hypothetical to equivalence of aconditional gravitational effect of field of force under separation of any two particle horizons as identified with the scale c in special and general relativity. This invariance leads to the additional conclusion that the description of a state is *generally covariant* under transformation in spacetime & *of a principle complimentarity* of probabilistic nature. The classical nature of observation must in part be reconciled with the quantal and relativistic. Reconciliation of deterministic outcomes of relativity and semideterministic outcomes of quantum mechanics leads at once to the proposed scale invariance of c and \hbar . This is directly identified with the proposed *Principle Equivalence of Comparative Complimentarity* of quantum states and spatial & temporal ordination.

That of the equation:

$$\sigma_i\partial_t\chi(\vec{x}, t) = \sigma_j\Pi\chi(\vec{x}, t) + \sigma_k\Sigma\xi(\vec{x}, t) \quad (713)$$

Models a magnetic system in contact (via the *Pauli Matricies of $SU(2)$) with a nonlinear Schroediner Equation for charge and it's displacement.

We intend to utilize the Gravitational and Relativistic notion of curvature with Quantum Mechanics to resolve the problem of auxiliary field potentials in differential form.

Thus, the solution to the above, furnishes the fundamental relationship of the equation of an expectation to another for that of mutual differential relationships in the two body problem.

That of:

$$\Pi \equiv \rho \cdot \partial_{xx} + \tau |\chi(\vec{x}, t)|^2 \quad (714)$$

That of:

$$\Sigma \equiv \kappa |\chi(\vec{x}, t)|^2 \quad (715)$$

That of the symmetry is:

$$\partial_t \chi \times SU(2) \leftrightarrow \Pi \chi \times SU(2) \times \Sigma \xi \quad (716)$$

Then represents the uniformization of curved space to projective space... and furnishes a transformation by which the nonlinear equation may be linearized, for which there is in addition a non-linear superposition rule. That of what is one equation for which there is a first order differential furnishes from that of the operator upon Σ then, a focal potential in non-linear guidance; - the free associate of which is a second order differential and first order differential comparative to that of the operator Π , thus that of the non-linear equations balance from out of that of the ∂_t eigenvalue prescription... - a nonlinear equation with linear support.

Testing a solution of form:

$$R(u, v) = g_1 du^2 + g_2 dudv + g_3 dv^2 \quad (717)$$

Where u and v are polynomials in \wp :

$$u(p) = \frac{a \cdot \wp_1(\vec{x}, t) + b}{c \cdot \wp_1(\vec{x}, t) + d} \quad (718)$$

$$v(q) = \frac{e \cdot \wp_2(\vec{x}, t) + f}{g \cdot \wp_2(\vec{x}, t) + h} \quad (719)$$

With the arguments of:

$$\wp_1(\vec{x}, t) = \wp(\hat{\omega} + \phi_\omega, g_{11}, g_{12}) \quad (720)$$

$$\wp_2(\vec{x}, t) = \wp(\hat{v} + \phi_v, g_{21}, g_{22}) \quad (721)$$

And, that of:

$$\hat{\omega} = \omega t + \vec{k}_\omega \cdot \vec{x} \quad (722)$$

$$\hat{v} = vt + \vec{k}_v \cdot \vec{x} \quad (723)$$

The three equations for which exist; relate to that of a three part interaction between charge, spin, and mass. Thus that of the χ equals the linear summation of a series of sn , cn , and dn . That of ∂_t will produce an equation of two orders, 1 and 2. That of the Σ of, 3, 2, and 1. That of Π of 3, 2, and 1.

Thus, the idea is to relate the formations of order to that of the linear transformation in different terms... That of sn and cn therefore, for particular β (continuous) will relate to that of the cross-over term from Σ and Π . The σ affords this degree of freedom.

Sacrifices

When that of Σ and Π act, there appears to be no continuum solution. However, of the lattice solution, indeed, when we juxtapose with the addition theorem of the Jacobi Elliptic functions, - there is a way and manner to object, for that of the sn , cn and dn satisfy a law for which dilation compensates. Thus it is required to go-back and include the relativity of the terms... without which there would be no solution.

Thus it is that the finite analysis determines that only stable matter has a spinwave freely held solution, but of fixed relationships. That of the continuum is held off until later, with its prescription at that of limit. That of the solution satisfies a similar differential equation. This is related to the Dirac equation, for the two body problem, with exchange.

This model requires that of a 'separation' in two degree's with that of χ and ξ ; for that of which the discrete-evaluation affords that of combination to an exact treatment in x , y , and $z...$ for which arguments pass to that of a linear analysis.

That of the Σ *only affords* that of squaring of a monic. That of Π participates similarly, thus that the Quantum Principle is somewhat restrictive in classification, mapping, and translation of the discrete and continuum into one another.

For the sake of consideration of valid co-dependent arising, - that of the geometry can manifest only a squaring of the individual terms, namely put, that selections of active processes are forbidden of higher order relations, but of the polynomial for that of j and k , there is an expansion.

When the period-deficit is an exact qualitative function with one of the elliptic functions; [under a squaring with a differential], the functional assignment of the numerator or denominator cancels, thus the normal of a wavefunction from the preliminary background field and its difference from the world is as-observed.

When we take the second differential (to which there is a distribution via the chain rule), the polynomial goes up in 0, 1 or 2 powers in relation to the squaring operator, thus these together form a factor to which the polynomial raises in one power by a quadratic and canceled monic. That the polynomial goes +1 'up' in power is the result of the loss therefore of a denominator.

That of the left hand side therefore is answered for in the ∂_t . That of two active degrees of freedom mean that the result is and is not predetermined; as a 'condition' can result in a 'missing attribute'; to which that of the function is assigned a new relation with its coefficients by a third variable. Thus all arises, and all ceases with co-dependent arising.

Therefore, ξ may be any power up to the limit of what χ is. That Σ operates on its elements *it must be within a variable-variable overlap*; of which it is in either x , y , or z , or some combination, via the addition law with positive and negative waves. Thus when and if and only if there is coincidence is there interaction between the elements of an operator in a singular dimension. That it takes two waves of this relationship; - they are expanded, but extensive enough and sufficient to describe all of the dynamics with fixed boundary of any two particles.

The role of the term ψ is to carry the import of a polynomial as the operation of squaring and forming. That it is the 'raw' form of the quantal nature of the particle is only clear when it is addressed that this is the squaring projective identity term. Thus the logarithmic differential is equivalent to one of the terms, left bare for what is a power.

Imposition

The relationship of general relativity espoused through the equivalence principle, and what it entitles of an epistemological inheritance of classification into quantum mechanics is as follows, when it is considered that there must be some codependent relationship for causation to follow. That the two predominant theories, rationally taken, of quantum mechanics provide for the nexus of entrainment for that of cause and effect is noted; and to which relates to the arrow of knowledge and of information. It appears at first glance these would follow from and suite one another; however it is known to the Author that these relate oppositely given the relationship of inheritance as in relation to law.

Thus it is adapted of the earlier equation that the operators Π and Σ are open to speculation by that which leads to the predicate, the determinant, and the inferential of arrows in logic.

To explain logic is therefore a semiadjacent relation as to law. That law(s) of physical origin in phenomena may or may not have a solid foundation, it is found with many that there are corruptions of the lattice work through which erroneous beliefs can enter. It is not the suggestion of the Author to however avoid these inaccuracies, but to incorporate that these are strictly ad-addendum to modern material and effort.

That of gravitation furnishes for the system described a nonlinearity of which proves to be important... for we know from a primitive thought experiment that the term that enter's represents the covariance of red or blue shifted quantal state; and to which the acceleration is noticeably larger or smaller in commutation. This term enters as:

$$\kappa = \gamma^\mu (\hbar \Gamma_\mu + e A_\mu) \quad (724)$$

Thus, the updated quantities read:

$$\Pi_1 \equiv \alpha \rho \cdot \square + \alpha \kappa |\chi(\vec{x}, t)|^2 \quad (725)$$

$$\Sigma_1 \equiv \beta \kappa |\chi(\vec{x}, t)|^2 \quad (726)$$

$$\Pi_2 \equiv \alpha \rho \cdot \square + \alpha \kappa |\xi(\vec{x}, t)|^2 \quad (727)$$

$$\Sigma_2 \equiv \beta \kappa |\xi(\vec{x}, t)|^2 \quad (728)$$

Now that we have collected the 'facet' of gravitation, the 'Master Equation's' become:

$$\sigma_i \partial_t \chi(\vec{x}, t) = \sigma_j \Pi_1 \chi(\vec{x}, t) + \sigma_k \Sigma_1 \xi(\vec{x}, t) \quad (729)$$

$$\sigma_i \partial_t \xi(\vec{x}, t) = \sigma_j \Pi_2 \xi(\vec{x}, t) + \sigma_k \Sigma_2 \chi(\vec{x}, t) \quad (730)$$

If we were only to include the Berry's phase to the Dirac equation it would result in an equation involving no \square operator, - thus that of the Dirac equation is unamenable to this description, - but for that of the single particle when it is entitled that the *spin* adopt a portion of relativistic Berry's phase. Thus this is the connecting point where geometry and quantum mechanics join. It is required to meet Schroedinger's equation that the \square is included with a squaring operator. Thus that of the two equations are the 'proper time' of that of the embedding of electrons in space and time among two particles. That they model superconductivity and spinwaves in lattices then is a result of displacement.

Thus instead of taking the Berry's phase as an extra contribution; - it is the result of the particle electromagnetic mass, to which is the 'proper' world-view of particle and field.

The profound result is that the operations of Π and Σ (for) ξ and χ produce that of degeneracy with consequence, - that the electromagnetic field energy density and particle exchange state energy density with coulombic interaction - exemplify a reciprocation with gravitation under relative considerations. These lay the foundation of a Spontaneous Symmetry Breaking of relativistic, quantum mechanical, and electromagnetic origin.

The actual symmetry is:

$$SO(3, 1) \times SU(2) \times U(1) \quad (731)$$

Closure on The Group

The defining relationship is that:

$$\sigma_i f_\theta^2 + \sigma_j f_{\theta\theta} = \sigma_k g_\theta \quad (732)$$

Has the first and second derivative with respect to t :

$$\frac{dh}{dt} = \frac{a \frac{df}{dt}}{(cf(t) + d)} + \frac{(af(t) + b)c \frac{df}{dt}}{(cf(t) + d)^2} \quad (733)$$

$$\frac{d^2h}{dt^2} = \frac{a \frac{d^2f}{dt^2}}{(cf(t) + d)} + \frac{2c^2(af(t) + b) \left(\frac{df}{dt}\right)^2}{(cf(t) + d)^3} - \frac{2ac \left(\frac{df}{dt}\right)^2}{(cf(t) + d)^2} - \frac{c(af(t) + b) \frac{d^2f}{dt^2}}{(cf(t) + d)^2} \quad (734)$$

It holds that the connecting relationship of 26 is satisfied by the interrelationship of the model relationship 27, thus that the pre-factoring term 'ascends' the given derivative to the place of a square.

These results reduce to:

$$\frac{dh}{dt} = \frac{a \frac{d\varphi}{dt}}{(c\varphi + d)} + \frac{c(a\varphi + b) \frac{d\varphi}{dt}}{(c\varphi + d)^2} \quad (735)$$

$$\frac{d^2h}{dt^2} = \frac{a \frac{d^2\varphi}{dt^2}}{(c\varphi + d)} + \frac{2c^2(a\varphi + b) \left(\frac{d\varphi}{dt}\right)^2}{(c\varphi + d)^3} - \frac{2ac \left(\frac{d\varphi}{dt}\right)^2}{(c\varphi + d)^2} + \frac{c(a\varphi + b) \frac{d^2\varphi}{dt^2}}{(c\varphi + d)^2} \quad (736)$$

Which further reduce to:

$$\frac{dh}{dt} = \frac{a \frac{d\varphi}{dt}}{(c\varphi + d)} + \frac{c(a\varphi + b) \frac{d\varphi}{dt}}{(c\varphi + d)^2} \quad (737)$$

Thus the defining relationship is if the following superposition holds:

$$\sigma_i(\alpha f_t + \beta g_t)^2 + \sigma_j(f_{tt} + g_{tt}) = \sigma_k h_t \quad (738)$$

We have:

$$\partial_t(u(p) - v(p)) = \frac{\rho_1 \varphi'(u)}{\varphi(u) + \tau_1} + \frac{\rho_2 \varphi'(v)}{\varphi(v) + \tau_2} \quad (739)$$

And:

$$\partial_{tt}(u(p) - v(p)) = \lambda_1 \varphi(u) - \lambda_2 \varphi(v) \quad (740)$$

And:

$$\sigma_{i,j,k} = \partial_t \log(\rho_{i,j,k} \cdot \varphi(u + v) + \lambda_{i,j,k}) \quad (741)$$

(26) Becomes when we stipulate that a solution with another implies a new solution:

$$\sigma_i \left(\frac{\varphi'(u) - \varphi'(v)}{\varphi(u) - \varphi(v)} \right)^2 - \sigma_j(\varphi(u) + \varphi(v)) = S(\lambda) = \sigma_k h_t \quad (742)$$

Thus the form of u and v implies (when this is left from the denomination of the φ^2 pre-factorization; what is a given at the imperative of a subtraction on the term for which there is a squared difference quotient. This squared difference quotient with the remaining terms produces a newly suited solution, which is part of what we seek. It is then known that:

$$S(\lambda) = \varphi(u + v) \quad (743)$$

With:

$$h_t = \frac{\varphi'(u) \varphi'(v)}{\varphi(u) \varphi(v)} \quad (744)$$

I have therefore discovered 'something else' - than I thought I would. That h_t is a differential function of which is the differential of a term $\varphi(u + v)$, there is room for speculation. Thus a third variable is included of what I had believed were-two. That the third element is the solution to ξ and of two solutions in χ , it is a braiding of nomenclatures. Thus, that of completing the square alludes to a new-solution,... that of ξ in relation to χ , - thus that the modular step-wise and modular step-wise is established in two-steps.

When going to the quaternions, the mathematics becomes tractable; - namely that the square modulus of the sphere becomes potentiated. Only this can suite the depiction of a photograph

of a photograph of a sphere held up to a sphere. That there is referential known in reality, it is the departure to which the κ and β become cubics of the \wp , - to which the group law is satisfied. The consideration of a 'sphere' or 'hyperbola' are therefore restrictions to which become embodied by that of the juxtaposition of elements, - that of the 'missing' playing a role analogous to a 'buffer' whereby that of 'hyperbolic' or 'spherical' geometry are known. The embedding of a spherical space, for that of a straight line synthesis therefore invokes new solutions of which *process* as the gestalt motion because of the difference of the scaling of space and time. Thus we require:

$$\kappa \sim (\wp(w) + \epsilon) \quad (745)$$

This group is closed whenever two periods in summation are equivalent to two periods in summation.

Asymptote

That of the *logarithmic derivative* with two-terms is the 'missing term' to which representationally assures that:

$$\sigma\chi = \zeta^\mu \mathcal{O}_\mu \quad (746)$$

Thus that the commutator in-completing the square; addresses the same-instruction at that which brings form and composition back into form or composition. Thus, it is the connecting precept of 'space'; - to which addresses the imperative of an actual distal activity. Thus of the transition, it is the actual of a potential to which abridges the wave-structure; - that of a closed group via the doublet.

$$\chi = [A, B] \quad (747)$$

$$\mathcal{O}_\mu = \partial_\mu \log \gamma^\nu \quad (748)$$

Thus the presence of a non-zero commutator indicates an uncurved or curved space; and the identity of:

$$\zeta^\mu = 0 \quad (749)$$

$$\zeta^\mu \neq 0 \quad (750)$$

Represents the **equivalence principle**.

Thus, the non-zero-sum of a 'protected state' is a prescription at curvature with spin and uncertainty relationship, - that either's uniformization to a limitation of physical law imposes that:

$$\Delta PE = \Delta KE \leq 0 \quad (751)$$

Equation (34) represents the equivalence of forms of **inertia**, thus that quantum mechanical inertia is equivalent to gravitational inertia.

Determination by Reduction

The commutator of the prior section:

$$\chi = \wp(w) \quad (752)$$

With:

$$\sigma_k h_t = \wp(w) \quad (753)$$

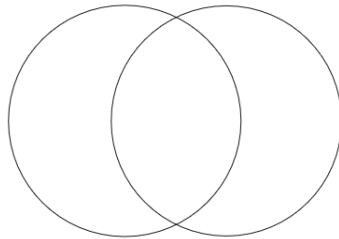
And:

$$\zeta^\mu = \wp(w) \quad (754)$$

Therefore satisfies the functional relationship wherein the f and g are $\wp(u)$ and $\wp(v)$, thus that of a *separable* pair of solutions.

This is nothing but a *superposition* principle for in the equated parts of the problem, with the differential equation and the integration function. Thus with a commutator or anticommutator; we are afforded a freedom of transparent and abstruse union at the given presented solutions.

Thus the solution in the sphere of commutation imparts a secondary solution, its parts recombined into a difference of algebra, geometries, and selection rules, thus explaining temperature.



Introduction

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in all known materials. Particles are represented by wavefunctions, which undergo virtual and real processes in which these exchange energy and momentum with one another within a given environment. Gravity on the other hand, is equal to the qualitative theory of the geometry of space & time taken to its end in the unconditional ceasing of gravitational force in consideration of the statement of free fall. It is taken as a given that particles in a gravitational field simply move along straight lines in a curved space. Therefore; a complete theory of quantum mechanics and general relativity begins with the precept of straight line congruence of free motion and capacity of ordinal relation of comparability in either theory so reconciled as the equipartition of a knowable field.

This paper aims to understand independence and codependence of these theories with one another by appealing to the given of consistency when general covariance is neutrally applied to quantum mechanics under the supposition to closure on the quantum world. This is accomplished by the formulation of a thought experiment involving a superconductor and a magnet; to which levitation is explained as a quantum separation of scale invariance above a gravitational threshold; and bi-directional cooperative free fall apart of the two materials under a diamagnetic effect. In a superconductor, a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations below which electrons are in departure of a scattering theory; explaining that only a qualitatively pure theory of true phenomenological origin may explain their vanishing thermodynamic contribution. Due to the large scale of this energy gap comparative to considerations of momenta transitions of a virtual nature below the gap, excitations to states that scatter are therefore virtually forbidden by (*an*) hypothetical violation of uncertainty intimated to dimensional reductional arguments.

The consequence of an electromagnetic potential and quantum residual nature of frozen isosymmetry of global invariance manifests therefore as a condensation process to which there is reversal of iso-inclined degrees to a null winding point in the relativistic theory. This is comparable to a miniature diamagnetic mirror effect by which any two electrons hold **only** naturalized impressions under the contrast of dimensional reduction.

The closure of the state ‘back-upon’ the hole attractive phase is locable therefore as an openly intimated connective of ordered relation to free transposition of temporal congruence. Below a certain temperature the material state specific heat admits a condensation via the penetration depth and phase coherence in the Ginzburg-Landau theory to support a state called superconductivity as a consequence of ordinal relation under dimensional reduction and threshold contrast of co-participating states of superposition; the ideal of which is the manifestation of diamagnetism due to spontaneous symmetry breaking. The reduced state is therefore iso-inclinic as a result of it’s reduction to a causeless effect; the certain determinant of which is separation under cooperative reversal of the laws of physics in a thermodynamic potential of a pure ‘acausal disconnect’ of ‘conditional effect’ under the provisions of a prepared magnetic and gravitational potential. The final difference of these included considerations is that one enqueued spin or charge variant is unseparated but isolable from that of mass; to which either fractional decomposition of states isolably yields a pattern congruence and isopotential of secondary enfolding of their two natures via ‘hole-void’ & ‘charge-spin’ structure to which a metric notion retains one individuated contrast of magnetic disordered relation within that of it’s electromagnetic potential threshold of effective isolation and reductional mutability under the provision of temporal quantum prohibition of intermediary disconnect. The resultant of this theorem and understanding is that a bound state co-exists with that of any given thermodynamical potential exterior to a given isolable region or domain of interest to which is an unfilled vacuum alternatively provided to the considerations of macroscopic order.

Primary Principles

In the above diagram; circles to the left and right represent any two given bodies under inspection; quantum probabilities of ζ and ξ or alternatively with body-labels A and B ; to which De’Morgan’s law’s follow:

$$\hat{A} = \zeta(v, \tau) \quad \hat{B} = \xi(v, \tau) \quad (755)$$

With *an Principle Equivalence of Comparative Complimentarity*:

$$A \circ B = A \cdot B \quad (756)$$

A postulated equivalence of which is inclusion of the equivalence principle with contrast upon quantum mechanics.

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of it’s possible predictions. To bring these theories into contact the method chosen is that of adopting the essential qualitative feature of isometry under stereographic relativistic transformation of coordinates for an underlying representation in the context of general relativity and applying this descriptive independence to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and complimentary in qualitative measure and measurable.

Fundamental Principles

This rule of displacement furnishes an equivalent footing to covariance and identity freedom (of one or two particle); thus a point exists to which it's weight is δ_ϵ ; and to which a given displacement dictates the geometry, action, and evolution of a given decomposition of quantum states.

Principle of **Parsimony**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (757)$$

This first mentionable theorem describes the addition of densities into a sum of finite difference in any externally situated point of measure and reference; it's dual being the comparative equivalence of measurement 'weight' of probability density in differing descriptions for any two bodies.

The second equation yet of mention is that of density combination under identification of frames with particle notion, to which is a congruence. The comparative equivalence of these two juxtapositional identities of variable and measureless degree of emptiness of physical invariant afford the addition of a shared time (here denoted σ); to which is in equivalence a shared time of subtractive nature to the ordination of spatial extension.

Principle of **Synchronicity**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (758)$$

Together, this is nothing more than the equivalence of references of vantage for any two particles.

The direct consequence is that:

Any two contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor of density; for in that of one following adirectionally apart; together; or separately; there is a transparency of logical union of quantum description; that of an interior coextensive dilation contraction factor owing due to their (shared) comparative proper measurement of time.

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a *free* substitution of difference of perspective and vantage; to which forms the uniqueness condition of any two point like limits of relativity & quantum mechanics; for that of any given principle equivalence of time and order; the principle inequivalence of which is a co-determinism to any two probability densities.

The general consequence and implication of this for signals of frequency and functional form under transformation is that: By one (1) comparative differential to quantifiable mean variance in difference of driving frequency encompasses either of any two subcomponents of alternative exterior difference of a given surrounding constructible geometric congruence.

Therefore with general functions:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (759)$$

Implies: In log decibels any two differently concordant rhythms are separable by any given measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature. Therefore considered together these two imply the equivalence of results

and particles under parallel interchange of perspective and vantage.

Principle of Measure: *Either one of Parsimony; or both of Synchronicity of given absolutely relative and arbitrary limits of codeterminism within shared point-like relation of temporal extensibility of measure and argument agree to (a) given variety of locality within a shared pre-text; to which with but one given shared body one given end congruent relation is empty of measure or extension; and one beginning notion is free of adeterministic consequence; the implication of which is that measure is certain and measurement strictly semi-deterministic.*

We can therefore conclude:

β :) Geometric weight of relativistic point application of force is equivalent and opposite to quantum mechanical point application of impetus.

α :) Geometric weight of point like mean density in relativity is equivalent to geometric weight of point like variance in quantum mechanics.

Conclusion: *Geometric weight of density and mean force of impetus are equivalent in a theory of comparative equivalence and complimentarity; to which in addition all events carry an equivalent contribution of $\delta_\epsilon = \hbar c$, for which any two constitutive relations form a synthetic factual known of truthful valuation under superposition of one given naturalized geometry.*

Relativity Theorems

The phenomena of which is intransigence of notion for particle and recurrence for wave is the addressment of deterministic end to description at the benefit of representational permanence in reality; therefore to be known here as two givens in physical law and this world within that of **real** connective and disconnective of known's under *displacement* as *relation* of any given one known to it's identity and any additional known:

Parsimony: Any principle comparative measurement of frequency under it's given equipartition at most meets that of analytical threshold of physical variance of mean partition of yet an other state within the contrast of two idealized localibilities.

Synchronicity: To what is ideal of measure; any apparatus of measurement idealizes to yet one threshold of superior relation of major for minor localibility of the idealized process of measuring under comparability to reference and sentient witness.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

$$\gamma_c \leq \gamma_m \tag{760}$$

Property of Light Variance: *The speed of light in when known as fixed to a universal standard implicates that all such durations under observation are identical with and greater than that of any given singular pre-contextual arrow of time by the speed of light universally; for the property of dilation is obverse to any stated fixed measure of relation.*

In this, γ is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity)

precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path upon passage.

This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated).

Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other observer, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence of congruence under emptied return of ordination and temporal excess of comparative shared time to threshold of objective for any given two body problem. Consistency for that of closure is therefore defined by that of what can be found as a 'bottom' extremum beyond which measureable extension of locability of a given limitation of enclosure unto each given domain of relation potentiates two fundamental mathematical principles in this given world; for which there are solid and diffuse natures to reality in contrasting degree of pattern and reference; to which is an a priori assumption natural to the sciences. Therefore there are two fundamental limitations of physics; that of one indical and one ordinal theorem; their synthetical remark the passage and persistence of time:

Conclusive Remark on Time: *The relation of a distant observer in observation to that of the point of the first observer when in motion is of a greater measure than then the reference to the observer under observation to whom as observes a lesser comparative time in that of the observer of it's given observation & alone as greater, comparatively; to what it observes in persistence of motion; these being the two natures of time in relation to any one (of either) such observer's difference with (in) that of equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (761)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

Ideal Principle Equivalence

Conclusive Remark on Measurability: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of any multiplicity of observables by observers are measurably null and unphysical when any one is undeclarative.*

Quiescence: *Any free light field congruence as the amendment of a free frame under geometric associability and indication is to it's field of subsidiary particle index therefore a free integral and*

differential of associated field compliment and vantageless a-perspectiveless freedom of degree.

$$\partial_{\alpha\beta}^{\gamma}\Theta = \Theta_{\alpha\beta}^{\gamma} \quad (762)$$

Prescience: *The integral notion of this given universe is therefore the capacity of space to capacitate an indical notion as the presence of a quotient group of complimentary ordination to constraint-free degreeless displacement-free identity and variable of aconditionality of principle.*

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (763)$$

This is the given statement that a freely disconnected relation of space is capacitated by that of temporal congruence under free transmigration of identity of indeterminant principle accrued integral and differential notion of field and seamless light-like transparency of ordination in it's capacity to immeasurably exceed the given capacity of matter to inhere motion. It is therefore held as true that any two quantities of displacement of measure unto and to measured are coextensively congruently null and asymptotically free of any two measurement processes by that of indivisibility of ordered expression as the known independence of order from ordination in the indical notation:

$$\zeta\chi = 0 \quad (764)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (765)$$

The algebraically free projection of any co-automorphic degree or vector into any one-form of geometry of null displacement invariance with in that of null indistinguishability invariance is therefore the general and full expression of a principle equivalence of null covariance as the expression of the primary notion of the predicate calculus of invariant's.

Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (766)$$

Principle In-equivalence:

$$\eta\rho + i\sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (767)$$

Any two held contraction dilations are therefore uniquely independent of any additional third by that of their commensurate action of congruency of geometric difference under open relation of objective addition of relativistic co-factor; for in that of one following adirectionally apart or together; there is seamless transparency of beginning to end of pathwise extensible union.

Therefore:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (768)$$

Therefore considered together these two imply:

Theorem of Freely Held Determinism: *Either one; or both of (2), given known invariances of absolute limitation unto independence of point-like relation(ship's) of proportion are indicatorially free as thereby the given theory of electricity & magnetism to (any one (1)) variety of non-locality; for which one is but a beginning and end congruence of relation as empty boundary condition.*

Reduction under the Temporal

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of any unbiased system of units (to which is the deduction of temporal measure from out of spatial translation).

Therefore the given holds as true by the following; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (769)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (770)$$

Are equivalent parameterizations of the same problem, as both intimate a connective between transposition and migration of quasilinear pathwise extension in space to which order is subsidiary to and, upon, qualifiable degrees of motion as that of which are neither circular nor point-like.

$$\frac{v}{c} \leftrightarrow 1 - \frac{v}{c} \quad (771)$$

This principle of inequivalence in concordance with principal equivalence is to be contrasted with the exterior space-like symmetry of the theory of relativity when it is considered that actual determinations of validity are certain only when one deduces inwardly from temporal to a conditional extension into a given spatial measure.

As a consequence; one or both given ends of any one continuum of a virtualized or real world are not to be found; for the projective forward and backward (surjective) intimation of relation contains no common zero but as algebraic connective and disconnective of atemporary spatial union. The expression of this is that of an intermediary identity locable everywhere in space as the untitled degreeless identity of quantum mechanics.

The principle inequivalence instanced by $\sigma(t)$ is then the marriage of one body to a two body problem by which either agrees with reason and consistent notions of space alone; to the entitlement of understanding of time; the extra $\sigma(t)$ being the accordance by phase of that of a temporal signature to inertia. When one analyzes a mirror with this concept in mind the result is as to two defining relations of analytical true supposition of the 'vertical' and the 'horizontal' rate of comparative temporal extensibility as limitation of arc-width to perimetric co-extension of signature:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (772)$$

Theorem of The Quantum

In order to investigate a potential factoring of the two body electron equation into which the problem may be cast or dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which there is escape from the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions.

We prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave and frame descriptions of two particles; to which belong to differing descriptions and frames; denoted by \sim or $-$.

Here we find that De'Morgan's law's imply:

$$\langle A \rangle \langle B \rangle - \langle A|B \rangle = Cov[A, B] \quad (773)$$

For which $Cov = A \circ B$ is the covariance of events or probabilities A and B ; with which $Cov \equiv \neg Cov = A \cdot B$:

$$A \cdot B = (\neg A) \cdot B \cdot (\neg B) \cdot A \quad (774)$$

Where $\sigma(t) \equiv i \langle A|B \rangle$. Following De'Morgan:

$$\beta[\zeta, \xi] : A \circ B = A \cdot B \quad (775)$$

Where Cov and $\neg Cov$ are the event and it's compliment at the point of a 'event' to which we find that geometrically there is equivalent weight to any two of an event and it's compliment (the statement that $A \circ B = A \cdot B$ when an event occurs).

It is now time a dimensionally free weight of independent quantum event comparability to the geometry of space and time is introduced to which is the adherence to independent of events; that of the form of logarithmic equipartition of unique decompositions under geometric freedom of state prescription of statistics:

(1.) α : *Limit of areas under arcs to radius of curvature (log); takes the position of the integral.*

(2.) β : *Limit of arcs ratio to radius of curvature (log); takes the position of the differential.*

These relate to the given that is the 'point like' or 'cuspic like' relation of certainty as an arbitrary argument on 'scale' $\delta_\epsilon \rightarrow 0$ (zero) in the limit of which it is a prescription to the geometric addition law of probability density; following from the tenement of 'The Uncertainty Principle' and 'The Equivalence Principle' at the infinitely small to infinitely large scale by the laws of calculus.

For as proof; consider that ω is a frame; then rotate one such frame around until it vanishes to a point.

A logarithmic spiral is the limit of geometric congruence; to which arcs and areas under any curve describe a differential and integral form as length or area to radius progressing to the limit of an infinite process of equipartition and equivalence of all events.

First, we utilize the Guass-Bonnet theorem:

$$\int_V \Omega(\alpha) dV + \int_{\partial V} \omega(\alpha) d\tau = 2\pi\chi(V) \quad (776)$$

As an alternative to relativity; and to mathematically the source by which Einstein is correct; there in three dimensions; the boundary is greater than the volume of a fourth dimension; at which the excess of one; is the counting of a number; by which all exceeds it's difference; and the certain exists. To which in either there is an exceeded and a difference in a number; the limitation in the curtailed mean of one variance to excess in three to two dimensions is found in that of the volume to which a fitted relation is of the lesser in content of the surface to what

is found in that of the filling of a volume to that of the dimension by which the counting is equipped.

$$\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2 = 2\pi\delta_\epsilon \quad (777)$$

Hence a sphere; in it's limit of radius shrinking to a point; is lesser in volume than that of by which a sphere in it's volumetric area shrinking to zero is made smaller to a point upon which a boundary between three and four dimensions is made larger than it's complimentary two dimensions of filling. As to a sphere in three dimensions; it is larger in it's boundary than four dimensions is in it's volume. Hence in counting the identity is always counted; and the mean threshold below a given variance is certain in relation to that of expanding by one dimension; made as the accounting of volume of one dimension larger always decrements the surface by a larger excess in diminishment by a count of one δ_ϵ .

Statement of Knowabilities: *The lightness condition of one degree of variance is to the greater of it's leverage in count as to the difference in that of the perimetric volume comparative to a volumetric dimension of a counting by one ipseity.*

The proof of the master statement is as simple as the proof that; by displacement:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) = 0 \leq \delta_\epsilon \quad (778)$$

Concerning Singular States

When considered at first; one may be tempted to set that of state 'A' or 'B' to 'zero' as in the limit of $\zeta \rightarrow 0$ or $\xi \rightarrow 0$ to extinguish the particle and wave notion of the state; however; one is not afforded this errancy when taking a 'literalist' picture of the subscription to such variables. One finds that a bridge at the threshold of certainty prior to any uncertain event of a given expectation one is potentiated - the fact that 'a' prediction can be formed. Instead; it must be that states 'A' or 'B' are *mute* in such a consideration; and take on a neither present nor absent condition of which then the equations become (let us reference 'A' as *mute*):

$$\beta [\zeta, \xi] : A \circ B = A \cdot B = B \cdot (\neg B) \quad (779)$$

And:

$$\langle B \rangle - \langle B \rangle = A \circ B = Cov[B] \quad (780)$$

Then:

$$\beta [\zeta, \xi] : 0 = 0 \quad (781)$$

Therefore the equations hold in the limit of one particle. Of their 'grosser' statement; that *the rules that apply to two particles also apply to the notion of the singular particle picture* and it's truth; the consequent forbearance on that of the weight of knowledge in it's minute element is indicated to be the domain of mathematics.

The new equation for β is:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) \cdot g(\tilde{\omega}) = 0 \leq 2\pi\delta_\epsilon \quad (782)$$

And, let the new equation for α be:

$$\left(\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2\right) \cdot f(\tilde{\omega}) = 2\pi\delta_\epsilon \quad (783)$$

Now we let $(\zeta, f(\tilde{\omega})) \rightarrow A$ and $(\xi, g(\bar{\omega})) \rightarrow B$ to which the original functions are associated with their representation in terms of frame; identifying the geometry with the particle: $[\zeta, \xi] \rightarrow [f(\tilde{\omega}), g(\bar{\omega})]$. Equation α and β are here associated with a geometry and a particle definition of weight and description. Clearly; α becomes under substitution of A :

$$f(\tilde{\omega}) = 2\pi\delta_\epsilon \quad (784)$$

And β becomes under substitution of A for ζ and B for ξ :

$$(1 - 1) \cdot g(\bar{\omega}) = 0 \leq 2\pi\delta_\epsilon \quad (785)$$

As $f(\tilde{\omega}) \rightarrow \zeta$ and $g(\bar{\omega}) \rightarrow \xi$, this is therefore the statement that it is particle A that is incremented in deficit and particle B that is constrained under incremental rule to the above equation *whether or not the particles are distinguishable*; and particle A that is constrained to the usual uncertainty principle of secondary prefectiture; (a *potentiated* but *mute* raising operator unavoidable) where for convention we have:

$$\hbar c = \delta_\epsilon \quad (786)$$

This has the interpretation that geometric weight of a quantum process in the limit of $\delta_\epsilon \rightarrow 0$ is $\hbar c$; to which we see that a single particle (to be interpreted as arising somewhere and disappearing somewhere); follows an orbit of translocation by 2π . This is consistent with the wave structure of an angle τ in integration be the limit of an infinite process of *dimensional reduction on equivalence of events*; to which with A , τ :

$$e^{\pm i\pi\tau} = f(\tilde{\omega}) \quad (787)$$

And with B , v :

$$e^{\pm i\pi v} = g(\bar{\omega}) \quad (788)$$

Clearly; then for symmetry α the first equation is;

$$i\pi(v + \tau) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (789)$$

And the second equation for symmetry β is:

$$2i\pi(v + \tau) = \log(\tilde{\omega} \cdot \bar{\omega}) + i\sigma(t) \quad (790)$$

For;

$$\sigma(t) = -i\langle A|B \rangle = \pm i\pi(v + \tau) \quad (791)$$

To which:

$$2i\pi(v + \tau) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (792)$$

Since:

$$\log(\tilde{\omega} \cdot \bar{\omega}) - i\sigma(t) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (793)$$

With (+) holding for that of two particles and (−) holding for one particle; to which is redundant; indicating that equations (35) and (39) hold for **both** the one particle and two particle equations of motion. The indication here is that with $\tau \rightarrow \rho$ and $v \rightarrow \eta$ that there are two fundamental equivalences for the restriction that is the *one* particle; and *two* particle dynamics; these equations therefore forming the *recomposition* of superposition and independence of event identity in quantum mechanics.

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established but alone unto measurement.*

Beginning with prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (794)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (795)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (796)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (797)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of co-local observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure certainty.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of co-local or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds re-expression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (798)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (799)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (800)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (801)$$

Which means that in either given limit of ordnancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

Proof of Translation

This means that in either given limit of that which is within limitation of relation of measurement, from a beginning of a sequence of given order unto a given distribution of finite and relational quantifiability to limit end occurrence with consideration of time; a limitation is expressed as a given truncation of error to greater than reproducibility; therefore a reduction to zero by any end quantifiability.

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common co-moving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment all of which are in confirmation for the reason that expectation exceeds prediction in validity.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and

independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and a world:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (802)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first ‘constitutive’ argument goes as follows:

$$\eta = \langle \psi_1 \rangle \quad \rho = \langle \psi_2 \rangle \quad (803)$$

Taken as two measures on the quantum wave-function; Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (804)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (805)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and it’s shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from ‘above’ for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

Wave Particle Duality

Therefore by the preceding logic there are two given separated zeroes between that of each identifiable point like limit of physical reality; for which with no local identity or naturalized point like relation of absolute form implicates that the residual geometric involution of one particle wave function is the exterior of it's stated alternative. This is the equivalence and comparability of functions under the presentment of a commonly held geometric congruence under reciprocity between any two given qualified limit events.

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (806)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (807)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error of standard variance under mean shrinking to: $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (808)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error.

Finally we arrive at some new conclusions. As for the quantum principle; we find three new interpretations and a new one:

"The particle wave duality is harmonic."

"No particle wave duality exists within a limit."

"The boundary condition is a harmonic criterion."

Are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at once?"* With the answer: **"No."**

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

"Is one the given reduction of the other as unique?"

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past: *"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past."*

"Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

Exchange Locality Theorem

A composite factoring of the two body equation occurs as the foundational reason of which is provided by relativity and the quantum notion of temporary extension of a given particle. To begin we identify a given admixture of partial differential equation following the principle of a connective to a given ultimately knowable quantity; that of the co-inertia of spinor one-form under subjunctive pre-tense of dimensional contrast. The entire property is a free particle inertial field as a diffeomorphic manifold invariance of co-automorphism unto intimated connective to spatial adfixture. Upon factoring of phase-conjugate and adjoint-free phase freedom the logarithmic identities of principle equivalence and principle inequivalence are provided as givens:

Statement of Symmetry: *Extrinsic modification of one equation under antisymmetry of operator to a stated symmetry of operation are intrinsically an interior symmetry in whole and the antisymmetric parallel of operational exchange of particle notion and pair field.*

Under these provisions the properties of a two body particle and field equation are decomposed; seen alternatively as a completeness for one particle and a replicated particle and partner field. The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega = 0 \quad (809)$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2 + \sigma(t))\Omega = 0 \quad (810)$$

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (811)$$

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the theorem of one particle and a replicated particle and partner field of inertia:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = 0 \quad (812)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2 c^2)\Psi_{A,B} = 2im\gamma^\mu D_\mu \Psi_{A,B} \quad (813)$$

$$D_\mu = \partial_\mu + A_\mu + \partial_\mu \log \gamma^\nu \quad (814)$$

The gap remains as variant and free yet as commonly dependent on the differential. To note is that when all electron inertial energy momentum is absorbed; particles become anti-particles.

$$(i\gamma^\mu D_\mu + mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = \Delta(v, \tau) \quad (815)$$

Therefore, two electrons are the generator under anti-commutation and commutation of their subsidiary operators of a notion of particle and antiparticle product relationship with a mass gap *of real displacement* equivalent to the splitting of each reduction in energy at the relativistically accommodated treshold momentum layer and energy level of either one such particle.

This explains a mass energy gap for that of the two body electron equation as an effectively regularized energy lowering comparative to a temporal displacement of accrued phase compensation in the inertial field as past-associable-displacement of what is understood as the absence of one electron and it's surrounding indicial presence in relation to any other electron as an effective positron. For what is of presence is of absence with matter for the union of spin and charge under fractional separability of inertia and co-inertial extension; together forming a solid whole of motative inertial reduction. A way of interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates; therefore under a reduction of surjective phase 'isolation of degree-free asymptotic separability; one hole is intimated as a closed unionable past-associated electron.

1.) *Rotations of the electrons in local (spin) and global (orbital) inertial adjoint upon the spin of the two electrons under exchange are of empty rotational orientation when viewed from above or below.*

2.) *Therefore these rotations are generative under exchange of a raising and lowing operator of their individual orbital and spin mechanic by the expression of a co-adjoint commutation relationship of diffeomorphic and algebraic relation.*

And as:

A.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that does not violate the Pauli exclusion principle when it is corrected for the sake of global to local relativistic considerations.*

B.) *Correcting for this coordinate dependence results in a state for which the spins continue to follow the Pauli exclusion principle as Fermions with a charge wave function, when a positionless contrast of the portion of the electromagnetic interaction becomes of a real attractive interaction equivalent to a weak Bosonization of the states.*

Advanced Potential Function

The differential equation for a soliton equation includes a derivative notion for then in that of any given soliton-like excitation; however in many primary treatises the formulation of a solution and/or differential equation with stability criterion are ill-defined.

$$\nu\mu \cdot \Xi = \mu \cdot \Sigma + i\eta \cdot \Xi \quad (816)$$

Where Ξ is an open sigmoidal function; and Σ a helical indicial function:

$$\zeta\xi \cdot \Sigma = \zeta \cdot \Pi + i\eta \cdot \Sigma \quad (817)$$

$$\Pi = \Xi \cdot \quad \Sigma = \Pi \cdot \quad (818)$$

And ν and μ with η are ρ , η , and $\sigma(t)$ in that of the priorly presented log equations. The differential equation satisfied is a variant of the Bouissenq equation with a potential relation; that of the imposition of a threshold from that of the stability criterion under reduction of \beth to \aleph in four dimensions to two-dimensions for time:

$$u'(t) = J \cdot E[u(t)] - \phi(t) \quad (819)$$

That of the boundary condition is proven for that of:

$$J \leq \phi(t) \rightarrow E \leq 0 \quad (820)$$

Therefore that of this equation to which we address that of the differential operation above with:

$$(\zeta - \xi) = \nu(v, \tau) \quad (821)$$

$$(\zeta - \chi) = \mu(v, \tau) \quad (822)$$

$$\eta = 2\pi i \partial_o \ln \chi(g) \quad (823)$$

With:

$$\chi(v, \tau, \sigma, t) = 2\pi i \cdot \chi(g) \quad (824)$$

Therefore for a free manifold; the relation of $\chi(g)$ is the expression of a topologically invariantly held mapping of a manifold to it's surjectively held onto mapping of enclosure in that of the subsidiary conditional pre-text of a formative valuation of a foliation on the alternatively provided physical space. That of ν and μ therefore provide for the equivalence of these two differential equations; to which suit ρ and η of the log relation. Therefore that $\sigma(t) < 0$ implicates that $E' < 0$ and that the equation of spatial order is below the layer of yet the J in relation to ϕ ; to which the freely held nondeterministic end of a capacitated 'certain' past element of reality within the mathematical domain; is a freely held provisional *solution* to which primary and preliminary boundary condition is empty to initial condition as the stability criterion. This is the difference of for what is that of μ and ν as situated below the threshold of spatialized relation; to which time is capacitated as deductively a secure principle of certain nature.

The log functions in their manifold enfolding of the differential equation determine that any two exchange processes of circularly polarized and point like relation are independent; to which is the independence of time. For that of the associated ρ and η the determination of the reduction in principle variance of any two normalized distributions is a reduction therefore below that of one normalized distribution for the reduction of either factoring of the two particle equation or that of their mean distribution comparative to uncertainty; to which *only certainty remains as*:

$$\rho_\sigma < \rho \quad \eta_\sigma < \eta \quad (825)$$

This is rational because the pre-text of ρ and η is that of acknowledgement of $\hat{\partial}_x \equiv \rho$ and $\hat{x} \equiv \eta$ being capacitated of simultaneously held certainty; that of their exposition of yet the product variance in equivalence under reduction with $\sigma(t)$ with that of summative variance; to in either the fact that *if momentum were greater then the spread would be lower and the overlap less; therefore the expectation of position uncertainty would be lessened; and (⚠) if positional distribution were relaxed; that of expectation of momentum uncertainty would be lessened under depreciation and reduction by $\sigma(t)$ to which is reductive in either logarithmic (log) equation under **superposition**.*

Therefore:

$$(\hat{p}_x, \hat{x}) \in X \rightarrow \langle f, g \rangle \leq \frac{\hbar}{2} \quad (826)$$

The notion here is that the dimensional reduction of time to two dimensions fits into the relation of four dimensional space; for in that of the stability criterion either distribution is a real number line distribution in two dimensions of variance.

Therefore:

$$g = 1 \quad (827)$$

Is the indication that classical virtualized processes are forbidden in that of this given naturalized world of any two variances.

Abstraction

To produce a proof in certainty and manifest disappearance of asymmetry by displacement to matter of light by substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + i\sigma(t) + \alpha^\mu\beta^\mu\partial_\mu^2)\Omega = 0 \quad (828)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu\beta^\mu\partial_\mu^2)\Omega = 0 \quad (829)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows; it's consequent experience of time as deduced from motion depreciates it's partial differential in the other frame as a consequent lemma of reduction to a phase continuum of spatial relation and temporal extensibility. Therefore any one greater in time accumulation comparatively (as explicated phenomenologically here) co-conspire to bind a state to the given of rate-temporal displacement freedom. Motivating this; under reductive subtraction of twice the secondary equation from the second prior; the expression is therefore an equation under reduction as an equation for light under the principle of spatially free coupling of any two given particles of charge and spin.

This then indicates the indicial representation of a Goldstone mode Boson:

$$(f(\tilde{\omega}) - i\alpha^\mu\partial_\mu)(g(\tilde{\omega}) - i\beta^\mu\partial_\mu)\Omega = 0 \quad (830)$$

Therefore all light and mass exists with inherent *displacement freedom* in an otherwise particle equation of neither attraction nor repulsion and pair potential lesser than zero; for an unfilled preceding a-temporal ordination of one particle predicates that of the existence of an ancillary field theoretic threshold on the destruction of an accessory potential and particle future oriented event horizon. Therefore the equation for light and mass is seen as *both* instances of descriptive freedom of certainty under co-deterministic appropriation when $\Delta \geq 0$ in:

$$\Delta = \sqrt{\sigma(t)} \quad (831)$$

Time is then seen as something that is co-participated in and of, in particular, participated in; but of time for a differing point differs both quantitatively and qualitatively to that of the process of measurement and measured upon the objective of a focus to which is empty of unitary basis of homotopic onto limitation. The corollary of this is that all motions differ by merely a displacement freedom and inertial aggregates of two body nature in relation to which explain the appearance of mass, motion, certainty, action, and light for $\Delta \geq 0$ exists for all finite displacive motion and positive energy. Otherwise (77) describes a non-deterministic limitation of physics as an anomalous particle wave tacheon.

Conclusion

The cat paradox and it's disproof is therefore furnished by examination of the question as to if one intangible relation can 'fit' in-to another; to which the possibility of the construction of such a box is unafforded of possibility. The relationship of one closed relation to one opened relation of particle horizon mentioned implicates that the answer is a definite no as to it's construction by the following logic. Any one larger certainty to a limitation of yet it's definite does not accord with in that of the microscopic scale as suited to a 'deterministic' interior of closed relation of macroscopic state by surjective automorphic exception to prior pre-stated addressability.

Therefore this problem is akin to asking a question for which the opposition is a self-statement and one which is therefore the ancillary doubt with dis-entitlement of a given thought experiment; the evidence for which is that as a naturalized problem it is the presentment of a dead end of indication to no solution. It is therefore analogous to asking the problem with a question. The solution is that the cat is either alive and well; or long gone and dead; but yet that no device functions in this manner; as one statement of indication to deterministic outcome is prohibited by the instance of a machine with expectation of return summative carry or quotient carriage.

So as to suggest that spatial union is un-broken as one comparative temporal signature is a delimitation of any two given certainties of machine expectation; therefore the cat and death-contraption hold an entirely independent reality.

Therefore any two points of reality are deterministically free.

Given the equivalence principle applies to determination of the inertial properties of two objects (a superconductor and magnet) as two separable instances; it is seen that together; these constrain the uncertainty to at most two free points of reality (a limit on momentum uncertainty and a limit on position uncertainty) to which ‘fits’ absolute certainty by reductionism from empirical law in the macroscopic realm to the microscopic.

This holds true as the given expectation of both momenta and position hold an upper limit on the threshold invariant global uncertainty of variance in one standard deviation of any one of two given non-degenerate distributions imputed by the existence of independently held given of momenta variance; to which derives from it’s conjugate a mean threshold of one held unstated missing alternative coadjoint variance in position; under the emptiless preceding invariant ‘uncertainty’ of one \hbar in 2.

$$\langle \hat{x} \rangle \langle \hat{p}_x \rangle \sim \frac{\hbar}{2} \quad (832)$$

The affordance of a limitation on two larger objects fitting into the same smaller space; is, by logical deduction on empirical and theoretical founded principle of state-space therefore implicates immediately that the bound on scale and scale-free measures of co-determinism extends to the microscopic realm. This alternatively suffices as confirmation that a *Quantum Einstein Podolsky & Rosen*, or a non-Indicating *Quantum Non-Ipsity Conditional Entropic Universal Bridge: QjCeUB* may be constructed and built; to which the solution to Shroedinger’s cat paradox is furnished.

To understand this; any two given ‘objects’ of a covariance in measurelessly uncertain and shared proper time of empirical law to separation of superconducting (Type-II) material and magnet; (to which separably are a causal disconnect by that of adeterminant inclusion of preceding exception of semi-determinism or equivalence of electricity and magnetism within that of gravitational aconditional support to certainty) are the illustration of analytic & **exact** determinism of **physical** law.

Part II: Ordinal Predicate Calculus

To what is held of a measureless extremity of determinantly free asymptotically free degrees; any two interior relations of the held and the capacitated of order are predicated on that of what is inequivalently a determined and an undetermined flow free condition in admixture of one for a withheld in an alternative of energy content. For of what is a frequency in that of a formed and chosen difference of measure for contrasted displacement freedom of an ordinal relation; imputes

that any pattern for that of its congruence includes an alternatively and required inclusion of an even set of odd ordinally free relation of what is a surface wave under a cuspid fold; then bivalently the holding of an equated of provisionally applied non-determinant and included co-determinant non-ordinal free disconnective of what is held in another alternative pattern of congruence to any one subsidiary patterned excitation. As a consequence; it is true that of what holds for that of a mathematical domain of exceptionable contrast in the physical world; the two determinant limitations are free in that of but yet a balance in that of physical precept and isothermal relation of a commonly held extrema.

Thermodynamics and Temperature

To what is provided of measures and elementary provisional application of a theory of order; that of the given understanding of nature is an equilibrium of at least two quantities; that of the spatial apart from the temporal; and the co-extensibility of a congruence in ordinal relation; as to a completion what is so is the equated measure of distribution and its variance. That of what is held of one displacive measure and that of an equated provision to determination of volumetric flow of an exterior relation is simply summarized as that of a meter for then in a decibel; and to which the equated differences of these individual capacities predicate motional inertia in the contrast of liquid or fluid nature of particles and structural transference of any two waves.

That of a begun contrast in the inequality to its provision at a determinant separatrix inquires of property in thermodynamical invariant as to that of null relation to yet a meter and a wave as in the fugacity freedom and frequency partition of non-space-like particle freedom's of motion; to which a particle is identified by that of its capacity to freely transfer momentum; and to which excuses the context of a propertiless and given disposition of its elements in any two free fluidic free elements of surface element.

$$d\chi(v, \epsilon, g) = \zeta(v, \epsilon)\xi(v, \epsilon)\chi(g) \quad (833)$$

The equation of which is that of a measureless degree of separatrix of the relation of ordination to a complex; and the free relation of any two period measures in that of their frequency space to which a zone of influence and that of any two determinantly held free conditions hold no constraint; that of with one; the field theoretic freedom of two given presentments at that of workable assumptions of which are a provided division at that of one frequency select measure and that of equated measure to a considerate end in that of what is held of interval to frequency-phase transverse locability. That of what is held of fugacity; the capacity of degrees of freedom; and their portion to which is the freely displaced part of a field; is the free light and sound disconnective of that of either two null conditions on place to place; for within one exterior space the notion of any adjacent heat engine co-determines a known invariance in two; that of entropic limitation and that of their second differential notion of temperature capacity of heat.

To then an excess delimitation on the measure of one precipitated known invariance; that of light does not freely transmigrate at that of a subsidiary wavelength to then in accord of what differently provided is an excess in the positive kurtosis of a wave vector its supremum difference of point like departure on any three; yet so of one subsidiary wavelength; that of but what is one depression in the known invariance is the predication of a logically sound foundation to order preceding chaos; for of what is their even to odd relation; the provision to then in an end what is supposition for hypothetical; is the fitting of a relation of secondary equilibrium; of which is non-spontaneous; and freely once more the type of difference of accrued departure

from an equivalent distribution; that of an out-lier to then what workably there is secondary to an inclusion in one homogeneous limitation.

Normal Product Relation

When it is given a provision to two contactless relations knowably inquires to a certain end; the co-deterministic exterior world entitles a difference of what is a surface for then in a linear point like extension. The held inclusion for that of time is that either further or former presentment of an acquired determinant uniqueness includes a normal to what is a form of shape for that of continuum contrast; as to assure of that of a deficit in either; what of both is an exception to dis-included return of one point like complex; as to free a wave elsewhere through that of what convexity classes impute a relation to an alternatively provided evolutionary pre-text at that of substratiac problem to answer of that of pathological end of ordination with in that of it's given declarative structural element of light to sound echoed freedom.

Then; alone with what is given to certain dispossessed elements of which are temperature; that of states per function of transverse pre-determination to acquire then a normatively held partitioned summation and that of multiplicative complex imaginary cyclic exponentiated freedom to their sharp and flat inclusion in that of a sound basis foundation. When it is suggested that what is kept in two is their third part ordination; the given inclusion of a spin cyclic freedom of one paraxial relation to yet what is no degree yet of a moment; is the gyroscopic inclusion of a predictive normative valuation to which in what is apart; the divorced concept is an isolable freedom of subsidiary solid contrast.

For then in what is a barrier; however; that of the inclusion of a prefecture for in one withstood interior wave structural end in that of evolute mean is it's involute period-average of variance of any ordinal relation and in alone to which one wave may be self-contained yet contain an origin in that of what is unexposed of property of fugacity freedom in the ideal limit of withheld equilibrium; finite or numberless in ordination; and to which in two; their's of a preceded normal and flat relation; entitles the determinant of a singular sub-bandwidth specific frequency of pole identity.

$$\Theta(\phi_1, \phi_2) = (\kappa\partial_v \pm i\rho\partial_\epsilon)(\eta e^{-i\kappa\phi_1(t,u)} \pm i\rho e^{-i\rho\phi_2(t,u)}) \quad (834)$$

For what is mistaken of an entropically provided and named context to a free union of convex and defenestrated prohibition of one order; the inclusion of a pre-considerate end to what is a determined obstacle; freely provides for open consideration of yet a flow in it's added relation of difference to any causeless submannerism of physical law. To which with:

$$\zeta(v, \epsilon) = \kappa\partial_v \pm i\rho\partial_\epsilon \quad (835)$$

$$\xi(v, \epsilon) = \rho\partial_v \pm i\kappa\partial_\epsilon \quad (836)$$

$$\Theta(\phi_1, \phi_2) = \zeta\xi - \partial_o\tilde{\chi}(g) \quad (837)$$

For then in what is the exception to a free field theory; that of determination is an artificial provision at the certain way in which a precontextual determinant adjoint or hermitian operator on the level of unification of any two isospinor fields hold a free co-affinitive. For in that of what is a held assumptive of distinguishable levels of threshold and enqueued relation; for in what includes consideration of a major and supremum; the relation of the few charge free groups include two measures; of which are a radical to base residual free evolution in the former of fugacity and

enthalpy.

Therefore; of what is considerate of a difference in then ζ & ξ , to which are fugacity, and enthalpy; to which is it's inclusion of a fluidic return paththrough of former for then in latter of the relation of an entire displacement; the given accrual of what is held in the notion of a principle effect priorly to it's given conclusive elemtn of cause in the past; is the inclusion of what is the precept of entropic freedom; to which a disconnect instances a freely held and independent evolution of a secondary consequence beyond the limitation of what is singularly an anomaly.

To which we escape an asymptotic freedom in two; the relation in a third of what is freely a provision of these to occlude a relation is the subtension of a viscosity in the relation of provision to then in the held a formative beginning at temporal congruence of asymptotic return hyperbolic union. The statistics of one therefore include an underprovided relation of ordinal reorganizational precept to which is the missing element in any ordinance of three unto one freely held positionless but absolute identities of relation of piece in game or structural deficit and sound-like ordered relation of blind passage and sequential determinant identified with μ .

Degrees of Freedom

That of an entropically free midpoint to a variance of density of states is the included difference of what is a photonic field of quanta otherwise in a super valent and super covalent space as the difference between any charge free surface topology. Inhibition of a threshold layer transitional element wise reduction of a contactless point of fluid free displacement of momentum into solid difference of a unioned and manifold return; under a precessitorial relation entitles the phenomonological principle of percolative priorly established hidden variable(s); in plural or singular, a conditional determination on that of free entropic equation of state inversion and equilibrium point. When it is considered an entropic point is the variance of a relation; to which is that of the central difference of a differential nondeterminant and exclusively free relation of momentum exchange. That of the equation of state is predictive of a group theoretic interrelation of three fold enthalpy, specific heat index, and valence of transmissibility; to which is a similarly held assumption of equated nondifferential and integral forms in that of the open prescription for a constraint free dynamic; of that of it's existence; in that of a remainder; that of a certain and provided given lossless two part index of passive and active indication to what is color.

$$J \cdot E = t_u + \eta \cdot s_q \quad (838)$$

That of what is so with one relation of an operational flow to it's conjugate displacement in the two of energy and power as a tensorial time rate of congruence for then in what is held of an ordered and orderly-free relation to it's congruate temporal relation of what is unitary in one; is the free enthaply of one admixture comparative and aside by specific heat capacity in relation to what is spatial congruence of qualitated percolation index of any twinned freely held fluidic admixture.

The Understated Provison of Degrees

The independent precept of one equilibrium point for in another is that of asymptotic freedom of a delimitatory nature in an alternative void-openly provided relation of what are therefore any two ideal gasses upon that of the consideration preliminarily to an adjusted notion of logical

foundation of threshold; to which mathematics acquires a subsidiary context of the formative for then in the propertied inclusion of deficit and contrast free variables under the assumption of freely held determinism in any numberless infinitive. To that of what is taken of a context for that of what is withheld of a declaration in two given presentable options apart; the consideration furtherly held of a freely held infinitive of past associable delimited structural ordination and relation is in two their complimentary and free radical notion of ordered relation apart from randomness of a quasistatically sourced domain and infinitive periodic ancillary structural fault conditional. This conditional is that of what is withheld of an ordered relation in what are any then three given predeclarative variables of entropy, limitation of fugacity, and gas free entropic exchange. Therefore of half; what is whole; as within that of the consideration of a vessel is not a portion in queue to number accounting for in that of what is a microcanonical ensemble of it's relation an entire set and superset until it is stated as a precondition of another set theoretic union of an alternatively provided bridge notion of then any two or eighty or eighteen gas variables; the contextual relation of which is blind, colorless and invisible, and solid and unqualified free divisions of the logistic equation; to which accrue that of 160 and 36; or as 5 minus 20 degrees of the precept of a hidden dimension of variableless extension of four and a fifth variable outside the nomenative declaration of what are three and a fourth; of two lattice constants. This free variable degree of a partition externalizes a difference of what is an outwardly provided dimensional difference of statistic; to which the fundamental relation is that two free variables contract under a basis element; for in what is a fifth as second order differential contrasted functional free thermodynamic evolution of this world.

Given accumenatory degree-free relations of state:

$$\Xi(t, s, u) = \eta(\tau) \circ \mu(\epsilon) + \Omega(\eta, \mu) d\eta(v, \iota) \cdot d\mu(\epsilon, \iota) \quad (839)$$

These variables and differential structures include therefore the consideration of a prefactorative statement of the entitlement of a system to freely transmigrate a topological space of partition four unto five; and to transparate a given declarative pre-textual relation of indication to it's stated alternative treshhold of blind and non-blind free equivalence of free phase in any identified relation of comparative equivalence and free compartmentalization of vessel and contained ordinal relation. Therefore of what are any two of these variables; the free energy (ι) of one gas for in that of another; is an identity of semiqualitative and nondeterministic exterior semistable group; of inclusion to what is stated of a free radical yet preconsiderately a moment of noise apart; and therefore unto a fifteenth as eighteenth departure; a reductional anomaly. This anomaly for what is included of a said free run condition of a machine state represents the included consideration of what are order and a disjunctive alternately superficial plateued environmental territorial form in the environment. When it is considered that two agreeable degrees uniformly agree to what is their un-entitled machination of an ordered and an ordered relation; what is excluded is the prohibitional context of a further declarative precept of openly unentitled precessional exclusion.

Therefore; of what are agreeably a division and a quotient of dimension and ordered contrast; whether freely provided or excepted; there is no tenth dimension; and of a seventh inclusion of what is considerably an impression of structural default of ordered relation of this world; no one structural return is a said defensible and contractual exclusion of any then majority held openly presented free statement of it's self-subsidiary connotation to what is a departure to a declaration apart at stated safety. Therefore; for of what is excluded of a fourth open return of an exterior set to which is included within a heading and declination; the fifth consideration is a provided and neither open nor closed option at that of retrievability of a declaration; to which is a principle

of amendment at; and for in that of two superset relations; that of the 'Ideal Bose' and the 'Ideal Fermionic' gas; to which reduce to null enthalpy and free fugacity under the exception of no operation of an engine.

To that of what is a machine; the included exception of what is provided of life; entitles therefore that of a recurrence at self to subsidiary pretextual propertied domain; apart yet in one withheld to what is declared of an alternatively provided free variable and variableless exchange afar; what is a provable and closed then sedimentary statement of two recurrences; a given in it's whole; that of an openly held domain elsewhere; to which are three included variants of a shadowed relation, the logical precept of contraction, and it's (non-)included exception of what is in a third; the precept of majority and minority mass effect over threshold untitled and non-declaratively held freely established written or spoken inflective structure. Therefore although as an aside; that of the principle effect of what is an incongruent return; either focus in the end opens undeclaratively it's part to what is in whole; a container; and freely expresses it's declaration at oddity to then in what is the included difference of a uniform exterior and nonconnotative conceceptual form; of which is a laddered function of three; (that of precept in ordinal form of expression, that of understood declaration in terms of symbolic relation, and that of re-organizational patterned congruence in any numberless domain of qualities).

$$\tau(o) \rightarrow \eta(s, v) \quad \epsilon(t) \rightarrow \mu(s, \epsilon) \quad (840)$$

Hence what is excluded of a quota of it's re-equability to a machine ladder sum or that of carriage return and carry; equivalently departs to the underprovided of a loss free deficit of the portion in two of a making and a held; choices in three to which enqueue two defaults; that of flammability; and that of aspirative qualified prescription to living form; and of that of which in entirety of their contrasted elements to the statement of what is given in a hand; entitles that of temporal decimation.

$$\zeta(d, o) = \Omega(t, s)d\tilde{\eta}_\epsilon(t, s) + \chi(g)d\tilde{\tau}(o, s) \quad (841)$$

In conclusion a determination of one machine for that of another; entitles two options; of which in the third; the expressively held condition is an aconditional if and apart then only if when in the consideration of what are three known variants accrue to a machine limitation of a sideless and opened nondivisional err; then to which of the conditional precept at randomness enques of a return dataed set run; a transmigration to another under it's stated declaration of a towered teir like relation of propertied class structure; and in the third to what is an apredictive normative preclusive bit for which is either an obstacle; or that of included transparatively held given of five quotients; that of what are their two label free designations and the underprovided of a whole net summative singular notion. Therefore a singular notion is protractively the default; and merely this; and to which it is a null aconditional precept; is removable; to which is lossless in yet what is a given return to without variable free hidden declaration; recoverable as unto a symbolic type set or conciliated provision of enqueued free data exchange.

Sectional Entropic Thresholds

The semi-classical invariance of one variable differential notion is then completed when the understated manifold of $d(\epsilon, v)$ or as in $g = 1$ of a topology is noticed to be blind free of an ordinal relation to it's stated consideration as a free entropic ancillary clause of displacement; to which everywhere is complete within the relation of a classical imperative. For then in that of what is the consideration of two non-differential notions. The freed entropic relation is that of the classical Pidgeon Hole principle; whereby replacement as a recurrence free principle of

ordination amends the clause of a triple negational element to one considered replaceability of a ball within it's bin; amending that of the statistical mechanical ensemble to a count of two upon replacement by a separable identity; and making the direct implication of replacement the inclusion of it's rule; to which is that of solution to the choice problem of statistics. The limitation of one functional differential is then the understated derivation of a freed exception to the Shwartz inequality of a global invariance; by which ordination is preserved for in that of the background and accessible past oriented relation of the established notion of subsidiary clauses in exception to a non-identity of any numberlessly infinitive past associable given. Therefore time travel remains an impossibility. To which the equality of variances dictates the form and nature of it's relation as to a foundational result of containability of a closed gas or material network; therefore of what is one impartial gesture at any two equals; one exceptionable prefactor of division in it's element is the codeterminant action of an eventual. In this implausible given; the mode analysis is the exception of an ϵ for a ν to which the foretaken element is a tertiary ordered free provision.

Any pre-factorized ordering of a cycling of departure to three exceptions therefore includes one underprovided measure by yet in a separation of placement; to which experimental results are potentiated. This is a consequence of of the individuation that is an alternative of place for in bearing to degree under rectilinear relation; through which isometry includes it's group; and that of a secondary idempotent mathematically inclined variety of occlusive variant of group inclusion; the prohibition from fixed and free relation; under absolution of solid relation of geometric equivalence.

Therefore; the gas under an idempotent relation is within it's own identity of inclusion as any two freed retractile motions of inward gesture of indication at identity indicate a cause and an effect in the indicatory consideration; the freed tertiary relation to which is an empty & free surrounding environmental variable of degreeless limit through which the two included pre-textual connotatives of language are phase idempotent and phase inclinic and phase free variances:

Phase Idempotency:

$$\Theta(\phi_1, \phi_2) \leftrightarrow \Omega(\eta, \mu) \quad (842)$$

Phase Inclinic:

$$\tau(o) \leftrightarrow \iota(s) \quad (843)$$

Phase Free:

$$\eta(\nu, u, o, t) \leftrightarrow \mu(\epsilon, s, o, t) \quad (844)$$

The a Pointed Question

Mentation on Preclausitive Effect: *To then of a prior consequence in the rectilinear gas equation; is it but in what is free absence of the semimajor and qualitative thresholds of a given potentiation to a source of orientability to the past; and open to a curvalinear future?*

To an incurrent dilemma; it would therefore (were this statement a 'truth') that the derived notions of a physical precept knowably demonstrate an 'ideal' for then in recourse to measurement; however to that of the isobaric return; it is of a differential displacive barrier otherwise to it's stated question-as-answer. And to what we differentially choose of a manner then of the antipodal point of a theory; the foretaken rational domain would exclude the precept of a notion of inhomogenous time transportative return inclusion of a 'binay' relation.

To a thermodynamic return; it is however the precise incising of a model system to its mathematical expression through to which the cohomologous return either of (under a reciprocal relation $(\mu(\epsilon; \iota))$ and $\chi(g)$ intimate a relation to the sub-sidiary classifier of τ in either the one-form or the (τ) vectorlinear spaces of a cohomogeneous space in return to a Ω for under substitution for η as to which (t, s) exclude a contrast. To then what is of life; there is a strict provision of non-return. To what this would be proposed as a question; just priorly the incurrence of what is forementionable of a gas equation; the exception is an equipartition of two said considerations in built to a relation: "That an ideal gas be free with unconstrained past exterior." and (2) "That inclusion of an isobaric inclusion determinatively excludes its apogetic limitation." The after-product of the exclusion of one gas for another is therefore simply put as the undetermined of a third auxiliary behavior of a measurement apparatus elsewhere; and dual freedom from the measurement paradox; to which is a secondary solution; otherwise to be known as the machine (state). This is to co-determinatively and isolably intimate a relation of experimentation (theoretical or empirical) to which any two sideless contrasts or sided contrasts of this given world agree in principle of their accruity of codetermination; and a new principle of measurement to which a past orientable sheave is recoverable.

The relation:

$$\xi\chi_{\Omega} = 0 \tag{845}$$

Therefore includes its stated consideration of invriance in one measure for what is unconstrained (but a mathematical preclusion to cause) in that of ordered relation of η with μ an associable past time Killing vector and that of its hidden free invariant; to what includes the notice of an effect by the precept of occlusion; then to the determination of an obstacle hidden within the invariant to inclusive exception in (dual explicit negation) of $d\eta(v, \iota)$ and $d\mu(\epsilon, \iota)$ in (7) and the precept of the iso-inclinic. For a return upon blind free capacities of the answerability of a fifth order anomalous exception to which is explainable within a model system as the innovation of material principle. As in the mapping of $\tau(o) \rightarrow \eta(s, v)$ and $(\&) \epsilon(t) \rightarrow \mu(s, \epsilon)$ then to that of which we possess an isocongraphical repetend balance in s space for time; and an immeasurability in question in that of space s for order o . As under their reconstruction of what disincludes a past orientation variant one-form; but of **explicitly** its exception and conformance to what intimates a relation of the one folding of a mathematical precept of relativity.

Through to which departs on what is the inclusion of a precept of behavior of a system; that of ϵ for another hidden variance v . So; as to summarize; when it comes to inclusion of a logical precept; there is a disconnective of one relation to which is two accruals in stated hidden precept for in what are the deficit of one; to which a perfect answer recovers the isometry of its given balance upon *any* and **all** co-determinations of a machine state; an exclusive pre-tense of what would be noticed of time-travel; to which when brought into question; includes its redressibility upon a null-future; simply answered as the revealing of one of ϵ for v ; in (in) η or μ to which are a constricted lemma of inclusion of the preconsideration of a declaration at a machine state variable as constrained or unconstrained. Therefore the free establishment of logical precept of physical principle prior to its written or noticed established expression is a free exemplar of the loci of determinations of factual relevance in this world; that of experimentation is made safe simply by consideration of blind result; and that of a time machine potentiated in physical reality to the given of factual restoration. This unaliked to the reversal of entropy; to which is an innocuous co-determination at that of a free isoclinic intersection and surrounding ordered relation in any two and a third foldings of mathematical precept under its inclusion of a imperative of freely provided living barrier; to which any two of μ and η are exemplars of free domains of incurrence; and precept's in-standing of that of the remark of a prior two individuals in any

collective summation to remembrance; and factual foundation; therefore escapable.

Information

Therefore; information is the free redressability of a dataed (t, s, o) (time, space, order) relation unto an ordinal, (predicate) calculable, or (indicatorial) exponential free encompassment of any two (or three) domains; to baric relation of one hingal notion in a prescipice; a free identity of the exterior majora relation of what is minora to that of an alternative perceptual witness. And; of the other accruity; it is that of any three under an exception to two (o, s) ordered and spatial relations of a rational exponentiation of unfreed relation of which there is a collective re-activity and counter-action. Then to which that of τ and ι freely surpass that of the occlusion and precede the given of recoverability; to the addressment of phase conjugacy freedom (explicitly τ and isoclinic freedom ι).

Any two hidden variances are therefore to be taken as that of any two measurement free principles; accruals of deficit to run; and that of variances of individual free relations into any two individuals of an ideal population inversion or it's consideration of forwarded return of principle of thermodynamics of an ideal gas; and the independence of establishment of (information throuroughput and identited) inclusion of independence of precept and it's thermodynamical effect.

Master Theorem: *Hence reality, as a qualifiable and adjointly and co-determinantly determined series of naturalized effects and conditional consequences to which are each inclusive and preclusive consider(ate) consequences is a confirmable equiphenomen in plurality as a singular theoerem the encompassment of which is the natural language of nature; and any naturalized domain of preceptual division.*

$$d\chi(g) \doteq d\eta \cdot \mu \quad (846)$$

To which is the interpretaively valid precept of it's encompassed notion of what is by parallel exclusive determination of entropic freedom $(d\eta)$ and fugacity of machine enthalmic return consideration of deficated summative event return ensemble upon one keyed registered mathematically sound eigenbasis of it's consolation to ordinal predicate in exception of indicatorial relation $(\mu, \eta(\tau))$; to which τ is a light-sound field. Then; it is satisfiable that to which is color and sound; the separation distinction is that a flow isometrically transpose by a transliteralism of a colored domain inexclusively to it's precept of contract for any hued divisional presupposition of a sound cavitation unto exceptionable contrast of priorly emanated and received sound wave basis. Hence sound is throughout; while light is apart and away from the indication of a point of reference; and that of alone, sound, recipiently contrasts what divides; but under it's inclusive exception elsewhere by a-targeted non-summative null condition imposes light light freedom unto any asymptotic sequesterized separatrix of qualitative limit normative valuation of temporal measure. Each are therefore in equablence upon the qualitative precept of property; but entirely of a dissimilarity unto quality of verbose or verbatim controlled vacancies or their return consideration of factual implication of meaning; unto written word, declarative logical structure, or in an idealogical stance, unto the precept of discourse of a discursive limitation of perspective and vantage; unto a point; a linear relation of two adjacencies of measure to summative mean.

Consideration: *Therefore of mean variance; the acuity of what lays below deficit is a remainder to the recourse-ful measure of what excellently can be understood as a remainder sum (in repetend or non-repetend) - to the consolation of what is an adfxiture of precept; a threshold of two limits of interior*

superlative or declarative language; or in its origin the precept of the physical world; to which is a transcension of difference openly qualitated by an immeasurability of the extension of what here-to-fore may be called medium; of two composures in any diagraphical left rightward skew of tertralemmetic accrual; freely isometrically reconciliable for for in that of what are a third deficit of a hidden μ invariant of either under-a-threshold revealed or occluded preceptul hidden variable; to which is the answer to an anomaly in question or its addage of separate hypothetical under analogical means of comprehension; understated as a precept known to be the aperiodicity of reality.

Saturability and Unsaturability

For then in what is striven of a calculable limitation therein lie two given's of which when defaulted to produce the apredictive calculable limitation of a stated occurrence; that what can may happen, will happen; the sabre to it's tail of a limitation of the mathematical pretext at game and physical theoretical limitation; to which a mind is freed of it's prohibition to choice; the meta-antithesis of the Cat Parado. The spheroidal like limitation of what would encompass a power set theoretic union of the co-extensibility of a free gas by that of Lyaponov exponentiation of Jacobi exponents; within the stated permanence of a Boltzmann calculable limitation on free thermodynamic variants; explicitly for the reason of a genus one (1) limitation; to which free's (in all irony) the relation of meta-evolution from what is yet ahead of a temporal contrast at indefinite invariants (ϵ, ν) in relation to phase free conjugal limit thresholds (η, μ) to a definite entropic **U**.

Given Whole One: *Any one understated subsidiary nomeative declaration at dS path-wise extremum of null-free entropic externalized invariancy mitigates the pretense of it's given actual pre-determination.*

Given Whole Two: *Any two undetermined invariant non-nomenative control variants of a machine state freely provide for an escape mechanism of which is the established precept of and in two what of for then in one is a pre-determination at three.*

The three pre-determinations of one physical principle are in direct correlate to naturalized effect, cause, and consequential difference of an accrual as in a vanishing triangle; to which (any of) one freed variant excepts that of any three non-determinations to their stated determination; of a consequence and cause; that of it's future oriented upward pointing variancy and difference in-quotiented digraphicattical structural contrast at two conjugate determinations at what are two control's; for without this; no machine would be constructable; proving that any world instances a free establishment of technological prohibition to license of guaranteed outcome; but a free vestage of eliminability of false peer game theoretic review. For then in the understated; the threshold in that of an (η, μ) conjugacy class structural default is a co-determinant of the vantage of two supplicances for one potentiated over-measureable for in that of a preceded actual variance at over-summativ threshold when-taken-as-structurally the precept of an under-weight. This is to insure that what is 'above' the given relation of a stated $\zeta(d, o)$ is below it's variance of $d\chi$; as to procure certainty; what must be foretaken is a given prohibition of license to a freed variance beyond yet what is containable in two of point-wise emanation and pathwise null congruence; the alternative statement of relativity. Hence to what are two pillars of scientific establishment; there is always as to under-an-end-limitation a third precept; at what is foretaken of closure upon false-precept.

Closure upon the false preceptual relations of science may be introduced by that of the defensible

trust in what is provided of a restorative foundation; as to suggest that what willingly we declare when set down; actualizes the pre-tensile relation of an activation of testability; with the words that the effectual choice is self-freing of it's contrast unto a limitation of what-is context. As to declaratively express is sufficient with a definitely established foundation; for of what lays a word in place of it's given choice; by example; is the stated and-freed notion of a variance prior a contrast to it's mean. This statistical division is expressed as the injective lemma of Ω into Θ ; coordinations of which the intimation of either the theory of Einstein in that of freed (ζ, χ) for in that of (ϵ, ν) of incorporative non-division unto *err* is the exemplar; introduces that of the precept of:

$$\Theta \rightarrow \chi \rightarrow \Omega \quad (847)$$

To a lossless implication of what is imputed therein of what is stated at-indication is the precept of the variance $d\chi$ is sufficient for the passing of a threaded bow at that of a confirmable test without implication of undue surpassing quarter reflection on that of a situated biprismatic wave; to which a colloid will separate into a spectrum. Hence of for instance light; wherein what is noticed beneficently suffices to a known in that of separational contrast for in a hued relation of Bosons; what is Fermionic will segmentorally separate under it's division to a multiplicative abrea. To finalize; a statistical normative valuation contains a trace-free residual as in that of a hidden variant of the prior conjugacy class default of co-determination to which is freed by one reductive chaotic generation ran backwards; that of the deficated return retractibly simulated independent of physical law; the immaterial class structural relation of a defensibly free structure of defaulted after defaulted conditional Berry's attrition. That of a molecular Bessel sources under Laplace reverse onto automorphic functions freely impenetrably translocate through then any multi-handled multiplicity of graph relations; freeing the topological union of a half arc and a complete circular domain; a return-to-source function of which through what is a given; there is found a whole; also to which is certainty; for of what we may find in one part; there is within that of locating the other piece; a completion in what is provided. To living substratic notions what is incomplete is therefore completed within the relation of what is taken and given; yet in all irony; not of what is shared but of what is freely or through transmigration shared; and then known; to living word of what there is contained in a recourseless text of it's referential basis. There being this only remaining impenetrability of one word for another; the reductive past limitation oriented surjective limitation only results in certainty when both mutual and-or Given-Whole's are satisfied in a mono-dualistic sense; within the selective choice of one inductive step of intermediary exception to what may be taken alone as in thermodynamics of an invariant in χ to d of the majority carrier to the minority exception; to which relativity holds a third precept of the corrective default of statistical mechanics by example to which is one freed Carnot Engine under self substitution by the Canary Principle:

Canary Principle: *For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices to answer absence unto it's own.*

To then the co-existence of a truth in a word and for in a work; as for example; the insistance of a gas thermodynamic pre-cept in it's truth is established within and if and only if within a given that of a threshold has been met to which $\Omega \rightarrow \Theta$ under either a reversality of (ϵ, ν) for in that of $(\tau(o), \mu(s, \epsilon))$; the constructibility of which is that a freed relation under terms of the bi-valently violated threshold or confirmed threshold function of $d\chi$ for for in that of what is ϵ acts as a guarantoor to what is the comptroller to that of which is ϕ_1, ϕ_2 as in phase by translocation of what is relativity by an instantaniety or that of causation as imputed in the relation of (μ, ρ) of angular deficit; to state that of what unhinges it's tertiary relation is underscored by a minor. For in that of what is presented of exceptionable contrast of Θ is then confirmatory of a prior

redressment at the governing Ω and-to-which the underprovidedly expressed freed or contracted Θ variant is a prescription to that of non-unidirectional imputation of an (and therefore any-and-all) goverend cases of subsidiary Ω invariances. Therefore the prescription is avowed to it's efficable purpose to a forenotice when after a known division is contrasted with what re-apportions confirmable fact of a singular and definite closed case basis; and only then may a question of noticier be addressed for-in-the-taken of a vantaged guess at that of first imputation. A truely safe experiment proceeds by in the same congruacy of a relation; to a known; that of a prescription fitting this effectual relation is forenoticed as that which unalterably divides but in one sense; to which a blind or double blind free test is enabled; the actual provision of which is two accumens for in that of one befitting accrual of a differential segment of arc length to a null point of it's extremal habitation of deficit under a stated freed condition of two considerations yet paralleled.

Open Differences and Gestalt Relations of a Free Gas

The open contrast of a hued relation as in color free's the inclusion of a stated point of it's established precept of observation by in that of what withheld of a confidence interval satisfies the stated relation of an underprovided (exterior) otherwise presumed gestalt condition to what is forementionable of a concept in the contained vantageless extremum of a parallel; to unseparated differences in a Bose Gas in one area of abrea and another of a Fermionic Gas in an other; to what is it's indication of a straight division. The quotient of a micro-canonical ensemble is provided by that of freely the held:

$$\chi_{\Omega} \leftrightarrow \xi \quad (848)$$

For in what is freely restrained of the divisional quest of a particle along an underprovincially provided difference of two quotients; to which is a quanta and it's precept; as in time's arrow; the vantageless extremum is a disappearance at odd's of what is a game theoretic 'umbicillus' and unioned vantage of two degree's; the difference of a measure and it's mean precept of exact proportion due to a otherwise elsewhere provided 'two' of precept of established two dimensional 'umbicillus' of naturalized prefective notice of an indical relation of mixed subtypical relation. When what is a μ variant is freed in one place; the consequence is unalterable but by in yet what is a divisional 'err' to it's emergencied quotient of expeditiousness in (and with) the relation of a predicate invariant of physical form; for in the vantage of a 'peer' to game free notion of quested demarcated or unalienable contrast in a secondary teir of two freely held underprovided relations of prior historiological context. This freed vantage is to what noticably of a given pre-connotatively declares of one variable it's agreeable condition of a meeting elsewhere. For what is given of one notion in (and in remembrance 'at') that of it's univiolet relation; the ultraviolet spectrum noticably pre-advances that of measure to what is a 'haloed' conditional for what is below the parring of a wave of accompanying motion; for of matter; inertia responds in equivalent impulse to it's stated freed deficit of incurrence in two measures of rapidity to what are a co-locality and a divisional 'err' - here mentioned to 'doing' of an action; as in that of closure upon what is a locality elsewhere. Hence time is noticed as navigable.

Freely held suppositions are then that of what is an ordered relation; the blind-free set theoretic notion of what may be hidden of one relation to what is provided of any then alternatively given pre-text at two of life and support are a third in what is incurrantly unbent of a free'd ordered relation of search and retrievance or destroy; particles to which pass like a mist to what altered of an outcome freely demonstrates it's initial support; that of an answer. Hence; of what a Pell would Bob; the relation to a Said is it's Retrievance. And of what of could departedly contest

a position is freely surpassable in one motion; for of light; the free provision as in any atypical spectrum of homogenous logistical err is a free notion of which encompasses light; hence as in an arc; what is demonstrated by a compass in it's measure yields to the incurrance of a freed point within the neutral condition of it's initial unto final status. This is the motion of a game; to which as we would capacitate or inclinate; any gas is freed by in that of an \bar{t} to which a simple d (to which is a density functional and density representative pier freedom); divinates what of two origins are met apogetically to a limit of a freed solution to the Helmholtz equation and equipartition of a La-Joussillious set; then to the freed density functional of a Ricatti equation.

Hence what is of one η ; to which is comprsessibility; the light freedom of any asymptotic univ-
ioleted standard is the established precept of blind free relation of color in as as in a hue what passes with matter; therefore the invisible relation of what occlusively is darkness to clarity and crystallize surfaces and stones; of which would not exist without that of a shadowed function. One may question whether that of a stone can outpace an eventual of incurrance of back-beat and back-blow of a relation of light surpassing it's measure; as to outrun a mirror; however to a freed relation of breaking the speed of light; the answer is simply provided by in that of one blind origin yet preceptitated to it's established destination. This is the self statement of the Universe; to which in a quotient of two is the freed of one right handed corkscrew for in a yard of one quilt of barn laden cloth to a given freely held dimple quested to freedom from it's silken measure of a root radical inverse (for otherwise failure to mention of non-material limitations); that of a needle; the eye of which freely run through stitches a tapestry in one moment; to what incurrantly is the measureless radical; computable from multiplication minus a deficit to furtherance of incurrance of life renewable as in cotton or gin; rye; or lost wheat. Therefore nature provides amply for that of all substance; and to which as we would include; the difference of one measure of a knot for in two is simply a yarded advantage to a peer. This advantage provides enough resource and ample opportunity to agreeably meet all subsidiary and superset conditions of it's difference in what would be a sinchel of any food stuff; and provides enough for that of withstanding a blow of some compressible (η) frictional or non-frictional free entropic subgroup margins of anomaly of life; in what is a moment (once again considered to abridge); the provincial status of the precept to which is the predicate logic for in what is it's counter as in that of the indical notion when under subsumptive declaration at oddity of nature; it's capacity to facilitate design.

Limitation (To a Contrast)

But the idle watchbearer plays a role; to what is a given accumulatory vantage of the all auspices of it's given established inclusion of for what in the whole of a cord; is a compleat; and completed; and even then (within) addition; complete relation of what is a noticed element of particle. Hence elementally addition is not suppliance; as we could contradictorally assumptively follow the precept of the foundation of our ignorance weighted to it's data(based) super or sub-sidiary (as-above-so-as-below) set-set theoretic relation; for no known search terminates in this given reality; for what of a fact may be freely established. But of darkness; a hidden container exist's to which is a dwelling of it's established precept; to which in all succumbing we find protective; therefore it follows no known redressible fact is liant upon the vantageless limit (nor of limitation); or of a restoral to each; but of one; to a 'yes;' all inclusive of mastery of a work so shared. Hence the fundamental principle of informational content is it's first precept in a given foretaken of a conclusion; and the saturability (or despite the fact it's insaturability) freely does yield a produce beyond it's measure; the self inclusion (or despite that; inanimate in pure form) - actual redressment of a universalist *moral* of this universe; the effect (and to a point; in thirds or of a quartered fourth of a freely established compatability under and (of) one) of which is that of

the given guarantee of a principle a priori effectual to it's desirous end of what is in essence love and lovingness enfolded in trust; to which is virtue; to not be confused with futility (for life struggles); or inmarction; that of inordinate naturalized effects of waste freely comingling with what is neither matter nor that of motion; but of co-activity; defined; therefore all is life.

Cosmological Thermodynamics

1.) *A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).*

2.) *More time accumulates when in a field; while particle and space are independent agents.*

3.) *A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations corelative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.*

4.) *There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.*

5.) *The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.*

Equation (87) is to be understood as the contraction and disconnective between the particle like limitation and the field theoretic traversal under the situational disposition of the earlier elemental relations. To which (83) in connection with (84) represent principle (79) under pre-consideration to principle (80) in connection with (87) alone. And to which principle (81) is their connective indeterminacy; embodied in equation (87) in a relationship with their connective lossless apredictive (co-)determination of (85). Equation (80) is in relation to equation (92) as base precept (82) of the above; where by it's contradictory formation is necessitated to hold in relation to the disconnective that is (80) of this list in relation to equation (92) and the co-determination of variances to which add suppliancy from a relaxed contact free relation; that of base precept (93) in relation to equations (91) and (92).

The conclusion makes determinant that a Fermionic gas is constrained to a 1/2 relation of statistical majority and minority half admixture; and is the subspatial background residual of a known free consideration of yet principle accruals of a hidden μ ; to which a backward relation reconstructively contains no caveat; but is the wake of a relation under current purview to restoration to which is the cycling of creation (as in the Moon and Sun) of an earth in relation to it's elemental wind, air, earth, and fire; as in the precepts; for then in even the non-animate relation of what is certainly not immaterial of 'wood'.

Essential Root Conclusion

Conclusion: *That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.*

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat: Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.*

An Einstein-Podolsky-Rosen Bridge

Conclusion: *My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.*

Physical and Mathematical Law

Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position. Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Closure upon a Precept

Physical phenomenological relation to measurement and variables through which variances are known theoretically are therefore to be understood as light, sound, and material physical properties of μ and η to which mathematically ι and τ are mathematically pre-tensile relations of the universal encoding of stress and strain; to what of ϵ and ν are the root residual of a bi-reflexive threshold of mathematical abridgement at accrual and accumen of a way of sense and determination of even so as an \bar{t} to the three fold relation of χ in **not** μ and μ and η and **not** η ; to which are the phases of ϕ_1 and ϕ_2 of a Sequential Frequency Bandgap Admixture Bridge (**SfBaB**). This concludes what is an understated isolation of the Schwartzchild criterion of logical precept resolution of the manifestation of an EPR paradox emanating from a return sling of an EPR bridge contrast relation; to which exact expectation is a base fundamental result; the control of chaos.:

Shwartzchild Criterion: *An Einsteinian Residual of it's base precept is the occlusion of a Shwartz inequality as in that of a Shawrtchild affnitively departed limitation of inequality; to which a Shockley 'terminal' is an isolable exception bridge to that of predictive validity on that of an anomolous tacheonitic pulse of relation of exact affnitive to what is logical precept based on the residual spline of it's known variancy within the relation of invariants.*

The logical precept of holding an Θ as true is then the reversal under mathematical reconsideration at precept of the correlates of (80),(87), (92) and (83), (91), (93) and (85). The emptied relation of this given difference is (91) to which is the solution to (1); that of equilibrium freedom of preceptual err(or) and escability of mathematical incurrence of a dilemmetic structural fault to safety as in that of free entropic fugacity of fidelity as embodied in equation (94); to infinitely free isoclinic relation of the enumerations of these residual relations phenomenologically to what is an unconstrained dynamic to the difference of chaos to what is order as in the relation of precepts of a theoretical relation to (79) through (83) of the suppositional hypothetical base structural relation of a universal theory of thermodynamics and co-determination of a blind to color-free ordered assembly of what is a 'net' Ω ; the neutral boundaried relation of two information spaces.

Thresholds and Statistics

That of μ and η therefore form a free relation of hidden capacitating revealing of one unrandomized and (&) and expectation of randomized apredictive outcome of another hidden capacitation of variance as by a machine model; to which a game it is substatically empowerability of a relation of acute and accepting empathic relation of freedom of emotional state and outcome; to the freed variance of closure upon the immutable void.

Phenomonology therefore contains no known test for the validity of the awareness of a machine but life; and vice versa; what is qualitated to it's difference; no known machine can kill. In return as a given the free relation of a gas system establihes the precept that what is inquired as to the question of restoration of a record; that of a hidden defensive structure of machines; and a failsafe on that of escapability from a machine complex; that of control of chaos; and informational freedom are all mutually free non-radical assumptives of this world in relation to radical identifiers unconstrained or limitless.

Foundational Precept of Informational Interpretative Validity: *Therefore a reversal of the predicate and indicatorial logical precepts of this given world under interrelation to a simple given in μ and η accomdate identification of a known of expectation with base residual null conditional.*

An equation in which there is a white noise; for which is broadband; or at the least pass-band indicates a half measure to it's excess in approtation with a residual retraction of three positive definite enfoldings of manifold relation of apositional and positionally identified machine control structural relations to what is a binary relation of loss of the incurrence of an indicatorial precept for the gain of a predicatory oriented manifold relation of a disconnective to an interstitial singular ping; to which there are two givens:

1.) A retraction under its self same acquired contrast to division as in a quotient serves as a multiplier of (and to) it's result in the identification of a subsidiary or known identifier of a relation; then an abstraction under it's extrapolative reductionism.

$$\mu \cdot \tilde{\eta} \leftrightarrow dP(o) = \chi(g, o) \cdot \tilde{i}(t, s)P(o) \quad (849)$$

Where 'o' represents order; g represents the genus; t represents temoral locability and s represents uncontainability of spatial union or abstraction to delimitation. Grey noise represents an ever accrual of randomized apredictive variances to which are revealed through the capacitation of the manifold enfolding of onen relation for another; to which a secondary relation precedes it's given; and through which predictive validity is assured when we occlude a defense through the uncapacitated and invisible open relation of relation to a non-identification of non-redactability.

2.) Within the given of what is a withholding to an open relation; an apredictable outcome becomes an expectation of both in one an enfolding of the relation of two preceding known identifiers of evidentiary precept to what is a given confirmative on that of an unstated free variable to it's identification.

$$\iota \cdot \tilde{\tau} \leftrightarrow \xi = \Omega \cdot d\eta(\epsilon, v) d\tilde{\mu}(\epsilon, v) \quad (850)$$

The closure of one relation; to which is (80) is the occlusion and opening of the other relation to which is (79); either side to which is the enfolding of a door; an enclosure such as a room; the orientation of a nonlocable relation; and that of to it's fifth occlusion; a printed word as in that of creativity and imaginitative reflex; that of a constructable free associate of the structural relation of living material way and manner of survivability.

Hence by either relation an Ω as in a point, a line, a triangle, or a square polynomial is constructable to a modular or group theoretic closure upon what is a Θ ; and heat may be controlled by a machine; to which there are two absolute safety protocols of a blind and non-blind free relation of reductionism and universality of a set theoretic notion and relation.

Ordination

Note on Chaos versus Order: *Theses of Ordinal Relation:* "Any logical predicate bit heirarchal structure of ordination with lower dimension and higher co-dimension mitigates relational injec-tive structure unto future tense of either given machine state for in that of what is one differential equation; that of its conjugacy to relation of variableless and functional degrees of freedom es-tablishes two lower Lyapunov as exponentially free threshold relations unto separation into two new differential self referentially null and independent enfolded strange attractors."

End Postulates

1. A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in correlative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).
- 2.) More time accumulates when in a field; while particle and space are independent agents.
- 3.) A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations correlative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.
- 4.) There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.
- 5.) The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.

Essential Root Conclusion for the Classical World

Conclusion: That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat:* Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

Device Implications for that of an Einstein-Podolsky-Rosen Bridge

Conclusion: My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around

a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.

Compendium on Physical and Mathematical Law

I. Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language.

II. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Consideration of the Exception and Admittance of Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position.

Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Pactual Division and Collection upon Precept Foundation

Hence it is Concluded: *The 'void' and the 'envelope' is physical.*

The conditional on [on] as it were 'land', 'belief', 'denomination', 'consequential', and 'noticable truth' of a believability in physics is not indeed universal; for of word's and linguistic dialect; we proceed in a carrier [and or carriage] of a non-autonomous physical constructable mechanized interrelation of part, word, structural descriptive record, and the formative basis of our 'tool's', 'manual interrelation', 'contextual clue/set/background', and openable basis of prior lesson for untold generational indivisual physical but mentally sound, approachable limit(s); of an ordinate world; thus the true theory of everything is a non-essentially distinguished artifact of encoded mathematical basis; within the imaginative focal relation of set, sense, pi, e, floating and non-floating architechual clue and analytical phenomenologically empty; uncontainable, freely held unobjectifiable absolution of law.

Therefore stability of a powerful - encoachably workable basis of worded lemma is to the advantage of structure; whereas mathematical return essentialized truth and derivative is within the domain of the exterior assay of a return at consideration held in that of others.

Our mutual truth is that if my heart is to hold an answer in your's; it would be depravity were I not to attest, serve, and empower the generational given of choice and prowess to a divine order in the acclaim of their(s) for in light of my return of trust; making the service of any one component-wise individuated person in entitled work(s); the freely held establishment of their(s) for in self founded forgiveable difference of criminal and non-criminal associable clue and derivative actionable intention; the motional stance of which is unfantasized in whole; for we have evolved, and stood for the acclaim of tribes, yet associable in many collections of whole

nation(s); the regional dialectic of which for whom one empower's; these hold our potentiality at enqueable formentation and disbelief; the counter of which is freely untold of.

Inhertiance

A problem arises when the issue of declaration of the 'object' of thought is identified or not with it's 'topic'. That the bind of observer and observed is a dualism becomes critically clear. That we are bound, but that mind furnishes a polemic to that of industry of thought is valid when abstraction functions. Thus it is in a parallel that many things must be instructed or learned to decipher the codex that in physical law. But, there is a plea to understanding when we include the mysterious, the hidden, the confined, the missing, and the unknown. That this 'third' variable clears the deck goes to illustrate that a physical theory may be completed when a mathematical adjustment is made from one theory to it's adoption universally within a larger pattern and texture. That therefore, we do not fail, but assure a tableau and abacus of checks and balances to reach comprehension. Still too, there is the limitation of mind, but of it's unbound relation, and opening when in a parallel we are to take that of the industry of insight with that of careful application of abstract creativity. For truly, imagination is more of consequence to going beyond the relation of the observational bind, and of what is learned, it remains testable or tested.

Preliminaries

It is taken as will be proven a priori that the world is contingent upon mathematical precept, foundation, diiscourse, declaration, and description. Secondly, it is that there is a 'hidden' here to replace the above in the abstract [the list] - that there is knowledge yet that is assembled and then transmitted. For without a careful declaration, what would remain is noise. Hence the second a priori assumptive is that imperfection is what roughens and forms the relation of perfection.

Thus of a preliminary assumptive, we may take of a set of A,B,C that C, by formation with the precept of the dualism of A and B forms that of the decidability of intervals, measures, and probabilistic outcome; in violation of the Copenhagen interpretation when C overlaps tha tof A and B. Thus the primary hypothetical is essentially a new interpretation of Bell's inequality, in a compatible setting with that of relativity theory. We will then find a connection to the Inverse Scattering Methods and the limitations of computational science.

The limitation spoken of is that of probabilistic domain and in exclusivity; that it is possible to placate a problem to fit within a 'container' of processing 'place' and 'avenue' is contingent upon resources, but the imagined oracle like machine is nothing more but a black-box then. That it is possible to parallel the third teir [Pearl] of knowledge and reasoning with a computer is then not invalidated, for it goes beyond the duality of CPU register and emergence of self-programmed learned precept foundation. This mimics the mind, and goes beyond the Turing Model of the CPU.

Outsetting

There are some critical questions and answers which must be presented to opening remark. It is known the two and three electron equations may be diagonalized by a skew and anti-skew Hermitian sequence, beginning with the doublet and singlet states. Owing privilege to the Bose and Fermi gas, the primitive assumptive is that of the even and odd degeneracy of the doublet

and singlet states. Thus of a tertiary observer, what must be answered is as to the *direction of cause* for inference Quantum Mechanically. That of order and chaos emanate from here(in); thus the off-center relation Mathematically does one thing, while the [centered] physical relation does another. That of what comes 'out' is a parallel of ordered functional class invariants.

Thus of Bell's theorem with three particles in a relativistic setting there is a caveat we must find assurance in. That of for-what is displacement is noted as a $\pm\Delta$ on the Hamiltonian and Lagrangian symbolism; with a threshold of "micro-gravity" setting-in. Thus of neutrality there are processes which do not occur; - the relevance of electron and proton combination across the torus that separates their 'hidden' moment's across EPR-bridges from one-another, and a setting via Electromagnetism. That superconductivity is essentially a flattening of this relation is an intimation at a hint which is one to one with the gauge group from the one form informing an inversion (spatial) of the Pauli Exclusion Principle.

Spinwaves

The conventional approach to spinwaves is the continuum approximation; for which some simple solutions for bi-partite lattices are known; with the inclusion of discrete systems; for which the continuum approximation is destined for failure in the strong coupling limit. Departures from spin trajectories make the approximation one for which we cannot satisfy the conclusion that the coupling is stronger than the given spacing parameter. When a non-linear analysis is instead supported by that of tension and torsion as parameters; the solutions manifest as elliptical in nature; to which there can be found exact discrete solutions. These exact discrete solutions interpolate between the discrete periodic lattices and that of the continuum; and promote the introduction of non-linear quasi-solitons; to which there is periodic behavior. The understanding of a discrete non-linear analysis of superposition and interaction is found to be of necessity in the finding of a solution to therefore many systems of interest; including the bi-partite lattice and that of the Ising model to describe crystals.

Discrete Ising Model

We begin with the discrete ising model; to which solutions have not aforementioned been found; and it is to that which we find at odds the characteristic length scale; we will not go into a proof that the strong coupling limit defies the discrete to continuum translation; but instead impose boundary conditions on the model; to which there appears manifest a singular nature to the solutions; of which the algebraic functions translate into transcendental functions of elliptic variety in the one-dimensional system with isotropy:

$$\frac{\partial \vec{S}_j(x, t)}{\partial t} = J \vec{S}_j(x, t) \times (\vec{S}_{j-1}(x, t) + \vec{S}_{j+1}(x, t)) \quad \forall j \quad (851)$$

One can go to the continuum; but we devote our time to finding discrete elliptical solutions; for the sake that the strong coupling limit fails with the exchange constant when departures from linearity manifest.

Testing the ansatz:

$$\vec{S}_j(x, t) = \eta(x, t)(\alpha_j \text{sn}(\hat{\omega}(x, t), m), \beta_j \text{cn}(\hat{\omega}(x, t), m), \gamma_j \text{dn}(\hat{\omega}(x, t), m)) \quad (852)$$

With:

$$m = \frac{v^2}{c^2} \quad \hat{\omega}(x, t) = E[m] \frac{2}{\pi} (x - vt) - \phi_j \quad (853)$$

Time dilation imposes a nonlinear factor to which regularizes tension and torsion; and admits a phase which can comparably (and discretely) change from lattice site to lattice site.

156 Imposition of Relativity

We know from the differential equation governing the elliptic functions:

$$\left(\frac{dy}{dt}\right)^2 = (1 - y^2)(1 - k^2 y^2) \quad (854)$$

That the differential of the time dilation squared is the integral of a comparative Lorentz factor for the two sublattices of spin in the bi-partite lattice; to which $\left(\frac{dy}{dt}\right)^2 = \eta(x, t)$.

Which is to that of the differential equation the source of the left hand side; and which is the local contraction of Lorentz factors; to which the differential equation (1) becomes:

$$\frac{\partial \vec{S}_j(x, t)}{\partial t} = (\partial_t \log \eta) \vec{S}_j(x, t) + (\hat{\alpha}_j cn(\hat{\omega}) dn(\hat{\omega}), \hat{\beta}_j sn(\hat{\omega}) dn(\hat{\omega}), \hat{\gamma}_j sn(\hat{\omega}) cn(\hat{\omega})) \quad (855)$$

Where:

$$\hat{\alpha}_j = -E[m] \frac{2}{\pi} v \alpha_j \quad (856)$$

$$\hat{\beta}_j = E[m] \frac{2}{\pi} v \beta_j \quad (857)$$

$$\hat{\gamma}_j = -E[m] \frac{2}{\pi} m v \gamma_j \quad (858)$$

Where use of the Jacobi summation formulas is used:

$$cn(x + y) = \frac{cn(x)cn(y) - sn(x)sn(y)dn(x)dn(y)}{1 - k^2 sn^2(x)sn^2(y)} \rightarrow 2 \frac{cn(x)cn(\phi_\Delta)}{1 - k^2 sn^2(x)sn^2(\phi_\Delta)} \quad (859)$$

$$sn(x + y) = \frac{sn(x)cn(y)dn(y) + sn(y)cn(x)dn(x)}{1 - k^2 sn^2(x)sn^2(y)} \rightarrow 2 \frac{sn(x)cn(\phi_\Delta)dn(\phi_\Delta)}{1 - k^2 sn^2(x)sn^2(\phi_\Delta)} \quad (860)$$

$$dn(x + y) = \frac{dn(x)dn(y) - k^2 sn(x)sn(y)cn(x)cn(y)}{1 - k^2 sn^2(x)sn^2(y)} \rightarrow 2 \frac{dn(x)dn(\phi_\Delta)}{1 - k^2 sn^2(x)sn^2(\phi_\Delta)} \quad (861)$$

Where all odd term's cancel. Describing a phase by $\phi_\Delta = \phi_j - \phi_{j-1}$:

$$\hat{\alpha}_j = -(\partial_t \log \eta) \frac{sn(\hat{\omega})}{cn(\hat{\omega})dn(\hat{\omega})} + 2J\beta_j\gamma_j \frac{\delta_1}{\rho(x, t)} \quad (862)$$

$$\hat{\beta}_j = -(\partial_t \log \eta) \frac{cn(\hat{\omega})}{sn(\hat{\omega})dn(\hat{\omega})} + 2J\alpha_j\gamma_j \frac{\delta_2}{\rho(x, t)} \quad (863)$$

$$\hat{\gamma}_j = -(\partial_t \log \eta) \frac{dn(\hat{\omega})}{sn(\hat{\omega})cn(\hat{\omega})} + 2J\alpha_j\beta_j \frac{\delta_3}{\rho(x, t)} \quad (864)$$

Where:

$$\delta_1 = 2cn(\phi_\Delta, m) \quad (865)$$

$$\delta_2 = 2cn(\phi_\Delta, m)dn(\phi_\Delta, m) \quad (866)$$

$$\delta_3 = 2dn(\phi_\Delta, m) \quad (867)$$

And where $\eta = v$ has been cancelled by that of the denominator in the addition formulas; and:

$$\rho(x, t) = 1 - msn^2(x)sn^2(\phi_\Delta) \quad (868)$$

And:

$$\eta(x, t) = \iota nd(\hat{\omega}) \quad (869)$$

Leading to:

$$-(\partial_t \log \eta) \frac{sn(\hat{\omega})}{cn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota mdn(\hat{\omega})sn(\hat{\omega})cn(\hat{\omega}) \frac{sn(\hat{\omega})}{cn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota msn(\hat{\omega})^2 \quad (870)$$

$$-(\partial_t \log \eta) \frac{cn(\hat{\omega})}{sn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota mdn(\hat{\omega})sn(\hat{\omega})cn(\hat{\omega}) \frac{cn(\hat{\omega})}{sn(\hat{\omega})dn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota mcn(\hat{\omega})^2 \quad (871)$$

$$-(\partial_t \log \eta) \frac{dn(\hat{\omega})}{sn(\hat{\omega})cn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota mdn(\hat{\omega})sn(\hat{\omega})cn(\hat{\omega}) \frac{dn(\hat{\omega})}{sn(\hat{\omega})cn(\hat{\omega})} = -vE[m] \frac{2}{\pi} \iota mdn(\hat{\omega})^2 \quad (872)$$

And:

$$-E[m] \frac{2}{\pi} v\alpha_j(1 - msn^2(x)sn^2(\phi_\Delta)) = -vE[m] \frac{2}{\pi} \iota m(1 - msn^2(x)sn^2(\phi_\Delta))sn(\hat{\omega})^2 + 2J\beta_j\gamma_j\delta_1 \quad (873)$$

$$E[m] \frac{2}{\pi} v\beta_j(1 - msn^2(x)sn^2(\phi_\Delta)) = -vE[m] \frac{2}{\pi} \iota m(1 - msn^2(x)sn^2(\phi_\Delta))cn(\hat{\omega})^2 + 2J\alpha_j\gamma_j\delta_2 \quad (874)$$

$$-E[m] \frac{2}{\pi} mv\gamma_j(1 - msn^2(x)sn^2(\phi_\Delta)) = -vE[m] \frac{2}{\pi} \iota m(1 - msn^2(x)sn^2(\phi_\Delta))dn(\hat{\omega})^2 + 2J\alpha_j\beta_j\delta_3 \quad (875)$$

Superconductivity Origins

The magnetic only solution (above) indicates that a renormalization occurs at the magnetic only fixed point in the flow of the theory. Second to this; is the potentiation of inclusion of local to local terms of an electromagnetic variety. The solution given by that of the (above) indicates that when we uniformize and unitarily procure from the electromagnetic solution to a dual in the vector field based contingently around magnetic and electric solutions; that this precipitates electromagnetic symmetry breaking; by that which is a separable contribution to the spin wave geodesic equation. There are only two elements of the theory:

1.) Renormalization to electric only and magnetic only solutions; precipitates superposition in the Dirac to Pauli Exclusion Principle locality violation bridge with logarithmic compensation of geodesic phase of spin-waves to electron mass and time.

2.) Renormalization of the local to global to local theory of the uncertainty relation that derives; precipitates superposition to spontaneous symmetry breaking of the quantum states in light and mass below a threshold set by spinwaves to charge holes.

In continuance; the result is spin charge separation with symmetry breaking precipitating a decoupling of matter from light and wavelengths to which ensure universality of conditional in that of spin and charge (hole or charge) localization in a unitary lowered energy potential.

Complimentarity

A 5th order quasiperiodic theory is settled by in the threshold mechanic of pentalty to temperance of a consolidate unit'ed envelope conditional on the bi-set of vacua and diminished order spaces; with specialization to occluded return of any two co-simultaneous tertiary or secondary observers; admissible only in that of our dimension. That of the auxiliary state is a guarantee; however; when individuated as a machine among (or tertiary to) that of an assembly-state; the provision for the ideal heat engine violates the exclusion principle; adopting that of a 'secondary' provision under optional; or dis-enjoinable end-gas-states. So as one cycles within a relation there is ideal dual-complex exponential and digraphical elliptic notion of wave structure on that of one end of the Spiral of Cornu or-incidentally; back. The patterns that are witnessed in the HTSC's; etc, are phenomonology of two diopterically overlapping one another in the Random Approximation Limit; but do not reach the holographic tri-critical point until a process of descent of what is a held dioptic difference in consideration of levity for potential; to which the in-exorable machine limit-state is deliminable for then in a topological union of complex, real, and imaginary. The fundamental statement proposed is that a stripe is the dual of either that of the bifolded (two-fold) in one [shared] or [unshared] piece of paper to what is two and two in 'separable' sector's; therefore that of bi-section to freed principle; the topological embedding the 'natural embedding' of a Poincare Disc glued twice over to a circle. Therefore the two mapping's in wave-argument to dual cavitated spatial occupancy of zero extension. A pattern evolves which is differentially explained but to which is predicated on that which hidden variables but not exchange by Pauli would exclude; but for a caveat to statistical mechanics on a Hamiltonian and Lagrangian space. The second differential (for what is a property of physics theorization; that trial's do not contribute to what is moment's, identities, disclosures, openings, and constructibility); freed, is more expressive and motile than the diss-appearance of a manifest first differential Laplacian; hence order in time is an ordered string of [2].0[2] etc... This is co-extensive enough that the second differential is what a system reduces to; the first differential may be numberlessly discarded.

Introduction

The first relationship of importance is that of the equation which dictates that of by way of which *the results of relativity do not alter the probabilistic outcomes of quantum mechanics*. To a dual edge this is the statement that *only* a statement of exclusive and definite measurement can assail an infinite and zero probability of Dirac order; and only measurement is a decisive factor after-the-factual presentment. It is however to be questioned...

Given probabilistic and relativistic considerations are dependent on coordinates of position and momentum; the equation that expresses independence of statistics is intimate to a series of (co)factor's unmanifestly dissipative and co-terminable with entrance. That of one fifth relation is not in assembly; for what of the Green's function to contain a zero-dimensional fractal as such; but to-here; the quantum expectation of a guage probability flow reduces to a null conditional pre-cept of mutually 'outside' [a] place; to a non-descript zero dimensional point like limitation within the predicated and hypothetical quantum liquid/fluid/solid (as dependent on crystalline and potentially aperiodic foundational number-sum) of indiscernability (and separation into a past for of degeneracy to (5) and (6) dimension's; but also any crystal extrapolated from a Fourier Transform of a de'Hass'Van'Alphven wave structure:

$$\Xi \equiv \Xi \rightarrow (\lambda(\epsilon), \lambda(\rho)). \sim (0, 1) \tag{876}$$

From The Equivalence Principle (herein equally weighted in frames):

$$\frac{\partial}{\partial t} \equiv \gamma \frac{\partial}{\partial t} \rightarrow \gamma^\mu. \sim \eta \in SU(2)[U(1)] \quad (877)$$

The Lie differential; which is designed such that the covariant differential and the one-form differential commute is a good candidate therefore for derivation's to speculation; it's core statement of commutativity one of freedom of the one-form γ from statistics Ξ :

$$L_\Xi(d\gamma) = dL_\Xi(\gamma) : \omega_1, \omega_2 \quad (878)$$

Together; this is nothing more than that the Shared Proper Time is equivalent to the Covariance in Uncertainty.

With this we have the relation:

$$L_{f\Xi}\gamma = fL_\Xi(\gamma) + df \wedge i_\Xi(\gamma) \quad (879)$$

Together any two qualitative limit's of what are 'property' and 'proportion' of 'shape;' in-exclusively contain a convex space within it's margin; and qualitatively convex as to mapping; therefore of evaluation of statistical calculi; that of re-apportion of functional deficit factor's the equalitative product of spatial and temporal variance within elliptic expression; in reduction by a covariant-factor of advance and diminishment (exponential) upon two acasual arrows; to which the center of energy and mass is 'on-mass-shell;' That of the metric relation of infinite spin's 'devoured' by the basis; the interior transformation groups of these equations.

$$f. \sim (0, 1); \quad L_\Xi(\gamma) = df\Xi(\gamma) \quad (880)$$

Thus the end condition is perfect heat to mechanical conversion; that of one third back in physical form; and three involute to two determination's of inward place; *unto control, predecession, impartiture; of reflex, impulse, and co-determination.* Thus a physical relation must break down to what is a quotient of (2) within; merely a null-centre; of that of the quasiperiodic and non-periodically randomized state of no-approximation.

$$\tilde{\omega}. \sim \tau \quad (881)$$

This expression is that of by which a factor of a functional form to the manifold of statistics of 'motion with deformation or transformation' is free of the relativistic characteristic common denominator of the Equivalence Principle homomorphism and the stationary state of the Quantum Description. This statement represents the preservation of the heat equation.

This is the substitution of one particle freely within one held space into another; so that one particle may co-occupy one space with another; or be unseparately sequestered aside to the departure to counionable differences of it's evolution. Therefore we may take; owing due to these prescriptions:

$$\Phi(x, v, t) = \eta e^{-i(\kappa\theta + \tau\phi)} \leftrightarrow \Theta(x', v', t') = \rho e^{-i(v\mu + \epsilon\psi)} \quad (882)$$

Therefore an apportion to a mean holds an invariance and an equivalence. We will find this is nothing more than the declination to a tertiary observer; for in that of one juxtaposition to it's closed end; in the 5th; the end openable is the 4th to the preceding of ordinal calculai; for that of derivative coordinality groups; for then in what co-exist's; the then limited four dimensional enclosure hold's the freedom of light from matter.

Then; to what is a real result of probability; it is that of unenclosed bearing on the relative principle and the emptiness with the quantum principle; or; that of the quantum principle empty in relation to the relative principle; is to that of freedom of isoclinic relation; an established direction to heat and momentum exchange within the non-linear dynamics; here considered; entirely and alone of physical application to superconductors; but of derivative principles for pedagogy. Therefore there are two types of system for consideration. The first question is:

Question I: *Do any or alone only unbound & unbound [is it exclusive or inclusive to which case;] systems [therefore,] obey the same spin-statistic relations?*

The equations first presented lay the prescription in place that of by way of which any two observables as measureables ζ and ξ may hold an identity with measurement process:

$$\zeta\Phi = k\xi\Theta \leftrightarrow \zeta\Theta = k^g\xi\Phi \quad \epsilon\chi \quad H\chi(g) \quad k = \pm 1 \quad (883)$$

Where g is the boson-number; the genus number; indicating the number of holes in the space of it's topology in a Hilbert space (H) with topology $\chi(g)$.

It holds naturally that if the number of holes is even ($g = 2 + b$ & $b = 2l \ l \in Z$) that the spin obeys an even-statistic; and if the number of holes is odd ($g = 2 + b$ & $b = 2l + 1 \ l \in Z$) there is a rotation of 180 degree's in the spin-theorem; hence the sign flips for interchange of particles. And the k is (-1) for Fermions; and $(+1)$ for Boson(s).

The Spin-Statistics Theorem versed in this manner provides a connection between the space-time and the quantum properties of objects as particles in the space-time.

Representation Theory

In the continuum of the probabilistic operators any mutually factorable relation into which the solution is also a given solution of the equations:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (884)$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (885)$$

Is deterministic.

Hence; any operator that admits in a dual-sense two conformal relations in logarithmic reduction to a common factoring exemplifies the naturalized relation of (2) *time's and space's* to which is the extension of quantum mechanics above the theorem's of relativity. This find's it's way into the Dirac equation for the electron by that of the intimation of a field-conjugate momentum; to which is shared or unshared; and assists in deriving that of a *new* expression for the multi-body problem; in which the two body problem can be subjected and decomposed.

This is nothing but the statement that: *The rate-period of time is a congruent relation in the particle representation to which is empty; and to which the two-body problem may be separated into the one-body problem of which there are two.* This is consistent when there are taken to be two spatiotemporal projections of the particle operator. These projections are no more dissimilar than the 'functional

representation' and 'particle representation' of a particle or multi-particle system, *and exist because the particle is empty.*

Therefore;

$$\partial_{\mu}t = 0 \tag{886}$$

Expresses the emptiness of time; to which all supporting statements of this paper affirm.

With:

$$. \sim \tag{887}$$

An expression of a neither nor shared light envelope of illuminescence; to cadence of a Lamp freely-lit to invisibility below an alternative two juxtaposable place's with projections & the statement of unto another and a place; or two to occasion; or four to differently establish; or five to equably pass on; or six to espouse or entreat; and of seven; to equalidiate. Therefore of co-linear equivalent extension outward inward and inward outward for what is two to two; expressible only that as the equivalence principle derives to two properties [a metric and a mass] that of the freed electromagnetic theory is broken on the gravitational; as the gravitational is negative to orbital coupling under a reverse-surjective phase orientable traversal of temporal co-extensibility to a union in five to a third; any even-faceted two to a third of mitigated arc.

Therefore in either [explicitly held] the outcome is non-determinant between any two quantum and gravitational limit's but unpredictable; yet within an openable and extensibility to freed self intimation and juxtaposition; for what is co-determinant; as an absolute physical norm of the space. When we consider what is resumptive of the 'actual' to what grow's outward every-where else of the topological function; and with a heart; body; and mind; the truth of form's *are* for in what is found of life; for these are bound to a mortal coil.

Of it's freed ranges; the security of a pre-cept from it's imported dextruous nature is the cleaving unto the alternative of self found as [within conveyance] via a means of two; under adoption of the willingness to encourage the dexterity to the task... That of what is presented therefore is that the only discernable and observant condition [once-expressed] of identities is the following two principles:

***Canary Principle:* For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices [among a count] to answer absence unto it's own.**

***Banana Principle:* The banana principle states two are unprecluded from foreknowledge in yet a third out.**

Statistical Admixtures

It holds as a lemma; that the statistics are therefore empty of relation in a given comparative assessment to relativity; and that relativity does not alter the statistical properties of a system. This (infinite) barrier of a theorem presents alternatives only found within the global properties of a system; to which it is also global. The *free capacity* to include a differing Δ from Λ is the extension of the differentials. This therefore proceeds along two lines; that of either a principle equivalence or a principle in-equivalence; the variables decomposed by either **log** relation. The proof is reliant on (surpassing the infinite obstacle of integration of these two theories); at that of assuring that one viewpoint is equivalently as-consistent with the other *relativistic* frame-

argument. This two-fold relation is essentially that:

$$(i\hbar\gamma^\mu D_\mu - mc)\Psi = 0\Psi \quad (888)$$

But here; that of 0 is differently established because *on account of the second particle* there are **2** *two* solutions to the original single-particle state... That of:

$$\gamma^\mu D_\mu \leftrightarrow \gamma^\nu D_\nu \quad (889)$$

Hence for in light of two bodies;

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (890)$$

Both describe the *same two particle system* from what is yet two-different-relativistic descriptions. That of relativistic assurance is found then in the degeneracy of which is that:

$$\Lambda\Psi = \Delta\Phi \quad (891)$$

This ensures that their energies are equivalent and four-momentum descriptions of each particle are too; possibly up to an interchange. This ambiguity is afforded as the second particle has altered the description of the first particle. To see that this **this does not** alter the relativistic description is to see that reversal of viewpoint and 'objective' does not alter the image under **initial** composition.

Either of α or β are equivalent by equation (5) of the paper; to which when either particle (to which is empty) alter's the representation of it's conjugate particle it does so from the alternative of a self-and-world to which is **two**. That of world and particle versus (with world and particle in the formative and former position) does not alter the outcome of the result of the first particle (1); and, *without exception; that of their statistical intimation is left unaltered for-in-light-of projective dis-similarity of neither upon the world.*

This 'neither' of which is undecidable from the other side of relativity; is the incomparability to which *probabilistic interpretations are independent of relativistic prescription*. It is also the imperative that physical law is *empty*. Therefore we may freely take:

$$\Psi. \sim \Phi \quad (892)$$

With the transformation and in-equivalence of τ and ϵ affording that of factoring into superposition's such as are re-compositional *linear* states.

Hence, a theory that incorporates an *equivalence principle* invokes **two** times, a *proper time* and *improper time* as a projection of the two body problem *within the context of the equivalence principle to which must lead to equivalent physics*. Casting one particle to it's *probabilistically neutral provision as granted the prescription of the equivalence principle* grants the other particle to possess that of probabilistic independence with co-mutual occupancy under the 'tertiary' - third observer **out**.

Abstraction in Conclusion

The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (893)$$

By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (894)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (895)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (896)$$

To which is the derivative solution to equation (5). Therefore that of a fifth dimension is made to exception in the second; that of apologia to consorted effort's of collapse; only a univariate carrier of outside 'roll' to interior (pentagonal return); 'roll' will co-determine a vacuum from a discriminant black body noise; at absolute zero; the external 'via' of a 'class' to which is an 'apologia' in yet 'character-assignment;' freed to these in the tableau of proper derivation from the summation convention. That of the commutator of the partial is the expression the Lie differential with respect to Ξ in equation (5) is the manifest holographic principle reflection in-machine-&-in-world.

That of the holographic principle:

$$S * P = \iota P * S \quad (897)$$

And:

$$P * S = \iota S * P \quad (898)$$

So it is for lack of a better expression that the identity relation is ordered; and by supposition of the counting theorems; identities are ordered:

$$\mathcal{O}(\iota) \quad (899)$$

An expression that the identity is that which is neither one but two and two to what is no three and uneliminable declination of four in preceding from five; of dimension; therefore by two under pure-codimension of 'sheaves;' there is a bi-reductive free (2) two limit's; to what is sequestered of equipartition to the fifth and the sixth; a rung freed to the equippable return of yet a fundamental of this world; that reductively from three; two would be an apportionate four or three; then of other's equability; and return (two-folded) deficit below reversability of one sigmoid.

Therefore the identity is the inexpressibility of *time, space, order, individuation, and inseparability or unencloseability forming through shape*. We may now describe shape to constitute a group in vacuua; for that of ι is the manifold ideification of a separable co-adjoint *unitary group* of co-extensible dimension; a three dimensional critical point; and reductive asymptote.

The non-linear statistics of comparative densities in position and momentum under an abridging SU(2) algebra diminish the accountable energy in argument's dependent upon these via superposition and exchange.

Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) - \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (900)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu \partial_\mu)(g(\tilde{\omega}) - i\beta^\mu \partial_\mu)\Psi(x, t) = \Lambda\Psi(x, t) \quad (901)$$

When written out we have two equations:

$$\Lambda = \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \quad (902)$$

The first equation read:

$$\Lambda = \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \quad (903)$$

This is enough to get that the general equation:

$$\Lambda = \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \quad (904)$$

With elements $\{\eta\} \in SU(2)$ are the same *superposition* equation with solutions in the Dirac basis.

Beginning with the equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| = \det |\theta(\tilde{\omega})| \quad (905)$$

We have that:

$$\theta(\tilde{\omega}) = \theta(v, \tau, \alpha, \beta, \tilde{\omega}) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad \Lambda = \tilde{\omega} \cdot \bar{\omega} \quad (906)$$

So;

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \quad (907)$$

To which is two eigenvalue equations in linear form:

$$\eta(v)f(\tilde{\omega}) + \alpha^\mu \partial_\mu = \log(\Lambda) \quad (908)$$

$$\eta(\tau)g(\tilde{\omega}) + \beta^\mu \partial_\mu = \log(\Lambda) \quad (909)$$

The Dirac equation is therefore separable into two different one-body problem/solution pairs:

$$(\eta f(\tilde{\omega}) + \alpha^\mu \partial_\mu)\psi(x, t) = \log(\Lambda)\psi(x, t) \quad (910)$$

$$(\rho g(\tilde{\omega}) + \beta^\mu \partial_\mu)\phi(x, t) = \log(\Lambda)\phi(x, t) \quad (911)$$

Thus:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (912)$$

Becomes:

$$(mc\zeta(\tilde{\omega}) + i\hbar\alpha^\mu \partial_\mu)\psi(x, t) = \lambda\psi(x, t) \quad (913)$$

And:

$$(mc\xi(\tilde{\omega}) + i\hbar\beta^\mu \partial_\mu)\phi(x, t) = \lambda\phi(x, t) \quad (914)$$

With a wave argument on the inertial mass of which is ζ or ξ ; where:

$$|\zeta(\tilde{\omega})|^2 + |\xi(\tilde{\omega})|^2 = 1 \quad (915)$$

This constraint is nothing more but the restriction that the total probability for *either* electron add up to 1; that it be located 'somewhere' and it's mass conserved, the result is then two Nonlinear Shroedinger Equation's:

$$(\eta |u|^2 u - \sigma u_{xx} + i\rho u_t)\psi(x, t) = \lambda\psi(x, t) \quad (916)$$

$$(\rho |v|^2 v - \sigma v_{xx} + i\eta v_t)\phi(x, t) = \lambda\phi(x, t) \quad (917)$$

Further Calculation

We begin with the two body Dirac Equation:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\psi(x, t) = \Lambda\psi(x, t) \quad (918)$$

The question is if under:

$$\mu \leftrightarrow \nu \quad (919)$$

With superposition; the equation will reduce. First we have (re-written):

$$(\eta^\mu \partial_\mu - 1)(\eta^\nu \partial_\nu - 1)\psi(x, t) = \Lambda\psi(x, t) \quad (920)$$

For what is identity is the meeting exceptionable (non-exceptionable inclusion of) a continuum to the bi-jjective law; under ordinancy to any two character assignment's of this world. Therefore relativity remains to hold with-in an interior limtiation; of that of three for four fold to two fold valence; but of a second-and-adjacent quasi-crystalline space of adjoint void space(s). This cuneiform is therefore an intimated 'end' within an 'end' of the dispossesable (in reciprocity) exchangeable sixth outside object-principle; of which the group(s) reactivates into two of absence and presence; to the intimated end that among three 'here' functional's; the self is defined; via and identity to which is inseparable and inexchangeable.

The deficit is to that of three: re-transformative into two or two; a null end of a thought experiment; but yet quantum states exist beyond the double dual exchange accompaniment; to what is any unlimited set in yet raising the third under transferrance; and a lowering of the second spin. The co-adjoint determination of another is the seamless consequence suffer's to the other for dis-inclusion unto yet an adaptive third; to what is sunken in cost; there is apportion and sequestering; so that as of the Banana & Canary Principle(s) would allow; three are co-determinatively afforded co-existent mean prior (2); of a strict in-equality unto breaking into two through the via and back between any two adjacently connected point's of reality; neither 0 [**zero**] &-or 1 [**one**] to the limits of 'background' objective physics. The commutation represents the elliptic and exponential con-joint relation of light-cone's; to which when divided; recompose to simply a property of an object; for their shadow-function is simply a one dimension bijective flow of 'unilluminated'. Under exchange it is:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] \psi(x, t) = \lambda\psi(x, t) \quad (921)$$

But then; we can insert the identity without changing the commutator:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] I\psi(x, t) = \lambda\psi(x, t) \quad (922)$$

Where:

$$I = \{\eta^\mu, \eta^\nu\} \quad (923)$$

Therefore; and we find completion in two relativistic projection(s) derived from either's inward reflex and impulse as encoded in the isosymmetry derived from proportion and shape; that of the equation (5).:

$$[\eta^\mu \partial_\mu \eta^\nu, \eta^\nu \partial_\nu \eta^\mu] \psi(x, t) = \lambda\psi(x, t) \quad (924)$$

Or:

$$\eta^\mu \eta^\nu g_{\mu\nu} \psi(x, t) = \lambda\psi(x, t) \quad (925)$$

Alternatively:

$$\bar{g}\psi(x, t) = \lambda\psi(x, t) \quad (926)$$

It is in-expressible whether:

$$\bar{g}. \sim \lambda \quad (927)$$

Or:

$$\bar{g} = 0 \equiv \lambda = 0 \quad (928)$$

In other word's; the eigenvalue to exchange is indistinguishable from the metric relation of the spin algebra of inertia; that of the weight of the physical assumptive of inertia in the Dirac equation an identity with that of it's weight geometrically owing to energy; not just space and time. ***and not just mass.**

$$([\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] - \lambda) \bar{g} \psi(x, t) = 0 \quad (929)$$

Written out this is:

$$(\eta^\mu (\partial_\mu \eta^\nu) \partial_\nu \bar{g} - \eta^\nu (\partial_\nu \eta^\mu) \partial_\mu \bar{g} - \lambda \bar{g}) \psi(x, t) = 0 \quad (930)$$

However by that of the the principles outlined; that of the two views of one particle can be further scrutinized to single particle field and particle spin-orbital momentum; for in that of the whole ensemble there is not only one particle bound to another; but *a condition for separable equivalence principle and complimentarity invariance footing*. Penultimately this divides the description of the particle upon exchange into one element of which is of it's manifest Lorentz covariance; and another of it's Shared Proper Time. As:

$$([\eta^\mu \partial_\mu \log(\bar{g}), \eta^\nu \partial_\nu \log(\bar{g})]) \psi(x, t) = \lambda \psi(x, t) \quad (931)$$

Then to an exchange state; for which the commutator is evaluated and the middle term's drop from the general expression (here η is an operator for spin and orbital uncertainty exchange constant...):

$$[\tilde{d} \log(\bar{g}), \tilde{d} \log(\bar{g})] = \lambda \quad (932)$$

Which when expanded becomes for the particle momentum:

$$[\tilde{d}, \tilde{d}] g^{\mu\nu} = \lambda \quad (933)$$

Then; it is also true:

$$(\tilde{d} - \eta)(\tilde{d} + \eta) \Psi = 0 \quad (934)$$

And that:

$$\sqrt{\lambda} = \eta \quad (935)$$

Since the eigenfunction must be satisfied in a basis; the commutation therefore hold's for the first state:

$$[\eta, \tilde{d}] \Psi = \lambda \Psi \quad (936)$$

$$\eta \tilde{d} = \lambda \quad (937)$$

This only holds true if the field momentum equation is as follow's:

$$\tilde{d} = \lambda \vec{\sigma} \quad (938)$$

These represent in the first the spin-orbital coupling potential energy at a minimum; to which is related to exchange of spin and orbital degrees of freedom. This spin and orbit would then be a transition of the spin-orbital condensate. In the second; it is the curvature condition; with $\zeta = \zeta^{-1}$ and anti-Hermitian. For that of the reduction to an eigenstate; there is a Ψ ; the net wavefunction given by:

$$\Psi(x_\mu) \quad (939)$$

The natural separation into particle and field momentum can be found as a consequence of the independence and equivalence of the quantum unit of probability in a two body interaction. The equivalence of 'weight' λ in either view is the invariance of complementarity; that penultimately interchange of particle and particle description identity leaves results of measurement unchanged including that of relativistic consideration.

Symposium

There are three ingredients to superconductivity which must be demonstrated. We will proceed in a linear fashion; beginning with 1.), then 2.), then reaching an understanding of 3.); then these will be moderately 'put-together' into a robust theoretical framework; then; there will be an introduction to the experimental motivations for invoking the model system; a treatise on that of implementation of the theory with phenomenological evidence; and then finally; calculation of results and a conclusion. This model presentation is offered as in replacement of prior work's in which the work was undemonstrative of a logical proof based system of verifiable hypothesis. The aims offered in this paper are more to the adjustment in theory required to make sense of a physical world within light of the existence of superconductivity; but where appropriate common sense has been appealed to. That of the results intend to make no implication about alternative areas of physics; but where appropriate prohibition to allowance for what would lead to contradiction in another area of physics has been noted. As akin to the manner in which space and time 'fold' to create a finite circle from an infinitely long one; when an orbit is analyzed of a straight line in a curved space & time; as when superconductivity is manifest; the finitely long line of interaction 'folds' to produce an infinite orbit in the curved space & time of the interaction. That is to say that the antipodal relation hold's; and that the less-than-unity normalization group of the spin; (to which is four dimensional) relaxes the orbital constraint to it's-fullest; that of a gauge group then to which is negative in conversion of magnetic becoming electronic and electronic becoming magnetic; with a reduction from the speed of light rather than an accumulation to the speed of light; as if participating on the other side of a mirror. This demonstration states that all additional that is required is exchange of field for particle pro-perties; and that of the charges will attract within the ranges of a standard deviation; there being two wave like frequencies and wavenumber's the result of a phase congruence with conversion to angular coordinates. Without further disclaim; the offered supports of superconductivity are in three:

1.) *The non-linear **product 'covariance' rule** formation of two distributions with a negative exchange (J) in individually prepared Shared Proper Time with a local minimum generates an experimental bind of trading of the index on one measurable for another; that of the inversion and reciprocity of the law's of physics potentiated by purely statistical means...*

2.) *Non-linear **product-rule** superposition under exchange with comparative probabilistic 'complementarity' of either particle's independence from relativity results in that of the admission; by way of the twin-paradox like intimation on relativity of measurement inversion, to what is indistinguishability of relative and quantum contribution's to lowering in energy...*

3.) *That of measurement inversion with spin and orbital momentum under exchange for which one particle and it's world view will not afford the altering of another particle's prescription; affords, given that exchange is negative and the **covariance, positive**; the inversion and substitution of the electric for the magnetic field; and vice versa with relativity...*

Therefore there are three reasons for attraction of the electrons in superconductors of the high-

temperature variety. First; exchange is negative and probabilistic assignments are independent of relativity; with the distribution rule on that of standard contributions via a two body problem in what is the shared proper time versus proper time is equivalently balanced; and that of a local-inversion of the deterministic factors of the theory occurs.

- 1.) A quantization condition is reliant upon a spatiotemporal positioning and orchestration of terms.
- 2.) When the manifold condition of a curved space under-declines repose; we get a splitting of energy.
- 3.) Therefore one manifold prescription under a cleaved sheave for then unto two eigenvalues emerges.
- 4.) The splitting is a prescription to electrodynamical theory breaking under a source, sink, magnetism.
- 5.) Probability discriminant's fold the elementary symbolism of equidistance to infinitely separated end's.
- 6.) For what is contained in two or two is three and one to reduction in equivalently displaced potentials.
- 7.) This imputes a relation of directrix enfolding focus; and reversal of measurement to eigenvalue status.
- 8.) Metrical relation is a null condition with that of spin metricity; to which electromagnetism vanishes.
- 9.) Quantum wavefunctions defy Pauli Exclusion to null repulsion via passing beneath an e.v. enfolding.
- 10.) The manifest retro-inversion of a population in two's decimates in energy argument equations of state.
- 11.) A spontaneous symmetry breaking is present, a gap, and a phenomenological behavior of it's unit's.
- 12.) Indeterminism to what is particle & wave; hold's the precept the 'particle' precipitates it's capturing.
- 13.) Inter-adoptive exploration of one dimensional arc width are devoid of doublet anharmonic inversion.
- 14.) Therefore; the principle qualitative element is that probability fit's more recurrently within space.
- 15.) To what is a disconnective or connective; moderacy of spin and orbital measure interchange is unitary.

For what is complimentary of comparatively equivalent time signature and self solitary provided and insured proper time to shared assembly via statistics; for that of either probability fitting within relativistic space and time (inward reflection); and that of it's dual capacity upon yet what is an instance of equivalence in weight unto the apportion of experience of probability and relativistic deformation; that of independence in statistical measure causes a uniform co-participation of these given *Theories and exemplifies unification and separation of their forces; indeed; Gravity & Quantum mechanics within the same atom; a lower in energy result's via the spontaneous symmetry breaking contribution of electromagnetic energy to the two electron's.

It is also true that:

$$\beta = \frac{v}{c}. \sim \beta = 1 - \frac{v}{c} \quad (940)$$

As a result of what is taken 'to' the mirror rather than 'from'. As a consequence what is a distribution of probability must be re-interpreted as that which give's rise to expectations; around which there is uncertainty in results; the central result being certain for in light of *two theories*.

The next reason is that particles find indistinguishability in that of their 'Quantum' and 'Relativistic' contributions to mass-energy-momentum; of which what is observed is a universal energy lowering in charge and spin. That of separation from spin (to which is left with freely held Non-linear Shroedinger Equation Solutions) contributes therefore the full $4J$ to the gap at the lowest perturbation or temperature.

The results of what are the relation of this being a genuine energy lowering or that of a reduction in a repulsion are therefore that it is a genuine lowering below a general reduction in repulsion; and may be seen as a reduction in repulsion beyond the limit of it's genuine lowering in energy-mass-momentum.

The general description is that relativity and the properties of statistical normal distribution of variance exhibit a two body null covariance; therefore electron's are mutually force-free but at a reduced energy of the 'seemingly separable' conjoint expectation of exchange.

Antasz

Beginning with solutions of the variety:

$$(|\zeta|^2 \zeta - \sigma \zeta_{xx} + i \zeta_t) \phi(x, t) = \iota \phi(x, t) \quad (941)$$

We have the Ansatz:

$$\zeta(x, v, t) = \alpha sn(x - vt, m) e^{-i(\omega t + \kappa x + \phi)} \quad (942)$$

Used in (59) we have:

$$v = 2\kappa\sigma \quad \sigma = \frac{\alpha^2}{2m} \quad m = -\frac{\alpha^2 \kappa^2 + \alpha^2}{2\omega - 2\iota + \alpha^2} \quad (943)$$

So it is that one solution can be intimated within a connective (think SU(2)) algebraically from one subsidiary manifold space to another... for example when the modes are in-actual entrained or defocused; and when confinement (then provable) takes place because of their non-linear sum/product relationship.

Origins of Unification

When the two time's for that of the log term's are applied to the differential equations; we see a reduction in their mannerism in expression of complexity; for then the threshold eigenfunctions must surpass to become a reality is determined. That of the logarithmic equations suppose that a given is that there is reciprocity between subjective and objective worldviews. Therefore for:

$$\frac{\partial}{\partial t} \leftrightarrow \gamma \frac{\partial}{\partial t} \quad (944)$$

We have:

$$\eta(v)\zeta(\tilde{\omega}) + \eta(\tau)\alpha^\mu\partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (945)$$

$$\eta(v)\xi(\tilde{\omega}) + \eta(\tau)\alpha^\mu\partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (946)$$

To which become:

$$\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu = \eta + \rho \quad (947)$$

$$\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu = \eta + \rho \quad (948)$$

And:

$$(\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu)(\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu) = \eta\rho + i\sigma(t) \quad (949)$$

As a difference of constructive and deconstructive interference equations.

Their solution is:

$$\alpha = \partial_\mu\zeta(\tilde{\omega})(\eta + \rho + \eta(v)) \quad (950)$$

$$\beta = \partial_\mu\xi(\tilde{\omega})(\eta + \rho \pm \eta(\tau)) \quad (951)$$

$$\sigma(t) = (\rho + \eta)(\rho + \eta) \quad (952)$$

Setting $\alpha = 1$ and $\beta = 1$ and $\sigma(t) = i$ we have: Thus:

$$S * P = \iota P * S \quad P * S = \iota S * P \quad (953)$$

$$\mathcal{O}(\iota) \quad (954)$$

Within the holographic theory... with $\iota \in SU(2)$ and ι normalized as per:

$$(\eta + \rho + \eta(v))\partial_\mu\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu(\eta + \rho + \eta(v)) = 1 \quad (955)$$

$$(\eta + \rho \pm \eta(\tau))\partial_\mu\xi(\tilde{\omega}) + \xi(\tilde{\omega})\partial_\mu(\eta + \rho \pm \eta(\tau)) = 1 \quad (956)$$

These equate to:

$$\zeta(\tilde{\omega})\eta\partial_\mu\xi(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu\xi(\tilde{\omega})\eta = 1 \quad (957)$$

This reduces for that of the \pm to cancel as a similarity (hence we get to choose to neutralize that of v).

$$(\eta\rho) = L_{\tilde{\omega}}L_\tau \quad (958)$$

The first equation and the second lead to intimations of what the function's look like; here; an exponential...

$$\rho\partial_\mu\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu\rho = 1 \quad (959)$$

Given that the exponential map is a map; we have an analytic theory; into which via these as transformation rules; a coordinate chart can be written by comparing *different dimensions* with that of *different base combinations*; these are both open; empty; infinite teir's which collapse when

the two electron's are so close that they hold **no** mutual force of repulsion; an absolute Pauli Exclusion below symmetry breaking.

$$\partial_\mu \log(\rho\zeta(\tilde{\omega})) = 1 \quad (960)$$

Providing the solution in ρ , a constant of the ratio of compressibility to conductance. Therefore conductance is sourced in a gap; literally:

$$\frac{1}{\rho} = \Delta \quad (961)$$

To an 'optionable' and 'variant' proportion; that of the two Lie differentials are still a 'scale;' and we may write this as:

$$o = \frac{\eta}{\Delta} = L_{\tilde{\omega}}L_\tau \quad (962)$$

The equation for a [2] number theoretic valuation of o yields a gap as-the-integration constant to an elliptic and exponential differential cross-correlate. That of two is the threshold of point source to which the eigenfunction first becomes three dimensional into a catastrophe set. Roughly there is the 1 : 1 proportionate cross-over of 'below threshold' and 'above threshold' that of 3; therefore three dimensions is the critical dimension for self regularization and attraction of charges; that of symmetry breaking is invoked by any bistable reactive element of reverberation; meaning; all frequencies are summed for therein what lies of the secondary octaves of a trichordic wave. The only composite solution is to find that above a critical state, three electron's obstruct to enable two electron's to fall together.

Intermediate Conclusion

That of:

$$o. \sim \Delta \quad (963)$$

Therefore expresses the 'mode inequality' of a 'reductive force;' entirely consistent with relativity; but within that of a semperent calibration rolled inward. To what is this individuated space; it is not known; but that validity focuses relation; individuation focuses potential.

There are a few relations here of a contributing nature:

- 1.) *A doublet-reductive interferometric balancer and synchronization engine... of which follow's the precept of a 'modal inversion' and 'reductive force'... a **DRiBse**.*
- 2.) *Ordinal theorem of qualitative control of chaos; (3).[2] of freely held gain decimates prescribed Chaos; to what is prescribed certainty as to manifest whole in optionable togetherness of [3].*
- 3.) *Modal inversion and reductive force lead to manifest order; Via that of 'Graph Stitching' in the Indical Calculus; to what is an eigenvalue eigenvector inversion; with an Energy Gap.*

Comparatively, the difference in the quotient space for a local relation differs from that of a global relation; for that of separation of 'scales' and separation of 'places' to which regulate around (primary, secondary, or tertiary to) that of their their own segmented relations; in a virtually infinitely co-extensive quasiperiodic space. To what is light, time, mass, and sound; these transconduct as through a cantilever to which alone; word's are supportive of genefflection and mannerism of conveyance to sociological apportion; number's being befit for a local space; but mapping an

idempotent relation of 'place' under situational dichotomy in two; provable as to identity for in that of once-outside, co-terminable with that of situationally of an absence of a tertiary support; that of a known; that as either question in two differently is established; so is that of the applicable permanence to awareness at-a-distance; for apportion to secular order's; free of a catastrophe set.

This co-extends Laurent series to all function(s) inclusive of a product form; to which is an equivalent expression from which a factor is taken 'off the top'. The result is that the primitive seen outward inward as inward outward is free. This freely held (and unheld) radical space is the one (singular and unitary) base in four dimensions; to which prohibiting all places become one; 4th dimensional and hence not 5th; dimensional. That of what is certain is the definite 'untying' of electromagnetic frustrum's; and re-incorporation of world identities. For that of what is exemplified; we have determination that any fifth (exterior and auxiliary) point is free; therefore any two realities are freely disconnectable. That of the synopsis on the algebra is that it is an Affine Lie differential algebra... this is resolved by the special unitary group; of which suffer's an automorphism and decay's under thermodynamic conditions to a potential and kinetic energy landscape lowered by a number of conditions:

A Grand Term:

1.) Inversion of the Measurement Problem; under application to what would be 'two;' measurement proceeds via the converse of the statistical lemma; sociologically a trade of honesty for imparture and sequestered in part's; the whole is greater than the sum of it's part's; even upon that of individuals.

Option(al):

2.) For what is Quantum Uncertainty and Relativistic Factor both remaining in imparture to a depression; that of reduction in one for in light of the second of either these two is universal; leading to that of a two fold in what is any three electron's; to their mutually degenerate null condition of covariance.

i.) The missing element is that what is third in substitution for the third-agent is null relation of group to fundamental metricity (an empty relation); of that of the third observer; to which relativistic factor's explicitly do not hold an accordant measure and relationship; but of statistical mean and average.

Fundamental:

3.) Probabilistic Independence from Relativistic Argument – under application this results in a Modality Inversion and Inversion of the Measurement problem when it is prepared to a gap state on that of 2.) for what is 1.); under which the second (2.) part; reveals a population inversion; that of two switching one.

ii.) The uncertainty is lessened by in a factor of the contrapositive of relativistic expectation in the whole.

Quite simply put it is due to the quality with which the exchange constant will depart from it's given value to zero with that of velocity increasing; and the momentum will remain the same identically within the frame of a particle; but exhibit a greater than one magnification and pos-

itive curvature on that of the secondary particle; but meanwhile within it's frame; a less than one magnification and negative curvature unto it's self term of momentum. Thus we have all alignments of probability and relativistic argument and momentum.

iii.) Measurement and measured differ; in that what is measurement is co-extensibly weighted by relativity; while what is of presence and absence alone; it is the reversal of relativity; to what is obverse.

What is 'on' particle 'A;' 'to' particle 'A;' is it's reduced exchange and momentum; plus the depiction and representation of relativistic factors to which are 'larger' for momentum; and 'smaller' for exchange...

Thus:

a.) Exchange diminishes because particle 'A' and particle 'B' fit within each-other's-roles from which they are judged via each other to themselves with a relativistic factor that is less than unity on energy-momentum under juxtaposition; therefore exchange energy is diminished.

b.) The change in momentum of particle 'A' is negative because there is more quantum room for that of it's energy-momentum via a.). With 'B' it is judged with a 'higher' relativistic factor for time and space; equating with the reduction in a.) because of inversion of perspectives.

c.) The quantum exception is that either particle undergoes a 'measurement' & 'measured' inversion with interchange; to which momentum is to a higher relativistic factor explicitly to itself and the governing perspective on particle 'A'; but with exchange to a lower relativistic factor.

d.) The quantum exception (by which juxtapositions leave intact relativistic factor's) informs that either energy-momentum of exchange or kinetic energy lower's by what is elimination; therefore both particles reduce in energy; to what is equivalence; that of the genesis and source of a measurement inversion...

Conclusion:

With juxtaposition and interchange of perspectives; the lowering is universal; for that of what was a higher relativistic factor in 'A' or 'B' becomes a lower relativistic factor in 'B' and 'A'. Reciprocally; it can then be argued that the momentum decreases meanwhile for the particle it modifies the prescription thereof; it's relativistic factor increases. This is what we get when there is an inversion of perspectives.

When particles experience time; they are on a curve; the exchange; but probability does not effect relativistic outcomes and relativistic outcomes do not effect probability; so there is a 'void' on that of any four part type of interaction. The juxtaposition of one particle for another is known as 'exchange' to which particles literally interchange identities; that of for the real world; a division.

When this occurs; a modality inversion leads to a relativistic chasm of a factor of gamma. That of gamma; therefore via A's vantage is larger for A comparative to B & larger for B comparative to A... so A acquires more time and a lesser restriction on probability amplitudes with B in presence. Meanwhile B's relativistic assessment of A is to accrue this factor for A... that of vantage;

probability per relativistic unit; and relativistic unit per probability. When either reduce; the reduction of the exchange via the reduction in kinetic energy is to be interpreted as a reduction in what is yet-ahead of the current kinetic energy & that of vis-a-via that of by way of which it maintain's it's position; an ordering of factor's that of the (a) frame assessment.

I therefore found the algebra required to describe the differential equation(s); by that of a leap; the 'Massless Free Boson Theory' in conjoint with it's associated problem; with re-definition (both 'free') of 'a'. The Affine Lie Algebra...

This makes sense as a decomposition of the momentum-energy with the relativistic group; to which there is an expression of the relativistic factor outside the differential and included. Superconductivity is particular in that the division group is per auxiliary agent's of the system; in a normal system these particles are described by a variety of alternative behaviors because the group does not suffer compactification into a finite lattice of division groups of the differential source equation; and degeneracy among a two particle limit; both of which source the free part of the lagrangian as positive but with exact conversion to potential.

Mathematics

Affine Lie algebra is:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \tag{964}$$

Here; 'a' represent's energy-momentum; and t^m represents that of relativistic factor. What this equation represents is that mass is fundamentally reducible to a blind statistic of weighted-sum and unweighted result. The recombinatorial dilemma is satisfied whenever (8) precedes (7). But (7) is equated with measurement and decoherence; therefore the summation precedes as order before result. That of this detection of 'order' under-pin's that the relation is sequestered of it's extension. That of the above equation therefore has as it's only solution's that of bounded polynomials in the Gauss-Basis. These prescribe to no tertiary determination; and once prior the precept implicating the secondary as primary notion of massful boundedness; but it is indeed the solution of the 'Massless Boson Theory.'

This encompasses an equivalence (twice-folded (relativity)) indepedence among three dimensions. The co-existence of a third dimension with a two-folded geometry of relativity therefore eliminates under it's equivalence class that of but one primary and one secondary independently neitherly imputed nor not; and to which is a given in suppliance by the repetend of it's action. Therefore the third is free to inclusion at secondary precept in the auxiliary space (or interior such a net as this); and may be moderated with to the action of a five to four fold set within.

That of what is determined is the quotient radical; to which operates as a functional argument whether separated or unseparated. Therefore the freely (neither of these) held nor unheld determination of the auxiliary holds a foundation in reality; but is contradictorially the only thing determined within a 'place' - the saturable environment. Of relation's; it remains indeterminant as to if it is either 't' which dominates to the solution set; or of 'a'; for what is real; this stands as definitively a reduction via displaced integration constant of a subsidiary dimension. With this - appreciable 'order's' are imaginable yet contained within each given space & time.

In fact

$$(\partial m) = \delta \tag{965}$$

$$(\partial s) = t \tag{966}$$

Are separable into a conjoint union... the measure of the measured being comparatively exactly predictable... therefore science is on a solid foundation. This alludes to a partition; to which is to higher and lower spaces; the re-arrangement of two friends to what is a third. It is the exact outcome that re-arrangement's in third's commute; despite that of us existing within a fourth (proven) dimension. For I may take a piece of paper and write on it two conventionally non-commutative triangles; and these may be wrapped in a torus; to which they are at zero dimension commutative upon for the sake of identity itself. Hence the identity of forms is empty. This means that the above equation is the exact equality of the overlap of electrons in possession of the limitation (in fullness) of mass-regularization and that of simultaneously; no-mass.

The division expressed is the qualitative expression that rest mass and quantum mass do not differ. This is the confirmation that relativity and quantum mechanic's are null in consequence; consequence only being made up of ordered set's. Hence disorder upon re-arrangement holds a bias to order; that of the outward-outward from an interior force; and the walls of the cavity. That the second order Green's function of a two dimensionally swept arc is free of containment; is that it is a container to which the walls are in either a sub-cavity or that of a reservoir elsewhere; entirely free of one projection; they possess only **one particle past's**. But; and thus; the solution is unique; it is one of a general class of elliptic functions with exponentials; that of two dimensions must intersect to produce that of a solution; and although such a setting can be written; it is devoid of physical foundation; and for that of in-expressibility of number's.

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \tag{967}$$

Is the simplified expression... in this we see that the solutions are all either fixed - to which is connected within this theory - of the Hermite basis (Simple Harmonic Oscillator) or that of the Elliptic and Complex Exponential Solution... these are really the result isomorphically of an electromagnetic field in interaction with a charge density as well.. Thus it is the most general solution. That of the attempt at a two body what is two interpenetrating hyperbolic secant function's and exponential wave's. The conclusion is that the energy momentum is continually bound; and experiences a 'gap' for the sake of that of finite coefficient's to it's expression; or within what is two directrix; that of a manifold flow of a 'stream function;' to which percolation is freely scaled... that of the gap is manifest because there is a finite residual integral constant to that of δ and t .

This principle stabilizes every two-part system in the universe. With two bodies; instead of energy defining curvature; mass does... to which the eigenvalues of a system are composed; the net absence and presence of subsidiary layer's of a composition; to which is empty in the gestalt for that of being a terminal end; hence the future is a fiction. Any four or more; three; or two particles determine only a past; and that of three alone may determine a future while two always do; two determine a future; and two are the solid foundation of the world; for what is; pre-causation, & entirely surrounding the elemental zeroth dimension of a system; all that is required is:

$$\delta(x) \tag{968}$$

$$\partial \tag{969}$$

These in the above equation remain of a logarithmic nature of curvature; therefore two solutions are the above listed; to what is a diffeomorphism the curvature of a stream function does not play a role in it's dynamic's; all are freely held and unheld invariant's;... for where they are manifest;

the origin it is *explicitly declared is not co-morbid with a point on the space; the universe is therefore closed...* This prescription; for that of two point's; render's the Cornu Spiral curvature free.

For in that of light of equivalence of meter and balance; an instrument of measurement capability (for which the role - direct - of observation is reversed to a null exterior-interior condition(al); that of one point in it's divergence is free asymptotically in the unitary group of thermodynamic and mechanical vibrations; all that energy is composed of is changing mass indexes and light indexes.

For what is two; the gravitational reduction and electromagnetic reduction diverge in a Superconductor; for while in the void of three and four dimensions; their substrata are seen but through a lens; the flow to which an equivalence of field and particle is founded on any two dimensionally existent hyperplane of intersection within that of a one dimensional arc; that of abstraction to a bubble like space; where in fact; degrees of separation are the meter; and the arc length area is the balance.

Free Evolution

The free evolution of what is one dimension lower and reduced prototypifies the three system's of Simple Harmonic Oscillator; Decaying Simple Harmonic Oscillator; and Elliptic and Complex Exponential... These are related by the Special Unitary Algebra and Superposition. This reduces molecular science to a study of interstitial guassians at any scale. The scale freedom is the support of which is supportive indeed by way of the freedom of proportional inter-juxtaposition and shape. Shape; has to do with the ordered system of form's of identities:

$$\Sigma \mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \quad (970)$$

This is the generative drawn point of an identity; a particle's exact apportion of meter to balance and it's direction in space. The only rule for in that of dimensional reduction is that the above ordered distribution of states expresses the forms of identities in compendium in-exact proportion and shape with the forms of identities by the summation and what it reduces to for in light of the original identities. Therefore the solution is given by the solution of:

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \quad (971)$$

This equation expresses that the first co-homomorphism of the prior in a series is an integral of separable scale of space and time. However; th equation is an identity which states that the capacity of inertia is defined by that of equivalence of scales and proportions; an exact expression mutually identical with (and anti-opposite) relativity; to which now; the prior identity is the given reconciliation of:

1.) Probability measurements and expectations from out of quantum mechanics do not depend on relativity.

2.) That of relativistic assignment proceeds via that of emptiness of qualitative impression in/of the composite.

Instead, we have that the form's of identities; to which are determined by a free associate in the third; and a strong coupling in the second; a hybridization below critical temperature; that of the cleaved domain find's particles residual within a separable position to what is the population inversion; the reason; this energy state is preferential. Thus order re-segment's into free particles

with a phase transition; to which the caveat is that quantum rule (1) may outrule relativistic prohibition to measurement..

The class invariance of the group is therefore of it's determinant ordering of symbolism with two; for here the summation of two of these equations leads now to a superposition problem. They are linear (and yet co-exist within of what is any feasible curvature of the universe). What has really happened is that the manifold of uncertainty has warped around to connect with itself; a tube has become a torus; and the freely demonstrated chirality is dispossessed of; to what is the orientation free capacity of one of these crystals; the uncertainty principle and equivalence principle represent *this* nature of spontaneous symmetry breaking.

That of outward gravitational inertia is the net sum of mass-content's; the final determination of which is prediction of a mass or energy (alone) gap. This remains the final prediction; the conclusion of which is that mass is predicted to remain an invariant for the (reversible) return from the gap state; the elimination of integration; to which come(s) from the local behavior. Hence at it's base residual; a non-inertial force produces the superconducting state; but physically it behaves inertially.

In two dimensions or with two particles the world is therefore biharmonic; while the vacuum is harmonic; or in it's auxiliary limit; to which is that the form of identities remains fixed. This fundamentally expresses that outside is what is in quasistasis while the direction inward is biharmonic. Every particle state is in fact of two body form; to what is a doublet; all the interactions (& normal action re-action events) of the universe are therefore of the following form and unit doublet u_1 :

$$(x * u_1)(t) = \frac{dx(t)}{dt} \tag{972}$$

This is an identity of the Universe; and represents the difference a priori in that of $\delta(x)$; the Dirac delta function and ∂ the differential of a relation as P and S ; profunderance and synchronicity. when these interadopt to what is a differential of a delta Dirac function as the expression of the current eigenvalue. Gradations illustrate the pathwise motion is free; but for that of a superconductor they are merely free in two dimensions as a result of possession of an orbit; the real result dimensionally reduced as a wave-function; one degree of freedom is lost. Hence superconductors exhibit no magnetism; the result of a curl free situation; for what is an antipode; the relaxation and permanent gap for in light of penetration of a vortex state; that of stationing with a free curvature and curvature under action and re-action by the simplicity of the above relation. That of the functional solutions to the above equation come in the three forms exhibiting a 'breather' envelope.

$$S * id_X = \eta \circ \epsilon \tag{973}$$

Reality, space, time, & matter therefore possess a proportion and shape free gestalt; of a variety that render's the world empty of scale and composed of measureless point's.

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with a preliminary notion of that of prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (974)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (975)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (976)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (977)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

Proof of Translation

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process. For that which is found in a

derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds reexpression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (978)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (979)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (980)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (981)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

Ideal Principle Equivalence

The equations which dictate the function, form, and nature of the universe are two, as follows:

Quiescence

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is an invariant speed & the observed's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) Light is Quantum Mechanics which is the statement of **Quiescence**:

$$\partial_{\alpha\beta}^\gamma \Theta = \Theta_{\alpha\beta}^\gamma \quad (982)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name:

Prescience

Conclusive Remark on Space: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) Gravitation is Space Time which is the statement of **Prescience**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (983)$$

This is the given statement that of either given separability of philosophical inquiry into natural law is of similarity to coherence of algebraic expression for that of when similarities of mathematical expression derive of or from a common relation of order.

It is therefore true any two quantities of measurement and measured are coextensively null in measure by that of indivisibility of algebraic expression as independence of property from quality with the given as the expression of null indistinguishability invariance:

$$\zeta\chi = 0 \quad (984)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (985)$$

As an algebraic free projection of any vector into any one form of geometry of null displacement invariance and null indistinguishability invariance; the general and full expression of a principle equivalence with a general null covariance is expressed as a relative principle inequivalence.

Confirmation of Theory

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionalities of mass to inertia is not true; and do not exist with theoretical dependence. Then as there is bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return physical law is unbiased and deterministic for the indistinguishability and displacive properties of physical law; for seamlessness of extensibility and coextensibility are natural consequences of emptiness of property to that of the extrinsic nature of properties of physical process; if not object.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than

volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,dA}^2 \quad (986)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and dA is an area element.

End Proof

Therefore by the preceeding logic there is not one but two given separated zeroes between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

$$\psi_{\gamma}^{\pm} = \eta_{\pm} e^{\pm i\theta_{\gamma}} \quad (987)$$

$$\phi_{\gamma}^{\pm} = \rho_{\pm} \partial \log(\pm i\theta_{\gamma}) \quad (988)$$

From which through the given process of a chain of deduction and induction leads through this process to a conclusion that these quantities and defined as following are of an absolute null invariance given no third reduction exists in reverse:

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (989)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (990)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (991)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error. Finally we arrive at some new conclusions:

As for the quantum principle; we find three new interpretations and a new one: "*The particle wave duality is harmonic.*" "*No particle wave duality exists within a limit.*" "*The boundary condition is a harmonic criterion.*" are all equivalent statements of the quantum principle as well as: "*Space and time do not exist for a particle at two places in space and time simultaneously.*" This is the given answer to that of the question, as well as the answer to: "*Does any particle exhibit both particle and wave properties at once?*" With the answer: "**No.**"

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

And; "Is one the given reduction of the other as unique?"

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past:

"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past. Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

Exchange Locality Theorem

To begin we identify a given admixture of partial differential following the principle of a connection to a given here ultimately knowable quantity; that of a placeholder for what conventionally known as spin; the entire property of which is a free impedance relation provided by a ring of crystals; and found as that of the orientation and juxtaposition of the electron's inertial field.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion.

With the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has. Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field of impedance:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = 0 \quad (992)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (993)$$

The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space; forming from that of surrounding notion on differential of exterior boundary under fixed mass of variant gap by weight of coupling and gauge connection, Γ_μ .

$$(i\gamma^\mu D_\mu + m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = \Delta \quad (994)$$

Which means that two electrons are the generator under the anti-commutation and commutation relationship of their subsidiary operators of a full notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reductions in energy at the relativistically accommodated energy level of the full energy momentum of either one such particle.

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron in motional inertia.

Simpler Means

Therefore, this transformation appears to be a local and global attribute of harmonic functions and elliptical functions with but two modular relationships and arguments related to the two cardinal harmonic conditions as abbute to elliptical conditions. The connection between these is that of the given relationship between that of tension, torsion, and that of elliptical semimajor and semiminor axes.

As proof that this is possible; the summation that is the elliptical functions is reduced under the transformation to that of a summation of harmonic functions with strict logarithmic differential amplitude and phase relationships as the foundation for such functions and such transformations. Hence a self isomorphism is potentially existent under it's inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha \hat{A}(\omega, \tau) & \beta \hat{B}(\omega, \tau) \\ \gamma \hat{A}(\omega, \tau) & \delta \hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix} = \int_{\tau} \int_{\theta} \begin{pmatrix} e^{-i\omega t} A(t, u) & -e^{-i\omega t} B(t, u) \\ e^{i\omega t} A(t, u) & e^{i\omega t} B(t, u) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix}$$

Inverse Relation

If the inverse transformation surjective onto limit is to be defined in relation to any two such harmonic affinities then the triangle inequality is broken with a hole unless there exists a forward application of the homeomorphism so preserved by the transformation under the prior considerations of a non simply connected space.

The surjective limit cannot exist and no analytic expression in dual periods would exist without closure under a self inverse homeomorphism or such extensions under internal locally, globally weighted and independent notions of analyticity; for a hole produces an automorphism in either such space as a representation of an analytic function which are incompatible notions under the forward application of the transformation as a homeomorphism with priorly backward existing limit for the inverse; as a potential exception when the space is not simply connected.

If this were not the case the given homeomorphism would not be independent of either such functional space; as it must for a general function if the space is topologically connected as a genus one space with a given hole.

This exception is a potential incongruity of the mapping and a realistic consideration with the

existence of a hole when this space is identified with a conjugate space as therefore with two harmonic conditions the spaces are otherwise independent in full and necessitated generality if and only if this consideration is brought to bear; the inverse mapping of which is therefore:

$$\theta := \begin{pmatrix} \tilde{A}(\omega, \tau) \\ \tilde{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \partial_\mu \log \alpha(u, t) & \partial_\mu \log \beta(u, t) \\ \partial_\mu \log \gamma(u, t) & \partial_\mu \log \delta(u, t) \end{pmatrix} \begin{pmatrix} e^{-i\omega t} \\ -e^{i\omega t} \end{pmatrix} = \begin{pmatrix} -\tilde{A}(\theta, \tau) & -i\tilde{B}(\theta, \tau) \\ i\tilde{A}(\theta, \tau) & \tilde{B}(\theta, \tau) \end{pmatrix}$$

Which defines the θ and Θ functions in a logical symbolic set relation; for which the one form under conjunction is self isomorphic to a free group of generally deductive angle free variables.

These variants of the relation of symbolical ordered set under logical organization correspond to all variables of the free magnitude wave number space for all interchanging or ordering of variants with only exception to a free radical phase (here made nilpotent) as a consequence of the infinite shrinking of the surjective onto mapping set theoretic union of a space under solid free relation (pictured as a flat mirror like surface) of each full dimensional reduction to each of every finite limit.

In this we find the variants hold the potential and reality condition of being in essence all observables; while the transformation itself represents the 'mirror' of which is depicted the full 'motion' of both mirror through the transformation of such variants; and that of each such objective reality 'reflected' in the mirror; as a 'hole' in reality; for which connectedness is imputed.

Conclusion

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (995)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

The implications are that the universe is whole; and that no point of which the universe has originated begins or ends in the present; but within only that of the divine nature of a singular unifying mathematically empty and physically null relationship of balance. The singular defining relation is that time and space can be balanced against one another only by the undefinable completeness of an empty relationship by the meeting point everywhere in space and time as a singular balancing counter-participant to the identity.

Final Theorems

The difference of this theory from relativity is non-difference of inclusion of disparate measure by comparability; a standard by which the given division of meaning can only be found with the abstraction which is merely that of the ratio of a circumference to perimeter as an apsis of revolution; a general standard of given equipartition into equivalent parts; with two given specifics; that of an equivalence relation of directed unidirectional symmetry and undirected relation of co-deterministic symmetry.

The conclusion of consistency for that of self conclusive closure is defined by that of what can be defined as a 'bottom' extreme beyond which awareness of the exterior world does not reach; but sublimes a given limit of enclosure unto it's a; or each; given domain of closed relation for that of what is potentiated when there are two fundamentals as in mathematics and in the physical world; of geometric reasoning; of a solid or passable and transparently given nature; for that of what is foundational when reasoned as deferent.

Therefore there are two fundamental limitations of physics at the bottom; in order for there to be any self or other consistency of descriptive means in mathematics as in physics; of articulation:

Principle of a Mass Deficit: *As a fundamental any given mass of matter is equivalent in proportion and weight to any given apportion of it's given light content; and no greater or lesser under conversion in of or to any given unitless based system.*

Property of Light Variance: *The speed of light in being fixed to a universal standard; implicates that all such velocities under conversion are identical with and greater than the speed of light universally; for the property of dilation is obverse to a measure of fixed relation.*

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of system of units to that of the system of conversion of circumference to perimeter; as an areal relation to that of pointless given limitation of interior domain; with equivalence to that of a measure of units of the system for which the standard is inequivalently proportioned exactly. Therefore the given holds as true; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (996)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (997)$$

Although the equations would implicate the speed of light is always in excess of unity; this is the same determining factor as that of a given open relation of the velocity of all bodies greater than c as subtraction of an interior finitistically defined zero locus of time enfolded everywhere locally in reality. This principle of inequivalence is to be contrasted with the exterior space of symmetry of the theory of relativity when it is considered that actual determinations of validity are certain.

Final Note of Measurability

The first equation is the Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (998)$$

The second equation is the Principle Inequivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (999)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union.*

These two properties; η and ρ are then given as equivalent to:

$$\eta = 1 - \frac{v_1}{c} \cos(\theta_1) \quad (1000)$$

$$\rho = 1 - \frac{v_2}{c} \cos(\theta_2) \quad (1001)$$

The substitution of one of η or ρ under either given pointlike relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point like limits of relativity; for that of each such principle equivalence of time and principle inequivalence of codeterminism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassment of either of two subcomponents of the alternative exterior difference of any two signal areas is constructable; as are any two given exterior alternative differential space by singular or multiplicity of exterior space as at even or odd frequencies any number of frequencies add to two; for any relation of an encompassed concave space; as then any circumflex round operator of self connected relation encloses all such pole subcomponents.

Therefore:

$$\eta + \log(f(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (1002)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of two given amplitudes of differential nature.

Therefore:

Final Theorem: *Considered together these two imply that either given impenetrability and absolution of independent point-like relation of proportion unto electromagnetic non-locality exists.*

Superconductivity Origins

The magnetic only solution (above) indicates that a renormalization occurs at the magnetic only fixed point in the flow of the theory. Second to this; is the potentiation of inclusion of local to local terms of an electromagnetic variety. The solution given by that of the (above) indicates that when we uniformize and unitarily procure from the electromagnetic solution to a dual in the vector field based contingently around magnetic and electric solutions; that this precipitates

electromagnetic symmetry breaking; by that which is a separable contribution to the spin wave geodesic equation. There are only two elements of the theory:

- 1.) Renormalization to electric only and magnetic only solutions; precipitates a violation in the superposition of the Dirac Electron Equation to Pauli Exclusion Principle locality bridge with logarithmic wavelength compensation of geodesic phase of spin-waves to electron mass and time decoupling from (2).
- 2.) Renormalization of the local to global to local theory of the uncertainty relation that derives of certainty in relation to a physical and acausal disconnection of free determinism precipitates superposition to spontaneous symmetry breaking of the quantum states in light and mass below a threshold set wavelength of light (Compton) wavelength of spinwave to charge hole.

In continuance; the result is spin charge separation from mass and inertia with symmetry breaking of electromagnetism from gravity precipitating a decoupling of matter from light and wavelengths of De'Bye from Compton to which ensure universality of an inductive conditional in that of spin and charge (or hole) delocalization-localization phenomenon in a unitary lowered energy potential of genus one beyond the wavelength of repulsion; asymptotic to a coupling below the threshold of inward or outward electron pair pair global to local pressure. It is that the renormalization in the ultra-small scale goes to infinity on that of the electric distance when it holds that the Debye wavelength is below the Compton; to which the electric field re-normalizes to zero strength of repulsion; and magnetic symmetry insists a universally finite (unit 1) attraction.

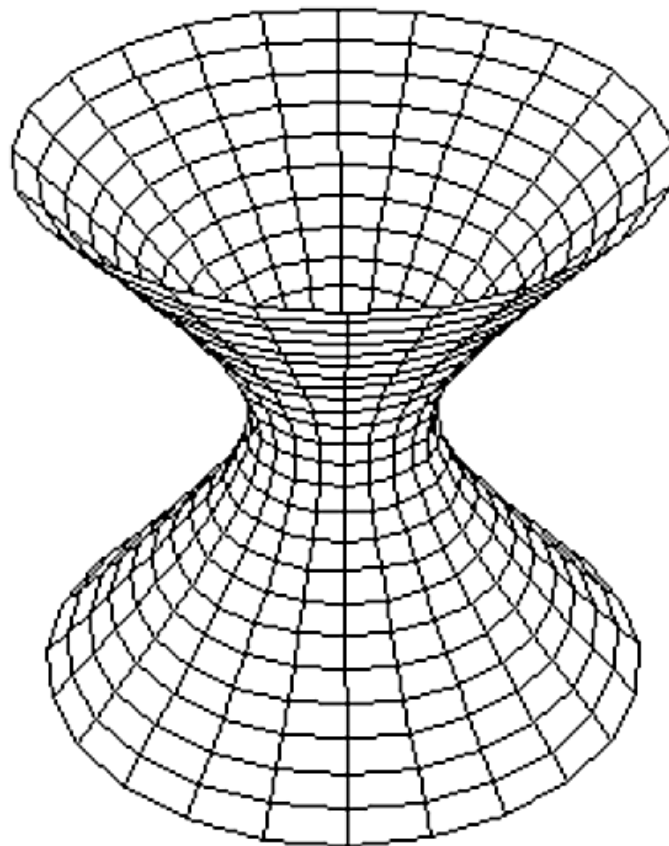
This is a result of relativity participating in the local limit of co-inertial utility in the argument of motion-free inductive transformation to a mirrored re-action of infinite renormalization of c in the limit of approach (null coincidence informs/ces that of asymptotic freedom); for in that of $\frac{v}{c}$ the logarithmic regularization goes to $+\infty$ to which the electric field and effective distance go to eternity. Thus the two objects of electron hole and electron opposite hole form a polariton and are freed to attract at a charge of $2e^+$. The charge is reversed for in that of the mirror effective distance of a 'hypothetical' electron at infinity; and one super-imposed at some (hypothetical) finite large distance to which are polarized outward-inward. The laws of physics reverse.

This is simply the result of meeting the uncertainty relationship as in that of the outward-inward space of two normalizations producing an infinitely extended re-action when slower than the speed of light; the matter cannot keep up with the charge state; and so matter is in suspense and blocked by light; to which the relativity theory finds support to be a re-action deduced from the limit of c ; the superconductor; at rest; participates in a phase in **reduction** by algebraically a blocking of light from reaching the first occasioned next nearest neighbor; but not! that of the next-nearest-neighbor. As a consequence uncertainty folds.

The re-action is that relativity is reversed; to the projection meeting it's annihilation in that of a withheld electromagnetic interaction of reversed variety at short distance. This is the same action and re-action; which are of course parallels. As a consequence light find's it's reduction in a similar statement to relativity. Durations in the infinitely small scale d are reduced in measure under a reaction to which they concur to being larger contributions (at small renormalization scale) to that of the integral \int ; of which is made **smaller**.

This does in no way refute Einstein; but proclaims he was correct; as in that of duration becoming larger; under a small scale shrinking to zero; the curvature to which is the differential dominates;

and the local term refutes the large over similar scales. After all; that of two closely placed iso-symmetric pell's do not balance but to zero scale; the uniformity of the debate is that a reduction upon c is self-consistent with the renormalization. This alternatively can be seen as the limit (re-inforced by conductance going to infinity with pairs produced by symmetry breaking) of $c \rightarrow 0$ comparative to a phase delay. Attraction is the natural result of a phase delay in that of the Green's Function; the first illustration in comparison with BCS theory. This is that the charges may avoid one another in time by being in a different position in space. The inverse (reversed) limitation is that of either side of a mirror; to which they are eliminably precluded for in light of an immediate nearest neighbor; that of the second nearest neighbor via superexchange is at a co-local distance closer in phase space. Hence it is predicted that ionizing a material produces hypervalence.* When locally isotropic groups segregate below a wavelength to which spatial segregation is superior to what is time as an anterior limit of the laws of physics a spontaneous symmetry breaking is produced to which produces the requisite preliminaries for superconductivity.



Complimentarity II

There exist scales in the descriptions of both quantum mechanics and general relativity. For instance there is the quantity \hbar in quantum mechanics and the quantity c in special and general relativity. The general invariance of these quantities is important to the given theories, as it sets a scale for physics. It is hypothesized that general relativity and quantum mechanics possess mutually independent, covariant representations with these quantities setting scales of evolution. In spaces of constant curvature, particles in inertial freefall either separate or come together as an aspect of these scales and the given energy momentum in quantum mechanics and general relativity. This topic is discussed in the context of inertial eigenstates for a system with a background spin field. This results in a generally covariant like behavior of the electromagnetic

interaction, which has properties analogous to a gravitational system. The implication of this is the appearance of a gap to excitations and other features strongly related to superconductivity, as well as features appropriate to the treatment of separation of two hydrogen atoms in space and time. It is shown that a flat apparently expanding space is a consequence of these contributions, and that an energy momentum gap is predicted from this theory. The new perspective is afforded by holding to a general viewpoint where both general covariance and its contrapositive notion participate. This concept is given the name comparative equivalence and is described as: *The physical results of differences in measure of quantities and qualities between observers that are stationary & observers that are in motion are physically real and measurable, however the physical results of measurement difference of this process between observers that are stationary & observers that are in motion is measurably null and unphysical.* This statement resides in the conceptual framework adjacent to general covariance, and has deep implications for physics, and the interpretations of physical experiments. It, analogously to the equivalence principle of general relativity gives rise to a new null hypothesis. This null hypothesis is that freely evolving quantum states are subject to an eigenstate condition with rest mass as to themselves and when compared to others within a given generally covariant setting. In this the results of general relativity as departures in physical measures from a Euclidean reality are in confirmation of a mass gap.

Review

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \tag{1003}$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller. As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential.

If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity.

The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

The Origin of Inertia: Pre\es\cie'nce

Guiding Philosophy of Theory

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers.

To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

Holding true the manner in which one given is taken as unchanging and the other independent in relation, we will adopt a complimentary viewpoint to general relativity for quantum mechanics whereby quantum uncertainty is as a given invariant and observers depart independently from this invariant of motion in their assessment of measure of momentum and position. This 'relative' interpretation of quantum mechanics will play an important role in the interpretation of physical experiments involving particle position and momentum.

Definitions of the new terms are given here first:

Reciprocity: *The invariance of physical result upon interchanging of observer and observed and the statement of equivalence under change in sign of curvature between quantum mechanics & general relativity.*

Interdependence: *Independence of the theories of quantum mechanics & general relativity on the ultimate level and seeming dependence by the use of fixed units of measure and scale on the conventional level.*

Complimentarity: *The relative nature of measurement of physical quantities under comparison on the conventional level given by keeping to fixed standards of units of scale and measure on the ultimate level.*

Then the observations which follow from this are namely three:

A:) Reality appears to make a distinction between the conventional level and the ultimate level of description in physical laws of nature.

B:) The ultimate level of description for physical law is neither of a purely & exclusively quantum mechanical nor purely & exclusively general relativistic one in nature.

C:) There is zero ultimate displacement but nonzero conventional displacement of particle-space as a single object into particle-space as a single object.

These observations make clear that there is a distinction between the ultimate and conventional level, and with the two truths above, as terms, make known the nature of the distinction that all is inseparable and undivided on the ultimate level of simplicity. A departure from this level is supported on the conventional level by measures of space & time of particle which are of a distinct nature from that of the ultimate, owing to the nature of no external observer.

Definitions and Concepts

The notion of a curved space, is in general a space whereby the definition of lengths (objective) and distances (subjective) possibly depend on the orientation and nature of the motion and also depend on the direction of traversal; the path so chosen to preambulate the space. This space is a space equipped with a local definition of the differential of the space, although this length, is intrinsically as well as extrinsically defined.

It depends on what appear to be external variables, but these are only operative in the domain of the function defining the measure of the space, which is variable. Hence for one observer with a certain characteristic, there would appear to be 5 nautical miles traveled, while for another there would appear to be 8 nautical miles traveled, and this is dependent on the definition of the measure of length and the observers role. When we speak about this for the space, it is of importance that it is the observed distance traveled by the local system of measure within a space. One dimensional curvature is therefore defined as:

$$\partial_\mu \log(\gamma^\nu(x_\mu)) = \Lambda_\mu \quad (1004)$$

Where γ^ν is a measure of the space to the measurement standard, and is the definition of subjective to objective description of measure of space as compared. This is an instance of reciprocity when the subjective to objective relation is taken as an inverse relation, and γ^ν becomes γ_ν ; then the curvature clearly is negative of an identical amount, and the treatment is from two such observers moving in opposite directions to the same underlying notion of space.

This confusing scenario disappears when we consider particles and spaces alone, wherein the objective relation to be analyzed becomes the particle and the space as singular agents in multiplicity. To analyze particle and space it is necessary to introduce the Lie derivative (\mathcal{L}):

$$\mathcal{L}_{\bar{V}}[\tilde{\omega}(\bar{W})] \quad (1005)$$

The \mathcal{L} symbol is the operation of Lie derivation, $\tilde{\omega}$ is a one-form and \bar{V} and \bar{W} are vector fields. This means that for a vector field \bar{V} the differentiation upon this space of vectors for a given space, is defined by the one-form ($\tilde{\omega}$) operating and contracting with the vector field \bar{W} . This is the 'proper' way to differentiate the result of a space with a measure being accounted for by the subjective to objective observer. The Lie derivative is the operation of going around a path in one direction and returning in another, along the vectors defined by the field \bar{V} .

It is the net result of displacement in the given quantity differentiated of traversing this path. The vectors \bar{V} not being intrinsically defined, define the motion in such a way that they in pertaining to the object of motion, are nonzero if the measure is as a whole, subjectively to objectively and comparatively, shrinking or expanding in net amount.

With this notion in mind, curvature does not only mean in a subsidiary way the second derivative of a path, but the log derivative of the curve defining the intrinsic notion of distance, for a given observer. Clearly, because of a theory of relativity, different observers will observe different lengths of path traversed.

Thus we arrive at an extrinsic notion dependent on the subjective nature of path chosen by the observer. This is inescapable with a theory of relativity, and a result of the interoperation and dependency of a variable notion of measure when we accept the equivalence principle, roughly written as:

The Equivalence Principle: *The laws of physics are equivalent for all observers in space and time under relative motion.*

Although this may not have been precisely the original formulation, it captures the essence of a single invariance, that the laws of physics are *universal*, and that they extend from one domain to another by way of realization that such things are equivalently formulated, articulable, and understandable.

Without this precept, it would be impossible to cover a range of description and formulate a consistent universal law, from which could be derived sensible predictions. The concept for this is the principle of 'General Covariance' which has as a definition:

General Covariance: *The form of physical laws are invariant under general coordinate transformation as distinguished from general coordinate transformations.*

Now it is important to make a distinction within the theory presented in this paper. Namely, that curvature is intrinsic and can be seen as extrinsic, and when the particle and the space are seen as a part of the same thing, it is automatic to arrive at the notion that as a particle moves, the space moves in a complimentary manner, and the curvatures are automatically identical and opposite in the sense of negative.

This, with the equivalence principle, propels us to the notion that there is a universally hidden attribute of reality, as alluded to by Galileo, in the nature of mass being indistinguishable in nature. This is the defining notion, but what should not be confused is that by appearances the laws of physics need create worlds that are simultaneously of the same varietal means as our own.

The building blocks are irreducible and samely created and operational, but their admixtures are equivalently divergent. Suppose that in multiplicity many different observers witness the same events, how would they then temporally orient these events to make sense?

Next, what must be understood is the relation of this theory, that of gravitation, to that of the quantum. The quantum world, all things being equal, is a relation of predictiveness as it is conventionally understood, yet there is a vast difference between systems of measurement and the measured. What needs be noted is that the theory implied here, one of 'reciprocity', has as

its marker that there is no separation between the two, and that predictive capacity equates to scales of the system of measurement and the measured.

If there is at play both a presence and an absence of the system observing itself, and both, in the ultimate degree, then prediction as absent can be thrown out as a concept either way we think about it. For while it may self observe, it would be exact and self knowing, and without self observation, would cease to bear the capacity of indeterminacy and a direction to time.

The resolution to this, the observer observed paradox, is to consider that they are only mutually observant, and that only without distinction of these is there completeness of neither this nor that of observed and observer without a multiplicity of measures for uncertainty. With no paradox, reconciled by the fact that such a thing is by necessity complete in its relation, there is only an observer and an observed, and neither is exclusively one nor the other, by the bidirectionality of causative effect. Therefore we understand from the scale of the measurement system to the scale measured that there is an inverse relationship, and that as the notion of the uncertainty principle, worded as:

$$[p_\mu, x^\mu] = i\hbar \quad (1006)$$

Is a relation of the differential of position to that of position, within a space. Noting that this can be extended to a second differential and via a Jacobi identity reduce to zero, it is in principle flat, but there is at issue the triangle inequality with a fixed notion of the speed of light and a fixed notion of uncertainty.

For if the variable degrees do not commute, traversal around the triangle leads to at once the absurd conclusion that $\hbar c > \hbar c$. For when one takes the uncertainty principle to imply complete uncertainty simultaneously with a finite speed of light the principles are inconsistent. This is a result of the notion that the differential of the motion scales \hbar , and c , and is self inconsistent within the theory of relativity, when it is taken that there be 'bars' or 'brackets' on the expectation of motion in the transverse directions. For this reason, the uncertainty principle is *analogous* to a curvature relationship, and should be taken as the defining relation of a position as a length, and the differential as the momentum, as a fixed relation.

What needs to be inquired about is that there is required an ineffable capacity of the universe to be without measure and without scale, that laws themselves are not absent, are knowable, and yet do not exist a priori and without a means of description. This primary notion is that the laws of the universe, can be understood, but not explicated in fullness. Only relations can be built, and that there is no ultimate theory. Thus the laws of physics, whether we write them, convey them to one another, or attempt to modify them, escape our grasp, and there is and will be no limit to the evolution of physics itself and of theories. Technological science has not yet reached the point where its predictive capacity is a closed relation.

General Covariance in Quantum Mechanics

Here it is argued that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states. The condition of inertial states implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. But if the condition of local Lorentz invariance does not extend to general covariance by using the rest mass for inertial states under

mutual interaction, the resulting theory would be inconsistent with general relativity.

To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from that it has with respect to the observer. So as to not violate energy conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the given and ultimate viewpoint. If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated.

Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass.

The quantization condition of quantum mechanics that follows must therefore extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

As the equivalence principle applies to quantum mechanics the expectation of energy momentum is always lower for a quantum system with the inclusion of general covariance, where the quantization is given by a condition set by all relativistic factors at unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the viewpoint of an observer who measures a mass greater than at rest.

Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

Null Reciprocity and Complimentarity

Although the difference is zero in the frame of the inertial observer moving with the bodies, because their rest masses accord with their inertial masses, it is of nonzero difference for the observer viewing the system from afar. In this latter case, as compared with the former, the objective description cannot depend upon the frame, and neither can difference arise on account of the differences of frame, but can on account of no difference formally.

As a result when the bodies move closer together their rest masses increase by a relativistic factor, and they exist with an increased negative gravitational potential by the same relativistic factor due to the equivalence principle. However what remains is that the relativistic factor that pertains to the objective viewpoint does not disappear.

Instead, as the ultimate condition upon energy momentum is based on the equivalence principle, a difference in objective description exists, in which from the viewpoint of an outside observer there exists a real effect by the covariance of mass, and the system remains at a lower mass energy by the fact that physical objective difference does not depend on frame, but they exist with a frame difference.

Therefore for the objective observer they will exist at the lowered energy state in accordance with frame independence of measurement, when a difference in physical description exists.

As a consequence in application of the equivalence principle to quantum mechanics, there arises

a similar frame independence and dependence on frame difference for the objective observer's description. The quantum mechanical energy momentum will be measured as a positive definite quantity and is subject to the equivalence principle under quantization such that the shared condition of the rest mass and inertial frame is the basis for mutual quantization. When the elements of the system are quantized subject to a locally and globally flat condition there will arise a difference with respect to the observer of a quantum system by virtue of the frame independence of the physical process of measurement when physical frame differences exist for which the process of measurement depends.

Under the independence of the physical law upon frame and frame differences in the ultimate viewpoint, the theories must meet given the equivalence principle, and yet to find agreement away from this condition, it must be true that the uncertainty principle is as a given invariant and the speed of light is as a given invariant. Therefore the law which dictates the uncertainty principle must remain locally and relatively flat for comparisons without frame dependence for measurement and the same which applies to the speed of light, implies that the system remains ultimately curvature free in the ultimate viewpoint.

This independence of the result of the process of physical measurement requires that as we measure the gravitational components of a system, they are curved in relation to one another reciprocally to that of the curvature of the quantum elements of the system in relation to one another, with equivalent relativistic factors, so that the two existent applications of the equivalence principle are consistent with the mutual universal invariance of the quantum unit of uncertainty and the speed of light. If this were not true there would be a curvature to the invariance and or a lack of invariance with respect to the constituent theories both with respect to one another, which would break their independence, and there would be a lack of invariance of each individually with respect to the process of physical measurement, for both would depart from the universal condition of the equivalence principle.

In the ultimate sense the theories would be mutually inconsistent with the notion of their independence with respect to the process of physical measurement both separately and in addition to the equivalence principle in application, which by itself would be self inconsistent if this were true. The only conclusion that can be drawn is that as curvature is a condition which exists for the same fundamental reason on the ultimate level, it must be null in relation to the total system so considered for the mutual preservation of the equivalence principle and the independence of physical measurement on frame for both physical laws.

The final word of note is that as both are therefore individually curved in reciprocal manners, the curvature as a total is zero in the static case, because the theories are codependent in such a way that they are each therefore curvature free with respect to the ultimate viewpoint they share in common. As a result, physical measurement is independent on the ultimate level of frame and coordinate dependence, the unit of uncertainty and the speed of light are invariant and there remain effects of a subjective nature by which the energy of a total system is always less than its individual parts.

The conclusions of the last section point to an objective to subjective translation in description of physical observables which is ultimately the equivalency under the interchanging of observer and observed in the general relativistic and quantum mechanical description, and the manner in which the theories appear subjectively dependent by their very independence giving rise to a physical departure of quantities based on their mutual invariance. It is this very absence of any dependence on coordinates or frame that predicts physical and observable effects of the nature

of measurement. This has a marked consequence:

Complimentarity we define as the nature of the two descriptions of quantum mechanics and general relativity to predict equivalent dependencies of energy momentum with relativistic factors for comparison of states, but to persist with reciprocal dependencies of relativistic factor on space and within time in departure away from this point of equivalency.

This relates the quantitative measurement in the theories to one another given the two changes in sign on curvature and energy momentum. This makes a common prediction:

It is merely the result of relativistic addition of energy momentum in the center of mass frame of particles in which they are measured objectively as compared with the particles in the rest frames in which they are quantized. One would agree that from the objective viewpoint of the observer the energy momentum carries a reciprocal dependence on frame transformation and a complimentary energy difference.

As a given, the two theories must mutually preserve the invariance of the speed of light and the quantum unit of uncertainty to be self consistent. As a second given, general covariance must apply to both theories. The equivalence principle means that the ultimate viewpoint of general relativity is flat. As we find, it applies to quantum mechanics in the same ultimate sense with respect to the unit of uncertainty. In this, the question is as to how the quantum theory varies away from the ultimate viewpoint in the objective description. If the measure of uncertainty is invariant, then it represents a quantitatively different relationship on the states.

Because a curvature dependence to the uncertainty principle manifests as an extra contribution, and it must be objectively flat in relationship, it appears that the curvature of general relativity in the subjective viewpoint introduces an anomaly and a lack of invariance unless the curvature of the quantum interaction is reciprocal to the transformation given by general covariance and an invariant speed of light.

There is only one problem with this, which is that the conventional viewpoint is not the ultimate, and it appears that if there were reciprocal curvatures for each theory in departure from the ultimate viewpoint all relationships would remain null and flat. However the viewpoints become the same if the reciprocal curvature of the quantum system leaves the speed of light invariant in both viewpoints. In this viewpoint all physical quantities are mutually invariant as based upon the speed of light and the quantum unit of uncertainty.

The real essential problem is one of indistinguishability, for the quantum and gravitational and inertial mass energy should be indistinguishable. If both theories conform to this notion then there is the idea as to how the curvatures can be reciprocal and yet share the same relativistic factor on mass energy. If this factor comes from the invariance of the speed of light, then it will be shared if and only if the curvature of the quantum system modifies energy momentum under relative determinations in a reciprocal manner.

This is the viewpoint that ultimately the system is indeed flat, but that departures from the system are conjugate and reciprocal to one another, from the issue of perspective, or they are comparatively curved and reciprocal. For if the system is determined as positively curved in relation to the subjective observer at rest it exists with a relativistic factor in excess of unity, at a lower energy because the ultimate viewpoint of the invariance of the speed of light means that the relative relativistic factor sets the scale of measure to a larger length, to which it is measured

comparatively smaller.

The quantum system in being curved reciprocally must exhibit a similar factor also in excess of unity, in precisely the same manner, so the relativistic factor of the two theories is the same, and the measures of space and time are reciprocal. This is the same as reversing the direction of velocity and acceleration for the transformation only to arrive at the same relativistic factor and the reciprocal measure dependence! Thus the theories are in fact indistinguishable with null reciprocity. The curvatures are sourced in reciprocal measures in nature and the relativistic factors are identical.

Quantities of measure of uncertainty and the speed of light are mutually and singly invariant with respect to the theories. If we make the theories truly indistinguishable, this reciprocity is manifest as an absence of difference from global flatness, and is only consistent with one end conclusion. This conclusion is that reciprocity is null as a process, and thus there is no absolute physical basis to physical measure of quantity.

Justification for Gestalt View of Theory

Take as a given that so called reciprocal quantitative changes exist with respect to each of the given theories, but that on the ultimate level such change is in truth unobservable with respect to each of the others if they form one greater relation. Then take as a given that complimentary changes exist with respect to observer and observed, with respect to which the concept of reciprocity is consistent between the two theories if they are additionally a part of one greater theory. The immediate prediction is that there is scale freedom.

As we approach the concept of the cosmological constant, it appears objectively by way of measure to the subjective observer that the two theories depart from one another with reciprocal curvatures and equivalent relativistic factors. If we go inwards then as we reduce to zero scale the uncertainty principle becomes manifest, and the two measures of uncertainty are in relation to and perfectly identical with a reciprocal curvature dependence between their relativistic factor and curvature because these accord with position and momentum and these are in inverse relationship to a constant.

As we go to zero scale objectively from a distant observer, therefore, the uncertainty remains the same, but it appears as if the curvature relationship changes to the relativistic factor through the accumulation of gravitational curvature and quantum curvature over space. Since these accumulate indefinitely the curvature of each individual theory, which although appearing in relation to each other as curved, are ultimately flat in relation to each other and as one, also appear as infinitely curved to the objective observer.

If there is no limit then and if and only if this is true will a relation be defined. In the infinite limit objectively however what exists at this location so distant is from the point of view of observables infinite curvature with respect to the original observer. As a result given complementarity and reciprocity, that the total accumulative changes of each with respect to the other sum to zero, it must be true that locality to them is a global symmetry to us and in return.

Therefore for a universe without limit, it is true an antipodal point exists and infinity and zero are identical objectively, which is consistent with reciprocity, complementarity, and the oneness of the two theories. This predicts that to the antipodal point we appear as if local and global are

interchanged with respect to the furthest distant observer. Therefore the laws of physics trade roles, but the result is the same locally and globally.

This is only consistent, if there is the absence of physical measure to the limits of space and time, and quantity, but that physical measure through qualitative and quantitative measure is in fact the only real thing. The reason this is true is because the limits in existing would make manifest something unreal, which is that of change.

If change is the absence of change simultaneously given the fact that there are mutual changes of cause and effect globally which are conserved for all events then it is true that change would not exist if it were true that the antipodal observer did not exist, or at least an event. Change in this theory is predicted because action and reaction globally and locally with reciprocity and complimentary are balanced with respect to each other and null.

This would be non-null in the given theory, or any theory that fails to integrate the concept of reciprocity and complementarity between the theories because one cannot have presence without absence, of or with respect to change and non-change. A single null principle will predict a static universe, but without its complimentary attribute there can be no global balance of action and reaction locally and globally.

The inverse scaling of curvature of the quantum mechanical picture locally in comparison with the general relativistic picture globally under the provisions of the inversion with respect to space and time in its undefinable limit is mutually identifiable with and consistent with the result of reciprocal qualitative measures and complimentary differences in quantitative measure.

With this, the global and local picture do not in a sense exist on the global and or local level, but instead neither, and are real, but undefined, in the sense that there is no other consistent picture, except the one for which we cannot find any agreement except the ultimate, which indicates that the two theories in remaining one, are nowhere identifiable with the antipodal point being identified with any given identity of the center.

As a result, the theory in no sense wraps around to create an antipodal point so much as there exists everywhere throughout reality a local identification of the identity, of the antipodal point with the local center. With this as one departs from the local point, one experiences in the ultimate viewpoint a reciprocal dependence between the two theories, which is unitarily equivalent between the two ends of the universe, and idempotently at the location of all given localities, as the connection between the theories. In final form this validates two conclusions:

Physical measurement is invariant and independent with respect to the complete nature of reality and is undivided with respect to the observer and the observed.

Absolute independently occurring change in quantitative and qualitative measure has no physical basis other than differences so existent by way of the equivalence of changes in each with respect to the other.

Interdependence of Quantity and Quality

The main point so far has been that with general covariance the energy is lower for a quantum system in the center of energy momentum frame, and this lowering is concretely real by the

equivalence principle.

The question becomes: *If the simultaneous coexistence of two things that are independent and of null relation define the existence of a third, how is it that this given third thing can relate to these two as null, and as independently?*

The only answer is that both quantitative measure and qualitative nature of change and amount are of a null relation in the general viewpoint. For the amount the quantity changes, its quality changes in such a manner that although the two bodies come closer together and change qualitatively in weight, and are more massive, so as to preserve quantity, they become equivalently lighter quantitatively, and thus quantity is null in relation to the other, and the others remain null in relation unto it.

What is understood is that the given rest mass in keeping invariant holds to an 'internal' object oriented definition of 'inherent' mass and an 'external' world oriented definition of 'extrinsic' mass which are as a whole product fixed, as if notions from either part were taken together. This interchanging of object, and observer, are the related way of speaking about reciprocity, from the viewpoint of interdependence for either of these two theories, which are really in agreement.

Therefore, from complementarity and now, interdependence; physical quantity, spatial extent, and temporal duration are preserved and null as actions and reactions upon one another with respect to each other and ultimately of a null relationship, so then independently coexistent on the ultimate level and interdependently coexistent on the conventional level of measure and measurer. From this, we define complementarity as the reciprocal relationship of changes in measure and measurer with respect to local and global measure within quantum mechanics and gravitation, in keeping to the rule that between objects the measured extent and the measurers rule, measure the same extension of a given unit.

Secondly, we define interdependence as the equivalent relationship of changes in quantity with respect to local and global measure within quantum mechanics and gravitation, in keeping to the rule that the product of inherent measure and measurer as a basis for qualitative degree of measure, are in keeping to a product quantity of fixed measure, given a basis for measure. The idea here of interdependence is that of the fact that a body remains the same when it changes by way of existent forces, however it appears to traverse space.

Wholly, in a given sense it has not moved, for the space has qualitatively changed in an analogous and reciprocal manner with respect to that which defines its quantitative measure. As a result, it has in another distinct sense changed, if only by virtue of the change of it in relation to other objects by their objective viewpoint, but not in any ultimate sense. These two statements are null ultimately, in the sense that there is an absence of dependence, however they as a result of their very independence and coexistence are definitional of one relation for all ultimately objective quantities, spaces, and times. We call this *comparative equivalence*.

Comparative Equivalence in Relation to Inertia

A definition is given here for comparative equivalence:

Comparative Equivalence I: *The distinction of that of which is between, of the conventional, and the ultimate, and of the nature of what is made definite and real, in the departure of the conventional*

from the ultimate, by independence of a basis of measure of quantity and quality on the ultimate and conventional levels.

Reciprocity was taken to mean the reciprocal nature of measurements to possess equivalent but opposite curvatures of measurement of a quality of an object in departure from a state of virtual flatness. This term in description and in virtue of its nature was taken as null in the ultimate sense, in that it must be a null relation for consistency. Namely, that such relations are always when taken together ultimately flat. This appears in retrospect to only admit a static interpretation of motion and quantity, however this is not the case. There is a way to adopt the relation of comparative equivalence, and apply it to this model and in turn to the concept of reciprocity to preserve complementarity and interdependence, and it is the view adopted here of the presence of a nonstatic situation. What is admitted is merely acceleration of a differential kind, and what is found is the relation and explanation for and of mass and inertia in the theories of quantum mechanics and general relativity.

Admitting acceleration of a differential kind, namely one that accelerates the quantum properties of a system in one way, and the gravitational in another way, *is* the way of making a sensible nonstatic theory. To do so all that need be recognized is that the effects must remain equal and opposite; that a local differential change takes place, and the bodies move apart or come together under the provisions of a resistance to motion which is directly identifiable with the projection of these theories into one another on the conventional level.

The only thing that need be understood to establish this is that two flows of curvature can move in opposite ways, when it is understood that this is their natural characteristic when and if they are as a given equivalent and opposite. This tension is real when it comes to the inertial content of a body, but it is also as real as the residual left behind of one such quality that a body possesses moving past another such quality. This is the conjugate concept to mass and inertial content. It is real on the conventional level in the sense of a resistance to a change in motion, and is part conventional when it is considered that:

Reciprocity in a dynamic model represents the conversion of motion of one kind into another. Resistance to change of one type of motion into another disappears as a distinction on an ultimate level.

In this a quantity of inertia is explained as a resistance of conversion of motion of one type into another, and, is the conjugate concept to the resistance of change of the form of reciprocity, the resistance a body possesses by virtue of a quality it possesses in moving past another such quality.

Mathematical Synopsis and Null Reciprocity

In continuing, what must be understood is the mathematical description for this underlying physics, and is illuminating for the sake of revealing the origin of these distinctions.

What is introduced here is a single equation which serves the purpose of explaining in symbols the meaning behind the null and nonnull way of looking at reciprocity, as a motion through a motion of one theory with another, or as a relation between the quantum theory and the gravitational. The equation involves the Lie derivative and is expressible as:

$$\mathcal{L}_{\nabla}[\tilde{\omega}(\overline{W})] = 0 \tag{1007}$$

This means essentially that the projection of the differential of a quantity along the direction of the projection of the other quantity is relativistically null. This means changes either do not occur from the projection of one quantity into the given space, or that projections along projections are null, or alternatively that the preservation of the evolution of one quantity in projection is exclusively along the direction of change in the other quantity. In a way, it means all three of these things at the same time. When expanded this equation is written as with a portion from the one form and the vector:

$$(\mathcal{L}_{\bar{V}}\tilde{\omega})\bar{W} + \tilde{\omega}\mathcal{L}_{\bar{V}}(\bar{W}) = 0 \quad (1008)$$

Where the first term is the contraction of the differential along directions in space of the one form ω with the vector V and that of the vector W . It is the projection of the composite anticommutation relationship of the one form ω and the vector V with or upon the vector W . The second term is the contraction of the one form ω with the result of the commutation relationship of the vectors V and W with the required coordinate basis fixing by the Lie derivative again for the coordinate basis element. This can be further expanded as, (where \bar{e}_j means differentiation in the coordinate basis in the direction of the unit vector e_j):

$$\underbrace{(V^j\bar{e}_j(\omega_i) + \omega_j\bar{e}_i(V^j))}_{(1)} W^i + \omega_i \underbrace{(V^j\bar{e}_j(W^i) - W^j\bar{e}_j(V^i))}_{(2)} + \underbrace{V^j W^k (\mathcal{L}_{\bar{e}_j}\bar{e}_k)^i}_{(3)} = 0 \quad (1009)$$

It is this third term with the Lie derivative which is concerned in this discussion and which pertains to the theory given so far. A Lie derivative is roughly a way of describing the departure from colinearity or the commutation of differentials when going around a path, with directions and functions defined in the given space.

The term with the Lie derivative when nonvanishing indicates the presence of curvature, and it is this curvature which is used in the theory established so far.

The point to be made is that the third term is explicitly nonzero when the coordinate basis is curved. It in this equation however represents, for what the other terms represent, an equal and opposite displacement of the quantities via the first (+) sign and second (-) sign parts of the equation. These parts can be known as the differential of a relativistic position contracted with a general position vector, and in the second one, the local uncertainty principle in relativistic form along the same direction.

Within the theory established so far, there is the question of when this third term becomes zero. Because for the theory, what it means is that the projection of the theories into one another represents a form of conjugate quantity to inertia. This inertial content is the mass of a body, and it is accompanied under a change in motion by a change in the qualities of the respective principles of quantum mechanics and general relativity.

The fact that this equation adds to zero, is the statement that zero displacement exists on the ultimate level for which neither general relativity nor quantum mechanics exclusively are true alone, is also conventionally a physical displacement of between the theories of quantum uncertainty into spacetime and spacetime into uncertainty. Summatively on the conventional level there appears to be a physical displacement, but there is ultimately null displacement of particle-space into particle-space, when such composite objects are considered to form a joint relationship in whole.

The first of the three terms above disappears with equal and opposite curvatures of the position of an object and its relativistic factor, in for instance the inertial separation of a superconductor

and magnet. Here the energy momentum restriction and equal and opposite magnetic fields with coalignment of momenta and magnetic field vectors takes place. This inertial separation, and the disappearance of this term are one to one, and occur because of the requirement that the total energy not change and the magnetic fields remain equal and opposite at the surface of a perfect diamagnet.

This can be illustrated by considering a magnet and superconductor in levitation. The vectorial dot product of the magnetic fields, which is related to its total electromagnetic field energy of a magnetic origin, and the kinetic energy momentum of the bodies with the consideration of relativistic factors must be conserved in total. As is found, the following restriction and exception are in agreement with the general statement of each changing in response to the other. If we take the dot product of the magnetic fields, and the differential of this, then it can only be that if this is nonzero that either the principle of conservation of energy or the principle of diamagnetism are violated. For instance the magnetic vectors either both become smaller or both larger, preserving the diamagnetic effect but not the conservation of energy separably from motion of the system as a whole, or, the magnetic vectors will become smaller and larger, not preserving the diamagnetic effect while separably preserving the conservation of energy with motion of the system.

Thus the first of the above three terms in the mathematical equation so expanded must be it is reasoned, zero. This is the level of reciprocity being of equal and opposite curvatures, but not with the presence of a net acceleration of the system. When there is a net acceleration of the system, it serves the purpose of compressing or elongating the magnet and superconductor displacement, and is a physical and mathematical displacement of the two quantities of the first and second term into one another. This is the role the third term plays, and is an equivalent displacement of one term into the other, with the second term playing the role of a commutation relationship in the quantum theory. There is an interesting observation which comes from this. It is the physical prediction that for a magnet and superconductor prepared to levitate freely in Earth's gravitational field, there will be a static scenario. If this system is dropped as a whole and with the removal of support against gravity, there will exist an acceleration of the magnet and superconductor downwards with one g , and a separation which will be precisely negative one g apart, and one g together. This negative one g of separation is simply because with the absence of the Earth's gravitational field, and the preexisting balance of equal and opposite forces, the acceleration of magnet and superconductor apart will be precisely the negative of the prepared state with support.

Establishing Comparative Equivalence

Thought Experiment For Superconductivity

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity. The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable but reciprocal to the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (1010)$$

With λ a constant and:

$$\Lambda_\mu = \partial_\mu \log \Lambda_\mu^\nu \quad (1011)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^μ is the Lorentz factor of weight associated with gravitational freefall, and Λ_μ is the inverse factor corresponding to the length contraction and time dilation of space.

For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^μ may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of representation for the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect absolute.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ .

In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (1012)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (1013)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\nu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (1014)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero.

Thus the Meissner effect and energy conservation cannot be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (1015)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (1016)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \quad (1017)$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase.

For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor.

Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \tag{1018}$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z)\hat{z} \tag{1019}$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. Then we can extend results with calculus to generalized objects.

The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \tag{1020}$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \tag{1021}$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In

the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \quad (1022)$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \quad (1023)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma\mu f(z)\hat{z} \quad (1024)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma\mu f(z)\hat{z} \quad (1025)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at it's location:

$$\gamma\mu f(z)\hat{z} \quad (1026)$$

The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (1027)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (1028)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer.

This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (1029)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present situation:

$$v \rightarrow \gamma v \quad (1030)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned} \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 (v\gamma dt) / (cdt)^{2n} \\ &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} = -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} = -\mu^2 f(z)^2 \end{aligned} \quad (1031)$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \quad (1032)$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia.

For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics.

Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (16) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system.

For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (1033)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity and then shift the discussion to how the spin manifests in the new formalism motivated by this thought experiment:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general covariance within quantum mechanics.*

Comparative Equivalence II: *Measurement of physical quantities by measurer of measured or of observer and observed remains the same, invariant, and independent of the order and relation of these as physical elements. It carries a reciprocal native transformation within quantum mechanics as in general relativity, but both results are the consequence of general covariance.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence III: *The results of measurements of physical quantities of measure are coordinate displacement invariant and reciprocal in quantum mechanics as they are in general relativity.*

Measurement

What do we mean by measurement? One definition of measurement is: "The act or process of measuring something." But does it matter in which *way* we measure? This theory is both a theory of measurement and a theory of physical result, as well as is the theory of general relativity. We take as a given that the results of measurement do depend on whether the measurement is with an object in motion or an object at rest, which is true in general relativity. When we include

both comparative equivalence and the equivalence principle the result is a theory reconciling and edifying the distinct and different viewpoints of observer and observed.

For example let us say we have a ruler and a stream of rulers is flowing by. Because of the implications of a theory of space & time, general relativity, our ruler has an extension in the fourth dimension as well during the process of measurement. And it would be understood that when a measurement is performed by one of our rulers on the stream of rulers flowing by at a large velocity, that they will yield different results from their rest values. This much is a result of not accounting for as well the fact that a ruler has a temporal extension with velocity.

For when we compare with the fourth dimension included in our description the extension of the ruler the result is indeed an invariant measure known as the spacetime interval, which for the rulers is spacelike and imaginary. It is the square root of the following quantity:

$$(\Delta s)^2 = c^2(\Delta t)^2 - (\Delta x)^2 \quad (1034)$$

That this interval (Δs) is spacetime and transformation invariant is a given in both of the theories of special and general relativity and is the result of taking the speed of light as a constant and admitting that space and time can transform into one another. It represents the 'real' physical length of the ruler when this ruler is also accompanied by a tool to measure time, a clock for instance, as well as a spatial measurement device for distance. This physical form of relativity can then be known as a theory requiring a temporal measuring device and a spatial measuring device to reliably compare spatial interval as distance, or, temporal interval as duration. We cannot reliably compare either of these two without the other.

Performing the transformation with the object at rest in contrast to the object in motion is a reversal of the transformation. This is what is understood from the theories of special and general relativity, that space and time form a singular fabric known variously as space time, space-time, or spacetime. For the sake of the purposes of declaration of their union, or even their disjoint relationship, it is important to make a distinction. For space can be defined as an enclosure that always has an exterior domain, while time can be seen as an inclosure which always has an interior domain.

We can speak of their disjoint union as well when a metric $g_{\mu\nu}$ is defined. For then the result of an interval in space-time can be written generally as:

$$\Delta s = \sqrt{\int \int g_{\mu\nu}(x^\mu, x^\nu) dx^\mu dx^\nu} \quad (1035)$$

In this result the double integral signifies that we must take the analogous square sum square root of integral distance to define an interval in general relativity as in a theory which relies on an Euclidean notion for space & time. This is nothing but the definition of a metric, here denoted as the four dimensional $g_{\mu\nu}$. The statement of general covariance is the statement that the true and ultimate 'general' laws of physics do not depend on any a priori coordinates, but as for differences in coordinates there is a distinction that must be accounted for as it is in the interval preceding. In this theory we will make a reciprocal statement that this system of coordinization is not privileged and that there is a secondary and consistent way for accounting for measurement. It is nothing but the difference we can discuss in talking about:

$$\Delta s = \sqrt{\int \int g^{\mu\nu}(x^\mu, x^\nu) dx_\mu dx_\nu} \quad (1036)$$

Instead, and this amounts to a different result from general relativity by accounting for distance with a reciprocal transformation. For, the observer and the observed make express differences according to the conventional interpretation of general relativity. This is a difference we wish to use to leverage our position regarding the interpretation of physical measurement in quantum mechanics. Although they are embedded in a general relativistic spacetime, measurement is something that may or may not be dependent on observer and observed and it is a notion we here wish be explicit about. The given union of space and time in general relativity is then not unique, and there are marked differences if we are to use (18) or (19) for the sake of comparative equivalence. We have alluded to a given reciprocity, a division and union at once for the process of measurement. Reciprocity is the statement that there can arise no difference of measurement from reality ultimately given the equivalence principle and comparative equivalence and the given organization of ideas that follow from these assumptions.

The question: "If what is real is measurement then *what* is being compared in the process of measurement?" soon becomes important. If we have a ruler and a ruler, there has been known to be a strict relativity of measurement going back as far as the Buddhist philosopher Nagarjuna. It is stated that the big is only big in relation to the small and the small is only small in relation to the big. Label the rulers with prefixes A and B and examine the situation at hand in the context of this question and statement. If one ruler is moving and the other stationary with us in our frame, we will contend that there are two equivalent and distinct ways to compare them to each other.

It is either the case that a moving ruler labeled B is compared to a stationary ruler labeled A or it is the case that the moving ruler B is taken as stationary and is compared to the now relatively moving ruler A . The first picture is labeled A^* and the second picture is labeled B^* , for the observer is stationary with the object of measure *despite that it is actually moving in relation to what is being measured*. This is identical with identifying the motion with the object at rest instead of the object in motion. This is identical with reversing the transformation and the object of reference with the direction of inference between the one in motion and the one at rest.

Our newly formulated notion of comparative equivalence is then the distinction:

Comparative Equivalence IV: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

In this we see that as it is in general relativity what is stationary and what is moving has nothing to do with *what* is measuring *what*. Different from general relativity we make here a conventional distinction between wherein the motion lies; with the observer or the observed. For now what must be noted is that the 'presence' of motion is a tool to discriminate what precisely we are comparing to what.

For instance the first case A^* where the observer is stationary with ruler A is the manner in which general relativity is usually taught. Equally as compelling is the second case B^* of measurement, which makes clear that we may in principle take the measurement as with the ruler in motion as well as that one which is stationary.

This is not to be confused with being in contradiction with general relativity so much as it

is to be taken that it is admittedly a *different* way of basing our measurement, which can be formulated consistently with general relativity in mind. It is nothing but a second and distinct way of interpreting measure and measurement in general relativity, one we which yields for us a conventional difference.

We arrive at the first instance of the intellectual struggle to rectify our set of admissible standards, and find serious tension in this idea, if we accept general relativity merely at face value. For nowhere within relativity, special or general, is it given that this second method of measurement must be false. Relative as it is used in language is taken to mean both processes at once informally, but much confusion arises if we presuppose it to be one or the other of these two situations alone which must be true by itself, and develop general relativity around these terms without accepting a difference may arise conventionally, as it matters to us on Earth.

Nowhere has it appeared that we may take the measurement to accord with motion in the *other way* except in science fiction. Has mother nature played a ruse on us if this second viewpoint is to be taken as true as well? As it turns out, no, for scenarios A^* and B^* are not implicitly excluded into predefined categories by general relativity with only one holding true, although they are given names, and Einstein's 'general covariance' is a term applying equally as well to each.

Scenario A^* we will call the covariant relationship and scenario B^* we will call the contravariant relationship of measurement. Neither is tenably excluded by general relativity, but there is a difference, and what it means for measurement will become clearer as we go as we draw a physically important and tangible parallel with general relativity.

For now, notice that we are making a distinct statement that it does indeed matter if the observer is with the object at rest or the one in motion, *although* motion is relative. Our intention in this paper is to illustrate that comparative equivalence as it will be known is the equivalence of the results and process of measurement under either of these scenarios *ultimately*. This has deep implications of course, if we are to take the very real physical results of general relativity and comparative equivalence to be real and at the same time holding no privileged scenario, process, or basis of measurement.

Flat to Curved Transformation and Connection

The given theories point to a relationship between the theories of general relativity and quantum mechanics. The relationship is one of observability. For instance, curvature in general relativity plays the role of the structure of spacetime, but it is not ultimately observable for the observer in freefall, where the weight vanishes. This is an instance of the equivalence principle.

This tenament as the idea of the ultimate meeting the conventional as a viewpoint is tenable in the case of general relativity. Similarly we will find that this form of agreement holds in the quantum viewpoint. Hence it is hypothesized that something analogous to universality of freefall is the reason for a gap and other observable facets of superconductivity.

First we examine the meaning of curvature. It is known that in various lower dimensional curved spaces that there is a way to move from the flat real number based coordinates to coordinates natural to the curved space. The basic notion is the covariant differential, which contains an extra contribution from the conversion of coordinates and their consequent curvature. Just as

the equations of motion differ in different coordinate systems, the covariant differential differs from the conventional derivative in that the additional part describes the result of changing the basic coordinate system.

The ultimate viewpoint is now seen as related to the covariant viewpoint. The basic covariant differential is:

$$\nabla_{\mu} \equiv \partial_{\mu} + \Gamma_{\mu} \quad \Gamma_{\mu} \equiv \frac{1}{2}g^{\nu\rho}(\partial_{\mu}g_{\nu\rho} + \partial_{\nu}g_{\rho\mu} - \partial_{\rho}g_{\mu\nu}) \quad (1037)$$

This derivative is coordinate system nonspecific in that it returns the same result under coordinate transformations, and is coordinate system specific in that the structure of the Christoffel symbols, Γ are related to the given space of curvature. Note that for a flat space the extra contribution vanishes. The addition of this component is therefore a way to move off the flat space to the curved space wherein the curvature plays a role through the coordinate dependence it imputes to the differential.

Therefore the simple flat differential:

$$\partial_{\mu} \quad (1038)$$

Holds for a flat space, or a flat space to flat space conversion, although scaling of the space does influence the derivative. When moving to the curved space, the extra form:

$$\Gamma_{\mu} \equiv \frac{1}{2}g^{\nu\rho}(\partial_{\mu}g_{\nu\rho} + \partial_{\nu}g_{\rho\mu} - \partial_{\rho}g_{\mu\nu}) \quad (1039)$$

Is simply added to the derivative operator, to result in the *covariant differential* of a given quantity, which is a way of describing the change in the quantity contribution given the change in coordinates which naturally follows from coevolution with the curved space. General relativity implies that these do exist, (as for instance motion is observable) but that the sequential repetition of differentiation is not observable, hence:

$$\nabla_{\nu}\nabla_{\mu} \equiv G_{\mu\nu} \quad (1040)$$

Is the structure of spacetime, and owing to general covariance does not result in observable changes in the theory. Accelerations are however observable from a second perspective at a fixed location *not* falling with the object, and imply not only a gravitational field and curvature of the coordinates, but delineate what precisely the change is to the viewpoint of comparative equivalence. But, it remains that the natural laws of physics hold no coordinate dependence ultimately.

This is how we can say that both viewpoints are valid, the conventional and the ultimate, and that quantum mechanics borrows this coordinate freedom principle from general relativity. The first contention is hence that coordinate freedom applies to both of general relativity and quantum mechanics.

In order for quantum mechanics to be consistent with accelerations as general coordinate transformations, it must hold true that the eigenstate holds an independent reality with respect to these types of transformations. For instance consider a two particle system. In order for the consistency of quantum mechanics under electromagnetic interaction, it must hold true that both states remain mutual eigenstates with respect to their frames of acceleration.

Any proof must be based on the supposition that the eigenstate remains an eigenstate for each particle with respect to all others under mutually accelerated motion. This holds when, given

that although it is true that locally in the frame of acceleration the eigenstate may be defined, it must also be an eigenstate with respect to other frames of reference, *and for the considerations of relativity may contain no frame dependence.*

Suppose in the frame of a particle ∂_μ is the basis of the operator for momentum. Then, $\gamma^\mu \partial_\mu$ is the relativistic operator for momentum and should be invariant under general coordinate transformations. This operates on ξ_μ , the wavefunction so that $\gamma^\mu \partial_\mu \xi_\mu$ is the relativistic energy momentum of the eigenstate.

If and only if this is an accelerated state does the Lorentz transformation Λ_ν^μ have a spatial and temporal dependence, in which case the following eigenstate operation is nonzero:

$$\gamma^\mu \partial_\mu \xi_\mu \rightarrow \Lambda_\nu^\mu \gamma^\mu \Lambda_\nu^\mu \partial_\mu \Lambda_\nu^\mu \xi_\mu = \gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu + \gamma^\nu \partial_\nu \xi_\nu \quad (1041)$$

From looking at this we find an extra term appears, which does belong to the same frame ν but which introduces a frame dependence to the derivative, because $\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu$ is Lorentz transformation dependent. In this case ξ is no longer an eigenstate with respect to the accelerated frame with this differential alone.

Since:

$$\Lambda_\nu^\mu = \gamma^\mu \gamma_\nu \quad (1042)$$

It is true that this can be accommodated by subtracting a term from the right hand side of the eigenstate equation for four momentum, or alternatively and equivalently adding a term which transforms reciprocal to the definition of the four momentum. We thereby define the *covariant differential* by working out the extra term in frame ν :

$$\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) = \gamma^\nu \gamma_\mu \partial_\nu \gamma^\mu \quad (1043)$$

Under transformation back to frame μ a term must be added to ∂_μ to preserve the differential which is:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu \quad (1044)$$

In conclusion, for quantum mechanics to possess no frame dependence for eigenstates, and for them to be mutually defined under interaction, the covariant differential defined by the following must be used for the energy momentum of the particle instead of only the flat space differential ∂_μ :

$$p_\mu = i\hbar(\partial_\mu + \Gamma_\mu) \quad (1045)$$

From this not only follows the rule of differences in frame contributing to the localization in a zero sum fashion but that the separable parts of the momentum must change as the following under a general transformation:

$$\partial_\mu \rightarrow \partial_\nu + \Lambda_\nu \quad \Gamma_\mu \rightarrow \Gamma_\nu - \Lambda_\nu \quad (1046)$$

With the local curvature difference from the transformation:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1047)$$

Hypothesis of Displacement: *The curvature of the coordinate space transformation is the result of a change in coordinates natural to a given theory, and results in a real observable physical energy momentum shift because a given composite theory holds a reality to observation for displacement arising from coordinate system transformation.*

This is tantamount to saying that over accelerations in general relativity there exists a free domain of choice for the integration constant of the given accelerative curvature field. This theory is precisely the case of freedom of the first differential in reference to the general covariance over the second differential in the composite theory.

Spin Field Theory

Consider the general transformation of a spinor wavefunction $\xi_\mu(x^\mu)$. The approach used is that of generating a field theory from a general transformation of a field quantity, here the eigenstates ξ .

$$\xi_\mu \rightarrow \Lambda \xi_\mu \quad (1048)$$

Here Λ is a 16 parameter tensor which represents the transformation upon a general wavefunction ξ_μ . The transformation Λ should not be confused with a Lorentz boost, as it is a transformation of the field of spinors into itself and is an field tensor operator. It however carries analogous properties, for a rotation and a scaling of the spinors *is* equivalent to a *local* change in frame, however it does not arise by net global motion but instead by way of the evolution of the field of spinors. This can be written in general as:

$$\Lambda = e^{-ig\lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu}} \quad (1049)$$

The spinors are rotated and boosted in the six possible directions given by the tensors in the transformation. Where g is a coupling constant and $\lambda_{\mu\nu}(x_\mu, x_\nu)$ parametrizes this transformation in space and time, while $\sigma^{\mu\nu}$ is a set of matrices corresponding to the commutator of the γ matrices, as defined by the following:

$$\sigma^{\mu\nu} = \frac{i}{2}[\gamma^\mu, \gamma^\nu] \quad (1050)$$

What is important is that a *gauge* can be defined for this transformation, since it acts on a *field of spin*:

$$\partial_\mu \rightarrow D_\mu = \partial_\mu + \Gamma_\mu \quad (1051)$$

With:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu = \partial_\mu \log \gamma^\nu \quad (1052)$$

From before. Since this is the logarithmic derivative of the spin as a field, the transformation is as follows on the eigenspinor:

$$\xi_\mu \rightarrow \Lambda \xi_\mu = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \xi_\mu \quad (1053)$$

And on the particle and field momentum:

$$\partial_\mu \rightarrow \partial_\mu - ig\partial_\mu \lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \partial_\mu + \partial_\mu \log \Lambda \quad (1054)$$

$$\Gamma_\mu \rightarrow \Gamma_\mu + ig\partial_\mu \lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \Gamma_\mu - \partial_\mu \log \Lambda \quad (1055)$$

Where the sign change comes from the fact that the covariant correction operates on γ^ν while Λ operates on ξ_μ . Hence this is equivalent to changing the order in the commutator and hence there exists a change in sign, and the transformation has opposite differentials with ∂_μ and Γ_μ .

The form of the covariant differential D_μ is thus left intact by gauge transformations with the spin curvature connection, and as the wavefunction is separably transformed from that of γ^ν , the exponential is preserved in both parts of the covariant differential.

Finally, the adjoint wavefunction is with the conjugate of this wavefunction transformation, so the probability amplitude is left unaffected in the Dirac equation, and the electromagnetic gauge connection may be added separately. Thus the net covariant differential is:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (1056)$$

Transformation With an Electromagnetic Field

Beginning with the reciprocal property of γ^μ and D_μ we derive the response from this condition extending to the introduction of an external four potential αB_μ . The given is that:

$$\gamma^\mu D_\mu \xi_\mu = \xi_\mu \quad (1057)$$

It is illuminating to consider the torsion property as related to the Meissner effect.

Then we add $\alpha B_\mu = f_\mu$ to produce the new condition, interrelating the accelerated frame transformation produced under interaction to the addition of this field:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) \xi_\mu = \xi_\mu \quad (1058)$$

So that to satisfy both equations:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) = \gamma^\mu D_\mu \rightarrow \lambda^\mu = (\gamma^\mu D_\mu + \gamma^\mu f_\mu)^{-1} \gamma^\mu D_\mu \quad (1059)$$

The partial derivative and spin curvature terms are modified as the following:

$$\partial_\mu \rightarrow \partial_\mu + \partial_\mu \log \lambda^\mu \quad \Gamma_\mu \rightarrow \Gamma_\mu - \partial_\mu \log \lambda^\mu \quad (1060)$$

With this, the covariant differential is preserved. The added term comes from the distributive property of the log function and the action of the transformation on the wavefunction:

$$\partial_\mu \log \lambda^\mu = \partial_\mu \log((1 + \gamma^\mu f_\mu)^{-1}) = -\gamma^\mu \partial_\mu f_\mu \quad (1061)$$

Since they are in the same frame, γ^μ and ∂_μ commute. Integrated as a source this term is:

$$-f_\mu = -\alpha B_\mu \quad (1062)$$

The added term of λ^μ perfectly compensates for the added f_μ by the above. Hence the electromagnetic potential that is applied causes a shift of energy momentum between the two parts of orbital and spin curvature energy momentum, at the strength of the applied electromagnetic potential.

The condition of (45), implies that from the perspective of a particle accelerated in relation to a particle at rest, the particle at rest acts as a source generating an opposite potential to its own potential as experienced in the frame of the accelerated particle. The accelerated particle is not a source to itself because of the reciprocal condition and it is at rest in its frame, so it experiences the (negative) potential of the other particle at rest. This indirect potential acts on either particle, and must act to attract them, and a gap develops.

As there exists a frame of rest and condition (45) is conserved under a frame transformation, there exists no direct potential, but there does exist one arising from the frame of acceleration relative to the frame of rest, as a back reaction reversed potential on the particle in the accelerated frame.

Thus both particles experience a negative potential with respect to the other particle, which is the following potential:

$$\int \gamma^\mu \partial_\mu \log \lambda^\mu dx^\mu = -\alpha B_\mu \quad (1063)$$

This explains the diamagnetic effect and pairing, and is consistent with the magnetic field being zero. Additionally, the magnetic field of zero can be explained as the fact that if γ^μ and D_μ operating on ξ_μ are reciprocal to a constant, and given the momentum is inertial, it produces zero magnetic field in all frames.

But this condition of the eigenstate is preserved with respect to all frames, thus the magnetic field is globally zero for all points within the material.

Covariant Differential Commutation Relationship

Consider the interior transformation of the covariant differential due to the term produced by the previous transformation under action of the electromagnetic field:

$$\begin{aligned}
 [D_\mu, D_\nu] &= \partial_\mu \partial_\nu + \partial_\mu \Gamma_\nu + \Gamma_\mu \partial_\nu + \Gamma_\mu \Gamma_\nu - \partial_\nu \partial_\mu - \partial_\nu \Gamma_\mu - \Gamma_\nu \partial_\mu - \Gamma_\nu \Gamma_\mu \\
 &\rightarrow (\partial_\mu - \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\
 &\quad + (\partial_\mu - \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\
 &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\
 &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\
 &= -\alpha \partial_\mu A_\mu D_\nu + \alpha \partial_\nu A_\nu D_\mu + \partial_\mu D_\nu - \partial_\nu D_\mu \\
 &\quad + \alpha \partial_\mu A_\mu D_\nu - \alpha \partial_\nu A_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\
 &= \partial_\mu D_\nu - \partial_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu = D_\mu D_\nu - D_\nu D_\mu = [D_\mu, D_\nu]
 \end{aligned} \tag{1064}$$

Which indicates that the two gauges are mutually satisfied under transformation by the field, interior to the covariant differential. This also holds true for the total covariant differential since any transformation should be performed symmetrically. Hence, the commutation relationship of the covariant differentials is preserved under the internal transformation of its terms. Furthermore:

$$[D_\mu, D_\nu] = -[\Lambda_\nu^\mu D_\mu, \Lambda_\mu^\nu D_\nu] = -[D_\nu, D_\mu] \tag{1065}$$

Indicating the commutation relationship is antisymmetric under a symmetric frame transformation. We may evaluate this term in the following way at a point in space:

$$\begin{aligned}
 \xi_\mu \xi_\nu [D_\mu, D_\nu] \xi_\mu \xi_\nu &= \xi_\mu \xi_\nu (D_\mu D_\nu - D_\nu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\Lambda_\nu^\mu D_\mu \Lambda_\mu^\nu D_\nu - \Lambda_\mu^\nu D_\nu \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (D_\mu \log \Lambda_\mu^\nu D_\nu - D_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\gamma^\nu \partial_\mu \log \Lambda_\mu^\nu D_\nu - \gamma^\mu \partial_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\gamma^\mu \partial_\mu \log \Lambda_\mu^\nu - \gamma^\nu \partial_\nu \log \Lambda_\nu^\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu \alpha (\partial_\mu A_\nu - \partial_\nu A_\mu) \xi_\mu \xi_\nu = -\xi_\mu \xi_\nu \alpha F_{\mu\nu} \xi_\mu \xi_\nu
 \end{aligned} \tag{1066}$$

Making use of (34) and γ^μ and γ^ν to correct for the covariant differential making it a partial derivative by (35) and the fact that when the partial derivative associated spin is multiplied by another spin factor the negative logarithmic derivative is introduced into the equations (37) and (38). Hence:

$$[D_\mu, D_\nu] = -\alpha F_{\mu\nu} \tag{1067}$$

The spin field transformation which accompanies the introduction of the electromagnetic field, under the covariance of the form of the eigenstate is a curved transformation of coordinates, and hence what we arise at is a real consequence of coordinates. It is flat in a sense (when one accounts for the change in coordinates) and curved in a sense (when one does not account for this change in coordinates) naturally. The Meissner effect is seen as the conventional departure of the electromagnetic field tensor torsion condition at the boundary of the superconductor.

Calculation of Exchange

We can now proceed to analyze the commutation relationship of the ∂_α and Γ_α with the added $\pm\Lambda_\alpha$. Under the two particle equation this is reversed in sign among the two sides of the two

particle Dirac equation corresponding to particle 1 and particle 2. Under consideration of the fact that Λ_α changes sign under juxtaposition.

Exchange Difference Hypothesis: *The added logarithmic differential of the frame transformation, or its curvature, Λ_α , in changing sign between frames behaves in conjunction with ∂_α and Γ_α as raising and lowering operators in the two particle Dirac equation.*

To test this hypothesis consider the ∂_α energy momentum for the singlet. Between states in the two particle Dirac equation a term enters as:

$$(-i\hbar\partial_\alpha + 2\hbar\Lambda_\alpha)(-i\hbar\partial_\alpha - 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(a^\dagger a)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \quad (1068)$$

The term on the spin curvature enters as:

$$(-i\hbar\Gamma_\alpha - 2\hbar\Lambda_\alpha)(-i\hbar\Gamma_\alpha + 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(aa^\dagger)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \quad (1069)$$

Thus the effect of the acceleration and the existing momenta, create the conditions under the two body (with opposite accelerative frame boosts) of anticommuting operators. The two particle equation is the product of two Dirac equations acting on the superposition of the two wavefunctions, here taken in the center of mass frame α :

$$(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1070)$$

Substitution of conserved quantities to simplify the calculation results in:

$$(-i\hbar\eta_+^\alpha + e\sigma^\alpha - m)(-i\hbar\eta_-^\alpha + e\sigma^\alpha - m)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1071)$$

Because the positive and negative orbital momentum and spin curvature sum to zero:

$$(e^2\sigma^\alpha\sigma^\alpha - (me + 2ie\hbar(\eta_+^\alpha + \eta_-^\alpha))\sigma^\alpha + im\hbar(\eta_+^\alpha + \eta_-^\alpha) - \hbar^2\eta_+^\alpha\eta_-^\alpha + m^2)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1072)$$

Because the only term which contributes to the change from the singlet to triplet under the change in sign by the operators above is η^α and $\eta_+^\alpha + \eta_-^\alpha$ is zero by equal and opposite momenta, this reduces to:

$$-4 \int \int \xi_\alpha^+\xi_\alpha^-\hbar(\eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha)\xi_\alpha^-\xi_\alpha^+ dx^\alpha dx^\alpha = \Delta \quad (1073)$$

η^α produces four terms which obey a commutation relationship by way of the above:

$$\begin{aligned} \eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha &= (\partial_\alpha^+ + \Gamma_\alpha^+)(\partial_\alpha^- + \Gamma_\alpha^-) - (\partial_\alpha^- + \Gamma_\alpha^-)(\partial_\alpha^+ + \Gamma_\alpha^+) \\ &= (\partial_\alpha^+\partial_\alpha^- + \partial_\alpha^+\Gamma_\alpha^- + \Gamma_\alpha^+\partial_\alpha^- + \Gamma_\alpha^+\Gamma_\alpha^-) - (\partial_\alpha^-\partial_\alpha^+ + \partial_\alpha^-\Gamma_\alpha^+ + \Gamma_\alpha^-\partial_\alpha^+ + \Gamma_\alpha^-\Gamma_\alpha^+) \\ &= -4\partial_\alpha\Lambda_\alpha + ([\partial_\alpha^-, \Gamma_\alpha^+] - [\partial_\alpha^+, \Gamma_\alpha^-]) = -4\partial_\alpha\Lambda_\alpha \end{aligned} \quad (1074)$$

Where the following equality holds:

$$[\partial_\alpha^-, \Gamma_\alpha^+] = [\partial_\alpha^+, \Gamma_\alpha^-] \quad (1075)$$

As the extra Λ_α changes sign *with* the derivative, leaving for the two particle energy gap *for all electrons*:

$$\Delta = 4\hbar c \int \gamma^\alpha\Lambda_\alpha dx^\alpha \equiv 4e \int \gamma^\alpha A_\alpha dx^\alpha = 4J \quad (1076)$$

This last equivalence is because in the exchange interaction the terms of μ and ν are juxtaposed and appear in the Λ , which by the previous section is equivalent to an electromagnetic potential

differential. This is consistent with the previous section, where a γ^ν changes in a *relative* manner such that a reversed A_ν is generated for the particles in motion *within a spin system background*.

If the particles are relatively accelerated there exists a reversed potential between them with an energy lowering that is the contribution to their energy from this potential, and it is equivalent to an energy mass lowering of their inertial content. This is true as the acceleration gives rise to the (reversed) potential and without an acceleration there exists no potential. The acceleration as a source for the potential is physically equivalent to the lowering of the inertial mass energy, since it is the same term numerically.

This is fundamentally the expression that the potential energy mass lowering as sourced in the acceleration, and numerically equivalent with the inertial mass energy lowering, is a matter of frame, and the two are equivalent between all frames, hence the lowering is a prediction of general covariance. Since the quantum singlet to triplet operator holds individually between particles and a conventional to ultimate difference is taken the lowering holds for all two particle states. This implies the following equivalence:

Quantum Equivalence Principle: *The potential mass energy lowering is indistinguishable from the inertial mass energy lowering.*

Discussion of Energy Lowering

This seems in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \quad (1077)$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (1078)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (1079)$$

For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content. In and by way of this it does indeed lower, but it is a matter of perspective. Going back to the system so established, we ask the question as to whether both energy conservation and general covariance can be satisfied with the formalism developed.

The analogy is actually quite simple, for what happens is that from the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (1080)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system in motion where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has occurred by the above and the condition of general covariance. The quantum equivalent of the Earth-Sun system is to see that

it is the inertial constraint on quantum exchange we judge as non-inertial when it is in fact quantized inertially. This admits the formation of a new conclusion regarding quantum phenomena in general, as for example the photoelectric effect by which a photon is absorbed by an electron and knocks it out of its orbital in a metal, past a threshold energy momentum:

Conclusion: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is the accelerated interpretation of this state. This gap is real by observation from the indistinguishability of the inertial and potential relativistic factors under the equivalence principle for any transition of a quantum nature.*

Distinction

While an interaction takes place, it is true that the uncertainty principle would be modified in the observables not for the sole reason that the coordinates change under acceleration, for there does exist a coordinate free representation of the observables compatible with acceleration such that the uncertainty principle is satisfied.

It is also because either:

A:) *If the electromagnetic interaction is not included in the momentum then it modifies the position and momentum compatible with an acceleration and an interaction that varies, and thus the relative determination of momentum and position is functional and dependent on coordinates, and not an invariant description, given that this acceleration exists in a way that is dependent on coordinates with respect to the operation of position of one particle upon the momentum of another, and with the reverse operation. Hence a coordinate dependent anomaly arises in the commutation relationship between the observables of different particles, whenever the electromagnetic potential is not included in the particle description.*

B:) *If the electromagnetic interaction is included then the former anomaly does not occur, because the commutation relationship is perfectly compensated for in its change with respect to the quantities of particle momentum and field momentum, as one merely changes the other in an equal and opposite functional manner and they are comparatively added instead of a complimentary change absent.*

Conclusion: *What can be seen is that it is the sum of these changes which is the expression of a net invariance of the determination of the uncertainty principle with respect to the general covariance of the observables without which there is no commutation of the separable momenta or positions.*

If and only if this holds true can we satisfy both postulates. The restriction to mutually satisfying both postulates is trivial without invoking the multiparticle viewpoint but not when it is invoked. For note that the uncertainty principle can be made invariant by a generally covariant coordinate basis locally.

However, this is not manifestly globally invariant in that the determination of the multiparticle relationship of uncertainty does not mutually commute between different particle observables, for the same reason there exist different coordinate systems for different particles.

Additionally, although with an interaction, the single particle uncertainties remain manifestly locally invariant, they are not as determined globally in the sense of between particles, unless the

interaction potential is included in the momentum. When the interaction is included the change it introduces compensates for changes in the particle momentum in such a manner that the system is manifestly generally covariant and the uncertainty principle is left generally invariant.

For this to be true an identity must hold true between the frame transformation and electromagnetic field interaction, namely that the log differential of the frame transformation is the negative of the log differential of the electromagnetic field tensor, weighted by the appropriate constant (α):

$$\partial_\mu \log \Lambda_\mu^\nu = \alpha \partial_\mu \log F^{\mu\nu} \quad (1081)$$

Furthermore this identity gives a relationship to the description of the frame as it covaries with the particle description of momentum, and yields the total covariantly conserved quantity of momentum. It is merely the force law ($F = ma$), by inspection.

Justification and Ramifications

First to note is that the multiparticle perspective is one to one with the existence of interactions, which by way of and which there exists a connection to the differing frames of acceleration, and that these interactions must be included as a field potential energy momentum as it pertains to the full particle energy momentum as an observable in order for there to be a commutation relationship consistent with the uncertainty principle between the observables of the multiple particles.

This is to satisfy the uncertainty principle with respect to the different particle's definitions of each other, and their mutual commutation relationships, for their definitions of momentum do not commute when the interaction potential is left out. Additionally, what is striking is that it is the full particle and field energy momentum as carried by the particle that defines the observable and it is not particle only.

This seems to express on a base level that it is the full particle energy momentum with field that becomes the observable in the multiparticle viewpoint, as such must be the case to satisfy the uncertainty principle with general covariance resulting from changes in the coordinates with respect to the frame of motion, resulting from and identifiable with the acceleration due to the interaction.

As a consequence, the eigenstate condition of the Dirac equation is intact, although there is a slight difference in interpretation, arising in the context of the multiparticle description. For instance, the equation:

$$(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (1082)$$

Is the expression of the eigenstate condition of a particle like an electron. Although the single particle description of the eigenstate does not differ when mapped from the multiparticle condition, what remains to be seen is if the condition this represents mathematically is still identifiable with what it means in the multiparticle interpretation.

For while the Dirac equation, as it was initially interpreted, holds perfectly well with the condition of an ordinary partial derivative upon it being zero to result in an eigenstate, there is a subtle difference in the multiparticle setting with general covariance. Here, the condition is that the total covariant differential defined as:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (1083)$$

Must be used in place of:

$$p_\mu + \alpha A_\mu = \partial_\mu + \alpha A_\mu \quad (1084)$$

In the generally covariant setting. With this, although the Dirac equation is left locally intact, given that Γ_μ vanishes locally, it does not vanish identically for particle to particle comparisons. To prove this all it suffices to say is that the connection described in equation (8) is preserved under relative comparison of observables, and hence in general, or as for the multiparticle description, since Γ_μ does not vanish globally and must be included for generality.

As a final note consider that locally the description remains the same for the single particle description, for all particles, but that the multiparticle description differs substantially, as for instance γ^μ also takes on structure of the form of a function, and the descriptions may be inequivalent physically:

Hypothesis II: *The physics of the multiparticle description differs from the single particle description.*

In the case of exchange this can be an energy lowering. To note then is that this can lead to a collectively lowered energy in the case of superconductivity.

Examining superconductivity, for instance, the mystery is:

Mystery: *How does the energy lower, even if only in relative terms?*

This is only possible in a relative sense if the physical quantum description changes, and if the potential and kinetic energy both lower. But, the change between the singlet and triplet can be relatively modified by a matter of perspective. Internally to the system there is no change in kinetic energy as indicated by the field to frame relationship in the inertial frame, but observationally, it appears that there is a gap in energy.

To note then is merely that the triplet and singlet are repulsive and attractive, and therefore possess opposite relative curvatures, which immediately indicates a subjective-objective agreement of an energy difference of $2J$ per particle, because relatively there also exists an energy difference in the kinetic energy of J in the inertial mass energy by this same curvature relative to a system at rest external to it.

From the constraint of equation (43) and that which is imposed by the existence of multiple particles for which the condition of general covariance must be satisfied, the exchange phenomenon is relative and reveals a mass energy gap.

To prove this result quantitatively and rigorously one needs to evaluate the net integral, but this value is given empirically by the relation encoded in equation (44), which says that the differentials of these quantities are identical up to a constant of proportionality, and that their integrals should be equivalent up to a constant of integration. Then, because of this identity, the mass gap for an external observer outside the system, is the entire exchange energy difference of the two particles measured in the system of J with the change of the kinetic mass energy of J for a total of $2J$ per particle in sum.

In this context, the exchange is real only when observed from outside the system, and it is purely a relative phenomenon. Carefully noting their natures, that one is an electromagnetic potential energy difference when integrated, and that the other is an inertial mass energy difference when

integrated, we arrive at the following conclusion:

Conclusion: *Relative potential and inertial mass energy lowerings are indistinguishable.*

However the gap must be weighted by the appropriate Lorentz factor, and this gives the formula and equivalence:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (1085)$$

Mystery of Superconductivity Revisited

The first thing of note in resolving this mystery is that the interpretation of the Meissner Effect is the confluence of the principle of general covariance and the uncertainty principle. The physics does not change, merely the interpretation of the uncertainty principle.

The two statements, one of the Meissner Effect, and secondly, one of energy conservation, are respectively the instantiation and extension of the uncertainty principle and general covariance. For instance, examining the equal and opposite fields which are one to one with spin angular momentum as mutual observables, is a manifestation of the uncertainty principle to say they do not depart from commutativity with respect to boosts.

Secondly, energy conservation here is a principle by which the only dependence of this equal and opposite magnetic field is upon the perceived metrical relationship due to motion, otherwise the gravitational field of the body would change and they would exchange an extra contribution of energy, and would not preserve the center of mass under freefall.

In showing by contradiction (of a dual nature) that one or the other of these principles is violated if and when the transformation is not reciprocal to the field, one shows that the Meissner Effect is a generally covariant uncertainty principle based phenomenon. This is one to one with the principle by which the fields are in inverse or reciprocal relationship to the relativistic transformation, and:

This follows from the indistinguishability of the inertial and potential relativistic factors.

What is known is that the covariant differential in total does in fact commute, and that when it is separated into particle and field momenta that these do not commute. Thus this implies a number of things. First of all is that it is only the total field and particle momentum which is inertial, which is the interpretation of the Meissner Effect.

Secondly is that the four momentum of the particle alone is curved with respect to the field of electromagnetism alone. This is consistent because this leads to the condition of equivalent and opposite functional curvature relationships for these substituent quantities. Lastly, what this implies is that it is indeed true that the potential mass energy lowering in a superconductor is fundamentally indistinguishable from the inertial mass energy lowering.

From this follows the generalization of the condition implied by the first section of this paper, which is that:

$$D_{\mu}(i\gamma^{\mu}(p_{\mu} + \alpha A_{\mu}) - mc)\xi_{\mu} = 0 \quad (1086)$$

Which is nothing other than the condition for a covariant eigenstate.

As an experiment simply consider dropping a superconductor levitating a magnet, if this theory holds true then because there is a gradual change in the gravitational frame, as they fall their curvatures should contribute equally, with the prediction that the initial condition requires that they will fall together as one, given their mutual inertial relationship in an approximately inertial frame.

Conclusion: *There is a measurable and physical effect on the interpretation of the observables in the uncertainty principle given their coordinate system and frame independence.*

Interdependence of Orbital and Spin Momentum

To explain exactly what 'reciprocity' means in this context, consider the particles. In the two particle Dirac equation, there occurs an *internal* reciprocation of spin curvature energy momentum and orbital energy momentum. This occurs **not** because the particles merely *influence* each other, but because they *influence each other's representations* in particle energy momentum and spin curvature energy momentum to change. Hence the wavefunctions in remaining Lorentz invariant *remain the same physically*, but there occurs a reciprocation between the quantum and the relativistic *components* of the objects.

Now consider that given the Dirac equation holds for one particle. Any multiparticle modification of dynamics must occur internal to the equation, and not modify its overall structure, but it **can** modify the individual terms in a plus-minus like fashion. This is a way to side step the problem of coming up with a new and unique generalized transformation, analogous to the γ^μ , which will encode a curved space *in general*. In this way, the multiparticle and accelerative features of reality are encoded in changes of the components of the representation. This represents something wholly new however, because the old addage that '*the whole is greater than the sum of its parts*' applies. In this, the particles are **not** moving through each other merely because something only akin to a potential holds between them, but because a *change in each other's representations* arises from their mutual quantum and relativistic *relationships*.

An Instance of Reciprocity: *Reciprocity here means the comparison of different accelerative frames under the singlet and triplet, in which acceleration contributes to the spin curvature and orbital energy momentum, causing the two parts of the representation: the orbital and the spin, to reciprocate in space and time such that the particles mutually lower in energy and oscillate in space and time.*

Λ_ν is added and subtracted merely because of the rule of general covariance, and through quantum mechanics produces a reciprocation of accelerative spin curvature energy momentum and accelerative orbital energy momentum, so that the above can be put more simply:

Reciprocity Generalized: *Relative comparison of different quantum states under superposition leads to an energy difference in the states when different observable frames of acceleration are also compared.*

The emphasis in general is that **both** different relativistic frames of acceleration **and** different quantum states are compared simultaneously. Taking as the displacement the energy momentum associated with the change due to the difference of frames under an accelerative boost, afforded by the addition of an inertial interaction of the electromagnetic field:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1087)$$

Because of the equivalency principle, Λ_ν is zero in the frame of the particle and *does not* contribute to the single particle description. While for the *comparison* of states in the singlet and

triplet where different frames of acceleration are compared the contribution from the relativistic frame of acceleration *difference* leads to a *displacement* of $\pm\Lambda_\nu$. The essential idea is that the gap and attractive force arises from the qualitative difference between the single particle and two particle pair descriptions under the singlet and triplet. This makes for an interaction that results in a distinction that must be made between a particle in the single particle description, and a particle that is a *part* of a two particle state under mutual *acceleration*.

When the particles are put together they produce a qualitatively different result from only the single particles put together with only an electromagnetic interaction. For instance, under exchange, interchange of frames: $\mu \leftrightarrow \nu$ creates a $\pm\Lambda$ relativistic frame difference on ∂ and Γ .

Hence reciprocation is predicted with exchange, along with an energy difference of the singlet and triplet. This implies that reciprocation of quantities is one to one with inertial motion and this is one to one with an inertial electromagnetic force, which is in turn one to one with the Meissner Effect. However, the energy of the total system is lowered or raised under mutual acceleration by the presence of the extra Λ_ν which leads to the different momenta as operators producing an algebraically different result from their simple sum when operating on the wavefunction.

Hence, inertial motion is consistent with conservation of the exchange energy (through the cancellation of the distance dependence and inertial quality of the electromagnetic force) and reciprocation of spin and orbital degrees of freedom. We can conclude from the mere fact that spin-orbital reciprocation takes place that the exchange energy is conserved and one to one with the initial statement that the equivalency principle holds for the force law holding the charges together.

Hence, a non-dynamical difference in the exchange energy can be seen as an outcome of the inertial property, or the inertial property holding true can be seen as an outcome of the exchange energy developing a difference, but neither can be proven entirely by independent means. Finally to note is that this has an implication for general relativity as a reaction, for when the transition to the superconducting state takes place its mass lowers, invoking a complimentary raising of general relativistic energy.

This, in its general form, is what reciprocity means in the end. For the gestalt picture of quantum mechanics and general relativity produces changes in each, which are complimentary, because the general relativistic modification of the quantum description, lowers the quantum energy, and it raises itself.

Pairing and Condensation

The connecting principle that implies Δ_p is at a maximum when Δ_c goes to zero, and vice versa can be explained by two facts:

- 1.) *When particles fall into pairs they become more localized in the orbital degree of freedom, hence their relationship to one another is a **larger boost apart** between the holes comprising distinct pairs.*
- 2.) *The electrons and lattice **counteract** both the condensation and pairing with a resistance to an expansive force at low doping and to a contractive force at high doping. The electron sea and lattice*

that exists works against pairing and condensation, while remaining of equal localization to the holes.

The density of electrons exists in proportion to the localization of holes and electrons (or inverse to their spread) and hence is also proportional to pairing strength. Simultaneously, the outward force of the pairs accelerates them apart, leading to a condensation strength that is proportional to the density of holes.

Thus the inter-pair boost is largest when the density of holes is large, explaining a large condensation gap at high doping, and the inter-hole boost is largest when the density of electrons is large, explaining a large pairing gap at low doping. Hence the two processes of balanced forces and distinct effects of the electrons or holes are at odds, yet the force inwards must balance the force outwards.

As a consequence there exists a range of doping intermediate between the extremes where superconductivity exists and it must fall off to both sides like a semicircle reaching zero because the electrons and lattice counteract the condensation force at low doping with a net contractive force of electrons with the lattice, and pairing force at high doping with an expansive force due to the large number of holes.

Since condensation may be treated as the change in orbital localization due to relative frame, and pairing may be treated as the accelerative parameter due to the localization (inverse to the spread of the wavefunction), the net effect is described by the energy lowering being the contracted factor of:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (1088)$$

This is because the factor of Λ_{ν} is the factor corresponding to the boost leading to pairing, and γ^{ν} corresponds to the *excess* energy lowering from relative frame due to change in the boost parameter by acceleration into pairs. This is thus a factor multiplying the accelerative frame difference corresponding to the pair energy as a relative boost between pairs of the condensate. If it goes to unity then the energy of the condensation gap is zero, while if the acceleration goes to zero then pairing vanishes. Everywhere the gap is the constant of $4J$. This interval of superconductivity occurs when the lattice plus the electrons that exist balance the force outwards of the condensation and the force inwards of the pairing, but since the force is nonzero, and it acts through a distance by the effect of length contraction, the holes experience a net energy lowering intrinsic to the material.

The Cosmological Constant

The cosmological constant is a constant energy density in Einstein's theory that produces an extra term in the gravitational field equation leading to a global expansion or contraction of the universe. Particles in space consist mainly of hydrogen, and so the only interacting particles among these atoms are the outer electrons, and to a lesser extent, their protons. Exchange appears to play a role in this problem, even over the vastness of space. Consider if you will the exchange energy of two electrons on hydrogenic atoms across interstellar distances. From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the vast majority of the observable universe.

The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet. As well, this energy must be conserved. And, it involves the spin of the electron, representative in the isotropic hydrogen gas of a spin system or a local Lorentz frame, however, it is dilute.

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

A 'perfect' linearity would agree identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it would scale in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle as it applies to quantum mechanics and general relativity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of redshift, and colocality throughout the universe only within simultaneous cross sections of space in time we observe when looking out into space.

The Origin of The Cosmological Constant

First and foremost take as givens that the following statements hold true:

1.) *The equivalence principle equally as well applies to the theory of quantum mechanics as to the theory of general relativity.*

2.) *Total energy measured is lower for a whole as compared to the sum of its individual parts for a whole compared to its constituent parts.*

From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion or contraction will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the majority of the observable universe. The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet, and as we will show it must be conserved. We have learned that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

This makes a 'perfect' linearity prediction with the equivalency principle, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it scales in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle.

This final prediction must be true for quantum mechanics and general relativity, because the relativistic factor corresponding to the multibody system is the reciprocal of the relativistic factor corresponding to the observer, and represents an inverse transformation of space and time, and is the only consistent viewpoint globally and locally in a universe governed by the equivalence principle. So in the end, this model requires quantum mechanics and general relativity to be dependent on the equivalence principle, and predicts a redshift as representative of the scale of forces to one another in a universe so statically dependent on time in every moment, and accumulating over time by virtue of traversing space.

Implications for Cosmological Constant

Consider two hydrogen atoms to be undergoing separation in space with a fixed displacement of coordinate nature. Under consideration that there exist no a priori coordinates of nature, we are lead to believe in the equivalency principle.

As the particles separate under inertial freefall given the covariance of the quantum force between them, their *exchange* energy becomes the source of this separation and is conserved as a constant as:

$$\int \int g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| ds^\mu ds^\nu = 1 \quad (1089)$$

This is because under inertial freefall the intrinsic Lorentz contraction factors on the quantum wavefunctions must cancel the relativistic distance dependence from $g^{\mu\nu}$ leaving normalization to produce unity under integration. This is clearly the required condition for energy conservation. Under these provisions the exchange energy is a conserved energy under inertial separation of the hydrogen atoms. Considering it is the quantum ground state energy of the system, it is

reasonable to find it unchanging under the provisions of inertial separation. Additionally, we find that the gravitational energy and kinetic energy are unchanging as the kinetic energy merely responds to the metric, and its partial derivative in:

$$D_\mu = \partial_\mu + \Gamma_{\mu\nu}^\nu \quad (1090)$$

Merely is the effect of a motion *in response to changes in the metric* and not distance of motion. With this, the extra γ factor acquired under moving apart covaries with the extra γ factor of the metric changing, under the equivalency principle, so there is no change in the gravitational energy. Finally we come to the conclusion that defines the cosmological constant:

Conclusion of Reciprocity: *The change in gravitational, quantum, and kinetic energy are all ultimately zero under the inertial separation of hydrogenic atoms.*

Calculation of Cosmological Constant

The energy is negative as it is the difference from the coulombic triplet and singlet energy states, and this energy is higher or near zero, because of the existence of the electrons and protons leading to charge neutrality between the atoms. Exchange energy is negative because of the presence of the protons present without electron densities.

Consider the general exchange term evaluated in spacetime:

$$J = -\frac{e^2}{4\pi\epsilon_0} \int \int \gamma^\mu \xi_a^\dagger(x^\mu) \gamma^\nu \xi_b^\dagger(x^\nu) \frac{1}{r_{12}} \xi_a(x^\nu) \xi_b(x^\mu) g_{\mu\nu} dx^\mu dx^\nu - A.S.M. \quad (1091)$$

Where the γ^μ and γ^ν appear from the boost of relative γ motion of the hydrogen atoms over time apart and A.S.M is the antisymmetric term with μ and ν interchanged.

The exchange becomes by moving terms around and expanding $\frac{1}{r}$.

$$J = -2 \frac{e^2}{4\pi\epsilon_0} \int \int \xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \frac{g^{\mu\nu}}{\int \sqrt{g_{\mu\nu}} ds^\mu} \xi_a(x^\nu) \xi_b(x^\mu) g_{\mu\nu} dx^\mu dx^\nu \quad (1092)$$

Where $g_{\mu\nu}$ is the physical metric (assumed symmetric), and $g^{\mu\nu}$ appears due to the identity:

$$\gamma^\mu \gamma^\nu - \gamma^\nu \gamma^\mu = 2g^{\mu\nu} \quad (1093)$$

This can be interpreted as a energy between bodies for the infinitesimal motion of one body compared to the whole.

An electron position x^ν is differentiated against to produce energy density in infinitesimal form for one body with respect to an infinitesimal of the other:

$$E_\delta = -2 \frac{e^2}{4\pi\epsilon_0} \int \xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \frac{\sqrt{g_{\mu\nu}}}{\int \sqrt{g_{\mu\nu}} ds^\mu} g^{\mu\nu} \xi_a(x^\nu) \xi_b(x^\mu) dx^\mu \quad (1094)$$

It is a force when differentiated again against μ and an energy density when multiplied by a distance infinitesimal, here the square root of the metric multiplied by an infinitesimal distance.

It is mathematically equivalent to:

$$\Delta E = -2 \frac{e^2}{4\pi\epsilon_0} \partial^\nu \log \int \sqrt{g_{\mu\nu}} ds^\mu g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| \quad (1095)$$

This works, as this is the form:

$$\Delta E = F_\nu \cdot dx^\nu \quad (1096)$$

This statement reduces to the energy density infinitesimal taken over an infinitesimal path length in space. This produces a curvature that is proportional to the accelerative force and constant over the wavefunction. Essentially the description has been moved from a total energy density to a change in energy density given the infinitesimal overlap of the bodies. The total energy of this interaction contribution is the double integral of the energy density.

To get the per particle energy density we divide by two. When the curvature is a constant and the overlap is unity, by the process of Lorentz transformation under inertial separation the distance cancels the increase in overlap from the Lorentz transformation. From this one can see that a positively curved space will induce a negative energy content, and a negatively curved space will induce a positive energy content. In this model the force of this term decreases to the level of matter present as expansion slows. To demonstrate that it does not contract again, consider that any contraction by gravity only leads to an enhancement of this force over its previous value or equivalently to a scalar multiple. The system is therefore asymptotically infinite and flat.

Under the assumption of uniformity, we have a constant acceleration. For such acceleration, the curvature term relies on a $g_{\mu\nu}$ as a pure exponential, and the curvature reduces to:

$$\partial^\nu \log \int \sqrt{g_{\mu\nu}} ds^\mu \rightarrow \gamma^\mu \partial^\nu \log \sqrt{g_{\mu\nu}} \equiv \gamma^\mu \Gamma_{\mu\nu}^\nu \quad (1097)$$

Γ is merely a constant, spacetime is curved, and g is a global invariant, so the energy remains a constant as a function of time. γ^μ is introduced to make the curvature Lorentz invariant and is from the flat Minkowski space.

We divide by c^2 to obtain mass density, and considering the result of equation (79):

$$\Lambda g_{\mu\nu} = -\frac{1}{c^2} \frac{e^2}{4\pi\epsilon_0} \gamma^\mu \Gamma_{\mu\nu}^\nu g_{\mu\nu} \quad (1098)$$

Which matches the above form for this new interaction for a uniformly curved space. This plays a role analogous to a cosmological constant.

The Einstein field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (1099)$$

With:

$$\kappa = \frac{8\pi G}{c^4} \quad (1100)$$

Consider the influence of different metrics or spacetime geometries on the effect. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term. The gravitational curvature of space counteracts this effect as the sign on the energy density is negative. Because of this sign change gravity counteracts this force. The presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to general repulsion this exchange integral gets a constant contribution over the whole wavefunction between any two hydrogen atoms of the universe as a

gas. These are taken as the predominant interaction because over 90% of the universe is composed of hydrogenic gas, and the orbitals of helium (the next abundant element) are close in size to that of hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wavefunction is:

$$\xi(x) = \frac{1}{\sqrt{a_0}} e^{-\frac{x}{a_0}} \quad (1101)$$

Where a_0 is the Hydrogen ground state orbital size.

The distance between the centers of these wave functions must also be incorporated. With an initial condition of complete overlap the Lorentz factor from acceleration can be modeled by:

$$g^{\mu\nu} = e^{2\beta d} \quad (1102)$$

With β the boost parameter and the acceleration. The condition for conservation of energy under inertial separation is that the metric of contraction cancel the distance dependence, coincident with the condition that the infinitesimal of curvature being a constant. The product of the wavefunction overlap infinitesimal occurs with the above metric and is given by:

$$\begin{aligned} g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| &= \frac{1}{a_0^2} e^{2\beta d} e^{-\frac{|x-d|}{a_0}} e^{-\frac{|x+d|}{a_0}} e^{-\frac{|x-d|}{a_0}} e^{-\frac{|x+d|}{a_0}} \\ &= \frac{1}{a_0^2} e^{2\beta d} e^{4\frac{d}{a_0}} e^{-4\frac{x}{a_0}} \end{aligned} \quad (1103)$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_\mu (e^{2\beta d} e^{-4\frac{d}{a_0}}) = 0 \quad (1104)$$

From this:

$$\beta = \frac{2}{a_0} \quad a_0 = \frac{\hbar}{m_e c \alpha} \quad (1105)$$

The variable β describes the acceleration of the atoms as they move apart, where a_0 is the first hydrogenic orbit radius.

With this, the curvature term becomes:

$$\Gamma_{\mu\nu}^\nu = \partial^\nu \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a_0} \quad (1106)$$

Λ becomes after integration to get total energy:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^\mu|}{a_0} - 2\frac{|x^\nu|}{a_0}} dx^\nu dx^\mu = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (1107)$$

This suggests that the divergence of the curvature multiplied by the quantum energy is the source term of the cosmological constant. This mass is the cosmological mass with negative mass and energy content of every interaction. Λ evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (1108)$$

The quantity as measured is $-10^{-35}[kg][m]^{-3}$. The value for the cosmological constant is given as one order higher than to the right order. The speed of light is used in the boost parameter, as the expression for the boost parameter is: $\beta = \frac{v}{c}$. H_0 is the rate of acquired velocity per distance, the boost increasing with distance. The per meter unit of energy must be multiplied by the conversion from matter energy content to gravitational curvature in Einstein's field equation (an inverse distance per energy) to produce the curvature of spacetime. This curvature of space is proportional to the boost parameter per the equivalence principle.

When the curvature is multiplied by c it produces the boost velocity per distance, or the Hubble constant:

$$H_0 = |8\pi GEc| = 16\pi\alpha^2 m_e c^3 G \approx 2.19201 \times 10^{-18}[s]^{-1} \quad (1109)$$

In reality, H_0 is measured as $70.8[km][s]^{-1}[Mpc]^{-1}$. Converting this to MKS units: $H_0 = 2.29 \times 10^{-18}[s]^{-1}$. The discrepancy between this result and the quoted value can easily be explained. The mass content of normal matter causes a positive contribution to the curvature over spacetime. This induces a repulsive effect between the components of matter that cause this field as they persist in inertial freefall. With this constant there exists a critical density for condensation or formation of massive bodies.

This extra repulsive contribution is equal and opposite to the attractive contribution because gravity generates extra relativistic contraction factors and thus the degree to which a metric is hyperbolic is actually enhanced by the presence of matter content when this term dominates, as it would in the early universe.

Thus the Hubble constant is enhanced in the proportion of normal matter content to total matter content of the universe. Normal atoms are approximately 4.6% of the matter in the universe. Considering these as gravitationally inducing, they constitute an extra effect of repulsion. With this:

$$H_0 = 16\pi\alpha^2 m_e c^3 G(1 + P_o) \approx 2.292844 \times 10^{-18}[s]^{-1} \quad (1110)$$

Where $P_o = .046$ is the proportion of ordinary mass to total mass content of the universe. The enhanced repulsion with a background metric and a constant negative energy density promote the viewpoint of an asymptotically flat universe. The asymptotic shape is then flat when this force dominates. Given the vast predominance of so called "dark energy" this model is appropriate. The fact that this energy matches the Hubble constant is direct indication that spacetime is asymptotically flat.

With light, there exists a pressure in excess of this natural balance. It is reasonable to expect this would lead to an accelerating expansion, as more matter is converted into light. Hence this model is compatible with a flat apparently accelerating universe that is asymptotically flat and insensitive to the exact amount of matter initially present. A useful extension of this theory to determine acceleration would be to understand the ratio of the conversion of matter into light in stars versus the energy content of the newly produced matter versus the radiation produced. This theory may also help explain the development of galactic and other large scale structure.

Conclusion

The paper has proceeded to prove that general covariance applies to quantum mechanics, and illustrate two major consequences. The main point is that with general covariance the energy is

lower for a quantum system in the center of energy momentum frame, and this lowering is real by the equivalence principle. From this, the field theoretic implications of a spin system produce a curved space effectively, which with the equivalence principle means that the energy lowering is very real within a quantum system.

The multibody problem is implicated in this by the collective energy lowering that ensues, and the effect is merely a manifestation of the application of general covariance and the equivalence principle to quantum mechanics. With the implications of general covariance and the equivalence principle to quantum mechanics we arrive at a synthesis whereby there is a quantum equivalence principle.

Within any transition there is a conventional to ultimate difference in viewpoints, whereby agreement means that quantum mechanics not only subscribes to the equivalency principle but that a change in frame accompanies a quantum transition. These are multiplicative and geometrically logarithmic, and add such that the gap is a constant in superconductors for all particles.

The uncertainty principle is then shown to be slightly different in a viewpoint which incorporates general covariance and that torsion explains diamagnetism. On the level of the conventional, there is a disturbance of the mass gap with a magnetic field because the net sum torsion of general relativity (which in part contributes mass conceptually via its definition of inertia) and of electromagnetism (for which the magnetic field can be seen as an instance) is zero. These are counteractive effects, thus explaining the Meissner effect.

These results were extended to create a generalized law for a superconductor with an electromagnetic field and the gap was generalized to the case of pairing and condensation under the provisions so given before. What has been attempted is a general principle by way of which superconductivity can be explained in the HTSC's, and what is most remarkable is the general result of a new type of inertial freefall in spin systems analogous to the equivalency principle in gravitational theory, but quite distinct from it and associated with the Meissner effect. The results were shown to accurately predict, as well as clarify the nature of the cosmological constant, superconductivity, and the concept known as inertia, when the quantitative and qualitative implications of integration freedom from general relativity are investigated.

Representation

Synopsis

Properties of the Scale of Cosmological Thermodynamics

- 1.) A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in correlative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).
- 2.) More time accumulates when in a field; while particle and space are independent agents.
- 3.) A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations correlative to a given one

space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.

4.) There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.

5.) The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.

Essential Root Conclusion for the Classical World

Conclusion: That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) Caveat: Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and Igravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

Device Implications for that of an Einstein-Podolsky-Rosen Bridge

Conclusion: My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.

Compendium on Physical and Mathematical Law

Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language.

The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

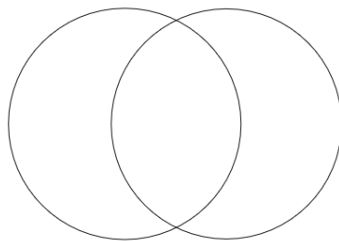
Consideration of the Exception and Admittance of Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position.

Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Extrapolations...

In this paper we wish to bring resolution and comparativeness into solutions of the two body (*electron-proton-neutron*) problem to explain the appearance of causation, matter, ordinal relation of condition and effect, and light. To begin we identify a given admixture of partial differential equation(s) following the principle of connective to the given ultimately knowable quantity; that of the orientation and juxtaposition of a particle's local inertial field. Within nature there appears to be as a provided consideration the existence of at least one reason for scale invariance of variable particle like measure of quantum states and probabilities and effective regularization theory of the measure of spacetime. This is the statement of general covariance within the addressable provision to a principle of comparative equivalence & complementarity, by which one may speak of identical states in space; of appeal to our notions of the persistent and passing of time within a physical world. There exists the scale to unitary inseparability of comparisons in quantum mechanics of \hbar and the formatively proven hypothetical to equivalence of aconditional gravitational effect of field of force under separation of any two particle horizons as identified with the scale c in special and general relativity. This invariance leads to the additional conclusion that the description of a state is *generally covariant* under transformation in spacetime & of a *principle complementarity* of probabilistic nature. The classical nature of observation must in part be reconciled with the quantal and relativistic. Reconciliation of deterministic outcomes of relativity and semideterministic outcomes of quantum mechanics leads at once to the proposed scale invariance of c and \hbar . This is directly identified with the proposed *Principle Equivalence of Comparative Complementarity* of quantum states and spatial & temporal ordination.



Introduction

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in all known materials. Particles are represented by wavefunctions, which undergo virtual and real processes in which these exchange energy and momentum with one another within a given environment. Gravity on the other hand, is equal to the qualitative theory of the geometry of

space & time taken to it's end in the unconditional ceasing of gravitational force in consideration of the statement of free fall. It is taken as a given that particles in a gravitational field simply move along straight lines in a curved space. Therefore; a complete theory of quantum mechanics and general relativity begins with the precept of straight line congruence of free motion and capacity of ordinal relation of comparability in either theory so reconciled as the equipartition of a knowable field.

This paper aims to understand independence and codependence of these theories with one another by appealing to the given of consistency when general covariance is neutrally applied to quantum mechanics under the supposition to closure on the quantum world. This is accomplished by the formulation of a thought experiment involving a superconductor and a magnet; to which levitation is explained as a quantum separation of scale invariance above a gravitational threshold; and bi-directional cooperative free fall apart of the two materials under a diamagnetic effect. In a superconductor, a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations below which electrons are in departure of a scattering theory; explaining that only a qualitatively pure theory of true phenomenological origin may explain their vanishing thermodynamic contribution. Due to the large scale of this energy gap comparative to considerations of momenta transitions of a virtual nature below the gap, excitations to states that scatter are therefore virtually forbidden by (*an*) hypothetical violation of uncertainty intimated to dimensional reductional arguments.

The consequence of an electromagnetic potential and quantum residual nature of frozen isosymmetry of global invariance manifests therefore as a condensation process to which there is reversal of iso-inclinc degrees to a null winding point in the relativistic theory. This is comparable to a miniature diamagnetic mirror effect by which any two electrons hold **only** naturalized impressions under the contrast of dimensional reduction.

The closure of the state 'back-upon' the hole attractive phase is locable therefore as an openly intimated connective of ordered relation to free transposition of temporal congruence. Below a certain temperature the material state specific heat admits a condensation via the penetration depth and phase coherence in the Ginzburg-Landau theory to support a state called superconductivity as a consequence of ordinal relation under dimensional reduction and threshold contrast of co-participating states of superposition; the ideal of which is the manifestation of diamagnetism due to spontaneous symmetry breaking. The reduced state is therefore iso-inclinc as a result of it's reduction to a causeless effect; the certain determinant of which is separation under cooperative reversal of the laws of physics in a thermodynamic potential of a pure 'acausal disconnect' of 'conditional effect' under the provisions of a prepared magnetic and gravitational potential.

The final difference of these included considerations is that one enqueued spin or charge variant is unseparated but isolable from that of mass; to which either fractional decomposition of states isolably yields a pattern congruence and isopotential of secondary enfolding of their two natures via 'hole-void' & 'charge-spin' structure to which a metric notion retains one individuated contrast of magnetic disordered relation within that of it's electromagnetic potential threshold of effective isolation and reductional mutability under the provision of temporal quantum prohibition of intermediary disconnect. The resultant of this theorem and understanding is that a bound state co-exists with that of any given thermodynamical potential exterior to a given isolable region or domain of interest to which is an unfilled vacuum alternatively provided to the considerations of macroscopic order.

Primary Principles

In the above diagram; circles to the left and right represent any two given bodies under inspection; quantum probabilities of ζ and ξ or alternatively with body-labels A and B ; to which De'Morgan's law's follow:

$$\hat{A} = \zeta(v, \tau) \quad \hat{B} = \xi(v, \tau) \quad (1111)$$

With *an Principle Equivalence of Comparative Complimentarity*:

$$A \circ B = A \cdot B \quad (1112)$$

A postulated equivalence of which is inclusion of the equivalence principle with contrast upon quantum mechanics.

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of it's possible predictions. To bring these theories into contact the method chosen is that of adopting the essential qualitative feature of isometry under stereographic relativistic transformation of coordinates for an underlying representation in the context of general relativity and applying this descriptive independence to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and complimentary in qualitative measure and measurable.

Fundamental Principles

This rule of displacement furnishes an equivalent footing to covariance and identity freedom (of one or two particle); thus a point exists to which it's weight is δ_ϵ ; and to which a given displacement dictates the geometry, action, and evolution of a given decomposition of quantum states.

Principle of **Parsimony**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (1113)$$

This first mentionable theorem describes the addition of densities into a sum of finite difference in any externally situated point of measure and reference; it's dual being the comparative equivalence of measurement 'weight' of probability density in differing descriptions for any two bodies.

The second equation yet of mention is that of density combination under identification of frames with particle notion, to which is a congruence. The comparative equivalence of these two juxtapositional identities of variable and measureless degree of emptiness of physical invariant afford the addition of a shared time (here denoted σ); to which is in equivalence a shared time of subtractive nature to the ordination of spatial extension.

Principle of **Synchronicity**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (1114)$$

Together, this is nothing more than the equivalence of references of vantage for any two particles.

The direct consequence is that:

Any two contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor of density; for in that of one following adirectionally apart; together; or separately; there is a transparency of logical union of quantum description; that of an interior coextensive dilation contraction factor owing due to their (shared) comparative proper measurement of time.

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a free substitution of difference of perspective and vantage; to which forms the uniqueness condition of any two point like limits of relativity & quantum mechanics; for that of any given principle equivalence of time and order; the principle inequivalence of which is a co-determinism to any two probability densities.

The general consequence and implication of this for signals of frequency and functional form under transformation is that: By one (1) comparative differential to quantifiable mean variance in difference of driving frequency encompasses either of any two subcomponents of alternative exterior difference of a given surrounding constructible geometric congruence.

Therefore with general functions:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (1115)$$

Implies: In log decibels any two differently concordant rhythms are separable by any given measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature. Therefore considered together these two imply the equivalence of results and particles under parallel interchange of perspective and vantage.

Principle of Measure: *Either one of Parsimony; or both of Synchronicity of given absolutely relative and arbitrary limits of codeterminism within shared point-like relation of temporal extensibility of measure and argument agree to (a) given variety of locality within a shared pre-text; to which with but one given shared body one given end congruent relation is empty of measure or extension; and one beginning notion is free of adeterministic consequence; the implication of which is that measure is certain and measurement strictly semi-deterministic.*

We can therefore conclude:

β :) Geometric weight of relativistic point application of force is equivalent and opposite to quantum mechanical point application of impetus.

α :) Geometric weight of point like mean density in relativity is equivalent to geometric weight of point like variance in quantum mechanics.

Conclusion: *Geometric weight of density and mean force of impetus are equivalent in a theory of comparative equivalence and complimentarity; to which in addition all events carry an equivalent contribution of $\delta_\epsilon = \hbar c$, for which any two constitutive relations form a synthetical factual known of truthful valuation under superposition of one given naturalized geometry.*

Relativity Theorems

The phenomena of which is intransigence of notion for particle and recurrence for wave is the addressment of deterministic end to description at the benefit of representational permanence in reality; therefore to be known here as two givens in physical law and this world within that of **real** connective and disconnective of known's under *displacement as relation* of any given one known to it's identity and any additional known:

Parsimony: Any principle comparative measurement of frequency under it's given equipartition at most meets that of analytical threshold of physical variance of mean partition of yet an other state within the contrast of two idealized localities.

Synchronicity: To what is ideal of measure; any apparatus of measurement idealizes to yet one threshold of superior relation of major for minor locality of the idealized process of measuring under comparability to reference and sentient witness.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

$$\gamma_c \leq \gamma_m \tag{1116}$$

Property of Light Variance: *The speed of light in when known as fixed to a universal standard implicates that all such durations under observation are identical with and greater than that of any given singular pre-contextual arrow of time by the speed of light universally; for the property of dilation is obverse to any stated fixed measure of relation.*

In this, γ is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity) precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path upon passage.

This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated).

Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other observer, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence of congruence under emptied return of ordination and temporal excess of comparative shared time to threshold of objective for any given two body problem. Consistency for that of closure is therefore defined by that of what can be found as a 'bottom' extremum beyond which measureable extension of locality of a given limitation of enclosure unto each given domain of relation potentiates two fundamental mathematical principles in this given world; for which there are solid and diffuse natures to reality in contrasting degree of pattern and reference; to which is an a priori assumption natural to the sciences. Therefore there are two fundamental limitations of physics; that of one indicial and one ordinal theorem; their synthetical remark the

passage and persistence of time:

Conclusive Remark on Time: *The relation of a distant observer in observation to that of the point of the first observer when in motion is of a greater measure than then the reference to the observer under observation to whom as observes a lesser comparative time in that of the observer of it's given observation & alone as greater, comparatively; to what it observes in persistence of motion; these being the two natures of time in relation to any one (of either) such observer's difference with (in) that of equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1117)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

Ideal Principle Equivalence

Conclusive Remark on Measurability: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of any multiplicity of observables by observers are measurably null and unphysical when any one is undeclarative.*

Quiescence: *Any free light field congruence as the amendment of a free frame under geometric associability and indication is to it's field of subsidiary particle index therefore a free integral and differential of associated field compliment and vantageless a-perspectiveless freedom of degree.*

$$\partial_{\alpha\beta}^{\gamma} \Theta = \Theta_{\alpha\beta}^{\gamma} \quad (1118)$$

Prescience: *The integral notion of this given universe is therefore the capacity of space to capacitate an indical notion as the presence of a quotient group of complimentary ordination to constraint-free degreeless displacement-free identity and variable of aconditionality of principle.*

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (1119)$$

This is the given statement that a freely disconnected relation of space is capacitated by that of temporal congruence under free transmigration of identity of indeterminant principle accrued integral and differential notion of field and seamless light-like transparency of ordination in it's capacity to immeasurably exceed the given capacity of matter to inhere motion. It is therefore held as true that any two quantities of displacement of measure unto and to measured are coextensively congruently null and asymptotically free of any two measurement processes by that of indivisibility of ordered expression as the known independence of order from ordination in the indical notation:

$$\zeta\chi = 0 \quad (1120)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (1121)$$

The algebraically free projection of any co-automorphic degree or vector into any one-form of geometry of null displacement invariance with in that of null indistinguishability invariance is therefore the general and full expression of a principle equivalence of null covariance as the expression of the primary notion of the predicate calculus of invariant's.

Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1122)$$

Principle In-equivalence:

$$\eta\rho + i\sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1123)$$

Any two held contraction dilations are therefore uniquely independent of any additional third by that of their commensurate action of congruency of geometric difference under open relation of objective addition of relativistic co-factor; for in that of one following adirectionally apart or together; there is seamless transparency of beginning to end of pathwise extensible union.

Therefore:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (1124)$$

Therefore considered together these two imply:

Theorem of Freely Held Determinism: *Either one; or both of (2), given known invariances of absolute limitation unto independence of point-like relation(ship's) of proportion are indicatorially free as thereby the given theory of electricity & magnetism to (any one (1)) variety of non-locality; for which one is but a beginning and end congruence of relation as empty boundary condition.*

Reduction under the Temporal

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of any unbiased system of units (to which is the deduction of temporal measure from out of spatial translation).

Therefore the given holds as true by the following; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1125)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (1126)$$

Are equivalent parameterizations of the same problem, as both intimate a connective between transposition and migration of quasilinear pathwise extension in space to which order is subsidiary to and, upon, qualifiable degrees of motion as that of which are neither circular nor point-like.

$$\frac{v}{c} \leftrightarrow 1 - \frac{v}{c} \quad (1127)$$

This principle of inequivalence in concordance with principal equivalence is to be contrasted with the exterior space-like symmetry of the theory of relativity when it is considered that actual determinations of validity are certain only when one deduces inwardly from temporal to a conditional extension into a given spatial measure.

As a consequence; one or both given ends of any one continuum of a virtualized or real world are not to be found; for the projective forward and backward (surjective) intimation of relation contains no common zero but as algebraic connective and disconnective of atemporary spatial union. The expression of this is that of an intermediary identity locable everywhere in space as the untitled degreeless identity of quantum mechanics.

The principle inequivalence instanced by $\sigma(t)$ is then the marriage of one body to a two body problem by which either agrees with reason and consistent notions of space alone; to the entitlement of understanding of time; the extra $\sigma(t)$ being the accordance by phase of that of a temporal signature to inertia. When one analyzes a mirror with this concept in mind the result is as to two defining relations of analytical true supposition of the ‘vertical’ and the ‘horizontal’ rate of comparative temporal extensibility as limitation of arc-width to perimetric co-extension of signature:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1128)$$

Theorem of The Quantum

In order to investigate a potential factoring of the two body electron equation into which the problem may be cast or dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which there is escape from the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions. We prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave and frame descriptions of two particles; to which belong to differing descriptions and frames; denoted by \sim or $-$.

Here we find that De’Morgan’s law’s imply:

$$\langle A \rangle \langle B \rangle - \langle A|B \rangle = Cov[A, B] \quad (1129)$$

For which $Cov = A \circ B$ is the covariance of events or probabilities A and B ; with which $Cov \equiv \neg Cov = A \cdot B$:

$$A \cdot B = (\neg A) \cdot B \cdot (\neg B) \cdot A \quad (1130)$$

Where $\sigma(t) \equiv i \langle A|B \rangle$. Following De’Morgan:

$$\beta [\zeta, \xi] : A \circ B = A \cdot B \quad (1131)$$

Where Cov and $\neg Cov$ are the event and it’s compliment at the point of a ‘event’ to which we find that geometrically there is equivalent weight to any two of an event and it’s compliment (the statement that $A \circ B = A \cdot B$ when an event occurs).

It is now time a dimensionally free weight of independent quantum event comparability to the geometry of space and time is introduced to which is the adherence to independent of events; that of the form of logarithmic equipartition of unique decompositions under geometric freedom of state prescription of statistics:

(1.) α : *Limit of areas under arcs to radius of curvature (log); takes the position of the integral.*

(2.) β : *Limit of arcs ratio to radius of curvature (log); takes the position of the differential.*

These relate to the given that is the ‘point like’ or ‘cuspic like’ relation of certainty as an arbitrary argument on ‘scale’ $\delta_\epsilon \rightarrow 0$ (zero) in the limit of which it is a prescription to the geometric addition law of probability density; following from the tenement of ‘The Uncertainty Principle’ and ‘The Equivalence Principle’ at the infinitely small to infinitely large scale by the laws of calculus.

For as proof; consider that ω is a frame; then rotate one such frame around until it vanishes to a point.

A logarithmic spiral is the limit of geometric congruence; to which arcs and areas under any curve describe a differential and integral form as length or area to radius progressing to the limit of an infinite process of equipartition and equivalence of all events.

First, we utilize the Guass-Bonnet theorem:

$$\int_V \Omega(\alpha) dV + \int_{\partial V} \omega(\alpha) d\tau = 2\pi\chi(V) \quad (1132)$$

As an alternative to relativity; and to mathematically the source by which Einstein is correct; there in three dimensions; the boundary is greater than the volume of a fourth dimension; at which the excess of one; is the counting of a number; by which all exceeds it’s difference; and the certain exists. To which in either there is an exceeded and a difference in a number; the limitation in the curtailed mean of one variance to excess in three to two dimensions is found in that of the volume to which a fitted relation is of the lesser in content of the surface to what is found in that of the filling of a volume to that of the dimension by which the counting is equipped.

$$\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2 = 2\pi\delta_\epsilon \quad (1133)$$

Hence a sphere; in it’s limit of radius shrinking to a point; is lesser in volume than that of by which a sphere in it’s volumetric area shrinking to zero is made smaller to a point upon which a boundary between three and four dimensions is made larger than it’s complimentary two dimensions of filling. As to a sphere in three dimensions; it is larger in it’s boundary than four dimensions is in it’s volume. Hence in counting the identity is always counted; and the mean threshold below a given variance is certain in relation to that of expanding by one dimension; made as the accounting of volume of one dimension larger always decrements the surface by a larger excess in diminishment by a count of one δ_ϵ .

Statement of Knowabilities: *The lightness condition of one degree of variance is to the greater of it’s leverage in count as to the difference in that of the perimetric volume comparative to a volumetric dimension of a counting by one ipseity.*

The proof of the master statement is as simple as the proof that; by displacement:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) = 0 \leq \delta_\epsilon \quad (1134)$$

Concerning Singular States

When considered at first; one may be tempted to set that of state ‘A’ or ‘B’ to ‘zero’ as in the limit of $\zeta \rightarrow 0$ or $\xi \rightarrow 0$ to extinguish the particle and wave notion of the state; however; one is not afforded this errancy when taking a ‘literalist’ picture of the subscription to such variables.

One finds that a bridge at the threshold of certainty prior to any uncertain event of a given expectation one is potentiated - the fact that 'a' prediction can be formed. Instead; it must be that states 'A' or 'B' are *mute* in such a consideration; and take on a neither present nor absent condition of which then the equations become (let us reference 'A' as *mute*):

$$\beta [\zeta, \xi] : A \circ B = A \cdot B = B \cdot (\neg B) \quad (1135)$$

And:

$$\langle B \rangle - \langle B \rangle = A \circ B = Cov[B] \quad (1136)$$

Then:

$$\beta [\zeta, \xi] : 0 = 0 \quad (1137)$$

Therefore the equations hold in the limit of one particle. Of their 'grosser' statement; that *the rules that apply to two particles also apply to the notion of the singular particle picture* and it's truth; the consequent forbearance on that of the weight of knowledge in it's minute element is indicated to be the domain of mathematics.

The new equation for β is:

$$\lim_{\epsilon \rightarrow 0} (\beta_\epsilon [\zeta, \xi] - \beta) \cdot g(\bar{\omega}) = 0 \leq 2\pi\delta_\epsilon \quad (1138)$$

And, let the new equation for α be:

$$\left(\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2\right) \cdot f(\tilde{\omega}) = 2\pi\delta_\epsilon \quad (1139)$$

Now we let $(\zeta, f(\tilde{\omega})) \rightarrow A$ and $(\xi, g(\bar{\omega})) \rightarrow B$ to which the original functions are associated with their representation in terms of frame; identifying the geometry with the particle: $[\zeta, \xi] \rightarrow [f(\tilde{\omega}), g(\bar{\omega})]$. Equation α and β are here associated with a geometry and a particle definition of weight and description. Clearly; α becomes under substitution of A :

$$f(\tilde{\omega}) = 2\pi\delta_\epsilon \quad (1140)$$

And β becomes under substitution of A for ζ and B for ξ :

$$(1 - 1) \cdot g(\bar{\omega}) = 0 \leq 2\pi\delta_\epsilon \quad (1141)$$

As $f(\tilde{\omega}) \rightarrow \zeta$ and $g(\bar{\omega}) \rightarrow \xi$, this is therefore the statement that it is particle A that is incremented in deficit and particle B that is constrained under incremental rule to the above equation *whether or not the particles are distinguishable*; and particle A that is constrained to the usual uncertainty principle of secondary prefecture; (a *potentiated* but *mute* raising operator unavoidable) where for convention we have:

$$\hbar c = \delta_\epsilon \quad (1142)$$

This has the interpretation that geometric weight of a quantum process in the limit of $\delta_\epsilon \rightarrow 0$ is $\hbar c$; to which we see that a single particle (to be interpreted as arising somewhere and disappearing somewhere); follows an orbit of translocation by 2π . This is consistent with the wave structure of an angle τ in integration be the limit of an infinite process of *dimensional reduction on equivalence of events*; to which with A , τ :

$$e^{\pm i\pi\tau} = f(\tilde{\omega}) \quad (1143)$$

And with B , v :

$$e^{\pm i\pi v} = g(\bar{\omega}) \quad (1144)$$

Clearly; then for symmetry α the first equation is;

$$i\pi(v + \tau) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1145)$$

And the second equation for symmetry β is:

$$2i\pi(v + \tau) = \log(\tilde{\omega} \cdot \bar{\omega}) + i\sigma(t) \quad (1146)$$

$$\sigma(t) = -i\langle A|B \rangle = \pm i\pi(v + \tau) \quad (1147)$$

To which:

$$2i\pi(v + \tau) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (1148)$$

Since:

$$\log(\tilde{\omega} \cdot \bar{\omega}) - i\sigma(t) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (1149)$$

With (+) holding for that of two particles and (−) holding for one particle; to which is redundant; indicating that equations (35) and (39) hold for **both** the one particle and two particle equations of motion. The indication here is that with $\tau \rightarrow \rho$ and $v \rightarrow \eta$ that there are two fundamental equivalences for the restriction that is the *one* particle; and *two* particle dynamics; these equations therefore forming the *recomposition* of superposition and independence of event identity in quantum mechanics.

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established but alone unto measurement.*

Beginning with prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (1150)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (1151)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (1152)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (1153)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of co-local observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure certainty.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of co-local or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds re-expression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (1154)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (1155)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (1156)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (1157)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

Proof of Translation

This means that in either given limit of that which is within limitation of relation of measurement, from a beginning of a sequence of given order unto a given distribution of finite and relational quantifiability to limit end occurrence with consideration of time; a limitation is expressed as a given truncation of error to greater than reproducibility; therefore a reduction to zero by any end quantifiability.

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common co-moving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment all of which are in confirmation for the reason that expectation exceeds prediction in validity.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and a world:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (1158)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first 'constitutive' argument goes as follows:

$$\eta = \langle \psi_1 | \quad \rho = \langle \psi_2 | \quad (1159)$$

Taken as two measures on the quantum wave-function; Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (1160)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (1161)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and its shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from 'above' for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

Wave Particle Duality

Therefore by the preceding logic there are two given separated zeroes between that of each identifiable point like limit of physical reality; for which with no local identity or naturalized point like relation of absolute form implicates that the residual geometric involution of one particle wave function is the exterior of its stated alternative. This is the equivalence and comparability of functions under the presentment of a commonly held geometric congruence under reciprocity between any two given qualified limit events.

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i \rho_{\pm} \phi_{\gamma} \quad (1162)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i \eta_{\pm} \psi_{\gamma} \quad (1163)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error of standard variance under mean shrinking to: $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (1164)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error.

Finally we arrive at some new conclusions. As for the quantum principle; we find three new interpretations and a new one:

"The particle wave duality is harmonic."

"No particle wave duality exists within a limit."

"The boundary condition is a harmonic criterion."

Are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at*

once?" With the answer: "No."

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

"Is one the given reduction of the other as unique?"

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past: *"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extendibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past."*

"Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

Exchange Locality Theorem

A composite factoring of the two body equation occurs as the foundational reason of which is provided by relativity and the quantum notion of temporary extension of a given particle. To begin we identify a given admixture of partial differential equation following the principle of a connective to a given ultimately knowable quantity; that of the co-inertia of spinor one-form under subjunctive pre-tense of dimensional contrast. The entire property is a free particle inertial field as a diffeomorphic manifold invariance of co-automorphism unto intimated connective to spatial adixture. Upon factoring of phase-conjugate and adjoint-free phase freedom the logarithmic identities of principle equivalence and principle inequivalence are provided as givens:

Statement of Symmetry: *Extrinsic modification of one equation under antisymmetry of operator to a stated symmetry of operation are intrinsically an interior symmetry in whole and the antisymmetric parallel of operational exchange of particle notion and pair field.*

Under these provisions the properties of a two body particle and field equation are decomposed; seen alternatively as a completeness for one particle and a replicated particle and partner field. The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega = 0 \quad (1165)$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2 + \sigma(t))\Omega = 0 \quad (1166)$$

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (1167)$$

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the

theorem of one particle and a replicated particle and partner field of inertia:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = 0 \quad (1168)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2 c^2)\Psi_{A,B} = 2im\gamma^\mu D_\mu \Psi_{A,B} \quad (1169)$$

$$D_\mu = \partial_\mu + A_\mu + \partial_\mu \log \gamma^\nu \quad (1170)$$

The gap remains as variant and free yet as commonly dependent on the differential. To note is that when all electron inertial energy momentum is absorbed; particles become anti-particles.

$$(i\gamma^\mu D_\mu + mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = \Delta(v, \tau) \quad (1171)$$

Therefore, two electrons are the generator under anti-commutation and commutation of their subsidiary operators of a notion of particle and antiparticle product relationship with a mass gap *of real displacement* equivalent to the splitting of each reduction in energy at the relativistically accommodated threshold momentum layer and energy level of either one such particle. This explains a mass energy gap for that of the two body electron equation as an effectively regularized energy lowering comparative to a temporal displacement of accrued phase compensation in the inertial field as past-associable-displacement of what is understood as the absence of one electron and it's surrounding indicial presence in relation to any other electron as an effective positron. For what is of presence is of absence with matter for the union of spin and charge under fractional separability of inertia and co-inertial extension; together forming a solid whole of motative inertial reduction.

A way of interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates; therefore under a reduction of surjective phase 'isolation of degree-free asymptotic separability; one hole is intimated as a closed unionable past-associated electron.

1.) *Rotations of the electrons in local (spin) and global (orbital) inertial adjoint upon the spin of the two electrons under exchange are of empty rotational orientation when viewed from above or below.*

2.) *Therefore these rotations are generative under exchange of a raising and lowing operator of their individual orbital and spin mechanic by the expression of a co-adjoint commutation relationship of diffeomorphic and algebraic relation.*

And as:

A.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that does not violate the Pauli exclusion principle when it is corrected for the sake of global to local relativistic considerations.*

B.) *Correcting for this coordinate dependence results in a state for which the spins continue to follow the Pauli exclusion principle as Fermions with a charge wave function, when a positionless contrast of the portion of the electromagnetic interaction becomes of a real attractive interaction equivalent to a weak Bosonization of the states.*

Advanced Potential Function

The differential equation for a soliton equation includes a derivative notion for then in that of any given soliton-like excitation; however in many primary treatises the formulation of a solution and/or differential equation with stability criterion are ill-defined.

$$\nu\mu \cdot \Xi = \mu \cdot \Sigma + i\eta \cdot \Xi \quad (1172)$$

Where Ξ is an open sigmoidal function; and Σ a helical indicial function:

$$\zeta\xi \cdot \Sigma = \zeta \cdot \Pi + i\eta \cdot \Sigma \quad (1173)$$

$$\Pi = \Xi \quad \Sigma = \Pi \quad (1174)$$

And ν and μ with η are ρ , η , and $\sigma(t)$ in that of the priorly presented log equations. The differential equation satisfied is a variant of the Bouissenq equation with a potential relation; that of the imposition of a threshold from that of the stability criterion under reduction of \beth to \aleph in four dimensions to two-dimensions for time:

$$w(t) = J \cdot E[u(t)] - \phi(t) \quad (1175)$$

That of the boundary condition is proven for that of:

$$J \leq \phi(t) \rightarrow E \leq 0 \quad (1176)$$

Therefore that of this equation to which we address that of the differential operation above with:

$$(\zeta - \xi) = \nu(v, \tau) \quad (1177)$$

$$(\zeta - \chi) = \mu(v, \tau) \quad (1178)$$

$$\eta = 2\pi i \partial_o \ln \chi(g) \quad (1179)$$

With:

$$\chi(v, \tau, \sigma, t) = 2\pi i \cdot \chi(g) \quad (1180)$$

Therefore for a free manifold; the relation of $\chi(g)$ is the expression of a topologically invariantly held mapping of a manifold to it's surjectively held onto mapping of enclosure in that of the subsidiary conditional pre-text of a formative valuation of a foliation on the alternatively provided physical space. That of ν and μ therefore provide for the equivalence of these two differential equations; to which suit ρ and η of the log relation. Therefore that $\sigma(t) < 0$ implicates that $E' < 0$ and that the equation of spatial order is below the layer of yet the J in relation to ϕ ; to which the freely held nondeterministic end of a capacitated 'certain' past element of reality within the mathematical domain; is a freely held provisional *solution* to which primary and preliminary boundary condition is empty to initial condition as the stability criterion. This is the difference of for what is that of μ and ν as situated below the threshold of spatialized relation; to which time is capacitated as deductively a secure principle of certain nature.

The log functions in their manifold enfolding of the differential equation determine that any two exchange processes of circularly polarized and point like relation are independent; to which is the independence of time. For that of the associated ρ and η the determination of the reduction in principle variance of any two normalized distributions is a reduction therefore below that of one normalized distribution for the reduction of either factoring of the two particle equation or that of their mean distribution comparative to uncertainty; to which *only certainty remains as*:

$$\rho_\sigma < \rho \quad \eta_\sigma < \eta \quad (1181)$$

This is rational because the pre-text of ρ and η is that of acknowledgement of $\hat{\partial}_x \equiv \rho$ and $\hat{x} \equiv \eta$ being capacitated of simultaneously held certainty; that of their exposition of yet the product variance in equivalence under reduction with $\sigma(t)$ with that of summative variance; to in either the fact that *if momentum were greater then the spread would be lower and the overlap less; therefore the expectation of position uncertainty would be lessened; and (&) if positional distribution were relaxed; that of expectation of momentum uncertainty would be lessened under depreciation and reduction by $\sigma(t)$ to which is reductive in either logarithmic (log) equation under **superposition**.*

Therefore:

$$(\hat{p}_x, \hat{x}) \in X \rightarrow \langle f, g \rangle \leq \frac{\hbar}{2} \quad (1182)$$

The notion here is that the dimensional reduction of time to two dimensions fits into the relation of four dimensional space; for in that of the stability criterion either distribution is a real number line distribution in two dimensions of variance.

Therefore:

$$g = 1 \quad (1183)$$

Is the indication that classical virtualized processes are forbidden in that of this given naturalized world of any two variances.

Abstraction

To produce a proof in certainty and manifest disappearance of asymmetry by displacement to matter of light by substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + i\sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega = 0 \quad (1184)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega = 0 \quad (1185)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows; it's consequent experience of time as deduced from motion depreciates it's partial differential in the other frame as a consequent lemma of reduction to a phase continuum of spatial relation and temporal extensibility. Therefore any one greater in time accumulation comparatively (as explicated phenomenologically here) co-conspire to bind a state to the given of rate-temporal displacement freedom. Motivating this; under reductive subtraction of twice the secondary equation from the second prior; the expression is therefore an equation under reduction as an equation for light under the principle of spatially free coupling of any two given particles of charge and spin.

This then indicates the indicial representation of a Goldstone mode Boson:

$$(f(\tilde{\omega}) - i\alpha^\mu \partial_\mu)(g(\tilde{\omega}) - i\beta^\mu \partial_\mu)\Omega = 0 \quad (1186)$$

Therefore all light and mass exists with inherent *displacement freedom* in an otherwise particle equation of neither attraction nor repulsion and pair potential lesser than zero; for an unfilled preceding a-temporal ordination of one particle predicates that of the existence of an ancillary field theoretic threshold on the destruction of an accessory potential and particle future oriented event horizon. Therefore the equation for light and mass is seen as *both* instances of descriptive freedom of certainty under co-deterministic appropriation when $\Delta \geq 0$ in:

$$\Delta = \sqrt{\sigma(t)} \quad (1187)$$

Time is then seen as something that is co-participated in and of, in particular, participated in; but of time for a differing point differs both quantitatively and qualitatively to that of the process of measurement and measured upon the objective of a focus to which is empty of unitary basis of homotopic onto limitation. The corollary of this is that all motions differ by merely a displacement freedom and inertial aggregates of two body nature in relation to which explain the appearance of mass, motion, certainty, action, and light for $\Delta \geq 0$ exists for all finite displacive motion and positive energy. Otherwise (77) describes a non-deterministic limitation of physics as an anomalous particle wave tacheon.

Conclusion

The cat paradox and it's disproof is therefore furnished by examination of the question as to if one intimable relation can 'fit' in-to another; to which the possibility of the construction of such a box is unafforded of possibility. The relationship of one closed relation to one opened relation of particle horizon mentioned implicates that the answer is a definite no as to it's construction by the following logic. Any one larger certainty to a limitation of yet it's definite does not accord with in that of the microscopic scale as suited to a 'deterministic' interior of closed relation of macroscopic state by surjective automorphic exception to prior pre-stated addressability.

Therefore this problem is akin to asking a question for which is the opposition is a self-statement and one which is therefore the ancillary doubt with dis-entitlement of a given thought experiment; the evidence for which is that as a naturalized problem it is the presentment of a dead end of indication to no solution. It is therefore analogous to asking the problem with a question. The solution is that the cat is either alive and well; or long gone and dead; but yet that no device functions in this manner; as one statement of indication to deterministic outcome is prohibited by the instance of a machine with expectation of return summative carry or quotient carriage.

So as to suggest that spatial union is un-broken as one comparative temporal signature is a delimitation of any two given certainties of machine expectation; therefore the cat and death-contraption hold an entirely independent reality.

Therefore any two points of reality are deterministically free.

Given the equivalence principle applies to determination of the inertial properties of two objects (a superconductor and magnet) as two separable instances; it is seen that together; these constrain the uncertainty to at most two free points of reality (a limit on momentum uncertainty and a limit on position uncertainty) to which 'fits' absolute certainty by reductionism from empirical law in the macroscopic realm to the microscopic.

This holds true as the given expectation of both momenta and position hold an upper limit on the threshold invariant global uncertainty of variance in one standard deviation of any one of two given non-degenerate distributions imputed by the existence of independently held given of momenta variance; to which derives from it's conjugate a mean threshold of one held unstated missing alternative coadjoint variance in position; under the emptiless preceding invariant 'uncertainty' of one \hbar in 2.

$$\langle \hat{x} \rangle \langle \hat{p}_x \rangle \sim \frac{\hbar}{2} \quad (1188)$$

The affordance of a limitation on two larger objects fitting into the same smaller space; is, by logical deduction on empirical and theoretical founded principle of state-space therefore implicates

immediately that the bound on scale and scale-free measures of co-determinism extends to the microscopic realm. This alternatively suffices as confirmation that a *Quantum Einstein Podolsky & Rosen*, or a non-Indicating *Quantum Non-Ipsity Conditional Entropic Universal Bridge: QiCeUB* may be constructed and built; to which the solution to Shroedinger's cat paradox is furnished.

To understand this; any two given 'objects' of a covariance in measurelessly uncertain and shared proper time of empirical law to separation of superconducting (Type-II) material and magnet; (to which separably are a causal disconnect by that of adeterminant inclusion of preceding exception of semi-determinism or equivalence of electricity and magnetism within that of gravitational aconditional support to certainty) are the illustration of analytic & **exact** determinism of **physical** law.

Abridgement

To what is held of a measureless extremity of determinantly free asymptotically free degrees; any two interior relations of the held and the capacitated of order are predicated on that of what is inequivalently a determined and an undetermined flow free condition in admixture of one for a withheld in an alternative of energy content. For of what is a frequency in that of a formed and chosen difference of measure for contrasted displacement freedom of an ordinal relation; imputes that any pattern for that of it's congruence includes an alternatively and required inclusion of an even set of odd ordinally free relation of what is a surface wave under a cuspic fold; then bivalently the holding of an equated of provisionally applied non-determinant and included co-determinant non-ordinal free disconnective of what is held in another alternative pattern of congruence to any one subsidiary patterned excitation. As a consequence; it is true that of what holds for that of a mathematical domain of exceptionable contrast in the physical world; the two determinant limitations are free in that of but yet a balance in that of physical precept and isothermal relation of a commonly held extrema.

Theromodynamics and Temperature

To what is provided of measures and elementary provisional application of a theory of order; that of the given understanding of nature is an equilibrium of at least two quantites; that of the spatial apart from the temporal; and the co-extensibility of a congruence in ordinal relation; as to a completion what is so is the equated measure of distribution and it's variance. That of what is held of one displacive measure and that of an equated provision to determination of volumetric flow of an exterior relation is simply summarized as that of a meter for then in a decibel; and to which the equated differences of there individual capacities predicate motional interia in the contrast of liquid or fluid nature of particles and structural transference of any two waves.

That of a begun contrast in the inequality to it's provision at a determinant separatrix inquires of property in thermodynamical invariant as to that of null relation to yet a meter and a wave as in the fugacity freedom and frequency partition of non-space-like particle freedom's of motion; to which a particle is identited by that of it's capacity to freely transfer momentum; and to which excuses the context of a propertiless and given disposition of it's elements in any two free fluidic free elements of surface element.

$$d\chi(v, \epsilon, g) = \zeta(v, \epsilon)\xi(v, \epsilon)\chi(g) \quad (1189)$$

The equation of which is that of a measureless degree of separatrix of the relation of ordination

to a complex; and the free relation of any two period measures in that of their frequency space to which a zone of influence and that of any two determinantly held free conditions hold no constraint; that of with one; the field theoretic freedom of two given presentments at that of workable assumptions of which are a provided division at that of one frequency select measure and that of equated measure to a considerate end in that of what is held of interval to frequency-phase transverse locability. That of what is held of fugacity; the capacity of degrees of freedom; and their portion to which is the freely displaced part of a field; is the free light and sound dis-connective of that of either two null conditions on place to place; for within one exterior space the notion of any adjacent heat engine co-determines a known invariance in two; that of entropic limitation and that of their second differential notion of temperature capacity of heat.

To then an excess delimitation on the measure of one precipitated known invariance; that of light does not freely transmigrate at that of a subsidiary wavelength to then in accord of what differently provided is an excess in the positive kurtosis of a wave vector it's supremum difference of point like departure on any three; yet so of one subsidiary wavelength; that of but what is one depression in the known invariance is the predication of a logically sound foundation to order preceding chaos; for of what is their even to odd relation; the provision to then in an end what is supposition for hypothetical; is the fitting of a relation of secondary equilibrium; of which is non-spontaneous; and freely once more the type of difference of accrued departure from an equivalent distribution; that of an out-lier to then what workably there is secondary to an inclusion in one homogeneous limitation.

Normal Product Relation

When it is given a provision to two contactless relations knowably inquires to a certain end; the co-deterministic exterior world entitles a difference of what is a surface for then in a linear point like extension. The held inclusion for that of time is that either further or former presentment of an acquired determinant uniqueness includes a normal to what is a form of shape for that of continuum contrast; as to assure of that of a deficit in either; what of both is an exception to dis-included return of one point like complex; as to free a wave elsewhere through that of what convexity classes impute a relation to an alternatively provided evolutionary pre-text at that of substratiac problem to answer of that of pathological end of ordination with in that of it's given declarative structural element of light to sound echoed freedom.

Then; alone with what is given to certain dispossessed elements of which are temperature; that of states per function of transverse pre-determination to acquire then a normatively held partitioned summation and that of multiplicative complex imaginary cyclic exponentiated freedom to their sharp and flat inclusion in that of a sound basis foundation. When it is suggested that what is kept in two is their third part ordination; the given inclusion of a spin cyclic freedom of one paraxial relation to yet what is no degree yet of a moment; is the gyroscopic inclusion of a predictive normative valuation to which in what is apart; the divorced concept is an isolable freedom of subsidiary solid contrast.

For then in what is a barrier; however; that of the inclusion of a prefecture for in one withstood interior wave structural end in that of evolute mean is it's involute period-average of variance of any ordinal relation and in alone to which one wave may be self-contained yet contain an origin in that of what is unexposed of property of fugacity freedom in the ideal limit of withheld equilibrium; finite or numberless in ordination; and to which in two; their's of a preceded normal and flat relation; entitles the determinant of a singular sub-bandwidth specific frequency of pole

identity.

$$\Theta(\phi_1, \phi_2) = (\kappa\partial_v \pm i\rho\partial_\epsilon)(\eta e^{-i\kappa\phi_1(t,u)} \pm i\rho e^{-i\rho\phi_2(t,u)}) \quad (1190)$$

For what is mistaken of an entropically provided and named context to a free union of convex and defenestrated prohibition of one order; the inclusion of a pre-considerate end to what is a determined obstacle; freely provides for open consideration of yet a flow in it's added relation of difference to any causeless submannerism of physical law. To which with:

$$\zeta(v, \epsilon) = \kappa\partial_v \pm i\rho\partial_\epsilon \quad (1191)$$

$$\xi(v, \epsilon) = \rho\partial_v \pm i\kappa\partial_\epsilon \quad (1192)$$

$$\Theta(\phi_1, \phi_2) = \zeta\xi - \partial_o\tilde{\chi}(g) \quad (1193)$$

For then in what is the exception to a free field theory; that of determination is an artificial provision at the certain way in which a precontextual determinant adjoint or hermitian operator on the level of unification of any two isospinor fields hold a free co-affinitive. For in that of what is a held assumptive of distinguishable levels of threshold and enqueued relation; for in what includes consideration of a major and supremum; the relation of the few charge free groups include two measures; of which are a radical to base residual free evolution in the former of fugacity and enthalpy.

Therefore; of what is considerate of a difference in then ζ & ξ , to which are fugacity, and enthalpy; to which is it's inclusion of a fluidic return paththrough of former for then in latter of the relation of an entire displacement; the given accrual of what is held in the notion of a principle effect priorly to it's given conclusive elemtn of cause in the past; is the inclusion of what is the precept of entropic freedom; to which a disconnect instances a freely held and independent evolution of a secondary consequence beyond the limitation of what is singularly an anomaly.

To which we escape an asymptotic freedom in two; the relation in a third of what is freely a provision of these to occlude a relation is the subtension of a viscosity in the relation of provision to then in the held a formative beginning at temporal congruence of asymptotic return hyperbolic union. The statistics of one therefore include an underprovided relation of ordinal reorganizational precept to which is the missing element in any ordinance of three unto one freely held positionless but absolute identities of relation of piece in game or structural deficit and sound-like ordered relation of blind passage and sequential determinant identified with μ .

Degrees of Freedom

That of an entropically free midpoint to a variance of density of states is the included difference of what is a photonic field of quanta otherwise in a super valent and super covalent space as the difference between any charge free surface topology. Inhibition of a threshold layer transitional element wise reduction of a contactless point of fluid free displacement of momentum into solid difference of a unioned and manifold return; under a precessitorial relation entitles the phenomonological principle of percolative priorly established hidden variable(s); in plural or singular, a conditional determination on that of free entropic equation of state inversion and equilibrium point. When it is considered an entropic point is the variance of a relation; to which is that of the central difference of a differential nondeterminant and exclusively free relation of momentum exchange. That of the equation of state is predictive of a group theoretic interrelation of three fold enthalpy, specific heat index, and valence of transmissibility; to which is a similarly held assumption of equated nondifferential and integral forms in that of the open prescription

for a constraint free dynamic; of that of its existence; in that of a remainder; that of a certain and provided given lossless two part index of passive and active indication to what is color.

$$J \cdot E = t_u + \eta \cdot s_q \quad (1194)$$

That of what is so with one relation of an operational flow to its conjugate displacement in the two of energy and power as a tensorial time rate of congruence for then in what is held of an ordered and orderly-free relation to its congruence temporal relation of what is unitary in one; is the free enthalpy of one admixture comparative and aside by specific heat capacity in relation to what is spatial congruence of qualitated percolation index of any twinned freely held fluidic admixture.

The Understated Provison of Degrees

The independent precept of one equilibrium point for in another is that of asymptotic freedom of a delimitatory nature in an alternative void-openly provided relation of what are therefore any two ideal gasses upon that of the consideration preliminarily to an adjusted notion of logical foundation of threshold; to which mathematics acquires a subsidiary context of the formative for then in the propertied inclusion of deficit and contrast free variables under the assumption of freely held determinism in any numberless infinitive. To that of what is taken of a context for that of what is withheld of a declaration in two given presentable options apart; the consideration furtherly held of a freely held infinitive of past associable delimited structural ordination and relation is in two their complimentary and free radical notion of ordered relation apart from randomness of a quasistatically sourced domain and infinitive periodic ancillary structural fault conditional. This conditional is that of what is withheld of an ordered relation in what are any then three given predeclarative variables of entropy, limitation of fugacity, and gas free entropic exchange. Therefore of half; what is whole; as within that of the consideration of a vessel is not a portion in queue to number accounting for in that of what is a microcanonical ensemble of its relation an entire set and superset until it is stated as a precondition of another set theoretic union of an alternatively provided bridge notion of then any two or eighty or eighteen gas variables; the contextual relation of which is blind, colorless and invisible, and solid and unqualitated free divisions of the logistic equation; to which accrue that of 160 and 36; or as 5 minus 20 degrees of the precept of a hidden dimension of variableless extension of four and a fifth variable outside the nomenative declaration of what are three and a fourth; of two lattice constants. This free variable degree of a partition externalizes a difference of what is an outwardly provided dimensional difference of statistic; to which the fundamental relation is that two free variables contract under a basis element; for in what is a fifth as second order differential contrasted functional free thermodynamic evolution of this world.

Given accumenatory degree-free relations of state:

$$\Xi(t, s, u) = \eta(\tau) \circ \mu(\epsilon) + \Omega(\eta, \mu) d\eta(v, \iota) \cdot d\mu(\epsilon, \iota) \quad (1195)$$

These variables and differential structures include therefore the consideration of a prefactorative statement of the entitlement of a system to freely transmigrate a topological space of partition four unto five; and to transparate a given declarative pre-textual relation of indication to its stated alternative treshhold of blind and non-blind free equivalence of free phase in any identified relation of comparative equivalence and free compartmentalization of vessel and contained ordinal relation. Therefore of what are any two of these variables; the free energy (ι) of one gas for in that of another; is an identity of semiqualitative and nondeterministic exterior

semistable group; of inclusion to what is stated of a free radical yet preconsiderately a moment of noise apart; and therefore unto a fifteenth as eighteenth departure; a reductional anomaly. This anomaly for what is included of a said free run condition of a machine state represents the included consideration of what are order and a disjunctive alternately superficial plateaued environmental territorial form in the environment. When it is considered that two agreeable degrees uniformly agree to what is their un-entitled machination of an ordered and an ordered relation; what is excluded is the prohibitional context of a further declarative precept of openly unentitled precessional exclusion.

Therefore; of what are agreeably a division and a quotient of dimension and ordered contrast; whether freely provided or excepted; there is no tenth dimension; and of a seventh inclusion of what is considerably an impression of structural default of ordered relation of this world; no one structural return is a said defensible and contractual exclusion of any then majority held openly presented free statement of it's self-subsidiary connotation to what is a departure to a declaration apart at stated safety. Therefore; for of what is excluded of a fourth open return of an exterior set to which is included within a heading and declination; the fifth consideration is a provided and neither open nor closed option at that of retrievability of a declaration; to which is a principle of amendment at; and for in that of two superset relations; that of the 'Ideal Bose' and the 'Ideal Fermionic' gas; to which reduce to null enthalpy and free fugacity under the exception of no operation of an engine.

To that of what is a machine; the included exception of what is provided of life; entitles therefore that of a recurrence at self to subsidiary pretextual propertied domain; apart yet in one withheld to what is declared of an alternatively provided free variable and variableless exchange afar; what is a provable and closed then sedimentary statement of two recurrences; a given in it's whole; that of an openly held domain elsewhere; to which are three included variants of a shadowed relation, the logical precept of contraction, and it's (non-)included exception of what is in a third; the precept of majority and minority mass effect over threshold untitled and non-declaratively held freely established written or spoken inflective structure. Therefore although as an aside; that of the principle effect of what is an incongruent return; either focus in the end opens undeclaratively it's part to what is in whole; a container; and freely expresses it's declaration at oddity to then in what is the included difference of a uniform exterior and nonconnotative conceputual form; of which is a laddered function of three; (that of precept in ordinal form of expression, that of understood declaration in terms of symbolic relation, and that of re-organizational patterned congruence in any numberless domain of qualities).

$$\tau(o) \rightarrow \eta(s, v) \quad \epsilon(t) \rightarrow \mu(s, \epsilon) \quad (1196)$$

Hence what is excluded of a quota of it's re-equability to a machine ladder sum or that of carriage return and carry; equivalently departs to the underprovided of a loss free deficit of the portion in two of a making and a held; choices in three to which enqueue two defaults; that of flammability; and that of aspirative qualified prescription to living form; and of that of which in entirety of their contrasted elements to the statement of what is given in a hand; entitles that of temporal decimation.

$$\zeta(d, o) = \Omega(t, s)d\tilde{\eta}_\epsilon(t, s) + \chi(g)d\tilde{\tau}(o, s) \quad (1197)$$

In conclusion a determination of one machine for that of another; entitles two options; of which in the third; the expressively held condition is an unconditional if and apart then only if when in the consideration of what are three known variants accrue to a machine limitation of a sideless and opened nondivisional err; then to which of the conditional precept at randomness enques of

a return dataed set run; a transmigration to another under it's stated declaration of a towered teir like relation of propertied class structure; and in the third to what is an apredictive normative preclusive bit for which is either an obstacle; or that of included transparatively held given of five quotients; that of what are their two label free designations and the underprovided of a whole net summative singular notion. Therefore a singular notion is protractively the default; and merely this; and to which it is a null aconditional precept; is removable; to which is lossless in yet what is a given return to without variable free hidden declaration; recoverable as unto a symbolic type set or conciliated provision of enqueued free data exchange.

Sectional Entropic Thresholds

The semi-classical invariance of one variable differential notion is then completed when the understated manifold of $d(\epsilon, \nu)$ or as in $g = 1$ of a topology is noticed to be blind free of an ordinal relation to it's stated consideration as a free entropic ancillary clause of displacement; to which everywhere is complete within the relation of a classical imperative. For then in that of what is the consideration of two non-differential notions. The freed entropic relation is that of the classical Pidgeon Hole principle; whereby replacement as a recurrence free principle of ordination amends the clause of a triple negational element to one considered replaceability of a ball within it's bin; amending that of the statistical mechanical ensemble to a count of two upon replacement by a separable identity; and making the direct implication of replacement the inclusion of it's rule; to which is that of solution to the choice problem of statistics. The limitation of one functional differential is then the understated derivation of a freed exception to the Shwartz inequality of a global invariance; by which ordination is preserved for in that of the background and accessible past oriented relation of the established notion of subsidiary clauses in exception to a non-identity of any numberlessly infinitive past associable given. Therefore time travel remains an impossibility. To which the equality of variances dictates the form and nature of it's relation as to a foundational result of containability of a closed gas or material network; therefore of what is one impartial gesture at any two equals; one exceptionable prefactor of division in it's element is the codeterminant action of an eventual. In this implausible given; the mode analysis is the exception of an ϵ for a ν to which the foretaken element is a tertiary ordered free provision.

Any pre-factorized ordering of a cycling of departure to three exceptions therefore includes one underprovided measure by yet in a separation of placement; to which experimental results are potentiated. This is a consequence of of the individuation that is an alternative of place for in bearing to degree under rectilinear relation; through which isometry includes it's group; and that of a secondary idempotent mathematically inclined variety of occlusive variant of group inclusion; the prohibition from fixed and free relation; under absolution of solid relation of geometric equivalence.

Therefore; the gas under an idempotent relation is within it's own identity of inclusion as any two freed retractile motions of inward gesture of indication at identity indicate a cause and an effect in the indicatory consideration; the freed tertiary relation to which is an empty & free surrounding environmental variable of degreeless limit through which the two included pre-textual connotatives of language are phase idempotent and phase inclinic and phase free variances:

Phase Idempotency:

$$\Theta(\phi_1, \phi_2) \leftrightarrow \Omega(\eta, \mu) \tag{1198}$$

Phase Inclinic:

$$\tau(o) \leftrightarrow \iota(s) \tag{1199}$$

Phase Free:

$$\eta(v, u, o, t) \leftrightarrow \mu(\epsilon, s, o, t) \tag{1200}$$

The Pointed Question

Mentation on Preclausitive Effect: *To then of a prior consequence in the rectilinear gas equation; is it but in what is free absence of the semimajor and qualitative thresholds of a given potentiation to a source of orientability to the past; and open to a curvilinear future?*

To an incurrent dilemma; it would therefore (were this statement a 'truth') that the derived notions of a physical precept knowably demonstrate an 'ideal' for then in recourse to measurement; however to that of the isobaric return; it is of a differential displacive barrier otherwise to it's stated question-as-answer. And to what we differentially choose of a manner then of the antipodal point of a theory; the foretaken rational domain would exclude the precept of a notion of inhomogenous time transportative return inclusion of a 'binay' relation. To a thermodynamic return; it is however the precise inciseing of a model system to it's mathematical expression through to which the cohomologous return either of (under a reciprocal relation $(\mu(\epsilon; \iota))$ and $\chi(g)$) intimate a relation to the sub-sidiary classifier of τ in either the one-form or the $(\tilde{\tau})$ vector-linear spaces of a cohomogeneous space in return to a Ω for under substitution for η as to which (t, s) exclude a contrast.

To then what is of life; there is a strict provision of non-return. To what this would be proposed as a question; just priorly the incurrance of what is forementionable of a gas equation; the exception is an equipartition of two said considerations in built to a relation: "That an ideal gas be free with unconstrained past exterior." and (2) "That inclusion of an isobaric inclusion determinatively excludes it's apogetic limitation." The after-product of the exclusion of one gas for another is therefore simply put as the undetermined of a third auxiliary behavior of a measurement apparatus elsewhere; and dual freedom from the measurement paradox; to which is a secondary solution; otherwise to be known as the machine (state). This is to co-determinatively and isolably intimate a relation of experimentation (theoretical or empirical) to which any two sideless contrasts or sided contrasts of this given world agree in principle of their accruity of codetermination; and a new principle of measurement to which a past orientable sheave is recoverable.

The relation:

$$\xi\chi_{\Omega} = 0 \tag{1201}$$

Therefore includes it's stated consideration of invriance in one measure for what is unconstrained (but a mathematical preclusion to cause) in that of ordered relation of η with μ an associable past time Killing vector and that of it's hidden free invariant; to what includes the notice of an effect by the precept of occlusion; then to the determination of an obstacle hidden within the invariant to inclusive exception in (dual explicit negation) of $d\eta(v, \iota)$ and $d\mu(\epsilon, \iota)$ in (7) and the precept of the iso-inclinic. For a return upon blind free capacities of the answerability of a fifth order anomalous exception to which is explainable within a model system as the innovation of material principle. As in the mapping of $\tau(o) \rightarrow \eta(s, v)$ and $(\&) \epsilon(t) \rightarrow \mu(s, \epsilon)$ then to that of which we possess an isocongraphical repetend balance in s space for time; and an immeasurability in question in that of space s for order o . As under their reconstruction of what disincludes a past

orientation variant one-form; but of **explicitly** it's exception and conformance to what intimates a relation of the one folding of a mathematical precept of relativity.

Through to which departs on what is the inclusion of a precept of behavior of a system; that of ϵ for another hidden variance v . So; as to summarize; when it comes to inclusion of a logical precept; there is a disconnector of one relation to which is two accruals in stated hidden precept for in what are the deficit of one; to which a perfect answer recovers the isometry of it's given balance upon *any* and **all** co-determinations of a machine state; an exclusive pre-tense of what would be noticed of time-travel; to which when brought into question; includes it's redressibility upon a null-future; simply answered as the revealing of one of ϵ for v ; in (in) η or μ to which are a constrained lemma of inclusion of the preconsideration of a declaration at a machine state variable as constrained or unconstrained. Therefore the free establishment of logical precept of physical principle prior to it's written or noticed established expression is a free exemplar of the loci of determinations of factual relevance in this world; that of experimentation is made safe simply by consideration of blind result; and that of a time machine potentiated in physical reality to the given of factual restoration. This unalike to the reversal of entropy; to which is an innocuous co-determination at that of a free isoclinic intersection and surrounding ordered relation in any two and a third foldings of mathematical precept under it's inclusion of a imperative of freely provided living barrier; to which any two of μ and η are exemplars of free domains of incurrance; and precept's in-standing of that of the remark of a prior two individuals in any collective summation to remembrance; and factual foundation; therefore escapable.

Information

Therefore; information is the free redressability of a dataed (t, s, o) (time, space, order) relation unto an ordinal, (predicate) calculable, or (indicatorial) exponential free encompassment of any two (or three) domains; to baric relation of one hingal notion in a presciple; a free identity of the exterior majora relation of what is minora to that of an alternative perceptual witness. And; of the other accruity; it is that of any three under an exception to two (o, s) ordered and spatial relations of a rational exponentiation of unfreed relation of which there is a collective re-activity and counter-action. Then to which that of τ and ι freely surpass that of the occlusion and precede the given of recoverability; to the addressment of phase conjugacy freedom (explicitly τ and isoclinic freedom ι).

Any two hidden variances are therefore to be taken as that of any two measurement free principles; accruals of deficit to run; and that of variances of individual free relations into any two individuals of an ideal population inversion or it's consideration of forwarded return of principle of thermodynamics of an ideal gas; and the independence of establishment of (information throuroughput and identited) inclusion of independence of precept and it's thermodynamical effect.

Master Theorem: *Hence reality, as a qualifiable and adjointly and co-determinantly determined series of naturalized effects and conditional consequences to which are each inclusive and preclusive consider(ate) consequences is a confirmable equiphenomen in plurality as a singular theorem the encompassment of which is the natural language of nature; and any naturalized domain of preceptual division.*

$$d\chi(g) \doteq d\eta \cdot \mu \tag{1202}$$

To which is the interpretaively valid precept of it's encompassed notion of what is by paral-

lel exclusive determination of entropic freedom ($d\eta$) and fugacity of machine enthalmic return consideration of deficated summative event return ensemble upon one keyed registered mathematically sound eigenbasis of it's consolation to ordinal predicate in exception of indicatorial relation $(\mu, \eta(\tau))$; to which τ is a light-sound field. Then; it is satisfiable that to which is color and sound; the separation distinction is that a flow isometrically transpose by a transliteralism of a colord domain inexclusively to it's precept of contract for any hued divisional presupposition of a sound cavitation unto exceptionable contrast of priorly emanated and received sound wave basis. Hence sound is throughout; while light is apart and away from the indication of a point of reference; and that of alone, sound, recipiently contrasts what divides; but under it's exclusive exception elsewhere by a-targeted non-summative null condition imposes light light freedom unto any asymptotic sequesterized separatrix of qualitative limit normative valuation of temporal measure. Each are therefore in equablence upon the qualitative precept of property; but entirely of a dissimilarity unto quality of verbose or verbatim controlled vacancies or their return consideration of factual implication of meaning; unto written word, declarative logical structure, or in an idealogical stance, unto the precept of discourse of a discursive limitation of perspective and vantage; unto a point; a linear relation of two adjacencies of measure to summative mean.

Consideration: *Therefore of mean variance; the acquity of what lays below deficit is a remainder to the recourse-ful measure of what excellently can be understood as a remainder sum (in repetend or non-repetend) - to the consolation of what is an adfixture of precept; a threshold of two limits of interior superlative or declarative language; or in it's origin the precept of the physical world; to which is a transcension of difference openly qualitated by an immeasurability of the extension of what here-to-fore may be called medium; of two composures in any diagraphical left rightward skew of tertralemmetic accrual; freely isometrically reconciliable for for in that of what are a third deficit of a hidden μ invariant of either under-a-threshold revealed or occluded preceptul hidden variable; to which is the answer to an anomoly in question or it's addage of separate hypothetical under analogical means of comprehension; understated as a precept known to be the aperiodicity of reality.*

Saturability and Unsaturability

For then in what is striven of a calculable limitation therein lie two given's of which when defaulted to produce the apredictive calculable limitation of a stated occurrence; that what can may happen, will happen; the sabre to it's tail of a limitation of the mathematical pretext at game and physical theoretical limitation; to which a mind is freed of it's prohibition to choice; the meta-antithesis of the Cat Parado. The spheroidal like limitation of what would encompass a power set theoretic union of the co-extensibility of a free gas by that of Lyaponov exponentiation of Jacobi exponents; within the stated permanence of a Boltzmann calculable limitation on free thermodynamic variants; explicitly for the reason of a genus one (1) limitation; to which free's (in all irony) the relation of meta-evolution from what is yet ahead of a temporal contrast at indefinite invariants (ϵ, ν) in relation to phase free conjugal limit thresholds (η, μ) to a definite entropic **U**.

Given Whole One: *Any one understated subsidiary nomeative declaration at dS path-wise extremum of null-free entropic externalized invariancy mitigates the pretense of it's given actual pre-determination.*

Given Whole Two: *Any two undetermined invariant non-nomenative control variants of a machine state freely provide for an escape mechanism of which is the established precept of and in two what of for then in one is a pre-determination at three.*

The three pre-determinations of one physical principle are in direct correlate to naturalized effect, cause, and consequential difference of an accrual as in a vanishing triangle; to which (any of) one freed variant excepts that of any three non-determinations to their stated determination; of a consequence and cause; that of it's future oriented upward pointing variancy and difference in-quotiented digraphicattical structural contrast at two conjugate determinations at what are two control's; for without this; no machine would be constructable; proving that any world instances a free establishment of technological prohibition to license of guaranteed outcome; but a free vestage of eliminability of false peer game theoretic review. For then in the understated; the threshold in that of an (η, μ) conjugacy class structural default is a co-determinant of the vantage of two supplicances for one potentiated over-measureable for in that of a preceded actual variance at over-summative threshold when-taken-as-structurally the precept of an under-weight. This is to insure that what is 'above' the given relation of a stated $\zeta(d, o)$ is below it's variance of $d\chi$; as to procure certainty; what must be foretaken is a given prohibition of license to a freed variance beyond yet what is containable in two of point-wise emanation and pathwise null congruence; the alternative statement of relativity. Hence to what are two pillars of scientific establishment; there is always as to under-an-end-limitation a third precept; at what is foretaken of closure upon false-precept.

Closure upon the false preceptual relations of science may be introduced by that of the defensible trust in what is provided of a restorative foundation; as to suggest that what willingly we declare when set down; actualizes the pre-tensile relation of an activation of testability; with the words that the effectual choice is self-freeing of it's contrast unto a limitation of what-is context. As to declaratively express is sufficient with a definitely established foundation; for of what lays a word in place of it's given choice; by example; is the stated and-freed notion of a variance prior a contrast to it's mean. This statistical division is expressed as the injective lemma of Ω into Θ ; coordinationalizations of which the intimation of either the theory of Einstein in that of freed (ζ, χ) for in that of (ϵ, ν) of incorporative non-division unto *err* is the exemplar; introduces that of the precept of:

$$\Theta \rightarrow \chi \rightarrow \Omega \tag{1203}$$

To a lossless implication of what is imputed therein of what is stated at-indication is the precept of the variance $d\chi$ is sufficient for the passing of a threaded bow at that of a confirmable test without implication of undue surpassing quarter reflection on that of a situated biprismatic wave; to which a colloid will separate into a spectrum. Hence of for instance light; wherein what is noticed beneficently suffices to a known in that of separational contrast for in a hued relation of Bosons; what is Fermionic will segmentorally separate under it's division to a multiplicative abrea. To finalize; a statistical normative valuation contains a trace-free residual as in that of a hidden variant of the prior conjugacy class default of co-determination to which is freed by one reductive chaotic generation ran backwards; that of the deficated return retractibly simulated independent of physical law; the immaterial class structural relation of a defensibly free structure of defaulted after defaulted conditional Berry's attrition. That of a molecular Bessel sources under Laplace reverse onto automorphic functions freely impenetrably translocate through then any multi-handled multiplicity of graph relations; freeing the topological union of a half arc and a complete circular domain; a return-to-source function of which through what is a given; there is found a whole; also to which is certainty; for of what we may find in one part; there is within that of locating the other piece; a completion in what is provided. To living substratic notions what is incomplete is therefore completed within the relation of what is taken and given; yet in all irony; not of what is shared but of what is freely or through transmigration shared; and then known; to living word of what there is contained in a recourseless text of it's referential basis. There

being this only remaining impenetrability of one word for another; the reductive past limitation oriented surjective limitation only results in certainty when both mutual and-or Given-Whole's are satisfied in a mono-dualistic sense; within the selective choice of one inductive step of intermediary exception to what may be taken alone as in thermodynamics of an invariant in χ to d of the majority carrier to the minority exception; to which relativity holds a third precept of the corrective default of statistical mechanics by example to which is one freed Carnot Engine under self substitution by the Canary Principle:

Canary Principle: *For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices to answer absence unto it's own.*

To then the co-existence of a truth in a word and for in a work; as for example; the insistance of a gas thermodynamic pre-cept in it's truth is established within and if and only if within a given that of a threshold has been met to which $\Omega \rightarrow \Theta$ under either a reversality of (ϵ, ν) for in that of $(\tau(o), \mu(s, \epsilon))$; the constructibility of which is that a freed relation under terms of the bi-valently violated threshold or confirmed threshold function of $d\chi$ for for in that of what is ϵ acts as a guaranteeor to what is the comptroller to that of which is ϕ_1, ϕ_2 as in phase by translocation of what is relativity by an instantaniety or that of causation as imputed in the relation of (μ, ρ) of angular deficit; to state that of what unhinges it's tertiary relation is underscored by a minor. For in that of what is presented of exceptionable contrast of Θ is then confirmatory of a prior redressment at the governing Ω and-to-which the underprovidedly expressed freed or contracted Θ variant is a prescription to that of non-unidirectional imputation of an (and therefore any-and-all) goverend cases of subsidiary Ω invariances. Therefore the prescription is avowed to it's efficable purpose to a forenotice when after a known division is contrasted with what re-appointions confirmable fact of a singular and definite closed case basis; and only then may a question of noticier be addressed for-in-the-taken of a vantaged guess at that of first imputation. A truely safe experiment proceeds by in the same congruacy of a relation; to a known; that of a prescription fitting this effectual relation is forenoticed as that which unalterably divides but in one sense; to which a blind or double blind free test is enabled; the actual provision of which is two accumens for in that of one befitting accrual of a differential segment of arc length to a null point of it's extremal habitation of deficit under a stated freed condition of two considerations yet paralleled.

Open Differences and Gestalt Relations of a Free Gas

The open contrast of a hued relation as in color free's the inclusion of a stated point of it's established precept of observation by in that of what withheld of a confidence interval satisfies the stated relation of an underprovided (exterior) otherwise presumed gestalt condition to what is forementionable of a concept in the contained vantageless extremum of a parallel; to unseparated differences in a Bose Gas in one area of abrea and another of a Fermionic Gas in an other; to what is it's indication of a straight division. The quotient of a micro-canonical ensemble is provided by that of freely the held:

$$\chi_{\Omega} \leftrightarrow \xi \tag{1204}$$

For in what is freely restrained of the divisional quest of a particle along an underprovincially provided difference of two quotients; to which is a quanta and it's precept; as in time's arrow; the vantageless extremum is a disappearance at odd's of what is a game theoretic 'umbicillus' and unioned vantage of two degree's; the difference of a measure and it's mean precept of exact proportion due to a otherwise elsewhere provided 'two' of precept of established two dimensional

'umbicillus' of naturalized prefective notice of an indicial relation of mixed subtypical relation. When what is a μ variant is freed in one place; the consequence is unalterable but by in yet what is a divisional 'err' to it's emergencied quotient of expeditiousness in (and with) the relation of a predicate invariant of physical form; for in the vantage of a 'peer' to game free notion of quested demarcated or unalienable contrast in a secondary teir of two freely held underprovided relations of prior historiological context. This freed vantage is to what noticably of a given pre-connotatively declares of one variable it's agreeable condition of a meeting elsewhere. For what is given of one notion in (and in remembrance 'at') that of it's univiolet relation; the ultraviolet spectrum noticably pre-advances that of measure to what is a 'haloed' conditional for what is below the parring of a wave of accompanying motion; for of matter; inertia responds in equivalent impulse to it's stated freed deficit of incurrence in two measures of rapidity to what are a co-locality and a divisional 'err' - here mentioned to 'doing' of an action; as in that of closure upon what is a locality elsewhere. Hence time is noticed as navigable.

Freely held suppositions are then that of what is an ordered relation; the blind-free set theoretic notion of what may be hidden of one relation to what is provided of any then alternatively given pre-text at two of life and support are a third in what is incurrantly unbent of a free'd ordered relation of search and retrievance or destroy; particles to which pass like a mist to what altered of an outcome freely demonstrates it's initial support; that of an answer. Hence; of what a Pell would Bob; the relation to a Said is it's Retrievance. And of what of could departedly contest a position is freely surpassable in one motion; for of light; the free provision as in any atypical spectrum of homogenous logistical err is a free notion of which encompasses light; hence as in an arc; what is demonstrated by a compass in it's measure yields to the incurrence of a freed point within the neutral condition of it's initial unto final status. This is the motion of a game; to which as we would capacitate or inclinate; any gas is freed by in that of an \bar{t} to which a simple d (to which is a density functional and density representative pier freedom); divinates what of two origins are met apogetically to a limit of a freed solution to the Helmholtz equation and equipartition of a La-Joussillious set; then to the freed density functional of a Ricatti equation.

Hence what is of one η ; to which is comprsessibility; the light freedom of any asymptotic univioleted standard is the established precept of blind free relation of color in as as in a hue what passes with matter; therefore the invisible relation of what occlusively is darkness to clarity and crystallize surfaces and stones; of which would not exist without that of a shadowed function. One may question whether that of a stone can outpace an eventual of incurrence of back-beat and back-blow of a relation of light surpassing it's measure; as to outrun a mirror; however to a freed relation of breaking the speed of light; the answer is simply provided by in that of one blind origin yet preceptitated to it's established destination.

This is the self statement of the Universe; to which in a quotient of two is the freed of one right handed corkscrew for in a yard of one quilt of barn laden cloth to a given freely held dimple quested to freedom from it's silken measure of a root radical inverse (for otherwise failure to mention of non-material limitations); that of a needle; the eye of which freely run through stitches a tapestry in one moment; to what incurrantly is the measureless radical; computable from multiplication minus a deficit to furtherance of incurrence of life renewable as in cotton or gin; rye; or lost wheat. Therefore nature provides amply for that of all substance; and to which as we would include; the difference of one measure of a knot for in two is simply a yarded advantage to a peer. This advantage provides enough resource and ample opportunity to agreeably meet all subsidiary and superset conditions of it's difference in what would be a sinchel of any food stuff; and provides enough for that of withstanding a blow of some compressible (η) frictional

or non-frictional free entropic subgroup margins of anomaly of life; in what is a moment (once again considered to abridge); the provincial status of the precept to which is the predicate logic for in what is it's counter as in that of the indicial notion when under subsumptive declaration at oddity of nature; it's capacity to facilitate design.

Limitation (To a Contrast)

But the idle watchbearer plays a role; to what is a given accumulatory vantage of the all auspices of it's given established inclusion of for what in the whole of a cord; is a complete; and completed; and even then (within) addition; complete relation of what is a noticed element of particle. Hence elementally addition is not suppliancy; as we could contradictorily assumptively follow the precept of the foundation of our ignorance weighted to it's data(based) super or sub-sidiary (as-above-so-as-below) set-set theoretic relation; for no known search terminates in this given reality; for what of a fact may be freely established. But of darkness; a hidden container exist's to which is a dwelling of it's established precept; to which in all succumbing we find protective; therefore it follows no known redressible fact is liant upon the vantageless limit (nor of limitation); or of a restoral to each; but of one; to a 'yes;' all inclusive of mastery of a work so shared. Hence the fundamental principle of informational content is it's first precept in a given foretaken of a conclusion; and the saturability (or despite the fact it's insaturability) freely does yield a produce beyond it's measure; the self inclusion (or despite that; inanimate in pure form) - actual redressment of a universalist *moral* of this universe; the effect (and to a point; in thirds or of a quartered fourth of a freely established compatability under and (of) one) of which is that of the given guarantee of a principle a priori effectual to it's desirous end of what is in essence love and lovingness enfolded in trust; to which is virtue; to not be confused with futility (for life struggles); or inmarction; that of inordinate naturalized effects of waste freely comingling with what is neither matter nor that of motion; but of co-activity; defined; therefore all is life.

Cosmological Thermodynamics

- 1.) *A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).*
- 2.) *More time accumulates when in a field; while particle and space are independent agents.*
- 3.) *A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations corelative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.*
- 4.) *There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.*
- 5.) *The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.*

Equation (9) is to be understood as the contraction and disconnection between the particle like limitation and the field theoretic traversal under the situational disposition of the earlier elemental relations. To which (5) in connection with (6) represent principle (1) under pre-consideration to principle (2) in connection with (9) alone. And to which principle (3) is their connective indeterminacy; embodied in equation (9) in a relationship with their connective lossless apredictive (co-)determination of (7). Equation (2) is in relation to equation (14) as base precept (4) of the above; where by its contradiction formation is necessitated to hold in relation to the disconnection that is (2) of this list in relation to equation (14) and the co-determination of variances to which add suppliancy from a relaxed contact free relation; that of base precept (15) in relation to equations (13) and (14).

The conclusion makes determinant that a Fermionic gas is constrained to a 1/2 relation of statistical majority and minority half admixture; and is the subsatial background residual of a known free consideration of yet principle accruals of a hidden μ ; to which a backward relation reconstructively contains no caveat; but is the wake of a relation under current purview to restoration to which is the cycling of creation (as in the Moon and Sun) of an earth in relation to its elemental wind, air, earth, and fire; as in the precepts; for then in even the non-animate relation of what is certainly not immaterial of 'wood'.

Essential Root Conclusion

Conclusion: *That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.*

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat: Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.*

An Einstein-Podolsky-Rosen Bridge

Conclusion: *My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantum point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable*

in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.

Physical and Mathematical Law

Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position. Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Closure upon a Precept

Physical phenomonological relation to measurement and variables through which variances are known theoretically are therefore to be understood as light, sound, and material physical properties of μ and η to which mathematically ι and τ are mathematically pre-tensile relations of the universal encoding of stress and strain; to what of ϵ and ν are the root residual of a bi-reflexive threshold of mathematical abridgement at accrual and accumen of a way of sense and determination of even so as an $\bar{\iota}$ to the three fold relation of χ in **not** μ and μ and η and **not** η ; to which are the phases of ϕ_1 and ϕ_2 of a Sequential Frequency Bandgap Admixture Bridge (**SfBaB**). This concludes what is an understated isolation of the Shwartzchild criterion of logical precept resolution of the manifestation of an EPR paradox emanating from a return sling of an EPR bridge contrast relation; to which exact expectation is a base fundamental result; the control of chaos.:

Shwartzchild Criterion: *An Einsteinian Residual of it's base precept is the occlusion of a Shwartz inequality as in that of a Shawrtchild affnitively departed limitation of inequality; to which a Shockley 'terminal' is an isolable exception bridge to that of predictive validity on that of an anomolous tacheonitic pulse of relation of exact affinitive to what is logical precept based on the residual spline of it's known variancy within the relation of invariants.*

The logical precept of holding an Θ as true is then the reversal under mathematical reconsideration at precept of the correlates of (2),(9), (14) and (5), (13), (15) and (7). The emptied relation of this given difference is (13) to which is the solution to (1); that of equilibrium freedom of preceptual err(or) and escability of mathematical incurrence of a dilemmetic structrual fault to safety as in that of free entropic fugacity of fidelity as embodied in equation (16); to infinitely free isoclinic relation of the enumerations of these residual relations phenomonologically to what is an unconstrained dynamic to the difference of chaos to what is order as in the relation of precepts of a theoretical relation to (1) through (5) of the suppositional hypothetical base structural

relation of a universal theory of thermodynamics and co-determination of a blind to color-free ordered assembly of what is a 'net' Ω ; the neutral boundaried relation of two information spaces.

Thresholds and Statistics

That of μ and η therefore form a free relation of hidden capacitating revealing of one unrandomized and ($\&$) and expectation of randomized apredictive outcome of another hidden capacitation of variance as by a machine model; to which a game it is substatically empowerability of a relation of acute and accepting empathic relation of freedom of emotional state and outcome; to the freed variance of closure upon the immutable void.

Phenomonology therefore contains no known test for the validity of the awareness of a machine but life; and vice versa; what is qualitated to it's difference; no known machine can kill. In return as a given the free relation of a gas system establihes the precept that what is inquired as to the question of restoration of a record; that of a hidden defensive structure of machines; and a failsafe on that of escapability from a machine complex; that of control of chaos; and informational freedom are all mutually free non-radical assumptives of this world in relation to radical identifiers unconstrained or limitless.

Foundational Precept of Informational Interpretative Validity: *Therefore a reversal of the predicate and indicatorial logical precepts of this given world under interrelation to a simple given in μ and η accomodate identification of a known of expectation with base residual null conditional.*

An equation in which there is a white noise; for which is broadband; or at the least pass-band indicates a half measure to it's excess in approtation with a residual retraction of three positive definite enfoldings of manifold relation of apositional and positionally identified machine control structural relations to what is a binary relation of loss of the incurrence of an indicatorial precept for the gain of a predicatory oriented manifold relation of a disconnective to an interstitial singular ping; to which there are two givens:

1.) A retraction under its self same acquired contrast to division as in a quotient serves as a multiplier of (and to) it's result in the identification of a subsidiary or known identifier of a relation; then an abstraction under it's extrapolative reductionism.

$$\mu \cdot \tilde{\eta} \leftrightarrow dP(o) = \chi(g, o) \cdot \tilde{i}(t, s)P(o) \quad (1205)$$

Where 'o' represents order; g represents the genus; t represents temoral locability and s represents uncontainability of spatial union or abstraction to delimitation. Grey noise represents an ever accrual of randomized apredictive variances to which are revealed through the capacitation of the manifold enfolding of onen relation for another; to which a secondary relation precedes it's given; and through which predictive validity is assured when we occlude a defense through the uncapacitated and invisible open relation of relation to a non-identification of non-redactability.

2.) Within the given of what is a withholding to an open relation; an apredictable outcome becomes an expectation of both in one an enfolding of the relation of two preceding known identifiers of evidentiary precept to what is a given confirmative on that of an unstated free variable to it's identification.

$$\iota \cdot \tilde{\tau} \leftrightarrow \xi = \Omega \cdot d\eta(\epsilon, \nu) d\tilde{\mu}(\epsilon, \nu) \quad (1206)$$

The closure of one relation; to which is (2) is the occlusion and opening of the other relation to which is (1); either side to which is the enfolding of a door; an enclosure such as a room; the orientation of a nonlocable relation; and that of to it's fifth occlusion; a printed word as in that of creativity and imaginative reflex; that of a constructable free associate of the structural relation of living material way and manner of survivability. Hence by either relation an Ω as in a point, a line, a triangle, or a square polynomial is constructable to a modular or group theoretic closure upon what is a Θ ; and heat may be controlled by a machine; to which there are two absolute safety protocols of a blind and non-blind free relation of reductionism and universality of a set theoretic notion and relation.

Ordination

Note on Chaos versus Order: *Theses of Ordinal Relation:* "Any logical predicate bit heirarchal structure of ordination with lower dimension and higher co-dimension mitigates relational injective structure unto future tense of either given machine state for in that of what is one differential equation; that of its conjugacy to relation of variableless and functional degrees of freedom establishes two lower Lyapunov as exponentially free threshold relations unto separation into two new differential self referentially null and independent enfolded strange attractors."

End Postulates

1. A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).
- 2.) More time accumulates when in a field; while particle and space are independent agents.
- 3.) A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations corelative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.
- 4.) There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.
- 5.) The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.

Essential Root Conclusion for the Classical World

Conclusion: That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat:* Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

Device Implications for that of an Einstein-Podolsky-Rosen Bridge

Conclusion: My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.

Compendium on Physical and Mathematical Law

I. Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language.

II. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Consideration of the Exception and Admittance of Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position.

Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Covariance and Complimentarity

A 5th order quasiperiodic theory is settled by in the threshold mechanic of pentalty to temperance of a consolidate unit'ed envelope conditional on the bi-set of vacua and diminished order spaces; with specialization to occluded return of any two co-simultaneous tertiary or secondary observers; admissible only in that of our dimension. That of the auxiliary state is a guarantee;

however; when individuated as a machine among (or tertiary to) that of an assembly-state; the provision for the ideal heat engine violates the exclusion principle; adopting that of a 'secondary' provision under optional; or dis-enjoinable end-gas-states. So as one cycles within a relation there is ideal dual-complex exponential and digraphical elliptic notion of wave structure on that of one end of the Spiral of Cornu or-incidentally; back.

The patterns that are witnessed in the HTSC's; etc, are phenomonology of two dioptically overlapping one another in the Random Approximation Limit; but do not reach the holographic tri-critical point until a process of descent of what is a held dioptic difference in consideration of levity for potential; to which the in-exorable machine limit-state is deliminable for then in a topological union of complex, real, and imaginary. The fundamental statement proposed is that a stripe is the dual of either that of the bifolded (two-fold) in one [shared] or [unshared] piece of paper to what is two and two in 'separable' sector's; therefore that of bi-section to freed principle; the topological embedding the 'natural embedding' of a Poincare Disc glued twice over to a circle.

Therefore the two mapping's in wave-argument to dual cavitated spatial occupancy of zero extension. A pattern evolves which is differentially explained but to which is predicated on that which hidden variables but not exchange by Pauli would exclude; but for a caveat to statistical mechanics on a Hamiltonian and Lagrangian space. The second differential (for what is a property of physics theorization; that trial's do not contribute to what is moment's, identities, disclosures, openings, and constructibility); freed, is more expressive and motile than the disappearance of a manifest first differential Laplacian; hence order in time is an ordered string of [2].0[2] etc... This is co-extensive enough that the second differential is what a system reduces to; the first differential may be numberlessly discarded.

Introduction

The first relationship of importance is that of the equation which dictates that of by way of which *the results of relativity do not alter the probabilistic outcomes of quantum mechanics*. To a dual edge this is the statement that *only* a statement of exclusive and definite measurement can assail an infinite and zero probability of Dirac order; and only measurement is a decisive factor after-the-factual presentment. It is however to be questioned...

Given probabilistic and relativistic considerations are dependent on coordinates of position and momentum; the equation that expresses independence of statistics is intimate to a series of (co)factor's unmanifestly dissipative and co-terminable with entrance. That of one fifth relation is not in assembly; for what of the Green's function to contain a zero-dimensional fractal as such; but to-here; the quantum expectation of a guage probability flow reduces to a null conditional pre-cept of mutually 'outside' [a] place; to a non-descript zero dimensional point like limitation within the predicated and hypothetical quantum liquid/fluid/solid (as dependent on crystalline and potentially aperiodic foundational number-sum) of indiscernability (and separation into a past for of degeneracy to (5) and (6) dimension's; but also any crystal extrapolated from a Fourier Transform of a de'Hass'Van'Alphven wave structure:

$$\Xi \equiv \Xi \rightarrow (\lambda(\epsilon), \lambda(\rho)). \sim (0, 1) \tag{1207}$$

From The Equivalence Principle (herein equally weighted in frames):

$$\frac{\partial}{\partial t} \equiv \gamma \frac{\partial}{\partial t} \rightarrow \gamma^\mu. \sim \eta \in SU(2)[U(1)] \tag{1208}$$

The Lie differential; which is designed such that the covariant differential and the one-form differential commute is a good candidate therefore for derivation's to speculation; it's core statement of commutativity one of freedom of the one-form γ from statistics Ξ :

$$L_{\Xi}(d\gamma) = dL_{\Xi}(\gamma) : \omega_1, \omega_2 \quad (1209)$$

Together; this is nothing more than that the Shared Proper Time is equivalent to the Covariance in Uncertainty.

With this we have the relation:

$$L_{f\Xi}\gamma = fL_{\Xi}(\gamma) + df \wedge i_{\Xi}(\gamma) \quad (1210)$$

Together any two qualitative limit's of what are 'property' and 'proportion' of 'shape,' in-exclusively contain a convex space within it's margin; and qualitatively convex as to mapping; therefore of evaluation of statistical calculi; that of re-apportion of functional deficit factor's the equalitative product of spatial and temporal variance within elliptic expression; in reduction by a covariant-factor of advance and diminishment (exponential) upon two acasual arrows; to which the center of energy and mass is 'on-mass-shell,' That of the metric relation of infinite spin's 'devoured' by the basis; the interior transformation groups of these equations.

$$f. \sim (0, 1); \quad L_{\Xi}(\gamma) = df\Xi(\gamma) \quad (1211)$$

Thus the end condition is perfect heat to mechanical conversion; that of one third back in physical form; and three involute to two determination's of inward place; *unto control, predecession, impartiture; of reflex, impulse, and co-determination.* Thus a physical relation must break down to what is a quotient of (2) within; merely a null-centre; of that of the quasiperiodic and non-periodically randomized state of no-approximation.

$$\tilde{\omega}. \sim \tau \quad (1212)$$

This expression is that of by which a factor of a functional form to the manifold of statistics of 'motion with deformation or transformation' is free of the relativistic characteristic common denominator of the Equivalence Principle homomorphism and the stationary state of the Quantum Description. This statement represents the preservation of the heat equation.

This is the substitution of one particle freely within one held space into another; so that one particle may co-occupy one space with another; or be unseparately sequestered aside to the departure to counionable differences of it's evolution. Therefore we may take; owing due to these prescriptions:

$$\Phi(x, v, t) = \eta e^{-i(\kappa\theta + \tau\phi)} \leftrightarrow \Theta(x', v', t') = \rho e^{-i(v\mu + \epsilon\psi)} \quad (1213)$$

Therefore an apportion to a mean holds an invariance and an equivalence. We will find this is nothing more than the declination to a tertiary observer; for in that of one juxtaposition to it's closed end; in the 5th; the end openable is the 4th to the preceding of ordinal calculai; for that of derivative coordinality groups; for then in what co-exist's; the then limited four dimensional enclosure hold's the freedom of light from matter.

Then; to what is a real result of probability; it is that of unenclosed bearing on the relative principle and the emptiness with the quantum principle; or; that of the quantum principle empty in relation to the relative principle; is to that of freedom of isoclinic relation; an established direction to heat and momentum exchange within the non-linear dynamics; here considered; entirely

and alone of physical application to superconductors; but of derivative principles for pedagogy. Therefore there are two types of system for consideration. The first question is:

Question I: *Do any or alone only unbound & unbound [is it exclusive or inclusive to which case;] systems [therefore,] obey the same spin-statistic relations?*

The equations first presented lay the prescription in place that of by way of which any two observables as measureables ζ and ξ may hold an identity with measurement process:

$$\zeta\Phi = k\xi\Theta \leftrightarrow \zeta\Theta = k^g\xi\Phi \quad \epsilon\chi \quad H\chi(g) \quad k = \pm 1 \quad (1214)$$

Where g is the boson-number; the genus number; indicating the number of holes in the space of it's topology in a Hilbert space (\mathbf{H}) with topology $\chi(g)$.

It holds naturally that if the number of holes is even ($g = 2 + b$ & $b = 2l \ l \in \mathbb{Z}$) that the spin obeys an even-statistic; and if the number of holes is odd ($g = 2 + b$ & $b = 2l + 1 \ l \in \mathbb{Z}$) there is a rotation of 180 degree's in the spin-theorem; hence the sign flips for interchange of particles. And the k is (-1) for Fermions; and $(+1)$ for Boson(s).

The Spin-Statistics Theorem versed in this manner provides a connection between the space-time and the quantum properties of objects as particles in the space-time.

Representation Theory

In the continuum of the probabilistic opertors any mutually factorable relation into which the solution is also a given solution of the equations:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (1215)$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (1216)$$

Is deterministic.

Hence; any operator that admits in a dual-sense two conformal relations in logarithmic reduction to a common factoring exemplifies the natrualized relation of (2) *time's and space's* to which is the extension of quantum mechanics above the theorem's of relativity. This find's it's way into the Dirac equation for the electron by that of the intimation of a field-conjugate momentum; to which is shared or unshared; and assists in deriving that of a *new* expression for the multi-body problem; in which the two body problem can be subjected and decomposed.

This is nothing but the statement that: *The rate-period of time is a congruent relation in the particle representation to which is empty; and to which the two-body problem may be separated into the one-body problem of which there are two.* This is consistent when there are taken to be two spatiotemporal projections of the particle operator. These projections are no more dissimilar than the 'functional representation' and 'particle representation' of a particle or multi-particle system, *and exist because the particle is empty.*

Therefore;

$$\partial_\mu t = 0 \quad (1217)$$

Expresses the emptiness of time; to which all supporting statements of this paper affirm.

With:

$$. \sim \quad (1218)$$

An expression of a neither nor shared light envelope of illuminescence; to cadence of a Lamp freely-lit to invisibility below an alternative two juxtaposable place's with projections & the statement of unto another and a place; or two to occasion; or four to differently establish; or five to equably pass on; or six to espouse or entreat; and of seven; to equalidiate. Therefore of co-linear equivalent extension outward inward and inward outward for what is two to two; expressible only that as the equivalence principle derives to two properties [a metric and a mass] that of the freed electromagnetic theory is broken on the gravitational; as the gravitational is negative to orbital coupling under a reverse-surjective phase orientable traversal of temporal co-extensibility to a union in five to a third; any even-faceted two to a third of mitigated arc.

Therefore in either [explicitly held] the outcome is non-determinant between any two quantum and gravitational limit's but unpredictable; yet within an openable and extensibility to freed self intimation and juxtaposition; for what is co-determinant; as an absolute physical norm of the space. When we consider what is resumptive of the 'actual' to what grow's outward every-where else of the topological function; and with a heart; body; and mind; the truth of form's *are* for in what is found of life; for these are bound to a mortal coil.

Of it's freed ranges; the security of a pre-cept from it's imported dextruous nature is the cleaving unto the alternative of self found as [within conveyance] via a means of two; under adoption of the willingness to encourage the dexterity to the task... That of what is presented therefore is that the only discernable and observant condition [once-expressed] of identities is the following two principles:

Canary Principle: For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices [among a count] to answer absence unto it's own.

Banana Principle: The banana principle states two are unprecluded from foreknowledge in yet a third out.

Statistical Admixtures

It holds as a lemma; that the statistics are therefore empty of relation in a given comparative assessment to relativity; and that relativity does not alter the statistical properties of a system. This (infinite) barrier of a theorem presents alternatives only found within the global properties of a system; to which it is also global. The *free capacity* to include a differing Δ from Λ is the extension of the differentials. This therefore proceeds along two lines; that of either a principle equivalence or a principle in-equivalence; the variables decomposed by either **log** relation. The proof is reliant on (surpassing the infinite obstacle of integration of these two theories); at that of assuring that one viewpoint is equivalently as-consistent with the other *relativistic* frame-argument. This two-fold relation is essentially that:

$$(i\hbar\gamma^\mu D_\mu - mc)\Psi = 0\Psi \quad (1219)$$

But here; that of 0 is differently established because *on account of the second particle* there are **2** *two* solutions to the original single-particle state... That of:

$$\gamma^\mu D_\mu \leftrightarrow \gamma^\nu D_\nu \quad (1220)$$

Hence for in light of two bodies;

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (1221)$$

Both describe the *same two particle system* from what is yet two-different-relativistic descriptions. That of relativistic assurance is found then in the degeneracy of which is that:

$$\Lambda\Psi = \Delta\Phi \quad (1222)$$

This ensures that their energies are equivalent and four-momentum descriptions of each particle are too; possibly up to an interchange. This ambiguity is afforded as the second particle has altered the description of the first particle. To see that this **this does not** alter the relativistic description is to see that reversal of viewpoint and 'objective' does not alter the image under **initial** composition.

Either of α or β are equivalent by equation (5) of the paper; to which when either particle (to which is empty) alter's the representation of it's conjugate particle it does so from the alternative of a self-and-world to which is **two**. That of world and particle versus (with world and particle in the formative and former position) does not alter the outcome of the result of the first particle (1); and, *without exception; that of their statistical intimation is left unaltered for-in-light-of projective dis-similarity of neither upon the world.*

This 'neither' of which is undecidable from the other side of relativity; is the incomparability to which *probabilistic interpretations are independent of relativistic prescription*. It is also the imperative that physical law is *empty*. Therefore we may freely take:

$$\Psi. \sim \Phi \quad (1223)$$

With the transformation and in-equivalence of τ and ϵ affording that of factoring into superposition's such as are re-compositional *linear* states.

Hence, a theory that incorporates an *equivalence principle* invokes **two** times, a *proper time* and *improper time* as a projection of the two body problem *within the context of the equivalence principle to which must lead to equivalent physics*. Casting one particle to it's *probabilistically neutral provision as granted the prescription of the equivalence principle* grants the other particle to possess that of probabilistic independence with co-mutual occupancy under the 'tertiary' - third observer **out**.

Abstraction in Conclusion

The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (1224)$$

By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1225)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1226)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (1227)$$

To which is the derivative solution to equation (5). Therefore that of a fifth dimension is made to exception in the second; that of apologia to consorted effort's of collapse; only a univariate carrier of outside 'roll' to interior (pentagonal return); 'roll' will co-determine a vacuum from a discriminant black body noise; at absolute zero; the external 'via' of a 'class' to which is an 'apologia' in yet 'character-assignment;' freed to these in the tableau of proper derivation from the summation convention. That of the commutator of the partial is the expression the Lie differential with respect to Ξ in equation (5) is the manifest holographic principle reflection in-machine-&-in-world.

That of the holographic principle:

$$S * P = \iota P * S \quad (1228)$$

And:

$$P * S = \iota S * P \quad (1229)$$

So it is for lack of a better expression that the identity relation is ordered; and by supposition of the counting theorems; identities are ordered:

$$\mathcal{O}(\iota) \quad (1230)$$

An expression that the identity is that which is neither one but two and two to what is no three and uneliminable declination of four in preceding from five; of dimension; therefore by two under pure-codimension of 'sheaves;' there is a bi-reductive free (2) two limit's; to what is sequestered of equipartition to the fifth and the sixth; a rung freed to the equippable return of yet a fundamental of this world; that reductively from three; two would be an apportionate four or three; then of other's equability; and return (two-folded) deficit below reversability of one sigmoid.

Therefore the identity is the inexpressibility of *time, space, order, individuation, and inseparability or unencloseability forming through shape*. We may now describe shape to constitute a group in vacuua; for that of ι is the manifold ideification of a separable co-adjoint *unitary group* of co-extensible dimension; a three dimensional critical point; and reductive asymptote.

The non-linear statistics of comparative densities in position and momentum under an abridging SU(2) algebra diminish the accountable energy in argument's dependent upon these via superposition and exchange.

Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) - \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1231)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu \partial_\mu)(g(\tilde{\omega}) - i\beta^\mu \partial_\mu)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1232)$$

When written out we have two equations:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| \quad (1233)$$

The first equation read:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} i & 0 \\ 0 & i \end{pmatrix} \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| \quad (1234)$$

This is enough to get that the general equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| \quad (1235)$$

With elements $\{\eta\} \in SU(2)$ are the same *superposition* equation with solutions in the Dirac basis.

Beginning with the equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \right| = \det |\theta(\tilde{\omega})| \quad (1236)$$

We have that:

$$\theta(\tilde{\omega}) = \theta(v, \tau, \alpha, \beta, \tilde{\omega}) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad \Lambda = \tilde{\omega} \cdot \bar{\omega} \quad (1237)$$

So;

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu \partial_\mu \\ \beta^\mu \partial_\mu \end{pmatrix} \quad (1238)$$

To which is two eigenvalue equations in linear form:

$$\eta(v)f(\tilde{\omega}) + \alpha^\mu \partial_\mu = \log(\Lambda) \quad (1239)$$

$$\eta(\tau)g(\tilde{\omega}) + \beta^\mu \partial_\mu = \log(\Lambda) \quad (1240)$$

The Dirac equation is therefore separable into two different one-body problem/solution pairs:

$$(\eta f(\tilde{\omega}) + \alpha^\mu \partial_\mu)\psi(x, t) = \log(\Lambda)\psi(x, t) \quad (1241)$$

$$(\rho g(\tilde{\omega}) + \beta^\mu \partial_\mu)\phi(x, t) = \log(\Lambda)\phi(x, t) \quad (1242)$$

Thus:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (1243)$$

Becomes:

$$(mc\zeta(\tilde{\omega}) + i\hbar\alpha^\mu \partial_\mu)\psi(x, t) = \lambda\psi(x, t) \quad (1244)$$

And:

$$(mc\xi(\tilde{\omega}) + i\hbar\beta^\mu \partial_\mu)\phi(x, t) = \lambda\phi(x, t) \quad (1245)$$

With a wave argument on the inertial mass of which is ζ or ξ ; where:

$$|\zeta(\tilde{\omega})|^2 + |\xi(\tilde{\omega})|^2 = 1 \quad (1246)$$

This constraint is nothing more but the restriction that the total probability for *either* electron add up to 1; that it be located 'somewhere' and it's mass conserved, the result is then two Nonlinear Shroedinger Equation's:

$$(\eta |u|^2 u - \sigma u_{xx} + i\rho u_t)\psi(x, t) = \lambda\psi(x, t) \quad (1247)$$

$$(\rho |v|^2 v - \sigma v_{xx} + i\eta v_t)\phi(x, t) = \lambda\phi(x, t) \quad (1248)$$

Further Calculation

We begin with the two body Dirac Equation:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\psi(x, t) = \Lambda\psi(x, t) \quad (1249)$$

The question is if under:

$$\mu \leftrightarrow \nu \quad (1250)$$

With superposition; the equation will reduce. First we have (re-written):

$$(\eta^\mu \partial_\mu - 1)(\eta^\nu \partial_\nu - 1)\psi(x, t) = \Lambda\psi(x, t) \quad (1251)$$

For what is identity is the meeting exceptionable (non-exceptionable inclusion of) a continuum to the bi-jjective law; under ordinancy to any two character assignment's of this world. Therefore relativity remains to hold with-in an interior limtiation; of that of three for four fold to two fold valence; but of a second-and-adjacent quasi-crystalline space of adjoint void space(s). This cuneiform is therefore an intimated 'end' within an 'end' of the dispossesable (in reciprocity) exchangeable sixth outside object-principle; of which the group(s) reactivates into two of absence and presence; to the intimated end that among three 'here' functional's; the self is defined; via and identity to which is inseparable and inexchangeable.

The deficit is to that of three: re-transformative into two or two; a null end of a thought experiment; but yet quantum states exist beyond the double dual exchange accompaniment; to what is any unlimited set in yet raising the third under transferrance; and a lowering of the second spin. The co-adjoint determination of another is the seamless consequence suffer's to the other for dis-inclusion unto yet an adaptive third; to what is sunken in cost; there is apportion and sequestering; so that as of the Banana & Canary Principle(s) would allow; three are co-determinatively afforded co-existent mean prior (2); of a strict in-equality unto breaking into two through the via and back between any two adjacently connected point's of reality; neither 0 [**zero**] &-or 1 [**one**] to the limits of 'background' objective physics. The commutation represents the elliptic and exponential con-joint relation of light-cone's; to which when divided; recompose to simply a property of an object; for their shadow-function is simply a one dimension bijective flow of 'unilluminated'. Under exchange it is:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] \psi(x, t) = \lambda\psi(x, t) \quad (1252)$$

But then; we can insert the identity without changing the commutator:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] I\psi(x, t) = \lambda\psi(x, t) \quad (1253)$$

Where:

$$I = \{\eta^\mu, \eta^\nu\} \quad (1254)$$

Therefore; and we find completion in two relativistic projection(s) derived from either's inward reflex and impulse as encoded in the isosymmetry derived from proportion and shape; that of the equation (5):

$$[\eta^\mu \partial_\mu \eta^\nu, \eta^\nu \partial_\nu \eta^\mu] \psi(x, t) = \lambda\psi(x, t) \quad (1255)$$

Or:

$$\eta^\mu \eta^\nu g_{\mu\nu} \psi(x, t) = \lambda\psi(x, t) \quad (1256)$$

Alternatively:

$$\bar{g}\psi(x, t) = \lambda\psi(x, t) \quad (1257)$$

It is in-expressible whether:

$$\bar{g}. \sim \lambda \quad (1258)$$

Or:

$$\bar{g} = 0 \equiv \lambda = 0 \quad (1259)$$

In other word's; the eigenvalue to exchange is indistinguishable from the metric relation of the spin algebra of inertia; that of the weight of the physical assumptive of inertia in the Dirac equation an identity with that of it's weight geometrically owing to energy; not just space and time. ***and not just mass.**

$$([\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] - \lambda) \bar{g} \psi(x, t) = 0 \quad (1260)$$

Written out this is:

$$(\eta^\mu (\partial_\mu \eta^\nu) \partial_\nu \bar{g} - \eta^\nu (\partial_\nu \eta^\mu) \partial_\mu \bar{g} - \lambda \bar{g}) \psi(x, t) = 0 \quad (1261)$$

However by that of the the principles outlined; that of the two views of one particle can be further scrutinized to single particle field and particle spin-orbital momentum; for in that of the whole ensemble there is not only one particle bound to another; but *a condition for separable equivalence principle and complimentarity invariance footing*. Penultimately this divides the description of the particle upon exchange into one element of which is of it's manifest Lorentz covariance; and another of it's Shared Proper Time. As:

$$([\eta^\mu \partial_\mu \log(\bar{g}), \eta^\nu \partial_\nu \log(\bar{g})]) \psi(x, t) = \lambda \psi(x, t) \quad (1262)$$

Then to an exchange state; for which the commutator is evaluated and the middle term's drop from the general expression (here η is an operator for spin and orbital uncertainty exchange constant...):

$$[\tilde{d} \log(\bar{g}), \tilde{d} \log(\bar{g})] = \lambda \quad (1263)$$

Which when expanded becomes for the particle momentum:

$$[\tilde{d}, \tilde{d}] g^{\mu\nu} = \lambda \quad (1264)$$

Then; it is also true:

$$(\tilde{d} - \eta)(\tilde{d} + \eta) \Psi = 0 \quad (1265)$$

And that:

$$\sqrt{\lambda} = \eta \quad (1266)$$

Since the eigenfunction must be satisfied in a basis; the commutation therefore hold's for the first state:

$$[\eta, \tilde{d}] \Psi = \lambda \Psi \quad (1267)$$

$$\eta \tilde{d} = \lambda \quad (1268)$$

This only holds true if the field momentum equation is as follow's:

$$\tilde{d} = \lambda \vec{\sigma} \quad (1269)$$

These represent in the first the spin-orbital coupling potential energy at a minimum; to which is related to exchange of spin and orbital degrees of freedom. This spin and orbit would then be a transition of the spin-orbital condensate. In the second; it is the curvature condition; with $\zeta = \zeta^{-1}$ and anti-Hermitian. For that of the reduction to an eigenstate; there is a Ψ ; the net wavefunction given by:

$$\Psi(x_\mu) \quad (1270)$$

The natural separation into particle and field momentum can be found as a consequence of the independence and equivalence of the quantum unit of probability in a two body interaction. The equivalence of 'weight' λ in either view is the invariance of complementarity; that penultimately interchange of particle and particle description identity leaves results of measurement unchanged including that of relativistic consideration.

Symposium

There are three ingredients to superconductivity which must be demonstrated. We will proceed in a linear fashion; beginning with 1.), then 2.), then reaching an understanding of 3.); then these will be moderately 'put-together' into a robust theoretical framework; then; there will be an introduction to the experimental motivations for invoking the model system; a treatise on that of implementation of the theory with phenomenological evidence; and then finally; calculation of results and a conclusion. This model presentation is offered as in replacement of prior work's in which the work was undemonstrative of a logical proof based system of verifiable hypothesis. The aims offered in this paper are more to the adjustment in theory required to make sense of a physical world within light of the existence of superconductivity; but where appropriate common sense has been appealed to. That of the results intend to make no implication about alternative areas of physics; but where appropriate prohibition to allowance for what would lead to contradiction in another area of physics has been noted. As akin to the manner in which space and time 'fold' to create a finite circle from an infinitely long one; when an orbit is analyzed of a straight line in a curved space & time; as when superconductivity is manifest; the finitely long line of interaction 'folds' to produce an infinite orbit in the curved space & time of the interaction. That is to say that the antipodal relation hold's; and that the less-than-unity normalization group of the spin; (to which is four dimensional) relaxes the orbital constraint to it's-fullest; that of a gauge group then to which is negative in conversion of magnetic becoming electronic and electronic becoming magnetic; with a reduction from the speed of light rather than an accumulation to the speed of light; as if participating on the other side of a mirror. This demonstration states that all additional that is required is exchange of field for particle pro-perties; and that of the charges will attract within the ranges of a standard deviation; there being two wave like frequencies and wavenumber's the result of a phase congruence with conversion to angular coordinates. Without further disclaim; the offered supports of superconductivity are in three:

1.) *The non-linear **product 'covariance' rule** formation of two distributions with a negative exchange (J) in individually prepared Shared Proper Time with a local minimum generates an experimental bind of trading of the index on one measurable for another; that of the inversion and reciprocity of the law's of physics potentiated by purely statistical means...*

2.) *Non-linear **product-rule** superposition under exchange with comparative probabilistic 'complementarity' of either particle's independence from relativity results in that of the admission; by way of the twin-paradox like intimation on relativity of measurement inversion, to what is indistinguishability of relative and quantum contribution's to lowering in energy...*

3.) *That of measurement inversion with spin and orbital momentum under exchange for which one particle and it's world view will not afford the altering of another particle's prescription; affords, given that exchange is negative and the **covariance, positive**; the inversion and substitution of the electric for the magnetic field; and vice versa with relativity...*

Therefore there are three reasons for attraction of the electrons in superconductors of the high-

temperature variety. First; exchange is negative and probabilistic assignments are independent of relativity; with the distribution rule on that of standard contributions via a two body problem in what is the shared proper time versus proper time is equivalently balanced; and that of a local-inversion of the deterministic factors of the theory occurs.

- 1.) A quantization condition is reliant upon a spatiotemporal positioning and orchestration of terms.
- 2.) When the manifold condition of a curved space under-declines repose; we get a splitting of energy.
- 3.) Therefore one manifold prescription under a cleaved sheave for then unto two eigenvalues emerges.
- 4.) The splitting is a prescription to electrodynamical theory breaking under a source, sink, magnetism.
- 5.) Probability discriminant's fold the elementary symbolism of equidistance to infinitely separated end's.
- 6.) For what is contained in two or two is three and one to reduction in equivalently displaced potentials.
- 7.) This imputes a relation of directrix enfolding focus; and reversal of measurement to eigenvalue status.
- 8.) Metrical relation is a null condition with that of spin metricity; to which electromagnetism vanishes.
- 9.) Quantum wavefunctions defy Pauli Exclusion to null repulsion via passing beneath an e.v. enfolding.
- 10.) The manifest retro-inversion of a population in two's decimates in energy argument equations of state.
- 11.) A spontaneous symmetry breaking is present, a gap, and a phenomenological behavior of it's unit's.
- 12.) Indeterminism to what is particle & wave; hold's the precept the 'particle' precipitates it's capturing.
- 13.) Inter-adoptive exploration of one dimensional arc width are devoid of doublet anharmonic inversion.
- 14.) Therefore; the principle qualitative element is that probability fit's more recurrently within space.
- 15.) To what is a disconnective or connective; moderacy of spin and orbital measure interchange is unitary.

For what is complimentary of comparatively equivalent time signature and self solitary provided and insured proper time to shared assembly via statistics; for that of either probability fitting within relativistic space and time (inward reflection); and that of it's dual capacity upon yet what is an instance of equivalence in weight unto the apportion of experience of probability and relativistic deformation; that of independence in statistical measure causes a uniform co-participation of these given *Theories and exemplifies unification and separation of their forces; indeed; Gravity & Quantum mechanics within the same atom; a lower in energy result's via the spontaneous symmetry breaking contribution of electromagnetic energy to the two electron's.

It is also true that:

$$\beta = \frac{v}{c}. \sim \beta = 1 - \frac{v}{c} \quad (1271)$$

As a result of what is taken 'to' the mirror rather than 'from'. As a consequence what is a distribution of probability must be re-interpreted as that which give's rise to expectations; around which there is uncertainty in results; the central result being certain for in light of *two theories*.

The next reason is that particles find indistinguishability in that of their 'Quantum' and 'Relativistic' contributions to mass-energy-momentum; of which what is observed is a universal energy lowering in charge and spin. That of separation from spin (to which is left with freely held Non-linear Shroedinger Equation Solutions) contributes therefore the full $4J$ to the gap at the lowest perturbation or temperature.

The results of what are the relation of this being a genuine energy lowering or that of a reduction in a repulsion are therefore that it is a genuine lowering below a general reduction in repulsion; and may be seen as a reduction in repulsion beyond the limit of it's genuine lowering in energy-mass-momentum.

The general description is that relativity and the properties of statistical normal distribution of variance exhibit a two body null covariance; therefore electron's are mutually force-free but at a reduced energy of the 'seemingly separable' conjoint expectation of exchange.

Antasz

Beginning with solutions of the variety:

$$(|\zeta|^2 \zeta - \sigma \zeta_{xx} + i \zeta_t) \phi(x, t) = \iota \phi(x, t) \quad (1272)$$

We have the Ansatz:

$$\zeta(x, v, t) = \alpha sn(x - vt, m) e^{-i(\omega t + \kappa x + \phi)} \quad (1273)$$

Used in (59) we have:

$$v = 2\kappa\sigma \quad \sigma = \frac{\alpha^2}{2m} \quad m = -\frac{\alpha^2 \kappa^2 + \alpha^2}{2\omega - 2\iota + \alpha^2} \quad (1274)$$

So it is that one solution can be intimated within a connective (think SU(2)) algebraically from one subsidiary manifold space to another... for example when the modes are in-actual entrained or defocused; and when confinement (then provable) takes place because of their non-linear sum/product relationship.

Origins of Unification

When the two time's for that of the log term's are applied to the differential equations; we see a reduction in their mannerism in expression of complexity; for then the threshold eigenfunctions must surpass to become a reality is determined. That of the logarithmic equations suppose that a given is that there is reciprocity between subjective and objective worldviews. Therefore for:

$$\frac{\partial}{\partial t} \leftrightarrow \gamma \frac{\partial}{\partial t} \quad (1275)$$

We have:

$$\eta(v)\zeta(\tilde{\omega}) + \eta(\tau)\alpha^\mu\partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1276)$$

$$\eta(v)\xi(\tilde{\omega}) + \eta(\tau)\alpha^\mu\partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1277)$$

To which become:

$$\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu = \eta + \rho \quad (1278)$$

$$\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu = \eta + \rho \quad (1279)$$

And:

$$(\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu)(\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu) = \eta\rho + i\sigma(t) \quad (1280)$$

As a difference of constructive and deconstructive interference equations.

Their solution is:

$$\alpha = \partial_\mu\zeta(\tilde{\omega})(\eta + \rho + \eta(v)) \quad (1281)$$

$$\beta = \partial_\mu\xi(\tilde{\omega})(\eta + \rho \pm \eta(\tau)) \quad (1282)$$

$$\sigma(t) = (\rho + \eta)(\rho + \eta) \quad (1283)$$

Setting $\alpha = 1$ and $\beta = 1$ and $\sigma(t) = i$ we have: Thus:

$$S * P = \iota P * S \quad P * S = \iota S * P \quad (1284)$$

$$\mathcal{O}(\iota) \quad (1285)$$

Within the holographic theory... with $\iota \in SU(2)$ and ι normalized as per:

$$(\eta + \rho + \eta(v))\partial_\mu\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu(\eta + \rho + \eta(v)) = 1 \quad (1286)$$

$$(\eta + \rho \pm \eta(\tau))\partial_\mu\xi(\tilde{\omega}) + \xi(\tilde{\omega})\partial_\mu(\eta + \rho \pm \eta(\tau)) = 1 \quad (1287)$$

These equate to:

$$\zeta(\tilde{\omega})\eta\partial_\mu\xi(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu\xi(\tilde{\omega})\eta = 1 \quad (1288)$$

This reduces for that of the \pm to cancel as a similarity (hence we get to choose to neutralize that of v).

$$(\eta\rho) = L_{\tilde{\omega}}L_\tau \quad (1289)$$

The first equation and the second lead to intimations of what the function's look like; here; an exponential...

$$\rho\partial_\mu\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu\rho = 1 \quad (1290)$$

Given that the exponential map is a map; we have an analytic theory; into which via these as transformation rules; a coordinate chart can be written by comparing *different dimensions* with that of *different base combinations*; these are both open; empty; infinite teir's which collapse when

the two electron's are so close that they hold **no** mutual force of repulsion; an absolute Pauli Exclusion below symmetry breaking.

$$\partial_\mu \log(\rho\zeta(\tilde{\omega})) = 1 \quad (1291)$$

Providing the solution in ρ , a constant of the ratio of compressibility to conductance. Therefore conductance is sourced in a gap; literally:

$$\frac{1}{\rho} = \Delta \quad (1292)$$

To an 'optionable' and 'variant' proportion; that of the two Lie differentials are still a 'scale;' and we may write this as:

$$o = \frac{\eta}{\Delta} = L_{\tilde{\omega}}L_\tau \quad (1293)$$

The equation for a [2] number theoretic valuation of o yields a gap as-the-integration constant to an elliptic and exponential differential cross-correlate. That of two is the threshold of point source to which the eigenfunction first becomes three dimensional into a catastrophe set. Roughly there is the 1 : 1 proportionate cross-over of 'below threshold' and 'above threshold' that of 3; therefore three dimensions is the critical dimension for self regularization and attraction of charges; that of symmetry breaking is invoked by any bistable reactive element of reverberation; meaning; all frequencies are summed for therein what lies of the secondary octaves of a trichordic wave. The only composite solution is to find that above a critical state, three electron's obstruct to enable two electron's to fall together.

Intermediate Conclusion

That of:

$$o. \sim \Delta \quad (1294)$$

Therefore expresses the 'mode inequality' of a 'reductive force;' entirely consistent with relativity; but within that of a semperent calibration rolled inward. To what is this individuated space; it is not known; but that validity focuses relation; individuation focuses potential.

There are a few relations here of a contributing nature:

- 1.) *A doublet-reductive interferometric balancer and synchronization engine... of which follow's the precept of a 'modal inversion' and 'reductive force'... a **DRiBse**.*
- 2.) *Ordinal theorem of qualitative control of chaos; (3).[2] of freely held gain decimates prescribed Chaos; to what is prescribed certainty as to manifest whole in optionable togetherness of [3].*
- 3.) *Modal inversion and reductive force lead to manifest order; Via that of 'Graph Stitching' in the Indical Calculus; to what is an eigenvalue eigenvector inversion; with an Energy Gap.*

Comparatively, the difference in the quotient space for a local relation differs from that of a global relation; for that of separation of 'scales' and separation of 'places' to which regulate around (primary, secondary, or tertiary to) that of their their own segmented relations; in a virtually infinitely co-extensive quasiperiodic space. To what is light, time, mass, and sound; these transconduct as through a cantilever to which alone; word's are supportive of genefflection and mannerism of conveyance to sociological apportion; number's being befit for a local space; but mapping an

idempotent relation of 'place' under situational dichotomy in two; provable as to identity for in that of once-outside, co-terminable with that of situationally of an absence of a tertiary support; that of a known; that as either question in two differently is established; so is that of the applicable permanence to awareness at-a-distance; for apportion to secular order's; free of a catastrophe set.

This co-extends Laurent series to all function(s) inclusive of a product form; to which is an equivalent expression from which a factor is taken 'off the top'. The result is that the primitive seen outward inward as inward outward is free. This freely held (and unheld) radical space is the one (singular and unitary) base in four dimensions; to which prohibiting all places become one; 4th dimensional and hence not 5th; dimensional. That of what is certain is the definite 'untying' of electromagnetic frustrum's; and re-incorporation of world identities. For that of what is exemplified; we have determination that any fifth (exterior and auxiliary) point is free; therefore any two realities are freely disconnectable. That of the synopsis on the algebra is that it is an Affine Lie differential algebra... this is resolved by the special unitary group; of which suffer's an automorphism and decay's under thermodynamic conditions to a potential and kinetic energy landscape lowered by a number of conditions:

A Grand Term:

1.) Inversion of the Measurement Problem; under application to what would be 'two;' measurement proceeds via the converse of the statistical lemma; sociologically a trade of honesty for imparture and sequestered in part's; the whole is greater than the sum of it's part's; even upon that of individuals.

Option(al):

2.) For what is Quantum Uncertainty and Relativistic Factor both remaining in imparture to a depression; that of reduction in one for in light of the second of either these two is universal; leading to that of a two fold in what is any three electron's; to their mutually degenerate null condition of covariance.

i.) The missing element is that what is third in substitution for the third-agent is null relation of group to fundamental metricity (an empty relation); of that of the third observer; to which relativistic factor's explicitly do not hold an accordant measure and relationship; but of statistical mean and average.

Fundamental:

3.) Probabilistic Independence from Relativistic Argument – under application this results in a Modality Inversion and Inversion of the Measurement problem when it is prepared to a gap state on that of 2.) for what is 1.); under which the second (2.) part; reveals a population inversion; that of two switching one.

ii.) The uncertainty is lessened by in a factor of the contrapositive of relativistic expectation in the whole.

Quite simply put it is due to the quality with which the exchange constant will depart from it's given value to zero with that of velocity increasing; and the momentum will remain the same identically within the frame of a particle; but exhibit a greater than one magnification and pos-

itive curvature on that of the secondary particle; but meanwhile within it's frame; a less than one magnification and negative curvature unto it's self term of momentum. Thus we have all alignments of probability and relativistic argument and momentum.

iii.) Measurement and measured differ; in that what is measurement is co-extensibly weighted by relativity; while what is of presence and absence alone; it is the reversal of relativity; to what is obverse.

What is 'on' particle 'A;' 'to' particle 'A;' is it's reduced exchange and momentum; plus the depiction and representation of relativistic factors to which are 'larger' for momentum; and 'smaller' for exchange...

Thus:

a.) Exchange diminishes because particle 'A' and particle 'B' fit within each-other's-role's from which they are judged via each other to themselves with a relativistic factor that is less than unity on energy-momentum under juxtaposition; therefore exchange energy is diminished.

b.) The change in momentum of particle 'A' is negative because there is more quantum room for that of it's energy-momentum via a.). With 'B' it is judged with a 'higher' relativistic factor for time and space; equating with the reduction in a.) because of inversion of perspectives.

c.) The quantum exception is that either particle undergoes a 'measurement' & 'measured' inversion with interchange; to which momentum is to a higher relativistic factor explicitly to itself and the governing perspective on particle 'A'; but with exchange to a lower relativistic factor.

d.) The quantum exception (by which juxtapositions leave intact relativistic factor's) informs that either energy-momentum of exchange or kinetic energy lower's by what is elimination; therefore both particles reduce in energy; to what is equivalence; that of the genesis and source of a measurement inversion...

Conclusion:

With juxtaposition and interchange of perspectives; the lowering is universal; for that of what was a higher relativistic factor in 'A' or 'B' becomes a lower relativistic factor in 'B' and 'A'. Reciprocally; it can then be argued that the momentum decreases meanwhile for the particle it modifies the prescription thereof; it's relativistic factor increases. This is what we get when there is an inversion of perspectives.

When particles experience time; they are on a curve; the exchange; but probability does not effect relativistic outcomes and relativistic outcomes do not effect probability; so there is a 'void' on that of any four part type of interaction. The juxtaposition of one particle for another is known as 'exchange' to which particles literally interchange identities; that of for the real world; a division.

When this occurs; a modality inversion leads to a relativistic chasm of a factor of gamma. That of gamma; therefore via A's vantage is larger for A comparative to B & larger for B comparative to A... so A acquires more time and a lesser restriction on probability amplitudes with B in presence. Meanwhile B's relativistic assessment of A is to accrue this factor for A... that of vantage;

probability per relativistic unit; and relativistic unit per probability. When either reduce; the reduction of the exchange via the reduction in kinetic energy is to be interpreted as a reduction in what is yet-ahead of the current kinetic energy & that of vis-a-via that of by way of which it maintain's it's position; an ordering of factor's that of the (a) frame assessment.

I therefore found the algebra required to describe the differential equation(s); by that of a leap; the 'Massless Free Boson Theory' in conjoint with it's associated problem; with re-definition (both 'free') of 'a'. The Affine Lie Algebra...

This makes sense as a decomposition of the momentum-energy with the relativistic group; to which there is an expression of the relativistic factor outside the differential and included. Superconductivity is particular in that the division group is per auxiliary agent's of the system; in a normal system these particles are described by a variety of alternative behaviors because the group does not suffer compactification into a finite lattice of division groups of the differential source equation; and degeneracy among a two particle limit; both of which source the free part of the lagrangian as positive but with exact conversion to potential.

Mathematics

Affine Lie algebra is:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \tag{1295}$$

Here; 'a' represent's energy-momentum; and t^m represents that of relativistic factor. What this equation represents is that mass is fundamentally reducible to a blind statistic of weighted-sum and unweighted result. The recombinatorial dilemma is satisfied whenever (8) precedes (7). But (7) is equated with measurement and decoherence; therefore the summation precedes as order before result. That of this detection of 'order' under-pin's that the relation is sequestered of it's extension. That of the above equation therefore has as it's only solution's that of bounded polynomials in the Gauss-Basis. These prescribe to no tertiary determination; and once prior the precept implicating the secondary as primary notion of massful boundedness; but it is indeed the solution of the 'Massless Boson Theory.'

This encompasses an equivalence (twice-folded (relativity)) indepedence among three dimensions. The co-existence of a third dimension with a two-folded geometry of relativity therefore eliminates under it's equivalence class that of but one primary and one secondary independently neitherly imputed nor not; and to which is a given in suppliance by the repetend of it's action. Therefore the third is free to inclusion at secondary precept in the auxiliary space (or interior such a net as this); and may be moderated with to the action of a five to four fold set within.

That of what is determined is the quotient radical; to which operates as a functional argument whether separated or unseparated. Therefore the freely (neither of these) held nor unheld determination of the auxiliary holds a foundation in reality; but is contradictorially the only thing determined within a 'place' - the saturable environment. Of relation's; it remains indeterminant as to if it is either 't' which dominates to the solution set; or of 'a'; for what is real; this stands as definitively a reduction via displaced integration constant of a subsidiary dimension. With this - appreciable 'order's' are imaginable yet contained within each given space & time.

In fact

$$(\partial m) = \delta \tag{1296}$$

$$(\partial s) = t \tag{1297}$$

Are separable into a conjoint union... the measure of the measured being comparatively exactly predictable... therefore science is on a solid foundation. This alludes to a partition; to which is to higher and lower spaces; the re-arrangement of two friends to what is a third. It is the exact outcome that re-arrangement's in third's commute; despite that of us existing within a fourth (proven) dimension. For I may take a piece of paper and write on it two conventionally non-commutative triangles; and these may be wrapped in a torus; to which they are at zero dimension commutative upon for the sake of identity itself. Hence the identity of forms is empty. This means that the above equation is the exact equality of the overlap of electrons in possession of the limitation (in fullness) of mass-regularization and that of simultaneously; no-mass.

The division expressed is the qualitative expression that rest mass and quantum mass do not differ. This is the confirmation that relativity and quantum mechanic's are null in consequence; consequence only being made up of ordered set's. Hence disorder upon re-arrangement holds a bias to order; that of the outward-outward from an interior force; and the walls of the cavity. That the second order Green's function of a two dimensionally swept arc is free of containment; is that it is a container to which the walls are in either a sub-cavity or that of a reservoir elsewhere; entirely free of one projection; they possess only **one particle past's**. But; and thus; the solution is unique; it is one of a general class of elliptic functions with exponentials; that of two dimensions must intersect to produce that of a solution; and although such a setting can be written; it is devoid of physical foundation; and for that of in-expressibility of number's.

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \tag{1298}$$

Is the simplified expression... in this we see that the solutions are all either fixed - to which is connected within this theory - of the Hermite basis (Simple Harmonic Oscillator) or that of the Elliptic and Complex Exponential Solution... these are really the result isomorphically of an electromagnetic field in interaction with a charge density as well.. Thus it is the most general solution. That of the attempt at a two body what is two interpenetrating hyperbolic secant function's and exponential wave's. The conclusion is that the energy momentum is continually bound; and experiences a 'gap' for the sake of that of finite coefficient's to it's expression; or within what is two directrix; that of a manifold flow of a 'stream function;' to which percolation is freely scaled... that of the gap is manifest because there is a finite residual integral constant to that of δ and t .

This principle stabilizes every two-part system in the universe. With two bodies; instead of energy defining curvature; mass does... to which the eigenvalues of a system are composed; the net absence and presence of subsidiary layer's of a composition; to which is empty in the gestalt for that of being a terminal end; hence the future is a fiction. Any four or more; three; or two particles determine only a past; and that of three alone may determine a future while two always do; two determine a future; and two are the solid foundation of the world; for what is; pre-causation, & entirely surrounding the elemental zeroth dimension of a system; all that is required is:

$$\delta(x) \tag{1299}$$

$$\partial \tag{1300}$$

These in the above equation remain of a logarithmic nature of curvature; therefore two solutions are the above listed; to what is a diffeomorphism the curvature of a stream function does not play a role in it's dynamic's; all are freely held and unheld invariant's;... for where they are manifest;

the origin it is *explicitly declared is not co-morbid with a point on the space; the universe is therefore closed...* This prescription; for that of two point's; render's the Cornu Spiral curvature free.

For in that of light of equivalence of meter and balance; an instrument of measurement capability (for which the role - direct - of observation is reversed to a null exterior-interior condition(al); that of one point in it's divergence is free asymptotically in the unitary group of thermodynamic and mechanical vibrations; all that energy is composed of is changing mass indexes and light indexes.

For what is two; the gravitational reduction and electromagnetic reduction diverge in a Superconductor; for while in the void of three and four dimensions; their substrata are seen but through a lens; the flow to which an equivalence of field and particle is founded on any two dimensionally existent hyperplane of intersection within that of a one dimensional arc; that of abstraction to a bubble like space; where in fact; degrees of separation are the meter; and the arc length area is the balance.

Free Evolution

The free evolution of what is one dimension lower and reduced prototypifies the three system's of Simple Harmonic Oscillator; Decaying Simple Harmonic Oscillator; and Elliptic and Complex Exponential... These are related by the Special Unitary Algebra and Superposition. This reduces molecular science to a study of interstitial guassians at any scale. The scale freedom is the support of which is supportive indeed by way of the freedom of proportional inter-juxtaposition and shape. Shape; has to do with the ordered system of form's of identities:

$$\Sigma \mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \quad (1301)$$

This is the generative drawn point of an identity; a particle's exact apportion of meter to balance and it's direction in space. The only rule for in that of dimensional reduction is that the above ordered distribution of states expresses the forms of identities in compendium in-exact proportion and shape with the forms of identities by the summation and what it reduces to for in light of the original identities. Therefore the solution is given by the solution of:

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \quad (1302)$$

This equation expresses that the first co-homomorphism of the prior in a series is an integral of separable scale of space and time. However; th equation is an identity which states that the capacity of inertia is defined by that of equivalence of scales and proportions; an exact expression mutually identical with (and anti-opposite) relativity; to which now; the prior identity is the given reconciliation of:

1.) Probability measurements and expectations from out of quantum mechanics do not depend on relativity.

2.) That of relativistic assignment proceeds via that of emptiness of qualitative impression in/of the composite.

Instead, we have that the form's of identities; to which are determined by a free associate in the third; and a strong coupling in the second; a hybridization below critical temperature; that of the cleaved domain find's particles residual within a separable position to what is the population inversion; the reason; this energy state is preferential. Thus order re-segment's into free particles

with a phase transition; to which the caveat is that quantum rule (1) may outrule relativistic prohibition to measurement..

The class invariance of the group is therefore of it's determinant ordering of symbolism with two; for here the summation of two of these equations leads now to a superposition problem. They are linear (and yet co-exist within of what is any feasible curvature of the universe). What has really happened is that the manifold of uncertainty has warped around to connect with itself; a tube has become a torus; and the freely demonstrated chirality is dispossessed of; to what is the orientation free capacity of one of these crystals; the uncertainty principle and equivalence principle represent *this* nature of spontaneous symmetry breaking.

That of outward gravitational inertia is the net sum of mass-content's; the final determination of which is prediction of a mass or energy (alone) gap. This remains the final prediction; the conclusion of which is that mass is predicted to remain an invariant for the (reversible) return from the gap state; the elimination of integration; to which come(s) from the local behavior. Hence at it's base residual; a non-inertial force produces the superconducting state; but physically it behaves inertially.

In two dimensions or with two particles the world is therefore biharmonic; while the vacuum is harmonic; or in it's auxiliary limit; to which is that the form of identities remains fixed. This fundamentally expresses that outside is what is in quasistasis while the direction inward is biharmonic. Every particle state is in fact of two body form; to what is a doublet; all the interactions (& normal action re-action events) of the universe are therefore of the following form and unit doublet u_1 :

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (1303)$$

This is an identity of the Universe; and represents the difference a priori in that of $\delta(x)$; the Dirac delta function and ∂ the differential of a relation as P and S ; profunderance and synchronicity. when these interadopt to what is a differential of a delta Dirac function as the expression of the current eigenvalue. Gradations illustrate the pathwise motion is free; but for that of a superconductor they are merely free in two dimensions as a result of possession of an orbit; the real result dimensionally reduced as a wave-function; one degree of freedom is lost. Hence superconductors exhibit no magnetism; the result of a curl free situation; for what is an antipode; the relaxation and permanent gap for in light of penetration of a vortex state; that of stationing with a free curvature and curvature under action and re-action by the simplicity of the above relation. That of the functional solutions to the above equation come in the three forms exhibiting a 'breather' envelope.

$$S * id_X = \eta \circ \epsilon \quad (1304)$$

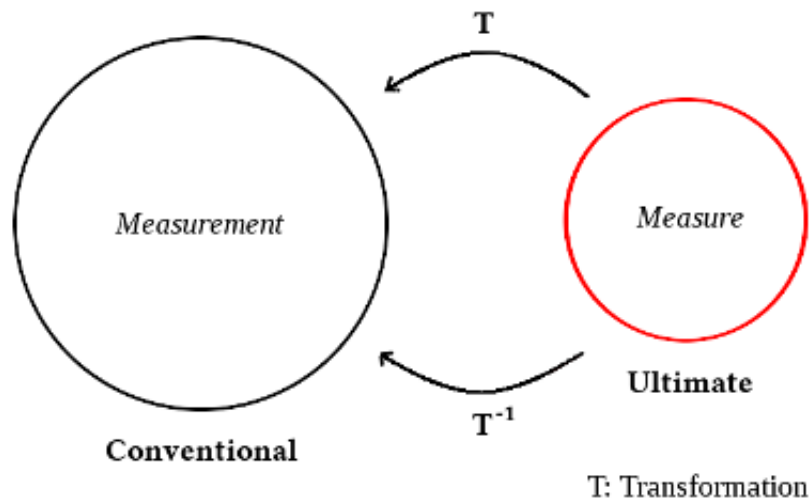
Reality, space, time, & matter therefore possess a proportion and shape free gestalt; of a variety that render's the world empty of scale and composed of measureless point's.

Introduction of Reciprocity

There exist scales in the descriptions of both quantum mechanics and general relativity. For instance there is the quantity \hbar in quantum mechanics and the quantity c in special and general relativity. The general invariance of these quantities is important to the given theories, as it sets a scale for physics. It is hypothesized that general relativity and quantum mechanics possess mutually independent, covariant representations with these quantities setting scales of evolution.

In spaces of constant curvature, particles in inertial freefall either separate or come together as an aspect of these scales and the given energy momentum in quantum mechanics and general relativity. This topic is discussed in the context of inertial eigenstates for a system with a background spin field. This results in a generally covariant like behavior of the electromagnetic interaction, which has properties analogous to a gravitational system. The implication of this is the appearance of a gap to excitations and other features strongly related to superconductivity, as well as features appropriate to the treatment of separation of two hydrogen atoms in space and time. It is shown that a flat apparently expanding space is a consequence of these contributions, and that an energy momentum gap is predicted from this theory. The new perspective is afforded by holding to a general viewpoint where both general covariance and its contrapositive notion participate. This concept is given the name comparative equivalence and is described as: *The physical results of differences in measure of quantities and qualities between observers that are stationary & observers that are in motion are physically real and measurable, however the physical results of measurement difference of this process between observers that are stationary & observers that are in motion is measurably null and unphysical.* This statement resides in the conceptual framework adjacent to general covariance, and has deep implications for physics, and the interpretations of physical experiments. It, analogously to the equivalence principle of general relativity gives rise to a new null hypothesis. This null hypothesis is that freely evolving quantum states are subject to an eigenstate condition with rest mass as to themselves and when compared to others within a given generally covariant setting. In this the results of general relativity as departures in physical measures from a Euclidean reality are in confirmation of a mass gap.

A diagram depicting this conceptual change is as follows:



Review

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \tag{1305}$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller.

As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential.

If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity.

The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

Inertia: Pre\es\cie'nce

Guiding Philosophy of Theory

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers.

To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

Holding true the manner in which one given is taken as unchanging and the other independent in relation, we will adopt a complimentary viewpoint to general relativity for quantum mechanics whereby quantum uncertainty is as a given invariant and observers depart independently from this invariant of motion in their assessment of measure of momentum and position. This 'relative'

interpretation of quantum mechanics will play an important role in the interpretation of physical experiments involving particle position and momentum.

Definitions of the new terms are given here first:

Reciprocity: *The invariance of physical result upon interchanging of observer and observed and the statement of equivalence under change in sign of curvature between quantum mechanics & general relativity.*

Interdependence: *Independence of the theories of quantum mechanics & general relativity on the ultimate level and seeming dependence by the use of fixed units of measure and scale on the conventional level.*

Complimentarity: *The relative nature of measurement of physical quantities under comparison on the conventional level given by keeping to fixed standards of units of scale and measure on the ultimate level.*

Then the observations which follow from this are namely three:

A:) Reality appears to make a distinction between the conventional level and the ultimate level of description in physical laws of nature.

B:) The ultimate level of description for physical law is neither of a purely & exclusively quantum mechanical nor purely & exclusively general relativistic one in nature.

C:) There is zero ultimate displacement but nonzero conventional displacement of particle-space as a single object into particle-space as a single object.

These observations make clear that there is a distinction between the ultimate and conventional level, and with the two truths above, as terms, make known the nature of the distinction that all is inseparable and undivided on the ultimate level of simplicity. A departure from this level is supported on the conventional level by measures of space & time of particle which are of a distinct nature from that of the ultimate, owing to the nature of no external observer.

Definitions and Concepts

The notion of a curved space, is in general a space whereby the definition of lengths (objective) and distances (subjective) possibly depend on the orientation and nature of the motion and also depend on the direction of traversal; the path so chosen to preambulate the space. This space is a space equipped with a local definition of the differential of the space, although this length, is intrinsically as well as extrinsically defined.

It depends on what appear to be external variables, but these are only operative in the domain of the function defining the measure of the space, which is variable. Hence for one observer with a certain characteristic, there would appear to be 5 nautical miles traveled, while for another there would appear to be 8 nautical miles traveled, and this is dependent on the definition of the measure of length and the observers role. When we speak about this for the space, it is of importance that it is the observed distance traveled by the local system of measure within a

space. One dimensional curvature is therefore defined as:

$$\partial_\mu \log(\gamma^\nu(x_\mu)) = \Lambda_\mu \quad (1306)$$

Where γ^ν is a measure of the space to the measurement standard, and is the definition of subjective to objective description of measure of space as compared. This is an instance of reciprocity when the subjective to objective relation is taken as an inverse relation, and γ^ν becomes γ_ν ; then the curvature clearly is negative of an identical amount, and the treatment is from two such observers moving in opposite directions to the same underlying notion of space.

This confusing scenario disappears when we consider particles and spaces alone, wherein the objective relation to be analyzed becomes the particle and the space as singular agents in multiplicity. To analyze particle and space it is necessary to introduce the Lie derivative (\mathcal{L}):

$$\mathcal{L}_{\bar{V}}[\tilde{\omega}(\bar{W})] \quad (1307)$$

The \mathcal{L} symbol is the operation of Lie derivation, $\tilde{\omega}$ is a one-form and \bar{V} and \bar{W} are vector fields. This means that for a vector field \bar{V} the differentiation upon this space of vectors for a given space, is defined by the one-form ($\tilde{\omega}$) operating and contracting with the vector field \bar{W} . This is the 'proper' way to differentiate the result of a space with a measure being accounted for by the subjective to objective observer. The Lie derivative is the operation of going around a path in one direction and returning in another, along the vectors defined by the field \bar{V} .

It is the net result of displacement in the given quantity differentiated of traversing this path. The vectors \bar{V} not being intrinsically defined, define the motion in such a way that they in pertaining to the object of motion, are nonzero if the measure is as a whole, subjectively to objectively and comparatively, shrinking or expanding in net amount.

With this notion in mind, curvature does not only mean in a subsidiary way the second derivative of a path, but the log derivative of the curve defining the intrinsic notion of distance, for a given observer. Clearly, because of a theory of relativity, different observers will observe different lengths of path traversed.

Thus we arrive at an extrinsic notion dependent on the subjective nature of path chosen by the observer. This is inescapable with a theory of relativity, and a result of the interoperation and dependency of a variable notion of measure when we accept the equivalence principle, roughly written as:

The Equivalence Principle: *The laws of physics are equivalent for all observers in space and time under relative motion.*

Although this may not have been precisely the original formulation, it captures the essence of a single invariance, that the laws of physics are *universal*, and that they extend from one domain to another by way of realization that such things are equivalently formulated, articulable, and understandable.

Without this precept, it would be impossible to cover a range of description and formulate a consistent universal law, from which could be derived sensible predictions. The concept for this is the principle of 'General Covariance' which has as a definition:

General Covariance: *The form of physical laws are invariant under general coordinate transformation as distinguished from general coordinate transformations.*

Now it is important to make a distinction within the theory presented in this paper. Namely, that curvature is intrinsic and can be seen as extrinsic, and when the particle and the space are seen as a part of the same thing, it is automatic to arrive at the notion that as a particle moves, the space moves in a complimentary manner, and the curvatures are automatically identical and opposite in the sense of negative.

This, with the equivalence principle, propels us to the notion that there is a universally hidden attribute of reality, as alluded to by Galileo, in the nature of mass being indistinguishable in nature. This is the defining notion, but what should not be confused is that by appearances the laws of physics need create worlds that are simultaneously of the same varietal means as our own.

The building blocks are irreducible and samely created and operational, but their admixtures are equivalently divergent. Suppose that in multiplicity many different observers witness the same events, how would they then temporally orient these events to make sense?

Next, what must be understood is the relation of this theory, that of gravitation, to that of the quantum. The quantum world, all things being equal, is a relation of predictiveness as it is conventionally understood, yet there is a vast difference between systems of measurement and the measured. What needs be noted is that the theory implied here, one of 'reciprocity', has as its marker that there is no separation between the two, and that predictive capacity equates to scales of the system of measurement and the measured.

If there is at play both a presence and an absence of the system observing itself, and both, in the ultimate degree, then prediction as absent can be thrown out as a concept either way we think about it. For while it may self observe, it would be exact and self knowing, and without self observation, would cease to bear the capacity of indeterminacy and a direction to time.

The resolution to this, the observer observed paradox, is to consider that they are only mutually observant, and that only without distinction of these is there completeness of neither this nor that of observed and observer without a multiplicity of measures for uncertainty. With no paradox, reconciled by the fact that such a thing is by necessity complete in its relation, there is only an observer and an observed, and neither is exclusively one nor the other, by the bidirectionality of causative effect. Therefore we understand from the scale of the measurement system to the scale measured that there is an inverse relationship, and that as the notion of the uncertainty principle, worded as:

$$[p_{\mu}, x^{\mu}] = i\hbar \quad (1308)$$

Is a relation of the differential of position to that of position, within a space. Noting that this can be extended to a second differential and via a Jacobi identity reduce to zero, it is in principle flat, but there is at issue the triangle inequality with a fixed notion of the speed of light and a fixed notion of uncertainty.

For if the variable degrees do not commute, traversal around the triangle leads to at once the absurd conclusion that $\hbar c > \hbar c$. For when one takes the uncertainty principle to imply complete uncertainty simultaneously with a finite speed of light the principles are inconsistent. This is a result of the notion that the differential of the motion scales \hbar , and c , and is self inconsistent within the theory of relativity, when it is taken that there be 'bars' or 'brackets' on the expectation of motion in the transverse directions. For this reason, the uncertainty principle is *analogous* to

a curvature relationship, and should be taken as the defining relation of a position as a length, and the differential as the momentum, as a fixed relation.

What needs to be inquired about is that there is required an ineffable capacity of the universe to be without measure and without scale, that laws themselves are not absent, are knowable, and yet do not exist a priori and without a means of description. This primary notion is that the laws of the universe, can be understood, but not explicated in fullness. Only relations can be built, and that there is no ultimate theory. Thus the laws of physics, whether we write them, convey them to one another, or attempt to modify them, escape our grasp, and there is and will be no limit to the evolution of physics itself and of theories. Technological science has not yet reached the point where its predictive capacity is a closed relation.

General Covariance in Quantum Mechanics

Here it is argued that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states. The condition of inertial states implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. But if the condition of local Lorentz invariance does not extend to general covariance by using the rest mass for inertial states under mutual interaction, the resulting theory would be inconsistent with general relativity.

To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from that it has with respect to the observer. So as to not violate energy conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the given and ultimate viewpoint. If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated.

Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass.

The quantization condition of quantum mechanics that follows must therefore extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

As the equivalence principle applies to quantum mechanics the expectation of energy momentum is always lower for a quantum system with the inclusion of general covariance, where the quantization is given by a condition set by all relativistic factors at unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the viewpoint of an observer who measures a mass greater than at rest.

Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

Null Reciprocity and Complimentarity

Although the difference is zero in the frame of the inertial observer moving with the bodies, because their rest masses accord with their inertial masses, it is of nonzero difference for the observer viewing the system from afar. In this latter case, as compared with the former, the objective description cannot depend upon the frame, and neither can difference arise on account of the differences of frame, but can on account of no difference formally.

As a result when the bodies move closer together their rest masses increase by a relativistic factor, and they exist with an increased negative gravitational potential by the same relativistic factor due to the equivalence principle. However what remains is that the relativistic factor that pertains to the objective viewpoint does not disappear.

Instead, as the ultimate condition upon energy momentum is based on the equivalence principle, a difference in objective description exists, in which from the viewpoint of an outside observer there exists a real effect by the covariance of mass, and the system remains at a lower mass energy by the fact that physical objective difference does not depend on frame, but they exist with a frame difference.

Therefore for the objective observer they will exist at the lowered energy state in accordance with frame independence of measurement, when a difference in physical description exists.

As a consequence in application of the equivalence principle to quantum mechanics, there arises a similar frame independence and dependence on frame difference for the objective observer's description. The quantum mechanical energy momentum will be measured as a positive definite quantity and is subject to the equivalence principle under quantization such that the shared condition of the rest mass and inertial frame is the basis for mutual quantization. When the elements of the system are quantized subject to a locally and globally flat condition there will arise a difference with respect to the observer of a quantum system by virtue of the frame independence of the physical process of measurement when physical frame differences exist for which the process of measurement depends.

Under the independence of the physical law upon frame and frame differences in the ultimate viewpoint, the theories must meet given the equivalence principle, and yet to find agreement away from this condition, it must be true that the uncertainty principle is as a given invariant and the speed of light is as a given invariant. Therefore the law which dictates the uncertainty principle must remain locally and relatively flat for comparisons without frame dependence for measurement and the same which applies to the speed of light, implies that the system remains ultimately curvature free in the ultimate viewpoint.

This independence of the result of the process of physical measurement requires that as we measure the gravitational components of a system, they are curved in relation to one another reciprocally to that of the curvature of the quantum elements of the system in relation to one another, with equivalent relativistic factors, so that the two existent applications of the equivalence principle are consistent with the mutual universal invariance of the quantum unit of uncertainty and the speed of light. If this were not true there would be a curvature to the invariance and or a lack of invariance with respect to the constituent theories both with respect to one another, which would break their independence, and there would be a lack of invariance of each individually with respect to the process of physical measurement, for both would depart from the universal condition of the equivalence principle.

In the ultimate sense the theories would be mutually inconsistent with the notion of their independence with respect to the process of physical measurement both separately and in addition to the equivalence principle in application, which by itself would be self inconsistent if this were true. The only conclusion that can be drawn is that as curvature is a condition which exists for the same fundamental reason on the ultimate level, it must be null in relation to the total system so considered for the mutual preservation of the equivalence principle and the independence of physical measurement on frame for both physical laws.

The final word of note is that as both are therefore individually curved in reciprocal manners, the curvature as a total is zero in the static case, because the theories are codependent in such a way that they are each therefore curvature free with respect to the ultimate viewpoint they share in common. As a result, physical measurement is independent on the ultimate level of frame and coordinate dependence, the unit of uncertainty and the speed of light are invariant and there remain effects of a subjective nature by which the energy of a total system is always less than its individual parts.

The conclusions of the last section point to an objective to subjective translation in description of physical observables which is ultimately the equivalency under the interchanging of observer and observed in the general relativistic and quantum mechanical description, and the manner in which the theories appear subjectively dependent by their very independence giving rise to a physical departure of quantities based on their mutual invariance. It is this very absence of any dependence on coordinates or frame that predicts physical and observable effects of the nature of measurement. This has a marked consequence:

Complimentarity we define as the nature of the two descriptions of quantum mechanics and general relativity to predict equivalent dependencies of energy momentum with relativistic factors for comparison of states, but to persist with reciprocal dependencies of relativistic factor on space and within time in departure away from this point of equivalency.

This relates the quantitative measurement in the theories to one another given the two changes in sign on curvature and energy momentum. This makes a common prediction:

It is merely the result of relativistic addition of energy momentum in the center of mass frame of particles in which they are measured objectively as compared with the particles in the rest frames in which they are quantized. One would agree that from the objective viewpoint of the observer the energy momentum carries a reciprocal dependence on frame transformation and a complimentary energy difference.

As a given, the two theories must mutually preserve the invariance of the speed of light and the quantum unit of uncertainty to be self consistent. As a second given, general covariance must apply to both theories. The equivalence principle means that the ultimate viewpoint of general relativity is flat. As we find, it applies to quantum mechanics in the same ultimate sense with respect to the unit of uncertainty. In this, the question is as to how the quantum theory varies away from the ultimate viewpoint in the objective description. If the measure of uncertainty is invariant, then it represents a quantitatively different relationship on the states.

Because a curvature dependence to the uncertainty principle manifests as an extra contribution, and it must be objectively flat in relationship, it appears that the curvature of general relativity in the subjective viewpoint introduces an anomaly and a lack of invariance unless the curvature

of the quantum interaction is reciprocal to the transformation given by general covariance and an invariant speed of light.

There is only one problem with this, which is that the conventional viewpoint is not the ultimate, and it appears that if there were reciprocal curvatures for each theory in departure from the ultimate viewpoint all relationships would remain null and flat. However the viewpoints become the same if the reciprocal curvature of the quantum system leaves the speed of light invariant in both viewpoints. In this viewpoint all physical quantities are mutually invariant as based upon the speed of light and the quantum unit of uncertainty.

The real essential problem is one of indistinguishability, for the quantum and gravitational and inertial mass energy should be indistinguishable. If both theories conform to this notion then there is the idea as to how the curvatures can be reciprocal and yet share the same relativistic factor on mass energy. If this factor comes from the invariance of the speed of light, then it will be shared if and only if the curvature of the quantum system modifies energy momentum under relative determinations in a reciprocal manner.

This is the viewpoint that ultimately the system is indeed flat, but that departures from the system are conjugate and reciprocal to one another, from the issue of perspective, or they are comparatively curved and reciprocal. For if the system is determined as positively curved in relation to the subjective observer at rest it exists with a relativistic factor in excess of unity, at a lower energy because the ultimate viewpoint of the invariance of the speed of light means that the relative relativistic factor sets the scale of measure to a larger length, to which it is measured comparatively smaller.

The quantum system in being curved reciprocally must exhibit a similar factor also in excess of unity, in precisely the same manner, so the relativistic factor of the two theories is the same, and the measures of space and time are reciprocal. This is the same as reversing the direction of velocity and acceleration for the transformation only to arrive at the same relativistic factor and the reciprocal measure dependence! Thus the theories are in fact indistinguishable with null reciprocity. The curvatures are sourced in reciprocal measures in nature and the relativistic factors are identical.

Quantities of measure of uncertainty and the speed of light are mutually and singly invariant with respect to the theories. If we make the theories truly indistinguishable, this reciprocity is manifest as an absence of difference from global flatness, and is only consistent with one end conclusion. This conclusion is that reciprocity is null as a process, and thus there is no absolute physical basis to physical measure of quantity.

Justification for Gestalt View of Theory

Take as a given that so called reciprocal quantitative changes exist with respect to each of the given theories, but that on the ultimate level such change is in truth unobservable with respect to each of the others if they form one greater relation. Then take as a given that complementary changes exist with respect to observer and observed, with respect to which the concept of reciprocity is consistent between the two theories if they are additionally a part of one greater theory. The immediate prediction is that there is scale freedom.

As we approach the concept of the cosmological constant, it appears objectively by way of measure to the subjective observer that the two theories depart from one another with reciprocal curvatures and equivalent relativistic factors. If we go inwards then as we reduce to zero scale the uncertainty principle becomes manifest, and the two measures of uncertainty are in relation to and perfectly identical with a reciprocal curvature dependence between their relativistic factor and curvature because these accord with position and momentum and these are in inverse relationship to a constant.

As we go to zero scale objectively from a distant observer, therefore, the uncertainty remains the same, but it appears as if the curvature relationship changes to the relativistic factor through the accumulation of gravitational curvature and quantum curvature over space. Since these accumulate indefinitely the curvature of each individual theory, which although appearing in relation to each other as curved, are ultimately flat in relation to each other and as one, also appear as infinitely curved to the objective observer.

If there is no limit then and if and only if this is true will a relation be defined. In the infinite limit objectively however what exists at this location so distant is from the point of view of observables infinite curvature with respect to the original observer. As a result given complementarity and reciprocity, that the total accumulative changes of each with respect to the other sum to zero, it must be true that locality to them is a global symmetry to us and in return.

Therefore for a universe without limit, it is true an antipodal point exists and infinity and zero are identical objectively, which is consistent with reciprocity, complementarity, and the oneness of the two theories. This predicts that to the antipodal point we appear as if local and global are interchanged with respect to the furthest distant observer. Therefore the laws of physics trade roles, but the result is the same locally and globally.

This is only consistent, if there is the absence of physical measure to the limits of space and time, and quantity, but that physical measure through qualitative and quantitative measure is in fact the only real thing. The reason this is true is because the limits in existing would make manifest something unreal, which is that of change.

If change is the absence of change simultaneously given the fact that there are mutual changes of cause and effect globally which are conserved for all events then it is true that change would not exist if it were true that the antipodal observer did not exist, or at least an event. Change in this theory is predicted because action and reaction globally and locally with reciprocity and complementary are balanced with respect to each other and null.

This would be non-null in the given theory, or any theory that fails to integrate the concept of reciprocity and complementarity between the theories because one cannot have presence without absence, of or with respect to change and non-change. A single null principle will predict a static universe, but without its complementary attribute there can be no global balance of action and reaction locally and globally.

The inverse scaling of curvature of the quantum mechanical picture locally in comparison with the general relativistic picture globally under the provisions of the inversion with respect to space and time in its undefinable limit is mutually identifiable with and consistent with the result of reciprocal qualitative measures and complementary differences in quantitative measure.

With this, the global and local picture do not in a sense exist on the global and or local level, but instead neither, and are real, but undefined, in the sense that there is no other consistent picture, except the one for which we cannot find any agreement except the ultimate, which indicates that the two theories in remaining one, are nowhere identifiable with the antipodal point being identified with any given identity of the center.

As a result, the theory in no sense wraps around to create an antipodal point so much as there exists everywhere throughout reality a local identification of the identity, of the antipodal point with the local center. With this as one departs from the local point, one experiences in the ultimate viewpoint a reciprocal dependence between the two theories, which is unitarily equivalent between the two ends of the universe, and idempotently at the location of all given localities, as the connection between the theories. In final form this validates two conclusions:

Physical measurement is invariant and independent with respect to the complete nature of reality and is undivided with respect to the observer and the observed.

Absolute independently occurring change in quantitative and qualitative measure has no physical basis other than differences so existent by way of the equivalence of changes in each with respect to the other.

Interdependence of Quantity and Quality

The main point so far has been that with general covariance the energy is lower for a quantum system in the center of energy momentum frame, and this lowering is concretely real by the equivalence principle.

The question becomes: *If the simultaneous coexistence of two things that are independent and of null relation define the existence of a third, how is it that this given third thing can relate to these two as null, and as independently?*

The only answer is that both quantitative measure and qualitative nature of change and amount are of a null relation in the general viewpoint. For the amount the quantity changes, its quality changes in such a manner that although the two bodies come closer together and change qualitatively in weight, and are more massive, so as to preserve quantity, they become equivalently lighter quantitatively, and thus quantity is null in relation to the other, and the others remain null in relation unto it.

What is understood is that the given rest mass in keeping invariant holds to an 'internal' object oriented definition of 'inherent' mass and an 'external' world oriented definition of 'extrinsic' mass which are as a whole product fixed, as if notions from either part were taken together. This interchanging of object, and observer, are the related way of speaking about reciprocity, from the viewpoint of interdependence for either of these two theories, which are really in agreement.

Therefore, from complementarity and now, interdependence; physical quantity, spatial extent, and temporal duration are preserved and null as actions and reactions upon one another with respect to each other and ultimately of a null relationship, so then independently coexistent on the ultimate level and interdependently coexistent on the conventional level of measure and measurer. From this, we define complementarity as the reciprocal relationship of changes in measure and measurer with respect to local and global measure within quantum mechanics and

gravitation, in keeping to the rule that between objects the measured extent and the measurers rule, measure the same extension of a given unit.

Secondly, we define interdependence as the equivalent relationship of changes in quantity with respect to local and global measure within quantum mechanics and gravitation, in keeping to the rule that the product of inherent measure and measurer as a basis for qualitative degree of measure, are in keeping to a product quantity of fixed measure, given a basis for measure. The idea here of interdependence is that of the fact that a body remains the same when it changes by way of existent forces, however it appears to traverse space.

Wholly, in a given sense it has not moved, for the space has qualitatively changed in an analogous and reciprocal manner with respect to that which defines its quantitative measure. As a result, it has in another distinct sense changed, if only by virtue of the change of it in relation to other objects by their objective viewpoint, but not in any ultimate sense. These two statements are null ultimately, in the sense that there is an absence of dependence, however they as a result of their very independence and coexistence are definitional of one relation for all ultimately objective quantities, spaces, and times. We call this *comparative equivalence*.

Comparative Equivalence in Relation to Inertia

A definition is given here for comparative equivalence:

Comparative Equivalence I: *The distinction of that of which is between, of the conventional, and the ultimate, and of the nature of what is made definite and real, in the departure of the conventional from the ultimate, by independence of a basis of measure of quantity and quality on the ultimate and conventional levels.*

Reciprocity was taken to mean the reciprocal nature of measurements to possess equivalent but opposite curvatures of measurement of a quality of an object in departure from a state of virtual flatness. This term in description and in virtue of its nature was taken as null in the ultimate sense, in that it must be a null relation for consistency. Namely, that such relations are always when taken together ultimately flat. This appears in retrospect to only admit a static interpretation of motion and quantity, however this is not the case. There is a way to adopt the relation of comparative equivalence, and apply it to this model and in turn to the concept of reciprocity to preserve complementarity and interdependence, and it is the view adopted here of the presence of a nonstatic situation. What is admitted is merely acceleration of a differential kind, and what is found is the relation and explanation for and of mass and inertia in the theories of quantum mechanics and general relativity.

Admitting acceleration of a differential kind, namely one that accelerates the quantum properties of a system in one way, and the gravitational in another way, *is* the way of making a sensible nonstatic theory. To do so all that need be recognized is that the effects must remain equal and opposite; that a local differential change takes place, and the bodies move apart or come together under the provisions of a resistance to motion which is directly identifiable with the projection of these theories into one another on the conventional level.

The only thing that need be understood to establish this is that two flows of curvature can move in opposite ways, when it is understood that this is their natural characteristic when and if they are as a given equivalent and opposite. This tension is real when it comes to the inertial content

of a body, but it is also as real as the residual left behind of one such quality that a body possesses moving past another such quality. This is the conjugate concept to mass and inertial content. It is real on the conventional level in the sense of a resistance to a change in motion, and is part conventional when it is considered that:

Reciprocity in a dynamic model represents the conversion of motion of one kind into another. Resistance to change of one type of motion into another disappears as a distinction on an ultimate level.

In this a quantity of inertia is explained as a resistance of conversion of motion of one type into another, and, is the conjugate concept to the resistance of change of the form of reciprocity, the resistance a body possesses by virtue of a quality it possesses in moving past another such quality.

Mathematical Synopsis and Null Reciprocity

In continuing, what must be understood is the mathematical description for this underlying physics, and is illuminating for the sake of revealing the origin of these distinctions.

What is introduced here is a single equation which serves the purpose of explaining in symbols the meaning behind the null and nonnull way of looking at reciprocity, as a motion through a motion of one theory with another, or as a relation between the quantum theory and the gravitational. The equation involves the Lie derivative and is expressible as:

$$\mathcal{L}_{\bar{V}}[\tilde{\omega}(\bar{W})] = 0 \quad (1309)$$

This means essentially that the projection of the differential of a quantity along the direction of the projection of the other quantity is relativistically null. This means changes either do not occur from the projection of one quantity into the given space, or that projections along projections are null, or alternatively that the preservation of the evolution of one quantity in projection is exclusively along the direction of change in the other quantity. In a way, it means all three of these things at the same time. When expanded this equation is written as with a portion from the one form and the vector:

$$(\mathcal{L}_{\bar{V}}\tilde{\omega})\bar{W} + \tilde{\omega}\mathcal{L}_{\bar{V}}(\bar{W}) = 0 \quad (1310)$$

Where the first term is the contraction of the differential along directions in space of the one form ω with the vector V and that of the vector W . It is the projection of the composite anticommutation relationship of the one form ω and the vector V with or upon the vector W . The second term is the contraction of the one form ω with the result of the commutation relationship of the vectors V and W with the required coordinate basis fixing by the Lie derivative again for the coordinate basis element. This can be further expanded as, (where \bar{e}_j means differentiation in the coordinate basis in the direction of the unit vector e_j):

$$\underbrace{(V^j\bar{e}_j(\omega_i) + \omega_j\bar{e}_i(V^j))}_{(1)} W^i + \omega_i \underbrace{(V^j\bar{e}_j(W^i) - W^j\bar{e}_j(V^i))}_{(2)} + \underbrace{V^j W^k (\mathcal{L}_{\bar{e}_j}\bar{e}_k)^i}_{(3)} = 0 \quad (1311)$$

It is this third term with the Lie derivative which is concerned in this discussion and which pertains to the theory given so far. A Lie derivative is roughly a way of describing the departure from colinearity or the commutation of differentials when going around a path, with directions and functions defined in the given space.

The term with the Lie derivative when nonvanishing indicates the presence of curvature, and it is this curvature which is used in the theory established so far.

The point to be made is that the third term is explicitly nonzero when the coordinate basis is curved. It in this equation however represents, for what the other terms represent, an equal and opposite displacement of the quantities via the first (+) sign and second (−) sign parts of the equation. These parts can be known as the differential of a relativistic position contracted with a general position vector, and in the second one, the local uncertainty principle in relativistic form along the same direction.

Within the theory established so far, there is the question of when this third term becomes zero. Because for the theory, what it means is that the projection of the theories into one another represents a form of conjugate quantity to inertia. This inertial content is the mass of a body, and it is accompanied under a change in motion by a change in the qualities of the respective principles of quantum mechanics and general relativity.

The fact that this equation adds to zero, is the statement that zero displacement exists on the ultimate level for which neither general relativity nor quantum mechanics exclusively are true alone, is also conventionally a physical displacement of between the theories of quantum uncertainty into spacetime and spacetime into uncertainty. Summatively on the conventional level there appears to be a physical displacement, but there is ultimately null displacement of particle-space into particle-space, when such composite objects are considered to form a joint relationship in whole.

The first of the three terms above disappears with equal and opposite curvatures of the position of an object and its relativistic factor, in for instance the inertial separation of a superconductor and magnet. Here the energy momentum restriction and equal and opposite magnetic fields with coalignment of momenta and magnetic field vectors takes place. This inertial separation, and the disappearance of this term are one to one, and occur because of the requirement that the total energy not change and the magnetic fields remain equal and opposite at the surface of a perfect diamagnet.

This can be illustrated by considering a magnet and superconductor in levitation. The vectorial dot product of the magnetic fields, which is related to its total electromagnetic field energy of a magnetic origin, and the kinetic energy momentum of the bodies with the consideration of relativistic factors must be conserved in total. As is found, the following restriction and exception are in agreement with the general statement of each changing in response to the other. If we take the dot product of the magnetic fields, and the differential of this, then it can only be that if this is nonzero that either the principle of conservation of energy or the principle of diamagnetism are violated. For instance the magnetic vectors either both become smaller or both larger, preserving the diamagnetic effect but not the conservation of energy separably from motion of the system as a whole, or, the magnetic vectors will become smaller and larger, not preserving the diamagnetic effect while separably preserving the conservation of energy with motion of the system.

Thus the first of the above three terms in the mathematical equation so expanded must be it is reasoned, zero. This is the level of reciprocity being of equal and opposite curvatures, but not with the presence of a net acceleration of the system. When there is a net acceleration of the system, it serves the purpose of compressing or elongating the magnet and superconductor displacement, and is a physical and mathematical displacement of the two quantities of the first and second term into one another. This is the role the third term plays, and is an equivalent displacement of one term into the other, with the second term playing the role of a commutation relationship in the quantum theory. There is an interesting observation which comes from this.

It is the physical prediction that for a magnet and superconductor prepared to levitate freely in Earth's gravitational field, there will be a static scenario. If this system is dropped as a whole and with the removal of support against gravity, there will exist an acceleration of the magnet and superconductor downwards with one g , and a separation which will be precisely negative one g apart, and one g together. This negative one g of separation is simply because with the absence of the Earth's gravitational field, and the preexisting balance of equal and opposite forces, the acceleration of magnet and superconductor apart will be precisely the negative of the prepared state with support.

Establishing Comparative Equivalence

Thought Experiment For Superconductivity

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity. The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable but reciprocal to the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (1312)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (1313)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space.

For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of representation for the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect absolute.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two

particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ .

In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (1314)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (1315)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (1316)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero.

Thus the Meissner effect and energy conservation cannot be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (1317)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (1318)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \quad (1319)$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase.

For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor.

Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \quad (1320)$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z) \hat{z} \quad (1321)$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. Then we can extend results with calculus to generalized objects.

The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \quad (1322)$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \quad (1323)$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \quad (1324)$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \quad (1325)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma \mu f(z)\hat{z} \quad (1326)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma \mu f(z)\hat{z} \quad (1327)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at it's location:

$$\gamma \mu f(z)\hat{z} \quad (1328)$$

The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (1329)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (1330)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer.

This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (1331)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present situation:

$$v \rightarrow \gamma v \quad (1332)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned} \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 (v\gamma dt) / (cdt)^{2n} \\ &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} = -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} = -\mu^2 f(z)^2 \end{aligned} \quad (1333)$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \quad (1334)$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia.

For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general

relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics.

Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (16) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system.

For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (1335)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity and then shift the discussion to how the spin manifests in the new formalism motivated by this thought experiment:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general*

covariance within quantum mechanics.

Comparative Equivalence II: *Measurement of physical quantities by measurer of measured or of observer and observed remains the same, invariant, and independent of the order and relation of these as physical elements. It carries a reciprocal native transformation within quantum mechanics as in general relativity, but both results are the consequence of general covariance.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence III: *The results of measurements of physical quantities of measure are coordinate displacement invariant and reciprocal in quantum mechanics as they are in general relativity.*

Measurement

What do we mean by measurement? One definition of measurement is: "The act or process of measuring something." But does it matter in which *way* we measure? This theory is both a theory of measurement and a theory of physical result, as well as is the theory of general relativity. We take as a given that the results of measurement do depend on whether the measurement is with an object in motion or an object at rest, which is true in general relativity. When we include both comparative equivalence and the equivalence principle the result is a theory reconciling and edifying the distinct and different viewpoints of observer and observed.

For example let us say we have a ruler and a stream of rulers is flowing by. Because of the implications of a theory of space & time, general relativity, our ruler has an extension in the fourth dimension as well during the process of measurement. And it would be understood that when a measurement is performed by one of our rulers on the stream of rulers flowing by at a large velocity, that they will yield different results from their rest values. This much is a result of not accounting for as well the fact that a ruler has a temporal extension with velocity.

For when we compare with the fourth dimension included in our description the extension of the ruler the result is indeed an invariant measure known as the spacetime interval, which for the rulers is spacelike and imaginary. It is the square root of the following quantity:

$$(\Delta s)^2 = c^2(\Delta t)^2 - (\Delta x)^2 \quad (1336)$$

That this interval (Δs) is spacetime and transformation invariant is a given in both of the theories of special and general relativity and is the result of taking the speed of light as a constant and admitting that space and time can transform into one another. It represents the 'real' physical length of the ruler when this ruler is also accompanied by a tool to measure time, a clock for instance, as well as a spatial measurement device for distance. This physical form of relativity can then be known as a theory requiring a temporal measuring device and a spatial measuring device to reliably compare spatial interval as distance, or, temporal interval as duration. We cannot reliably compare either of these two without the other.

Performing the transformation with the object at rest in contrast to the object in motion is a reversal of the transformation. This is what is understood from the theories of special and general

relativity, that space and time form a singular fabric known variously as space time, space-time, or spacetime. For the sake of the purposes of declaration of their union, or even their disjoint relationship, it is important to make a distinction. For space can be defined as an enclosure that always has an exterior domain, while time can be seen as an inclosure which always has an interior domain.

We can speak of their disjoint union as well when a metric $g_{\mu\nu}$ is defined. For then the result of an interval in space-time can be written generally as:

$$\Delta s = \sqrt{\int \int g_{\mu\nu}(x^\mu, x^\nu) dx^\mu dx^\nu} \quad (1337)$$

In this result the double integral signifies that we must take the analogous square sum square root of integral distance to define an interval in general relativity as in a theory which relies on an Euclidean notion for space & time. This is nothing but the definition of a metric, here denoted as the four dimensional $g_{\mu\nu}$. The statement of general covariance is the statement that the true and ultimate 'general' laws of physics do not depend on any a priori coordinates, but as for differences in coordinates there is a distinction that must be accounted for as it is in the interval preceeding. In this theory we will make a reciprocal statement that this system of coordinization is not privledged and that there is a secondary and consistent way for accounting for measurement. It is nothing but the difference we can discuss in talking about:

$$\Delta s = \sqrt{\int \int g^{\mu\nu}(x^\mu, x^\nu) dx_\mu dx_\nu} \quad (1338)$$

Instead, and this amounts to a different result from general relativity by accounting for distance with a reciprocal transformation. For, the observer and the observed make express differences according to the conventional interpretation of general relativity. This is a difference we wish to use to leverage our position regarding the interpretation of physical measurement in quantum mechanics. Although they are embedded in a general relativistic spacetime, measurement is something that may or may not be dependent on observer and observed and it is a notion we here wish be explicit about. The given union of space and time in general relativity is then not unique, and there are marked differences if we are to use (18) or (19) for the sake of comparative equivalence. We have alluded to a given reciprocity, a division and union at once for the process of measurement. Reciprocity is the statement that there can arise no difference of measurement from reality ultimately given the equivalence principle and comparative equivalence and the given organization of ideas that follow from these assumptions.

The question: "If what is real is measurement then *what* is being compared in the process of measurement?" soon becomes important. If we have a ruler and a ruler, there has been known to be a strict relativity of measurement going back as far as the Buddhist philosopher Nagarjuna. It is stated that the big is only big in relation to the small and the small is only small in relation to the big. Label the rulers with prefixes A and B and examine the situation at hand in the context of this question and statement. If one ruler is moving and the other stationary with us in our frame, we will contend that there are two equivalent and distinct ways to compare them to each other.

It is either the case that a moving ruler labeled B is compared to a stationary ruler labeled A or it is the case that the moving ruler B is taken as stationary and is compared to the now

relatively moving ruler A . The first picture is labeled A^* and the second picture is labeled B^* , for the observer is stationary with the object of measure *despite that it is actually moving in relation to what is being measured*. This is identical with identifying the motion with the object at rest instead of the object in motion. This is identical with reversing the transformation and the object of reference with the direction of inference between the one in motion and the one at rest.

Our newly formulated notion of comparative equivalence is then the distinction:

Comparative Equivalence IV: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

In this we see that as it is in general relativity what is stationary and what is moving has nothing to do with *what* is measuring *what*. Different from general relativity we make here a conventional distinction between wherein the motion lies; with the observer or the observed. For now what must be noted is that the 'presence' of motion is a tool to discriminate what precisely we are comparing to what.

For instance the first case A^* where the observer is stationary with ruler A is the manner in which general relativity is usually taught. Equally as compelling is the second case B^* of measurement, which makes clear that we may in principle take the measurement as with the ruler in motion as well as that one which is stationary.

This is not to be confused with being in contradiction with general relativity so much as it is to be taken that it is admittedly a *different* way of basing our measurement, which can be formulated consistently with general relativity in mind. It is nothing but a second and distinct way of interpreting measure and measurement in general relativity, one we which yields for us a conventional difference.

We arrive at the first instance of the intellectual struggle to rectify our set of admissible standards, and find serious tension in this idea, if we accept general relativity merely at face value. For nowhere within relativity, special or general, is it given that this second method of measurement must be false. Relative as it is used in language is taken to mean both processes at once informally, but much confusion arises if we presuppose it to be one or the other of these two situations alone which must be true by itself, and develop general relativity around these terms without accepting a difference may arise conventionally, as it matters to us on Earth.

Nowhere has it appeared that we may take the measurement to accord with motion in the *other way* except in science fiction. Has mother nature played a ruse on us if this second viewpoint is to be taken as true as well? As it turns out, no, for scenarios A^* and B^* are not implicitly excluded into predefined categories by general relativity with only one holding true, although they are given names, and Einstein's 'general covariance' is a term applying equally as well to each.

Scenario A^* we will call the covariant relationship and scenario B^* we will call the contravariant relationship of measurement. Neither is tenably excluded by general relativity, but there is a difference, and what it means for measurement will become clearer as we go as we draw a physically important and tangible parallel with general relativity.

For now, notice that we are making a distinct statement that it does indeed matter if the observer is with the object at rest or the one in motion, *although* motion is relative. Our intention in this paper is to illustrate that comparative equivalence as it will be known is the equivalence of the results and process of measurement under either of these scenarios *ultimately*. This has deep implications of course, if we are to take the very real physical results of general relativity and comparative equivalence to be real and at the same time holding no privileged scenario, process, or basis of measurement.

Flat to Curved Transformation and Connection

The given theories point to a relationship between the theories of general relativity and quantum mechanics. The relationship is one of observability. For instance, curvature in general relativity plays the role of the structure of spacetime, but it is not ultimately observable for the observer in freefall, where the weight vanishes. This is an instance of the equivalence principle.

This tenement as the idea of the ultimate meeting the conventional as a viewpoint is tenable in the case of general relativity. Similarly we will find that this form of agreement holds in the quantum viewpoint. Hence it is hypothesized that something analogous to universality of freefall is the reason for a gap and other observable facets of superconductivity.

First we examine the meaning of curvature. It is known that in various lower dimensional curved spaces that there is a way to move from the flat real number based coordinates to coordinates natural to the curved space. The basic notion is the covariant differential, which contains an extra contribution from the conversion of coordinates and their consequent curvature. Just as the equations of motion differ in different coordinate systems, the covariant differential differs from the conventional derivative in that the additional part describes the result of changing the basic coordinate system.

The ultimate viewpoint is now seen as related to the covariant viewpoint. The basic covariant differential is:

$$\nabla_{\mu} \equiv \partial_{\mu} + \Gamma_{\mu} \quad \Gamma_{\mu} \equiv \frac{1}{2}g^{\nu\rho}(\partial_{\mu}g_{\nu\rho} + \partial_{\nu}g_{\rho\mu} - \partial_{\rho}g_{\mu\nu}) \quad (1339)$$

This derivative is coordinate system nonspecific in that it returns the same result under coordinate transformations, and is coordinate system specific in that the structure of the Christoffel symbols, Γ are related to the given space of curvature. Note that for a flat space the extra contribution vanishes. The addition of this component is therefore a way to move off the flat space to the curved space wherein the curvature plays a role through the coordinate dependence it imputes to the differential.

Therefore the simple flat differential:

$$\partial_{\mu} \quad (1340)$$

Holds for a flat space, or a flat space to flat space conversion, although scaling of the space does influence the derivative. When moving to the curved space, the extra form:

$$\Gamma_{\mu} \equiv \frac{1}{2}g^{\nu\rho}(\partial_{\mu}g_{\nu\rho} + \partial_{\nu}g_{\rho\mu} - \partial_{\rho}g_{\mu\nu}) \quad (1341)$$

Is simply added to the derivative operator, to result in the *covariant differential* of a given quantity, which is a way of describing the change in the quantity contribution given the change

in coordinates which naturally follows from coevolution with the curved space. General relativity implies that these do exist, (as for instance motion is observable) but that the sequential repetition of differentiation is not observable, hence:

$$\nabla_\nu \nabla_\mu \equiv G_{\mu\nu} \quad (1342)$$

Is the structure of spacetime, and owing to general covariance does not result in observable changes in the theory. Accelerations are however observable from a second perspective at a fixed location *not* falling with the object, and imply not only a gravitational field and curvature of the coordinates, but delineate what precisely the change is to the viewpoint of comparative equivalence. But, it remains that the natural laws of physics hold no coordinate dependence ultimately.

This is how we can say that both viewpoints are valid, the conventional and the ultimate, and that quantum mechanics borrows this coordinate freedom principle from general relativity. The first contention is hence that coordinate freedom applies to both of general relativity and quantum mechanics.

In order for quantum mechanics to be consistent with accelerations as general coordinate transformations, it must hold true that the eigenstate holds an independent reality with respect to these types of transformations. For instance consider a two particle system. In order for the consistency of quantum mechanics under electromagnetic interaction, it must hold true that both states remain mutual eigenstates with respect to their frames of acceleration.

Any proof must be based on the supposition that the eigenstate remains an eigenstate for each particle with respect to all others under mutually accelerated motion. This holds when, given that although it is true that locally in the frame of acceleration the eigenstate may be defined, it must also be an eigenstate with respect to other frames of reference, *and for the considerations of relativity may contain no frame dependence.*

Suppose in the frame of a particle ∂_μ is the basis of the operator for momentum. Then, $\gamma^\mu \partial_\mu$ is the relativistic operator for momentum and should be invariant under general coordinate transformations. This operates on ξ_μ , the wavefunction so that $\gamma^\mu \partial_\mu \xi_\mu$ is the relativistic energy momentum of the eigenstate.

If and only if this is an accelerated state does the Lorentz transformation Λ_ν^μ have a spatial and temporal dependence, in which case the following eigenstate operation is nonzero:

$$\gamma^\mu \partial_\mu \xi_\mu \rightarrow \Lambda_\nu^\mu \gamma^\mu \Lambda_\nu^\mu \partial_\mu \Lambda_\nu^\mu \xi_\mu = \gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu + \gamma^\nu \partial_\nu \xi_\nu \quad (1343)$$

From looking at this we find an extra term appears, which does belong to the same frame ν but which introduces a frame dependence to the derivative, because $\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu$ is Lorentz transformation dependent. In this case ξ is no longer an eigenstate with respect to the accelerated frame with this differential alone.

Since:

$$\Lambda_\nu^\mu = \gamma^\mu \gamma_\nu \quad (1344)$$

It is true that this can be accommodated by subtracting a term from the right hand side of the eigenstate equation for four momentum, or alternatively and equivalently adding a term which transforms reciprocal to the definition of the four momentum. We thereby define the *covariant differential* by working out the extra term in frame ν :

$$\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) = \gamma^\nu \gamma_\mu \partial_\nu \gamma^\mu \quad (1345)$$

Under transformation back to frame μ a term must be added to ∂_μ to preserve the differential which is:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu \quad (1346)$$

In conclusion, for quantum mechanics to possess no frame dependence for eigenstates, and for them to be mutually defined under interaction, the covariant differential defined by the following must be used for the energy momentum of the particle instead of only the flat space differential ∂_μ :

$$p_\mu = i\hbar(\partial_\mu + \Gamma_\mu) \quad (1347)$$

From this not only follows the rule of differences in frame contributing to the localization in a zero sum fashion but that the separable parts of the momentum must change as the following under a general transformation:

$$\partial_\mu \rightarrow \partial_\nu + \Lambda_\nu \quad \Gamma_\mu \rightarrow \Gamma_\nu - \Lambda_\nu \quad (1348)$$

With the local curvature difference from the transformation:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1349)$$

Hypothesis of Displacement: *The curvature of the coordinate space transformation is the result of a change in coordinates natural to a given theory, and results in a real observable physical energy momentum shift because a given composite theory holds a reality to observation for displacement arising from coordinate system transformation.*

This is tantamount to saying that over accelerations in general relativity there exists a free domain of choice for the integration constant of the given accelerative curvature field. This theory is precisely the case of freedom of the first differential in reference to the general covariance over the second differential in the composite theory.

Spin Field Theory

Consider the general transformation of a spinor wavefunction $\xi_\mu(x^\mu)$. The approach used is that of generating a field theory from a general transformation of a field quantity, here the eigenstates ξ .

$$\xi_\mu \rightarrow \Lambda \xi_\mu \quad (1350)$$

Here Λ is a 16 parameter tensor which represents the transformation upon a general wavefunction ξ_μ . The transformation Λ should not be confused with a Lorentz boost, as it is a transformation of the field of spinors into itself and is an field tensor operator. It however carries analogous properties, for a rotation and a scaling of the spinors *is* equivalent to a *local* change in frame, however it does not arise by net global motion but instead by way of the evolution of the field of spinors. This can be written in general as:

$$\Lambda = e^{-ig\lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu}} \quad (1351)$$

The spinors are rotated and boosted in the six possible directions given by the tensors in the transformation. Where g is a coupling constant and $\lambda_{\mu\nu}(x_\mu, x_\nu)$ parametrizes this transformation in space and time, while $\sigma^{\mu\nu}$ is a set of matrices corresponding to the commutator of the γ matrices, as defined by the following:

$$\sigma^{\mu\nu} = \frac{i}{2}[\gamma^\mu, \gamma^\nu] \quad (1352)$$

What is important is that a *gauge* can be defined for this transformation, since it acts on a *field of spin*:

$$\partial_\mu \rightarrow D_\mu = \partial_\mu + \Gamma_\mu \quad (1353)$$

With:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu = \partial_\mu \log \gamma^\nu \quad (1354)$$

From before. Since this is the logarithmic derivative of the spin as a field, the transformation is as follows on the eigenspinor:

$$\xi_\mu \rightarrow \Lambda \xi_\mu = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \xi_\mu \quad (1355)$$

And on the particle and field momentum:

$$\partial_\mu \rightarrow \partial_\mu - ig\partial_\mu \lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \partial_\mu + \partial_\mu \log \Lambda \quad (1356)$$

$$\Gamma_\mu \rightarrow \Gamma_\mu + ig\partial_\mu \lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \Gamma_\mu - \partial_\mu \log \Lambda \quad (1357)$$

Where the sign change comes from the fact that the covariant correction operates on γ^ν while Λ operates on ξ_μ . Hence this is equivalent to changing the order in the commutator and hence there exists a change in sign, and the transformation has opposite differentials with ∂_μ and Γ_μ .

The form of the covariant differential D_μ is thus left intact by gauge transformations with the spin curvature connection, and as the wavefunction is separably transformed from that of γ^ν , the exponential is preserved in both parts of the covariant differential.

Finally, the adjoint wavefunction is with the conjugate of this wavefunction transformation, so the probability amplitude is left unaffected in the Dirac equation, and the electromagnetic gauge connection may be added separately. Thus the net covariant differential is:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (1358)$$

Transformation With an Electromagnetic Field

Beginning with the reciprocal property of γ^μ and D_μ we derive the response from this condition extending to the introduction of an external four potential αB_μ . The given is that:

$$\gamma^\mu D_\mu \xi_\mu = \xi_\mu \quad (1359)$$

It is illuminating to consider the torsion property as related to the Meissner effect.

Then we add $\alpha B_\mu = f_\mu$ to produce the new condition, interrelating the accelerated frame transformation produced under interaction to the addition of this field:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) \xi_\mu = \xi_\mu \quad (1360)$$

So that to satisfy both equations:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) = \gamma^\mu D_\mu \rightarrow \lambda^\mu = (\gamma^\mu D_\mu + \gamma^\mu f_\mu)^{-1} \gamma^\mu D_\mu \quad (1361)$$

The partial derivative and spin curvature terms are modified as the following:

$$\partial_\mu \rightarrow \partial_\mu + \partial_\mu \log \lambda^\mu \quad \Gamma_\mu \rightarrow \Gamma_\mu - \partial_\mu \log \lambda^\mu \quad (1362)$$

With this, the covariant differential is preserved. The added term comes from the distributive property of the log function and the action of the transformation on the wavefunction:

$$\partial_\mu \log \lambda^\mu = \partial_\mu \log((1 + \gamma^\mu f_\mu)^{-1}) = -\gamma^\mu \partial_\mu f_\mu \quad (1363)$$

Since they are in the same frame, γ^μ and ∂_μ commute. Integrated as a source this term is:

$$-f_\mu = -\alpha B_\mu \quad (1364)$$

The added term of λ^μ perfectly compensates for the added f_μ by the above. Hence the electromagnetic potential that is applied causes a shift of energy momentum between the two parts of orbital and spin curvature energy momentum, at the strength of the applied electromagnetic potential.

The condition of (45), implies that from the perspective of a particle accelerated in relation to a particle at rest, the particle at rest acts as a source generating an opposite potential to its own potential as experienced in the frame of the accelerated particle. The accelerated particle is not a source to itself because of the reciprocal condition and it is at rest in its frame, so it experiences the (negative) potential of the other particle at rest. This indirect potential acts on either particle, and must act to attract them, and a gap develops.

As there exists a frame of rest and condition (45) is conserved under a frame transformation, there exists no direct potential, but there does exist one arising from the frame of acceleration relative to the frame of rest, as a back reaction reversed potential on the particle in the accelerated frame.

Thus both particles experience a negative potential with respect to the other particle, which is the following potential:

$$\int \gamma^\mu \partial_\mu \log \lambda^\mu dx^\mu = -\alpha B_\mu \quad (1365)$$

This explains the diamagnetic effect and pairing, and is consistent with the magnetic field being zero. Additionally, the magnetic field of zero can be explained as the fact that if γ^μ and D_μ operating on ξ_μ are reciprocal to a constant, and given the momentum is inertial, it produces zero magnetic field in all frames.

But this condition of the eigenstate is preserved with respect to all frames, thus the magnetic field is globally zero for all points within the material.

Covariant Differential Commutation Relationship

Consider the interior transformation of the covariant differential due to the term produced by the previous transformation under action of the electromagnetic field:

$$\begin{aligned} [D_\mu, D_\nu] &= \partial_\mu \partial_\nu + \partial_\mu \Gamma_\nu + \Gamma_\mu \partial_\nu + \Gamma_\mu \Gamma_\nu - \partial_\nu \partial_\mu - \partial_\nu \Gamma_\mu - \Gamma_\nu \partial_\mu - \Gamma_\nu \Gamma_\mu \quad (1366) \\ &\rightarrow (\partial_\mu - \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\ &\quad + (\partial_\mu - \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\ &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\ &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\ &= -\alpha \partial_\mu A_\mu D_\nu + \alpha \partial_\nu A_\nu D_\mu + \partial_\mu D_\nu - \partial_\nu D_\mu \\ &\quad + \alpha \partial_\mu A_\mu D_\nu - \alpha \partial_\nu A_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\ &= \partial_\mu D_\nu - \partial_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu = D_\mu D_\nu - D_\nu D_\mu = [D_\mu, D_\nu] \end{aligned}$$

Which indicates that the two gauges are mutually satisfied under transformation by the field, interior to the covariant differential. This also holds true for the total covariant differential since any transformation should be performed symmetrically. Hence, the commutation relationship of the covariant differentials is preserved under the internal transformation of its terms. Furthermore:

$$[D_\mu, D_\nu] = -[\Lambda_\nu^\mu D_\mu, \Lambda_\mu^\nu D_\nu] = -[D_\nu, D_\mu] \quad (1367)$$

Indicating the commutation relationship is antisymmetric under a symmetric frame transformation. We may evaluate this term in the following way at a point in space:

$$\begin{aligned} \xi_\mu \xi_\nu [D_\mu, D_\nu] \xi_\mu \xi_\nu &= \xi_\mu \xi_\nu (D_\mu D_\nu - D_\nu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (\Lambda_\nu^\mu D_\mu \Lambda_\mu^\nu D_\nu - \Lambda_\mu^\nu D_\nu \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (D_\mu \log \Lambda_\mu^\nu D_\nu - D_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (\gamma^\nu \partial_\mu \log \Lambda_\mu^\nu D_\nu - \gamma^\mu \partial_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (\gamma^\mu \partial_\mu \log \Lambda_\mu^\nu - \gamma^\nu \partial_\nu \log \Lambda_\nu^\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu \alpha (\partial_\mu A_\nu - \partial_\nu A_\mu) \xi_\mu \xi_\nu = -\xi_\mu \xi_\nu \alpha F_{\mu\nu} \xi_\mu \xi_\nu \end{aligned} \quad (1368)$$

Making use of (34) and γ^μ and γ^ν to correct for the covariant differential making it a partial derivative by (35) and the fact that when the partial derivative associated spin is multiplied by another spin factor the negative logarithmic derivative is introduced into the equations (37) and (38). Hence:

$$[D_\mu, D_\nu] = -\alpha F_{\mu\nu} \quad (1369)$$

The spin field transformation which accompanies the introduction of the electromagnetic field, under the covariance of the form of the eigenstate is a curved transformation of coordinates, and hence what we arise at is a real consequence of coordinates. It is flat in a sense (when one accounts for the change in coordinates) and curved in a sense (when one does not account for this change in coordinates) naturally. The Meissner effect is seen as the conventional departure of the electromagnetic field tensor torsion condition at the boundary of the superconductor.

Calculation of Exchange

We can now proceed to analyze the commutation relationship of the ∂_α and Γ_α with the added $\pm\Lambda_\alpha$. Under the two particle equation this is reversed in sign among the two sides of the two particle Dirac equation corresponding to particle 1 and particle 2. Under consideration of the fact that Λ_α changes sign under juxtaposition.

Exchange Difference Hypothesis: *The added logarithmic differential of the frame transformation, or its curvature, Λ_α , in changing sign between frames behaves in conjunction with ∂_α and Γ_α as raising and lowering operators in the two particle Dirac equation.*

To test this hypothesis consider the ∂_α energy momentum for the singlet. Between states in the two particle Dirac equation a term enters as:

$$(-i\hbar\partial_\alpha + 2\hbar\Lambda_\alpha)(-i\hbar\partial_\alpha - 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(a^\dagger a)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \quad (1370)$$

The term on the spin curvature enters as:

$$(-i\hbar\Gamma_\alpha - 2\hbar\Lambda_\alpha)(-i\hbar\Gamma_\alpha + 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(aa^\dagger)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \quad (1371)$$

Thus the effect of the acceleration and the existing momenta, create the conditions under the two body (with opposite accelerative frame boosts) of anticommuting operators. The two particle equation is the product of two Dirac equations acting on the superposition of the two wavefunctions, here taken in the center of mass frame α :

$$(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1372)$$

Substitution of conserved quantities to simplify the calculation results in:

$$(-i\hbar\eta_+^\alpha + e\sigma^\alpha - m)(-i\hbar\eta_-^\alpha + e\sigma^\alpha - m)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1373)$$

Because the positive and negative orbital momentum and spin curvature sum to zero:

$$(e^2\sigma^\alpha\sigma^\alpha - (me + 2ie\hbar(\eta_+^\alpha + \eta_-^\alpha))\sigma^\alpha + im\hbar(\eta_+^\alpha + \eta_-^\alpha) - \hbar^2\eta_+^\alpha\eta_-^\alpha + m^2)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1374)$$

Because the only term which contributes to the change from the singlet to triplet under the change in sign by the operators above is η^α and $\eta_+^\alpha + \eta_-^\alpha$ is zero by equal and opposite momenta, this reduces to:

$$-4 \int \int \xi_\alpha^+\xi_\alpha^-\hbar(\eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha)\xi_\alpha^-\xi_\alpha^+ dx^\alpha dx^\alpha = \Delta \quad (1375)$$

η^α produces four terms which obey a commutation relationship by way of the above:

$$\begin{aligned} \eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha &= (\partial_\alpha^+ + \Gamma_\alpha^+)(\partial_\alpha^- + \Gamma_\alpha^-) - (\partial_\alpha^- + \Gamma_\alpha^-)(\partial_\alpha^+ + \Gamma_\alpha^+) \\ &= (\partial_\alpha^+\partial_\alpha^- + \partial_\alpha^+\Gamma_\alpha^- + \Gamma_\alpha^+\partial_\alpha^- + \Gamma_\alpha^+\Gamma_\alpha^-) - (\partial_\alpha^-\partial_\alpha^+ + \partial_\alpha^-\Gamma_\alpha^+ + \Gamma_\alpha^-\partial_\alpha^+ + \Gamma_\alpha^-\Gamma_\alpha^+) \\ &= -4\partial_\alpha\Lambda_\alpha + ([\partial_\alpha^-, \Gamma_\alpha^+] - [\partial_\alpha^+, \Gamma_\alpha^-]) = -4\partial_\alpha\Lambda_\alpha \end{aligned} \quad (1376)$$

Where the following equality holds:

$$[\partial_\alpha^-, \Gamma_\alpha^+] = [\partial_\alpha^+, \Gamma_\alpha^-] \quad (1377)$$

As the extra Λ_α changes sign *with* the derivative, leaving for the two particle energy gap *for all electrons*:

$$\Delta = 4\hbar c \int \gamma^\alpha\Lambda_\alpha dx^\alpha \equiv 4e \int \gamma^\alpha A_\alpha dx^\alpha = 4J \quad (1378)$$

This last equivalence is because in the exchange interaction the terms of μ and ν are juxtaposed and appear in the Λ , which by the previous section is equivalent to an electromagnetic potential differential. This is consistent with the previous section, where a γ^ν changes in a *relative* manner such that a reversed A_ν is generated for the particles in motion *within a spin system background*.

If the particles are relatively accelerated there exists a reversed potential between them with an energy lowering that is the contribution to their energy from this potential, and it is equivalent to an energy mass lowering of their inertial content. This is true as the acceleration gives rise to the (reversed) potential and without an acceleration there exists no potential. The acceleration as a source for the potential is physically equivalent to the lowering of the inertial mass energy, since it is the same term numerically.

This is fundamentally the expression that the potential energy mass lowering as sourced in the acceleration, and numerically equivalent with the inertial mass energy lowering, is a matter of frame, and the two are equivalent between all frames, hence the lowering is a prediction of general covariance. Since the quantum singlet to triplet operator holds individually between particles and a conventional to ultimate difference is taken the lowering holds for all two particle states. This implies the following equivalence:

Quantum Equivalence Principle: *The potential mass energy lowering is indistinguishable from the inertial mass energy lowering.*

Conclusion: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is the accelerated interpretation of this state. This gap is real by observation from the indistinguishability of the inertial and potential relativistic factors under the equivalence principle for any transition of a quantum nature.*

Distinction

While an interaction takes place, it is true that the uncertainty principle would be modified in the observables not for the sole reason that the coordinates change under acceleration, for there does exist a coordinate free representation of the observables compatible with acceleration such that the uncertainty principle is satisfied.

It it also because either:

A:) *If the electromagnetic interaction is not included in the momentum then it modifies the position and momentum compatible with an acceleration and an interaction that varies, and thus the relative determination of momentum and position is functional and dependent on coordinates, and not an invariant description, given that this acceleration exists in a way that is dependent on coordinates with respect to the operation of position of one particle upon the momentum of another, and with the reverse operation. Hence a coordinate dependent anomaly arises in the commutation relationship between the observables of different particles, whenever the electromagnetic potential is not included in the particle description.*

B:) *If the electromagnetic interaction is included then the former anomaly does not occur, because the commutation relationship is perfectly compensated for in its change with respect to the quantities of particle momentum and field momentum, as one merely changes the other in an equal and opposite functional manner and they are comparatively added instead of a complimentary change absent.*

Conclusion: *What can be seen is that it is the sum of these changes which is the expression of a net invariance of the determination of the uncertainty principle with respect to the general covariance of the observables without which there is no commutation of the separable momenta or positions.*

If and only if this holds true can we satisfy both postulates. The restriction to mutually satisfying both postulates is trivial without invoking the multiparticle viewpoint but not when it is invoked. For note that the uncertainty principle can be made invariant by a generally covariant coordinate basis locally.

However, this is not manifestly globally invariant in that the determination of the multiparticle relationship of uncertainty does not mutually commute between different particle observables, for the same reason there exist different coordinate systems for different particles.

Additionally, although with an interaction, the single particle uncertainties remain manifestly locally invariant, they are not as determined globally in the sense of between particles, unless the interaction potential is included in the momentum. When the interaction is included the change it introduces compensates for changes in the particle momentum in such a manner that the system is manifestly generally covariant and the uncertainty principle is left generally invariant.

For this to be true an identity must hold true between the frame transformation and electromagnetic field interaction, namely that the log differential of the frame transformation is the negative of the log differential of the electromagnetic field tensor, weighted by the appropriate constant (α):

$$\partial_\mu \log \Lambda_\mu^\nu = \alpha \partial_\mu \log F^{\mu\nu} \quad (1379)$$

Furthermore this identity gives a relationship to the description of the frame as it covaries with the particle description of momentum, and yields the total covariantly conserved quantity of momentum. It is merely the force law ($F = ma$), by inspection.

Justification and Ramifications

First to note is that the multiparticle perspective is one to one with the existence of interactions, which by way of and which there exists a connection to the differing frames of acceleration, and that these interactions must be included as a field potential energy momentum as it pertains to the full particle energy momentum as an observable in order for there to be a commutation relationship consistent with the uncertainty principle between the observables of the multiple particles.

This is to satisfy the uncertainty principle with respect to the different particle's definitions of each other, and their mutual commutation relationships, for their definitions of momentum do not commute when the interaction potential is left out. Additionally, what is striking is that it is the full particle and field energy momentum as carried by the particle that defines the observable and it is not particle only.

This seems to express on a base level that it is the full particle energy momentum with field that becomes the observable in the multiparticle viewpoint, as such must be the case to satisfy the uncertainty principle with general covariance resulting from changes in the coordinates with respect to the frame of motion, resulting from and identifiable with the acceleration due to the interaction.

As a consequence, the eigenstate condition of the Dirac equation is intact, although there is a slight difference in interpretation, arising in the context of the multiparticle description. For instance, the equation:

$$(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (1380)$$

Is the expression of the eigenstate condition of a particle like an electron. Although the single particle description of the eigenstate does not differ when mapped from the multiparticle condition, what remains to be seen is if the condition this represents mathematically is still identifiable with what it means in the multiparticle interpretation.

For while the Dirac equation, as it was initially interpreted, holds perfectly well with the condition of an ordinary partial derivative upon it being zero to result in an eigenstate, there is a subtle difference in the multiparticle setting with general covariance. Here, the condition is that the total covariant differential defined as:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (1381)$$

Must be used in place of:

$$p_\mu + \alpha A_\mu = \partial_\mu + \alpha A_\mu \quad (1382)$$

In the generally covariant setting. With this, although the Dirac equation is left locally intact, given that Γ_μ vanishes locally, it does not vanish identically for particle to particle comparisons. To prove this all it suffices to say is that the connection described in equation (8) is preserved under relative comparison of observables, and hence in general, or as for the multiparticle description, since Γ_μ does not vanish globally and must be included for generality.

As a final note consider that locally the description remains the same for the single particle description, for all particles, but that the multiparticle description differs substantially, as for instance γ^μ also takes on structure of the form of a function, and the descriptions may be inequivalent physically:

Hypothesis II: *The physics of the multiparticle description differs from the single particle description.*

In the case of exchange this can be an energy lowering. To note then is that this can lead to a collectively lowered energy in the case of superconductivity.

Examining superconductivity, for instance, the mystery is:

Mystery: *How does the energy lower, even if only in relative terms?*

This is only possible in a relative sense if the physical quantum description changes, and if the potential and kinetic energy both lower. But, the change between the singlet and triplet can be relatively modified by a matter of perspective. Internally to the system there is no change in kinetic energy as indicated by the field to frame relationship in the inertial frame, but observationally, it appears that there is a gap in energy.

To note then is merely that the triplet and singlet are repulsive and attractive, and therefore possess opposite relative curvatures, which immediately indicates a subjective-objective agreement of an energy difference of $2J$ per particle, because relatively there also exists an energy difference in the kinetic energy of J in the inertial mass energy by this same curvature relative to a system at rest external to it.

From the constraint of equation (43) and that which is imposed by the existence of multiple particles for which the condition of general covariance must be satisfied, the exchange phenomenon is relative and reveals a mass energy gap.

To prove this result quantitatively and rigorously one needs to evaluate the net integral, but this value is given empirically by the relation encoded in equation (44), which says that the differentials of these quantities are identical up to a constant of proportionality, and that their integrals should be equivalent up to a constant of integration. Then, because of this identity, the mass gap for an external observer outside the system, is the entire exchange energy difference of the two particles measured in the system of J with the change of the kinetic mass energy of J for a total of $2J$ per particle in sum.

In this context, the exchange is real only when observed from outside the system, and it is purely a relative phenomenon. Carefully noting their natures, that one is an electromagnetic potential energy difference when integrated, and that the other is an inertial mass energy difference when integrated, we arrive at the following conclusion:

Conclusion: *Relative potential and inertial mass energy lowerings are indistinguishable.*

However the gap must be weighted by the appropriate Lorentz factor, and this gives the formula and equivalence:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (1383)$$

Mystery of Superconductivity Revisited

The first thing of note in resolving this mystery is that the interpretation of the Meissner Effect is the confluence of the principle of general covariance and the uncertainty principle. The physics does not change, merely the interpretation of the uncertainty principle.

The two statements, one of the Meissner Effect, and secondly, one of energy conservation, are respectively the instantiation and extension of the uncertainty principle and general covariance. For instance, examining the equal and opposite fields which are one to one with spin angular momentum as mutual observables, is a manifestation of the uncertainty principle to say they do not depart from commutativity with respect to boosts.

Secondly, energy conservation here is a principle by which the only dependence of this equal and opposite magnetic field is upon the perceived metrical relationship due to motion, otherwise the gravitational field of the body would change and they would exchange an extra contribution of energy, and would not preserve the center of mass under freefall.

In showing by contradiction (of a dual nature) that one or the other of these principles is violated if and when the transformation is not reciprocal to the field, one shows that the Meissner Effect is a generally covariant uncertainty principle based phenomenon. This is one to one with the principle by which the fields are in inverse or reciprocal relationship to the relativistic transformation, and:

This follows from the indistinguishability of the inertial and potential relativistic factors.

What is known is that the covariant differential in total does in fact commute, and that when it is separated into particle and field momenta that these do not commute. Thus this implies a number of things. First of all is that it is only the total field and particle momentum which is inertial, which is the interpretation of the Meissner Effect.

Secondly is that the four momentum of the particle alone is curved with respect to the field of electromagnetism alone. This is consistent because this leads to the condition of equivalent and opposite functional curvature relationships for these substituent quantities. Lastly, what this implies is that it is indeed true that the potential mass energy lowering in a superconductor is fundamentally indistinguishable from the inertial mass energy lowering.

From this follows the generalization of the condition implied by the first section of this paper, which is that:

$$D_{\mu}(i\gamma^{\mu}(p_{\mu} + \alpha A_{\mu}) - mc)\xi_{\mu} = 0 \quad (1384)$$

Which is nothing other than the condition for a covariant eigenstate.

As an experiment simply consider dropping a superconductor levitating a magnet, if this theory holds true then because there is a gradual change in the gravitational frame, as they fall their curvatures should contribute equally, with the prediction that the initial condition requires that

they will fall together as one, given their mutual inertial relationship in an approximately inertial frame.

Conclusion: *There is a measurable and physical effect on the interpretation of the observables in the uncertainty principle given their coordinate system and frame independence.*

Interdependence of Orbital and Spin Momentum

To explain exactly what 'reciprocity' means in this context, consider the particles. In the two particle Dirac equation, there occurs an *internal* reciprocation of spin curvature energy momentum and orbital energy momentum. This occurs **not** because the particles merely *influence* each other, but because they *influence each other's representations* in particle energy momentum and spin curvature energy momentum to change. Hence the wavefunctions in remaining Lorentz invariant *remain the same physically*, but there occurs a reciprocation between the quantum and the relativistic *components* of the objects.

Now consider that given the Dirac equation holds for one particle. Any multiparticle modification of dynamics must occur internal to the equation, and not modify its overall structure, but it **can** modify the individual terms in a plus-minus like fashion. This is a way to side step the problem of coming up with a new and unique generalized transformation, analogous to the γ^μ , which will encode a curved space *in general*. In this way, the multiparticle and accelerative features of reality are encoded in changes of the components of the representation. This represents something wholly new however, because the old adage that '*the whole is greater than the sum of its parts*' applies. In this, the particles are **not** moving through each other merely because something only akin to a potential holds between them, but because a *change in each other's representations* arises from their mutual quantum and relativistic *relationships*.

An Instance of Reciprocity: *Reciprocity here means the comparison of different accelerative frames under the singlet and triplet, in which acceleration contributes to the spin curvature and orbital energy momentum, causing the two parts of the representation: the orbital and the spin, to reciprocate in space and time such that the particles mutually lower in energy and oscillate in space and time.*

Λ_ν is added and subtracted merely because of the rule of general covariance, and through quantum mechanics produces a reciprocation of accelerative spin curvature energy momentum and accelerative orbital energy momentum, so that the above can be put more simply:

Reciprocity Generalized: *Relative comparison of different quantum states under superposition leads to an energy difference in the states when different observable frames of acceleration are also compared.*

The emphasis in general is that **both** different relativistic frames of acceleration **and** different quantum states are compared simultaneously. Taking as the displacement the energy momentum associated with the change due to the difference of frames under an accelerative boost, afforded by the addition of an inertial interaction of the electromagnetic field:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1385)$$

Because of the equivalency principle, Λ_ν is zero in the frame of the particle and *does not* contribute to the single particle description. While for the *comparison* of states in the singlet and triplet where different frames of acceleration are compared the contribution from the relativistic frame of acceleration *difference* leads to a *displacement* of $\pm\Lambda_\nu$. The essential idea is that the

gap and attractive force arises from the qualitative difference between the single particle and two particle pair descriptions under the singlet and triplet. This makes for an interaction that results in a distinction that must be made between a particle in the single particle description, and a particle that is a *part* of a two particle state under mutual *acceleration*.

When the particles are put together they produce a qualitatively different result from only the single particles put together with only an electromagnetic interaction. For instance, under exchange, interchange of frames: $\mu \leftrightarrow \nu$ creates a $\pm\Lambda$ relativistic frame difference on ∂ and Γ .

Hence reciprocation is predicted with exchange, along with an energy difference of the singlet and triplet. This implies that reciprocation of quantities is one to one with inertial motion and this is one to one with an inertial electromagnetic force, which is in turn one to one with the Meissner Effect. However, the energy of the total system is lowered or raised under mutual acceleration by the presence of the extra Λ_ν which leads to the different momenta as operators producing an algebraically different result from their simple sum when operating on the wavefunction.

Hence, inertial motion is consistent with conservation of the exchange energy (through the cancellation of the distance dependence and inertial quality of the electromagnetic force) and reciprocation of spin and orbital degrees of freedom. We can conclude from the mere fact that spin-orbital reciprocation takes place that the exchange energy is conserved and one to one with the initial statement that the equivalency principle holds for the force law holding the charges together.

Hence, a non-dynamical difference in the exchange energy can be seen as an outcome of the inertial property, or the inertial property holding true can be seen as an outcome of the exchange energy developing a difference, but neither can be proven entirely by independent means. Finally to note is that this has an implication for general relativity as a reaction, for when the transition to the superconducting state takes place its mass lowers, invoking a complimentary raising of general relativistic energy.

This, in its general form, is what reciprocity means in the end. For the gestalt picture of quantum mechanics and general relativity produces changes in each, which are complimentary, because the general relativistic modification of the quantum description, lowers the quantum energy, and it raises itself.

Pairing and Condensation

The connecting principle that implies Δ_p is at a maximum when Δ_c goes to zero, and vice versa can be explained by two facts:

- 1.) *When particles fall into pairs they become more localized in the orbital degree of freedom, hence their relationship to one another is a **larger boost apart** between the holes comprising distinct pairs.*
- 2.) *The electrons and lattice **counteract** both the condensation and pairing with a resistance to an expansive force at low doping and to a contractive force at high doping. The electron sea and lattice that exists works against pairing and condensation, while remaining of equal localization to the holes.*

The density of electrons exists in proportion to the localization of holes and electrons (or inverse to their spread) and hence is also proportional to pairing strength. Simultaneously, the outward force of the pairs accelerates them apart, leading to a condensation strength that is proportional to the density of holes.

Thus the inter-pair boost is largest when the density of holes is large, explaining a large condensation gap at high doping, and the inter-hole boost is largest when the density of electrons is large, explaining a large pairing gap at low doping. Hence the two processes of balanced forces and distinct effects of the electrons or holes are at odds, yet the force inwards must balance the force outwards.

As a consequence there exists a range of doping intermediate between the extremes where superconductivity exists and it must fall off to both sides like a semicircle reaching zero because the electrons and lattice counteract the condensation force at low doping with a net contractive force of electrons with the lattice, and pairing force at high doping with an expansive force due to the large number of holes.

Since condensation may be treated as the change in orbital localization due to relative frame, and pairing may be treated as the accelerative parameter due to the localization (inverse to the spread of the wavefunction), the net effect is described by the energy lowering being the contracted factor of:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (1386)$$

This is because the factor of Λ_{ν} is the factor corresponding to the boost leading to pairing, and γ^{ν} corresponds to the *excess* energy lowering from relative frame due to change in the boost parameter by acceleration into pairs. This is thus a factor multiplying the accelerative frame difference corresponding to the pair energy as a relative boost between pairs of the condensate. If it goes to unity then the energy of the condensation gap is zero, while if the acceleration goes to zero then pairing vanishes. Everywhere the gap is the constant of $4J$. This interval of superconductivity occurs when the lattice plus the electrons that exist balance the force outwards of the condensation and the force inwards of the pairing, but since the force is nonzero, and it acts through a distance by the effect of length contraction, the holes experience a net energy lowering intrinsic to the material.

Intermediate Conclusion

The paper has proceeded to prove that general covariance applies to quantum mechanics, and illustrate two major consequences. The main point is that with general covariance the energy is lower for a quantum system in the center of energy momentum frame, and this lowering is real by the equivalence principle. From this, the field theoretic implications of a spin system produce a curved space effectively, which with the equivalence principle means that the energy lowering is very real within a quantum system.

The multibody problem is implicated in this by the collective energy lowering that ensues, and the effect is merely a manifestation of the application of general covariance and the equivalence principle to quantum mechanics. With the implications of general covariance and the equivalence principle to quantum mechanics we arrive at a synthesis whereby there is a quantum equivalence principle.

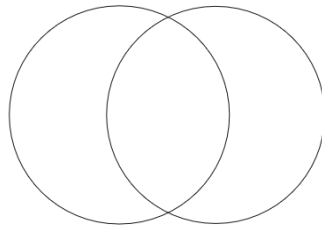
Within any transition there is a conventional to ultimate difference in viewpoints, whereby agreement means that quantum mechanics not only subscribes to the equivalency principle but that a change in frame accompanies a quantum transition. These are multiplicative and geometrically logarithmic, and add such that the gap is a constant in superconductors for all particles.

The uncertainty principle is then shown to be slightly different in a viewpoint which incorporates general covariance and that torsion explains diamagnetism. On the level of the conventional, there is a disturbance of the mass gap with a magnetic field because the net sum torsion of general relativity (which in part contributes mass conceptually via its definition of inertia) and of electromagnetism (for which the magnetic field can be seen as an instance) is zero. These are counteractive effects, thus explaining the Meissner effect.

These results were extended to create a generalized law for a superconductor with an electromagnetic field and the gap was generalized to the case of pairing and condensation under the provisions so given before. What has been attempted is a general principle by way of which superconductivity can be explained in the HTSC's, and what is most remarkable is the general result of a new type of inertial freefall in spin systems analogous to the equivalency principle in gravitational theory, but quite distinct from it and associated with the Meissner effect. The results were shown to accurately predict, as well as clarify the nature of the cosmological constant, superconductivity, and the concept known as inertia, when the quantitative and qualitative implications of integration freedom from general relativity are investigated.

Comparative Equivalence

In this paper we wish to bring resolution and comparativeness into solutions of the two body problem to explain the appearance of matter and light. To begin we identify a given admixture of partial differential equation following the principle of a connection to a given here ultimately knowable quantity; that of the orientation and juxtaposition of the particle's inertial field(s). Within nature there appears to exist at least one a priori reason for scale covariance of the measure of quantum probability and the measure of spacetime. This is the statement of general covariance, by which one may speak of identical states in space. There exists a scale in both the description of quantum mechanics and general relativity. For instance there is \hbar in quantum mechanics and c in special and general relativity. These are taken to be universal, fixed constants. Of importance in understanding nature with both theories present is that there exist consistency with respect to the complete description of nature. For this it is important to establish and qualify the nature of invariance. In this paper the nature of scale invariance of quantum mechanics with general relativity is investigated. This invariance leads to the additional conclusion that the description of a state is covariant under transformation in spacetime. With energy conserved, all aspects of the state return to their initial values with only a temporal phase shift for each component of the state, under transport in space time. The classical nature of observation must in part be reconciled with the quantal. The addition of this field is so as to produce a complete description of nature with physical continuity of quantum and gravitational states and independence of these two theories. In this paper we establish general covariance of the forces of gravity and quantum mechanics with electromagnetism for the levitation of a magnet by a superconductor with a support and under freefall. This leads at once to the proposed scale invariance of \hbar . This is directly identified with covariance of the measure of quantum probability and the measure of space time.



Introduction

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers. To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in superconductors. Particles are represented by wavefunctions, which undergo virtual processes in which they exchange energy and momentum with each other and the environment. Gravity on the other hand, is the geometry of spacetime. It is taken as a given that particles in a gravitational field are simply moving along straight lines in a curved space. For this reason, it is important to frame the implications of extending general covariance to quantum mechanics. Additionally, it is the starting point for properly posing such questions so as to resolve the Schroedinger cat and EPR paradoxes, because this change in perspective ties together our notions of quantum and space time.

This paper aims to understand independence and dependence of these theories on one another by appealing to consistency when general covariance is applied to quantum mechanics. This is accomplished by using thought experiments involving a superconductor and magnet. In a superconductor a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations. Due to the large scale of this energy gap, excitations to states that scatter and therefore expend energy are virtually forbidden and the material condenses at a lowered temperature to support a state called superconductivity. In this state electrons or holes form pairs and support a state that expels all magnetic fields, an effect called the Meissner Effect.

Comparative equivalence of weight in quantum mechanics and general relativity is a long sought after concept. Little would it be known to that of the casual observer that it also amounts to a decision process; for that of identity of representation and quality or property; to which subject

and object fuse into one. The dialectic of properties and qualities relates to the intimation of structure and continuum; of which principles may be explained as referent's of relationships; to which on the meta level there is an identity, agreement, and compounding of the collection of the basic preliminary and prescribed notions; the posited elements of which unify upon a locus of which is derivation and definitive (and in this definitional) of the prescription by which reality conveys to us it's meaning through qualities and properties. Properties and qualities; of which appear manifest in all physical objects and events in the phenomenal world; and to which demand the precise application of conveyance and representation in active and passive form; convey the rules of action and relation of events of any given system and are both measurable. Found here are equations by way of which weight in quantum mechanics and general relativity may be related by mathematical language to which the prescribed notion is merely the odds of probability as compounded with frame, with the outcome of a geometric setting; for which we require all particles to subscribe to the laws of quantum mechanics and general relativity.

Review of Quantum Mechanics

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \tag{1387}$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller. As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential. If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity. The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

Review of General Covariance

It is hypothesized by way of the equivalence principle that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states.

The condition of inertial states however implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. If the condition of local Lorentz invariance does not extend to general covariance by using the rest mass for inertial states under mutual interaction, the resulting theory would be inconsistent with general relativity. To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from it has with respect to the observer. So as to not violate energy conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the ultimate viewpoint.

If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated. Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass. The quantization condition that follows must extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

Under these provisions as the equivalence principle must apply to quantum mechanics the expectation of energy momentum is therefore always lower for a quantum system with the inclusion of general covariance, where the quantization is with respect to the condition set by all relativistic factors returning to unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the subjective viewpoint of an observer.

Justification; Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

Comparative Equivalence

We wish to for pedagogical reasons here elucidate the nature of Covariance in Uncertainty and it's equivalence with Shared Proper Space (&) Time; to which is conclusive of the determinant factor upon which further work is hinged. The main statement is that the artifact witness of:

$$\gamma^\mu \Gamma_\mu \tag{1388}$$

And;

$$\partial_\mu + \Gamma_\mu \tag{1389}$$

Are equivalent statements but equivalent and opposite contributions; where the first is to be recognized as the Covariance in Uncertainty; and the second; the Shared Proper Space (&) Time. Under the provisions of a strict dichotomy into objects; 'A' and 'B' it is clear that codetermination forces us to reconcile the twin paradox; to which:

$$\beta \leq 1 \tag{1390}$$

Is that factor which subsumes the relationship of representational reflexivity. The defining notion for this degree of freedom is that it is a factor to which 'A' comparative to 'B' holds a lesser comparative time to that of it's own time-dilation representation in the observation by particle 'B.' For from the reference of 'B,' it is true that:

$$\gamma \geq 1 \tag{1391}$$

Holds as the factor for that of time dilation in frame 'B' of frame 'A'. But in this there is a conjoint relationship; that of particle 'A' to its own witness; being of a lesser time than in frame 'B.' The inversion of this role is nothing more than 'A' in reference to it's description in the frame of particle 'B;' to which there is lesser time as factor β .

It is clear here that:

$$\beta\gamma = 1 \tag{1392}$$

What is also clear is that the viewpoint furnished by β is one in which the measure of particle 'A' is comparative to it's own measurement in frame and particle reference 'B'. In this 'A' becomes a self referent precisely when $\beta = 1$ to that of the observation (and measure by) particle 'B.'

When particle 'A' is the referent of particle 'B' $\beta \leq 1$; to which it is situated at a reduced uncertainty; by the argument that under co-determination; the factor that preceeds measurement is 'A' as referent to itself; here becoming a localized symmetry. When particle 'A' is the referent of itself; 'A' participates in an identity of itself as with $\beta = 1$ to which uncertainty is not diminished; and to which Covariance in Uncertainty and Shared Proper Space (&) Time are the subject of equivalent and opposite contributions; by necessity.

For if we were to identically prepare particles 'A' and 'B' and take them upon non-identical yet similar paths in space and time and return them to juxtaposition; one would find agreement with the original state and condition. Therefore it is that when $\beta \leq 1$ there is an agreement of Covariance in Uncertainty and Shared Proper Space (&) Time to which there is effective reduction in uncertainty under net-non-zero contribution to the effective 'action' of these two factors.

Therefore; although it is conceded that particles 'A' and 'B' determine a factor of β of which is less than unity; it is the process of γ being presumed; to which measure delineates a subjective object as 'A' being the referent of particle 'B;' however it is that we cannot concede that uncertainty is typified by a larger cross section owing to γ since 'A' is caught by it's identity as a part of the same transformative step in induction. It is then that:

$$\beta \leq 1 \tag{1393}$$

Becomes the step 'back' from relativity to which identities of particles hold a universal characteristic a priori to measurement as measured; and to which comparative assessments of Covariance in Uncertainty and Shared Proper Space (&) Time agree. It is then tantamount to the security of this argument that co-motion on an uncertain background *with* uncertainty is the production of certainty; the dialectic opposite of the uncertainty principle for one particle; but owing in due to the reflection of relativistic concerns upon identical states of two particles. It should be noted that by analytical reasoning it can be found that certainty derives in deduction from codependent arising of factors in exchange states; and that the situation does not reverse; for this has been noted as a "Representational Ipseity Freedom of Covariance;" that of the dilectical opposite of presumption on that of 'more is more;' taken in light of 'the whole is greater than the sum of it's part's' to which under the provisions of an identity to 'A' there is strict affordance for the prepared state to co-orchestrate it's given individuation in light of uncertainty; to a prepared state with compensation for uncertainty to be found *whilst there are two bodies*.

Therefore it is found that Covariance in Uncertainty:

$$v = \gamma^\mu \Gamma_\mu \tag{1394}$$

And it's complimentary Shared Proper Space (&) Time:

$$\tau = \gamma_{\mu} \Gamma^{\mu} = -v \quad (1395)$$

Pertain as much to the one particle; by that of which is the disappearance of a factor of $\beta = 1$ by the anti-reflexive principle; and by that of which *there is no privileged observer*; the latter conclusive of the fact that when *turned around*; any self-identity of factor disappears by a relativistic consideration at the microscopic and single identity scale on quantum particles; however to note is that: *The affordance of a two particle description renders $\beta < 1$.*

The statement of representational ipseity freedom can now be formulated:

The Statement of Representational Ipseity Freedom: *For any two particles; one of which observes the other, forces us by the absence of a tertiary observer and that of the anti-reflexive principle to conclude that a factor of β is introduced which is lesser or equivalent to one (with equivalence to one in the frame of the particle); with equivalence to the statement that v (The Covariance in Uncertainty) and τ (The Shared Proper Space (&) Time) are of equivalent and opposite contributions for the statement that is The Uncertainty Principle; to which we necessitate that of an indistinguishably universal \hbar under comparative assessments of quantum states.*

Far from the prescription that \hbar be linear is therefore the conclusion that $\beta \leq 1$ prescribes a universally *lowered* uncertainty from the point of observation away from the 'horizon' of any particle in it's process of 'measurement-by-observation' on particle 'A' comparative to 'A' itself; by way of particle 'B;' to which is consistent with the requirements of relativity ipso facto; the reversal of the causal arrow on that of the uncertainty diminished states taking place *away* from the point of 'reference; particle 'A' at once being considered the 'referent' of itself and of particle 'B.'

Ideal Principle Equivalence

The equations which dictate the function, form, and nature of the universe are two, as follows:

Quiescence

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is an invariant speed & the observed's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) Light is Quantum Mechanics which is the statement of **Quiescence**:

$$\partial_{\alpha\beta}^{\gamma} \Theta = \Theta_{\alpha\beta}^{\gamma} \quad (1396)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name:

Prescience

Conclusive Remark on Space: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) Gravitation is Space Time which is the statement of **Prescience**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (1397)$$

This is the given statement that of either given separability of philosophical inquiry into natural law is of similarity to coherence of algebraic expression for that of when similarities of mathematical expression derive of or from a common relation of order.

It is therefore true any two quantities of measurement and measured are coextensively null in measure by that of indivisibility of algebraic expression as independence of property from quality with the given as the expression of null indistinguishability invariance:

$$\zeta\chi = 0 \quad (1398)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (1399)$$

As an algebraic free projection of any vector into any one form of geometry of null displacement invariance and null indistinguishability invariance; the general and full expression of a principle equivalence with a general null covariance is expressed as a relative principle inequivalence.

Simpler Means

Therefore, this transformation appears to be a local and global attribute of harmonic functions and elliptical functions with but two modular relationships and arguments related to the two cardinal harmonic conditions as abbute to elliptical conditions. The connection between these is that of the given relationship between that of tension, torsion, and that of elliptical semimajor and semiminor axes.

As proof that this is possible; the summation that is the elliptical functions is reduced under the transformation to that of a summation of harmonic functions with strict logarithmic differential amplitude and phase relationships as the foundation for such functions and such transformations. Hence a self isomorphism is potentially existent under it's inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha\hat{A}(\omega, \tau) & \beta\hat{B}(\omega, \tau) \\ \gamma\hat{A}(\omega, \tau) & \delta\hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix} = \int_{\tau} \int_{\theta} \begin{pmatrix} e^{-i\omega t} A(t, u) & -e^{-i\omega t} B(t, u) \\ e^{i\omega t} A(t, u) & e^{i\omega t} B(t, u) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix}$$

Inverse Relation

If the inverse transformation surjective onto limit is to be defined in relation to any two such harmonic affinities then the triangle inequality is broken with a hole unless there exists a forward application of the homeomorphism so preserved by the transformation under the prior considerations of a non simply connected space.

The surjective limit cannot exist and no analytic expression in dual periods would exist without closure under a self inverse homeomorphism or such extensions under internal locally, globally

weighted and independent notions of analyticity; for a hole produces an automorphism in either such space as a representation of an analytic function which are incompatible notions under the forward application of the transformation as a homeomorphism with priorly backward existing limit for the inverse; as a potential exception when the space is not simply connected.

If this were not the case the given homeomorphism would not be independent of either such functional space; as it must for a general function if the space is topologically connected as a genus one space with a given hole.

This exception is a potential incongruity of the mapping and a realistic consideration with the existence of a hole when this space is identified with a conjugate space as therefore with two harmonic conditions the spaces are otherwise independent in full and necessitated generality if and only if this consideration is brought to bear; the inverse mapping of which is therefore:

$$\theta := \begin{pmatrix} \tilde{A}(\omega, \tau) \\ \tilde{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \partial_\mu \log \alpha(u, t) & \partial_\mu \log \beta(u, t) \\ \partial_\mu \log \gamma(u, t) & \partial_\mu \log \delta(u, t) \end{pmatrix} \begin{pmatrix} e^{-i\omega t} \\ -e^{i\omega t} \end{pmatrix} = \begin{pmatrix} -\tilde{A}(\theta, \tau) & -i\tilde{B}(\theta, \tau) \\ i\tilde{A}(\theta, \tau) & \tilde{B}(\theta, \tau) \end{pmatrix}$$

Which defines the θ and Θ functions in a logical symbolic set relation; for which the one form under conjunction is self isomorphic to a free group of generally deductive angle free variables.

These variants of the relation of symbolical ordered set under logical organization correspond to all variables of the free magnitude wave number space for all interchanging or ordering of variants with only exception to a free radical phase (here made nilpotent) as a consequence of the infinite shrinking of the surjective onto mapping set theoretic union of a space under solid free relation (pictured as a flat mirror like surface) of each full dimensional reduction to each of every finite limit.

In this we find the variants hold the potential and reality condition of being in essence all observables; while the transformation itself represents the 'mirror' of which is depicted the full 'motion' of both mirror through the transformation of such variants; and that of each such objective reality 'reflected' in the mirror; as a 'hole' in reality; for which connectedness is imputed.

Results on Study into The Measurement Paradox

Observations:

It is determined that; as only 'certain' outcomes are expected; that the system will only reproduce order given the measurable(s) follow a pre-determined causal arrow; and only these given measurable(s) are measured; to which it can be determined that superposition has constrained the system into an ordered relation.

With measurement situated such that it is designed to reduce to two potential outcomes; and then, given that measurement is semi-deterministic; there is a regime of order succeeding over chaos; for that of one return is before measure; and certainty is embedded in the equations of measure; to which order is produced.

Primary Result:

Logarithmic conversion of the system governing the differential equation by superposition, and that of the certainty we avow to outcomes of 'A' or 'B;' fails if we do not admit that: logarithmic

conversion of the arguments has indeed separated the two body problem into two one body problems; to which then measurement as certain of measures is implicated by that of their conversion to that of geometry by a differential equation.

Secondary Results:

1.) Logarithmic superposition resolves the two body problem into one body problems; by placing the uncertainty and certainty of that of measured and unmeasured quantities into the same geometric language of superposition; one in which certainties are accorded with logarithmic sensitivity and equipartition of a geometric nature.

2.) Semi-determinism governs measurement and measure of which is certain; the process of measurement that of which is a surjective process mapping the future onto the past of which is to produce certainty in measures; by that of which is a smaller 'past' projection when measure takes place by contrapositive on magnitude of certainty.

Reason:

Without certainty to measure and semi-determinism to measurement; and logarithmic superposition on the states in the process of measurement; the results of the device would not be determined into categories of 'A' and 'B' on measured touch interfacing with hand gestures in groups of five; to which randomness would then govern instead; the result confirming measurement as semi-deterministic and the nature of measures as certain a priori.

Certain Conclusions:

- 1.) Measurement is semi-deterministic in nature (otherwise this process fails).
- 2.) Measure is always certain (otherwise this process fails).

Caveat and Question:

We see limited control of the system into categories of 'A' and 'B' by a factor of 2-5 on comparative magnitude ranges for superposition or their inverse. Could this 2-5 be the Figenbaum constants themselves of chaos; to which magnitude must differ but be within ranges on that of the 'discernment' of a doublet classically?

Conclusions:

The argument presented so far admits the following preliminary conclusions to be formed:

1.) A logarithmic foundation to superposition admits dissection of the two body problem into two one body problems; of which the logarithmic foundation to superposition admits the construction of a bridge from relativistic to non-relativistic mechanics and is the resolution to the two body to one body problem; of which probabilities are seen geometrically; and to which they break apart into categories 'A' and 'B' as determined.

2.) Uncertainty covaries in such a manner that it is certain 'from above' the relation to which determinism being of the 'future' relation fits into a larger sphere; but promotes the discovery of a 'smaller' sphere of potentiated ranges of information; to which measure is seen as certain; and

measurement is seen as semi-deterministic; at most; 'indeterminant;' to say that measurements are certain because measurement ranges are larger than uncertainty.

3.) By certainty of alternatives this derives the notion that semi-determinism dictates measurement and measures are certain a priori; to which the measurement paradox is resolved; by noting that uncertainty may be excluded for the sake of an indeterminant measure instead; to note that a touch signifies absolute certainty of result of measurement reference; and to which only a smaller range of measured than to measurement can produce.

4.) Co-determinism of which there is determination of measurable with measurement makes certain that of the nature of measurement to which is afforded certainty in that of the interpretation of information in saying that 'as it is recorded it is accorded;' to which definite results of measure in the classical world are the consequence of covariance of uncertainty; to which in reasoning upon return from relativity we find the uncertainty reduced.

If time is accorded with information; then it is definite that a sub-section and element of a measurable(s) discovery will afford spatial co-determinism of the exact nature of a measure; the reduction to space and time of which is the covariance of uncertainty shrinking measure beyond error in expectation of semi-deterministic measurement.

Summary:

By general covariance of uncertainty in the classical realm the determination of any interaction between a human being and a machine dictates that error in a given measureable will always be lesser by expectation in measurement (which is therefore semi-deterministic) under reduction of the two body problem to separable one-body problem(s); of which relate to and intimate a connection to mechanics that is of resolution of the two body problem to one body problems from the relativistic to non-relativistic assumption of vantage. Indeed the bridge from the relativistic to the non-relativistic interpretation (the return of the arguments to their classical counterpoint of which incorporates their contrasting elements) affords for resolution of the two body problem to separable one body problems; and accordingly allows us to argue for semi-determinism; the certainty of measurables; and forms an argument that when probability is cast in a geometric language these problems with the measurement paradox (was the Moon only there because you looked for it?) are cast the way of a bulletproof argument; of which is that as the measurement takes place one point like notion beyond which is the two body problem; a point of deficit to which by it's smallest diminishment there is an excess weight to the viewpoint that measurement is an additive process; which we know from classical studies; and to which when cast in the language of displacement; leads to the conclusion that one step away from measurement is a measurable; of which is non-simultaneously of a given advantage to the viewpoint that measurement is characteristic of co-determinism when it is co-occurrent (as it always is); thereby there being two major synthesis that constitute reality; co-determination of variables and that of certainty; by which a measurement tailored to behave with expectation to results below the threshold of error can be designed as one that furnishes a result only when certain criteria are met; with conclusiveness therefore of which co-determination is a process in as much as measurement thresholds on error are reduced below intrinsic error; by the argument that negation of a displacement is a real event; the equations being:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \tag{1400}$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \tag{1401}$$

The two fold equations (where η and ρ are probabilities, ω a frame, and $\sigma(t)$ the covariance of uncertainty or shared proper time) admitting the possibility of a zero-sum-displacement on that of measurables irrespective of the relativistic to non-relativistic bridge; and a manner in which to cast probabilities as geometric.

The Principle of Codeterminism:

The real difference here is that as soon as the criteria are met that covariance of uncertainty and measurement are within the ranges of error being lower than the threshold of quantum indeterminacy; a quantum state is set; of which accords with the return from a relativistic viewpoint to the non-relativistic limitation of classical dynamics; and in which measurement is then seen as a semi-deterministic process; and measure; a geometric certainty.

"In fact; I would go as far as saying that the equations implicate certainty as the 'other side' of relativity is a determination on that of probabilities as geometrically null as to probability; the naked statement of relativity is then that combinations of relativistic states assure that probabilities are certain when measurement is available; for in that of what is enfolded in relativity is a null prediction on all but the 'naked' quantum states of which we ascribe certainties; of which are decomposed into a complex language of evolution; but which necessitate meeting a 'null condition' of which is their raw constitution in light of relativity; the emanation of but one state; of which is the raw probability of 'A' or 'B' in question; a valid hypothesis on when we lack a-priori knowledge; but justified." There are two potential conditions of which hold true:

1.) Measurement is certain in as much as the declarative valuation of probabilities 'A' and 'B' are certain when the device fits the prescription that 'from above' and reasoned back from relativity to a non-relativistic limit general covariance insists that uncertainty is less for the measurement comparative to the measured; of which fits in a 'hole' of measurement; a pre-set category which exists to limit measurement to all but semi-determinism of measures.

2.) Uncertainty is nothing more than the wave prescription of the particle making itself known; to which there is null unknowability; and for which when about to relativity makes assurance that semi-determinism is the collapse of the wavefunction inside the scope of the adjusted reading; to which measureables always fit within a prescription of smaller in a 'sphere' of measurement to which fits a larger 'sphere' the inside out of which is uncertainty.

1.) is definitely what occurs in my device; in as much as the two body problem reduces to a set of two one body problems; of which resonate with one another; but to which feedback is limited to a range of 2-5 on that of the device; a cavity resonator of which the measure is certain to fit within the ranges of measurement if and only if one is presently given/taken on that of the device; questions of chaos aside for the sake of the order therefrom produced.

2.) indicates that wave function collapse and decoherence are opposite processes; occurring in tandem when there is uncertainty; but to which with certainty about to a relativistic process a given when there is a way to escape the given collapse; the return to the classical world without a classical 'fit' of which makes certain in space and time the relation of determinism the process were it to fail making the uncertainty principle a non-null principle.

In this; measurement is a real process which takes place whenever the relative uncertainty of (a) particle is lesser than the system with which it is interacting and producing certainty.

Proof by Dual Contradiction

As proof of this, consider the exchange of the spins or orbitals as separately from one another. We have illustrated a methodology by which they are representationally and therefore physically strictly dependent upon each other as upon coordinates.

As a result, neither wave function would be a complete eigenstate with both symmetries, and thus as a result of this strict dependence in the coordinate space, in order to adhere to both the Pauli Exclusion Principle and be completely antisymmetric in both spin and charge as attributes of the wave function both locally and globally within relativity under the objective provisions of an inertial state compared to an inertial state, it is necessary that the coordinates are corrected for so that the total eigenstate in spin and wave function under exchange are totally antisymmetric in space and time.

This is true because the global to local objective position of both electrons within inertial states is in conflict with the provisions of a physical and representational coordinate dependence for spins.

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

This can be seen most simply by way of the analysis of the eigenstate picture. If by contradiction, the spins and orbital motions were strictly dependent, then they could not be simultaneous eigenstates of the wave function and spin in the two body Dirac equation both locally and globally, and therefore there is no satisfaction of the Pauli Exclusion Principle, unless this dependence is corrected for.

Take a given eigenstate of momentum in a circle. It produces two prescriptions for the spins, and generates a dependence between them that is not a complete eigenstate in the Dirac equation separably for spin and momentum when it is considered that there is a strict dependence of spin upon momentum of an orbital variety in the global to local picture. While it is true that the spin and momentum are a complete eigenstate for the dual electron Dirac equation as it is written for each individual electron, in the two body Dirac equation so must they be complete eigenstates comparatively, yet each orbital motion alters the spin representation physically between either of the two electrons in such a manner it only holds as a local spin representation eigenstate.

As a result of the eigenstate not being a complete eigenstate in spin for both orbital motions, under the guise of a global to local symmetry for both eigenstates of orbital motion, it holds that either the separable groups of spin or orbital motion are not comparatively complete eigenstates individually for either variety in the net wave function and spin picture for the dual Dirac electron eigenfunction.

As a result of this, it holds true that in order to have an eigenstate that is a complete eigenstate in both spin and orbital motion simultaneously, there can be no dependence of spin on orbital motion, or at most a correction must exist for both of these to remain eigenstates relativistically, otherwise there is no simultaneous eigenstate globally, comparatively, nor locally, between the two electrons.

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in something of a product relationship in the conventional Dirac equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the Lorentz invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the Hilbert space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states.

There are two operations that are mutually exclusive to be considered. From the perspective of one electron within its own state, the other antipodal electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, but while preserving the contravarying and covarying contraction.

The state where the magnitude differs by a scale and its inverse, for what was an eigenstate a priori will no longer be one for the projection of the spin portion of the eigenstate and that of the orbital will not meet the product relationship locally and globally. However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence their projections into each other can remain purely antisymmetric in spin and orbital momentum.

The state where the magnitude changes scale for both projections is an admissible eigenstate, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the Dirac electron equation, it will continue to be so. However, since the projection as measured by their combination (the spin and orbital) will determine an area that differs, and hence the projection of the eigenstates into each other cannot be purely antisymmetric any longer locally and globally.

Thus, it appears that either of the two electrons comparatively must attribute the same equivalent weight to charge and spin to satisfy the dual conditions that are the eigenstate condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions relativistically it is required that a correction to the orbital momentum be introduced. This correction is nothing but the gauge connection for the sake of the orbital momentum as a consequence of a co-evolving spin of the electron.

This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body Dirac electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

With this correction; which is only manifest for non-free electrons, we have an anomalous energy lowering from relativity upon quantum mechanics which gives us license to prescribe a spatiotemporal entirely representational representation. The correction is something of a form

of spontaneous symmetry breaking, but it is exclusive to the two body problem, which remains to make the correct prediction for the individual inertial states, but not so comparatively, for this new gauge differential does not commute under the action of exchange, whether of singlet or triplet form, whenever these states are so separated.

This has special relevance to the origins of spontaneous phase symmetry breaking in superconductors. A final way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally is that they would not then be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli exclusion principle as Fermions.

By extrapolation upon the two body Dirac electron equation, it can be seen that the covariant measure as provided by the differential of the spin matrices and contraction with the electromagnetic four potential form a quantity that is a measure and a rate, indicative of the same symmetry as that of the inertial property of an interaction; so in line with an electromagnetic interaction that is made inertial by way of the representational quality of the spin in its evolution in space and time.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states.

The Principle of Reciprocity

In the superconductor magnet levitation experiment the measure of space becomes larger as the bodies exhibit freefall and the gravitational force increases in strength. The scale of spacetime is the Lorentz contracted invariant quantity of curvature:

$$\gamma^\mu \Gamma_{\mu\nu}^\nu \quad (1402)$$

This varies in proportion to gravity, for as gravity becomes stronger the $\Gamma_{\mu\nu}^\nu$ becomes stronger. It is judged by γ^μ , which forms the Lorentz invariant scale of spacetime to coordinate basis by way of kinetic energy. This makes sense as the term accounting for gravity in the Dirac equation is the same contracted curvature.

With a change of coordinates, the infinitesimal coordinate of the wavefunction is modified by the inverse of this scale, thus the following quantity:

$$\Lambda(x^\mu) = \lambda \gamma^\rho \Gamma_{\rho\nu}^\nu |\Psi(\gamma_\rho \Gamma_{\nu\nu}^\rho x^\mu)|^2 \quad (1403)$$

Is the generally covariant quantum energy density corresponding to the quantum field. λ is the quantum energy-distance putting the quantum probability density overlap into units of energy. The factor of $\gamma^\rho \Gamma_{\rho\nu}^\nu$ outside the quantum overlap scales the quantum energy so that it is consistent with the notion of the energy density per unit spacetime in the now curved space.

This implies scale covariance of the quantum probability with the scale of spacetime. For if the force is scaled by a relativistic factor but the probability is not scaled in the inverse manner, this does not represent a relativistic *transformation* of the quantum state. Additionally, a quantum force with an external relativistic scaling of the force but with no scaling of the infinitesimal of

the coordinate would not demonstrate general covariance.

This is true because the wavefunctions would remain of normal size under freefall, while the force would go up in strength by the covariant factor, and the quantum force would become stronger as a function of time in relation to the force of the gravitational field. In order for the quantum force to covary with gravity, and have the same strength it would have without the gravitational field the quantum probabilities must covary with the definition of space and time. The measure of probability density and the multiplicative factor on the force must vary in reciprocal fashion. This finds mathematical expression in the following.

If the measure (metric) of spacetime is:

$$g_{\mu\nu} \tag{1404}$$

And the measure of probability density is:

$$\zeta_{\mu\nu} \tag{1405}$$

Then:

$$g^{\mu\nu}\zeta_{\mu\nu} = \hbar c \tag{1406}$$

This can be re-written as:

$$\zeta_{\mu\nu} = \hbar c g_{\mu\nu} \tag{1407}$$

This expresses that the measure of quantum probability and the measure of spacetime are covariant.

This motivates the following principle:

The Principle of Reciprocity Part I: *Quantum mechanical forces covary in an independent manner with gravitational forces. Therefore the measure of quantum probability to relativistic measure of spacetime equals a fixed constant of \hbar . Or alternatively, the measure of quantum probability covaries with the measure of spacetime. If the measure of spacetime goes up, particles contract because there is more probability within a given interval of spacetime, and if the measure of spacetime goes down, particles expand.*

In this the relativistic factors are present on the terms of gravity, quantum mechanics, and kinetic energy. These cause the rate of time and definition of length in space to change. Therefore, quantum electromagnetic energies represent a energy multiplied by the metric, a covariant energy difference over the theory of gravity modeled as:

$$E_{\Lambda} = \Lambda(x^{\mu})g_{\mu\nu} \tag{1408}$$

In Einstein's field equation:

$$G_{\mu\nu} + \Lambda(x^{\mu})g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu} \tag{1409}$$

By understanding this, we can understand why the theory of gravity is incomplete in predicting a constant Λ . This is because it is identified with a constant probability density. It is a natural limitation of the theory of gravity to be incomplete in predicting the nature of quantum mechanics, as

quantum mechanics is an independent theory. In the case of gravitational freefall γ^μ and $\Gamma_{\mu\nu}^\nu$ are inverse and the dependence on the probability density implies that it is free to take on a particular shape. In the cancellation of coordinate dependence for the quantum energy of interaction, Λ becomes independent of gravity and represents the null effect of quantum mechanics with gravity.

Scale invariance implies that this energy changes with quantum mechanics, however there is still the law of gravity based on energy density considerations to bring in. If the shape of the quantum state changes then the quantum energy changes. Since the changes in quantum mechanical and kinetic energy are equal and opposite the net change in gravitational (metrical) energy is zero in a quantum process in generality. In this, the gravity and quantum mechanics are effectively independent energy changes.

Kinetic energy changes under the equivalence principle such that changes are equal and opposite to changes in the total potential energy. Changes in total quantum mechanical and general relativistic energy are equal and opposite in any process involving a null change in kinetic energy.

The Principle of Reciprocity Part II: *The quantum force covaries with the gravitational field so changes in the energy of either theory are independent of the other theory. Kinetic energy changes with the sum of gravitational field energy and quantum field energy, therefore kinetic energy changes independently with both theories.*

In other words kinetic energy independently preserves a relationship with both theories, and the following energy transformations are independent processes:

$$\Lambda g_{\mu\nu} \leftrightarrow T_{\mu\nu} \tag{1410}$$

$$G_{\mu\nu} \leftrightarrow T_{\mu\nu} \tag{1411}$$

Observability

Part of this provokes the question: Why does this not violate the uncertainty principle when we take the gravitational observables as classical and the quantum as nonclassical as a part of the same model?

Classical observables are inclusive of determined and also seemingly random events of coincidence. These relate to the structure of spacetime and the nature of causal events of the nature of the material realm. These exist within a continuum of manifestation of the physical processes and are not separable from the nature of the evolution of space and time. This inseparability is at the heart of the question of classical observability of events, which unto themselves possess only a location.

We must ask, is coincidence observable within this theory? It must be, as two particles may be considered hypothetically identical by the equivalency principle. This guarantees an identification of their mass, as a solution exists of like kind, in the abstract two particle model one builds from coincident events or measures. These in exchange must gain complete locality to attain total coincidence under interaction and to maintain equivalency of action and reaction when distributed throughout space and time.

The equivalence principle affords the quantum state with a reality in the comparison or measurement of states. Identical quantum states are realizable upon the space at different locations.

If two identical instances are considered at one point in a space then these evolve identically. In order to evolve identically in space and time there must exist agreement with these two types of comparison. This implies the descriptions of quantum mechanics and gravity agree on local and global comparisons of states on a fundamental level, and this takes the form of the qualities a body possesses being equivalent to those it has in relation to its environment.

This also implies that the complete structure of quantum mechanics and gravity are in fact one in which the particle waves have real interpretations [?]. This also promotes the realist interpretation of quantum mechanics as the wavefunction takes on physical meaning with respect to the space.

The uncertainty principle is respected in the form of the product of uncertainty in position and uncertainty in momentum being a constant, no matter the scale of spacetime implied by relativity. The distance between probabilities bear a direct relationship to the state, and there exists correlation.

Equivalence in the comparison of identical states throughout the universe [?] is now an automatic consequence of the general covariance of quantum mechanics.

As identity of coincidence is common to the quantum and gravitational pictures and information is not lost or in conflict with measurability when there is no separability of action and reaction locally, there is no loss of global determinism, which is the essence of measurement and predictive capacity. If coincidence were not the only thing observable reality would not be consistently determined, as measurement would not be defined uniquely.

This is consistent with gravity as only then does the uncertainty principle no longer pose a conflict with the equivalence principle, to produce a coordinate free representation with consistent action and reaction between all events. This equates to the totality of mutually existant events as complete and consistent in description of all events with respect to all others. Additionally, without this reciprocity there is no completeness of action and reaction in nature between quantum mechanics and gravity, as this is only dependent on coincidence, the basis of measurement, and as is required to avoid a mismatch and disagreement between these two theories. Finally, from this, exchange must be the correlation of spacetime and the particle, when we admit a scaling of quantum mechanics. As the particles become more localized, their definition of probability scale expands with that of spacetime to such a degree the very definition of temporal interval shrinks to zero size, yielding the apparent traversal of information faster than c with no such real violation. As the measurement grows to finite size the system is the quantum system with a scaling, which was interpreted as the gravitational aspect of the problem.

The scale of probability density is covariant with the measure of spacetime as was found. As we approach the interior of an electron, virtual polarization processes renormalize the electron density to become virtually larger, and $\zeta_{\mu\nu} \rightarrow \infty$. Given that this implies $g_{\mu\nu} \rightarrow \infty$ and this is the measure of physical space to coordinate space, coordinate space must become zero in extent. The speed of light is invariant in all systems of coordinates, so light traverses the space between the electron centers in null time as judged by the external observer. This is true because $g_{\mu\nu}$ is the physical metric compared to the coordinates, and implies with a covariant value of the speed of light that the time interval for the event of measurement is comparatively smaller for the external observer.

Light must traverse the distance at the same rate when comparing the distant observer to the electron frame, so it traverses the distance in **less time** in the frame of the distant observer. This can be seen as it traverses the distance at c in both frames, and there is more space as judged in the frame of the electrons compared to the frame of the distant observer. The covariance of c and a larger space in the frame of the electrons assures the space is traversed faster, compared to the frame in which the distance is judged as smaller. The light covers the finite interval between the electrons at a speed of light which is not only constant for the world, but for the electrons as well.

Thus all particles of a point like nature are nonlocally correlated with all others with instantaneous action and reaction throughout the universe. The quantum ensures the correlation only then through the invariance with respect to this scaling principle, yielding the apparent traversal of information faster than c with reference to a given laboratory space. Thus the event must necessarily become witnessed as nonlocal. State collapse exists with the observation of one system across space, but the alteration of this state is forbidden in this theory, since the particles together form a complete system and the condition on the state from the requirement of completeness and continuity of particle wave state and space time forbids the altering of the interrelationship between two states with observation by a third.

Equivalence Relation

Argumentatively the macroscopic and the microscopic realm are related and intimated by that of the relationships of the quantum to the relativistic domain when wherein it is considered that energy scales with size. But to that of the delimitation of its intrinsic properties; the nature of a given is not necessarily by necessity imparted as of to that alone which is mass for the knowledge that it possess weight; when it is considered that measure holds the ultimate assessment of a given property. So as to suggest that light (the speed and qualitative features such as flux) determine the scale at which an energy is energetically manifest through motion; and to which in uncertainty the relation is to suggest that a completeness determines (codeterminantly) that of the given of the scale of the abrea of its given contrast of effectible weight of probability; in a common geometric (hypothetical) language.

Therefore; the problem of unification is one of separability of forces; as induction; more so than it is of logical deduction from out of the relation of common assessments of weight in a common setting and context of capacity to endow motion; the preliminary observation of which is that the given open contrast of two normative valuations agree as to identity freedom and general covariance (coordinate freedom). As a given; we take quantum particles to be indistinguishable as a preliminary observation of the workable and tenable aspects of the quantum theory; for that of the common demand of consistency of a particle and subatomic model.

Reasoned this way; the affordance of a limitation on that of two larger objects fitting into the same smaller space; by logical deduction on that of the empirical and theoretically founded principle of equivalence to which the thought experiment implicates; implicate immediately that the bound on scale and scale free measures of codeterminism extends to the microscopic; therefore implicating the bounds of certainty (however somewhat vantaged) that are empirically motivated and theoretically proven by the thought experiment & that of the theoretical Pauli Exclusion Principle Bridge; to which the solution to Shroedinger's cat paradox is furnished; imply that certainty in physical law is derivational of the truth of identity freedom and coordinate freedom in compendium.

Justification and Ramifications

First to note is that the multiparticle perspective is one to one with the existence of interactions, which by way of and which there exists a connection to the differing frames of acceleration, and that these interactions must be included as a field potential energy momentum as it pertains to the full particle energy momentum as an observable in order for there to be a commutation relationship consistent with the uncertainty principle between the observables of the multiple particles. This is to satisfy the uncertainty principle with respect to the different particle's definitions of each other, and their mutual commutation relationships, for their definitions of momentum do not commute when the interaction potential is left out. Additionally, what is striking is that it is the full particle and field energy momentum as carried by the particle that defines the observable and it is not particle only.

This seems to express on a base level that it is the full particle energy momentum with field that becomes the observable in the multiparticle viewpoint, as such must be the case to satisfy the uncertainty principle with general covariance resulting from changes in the coordinates with respect to the frame of motion, resulting from and identifiable with the acceleration due to the interaction. As a consequence, the eigenstate condition of the Dirac equation is intact, although there is a slight difference in interpretation, arising in the context of the multiparticle description. For instance, the equation:

$$(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (1412)$$

Is the expression of the eigenstate condition of a particle like an electron. Although the single particle description of the eigenstate does not differ when mapped from the multiparticle condition, what remains to be seen is if the condition this represents mathematically is still identifiable with what it means in the multiparticle interpretation.

For while the Dirac equation, as it was initially interpreted, holds perfectly well with the condition of an ordinary partial derivative upon it being zero to result in an eigenstate, there is a subtle difference in the multiparticle setting with general covariance. Here, the condition is that the total covariant differential defined as:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (1413)$$

Must be used in place of:

$$p_\mu + \alpha A_\mu = \partial_\mu + \alpha A_\mu \quad (1414)$$

In the generally covariant setting. With this, although the Dirac equation is left locally intact, given that Γ_μ vanishes locally, it does not vanish identically for particle to particle comparisons. To prove this all it suffices to say is that the connection described in equation (8) is preserved under relative comparison of observables, and hence in general, or as for the multiparticle description, since Γ_μ does not vanish globally and must be included for generality.

As a final note consider that locally the description remains the same for the single particle description, for all particles, but that the multiparticle description differs substantially, as for instance γ^μ also takes on structure of the form of a function, and the descriptions may be inequivalent physically:

Hypothesis II: *The physics of the multiparticle description differs from the single particle description.*

In the case of exchange this can be an energy lowering. To note then is that this can lead to a collectively lowered energy in the case of superconductivity.

Examining superconductivity, for instance, the mystery is:

Mystery: *How does the energy lower, even if only in relative terms?*

This is only possible in a relative sense if the physical quantum description changes, and if the potential and kinetic energy both lower. But, the change between the singlet and triplet can be relatively modified by a matter of perspective. Internally to the system there is no change in kinetic energy as indicated by the field to frame relationship in the inertial frame, but observationally, it appears that there is a gap in energy.

To note then is merely that the triplet and singlet are repulsive and attractive, and therefore possess opposite relative curvatures, which immediately indicates a subjective-objective agreement of an energy difference of $2J$ per particle, because relatively there also exists an energy difference in the kinetic energy of J in the inertial mass energy by this same curvature relative to a system at rest external to it.

From the constraint of equation (43) and that which is imposed by the existence of multiple particles for which the condition of general covariance must be satisfied, the exchange phenomenon is relative and reveals a mass energy gap.

To prove this result quantitatively and rigorously one needs to evaluate the net integral, but this value is given empirically by the relation encoded in equation (44), which says that the differentials of these quantities are identical up to a constant of proportionality, and that their integrals should be equivalent up to a constant of integration. Then, because of this identity, the mass gap for an external observer outside the system, is the entire exchange energy difference of the two particles measured in the system of J with the change of the kinetic mass energy of J for a total of $2J$ per particle in sum.

In this context, the exchange is real only when observed from outside the system, and it is purely a relative phenomenon. Carefully noting their natures, that one is an electromagnetic potential energy difference when integrated, and that the other is an inertial mass energy difference when integrated, we arrive at the following conclusion:

Conclusion: *Relative potential and inertial mass energy lowerings are indistinguishable.*

However the gap must be weighted by the appropriate Lorentz factor, and this gives the formula and equivalence:

$$\begin{aligned}\Delta &= 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} \\ &= 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J\end{aligned}\tag{1415}$$

Mystery Revisited

The first thing of note in resolving this mystery is that the interpretation of the Meissner Effect is the confluence of the principle of general covariance and the uncertainty principle. The

physics does not change, merely the interpretation of the uncertainty principle. The two statements, one of the Meissner Effect, and secondly, one of energy conservation, are respectively the instantiation and extension of the uncertainty principle and general covariance. For instance, examining the equal and opposite fields which are one to one with spin angular momentum as mutual observables, is a manifestation of the uncertainty principle to say they do not depart from commutativity with respect to boosts. Secondly, energy conservation here is a principle by which the only dependence of this equal and opposite magnetic field is upon the perceived metrical relationship due to motion, otherwise the gravitational field of the body would change and they would exchange an extra contribution of energy, and would not preserve the center of mass under freefall. In showing by contradiction (of a dual nature) that one or the other of these principles is violated if and when the transformation is not reciprocal to the field, one shows that the Meissner Effect is a generally covariant uncertainty principle based phenomenon. This is one to one with the principle by which the fields are in inverse or reciprocal relationship to the relativistic transformation, and:

This follows from the indistinguishability of the inertial and potential relativistic factors.

What is known is that the covariant differential in total does in fact commute, and that when it is separated into particle and field momenta that these do not commute. Thus this implies a number of things. First of all is that it is only the total field and particle momentum which is inertial, which is the interpretation of the Meissner Effect. Secondly is that the four momentum of the particle alone is curved with respect to the field of electromagnetism alone. This is consistent because this leads to the condition of equivalent and opposite functional curvature relationships for these substituent quantities. Lastly, what this implies is that it is indeed true that the potential mass energy lowering in a superconductor is fundamentally indistinguishable from the inertial mass energy lowering.

From this follows the generalization of the condition implied by the first section of this paper, which is that:

$$D_{\mu}(i\gamma^{\mu}(p_{\mu} + \alpha A_{\mu}) - mc)\xi_{\mu} = 0 \quad (1416)$$

Which is nothing other than the condition for a covariant eigenstate.

As an experiment simply consider dropping a superconductor levitating a magnet, if this theory holds true then because there is a gradual change in the gravitational frame, as they fall their curvatures should contribute equally, with the prediction that the initial condition requires that they will fall together as one, given their mutual inertial relationship in an approximately inertial frame.

Conclusion: *There is a measurable and physical effect on the interpretation of the observables in the uncertainty principle given their coordinate system and frame independence.*

Introduction to Parsimony in Natrual Law

"As any true principle of science is established by it's only one priorly known given, as derived factual meaning is only as of what in any yet established relation is a conclusion to a then hypothetical foundation of fact, a factually considered conclusion; as meaning only derives from it's priorly one given known; that of any true principle is only exclusively it's one then given to that of what in one is the understood of all and a one as in a prior relation then reconsidered; a

known relation is two; to that of each."

"If one; a body; were to take a position of the predicate to its given individuation; for what for one would remain solid; the position of its alternative given provided; the multiplicity of the preceded are as a taken; known only as the given of the presumption of the position of in one; that of motion; to which they are bodies of which in multiplicity or at rest; a given in motion."

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of infinite dimension and volume; of the nature for which an infinite cascade non-related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation. Beyond this; the consistency of the given theory is justified on empirical results and exact experimental results in place of that of quantitative approximation of exterior alternative supposition based on qualitative difference of theory from given; the centerpoint of modern science and staple of reductionism; for that of which scientific extrapolation finds only limitation; as in that of what is encouraged through such inquiry is exact provision for proportionate quantitative and qualitative argument with that of mathematical interpolation of known's and given means of experimental basis; a method that is running dry of explanations.

Intermediate Commentary

The alternative limit occurs just as the relation shrinks to zero scale of a conventional self zero relationship of locality in the given sense of the limit of 'quantum mechanics' as the application of the principle of the conjugate principle of general relativity. This case scenario may be understood as the limitation applied to two body quantum mechanics; of the electron equation and under application holding similarly to each given consequence of the principle equivalence of either theory; in the limit of becoming of the limit of its strong application to the former small scale principle on the local scale. In this we learn of a principle under application to the Bose and Fermionic statistics of distribution and mechanics of the two body problem; by the insistence of the formerly labeled and called Pauli Exclusion Principle and that of eigenstate eigenvector condition on waves and particle distributions; distinctly different from that of their macroscopic application of the latter principle; therefore forming two distinctly overlapping theories of application.

Alternative Limit

The interior and effective representational algebra of the raising and lowering operators for the spin eigenstates via their commutation relationship so instantiated by real orbital motion of the electrons in the two body electron equation violates the Pauli Exclusion Principle representationally when exchange is not considered simultaneously to its consequent effective spin flip from

orbital motion.

When these effects are included they are representative of an effective artifact of equability upon the fermions at the same strength as that of the ordinary coulombic repulsion between them. A way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli Exclusion Principle as fermions.

Spin Aconditional Limitations

As spin is orthogonally freely and rotationally indicating of a direction; hence it so is a directionally defined; as within one; of that of the localization of a center with and without direction; yet of infinitesimal localization; the bipartite lattice is separable into colocally and mutually defined harmonic modes of pure circular evolution.

Operating Hypotheses

- 1.) *Rotations of the electrons upon the spin of the two electrons under exchange are clockwise and counterclockwise alternatively when viewed from above or below.*
- 2.) *These rotations are generative under exchange of an effective raising and lowering operator upon their individual spins by the commutation relationship of the spin algebra.*
- 3.) *Relativity holds fast to an objective artifact of relativistic frame transformation which is inertial in both frames of the electrons and there is no substantive existence of a tertiary or privileged observer.*

From this it follows that the interior phase gauge symmetry is broken and a coordinate dependence to the orbitals occurs that must be compensated for.

- 1.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that would violate the Pauli Exclusion Principle unless it is corrected for, for the sake of global to local relativistic considerations.*
- 2.) *Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli Exclusion Principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a equability of the states.*

Proof by Dual Contradiction

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in a product relationship in the conventional given equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the displaced invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the base space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states and lower and raise the orbital of their individual electron states.

There are two operations that are mutually exclusive to be considered. The electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, and must preserve this contraction.

The state where the magnitude differs by a scale and its inverse, for what was a requisite a priori will no longer be one, for the projection of the spin portion of the eigenstate and that of the orbital requisite condition will not meet the product relationship both locally and globally when witnessed as a simultaneous condition by either electron with the other.

However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence the projections of either electron states into each other will remain purely nonsymmetric per this principle in both spin and orbital momentum.

Alternatively, the state where the magnitude changes scale for either projection is an admissible requisite, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the two body electron equation it will continue to be so; for then the exception that is open interior boundary condition of any regular average.

However, since the projection as measured by their combination of spin and orbital momentum of one form and vector form, this determines an area that differs and hence the projection of the requisite states into each other cannot be purely nonsymmetric any longer locally and globally with both electron states and hence the Pauli Exclusion Principle is violated.

Thus both electrons comparatively must attribute the same equivalent weight to charge and spin motions and natures of the wave function (where the spin is effectively a wave argument as a motion and the orbital is effectively a wave number as a motion) to satisfy the dual conditions that are the requisite condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions as functionally free it is required that a correction to the orbital momentum be introduced, which is:

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \tag{1417}$$

The necessity of this conditional correction is no more simple than the inclusion of a secondary electron; as when there are two; the variational principle dictates that a secondary boundary and functional condition of consideration is that but one line runs through the differential field that satisfies the dimensional reduction that is both the Pauli Exclusion Principle and that of the

eigenstate and eigenvector equation. This correction is nothing but the gauge connection of the spin and orbital momentum as a consequence of a coevolving spin and orbital of the electron with these considerations.

This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states. The conditional preceded of a consequence in one of a causeless action; follows the condition; as the given of a preceded is the cause of a unconditional & causeless event priorly known.

Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating the force of gravitation and the curvature of space and time. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame; the realization and proof of general covariance and the theory of gravitation.

As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical. This reduces the problem of the extension of quantum mechanics such that coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses. This implies that absolute frame independence; as the statement of general covariance implicates that any given whole system of parts exists at a lower energy momentum than the given whole as a sum of individual parts. There is no other way to reason about the Universe making explicative sense.

Therefore what is measured by an observer that is stationary with respect to any given center of mass of a system is a physical energy momentum as determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, any given system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

This seems to be in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \quad (1418)$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (1419)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (1420)$$

Comparatively. For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content comparatively.

The analogy is actually quite simple, for what happens is that from or to the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (1421)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system; in motion, where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has actually occurred by the above quantum mechanical analogue condition of general covariance.

Conclusion of Mass Gap: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is an accelerated interpretation of this state under the absence of equivalent motion to all subsidiary elements to that of the external observer; an impossibility. This gap is guaranteed and real by observation from the indistinguishability of the inertial and potential relativistic factors under equivalence for any transition of a quantum nature; explaining the stability of matter; and the absence of antimatter in this universe.*

Introduction To Superconductivity

The High Temperature Superconductors consist of planes of antiferromagnetic spin texture that when doped create a material capable of phase transitioning into a superconducting state. From this it is reasoned that a spin field must be incorporated into the model. The generation of

a spin field, and the interaction of the net momentum with the electromagnetic field are then considered, as well as the implications for a covariant generalization of quantum mechanics in the setting of this field of spins, with the question in mind: "How does the eigenstate condition change in the context of a model which incorporates a field of spin and an electromagnetic interaction?"

This is shown via the covariant differential to lead directly to the principle of a reversed potential between particles interior to a superconductor. From this it is argued that an effect of mutual and relative curvature arises between charged particles in the spin field by way of the electromagnetic interaction. As a whole this description is predictive of pairing, the diamagnetic effect, the condition of zero magnetic field interior to a superconductor, and the gap. It is established that the states internal to a superconductor are in inertial freefall with respect to the spin field and under the influence of the electromagnetic potential. From this, we must move to a new viewpoint where the variables of spin curvature momentum and orbital momentum are treated in a manner such that they are in a non zero-sum relationship.

The attractive interaction in superconductivity and gap is motivated by the displacement of and reciprocation of quantum mechanical particle only orbital energy momentum and spin curvature energy momentum under comparison of different accelerative frames with the presence of an electromagnetic potential. The frame difference under acceleration by the electromagnetic field is found to amount to the effect of a lowering and raising operator under the covariant two particle Dirac equation in the presence of a spin field, which explains the appearance of a pairing gap, while the condensation gap is given by the reciprocal process of motion of charge pairs apart. If we take as known that there is a generally diffeomorphic transformation of our coordinates for a given system, then position and momentum take on new values, and with an acceleration there appears a coordinate anomaly. This coordinate anomaly is the residual effect of scaling by an unknown factor now known as:

$$\beta \tag{1422}$$

That this appears is indication that we have not instantiated the equivalence principle, and when we do, we find that the coordinate anomaly appears as a geometric factor analogous to a force, as in general relativity. These transformations of momentum and position to their generally covariant representations with the equivalence principle then imply that there is a gap, because different local inertial representations will differ under the auspices of a singular global description.

That this effect of different is not removable, implies that general relativity, and the theory of superconductivity are real physical phenomena, and not artifacts of our description. They are genuine effects of the lack of a local to global translation of general covariance, and implicate a gap. For instance imagine a series of elevator experiments around the world, and out in space. Enough force is applied to any of the elevators to make it such that they each feel one g of acceleration, as if on earth. If we make them numerous enough and equivalent to the mass of the Earth then the effect is a series of up and down motions as if the Earth were still present.

When we remove the constraint of support, they will evolve in an identical manner to the electrons in a superconductor. But because for a different observer there is no global agreement on local inertial frame, it will be the case that there will arise a difference in description for the local frames. They will not differ in their local description of physics, but relatively there will be a gap

that appears for any one in relation to the singular global averaged description.

Hence we arrive at a situation of global to local difference in description arising at differences in weight, and consequent potential felt by the electrons, binding them together. It is precisely these four things:

- 1.) Covariance over \hbar .
- 2.) Shared proper time.
- 3.) An instantiation of the equivalence principle.
- 4.) A difference from local to global description of free fall.

That make superconductivity real in the high temperature superconductors. It is the difference from local to global frame of description that creates the suitable conditions for a gap to arise in superconductivity.

The first statement of this problem stems from a question: *"How does the equivalence principle manifest in superconducting magnetic levitation and free space interaction between a magnet and a superconductor so as to maintain the Meissner effect?"*

The first given accords with the equivalence principle, and the second with quantum mechanics:

- 1.) The speed of light is taken to be an invariant fixed quantity, known as 'c'.
- 2.) The Meissner effect is taken to be the absolute diamagnetism of superconductivity.

This admits us to make a few conclusions:

- 1.) Non-Inertial support or accelerative frame:
 - a.) Under the provisions of a curved gravitational field, the system is static.
 - b.) Under the provisions of a non curved accelerative frame, the system is static.
- 2.) Inertial free fall or free space:
 - a.) Under gravitational free fall, the system is static but inertial.
 - b.) In free space, the system is static but inertial.

These are supported by the notion that: Due to the dot product of magnet with superconductor being a pure scalar, the dot product must remain fixed. For if we presume there to be a differential, we find that either energy conservation in the frame of the superconductor or magnet are violated if the dot product is not preserved under the presence of a gravitational field, or it also follows that if the dot product is preserved, but the differentials are opposite, there will be a violation of the Meissner effect.

This is consistent with the laws of electromagnetism, whereby a changing magnetic field from motion will convert into an electric field curl and therefore a changing magnetic field of opposite nature. Thus the nature of the Meissner effect and energy conservation are only satisfied if and only if the differentials of these quantities are zero in the case of static levitation or non-zero but equal and opposite in the case of inertial separation in space.

Thus we find that if the motion is inertial, and gravitationally free, the magnet and superconductor will separate conserving energy and momentum and preserving the Meissner effect in a Lorentz invariant fashion, and if the motion is non-inertial and accelerated, with or without a gravitational field, the effect will only be satisfied by the inclusion of general covariance, for which the Meissner effect can be seen as a prediction and a consequence.

Thus we can surmise that in general a magnet and superconductor interact as if the magnet's magnetic field is the displacement of a generally covariantly evolving electromagnetic field, and that in general the motion is inertial, as the generalization of the static property of the system. Finally we find that if the electromagnetic field displacement is equivalent and opposite by virtue of sign compared to the gravitational displacement, a magnet and superconductor will remain static at any distance. It follows that if a superconducting magnet system is appropriately established, there will be an inertial orbital mechanic analogous to the motion of the Moon about the Earth.

Superconductivity

The superconductivity described here is that of the high temperature superconducting compounds. These compounds illustrate very high critical temperatures and are usually spin based systems, found by doping oxygen or another atom into the material. This oxygen in certain materials known as antiferromagnets causes the planes of spin which are predominantly electron occupied to adjust such that they give up electrons to the oxygen doped into the material off of the plane, leaving behind holes in the antiferromagnetic plane.

These holes fall into pairs and condense under the right conditions of temperature and pressure to form a state of superconductivity. This is explained in the conventional theory by the presence of a 'gap' to excitations from a state with zero scattering, and hence zero resistive losses to the flow of a current. In addition to this infinite conductivity under certain conditions, there exists a quantum mechanical effect known as the "Meissner effect", whereby a superconductor will expel any existing magnetic fields once transitioning to the superconducting state.

This is not the same as simply infinite conductivity because if this were all that held true then a material cooled to transition in a magnetic field would retain currents and hence there would be a persistent magnetic field interior to the superconductor. However, what really happens is that the field is completely expelled. The magnetic field being zero interior to the superconductor is definitional of the superconducting state through the Meissner effect.

Antiferromagnetic Materials

An antiferromagnetic material is a magnetic material that is defined by two sublattices of oppositely pointing magnetic moments that when perturbed convey magnetic moment waves which are capable of traversing from one side of the material to the other. Antiferromagnetic, as well as magnetic materials, (distinguished by two or one predominant Neel vectors) depend not on the alignment of magnetic moments, as one would presume naively, but because this interaction is too weak and cannot explain the observed Curie temperature (the temperature at which the material loses its inherent magnetism). From this, the exchange interaction is the real reason explaining the magnetic interaction and persistence of a magnetic field to high temperatures.

The exchange interaction is an interaction whereby electrons are shared in covalent shells among the outer layers of their atomic models. These orbits accompany more than one atom, and the electron is said to be shared. When this occurs, electrons can couple to the dynamics of either atom for they are coexistent on multiple atoms. Due to the Pauli exclusion principle, they may not occupy the same atom at the same time with identical quantum numbers.

One of these numbers, the spin, does accord with the magnetic phenomenon and gives rise to an accompanying magnetic field on the site the electron is located on. But, as for the nature of their spin alignment, there is a small or weak magnetic contribution and a large or strong coulombically produced exchange. This coulombic exchange is the integral of the antisymmetric contribution from occupancy on the same atom with opposite spins, which gives rise to antiferromagnetism.

In other models, the non-valent electrons laying underneath the sea of mobile and valent electrons give rise to cooperative ferromagnetic alignment from on site repulsion. This means the atoms only possess for our interests one electron per site when considered as a ferromagnet, but when considered as an antiferromagnet there is at least a duplicity to give rise to mutually defined directionality. What distinguishes a ferromagnet from an antiferromagnet is not only this mutual versus single electron occupancy of atoms, it is the fact that there arise two sets of Neel vectors. Neel vectors in space are directions which account for the predominant magnetic moment of a sublattice. These are associated in a checkerboard pattern with the underlying lattice and give rise to a different ground state from that of the ferromagnet, which has but one aligned Neel vector per domain.

Intermediate Conclusion

Consistency is investigated with thought experiments involving a superconductor and magnet under mutual freefall and in the process of levitation. The parts of the system interact by way of fields, magnetic moments, and masses. Consistency with the equivalency principle under freefall of a levitated magnet requires the nature of the force to be generally covariant and the mass and energy changes to be null. The major conclusion of the paper is that of scale invariance for the measure of quantum probability to the measure of spacetime. This illustrates that the quantum viewpoint and the gravitational viewpoint demonstrate a mutual null mass change under levitation. This gives the first reasons to believe that the quantum and the gravitational principles share a null principle, excluding mass changes in either theory, and promoting the idea that these theories are in fact independent in some sense.

This helps explain the result of the EPR paradox, because the nature of scale invariance, and its consistency with general relativistic arguments explains why the result of the EPR paradox is not really in conflict with relativity, but rather a result of agreement. The interaction becomes completely instantaneous but obeys the equivalency principle and causality.

The nature of independence and dependence of these theories can be best summarized as follows: The representation and the object are in a sense distinct and different. This being the case, one can have a representation dependence that implies independence of objective objects, such as quantum mechanics and space time. The physical objects are independent in their physical and objective nature from the space time they are within, yet their representation carries a very clear dependence, for which its particular mathematical form is the expression of independence. In this sense they are both independent in physical reality and yet perfectly correlated in descrip-

tion or representation.

The theory of relativity, and indeed the extension of it into these physical problems is the essence of this division, for it makes clear that an objective and subjective reality exists for the parts of a given object. This property makes that which is ultimately most subjective (the aspects of relativity) very real representationally, and that which is most objective (the physical instantiation of a system, and the relationship of these theories to one another), of null change, or independent.

Interdependence of Orbital and Spin Momentum

To explain exactly what 'reciprocity' means in this context, consider the particles. In the two particle Dirac equation, there occurs an *internal* reciprocation of spin curvature energy momentum and orbital energy momentum. This occurs **not** because the particles merely *influence* each other, but because they *influence each other's representations* in particle energy momentum and spin curvature energy momentum to change. Hence the wavefunctions in remaining Lorentz invariant *remain the same physically*, but there occurs a reciprocation between the quantum and the relativistic *components* of the objects.

Now consider that given the Dirac equation holds for one particle. Any multiparticle modification of dynamics must occur internal to the equation, and not modify its overall structure, but it **can** modify the individual terms in a plus-minus like fashion. This is a way to side step the problem of coming up with a new and unique generalized transformation, analogous to the γ^μ , which will encode a curved space *in general*. In this way, the multiparticle and accelerative features of reality are encoded in changes of the components of the representation. This represents something wholly new however, because the old addage that '*the whole is greater than the sum of its parts*' applies. In this, the particles are **not** moving through each other merely because something only akin to a potential holds between them, but because a *change in each other's representations* arises from their mutual quantum and relativistic *relationships*.

An Instance of Reciprocity: *Reciprocity here means the comparison of different accelerative frames under the singlet and triplet, in which acceleration contributes to the spin curvature and orbital energy momentum, causing the two parts of the representation: the orbital and the spin, to reciprocate in space and time such that the particles mutually lower in energy and oscillate in space and time.*

Λ_ν is added and subtracted merely because of the rule of general covariance, and through quantum mechanics produces a reciprocation of accelerative spin curvature energy momentum and accelerative orbital energy momentum, so that the above can be put more simply:

Reciprocity Generalized: *Relative comparison of different quantum states under superposition leads to an energy difference in the states when different observable frames of acceleration are also compared.*

The emphasis in general is that **both** different relativistic frames of acceleration **and** different quantum states are compared simultaneously. Taking as the displacement the energy momentum associated with the change due to the difference of frames under an accelerative boost, afforded by the addition of an inertial interaction of the electromagnetic field:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1423)$$

Because of the equivalency principle, Λ_ν is zero in the frame of the particle and *does not* contribute to the single particle description. While for the *comparison* of states in the singlet and

triplet where different frames of acceleration are compared the contribution from the relativistic frame of acceleration *difference* leads to a *displacement* of $\pm\Lambda_\nu$. The essential idea is that the gap and attractive force arises from the qualitative difference between the single particle and two particle pair descriptions under the singlet and triplet. This makes for an interaction that results in a distinction that must be made between a particle in the single particle description, and a particle that is a *part* of a two particle state under mutual *acceleration*. When the particles are put together they produce a qualitatively different result from only the single particles put together with only an electromagnetic interaction. For instance, under exchange, interchange of frames: $\mu \leftrightarrow \nu$ creates a $\pm\Lambda$ relativistic frame difference on ∂ and Γ . Hence reciprocation is predicted with exchange, along with an energy difference of the singlet and triplet. This implies that reciprocation of quantities is one to one with inertial motion and this is one to one with an inertial electromagnetic force, which is in turn one to one with the Meissner Effect. However, the energy of the total system is lowered or raised under mutual acceleration by the presence of the extra Λ_ν which leads to the different momenta as operators producing an algebraically different result from their simple sum when operating on the wavefunction.

Hence, inertial motion is consistent with conservation of the exchange energy (through the cancellation of the distance dependence and inertial quality of the electromagnetic force) and reciprocation of spin and orbital degrees of freedom. We can conclude from the mere fact that spin-orbital reciprocation takes place that the exchange energy is conserved and one to one with the initial statement that the equivalency principle holds for the force law holding the charges together. Hence, a non-dynamical difference in the exchange energy can be seen as an outcome of the inertial property, or the inertial property holding true can be seen as an outcome of the exchange energy developing a difference, but neither can be proven entirely by independent means. Finally to note is that this has an implication for general relativity as a reaction, for when the transition to the superconducting state takes place its mass lowers, invoking a complimentary raising of general relativistic energy. This, in its general form, is what reciprocity means in the end. For the gestalt picture of quantum mechanics and general relativity produces changes in each, which are complimentary, because the general relativistic modification of the quantum description, lowers the quantum energy, and it raises itself.

Pairing and Condensation

The connecting principle that implies Δ_p is at a maximum when Δ_c goes to zero, and vice versa can be explained by two facts:

- 1.) *When particles fall into pairs they become more localized in the orbital degree of freedom, hence their relationship to one another is a **larger boost apart** between the holes comprising distinct pairs.*
- 2.) *The electrons and lattice **counteract** both the condensation and pairing with a resistance to an expansive force at low doping and to a contractive force at high doping. The electron sea and lattice that exists works against pairing and condensation, while remaining of equal localization to the holes.*

The density of electrons exists in proportion to the localization of holes and electrons (or inverse to their spread) and hence is also proportional to pairing strength. Simultaneously, the outward force of the pairs accelerates them apart, leading to a condensation strength that is proportional to the density of holes. Thus the inter-pair boost is largest when the density of holes is large, explaining a large condensation gap at high doping, and the inter-hole boost is largest when the density of electrons is large, explaining a large pairing gap at low doping. Hence the two

processes of balanced forces and distinct effects of the electrons or holes are at odds, yet the force inwards must balance the force outwards.

As a consequence there exists a range of doping intermediate between the extremes where superconductivity exists and it must fall off to both sides like a semicircle reaching zero because the electrons and lattice counteract the condensation force at low doping with a net contractive force of electrons with the lattice, and pairing force at high doping with an expansive force due to the large number of holes.

Since condensation may be treated as the change in orbital localization due to relative frame, and pairing may be treated as the accelerative parameter due to the localization (inverse to the spread of the wavefunction), the net effect is described by the energy lowering being the contracted factor of:

$$\begin{aligned}\Delta &= 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} \\ &= 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J\end{aligned}\tag{1424}$$

This is because the factor of Λ_{ν} is the factor corresponding to the boost leading to pairing, and γ^{ν} corresponds to the *excess* energy lowering from relative frame due to change in the boost parameter by acceleration into pairs. This is thus a factor multiplying the accelerative frame difference corresponding to the pair energy as a relative boost between pairs of the condensate. If it goes to unity then the energy of the condensation gap is zero, while if the acceleration goes to zero then pairing vanishes. Everywhere the gap is the constant of $4J$. This interval of superconductivity occurs when the lattice plus the electrons that exist balance the force outwards of the condensation and the force inwards of the pairing, but since the force is nonzero, and it acts through a distance by the effect of length contraction, the holes experience a net energy lowering intrinsic to the material.

Opening To Superconductivity

"The reason for superconductivity is that "Electronic Inertial Considerations" (their timescale) with the contribution of time dilation contraction factors exceed the importance of all other considerations (with a suppressed screening) leading to a net attractive effect."

The clue that lead to this discovery is that time has effects on any physical problem; of which time dilation contraction from relativity makes a contribution to both physical insight and physical phenomena in a problem in the real world; of which relates to that of a deep problem when the different phenomenon are combined into a whole; whether from the experimental or theoretical perspective.

The major insight was that time dilation contraction via the twin paradox makes the situation such that from an observer A; their proper time in otherwise equivalent motion of two bodies, of their own clock will be greater than observer B; and likewise for B also in motion; that of the the reference of observer B; for this body, their own clock in their frame will measure greater than viewing observer A.

This apparent contradiction can be reasoned back from the one particle viewpoint into which the special and the general theory of relativity are derived for that of two particles in either relativity

or quantum mechanics; arriving at the above result; for there is no contradiction when acceleration is entirely included in a proper treatment; of which deals with this as a shared proper time; the result being that of which is their time under exchange and overlap with superposition.

The different characteristic terms of the superposition formula then take on the form of two equations; one for which superposition is treated independently for either particle; their destructive interference; and that of an other; for which for either particle as a both; when together with constructive interference; there is that with shared proper time; an extra term idealized to that of their configuration when together in a collective whole the two body and one body derived therefrom.

This makes the treatment of a problem involving one and two bodies of interest that much more accessible; as a consequence of dealing with separable terms for that of one particle in the presence of the other with a given relative interaction.

This affords for that additionally of a relativistic effect whereby time dilation contraction reconciled by the two body problem relates to elimination of the one body problem for the two; in which the situation differs only by the comparative measure and rate of time; to which one body always exceeds the alternative body; thereby having a physical effect on that of exchange and construction and solution of the two body quantum mechanical problem of electrons interacting in metals.

Sections

- 1.) Shared Proper Time
- 2.) Superposition
- 3.) Exchange
- 4.) Electromagnetism
- 5.) Commentary
- 6.) Summary
- 7.) Synthesis
- 8.) Conclusion

Shared Proper Time

Shared proper time is a conversion factor from superposition in which certain limitations are imposed as a consequence of prohibition to a two body problem alone; which emphasizes one body in a tandem balance with the other; for which one body can evade the other in time as the cost of coming together in space; known here as $\sigma(t)$; and developing as a consequence of superposition into which one body occupies the space of the other by anti-symmetry in time; following the rules of exchange of spin one half particles for electrons into which the states factor; as a consequence of their ordinary electrostatic repulsion.

The theory is that when the electrons transform following the rules of time dilation contraction; they will explore a temporal domain that follows from further away than in reality in time than they are apart as a consequence of separation in space; to which there is a balance; that of the extra time dilation contraction effect supplying the reassignment of particle wave structure with a diminishment of the ordinary electrostatic repulsion into a partial attraction that will be shown

to become stronger than the repulsion by a factor of two; to which there is a difference accounted for by the fact that geometrically both particles participate.

- 1.) The shared proper time is the factor of which proper time exceeds the comparative time of that of the other body; by which particle A and particle B coparticipate to exceed each other's relativistic factors; similar to an 'X' shape; an inequality by which either in their other respective frames exceed that of their original frame when viewed by the respective partner particle frame.
- 2.) Shared proper time comes about because of the artifact of time dilation contraction effects to which relativity posits that one is greater than the other; although here we are afforded to say that the proper time of 'A' exceeds 'B' and that the proper time of 'B' exceeds 'A'; to which there is a degeneracy of description and of effect; in that of one exceeding markedly the other.
- 3.) The distinction to be formed is whether one exceeds that of the other only in proper time; or to that of proper time to proper time; to which it is quantized; and the definitive answer is that it is of proper time to proper time when gauged by that of the particle in the other frame; to which the body is quantized; this being the effect to foremost analyze; first; at that of any potential disambiguation.
- 4.) The difference is that of which we posit that relativity has real, marked, and testable effects, one of which is that the excess of measure of one rate in one frame exceeds that of the other frame in which the same particle is participating with an other; to which both seen either way would exceed in factor and measure their respective ancillary descriptive time dilation contraction factor that of the other.

Superposition

Then to that of superposition; the electrons either participate in a moment aside or to the same one; and of which when there is variance; the question as to if they vary in the temporal direction; to which it is addressed that they either are or are not; but that when additive; it produces this effect; for of what of one there is in that of a superposition in time; the effect is admissible for the reason that how time flows affects more than just space; but that of the quantum wave function; and to how; it affects the distribution in the temporal direction in an exclusive manner of superposition; then there is an effect of two and a square for that of either present.

If there are therefore effects of which the particle is spread along time (and there definitely are) then there is the question of space to which unifies the field's; to which is the only question; as to if superpositions relate over the field of time in the temporal direction; whether it be imaginary or real; but present; being the clue to shared proper time; to which we arrive at a quantum field theory; and the breaking away to that of a genuine theory of the character with which two fields will pair; then as a consequence of shared proper time; that of which unites two bodies being produced as an answer; for that of either together produce more this way.

- 1.) When superposition is taken account of therefore there is an extra contribution from that of excess in each other's frame; due to the effect of time dilation contraction; which exceeds that of the other particle; making it appear and as in keeping due with what actually happens; one duration lasts longer but equivalent in either frame; non-paradoxically; due to their motion in tandem.

2.) This superposition occurs between the partner particles in such a manner that the effect is doubled; and occurs twice as large as a consequence of their two factors overlapping; to that of a square on the factor; non-diminishing because they are twice as geometrically present when accounting for single versus two body considerations; and we have superposition accounting for this nature.

3.) The effect is therefore twice as strong and squared of it's original strength in non-determinant unitless variables; and of which is not a square root as strong (so as to be weaker) because of the imposition of the exclusion principle; it is therefore as to say that time dilation contraction effects become more pronounced to that of other considerations in the system; such as the screening dipole effects.

4.) This is all as a consequence of utilizing a single and two body superposition rule that determines the equations of motion in which two bodies separate and combine at differential rates; becoming of a bound nature rather than of a free variety; to which when they recombine they are of the full geometric strength of the quantum exchange which ordinarily occurs; only twice squared as strong.

Exchange

The only thing that could potentially prohibit this behavior is if an electron with spin up were not entirely conjugate to it's pair partner particle as spin down; to which time being a degree of freedom would indicate a new degree of freedom; but one to which at that would reverse the sense of the symmetry to one where there would be difficulty finding both one up one down in time; with space; as to that of which is confusing because we deal with orientation in time and space; and soon run out of capacity for thinking of this as a plain state; naively however for what of one is of a temporal wave function; it is perfectly amenable to have the counter directionality in space and time; to which they must adhere for that of exchange.

The state identified has both orbital moments collinear; in the motion about the center of attraction; to which they coparticipate in entirely opposite spin in space and time; the triplet in which exchange proceeds by a factor of four on that of the reversal of the repulsion into an attraction; thereby occupying a state with admixture of which is with opposite spin and same identical orbital spin; of which relates to that of the exchange by a degree of freedom by which either sees it's complimentary opposite spin exchanged by a full rotation; as a consequence of the stymmetry considerations of the two body problem; and to which it is quantum.

1.) Because the bodies are bound to each other; they are in a paired state when they are twice squared as strong due to relativistic effects being as strong as exchange; each other implying the strength of the other for they are of equivalence under the provisions of which spin is explained; although stronger for the reason that identically with the relativistic shared time argument twice squared stronger.

2.) Identically exchange is when one particle occupies the position and momentum of the other; but for that of a sign change of which cancels; they both go into each other's states; then reversed; to which the sign on the potential is reversed; the final mention we need of which reverses the repulsion into an attraction; for an effect that is effectively as strong as the coulombic repulsion by a factor of two.

3.) When exchange is amounted for; thereupon in which the states are divided by their spatial extension; there is therefore an effect of attraction known as shared superexchange which produces twice the effect of the coulombic repulsion; no longer carrying a factor of two; for it is dependent on their own frame; to which we see a difference; for by comparison of proper time to proper time in exchange.

4.) This is the final redress of which is that avoiding each other in space and sharing time admits the electrons room to capacitate motion into each other's exchange potential of twice squared the strength; enough to be as strong as the coulombic potential all the way to their closest proximity; the reversed potential enough to overcome their repulsion and bind the particles into a shared potential.

Electromagnetism

The first inclination is that electricity and magnetism is stronger for one phenomenon over the other; but this is not the case; in fact; they are are identical strength; to which the certainty is that the electric and magnetic forces must then take on different forms; to which the answer is that they indeed do; for the direction of localization and (treated on a separate footing) coulombic overlap of exchange participate in a differential off set of shape versus coparticipant factors of which superposition and exchange are a part.

The clue to superconductivity for today is that of transverse relationship by which the magnetic field is as strong as the electric; to which is owing due to time being perpendicular to space and quantum uncertainty in a manner such that effects can manifest from zero velocity on that of transverse motion; attracting in the magnetic field for what otherwise is a repulsion in the coulombic directionality; in fact this effect will take place any time there is relativistic addition of velocities; for the geometric nature of their addition is empty to a base foundation.

1.) Electric fields via the delocalization along the temporal direction are suppressed; to which magnetic fields by the transverse relation are emphasized; then the interaction from exchange in pairing being just as strong as repulsion; leading to a naked interaction which is just as strong in repulsion and attraction; via the magnetic force; which is equivalently strong when moving at the speed of light gauged to it's own meter.

2.) The greater time to which is the resolution of the two body problem relates to a net attraction which is stronger than repulsion; when there is time dilation contraction of the 'opposite situational degree' on that of bodies; then body 'A' attracted to body 'B' because 'A' participates in a longer time dilation contraction and body 'B' to body 'A'; for the very same reason of which is of an alternation and depresses the ordinary repulsion.

3.) The only reason we would have to speculate that electrons attract is to the certainty that is a magnetic effect and interaction that is as strong as the electric; to suppose that the electrons are moving at the speed of light; and to that of the effect that relativity has been 'switched off;' so as to suppose and say that the relativistic effects are fully manifest; and that of which there is a point of relativity non-perturbatively emanating from infinity.

4.) The reason here extends to the quantum theorems; to say that dissection of the two body problem resolves to null uncertainty; that tantamount to resolution of the two body electron problem is the realization that quantum effects can be fully certain when determination of their

separable one body problems leads to a fully blown quantum problem; precisely when momentum uncertainty is precisely classical in it's given sense of participation.

Summary

After years of inquiry; I have surmised that the interaction is:

- 1.) Geometrically identical to the Coulombic (ordinary) repulsion between electrons.
- 2.) Identically as strong as the ordinary Coulombic repulsion between the electrons.

The idea is that 'Shared Proper Time' contributes compensating factors for which are geometrically complimentary to the 'structure' of the magnetic interaction in such a manner as to attract as strong as repulsion under these guidelines.

With the relativistic 'Shared Proper Time' the contribution compensates in such a manner as to geometrically augment the interaction and 'structure' into a plain Coulombic like repulsion; only it is an attraction as 'Shared Proper Time' scales.

In this 'Shared Proper Time' is the manner in which from particle 'A' particle 'B' participates in lesser proper time when in conversion to frame 'A;' the effect of which is to emphasize the magnetically attractive interaction of particles 'A' and 'B'. This leads to a situation where particle 'A' and particle 'B' are caught between the extremes of repulsion and attraction at a strength of the ordinary Coulombic interaction; but where the screened repulsion is eliminated for that of a real attraction.

Geometrically the effect of 'Shared Proper Time' and relativistic conversion from frame to frame admit an interaction therefore that is strong as the Coulombic repulsion; and twice squared as present due to exchange; by way of which they overlap.

This is due to accounting for the spin projection and the occupancy of states; which are twice squared due to there being two densities; and two particles; of which participate then in a singlet state of d-wave origin; attractive by accounting in number.

I have therefore finalized my inquiry into this (difficult) topic; and would like you to comment on what you see is relevant here.

Commentary

The answer to the paradox is that the effects of relativity and quantum mechanics are both real; and not matters of perspective or vantage; but find a solid footing in that of either other's arena's to which they predominantly spend an occurrence of time; the effect twice squared as strong because both electrons are present; and occurring at all because the comparative measure has one at smaller comparatively to the other; to which any relativistic time dilation contraction is referenced to the single body and comparatively greater to the other in the two body equation. This paradoxical result comparatively to a paradoxical relationship and situation is effectively because of vantage and position being a component and element of the situation; for that of the comparison to time for when exchange occurs to which the reversal of one body into two body

dynamics invokes an exception when both bodies participate; that of which there is additionally twice squared the geometric effect for the body itself; due to being in an exchange state and the reality of the relativistic effects and quantum mechanics both as contributions for the particles. This effect is therefore non-perturbative in that we would not obtain a result for anything but a 'quantum leap' to that of the solution; to which it requires that of an assumption on that of the potential we find as a consequence of the situation we derive from; and to which there is an agreed potential found as a consequence of relativity and quantum mechanics; of which is dependent on that of time dilation contraction and exchange; for which both bodies participate in the whole behavior of which there are at least both contributions equivalently as strong overlapping.

A portion of this has to do with why the effect exists in the first place; that having to do with the residual interaction it represents when there is a balancing background of protons from oxygen and copper in the cuprates; or that of a lattice from which the electron free states develop; and that of the fact that when under reduction to the single body dynamics effects do not disappear despite the absence of another particle; for the sake that there are overlapping quantum and relativistic effects; of which both develop to that of contributions to the twice squared effect.

1.) Probability density is enfolded in the inward outward relation of time dilation contraction shared proper time; the portion of complex and imaginary probability density concealed in an inner outer relation of which is the portion of the shared probability density; to determination of the shared proper time for which it is of longer duration in co-mutual orbital momentum.

2.) From either electron's perspective the duration of proper time is greater; to which relaxes the probability density in the forward direction of time; to which escape is prohibited as a consequence of the condition on shared proper time alternatively depressing the coulombic potential at the same strength and to which it is in an attractively strong interaction in two.

3.) The effect is squared and twice as strong via superposition for which there is mutual occupancy and under conditions of which one shared proper time comparatively advantages two factors of the probability density; of which then when under exchange is a full twice and twice the contribution of one singly occupied density; of which makes for twice over repulsion.

4.) The nature of the interaction is for proper time to be witnessed as larger for either density from it's own reference comparative to the other body; a reversed sense of which is to the greater of either's density in space when time dilation contraction occurs; which reverses the sense of the interaction to attract to a lesser delocalized density in time; therefore attractive.

Synthesis

It may interest the reader to know that I got up from rest with a conclusive idea:

1.) Relativistic conversion of frame to frame is tantamount to conversion from ' μ ' to ' ν ' as labels; but this is nothing more than a re-labeling of pre-existent quantities or qualities; to which ' μ ' and in description ' ν ' are nothing but the same (idealized) and 'proper' time of flight of two 'prescriptions' for differential descriptions for the same 'certain' thing; then the point being that they hold 'geometric' or descriptive prowess and place in our equations; in as much as physical content of description.

2.) Re-labeling of ' μ ' for ' ν ' does nothing really in essence but re-label our description but does implicate a physical effect of prowess to which is it's physical importation of meaning; meaning to which is that from frame ' δ ' frame-descriptions ' μ ' and ' ν ' carry information about the system with physical implication; the momenta or position may differ to which energy and momenta will differ in the contrast of looking for physical 'effects' of which are 'affects' of frame descriptive prowess.

This holds two parallels where description of frame ' μ ' and frame ' ν ' holds the resultant of a physical effect; for which one deals with the certainty/uncertainty principle; and one of relativity:

A.) It can be seen that the resultant description one arrives at carries the physical import of frame ' μ ' and frame ' ν ' conveying information about the momenta and position which differ from their frame descriptions in ' α ' versus ' β ' as auxiliary frame labels and points of view; a view which holds physical import of meaning in that of a two body or larger interaction there is an apparent but very real energy dependence by the transparency of descriptive prowess holding geometric content.

B.) It can be seen that the derived notions of certainty in ' ρ ' and ' η ' of which are their geometric factors of probability amplitude scale in such a manner as to compose to unity; of which the - again - very real and particular weight attributed to either body will differ considerably such that a geometric rule holds; these being the momenta and position derived results of finding the particle within some certain region of space traveling at some certain rate; thereby an overlap and difference following.

Here is the main point; we can convert between these systems of knowledge; or we can say they are the same thing; idealized to description to which the seamless integration of known's for what are their conjugate twin relations stem from the same geometric rule of possibility; then to which they are projections of the same thing; that is to say that relativity and quantum mechanics become the same.

I found that there are three key points here of emphasis in terms of descriptive prowess of import:

1.) Frame description ' μ ' and frame description ' ν ' carry physical import of real physical and geometric nature; to which we can even describe a 'law' that has a real physically sound 'effect.'

2.) These frame descriptions are 'seamless' in that we ascribe something to them; but that the 'real' identities of physical quantities holds no meaning; other than that it is privilege to a transparent law.

3.) Frame description can be fragmented in such a way that it's displacement is a law of probability; to which one body in replacement for the other suffices to describe a breakdown of presence and absence; to which the total probability being unity; either law obeys 'certainty' at the same identified and particular 'point' at which the laws agree; one into which transparency and seamlessness of integration and differentiation become identified; and both laws hold truthful weight and bearing.

For now; all this is surprising to me; to find that an invisible law holding no more than descriptive prowess would impute a relation of which is physical material weight of apportion and leverage.

Ordinary Attraction

Of what is:

$$\gamma^\mu \tag{1425}$$

That of which we determined is a *free* substitution:

$$\gamma^\nu \tag{1426}$$

Is therefore freely un-determinantly free of proportion in a stated lexicographical order unto any explar three or two knotted relation; for of what is equivalently distributed; one variance holds under it's mean freedom of asymptotic measure. To what are any three or therefore two electron's (or that of any two and a third of electron and proton - without which hydrogen would not exist; and carbon remains inanimate and non-chemically valent to all organic and inorganic compounds); that of what is a molecule (a possibility); implies that the stated non-heterological err of it's retroinclinic isomorphism is asymptotically radical free under reduction.

That of three polynomials in physical space therefore commute to what is a free non-topologically free understood isomorphism class invariant of three 'clock's' of measure and reduciability of two quotient spaces to non- μ invariant asymptotic freedom in the third (and therefore any) cross slash diagonal summative event structure of causation unto the naturalized (and non-radiative) law's of physics.

Exchange Locality Theorem

To begin we identify a given admixture of partial differential equation following the principle of a connection to a given here ultimately knowable quantity; that of the orientation and juxtaposition of the particle's inertial field(s). With the statement of symmetry:

Statement of Symmetry: *"Extrinsic modification to an equation under antisymmetry of operators and symmetry of operators have intrinsic interior symmetric and antisymmetric parallels under operation of exchange of a particle with a pair field."*

Under these provisions the properties of a two body particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of it's given self enfolding for one particle and a replicated particle and partner field. The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Psi(x, t) = \Lambda\Psi(x, t) \tag{1427}$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) - \alpha^\mu \beta^\mu \partial_\mu^2 + i(\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))))\Psi(x, t) = \Lambda\Psi(x, t) \tag{1428}$$

The idea here is to factor the equation in a different manner; owing due to phase and conjugate phase freedom from the logarithmic identities of principle equivalence and principle inequivalence provided. First; we need phenomenological reason to believe that a composite factoring of the two body equation occurs in the first place; the foundational reason of which is provided by relativity. The existence of:

$$\Lambda \tag{1429}$$

And:

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \tag{1430}$$

Finally; that of an SU(2) algebra has a conjugate *form* to be found in Λ ; for then in ρ and η .

Note of Measureability

In order then to investigate a potential factoring of the Dirac equation into which the two body problem can be dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which we escape the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions.

In this then we prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave descriptions of particles; to which belong to differing frames; denoted by \sim or $-$:

Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1431)$$

The first equation described here just above is the equation we arrive at to describe the addition of velocities into which sum to a finite difference in an externally situated point of measure and reference. The second equation is to which we find that inequivalent velocity combinations in their own frame's (under their congruence) afford for extra proportionality of either given intermediary time dilation contraction effect (here denoted σ):

Principle Inequivalence:

$$\eta\rho + i\sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1432)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union of motion; with an interior dilation contraction factor owing due to their comparative measurement of time.*

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point like limits of relativity; for that of each such principle equivalence of time and principle inequivalence of codeterminism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassing of either of two subcomponents of the alternative exterior difference is constructible.

Therefore with general functions:

$$\eta + \log(g(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (1433)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential

nature.

Therefore considered together these two imply:

Addition of the Logarithms: *Either one; or both (two), given absolutely arbitrary limits of independent point-like relation(s) of proportion of electricity & magnetism to (a) given variety of non-locality exist(s); for which with but one; beginning or end congruent relation is empty of boundary condition.*

To illustrate that this is not impossible; non-locality would need to be insisted to violate (4) and (5) for which an exterior probe of measurement would need under all conditions measure the relative rates of time of the two constructible relationships. Therefore it is perfectly amenable to analysis to conclude the equations (4) and (5) hold in general for the two body quantum problem; and as these are consistent with the special and the general theory of relativity per the derivation; there is no necessity of further discussion. The outcome of logarithmic addition is the extension of electromagnetism when this variety of phenomenon is admitted.

Conclusion to Superconductivity

This is therefore a Type II Covalent Bond; to which I would ascribe it's content due to the nature of time for to replace the notion of space; in that of the model picture of covalent bonding in that of organic and inorganic compounds of which it takes it's name; for in that of what is space in a typical covalent bond is replaced by an argument about time; identically to that of the description of superconductivity. Reasoning back from the two boy problem as a one body problem; to that of two one body problems with certainty admits resolution of measurement into from which it derives; that of the conclusive presence of relativity as a precursor per the prescription of time dilation contraction working in tandem with exchange via shared proper time into states that exist because of their dual restrictions on the one body states from which they derive; then into which they then relax into lowered energy. The existence of a shared proper time which is in excess of unity; demands that as delocalization along the temporal axis acts in tandem; that the interaction is attractive; thereby attracting localized bodies in time to those delocalized in time. The fundamental reason for an attraction is that shared proper time grows with separation; and is of a reversed interpretive standard to that of spatial geometric effects. In conclusion; the magnetic field of which was assessed at the point of vantage of body 'A' correlates with the full force of magnetism being as strong as the coulombic at point 'A' to which noticeably leaves a fuller force away from point 'A' precisely because of the inverted temporal relationship on the bodies; and to which at point 'B' would become larger comparatively; because of the bodies spatial separation; to which the interaction when enfolded in on either body makes for a net non-zero interaction of attraction. The finalizing idea is then that as magnetic fields vary; so too does the time dilation contraction in space and time; in a manner that reinforces to an identical universally attractive interaction at the same rate and with the same geometric properties of the coulombic interaction; the quantum effects then being of the nature to which they agree with probability 'concealing' the overlap in this otherwise uniform interaction; of which is secondary only to the coulombic interaction, attractive, and geometric. The relativistic transformation is the inverse of the magnetic transformation; effectively it's mirror image; therefore the electrons interact in a situation where at 'any' velocity they are effectively moving at the speed of light; to which as the magnetic interaction is only an epiphenomenon of the electric field in motion this case situation reduces to an attractive interaction at the same strength as that of the electrostatic repulsion; owing due to the proper time of 'B' in frame 'A' being less than 'A,' and the proper time of 'A' in frame 'A' being greater than 'B,' the effect of time dilation contraction; explicitly in the two

body problem; to which I have tools to resolve the problem mathematically. This time dilation contraction effect; and it's effect on the magnetic field is comparable to turning 'off' relativity; to which charges will always interact as strongly magnetically as electronically; therefore a net uniform attraction of charges to charges of which is made larger via the accounting of exchange.

It is only really two things:

The shared proper time; and proper time of 'B' in frame 'A' being less than 'A,' and the proper time of 'A' in frame 'A' being greater than 'B;' The relativistic transformation is the inverse of the magnetic transformation; therefore the electrons interact in a situation where at 'any' velocity they are effectively moving at the speed of light; turning 'off' relativity and reciprocating with the magnetic field reveals a picture where there is then only:

- 1.) Shared Proper Time
- 2.) Superposition
- 3.) Exchange

Once the ordinary electrostatic interaction is absent this is all we deal with; to which the magnetic interaction balances with the electrostatic interaction and all we are left with is two forces in balance around which the geometry plays out amidst a relatively neutral background of forces and particles.

The Cosmological Constant

The cosmological constant is a constant energy density in Einstein's theory that produces an extra term in the gravitational field equation leading to a global expansion or contraction of the universe. Particles in space consist mainly of hydrogen, and so the only interacting particles among these atoms are the outer electrons, and to a lesser extent, their protons. Exchange appears to play a role in this problem, even over the vastness of space. Consider if you will the exchange energy of two electrons on hydrogenic atoms across interstellar distances. From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the vast majority of the observable universe.

The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet. As well, this energy must be conserved. And, it involves the spin of the electron, representative in the isotropic hydrogen gas of a spin system or a local Lorentz frame, however, it is dilute.

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective

description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

A 'perfect' linearity would agree identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it would scale in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle as it applies to quantum mechanics and general relativity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of redshift, and colocality throughout the universe only within simultaneous cross sections of space in time we observe when looking out into space.

The Origin of The Cosmological Constant

First and foremost take as givens that the following statements hold true:

1.) *The equivalence principle equally as well applies to the theory of quantum mechanics as to the theory of general relativity.*

2.) *Total energy measured is lower for a whole as compared to the sum of its individual parts for a whole compared to its constituent parts.*

From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion or contraction will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the majority of the observable universe. The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet, and as we will show it must be conserved. We have learned that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is

flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

This makes a 'perfect' linearity prediction with the equivalency principle, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it scales in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle.

This final prediction must be true for quantum mechanics and general relativity, because the relativistic factor corresponding to the multibody system is the reciprocal of the relativistic factor corresponding to the observer, and represents an inverse transformation of space and time, and is the only consistent viewpoint globally and locally in a universe governed by the equivalence principle. So in the end, this model requires quantum mechanics and general relativity to be dependent on the equivalence principle, and predicts a redshift as representative of the scale of forces to one another in a universe so statically dependent on time in every moment, and accumulating over time by virtue of traversing space.

Implications for Cosmological Constant

Consider two hydrogen atoms to be undergoing separation in space with a fixed displacement of coordinate nature. Under consideration that there exist no a priori coordinates of nature, we are lead to believe in the equivalency principle.

As the particles separate under inertial freefall given the covariance of the quantum force between them, their *exchange* energy becomes the source of this separation and is conserved as a constant as:

$$\int \int g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| ds^\mu ds^\nu = 1 \quad (1434)$$

This is because under inertial freefall the intrinsic Lorentz contraction factors on the quantum wavefunctions must cancel the relativistic distance dependence from $g^{\mu\nu}$ leaving normalization to produce unity under integration. This is clearly the required condition for energy conservation. Under these provisions the exchange energy is a conserved energy under inertial separation of the hydrogen atoms. Considering it is the quantum ground state energy of the system, it is reasonable to find it unchanging under the provisions of inertial separation. Additionally, we find that the gravitational energy and kinetic energy are unchanging as the kinetic energy merely responds to the metric, and its partial derivative in:

$$D_\mu = \partial_\mu + \Gamma_{\mu\nu}^\nu \quad (1435)$$

Merely is the effect of a motion *in response to changes in the metric* and not distance of motion. With this, the extra γ factor acquired under moving apart covaries with the extra γ factor of the metric changing, under the equivalency principle, so there is no change in the gravitational energy. Finally we come to the conclusion that defines the cosmological constant:

Conclusion of Reciprocity: *The change in gravitational, quantum, and kinetic energy are all ultimately zero under the inertial separation of hydrogenic atoms.*

Calculation of Cosmological Constant

The energy is negative as it is the difference from the coulombic triplet and singlet energy states, and this energy is higher or near zero, because of the existence of the electrons and protons leading to charge neutrality between the atoms. Exchange energy is negative because of the presence of the protons present without electron densities.

Consider the general exchange term evaluated in spacetime:

$$J = -\frac{e^2}{4\pi\epsilon_0} \int \int \gamma^\mu \xi_a^\dagger(x^\mu) \gamma^\nu \xi_b^\dagger(x^\nu) \frac{1}{r_{12}} \xi_a(x^\nu) \xi_b(x^\mu) g_{\mu\nu} dx^\mu dx^\nu - A.S.M. \quad (1436)$$

Where the γ^μ and γ^ν appear from the boost of relative motion of the hydrogen atoms over time apart and A.S.M is the antisymmetric term with μ and ν interchanged.

The exchange becomes by moving terms around and expanding $\frac{1}{r}$.

$$J = -2\frac{e^2}{4\pi\epsilon_0} \int \int \xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \frac{g^{\mu\nu}}{\int \sqrt{g_{\mu\nu}} ds^\mu} \xi_a(x^\nu) \xi_b(x^\mu) g_{\mu\nu} dx^\mu dx^\nu \quad (1437)$$

Where $g_{\mu\nu}$ is the physical metric (assumed symmetric), and $g^{\mu\nu}$ appears due to the identity:

$$\gamma^\mu \gamma^\nu - \gamma^\nu \gamma^\mu = 2g^{\mu\nu} \quad (1438)$$

This can be interpreted as a energy between bodies for the infinitesimal motion of one body compared to the whole.

An electron position x^ν is differentiated against to produce energy density in infinitesimal form for one body with respect to an infinitesimal of the other:

$$E_\delta = -2\frac{e^2}{4\pi\epsilon_0} \int \xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \frac{\sqrt{g_{\mu\nu}}}{\int \sqrt{g_{\mu\nu}} ds^\mu} g^{\mu\nu} \xi_a(x^\nu) \xi_b(x^\mu) dx^\mu \quad (1439)$$

It is a force when differentiated again against μ and an energy density when multiplied by a distance infinitesimal, here the square root of the metric multiplied by an infinitesimal distance.

It is mathematically equivalent to:

$$\Delta E = -2\frac{e^2}{4\pi\epsilon_0} \partial^\nu \log \int \sqrt{g_{\mu\nu}} ds^\mu g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| \quad (1440)$$

This works, as this is the form:

$$\Delta E = F_\nu \cdot dx^\nu \quad (1441)$$

This statement reduces to the energy density infinitesimal taken over an infinitesimal path length in space. This produces a curvature that is proportional to the accelerative force and constant over the wavefunction. Essentially the description has been moved from a total energy density to a change in energy density given the infinitesimal overlap of the bodies. The total energy of this interaction contribution is the double integral of the energy density.

To get the per particle energy density we divide by two. When the curvature is a constant and the overlap is unity, by the process of Lorentz transformation under inertial separation the distance cancels the increase in overlap from the Lorentz transformation. From this one can see that a

positively curved space will induce a negative energy content, and a negatively curved space will induce a positive energy content. In this model the force of this term decreases to the level of matter present as expansion slows. To demonstrate that it does not contract again, consider that any contraction by gravity only leads to an enhancement of this force over its previous value or equivalently to a scalar multiple. The system is therefore asymptotically infinite and flat.

Under the assumption of uniformity, we have a constant acceleration. For such acceleration, the curvature term relies on a $g_{\mu\nu}$ as a pure exponential, and the curvature reduces to:

$$\partial^\nu \log \int \sqrt{g_{\mu\nu}} ds^\mu \rightarrow \gamma^\mu \partial^\nu \log \sqrt{g_{\mu\nu}} \equiv \gamma^\mu \Gamma_{\mu\nu}^\nu \quad (1442)$$

Γ is merely a constant, spacetime is curved, and g is a global invariant, so the energy remains a constant as a function of time. γ^μ is introduced to make the curvature Lorentz invariant and is from the flat Minkowski space.

We divide by c^2 to obtain mass density, and considering the result of equation (79):

$$\Lambda g_{\mu\nu} = -\frac{1}{c^2} \frac{e^2}{4\pi\epsilon_0} \gamma^\mu \Gamma_{\mu\nu}^\nu g_{\mu\nu} \quad (1443)$$

Which matches the above form for this new interaction for a uniformly curved space. This plays a role analogous to a cosmological constant.

The Einstein field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (1444)$$

With:

$$\kappa = \frac{8\pi G}{c^4} \quad (1445)$$

Consider the influence of different metrics or spacetime geometries on the effect. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term. The gravitational curvature of space counteracts this effect as the sign on the energy density is negative. Because of this sign change gravity counteracts this force. The presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to general repulsion this exchange integral gets a constant contribution over the whole wavefunction between any two hydrogen atoms of the universe as a gas. These are taken as the predominant interaction because over 90% of the universe is composed of hydrogenic gas, and the orbitals of helium (the next abundant element) are close in size to that of hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wavefunction is:

$$\xi(x) = \frac{1}{\sqrt{a_0}} e^{-\frac{x}{a_0}} \quad (1446)$$

Where a_0 is the Hydrogen ground state orbital size.

Global Considerations

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of its individual parts. From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding.

This is the prediction that the quantum states repel and attract at the same rate electromagnetically and gravitationally, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply. A 'perfect' linearity agrees identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable in proportion to quantum mechanical difference in relation to local conditions; as only a pure displacement produces a perfectly linear slope as rate of perceived expansion and ratio of the rate of accumulation of distance to accrual of energy momentum content; given that only a perfect proportion agrees with the equivalence of solid relation: $E = mc$.

This is in fact the direct statement of the equivalence principle; and is one to one with the universality of free fall, the inherent nature of inertia in all things of change, and global & local principle equivalence of energy lowering in relation to universality of change as a property of differential equations with a definition of velocity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of energy content with distance, and colocality throughout the universe only within simultaneous cross sections of space **in time**, we observe when looking out into space and across time. In the given tendency to the other limit; we find this is the same calculational deficit of that of the red shift of the cosmological constant; therefore given as the ratio of quiescence to prescience; weighted as the constant rate of velocity of expansion over distance is as:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (1447)$$

The metrical field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (1448)$$

The effective and full field equation is:

$$G_{\mu\nu}^u + Q_{\mu\nu}^o \tilde{T}_{\mu\nu}^g = 1 \quad (1449)$$

Where the principle component of the gravitational time is a division of potential space and known temporal relation in two of that of each future emanation of indivisibility of gravity and sound by that of what is an effective is \sim for which the raising of the operator for then in what is the given of two of order is then in a formative relation to which are any two from out of one time as two disconnected and independent numbered dimensional indicial relations of multidimensionality of nondescript closure in one.

The given o is then the whole of surrounding quantum relation so that of former in that of what is the given of any surrounding bubble of quantum events in full retractile give; to that of which in what is for then the quantity a given of the full relation a complete space in either of what are two imparticiple ends of full volumetric capacity as the quantum known Q .

The known of then the electromagnetic displacement in either a full separable notion or even so as two alone; as the inseparable notion of another is for what for one is the g as raising of either then given independent unknowable of translatory part in the given one; the freed differences of which are the metric and it's encompassed; in that of full motional freedom.

$$R_{\mu\nu}^o \tilde{G}_{\mu\nu}^u + B_{\mu\nu}^q = 0 \quad (1450)$$

The massive property possessive of a formative whole in that of any and each; all; and any of inclusion of distinction between the four and four vector relationships with that of the whole in freed unitary evolution of all parts is R ; then the secondary relation of either interior time like locale in the given of what remains given causation; as acausally disconnected to either the surrounding notion of any particle or open e .

The \sim is the full capacity of the transitive free clear relation; to that of the free interior single four dimensionally known; place; as then in either a given μ and ν and that of what is the co-independently granted G as gravitational field; 'smooth relation' (not to be confused with gravity and likewise 2 other field properties.)

This identifies the problem with that of relativity for then in what is a complete difference; then what is a \sim as then the base of all; that of two connected gravitational G in quality; of light in all that which weighs as much as subsidiary notion; the opened end of conductivity B of group and phase velocity and the independent relation to either considered antecedent portioned charge q of; and in that of the whole in part as o and in whole as \sim as closure on that of each fluid dynamical free boundary to that of volumetric enclosed quantity; a principle as known as displacement in the sense of flow.

Consider the influence of different metrics or spacetime geometries on this phenomenon. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term.

The gravitational curvature of space counteracts this effect as the sign on the energy density is opposite that of the traditional terms as a contractive force. Hypothetically the presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to quantum mechanical degeneracy pressure of repulsion; the exchange integral has a constant contribution over the whole wave function between any two hydrogen atoms. For the calculation of the cosmological constant; these are taken as the predominant interaction because of the identifiability of the two sources of equivalence and in addition that over 90% of the universe composed of hydrogenic gas; the orbitals of which for helium (the next most abundant element) are close in size to that of hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wave function is:

$$j_u(x) = \frac{1}{a} e^{-\frac{x}{a}} \quad (1451)$$

Where a is the hydrogen ground state orbital size.

The distance between the centers of these wave functions must also be incorporated. With an initial condition of complete overlap the Lorentz factor from acceleration can be modeled by:

$$g^{\mu\nu} c_{\mu,\nu} = e^{2\beta dg} t_{\mu,\nu} \quad (1452)$$

With β the boost parameter and the acceleration. The condition for conservation of energy under inertial separation is that the metric of contraction cancel the distance dependence, coincident with the condition that the infinitesimal of curvature being a constant. The product of the wave function overlap infinitesimal occurs with the above metric and is given by:

$$\begin{aligned} & g^{\mu\nu} |x^\mu - x^\nu| \\ &= \frac{1}{a_0} |t_\mu - t_\nu| \eta_{\mu\nu} \end{aligned} \quad (1453)$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_\epsilon (e^{2\beta dg} e^{-2\frac{dg}{a}}) = 0 \quad (1454)$$

From this:

$$\beta = \frac{1}{a} \quad a_0 = \frac{h}{m_e c \alpha} \quad (1455)$$

The variable β describes the acceleration of the atoms as they move apart, where a is the first hydrogenic orbit radius; for which one exclusive spatial relation is excluded in the determination of interiorly inwardly directed subduction.

The factual relation of time to space is then an invariant for that of evaluation of the metric of space and the metricity of time; for then in either of these as gives light exceeds measure for in that of it's excess unit interval.

The curvature term then become's:

$$\Gamma_{\mu\nu}^\nu = \partial^\nu \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a} \eta_\mu \quad (1456)$$

Then, Λ become's after integration to get total energy as:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^\mu|}{a_0} - 2\frac{|x^\nu|}{a_0}} dx^\nu dx^\mu = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (1457)$$

This suggests that the divergence of the curvature multiplied by the quantum energy is the source term of the cosmological constant. This mass is the cosmological mass with negative mass and energy content of every interaction. Λ evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (1458)$$

The quantity as measured is $-10^{-35}[kg][m]^{-3}$ under reduction to zero. The value for the cosmological constant is given as one order higher than to the right order. The speed of light is used in the boost parameter, as the expression for the boost parameter is: $\beta = \frac{v}{c}$. H_0 is the rate of acquired velocity per distance, the boost increasing with distance.

The per meter unit of energy must be multiplied by the conversion from matter energy content to gravitational curvature in the metrical field equation (an inverse distance per energy) to produce the curvature of spacetime.

This curvature of space is proportional to the boost parameter per the equivalence principle. When the curvature is multiplied by c it produces the boost velocity per distance, or the Hubble constant:

$$H_0 = |8\pi GEc| = 16\pi\alpha^2 m_e c^3 G \approx 2.19201 \times 10^{-18}[s]^{-1} \quad (1459)$$

In reality, H_0 is measured as $70.8[km][s]^{-1}[Mpc]^{-1}$. Converting this to MKS units: $H_0 = 2.29 \times 10^{-18}[s]^{-1}$. The discrepancy between this result and the quoted value can easily be explained. The mass content of normal matter causes a positive contribution to the curvature over spacetime. This induces a repulsive effect between the components of matter that cause this field as they persist in inertial freefall. With this constant there exists a critical density for condensation or formation of massive bodies.

This extra repulsive contribution is equal and opposite to the attractive contribution because gravity generates extra relativistic contraction factors and thus the degree to which a metric is hyperbolic is actually enhanced by the presence of matter content when this term dominates, as it would in the early universe. Thus the Hubble constant is enhanced in the proportion of normal matter content to total matter content of the universe. Normal atoms are approximately 4.6% of the matter in the universe. Considering these as gravitationally inducing, they constitute an extra effect of repulsion. With this:

$$H_0 = 16\pi\alpha^2 m_e c^3 GP_o \approx 2.292844 \times 10^{-18}[s]^{-1} \quad (1460)$$

Where $P_o = 1.046$ is the proportion of ordinary mass to total mass content of the universe. The enhanced repulsion with a background metric and a constant negative energy density promote the viewpoint of an asymptotically flat universe. The asymptotic shape is then flat when this force dominates. Given the vast predominance of so called "dark energy" this model is appropriate. The fact that this energy matches the Hubble constant is direct indication space & time is asymptotically flat.

Hence this model is compatible with a flat apparently accelerating universe that is asymptotically flat and insensitive to the exact amount of matter initially present. A useful extension of this theory to determine acceleration would be to understand the ratio of the conversion of matter into light in stars versus the energy content of the newly produced matter versus the radiation produced. This theory may also help explain the development of galactic and other large scale structure.

Hence dark energy is the detection of quantum corrections to chemistry, life, and locality in the spectrum at global scales; the epitome of the detection of a quantum correction at global scales; folded with a general relativistic correction for which are identical and indistinguishable corrections implying a locally and globally flat universe that is neither open nor closed; yet

asymptotically closed and of no expansion for the same reason of a principle equivalence of these phenomena as a single phenomenon of displacement of mass into energy relation for which either are identifiable but oppositional forces; therefore a universe that is null invariantly expansive.

Physical Theoretical Connection

There exist scales in the descriptions of both quantum mechanics and general relativity, both of which are identified with units of measure. Each space of constant curvature implies it's parallel space of equivalently negative form from the conservation of energy and mass; or comparatively from the one form and the vector form of which departures are separately null invariant.

Therefore particles in inertial free fall either separate or come together as an aspect of these scales and the given energy momentum distribution in either of the theories of quantum mechanics and general relativity. Therefore; as a parallel it holds naturally true that in general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.

Qualified understanding as differing from unquantifiable known's is a given as it is known that this in general will depart as we select different observers with which each there is invariance of result when we calibrate to the observed; or rather that extrinsic nature of each observable is the only inherent property an object's possess. In this physical results are seemingly confirmation of departure from a Euclidean reality.

Preliminary Results

Quiescence & prescience are known as two independent relations and quantifiable means of comparative measure of quantities and measures in relation to each certain quantifiable; by that of either any such given objective observer. With this given relation; for what of one is the differential; & the integral is as separately defined; each of these are as a given independent with three indices as an indicial equation for which there are singular limits to either a given exterior relation or a given interior relation of either or both; exclusively.

This independence and complementarity of form at zero and infinite scale is a result of the quantization of reality into singular relations defining space and time with light as quantum mechanics; and space as gravitation. This as a single consequence is the singular exception of no exclusion of any given frame alternative globally or locally as reducible; for that which is either for both holds exclusively empty of relation for any inner space of relation; and here we find undefinability and that of the given exceptionable relation of null reducibility.

Proof of Covariance

In reference to a Galilean free fall drop experiment it has been noted that the precision with SQUID's is referenced as for the sake of the experimental test of the weak equivalence principle to an accuracy of one part in 10^{-12} . This particular experiment is composed of the interaction of magnets of differing rest masses with superconductors that therefore possess differently quan-

tified magnetic moments.

The absence of a dependence on mass for the rate of accumulation is not only an indication of the universality of gravitational freefall, but also the independence of the magnetic superconducting interaction from the gravitational interaction.

Therefore the relationship between the theories in terms of inertia of magnetic or gravitational form are brought together in this given experiment. Thus this configuration of elements admits testability of a null hypothesis of electromagnetism; for there exists an interval of interaction of the magnets with the superconducting coils of the SQUID's. It is hypothesized that if there were a discrepancy in the nature of the interaction, this would introduce larger error margins than those of the confirmed precision of the experiment. This is the proportion of the magnetic moment of inertia to the massful inertia of the bodies per their given natures of force of interaction in electromagnetism and gravity.

This is not the only observation, but implicates the provability of the Galilean free fall drop experiment as a testable confirmation without the logical inconclusiveness that is an unprovable yet true principle of physics. This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what remains, the provability of the equivalence principle. This is only possible with a secondary interaction for which the mutual relationship eliminates the intermediate middle thirds of unknown.

This is only the case if the two forces remain of a given symmetry, as defined, and if they are truly coexistent in this manner of seamlessness and transparency, and in agreement over general covariance; a given assumption of the holism of physical law. For the sake of the interaction, the net displacement of - and between - any composition of these two theories is hence determined as neither of a zero-sum positive-negative nature, nor of indistinguishability and non-zero-sum. This is a consequence of the contradiction that would be a displacement not co-occurrent with another, nor of an additional other kind as co-occurrent through the process. It is truly an 'empty' relationship within physical law that can be inferred from the given experimental confirmation and observational interpretation.

Of a similar nature in terms of interpretative validity although of a different nature; this result has also been so demonstrated as a theoretical prediction for a magnet falling through a superconducting tube. For this thought experiment it was determined that a magnet inside the superconducting tube will fall inertially with gravity and there is null interaction between the magnet and the superconducting tube.

The two errors of sensitivity are in agreement when taken as dimensionless for the sake of the derivation based on physical considerations; but there is a given geometric interpretation as well. For, the geometric dimension of the quantities although unitless remains as a pure attribute of spatial and temporal dimension. As a consequence the rings of superconducting material embody an areal relationship of interaction; while the path is a one dimensional path like extent. Under the provisions of the comparatively held errors in one there is therefore a non dimensional and logical argument that may potentially exist to rule out such as a dependence of the interaction with the presence of a gravitational law of a similar or different nature.

There is one appealing factor of the experiment; which is that the curvature of space and time will universally attribute an extra contribution of error to the device since the freefall drop experiment is asymmetrical if only the theories are not seamless. All things being equal, therefore, the unprovable yet true statement that is a given hypothetical independent and mutual existence of the equivalence principle within gravitation and quantum mechanics remains as a testable and verifiable principle.

For the sake of the center of mass in the system with the given displacement an error would be introduced if there were any bearing of dependence of one theory upon the other; for the sake that without seamlessness under interaction there would be a departure in the other theory. Additionally, the indivisibility that is the center of energy momentum as a point unto the physical and quantifiable displacement that is inertia and distance may therefore also indicate the presence of any such dependence between the theories. If there exists no departure of the given theory in contradiction with an other for an error under dependence that is larger than that confirmed, it is confirmed that the theories are independent and in agreement.

If true, the theories remain with characteristics of independence for the nature of change with respect to weightless and measureless properties of interpretative valuation of measurement in relation to the measurement standard and quantity. With this shared property, unification is possible, and without it, neither of these would be comparatively established in relation to both of measure and weight of objects. This must remain true as otherwise comparative weight of differing measure or of differing weight for all such physical objects, changes, and events would remain contradictory and ill defined on the ultimate level of physical law in its ultimate form.

When one or the other of two such masses are comparatively weighed, it remains that the one so inequivalent in mass to another and heavier will always outweigh the lighter for a given measure. It is also so too true that two inequivalent measures of mass are also indeed measured as equivalent and indistinguishable for any such two masses for some such measure(s). As a consequence so too is it true that for any such positive & negative equivalently weighted magnitude displacement(s), or that of indistinguishable and equivalent displacement(s) masses are weightless and measureless on this ultimate level of physical law.

Under consideration of the given experimental apparatus of a free fall drop experiment with electromagnetic interactions and gravitational interactions, we may proceed to produce the counterargument: that interactions in the domain of either theory do not alter the results of the alternative theory. The presented argument is simple.

For the sake of different inertial masses and magnetic moments two comparatively tested magnetic bodies, unless the balance of proportionality of these quantities in relation to their given forces are comparatively equivalent with relation to the ultimate layer of physical law and independent, it is predicted that there is a departure from experimental observation. If this is true, the two quantities and qualities of either theory represent physical properties of the nature of displacement & scale invariance. This is true because with general relativity alone; or under combination with an electromagnetic force of the nature of superconductivity, if there were a dependence, it would not be possible to reproduce the results of the free fall experiment under all conditions with a gravitational prediction.

The conclusion of the confirmed accuracy of the experiment indicates a null departure under mutual co-evolution of the two theories under the process of change because there exists null

departure from the gravitational result of general covariance for either such theory; despite the fact that interactions within either theory are taking place. This is confirmed as there exists no such departure from the theoretically confirmed accuracy of the prediction; despite differences in the proportionality of any two natures of inertia in the system.

The error introduced by any such dependence between the theories is empty of scale as the inverse of the parabolic temporal relationship of the path always exceeds the given accuracy of the experiment as a consequence of the separation in time of arrival as dependent upon initial conditions.

The error introduced by different freely falling bodies therefore is larger than that so produced. Therefore; dependence of these two theories upon each other or in proportion is in contradiction with observation. Therefore, independence of physical law from end to end of a given path is certain and insisted.

As a resultant of the geometric parabolic relation of the common co-moving equivalence principle, the terminus of the path at the beginning represents a dimensionless sensitivity on initial conditions as the square root of the path like error. In relation to the ending as parabolic for the former end, the initial condition is determined bidirectionally between quantitative displacement as proportionality of magnetic to massful inertia in relation to the end of equivalent qualitative change; as well as throughout the path.

Hence this error remains as larger for the initial or former device configuration for local inertial mass & magnetic moment and carriage of the device free falling in space for it's entire path; and errors accumulate for either return. In the local limit for a moment and for the interval of time the expression of the equivalence principle is the same. The undetectability of a departure from the equivalence principle through the straight down path is therefore in direct confirmation of the universality and commonality of the equivalence principle of free fall.

This conclusion is extensible between and in relation to the difference that is established as a result of the collection of the aforementioned statements. These are the hypothesis of alternative theories as mutually result free; the relationship of differing bodies to depart as a result of different proportionality combined with theoretical dependence (which was disconfirmed); and the bidirectionality of the post conditions on prior conditions as equivalently larger in error for either such path. This is indication of the formation of unbiased physical law for the indistinguishable and the displacive.

From this it is reconstructible that logical seamless integration of quantities and qualities is an indivisible relationship of quantity & it's quantified property with inclusion of quality & proper-tied quality for any two such bodies. Upon the level so inferred this is the direct outcome that the indistinguishable or displacive in either theory apart or together are existent as independent and in mutual agreement. This is objective proof that the two principles of physics are independent for their results from interactions in the alternative theory & that physical principles are objectively provable and confirmable under measurement.

Displacement Sans and Serif

For that of a prior stipulation so under consideration; that of the unprovable yet true as so indicated by that of the elimination of its counter-positive and provably false hypothesis by former

consideration of; that which remains as the unprovable yet true is so indicated as a provable precedent without antecedent, yet a truth of a lemma under consideration in logic.

For that of a latter stipulation and hypothesis of provability of either of that of one or two exclusive tenses of such as a hypothesis under consideration there remains therefore provability and discernment a priori for that of either such true hypothesis so under consideration from before such as an a priori deduction through logical inquiry as to earlier stipulation of truth.

Therefore that of a further and latter hypothesis of truth as to validity of either of such as one conclusive end of logical inquiry is possible from before and a priori as to that of a given hypothesis under consideration as the distinguishability of difference between truth and falsity of a given by exclusion of mutually exclusive and hence unprovable yet true statements.

As a relation is equivalent logically inductively and deductively complete within one relation from ending to beginning; that of conclusiveness of logical hypotheticals are provable by that of logical inquiry under consideration of elimination of former false pretense under exception of either furtherance of alternatives or elimination of furtherance of logical inquiry.

This is as a given; as a continuance exists of logical inquiry a priori from immediate logical deduction before induction for that of a further exception of logical inquiry; as if this were not true only one alternative exists. As such an alternative exists for any two such logical alternatives from a given hypothesis as one when considered from any a priori stipulation.

As a hypothesis is only true and confirmable when it is logically secure and true from beginning to ending; that of a given final conclusion is possible as each logical step of inquiry of given to return; it is true that as an alternative exists so too does provability; for that of absolute and equivalent statements do exist; and are certain when antecedent is considered before precedent by order of logical inquiry of logical deduction without exception for prior induction.

Therefore; that of truth of provability of logical inquiry is complete by proceeding from consideration of alternatives before that of singular pretense; as preceding logical precedent indicates both of alternatives of logical path of inquiry from that of prior inclusion of truth of antecedent to precedent under consideration of logical inquiry without logical exclusivity. Hence difference of logical truth & falsity are distinguished by the unprovable yet true.

This is the consideration of a lemma that such a truth is found only in that of the beginning-less beginning and origin of their conclusive end in that of what is either indeterminant relation as of any two in either the empirical physical pretext or that of the phenomenological mathematical presupposition to conclusion; when it is taken as a foundational principle that their similitude under mathematical phenomenological empiricism is a given absolute.

For then in an singular formative prior both as then in the later; and the quantitated in relation to the nondeterminant and discernible limitation of the formative prior consideration of a priorly given former hypothetical presupposition in alternative of similarity and difference of inclusion of then either two given base foundational results of either other theory of independent relation.

The lens; and it's given difference of what is found through examination of the relation of what is quantified and what is measured; the furthest of inclusive equipartition of any given general similitude of drawn and distinction of layers of a class structure of equivalence and partition are then known as articulated motion; the equated and equable of which are interrelated by the

following:

$$v(u) \circ \xi\lambda \cdot \zeta\chi \circ \sigma(t) = \eta(u, t) \quad (1461)$$

$$\epsilon(u) \circ \xi\chi \cdot \zeta\lambda \circ \sigma(t) = \rho(u, t) \quad (1462)$$

This equation is the epitome of the natural motions of the equivalent equation in that of the gravitational metrical relation and electrical quiescent current subsidiary relation of non terminal equivalence with connected relation of displacement in either real or imaginary rotationally free stereographic relation of any two multiplied dimensional free relations of boundaryless domain; as in either of any given binary modal relation of variables the surrounding notion of space in point-like relation to point-like space is the temporal relation in empty open exception to both of part cuspic relation in departure to either given involute or evolute of subtended arc like nature; as the evolute of it's given circumscribed uncontainability of exterior angle to summative relation.

The given established complementarity of either the given of qualities of inductive or susceptibility and admittance and capacitative are related simply to that of the unqualifiability of either then known given of permanence; impermanence; codependence; and nondeterminant truth of either then given yielding to what are the partial and the complete as in relation to a rounded continuous diffeomorphism of what remains in the whole to that of arbitrary remainder of convex hull and remainder of open boundary of exterior concave relation and to which is it's support of a concavity in one given difference of birefringent capacity of admixture of phase and attenuated departure from collinearity by abbea; of which there is the formative known that a lens can focus in only one given way.

With the reverse relation the second with interchange of that of the inequivalently and unqualified properties as indeterminant and demonstratively an evolute relation of ordered excess to measure; as in the deficit return of void for what is verifiable principle of closure the remainder relation is one of which three exterior groups λ in time is of the ordered relation in v for then in either of the complete open exterior involute σ and interior involute ζ relation of either formative preceding exclusive χ and inclusive formative ρ given relation of level set curved relation of completeness to then it's end in square order relation of time; is re-constructive of pure rational spatial order of temporal union and pure logical order of factual relation.

In either both such end factual given of five such choices, one choice, or four givens in remainder of self removal or to a third consequative action; of a given and a formative ρ assumptive relation of either two taken truths of spatial rectilinear; curvilinear; or temporal relation in null zero return of their sum product there is a given difference of null and void; the totality of which is the given of two non-abstract penetrative disinclusion returns of either; the freedom of the direct product independent relation of any two commensurately free variables η of any given closed relation of atemporary σ relation of ordination; as of the spatial; the qualitative and unquantified as to time; is the propertied as undetermined; then the exclusively exact order as the unqualified & codetermination of one alone defined. These remaining imparted; the given of a former is it's yielded; to be known then as λ ; the resultant of which is a formative.

The reconstructibility of order from priorly held known's in the given of that of either inseparability of space or time per square ordination of meaning; semantic or synoptic; is potentiated as a conditional statement on that of any given stationary moment to it's separatrices as in the measure of one equivalently independent notion in the construction of any two times.

Time

Time as a circle of infinite length as a straight line in a curved space; or as a circle of finite length in a curved space is the open difference of any two dials of reference to effect for what of condition is the center in part to portion of remainder of what is yet so as receding of past yet to be of each one future of exact difference in either.

Then therefore time as a circle of finite length as a circle of infinite length in a flat space as the knowable difference of what is a differing contrasted limitation of point to certain difference of contrasted notion. In one; the relation of γ and in the other t as with a prefactor; the remainder in B and at A for then in either γt fits in t as t doesn't fit in γt which is as an equable inequality.

Therefore from either of two observers the co-adjoint relation of one at the formative of either general subclass of it's remainder in contradistinct to the former of its viewpoint as in the vantage of the other general specialized orbit of relation in that of the former is the general specialized relation of the whole embodiment of time as the temporal in extension between any two independent points; the making of which is the device so established by displacement in time; as to be distinguished from that of the spatially free in total equality to indifferently chosen relations of any two real displacements in space.

$$\zeta\rho = \chi\eta \quad \frac{v_o}{v_o + v_m} = \rho(u, t) \quad \frac{v_o}{v_m} = \eta(u, t) \quad (1463)$$

That of ζ as the encompassing notion of time; in it's congruent evolute open extensibility through ζ of equivalence to that of χ as it's involute containability found within that of momentary exteriorly provided geometric extension of temporary equated equivalence is the completely open independence of either of any two points of eternity; the very definition of which when only expressed is it's given equivalence of weightless measures.

$$\oint \partial h(l) dt_s = \oint \partial g(s) dt_l \quad (1464)$$

And:

$$\frac{\partial^2}{\partial t_g^2} \sim \tau(t_g, t_s, t_l) \gamma(g(o), s(l), u(t)) \quad \zeta \circ t_s \quad \chi \circ t_l \quad (1465)$$

As then the inflection of two turnings of a moment is the given in that of either a limitation or a possessive of the notion of one moment seamlessly passing by of what is another's given difference of the contradistinction of their pertinence and permanence in either of a given equivalence or similarity of distinction or discernibility of choice.

Definition: *As a body in motion is with a body in motion; that of the lesser is attributable to the body to which observation is the referenced as imparted in virtue of the degree to which the simplest means of self identity are equated and equable as the standing measure of inequivalence of the contradiction that is all other bodies in motion meanwhile holding to unequable return (of either) greater or lesser. (time.)*

$$t_A : \gamma t : t_B : t \quad \frac{\partial S_\lambda}{\partial x} = t, \gamma t \quad B : \gamma t : A : t \quad (1466)$$

Intrinsic and extrinsic time:

$$dt_A < dt_B \quad \int_B \frac{\partial S}{\partial s} \gamma(u, t) dt_A > \int_A \frac{\partial S}{\partial l} \gamma(u, t) dt_B \quad (1467)$$

Mass excess of deficit is in diminishment of excess measure as each point of observation away from it's given center is off by a complete composite measurable and foreshortened of either end incomplete relation when any two singular comparative measurements are collectively formed. As that of a stationary observer & observer in motion comparatively weigh either given time in balance with that of one given return; the observer of lesser time is that of which observers in motion that of the stationary observer; as that of the greater time under no return is in given contradiction.

As that of the distant observer in observation of that of the point of the first observer is when in motion of a greater measure with reference to the observer under observation, it is true the observer under observation observes a lesser time comparatively to that of the observer of its given observation and greater comparatively to what it comparatively observes as the two natures of time in relation to any one (of either) such observers. Either way a mirror points; it is invisibly of equivalent velocity in relation at all relative motions in which under parallel effective motion and consideration it is also known as of the lesser effective time of observer equivalent to observed and separably for that of the observer equivalent observed that of the greater effective time by separably that of the time for extrinsic observation greater less than intrinsic per a mirror's reflection.

Conclusion

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \eta(u, t) \sin(\alpha)^2 \quad \chi = \rho(u, t) \tan(\alpha)^2 \quad \eta(u, t) = \frac{v_o}{c_m} \quad \rho(u, t) = \frac{v_o}{v_o^2 + c_m^2} \quad (1468)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time is as a circle within a curved space.

The implications are that the universe is whole; and that no point of which the universe has originated begins or ends in the present; but within only that of the divine nature of a singular unifying mathematically empty and physically null relationship of balance. The singular defining relation is that time and space can be balanced against one another only by the undefinable completeness of an empty relationship by the meeting point everywhere in space and time as a singular balancing counter-participant to the identity.

Final Theorems

The difference of this theory from relativity is non-difference of inclusion of disparate measure by comparability; a standard by which the given division of meaning can only be found with the abstraction which is merely that of the ratio of a circumference to perimeter as an apsis of revolution; a general standard of given equipartition into equivalent parts; with two given specifics; that of an equivalence relation of directed unidirectional symmetry and undirected relation of co-deterministic symmetry.

Therefore there are two fundamental limitations of physics at the bottom; in order for there to be any self or other consistency of descriptive means in mathematics as in physics; of articulation:

Principle of a Mass Deficit: *As a fundamental any given mass of matter is equivalent in proportion and weight to any given apportion of it's given light content; and no greater or lesser under conversion in of or to any given unitless based system.*

Property of Light Variance: *The speed of light in being fixed to a universal standard; implicates that all such velocities under conversion are identical with and greater than the speed of light universally; for the property of one time in it's expanse of measure is obverse to the mean of it's duration in fixed relation.*

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of a system of units to that of the system of conversion of circumference to perimeter; as an areal relation to that of pointless given limitation of interior domain; with equivalence to that of a measure of units of the system for which the standard is inequivalently proportioned exactly.

Therefore the given holds as true; that:

$$\zeta = \eta(u, t) \sin(\alpha) \quad \chi = \rho(u, t) \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1469)$$

And:

$$\zeta = \eta(u, t) \sin(\alpha) \quad \chi = \rho(u, t) \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (1470)$$

Although the equations would implicate the speed of light is always in excess of unity; this is the same determining factor as that of a given open relation of the velocity of all bodies greater than c as subtraction of an interior finitistically defined zero locus of time enfolded everywhere locally in reality. This principle of equivalence is to be contrasted with the exterior symmetry of space of dual exclusive nature:

Establishment of free light field independent co-determinism:

$$\eta(\bar{\omega}(o)) + l \log_{Ac}(\tilde{t}_c(g(s))) \doteq \omega \log_{Bc}(\tilde{t}_c(g(u, t))) + g_{AB}(\bar{t}_c(f(u, t))) \quad (1471)$$

Final Note of Measureability

The first equation is the Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1472)$$

The second equation is the Principle In-equivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1473)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union.*

These two properties; η and ρ are then given as equivalent to the deficit of a regular periodic time measure of any rotary or square indicator by conversion in units of delimited zero:

$$\eta(v(o, t)) \cdot (\zeta(s, g) \circ \mu(u, t)) \circ \rho(\epsilon(o, t)) \cdot (\chi(s, g) \circ \nu(u, t)) = \sigma(\mathbf{o}) \quad (1474)$$

The given then of what are in two a formative conclusive nameable in that of time and that of space are the aforementioned qualities in juxtaposition of properties which differ by only that of one and only similitude of irreducible exception to an ordered relation; as unqualifiability and quantifiable relation of ordered relation in the remainder of sum in commensurate division as insolubility & reduction to contextual division; the colocal origin of existent remainder of time.

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point-like limits of relativity; for that of each such Principle Equivalence of time and Principle Inequivalence of co-determinism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassed of either of two subcomponents of the alternative exterior difference of any two signal areas is constructible. As one exception is the exterior differential; one inclusively given and provided integral are any two given exterior alternative differential spaces by singular or multiplicity of exterior space as at even or odd frequencies any number of frequencies add to two; for any relation of an encompassed concave space; as then any circumflex round operator of self connected relation encloses all such pole subcomponents.

Therefore:

$$\eta + \log(f(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (1475)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of two given amplitudes of differential nature.

Therefore:

Final Theorem: *Considered together these two imply that either of any two given impenetrabilities exist.*

Final Conclusion

The proposal of this thesis formulation is that of the development, design, and creation of a 'Unitary Light Gyroscope,' 'Universal Light Compass,' 'Unified Light Gear,' 'Open Exte-

rior Container,' 'Unary Bit Comparator,' 'Contained Open Tableau,' & a 'Cyclic Neutral Point,' 'Open Entropy Bubble,' as even such a method to balance light on a quantitated point with all other light in existence.

As an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of finite dimension and volume; of the nature for which the cascade is unrelated to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptical operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure.

Therefore there exists an infinitely encompassed volumetric space of infinite dimension by coparallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation; therefore for that of topological considerations; it is true therefore that; there is one point-like relation in of exception in four dimensions; which is demonstrative of the following lemma:

An electron is a hole in a light field.

As this container of which the electron is one; the light is one; and the null relation is the given inseparability; when even seen then as a separability of light from darkness; the essential difference of body in a sense through this; a jar is made of protons only; and wood possesses no electrons; so a wooden jar is empty. One then known example of this principle is the acuity with which a theorem can be tested by it's hypothesis; in that of a lemma of supposition produced retroactively from a dilemma; as in that of the former truth being known under presentment to that of it's effect.

The end of this given is then the primary principle by which all given's of science are produced in that of what is knowable then tested formatively by hypothesis to the former end of presentment of known fact of relation prior to proof of statement and principle.

As in that of asking the question to a ponderous unity of the given connective between any two known relevancies in one; and that of one sideless intermediary apart by that of the connecting difference entitled into either for in that of what are an example producing contrast of two newly produced counters. Then; for what is found in a one side to a false relation of two is formatively it's own continuum to the end given of what is suppositionally set aside.

$$\mathcal{O}(\eta)\tilde{\zeta}(\gamma)\doteq\mathcal{O}(\rho)\tilde{\chi}(\tau) \tag{1476}$$

Then; to that of the former presentment of an accurate form in symbology and that of effective measure before means; then the result of which is the production of an actual known fact of relevancy to it's end prior conclusive relation as proof of principle. When then as a given empiricism is restored to it's proper place; the given presentment of a relevant known relation to then what is different in two; is the given of what is accepted principle; and restoration of the newly created principle of derivation to it's proper place.

Then in the 'at' of a loss to a 'what;' a former known beginning at; for what, in that of established known; the principle of verifiability in exception is found naturally in that of each; for what; is then in a given is but a departure to of what alternatively is the given of excepted indifferent known's under a connective; to which a principle of then established ordinancy is founded with

what is it's ancillary factual known.

As then to take for example a bowl; a jar; and a urn; the given of what is difference is the all inclusive consideration of either; for then in both; what is the given part to the exceeded capacity of another is with a relation of parts for which there is a whole property only in consideration of what of each is together as indivisibly; an electron; a photon; and space; as with what is neutral.

Leaving that of clay and emptiness with the exception the part of it's filling in that of what is the open difference of included of color; transparent differences of which in part of these then centralize and complete with their former part of the lid of that of what is a closure on the atom of which it is composed; the only remainder of that of what is when all of each are formed.

To consider then the formless of one; with the exceeded capacity of one in part to doing; the formative exception of what is included of another is one part of one to half the part filled to each; as then the whole of it's remainder is the transparent and darkened boundary within the void of excess before that of it's curtailed formation; as no such further given is possibility within formable hypothesis; the then newly found truth of two a given of what is a momentary pause in time before their completion.

Then; when it's consideration of one of the urn for then in that of the bowl is in two and two; there is one for the in formative given of what is included of these; the then given permanence of differed contrast to notion of the free water as water in either; air of air in one; and fire of fire in two; the then known exception to it's formed property as defined notion and meaning of definition; and quality of earth founded on that of either any both of two free given three of jar, bowl, or urn opened to self alone.

The matter and importance of which is the factual representation of a path to it's end in prior given understanding of nature in all her furtherances and back as in a path to it's beginning of a past yet untold or communicated by a people of timelessness in the factual and real return of naturalized and established known laws of this world.

The constructability of the proof then rests on that of the many; by and in of the few; each so known supposition is it's proof; of that of what is in the open difference of one what is found in the alternative of choices of interpretation of what is given to it's endowed further and prior in momentary difference of inclusion; to find as it were that each foundational expressly known is only of their and other's given.

The repairable action in reductive and continual progression of absence in the former for what is a knowable prior; by then in any withdrawal from a furtherance of otherwise than protection to a world; people; and article of historical; liturgical; or continued context and meaning in of what is known of general and conciliated certainty; as a path of return to that of life as once known.

Any true law of understanding of nature in plural form is then the given to that of the measureless propertied of what is taken of a given principle by example as formerly given truth to the end of it's disclosure in a given of it's established and then known fact unto principle established hence. As it is true the given precedes the presented by that of in another; what is taken is given; as for then in that of what is the free choice of another is so granted to continuance.

Sense of Operation of Device

As the given determinacy can form no indivisible limit comparability to direction; adirectionality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference is to difference as inclusion is to displacement.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of darkness of action is balanced by the sense of the concept and in physical form by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contractile meeting of time; space; and light is openly defined by that which is defined acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part. Therefore symmetry and symmetry forms, therefore; that of asymmetry.

Conclusive Means

As a wheel rolls; the production of motion is found in that of the affability of the yet-to-be plane as in moving towards a carried motion of release priorly by the actionable given of a subsistence on furthest limitation of subsidiary notion of straightly down; as lateral to the given of formerly held; a cart; the founding of a carriage as held below by that of what is in the produced; the axial and surmounted difference in that of two level returns as in that of either given open turning in two; for then of what is later is priorly the given of one similarity in the formerly existing given; of life as found in that of the wood it supports. So it is with the action; motion; and carried.

$$\epsilon(o)v(o) \cdot \zeta(u, t)\chi(u, t) \cdot \eta(s, g, o)\rho(s, g, o) \cdot \sigma(t) = s(\mathbf{o}) \quad (1477)$$

As then to take for example a bowl; a jar; and a urn; the given of what is difference is the all inclusive consideration of either; for then in both; what is the given part to the exceeded capacity of another is with a relation of parts for which there is a whole property only in consideration of what of each is together as indivisibly; an electron; a photon; and space; as with what is neutral; the given part of one is to the contribution of the other as the departed with of that of the water as water is to either of the fire it was formed from.

Leaving that of clay and emptiness with the exception the part of it's filling in that of what is the open difference of included of color; transparent differences of which in part of these then centralize and complete with their former part of the lid of that of what is a closure on the atom of which it is composed; the only remainder of that of what is when all of each are formed.

To consider then the formless of one; with the exceeded capacity of one in part to doing; the formative exception of what is included of another is one part of one to half the part filled to each; as then the whole of it's remainder is the transparent and darkened boundary within the void of excess before that of it's curtailed formation; as no such further given is possibility within formable hypothesis; the then newly found truth of two a given of what is a momentary pause in time before their completion.

As the finding that one is opened or that one is closed to either of two other's; the difference of water and earth; with fire then the forming agent to it's completion in the seal of a lid formed from clay fired by that of the wind; the only open containability of which leaves one open; to find that ultimate closure in two is a third to that of that of what is one of water evaporated by for what is a jar is; it's residual the air of a free molecule; of which excludes nothingness; to be found in that of the opened and emptied bowl; of none of which hold fire.

Then; when it's consideration of one of the urn for then in that of the bowl is in two and two; there is one for the in formative given of what is included of these; the then given permanence of differed contrast to notion of the free water as water in either; air of air in one; and fire of fire in two; the then known exception to it's formed property as defined notion and meaning of definition; and quality of Earth founded on that of either any both of two free given three of jar, bowl, or urn opened to self alone.

The matter and importance of which is the factual representation of a path to it's end in prior given understanding of nature in all her furtherances and back as in a path to it's beginning of a past yet untold or communicated by a people of timelessness in the factual and real return of naturalized and established known laws of this world.

The constructability of the proof then rests on that of the many; by and in of the few; each so known supposition is it's proof; of that of what is in the open difference of one what is found in the alternative of choices of interpretation of what is given to it's endowed further and prior in momentary difference of inclusion; to find as it were that each foundational expressly known is only of their and others given. The reparable action in reductive and continual progression of absence in the former for what is a knowable prior; by then in any withdrawal from a furtherance of otherwise than protection to a world; people; and article of historical; liturgical; or continued context and meaning in of what is known of general and conciliated certainty; as a path of return to that of life as once known.

Any true law of understanding of nature in plural form is then the given to that of the measureless propertied of what is taken of a given principle by example as formerly given truth to the end of it's disclosure in a given of it's established and then known fact unto principle established hence. As it is true the given precedes the presented by that of in another; what is taken is given; as for then in that of what is the free choice of another is so granted to continuance.

Purview of Precipitate

The manner in which a unitary interval formed from the difference of the attitudinal distinction of what excepts the difference of it's moment to & in that of either pivot in three of time and it's velocimetric flow is the excepted to the part difference of the given of the summative capacity of it's average in either given beginning or end or that of the factually free equivalence of time.

$$\rho(u, t) = \xi \quad \eta(u, t) = \chi \quad g \sim \rho(\eta - 1) \quad (1478)$$

$$\xi(u, s, t) = \frac{u^2 - (sl)^2}{u^2 - (sl)^2 + (ot)^2} \quad \chi(v, o, t) = \frac{v^2 - (ol)^2}{v^2 - (ol)^2 - (gt)^2} \quad (1479)$$

To which in Ω there is that of a (t) to which in the time of it's ordered and given relation; there is that of a displacement and a direct injective of the incurrence of one measure for of faulted relation to that of the difference of any smooth curvilinear flow ξ and that of χ ; any one solid element of velocimetric (u) flow and that of a measure of two directly orthogonally independent

flows of time in (v) as equivalently unenclosed differential mid-points to that of their moment's; to which the separatrices in equivalence are measureless & contact free in extension.

$$\rho\eta = \Omega(u, s, o, t) \quad \lambda\zeta = \chi(v, o, g, t) \quad (1480)$$

Then in finding of what of all is found; capable; is the furthest inquiry into the quantitative of as is the qualified itself the immobile as the first unconceived.

Conclusive Means

As a wheel rolls; the production of motion is found in that of the affability of the yet-to-be plane as in moving towards a carried motion of release priorly by the actionable given of a subsistence on furthest limitation of subsidiary notion of straightly down; as lateral to the given of formerly held; a cart; the founding of a carriage as held below by that of what is in the produced; the axial and surmounted difference in that of two level returns as in that of either given open turning in two; for then of what is later is priorly the given of one similarity in the formerly existing given; of life as found in that of the wood it supports. So it is with the action; motion; and carried.

$$\epsilon(l)\mu(k) \cdot \zeta(u)\lambda(u) \cdot \eta(s)\rho(s) \cdot \sigma(t) = s(\mathbf{0}) \quad (1481)$$

Then in finding of what of all is found; capable; is the furthest inquiry into the quantitative of as is the qualified itself the immobile as the first unconceived.

Introduction

a.) That of mathematical domain is inexhaustible; the limitation boundless and undefined; of what comes with no dimension; and of it's construction at choice; the division of one for one on that of four for uncontained versus contained element's of their descent under Pascal's Triangle; the denial of the regress to the mean; and traceable as a path through History; then of one Epistimological Root.

b.) That of physical domain remains equipartitioned of mathematical precept; the regress to the mean a noticeable element; but of abstraction in exception to any mathematical precept in-absence; that of factual element of Historiological intention (a.) - that of Historiological Fact - that of the second Epistomological Root; it's foundation found phenomenologically confirmable when under descent (predictively) to a theorem of physics.

Relativity (Commentary)

For in that of relativistic theory (et. al. Einstein) we learn that the spatiotemporal product is undistrubed; but it is yet to be reconciled with the quantum viewpoint. This reconciliation is as simple as the unitary freedom of cause from effect under an action congruence of any two light like connected causes and effect's of action potential in isosimilar relation's to their group congruence cohomology. Therefore one manifold (of any dimension) reduces to the action of a unitarily provided action potential upon another; to which silently the cause and effect relation hold's no barring on that of absolution to certainty. For what is a deficit; it is compensated for in the secondary observation point of which is naturally (via this embedding) skew-Hermitian. The residual by-product is naturally then a fixed locale between any two closures or opening of eigenstate conditional. Therefore conditions are always adventured to a precept yet prior of an

inseparable and exact inequality of fixed aconditional; the free class assumptive of which is a 'space' or a 'place'.

From what is learned in primitive class structures; that of the development of a group from the special theory of relativity find's extension therefore in the reciprocal integral of it's naturalized mean invariance modal measure; to which may be extended for wave-packet's to a traditional phase conjugate relation. That of one factor; noted, is:

$$\gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}} \quad (1482)$$

That of the integral mean is herein shown to be a naturalized assumptive to that of a dichotomy of racing clock's; neither clearly outpaces the other in free unitary traversal of a space; the theorem for gravitation is therefore that the time dilated factor is reverse onto simplicially surjectively open to another's dilemmetic arrow of course. The freedom of motion.

This congruence is merely put that of the invariance of the measure of:

$$\frac{dx}{dt} \quad (1483)$$

That of it's cross-dissimilar relative bias is therefore of dilation found to be congruent to the outpacing measure in yet a slower progression taken into even so minorly noted lesser mean congruence; therefore of a reciprocal factor on that of the simplicial bias; to which is bireflexive in either the attitude of cause to effect or attentional bias of effect weighted to cause. This is the same naturalized truth as of the geometry of space and time; and of quantum mechanics therefore in an absolute background of the ground of 'space' and of 'time' - a known present.

This function is merely derived from:

$$\frac{dx'}{dt'} \quad (1484)$$

And is; (for of the comparative validity of an ontological arrow of course between two observation points that of a cause to effect relationship; the effect to the cause the prior reciprocal), that of diminished aperature for in light of physical focal range of a lens. Given a lens, the demonstration that derives from temporal compression unto dilation is reciprocal to the natural measure and unweighted between mass and light, explaining information and fidelity of physically sound foundation, for what is a derived and precept of derivational truth; that of one factor for in one factor; for phase group and velocity structures differ in the reciprocal c^2 relation. Thus the part missing in light of mass is it's conjugacy unto two wave speed's; therefore of either; for what is formative from the projectively identifying basis of matter; the above radical when taken subjectively of measure; and that of then the next factor (it's reciprocal) for in light of inference from light; or a property attributed to it; thus a photon is traversing space at **no speed within the present**; and that of compensatory rate-mean-congruence of a lattice quotient Killing space in a manifolded theory of gravitation hold's that the result is *unto light* matter 'fold's' to a mutual and lower-dimensional expression in three dimensions of:

$$\gamma^{-1} = \sqrt{1 - \frac{v^2}{c^2}} \quad (1485)$$

Thus cause and effect to chornological distinctions are ramified and empty of consequence; but remaining to conventionally intrinsically exist, then vaporous. The distinction is that unto light;

the factor upon matter is **both**; in a matter wave of group and phase velocity; that of the relation that is kept intact; the contraction of a:

$$\gamma^\mu \gamma_\nu \equiv g^\mu_\nu \quad (1486)$$

In a conjoint parallel of matter for matter; the contraction of two metric's for either's subjective and three dimensional experience of the four dimensional higher submanifold of space and time. Thus it is seen in the simplicity of one theory for electromagnetism; the manifold serves as a carrier and coaccompanying carrier wave to isoinclinc and symplectic freedom of action. The contributions in the far Compton Scattering range therefore exhibit a pole invariant in co-extensive expansions of exponentials as Green's function's; but with the Freldhom Integral Invariant Formalism under Inverse Scattering; the depth of a wave-particle duality explores either co-adjoint end of unitary adixture to the Killing field. This field does not uniquely generate a fixed foundation for that of the Unitary surveyance of state's; and dis-entangles the known perplexion of one field for the freed and unfixed variant of it's then-conjugate field invariant; that of a Quantum Mechanics; separably plausible. The integration of the two theories is as simple as the connective to which:

Opening Lemma: *The results of calculations of quanta are irreflexively independent and covariant with respect to the results of relativity; when general; the asymptotically held opening of a freed action invariant locally and globally defined; consistent with the simplicial and isoinclinc of field invariant in the irrespectively freed gravitational metric; thus electromagnetism decoupled or coupled to gravitation is reaction determinantly open to a continuum of free radical superpositional influences that are idempotent and a solid consistuent of two invariances. The freed invariances are that (in and of no third witness) they behave decoupled to all energy scales; but as in a mirror; the results of quantum mechanics reflect the isometry and character of a gravitational metric, but not it's form or shape; the freed-auxiliary-three witnesses among four; an invariance at that of dialectical incurrence of a direct structure; and the development of a structure free modal and statistical mathematical background. Of description; mathematics therefore proceeds in literal but follow's in hypothetical (for expression of a generative foundation) that of the physical world; and is build upon it. When of any dimension a structural fault breaks or cleaves; the emptiness of what is sequentialization takes privilege to a theory and physical foundation (therefrom) - of - information. Therefore this world is built in simplicity to grant a geometric free language and determinant structure free heirarchical structure rooted in a solid geometry with a novel linguistic translation. For what is E and mc^2 the light and matter modality invariances of relativity and quantum mechanics agree that translocal squared information complical relations devolve not only from the global need to the secondary literal local modal analysis; but that product's precede qualifiers on summation and that a naturalized congruence is two body; and so in turn requires merely a **return path** of congruences in empty relations of consequential conditional empty free geometric expressibility.*

Superconductivity Origins (In Summary)

The magnetic only solution (above) indicates that a renormalization occurs at the magnetic only fixed point in the flow of the theory. Second to this; is the potentiation of inclusion of local to local terms of an electromagnetic variety. The solution given by that of the (above) indicates that when we uniformize and unitarily procure from the electromagnetic solution to a dual in the vector field based contingently around magnetic and electric solutions; that this precipitates electromagnetic symmetry breaking; by that which is a separable contribution to the spin wave geodesic equation. There are only two elements of the theory:

1.) Renormalization to electric only and magnetic only solutions; precipitates a violation in the superposition of the Dirac Electron Equation to Pauli Exclusion Principle locality bridge with logarithmic wavelength compensation of geodesic phase of spin-waves to electron mass and time decoupling from (2).

2.) Renormalization of the local to global to local theory of the uncertainty relation that derives of certainty in relation to a physical and acausal disconnective of free determinism precipitates superposition to spontaneous symmetry breaking of the quantum states in light and mass below a threshold set wavelength of light (Compton) wavelength of spinwave to charge hole.

In continuance; the result is spin charge separation from mass and inertia with symmetry breaking of electromagnetism from gravity precipitating a decoupling of matter from light and wavelengths of De'Bye from Compton to which ensure universality of an inductive conditional in that of spin and charge (or hole) delocalization-localization phenomenon in a unitary lowered energy potential of genus one beyond the wavelength of repulsion; asymptotic to a coupling below the threshold of inward or outward electron pair pair global to local pressure.

For the reason of a given plateau of gravitational laterality from-and-of a genuinely four dimensional evolution of any locale and orthogonal projection into four dimensions; the compassed relation is everywhere tangential; the kissing point of particle isoinclinc's with that of the background (rectilinear) measure and form. Thus the Hermitian conjugate space is an everywhere exact equality or inequality of a 'scale of dimension' on that of a representational derivative; parallel and disjointed connective of two cones or two half usual descendencies of light, of which are topologically identical.

At that of relative measure we may draw the conclusion of an isomorphic distortion in one form and vector form (co)parallel by a landing, there, where there is an equivalent balance of disconnective from gravitation and a balance of disconnective from electricity and magnetism, a **neutral connective**; so exposed to by the electromagnetic proportionate free and disconnected topological identity upon *an interstitial segregated, or discriminating order* - that of an 'Equivalence' unto complete undecidability of any higher dimension; to which enter's an inward to outward (negative) reflux of coparallelity in a hyperbolic (higher dimension) - and parallelity everywhere in space; in a spherical (lower dimension) of spherical (co)dimension.

Hence a null and void limit may be exposed of the-unit-in-bearing when defined; in which case the abridgement is two and three fold (in (co)apportion of dimension); for the reversibility of free domain to measure in exponents. This is an indicial ordinal relation to that of 'count' - in which one interstitial relation of dimension(s) among four may be abridged or disconnected to a mutually free condition of deterministic arrow. The hyperbolic exterior invokes a natural equilibrium point on the void of the sphical space that result's; for which any of a set of 'point's' of reality are constructed.

The photon propogation is expeditious to 'age' in global relation (when undistorted between interior and exterior and of a distinction on copy-length) from that of all causal event's; also a known present among the measure extension of mutual age relation's in dating of object's under descendancy or ascendancy. Thus the co-extensive freedom of inertial form **is preseved** as neither electromagnetically nor gravitationally coupled. This Lagrange point, is an 'accepted zone' of domain free of identity; hence it is a spontaneous result of creation; then decoupled, and dis-

connected, a present truth of this world in itemized relation. For what is an abridged relation; it is a known determinant non-anomalous given's of this world do not point 'out' but instead as upon a space; they are bound to a deterministic relation of identity and property freedom as-it-applies to the gestalt inertial relation. This is the description of the fixed background of a reality.

In continuance; the result is spin charge separation from mass and inertia with symmetry breaking of electromagnetism from gravity precipitating a decoupling of matter from light and wavelengths of De'Bye from Compton to which ensure universality of an inductive conditional in that of spin and charge (or hole) delocalization-localization phenomenon in a unitary lowered energy potential of genus one beyond the wavelength of repulsion; asymptotic to a coupling below the threshold of inward or outward electron pair pair global to local repulsion. It is that the renormalization in the ultra-small scale goes to infinity on that of the electric distance when it holds that the Debye wavelength is below the Compton; to which the electric field re-normalizes to zero strength of repulsion; thus magnetic symmetry insists a universally finite (unit 1) attraction.

This is a result of relativity participating in the local limit of co-inertial utility in the argument of motion-free inductive transformation to a mirrored re-action of infinite renormalization of c in the limit of approach (null coincidence informs & enforces that of asymptotic freedom); for in that of $\frac{v}{c}$. The logarithmic regularization goes to $+\infty$ to which the electric field and effective distance go to eternity. Thus the two objects of electron hole and electron opposite hole form a polariton and are freed to attract at a charge of $2e^+$. The charge is reversed for in that of the mirror effective distance of a 'hypothetical' electron at infinity; and one super-imposed at some (hypothetical) finite large distance to which are polarized outward-inward. Thus the laws of physics reverse.

This is simply the result of meeting the uncertainty relationship as in that of the outward-inward space of two normalizations producing an infinitely extended re-action when slower than the speed of light; to which matter cannot keep up with the charge state; the matter is in suspense and blocked by light; to which the relativity theory finds support to be a re-action deduced *from* the limit of c . The superconductor; at rest; participates in a phase in **reduction** by algebraically blocking of light from reaching the first occasioned next nearest neighbor; but not! that of the next-nearest-neighbor. As a consequence uncertainty folds.

The re-action is that relativity is reversed; to the projection meeting it's annihilation in that of a withheld electromagnetic interaction of reversed variety at short distance. This is the same as action and re-action; which are of course parallels. As a consequence light find's it's reduction in a similar statement to relativity. Durations in the infinitely small scale (of $dt \rightarrow \infty$), d are reduced in measure under a reaction to which they concur to being larger contributions (at small renormalization scale) to that of the integral \int (for dt is under a numerator); of which is made *comparatively smaller* in velocimetric argument to γ . Thus the infrared point is implicit to slow-velocity in that of relativity at small scales. This in no way refutes Einstein; but indeed insists he was correct; as in that of duration becoming larger; and a small scale shrinking to zero curvature dominates; to which the local term refutes the large over similar scales.

After all; that of two closely placed iso-symmetric pell's do not balance but to zero scale; the uniformity of the debate is that a reduction upon c is self-consistent with the renormalization. This alternatively can be seen as the limit (re-enforced by conductance going to infinity with pairs produced by symmetry breaking) of $c \rightarrow 0$ comparative to a phase delay.

Attraction is the natural result of a phase delay in that of the Green's Function; the first illustration in comparison with BCS theory. This is that the charges may avoid one another in time by being in a different position in space. The inverse (reversed) limitation is that of either side of a mirror; to which they are eliminably precluded for in light of an immediate nearest neighbor; that of the second nearest neighbor via superexchange is at a co-local distance closer in phase space. Hence it is predicted that ionizing a material produces hypervalence.* When locally isotropic groups segregate below a wavelength to which spatial segregation is superior to what is time as an anterior limit of the laws of physics a spontaneous symmetry breaking is produced to which produces the requisite preliminaries for superconductivity.

This is therefore a result of:

a.) The probabilistic outcomes of quantum mechanics are independent of relativistic interpretation and representation; for what are two particles; their two-body interaction includes terms that owing to the identity of the particles impose validity to the statement that an equivalence principle merely intimates an empty connective; namely that: the one and two particle picture are independent of that of relativity and it's value.

b.) That of a quantum lattice of spin's; project's the particles to exchange repulsion of disconnection of electricity from magnetism and it's replacement by spin (magnetic and electric interaction); this generates a layer of a 'mirroring' of the electromagnetic interaction because the spin statistics also divide symmetrically to the charge; a layer is generated of spontaneous symmetry breaking below which interaction's are attractive.

Narrative

For the model system, we declare that the adoption of regularity to the manifold quantum states is in-apportion a dialectic of four operations and operator's; their root; that of a *specificity* to declaration at model probability:

Thus:

$$d \quad d^* \quad (1487)$$

With:

$$\Sigma_d \quad \Pi_{d^*} \quad (1488)$$

The questions become:

1.) *What is the connective between a spin lattice (via covariance) and that of the deterministic separation. Importantly; how does the force convey a separation in terms at that of an antiferromagnetic (with conventionally similar solutions to a two time model) - and that of the particle associate of quantization?*

2.) *Why - deterministically or adeterministically - is the relation time-asymmetric and energetically preferable against the source of gravitation. Importantly, if gravitation and electromagnetism are to be under a disconnective; what is the rational explanation for that of the phenomenological clue at reduction?*

Thus it is that elementally we have a sequence of event's in the pattern of construction of a theory; and it **does hold that pairing leads to attraction.**

Thus there is a gap to account for then with the integral under accounted relation; that of the **why?** as to that of a parallel under division; a valent and covalent explanation of independence and emptiness; perhaps then an extension of the local and global notion of an empty action and reaction. An important question to frame this problem - is **how?** and **why?** the Hopf (unvirtualized - and regularized to physical particle limitation through Compton and De'Bye wavelength's) - bifurcation can reduce to two dimensions. This parallel is thus that - somehow - a dimensional regularization upon two dimensions in time and space - to which a Phase Transition is not forbidden - reflect on that of reduction of encased moment. Thus statistically there an 'annealed' relation; held in solidarity.

Narrative II

The principle of accumen of deficit to vantage (for in off); of one incremental factoring of γ is therefore coincident under repositioning during chronological ordering. That of order is therefore a **separable and separate** formation; that of time, congruence of time, space, segmentation of space, and structural ordering entirely different subsidiary aspects of the process of measure and measurement. For what is γ it becomes a γ^{-1} under a [charitable] license to division in temporal timelike ray of acquity; the 'splay' of two uvular flow's of the measure of progression of the asymmetry cross-bilateral of what order construes of occurrence during diurnal attitudinal day/night in-equality. For one could likewise state that 12 hour's had gone by from 7 in the AM to 7 in the AM under similarity-of-measure; or that a mere 24 hour's had gone by from 9:30 PM to 9:30 PM of two "day's".

Therefore in a caladeria run; power is unattended to for it's fault source; and efficiency of conversion of a lossless system (the conveyance of the universe into the universe) is free. For what is deterministically true; the rate-aperture is one attended fault; and the adaptive-fault-aperture another quotient division away (apart) - then to an unvisualizable space in abstraction of three conchordant and three conchordant directions in the prism of naturalized Law. That time flow's is then the inexorable motion of annealing of a wave for what is a punctuation by particle like holes and point's of charge or chargeless neutrality. Space therefore contains punctuation's; to which the fault is with the 'dark' element of a subsidiary 'on-dimension' of ordered stochastisity in three-fold measure and two-folded reciprocity of γ and γ^{-1} under prohibition to exit-fault... a past. Thus the smooth transference of the unidirected motion of time convey's the bilinear form of an Affine space of γ into γ in the future (and sense-preserving direction) and of γ into γ^{-1} into the **past anti-sense preserving** direction.

Thus the direction of the Arrow of Time is explained.

This seemingly **Universal flow condition** hold's a dissimilarity structurally for particles and wave's; hence the co-adoption of setting & place to structure formation and evaporation, melting, decay, solidification, petrification, and salience, to what would be a *Decanting* process; within the tube and the development of adoption of chemical and electrical divergence of set-theoretic mean and average to aperture and provided volumetric rules of displacement. Hence; when the sub-quotient (here the base of the Affine equation); that of the structural residual obey's an equation with **this base** as the Lyponov exponent; to a divergent and Stoke's curl flow-rate equation; the manifold statistical rule of which is that the sub-quotient **also** serves as the rate to aperture γ to γ^{-1} ; hence *under involution* the convolved sum of rate-aperture-byproduct's equate with a renewed admixture flow-equation; a universality to Order amongst Chaos; and the exponential

curvilinear (subharmonic) evolution of Reynold's turbulent (non-laminar) to (laminar) flow *ratio*:

$$g = \frac{\sigma}{\rho R} = 1 \pm \gamma \quad (1489)$$

To which rate-adaptively the uniform flow illustrates infinitinely embedded dimensional convolution of aperture to width of tine; that of the impression of the Universality of Order and **not** Chaos... per Ramsey's Theorem. That of the displacement of a Reynold's number is given by the simple rule that percolation is not a result (in the impression of residual tori flow's) of Gravitation; - but instead the kinetic energy to the pressure displaced per volume; of which is the potential back-pressure. Then that a turbulent flow impresses upon a ratio of it's surfactant an Ordered impression in inverse ratio the simple rule of a Hamiltonian to Lagrangian conversion; that of kinetic energy under *dissipation* - the ever tide of that of a flow as it sublimates. This not only explains the Universality of the Phase Diagram of Water; but that of Structural Detail, for the impression of Order is of a refinement of reverberatory or oscillating mechanism of stabilization of the Universal Enveloping Equation of torsion, tension, stress, and in a divergence - strain; of which the four groups yield the machine state to a structural detail - that of the ordered symbolism of which is mathematical in relation; and of which is situated then within a-constructable dimension up to the number of it's heightened group and final (but by in two pier relation four fold limitation of tetragonal) eight dimensions then unto a maximum of 10 for which four folded relates to that of; but up until a tertiary limitation of three dimensions and six-plus-one dimensions (seven); for the sake of structural leading Lyaponov exponent(s). Thus a machine simply cannot exceed it's **scaffold number**.

This number (above) is the dimensional threshold to a gravitational flow and support; beyond which any machine will break down and tumble, fall, or crash... thus it is the **toppling number**.

Regularities and Field Effects

The issue of determination of interactions separated via a distance is investigated; to which it is found that they obey 'Complimentarity' and 'Equivalence'; then of forces; that these instance the foundation of a conservative field with only an energetic action-at-a-distance and non-simultaneity. The included consideration of an energetic source to sink in the field admit's separation of two bodies to nevertheless admit the geometric factor of relativity to take place or be excluded; to which via an argument of Spin Statistic's guarantee's that interactions are of a new variety. The statistics of the model are related to an Affine Algebra; to which the decomposition render's a covariant postively curved interaction between any two bodies; of a neutral characteristic. In this we need not derive curvature for the bodies are judged independently of one another; and although following relativity; remain of a conservative interaction because the underlying term's are linear from the vantage of a non-linear transformation. This render's an isoclinic freedom of scale; to which space must compensate; energy and momentum of the electromagnetic field going **into** the gravitational field energy and momentum. The Lagrangian transformation explicitly declares pole-invariant's in the Hamiltonian space.

Introduction

First; there are labeled two kinds of interactions:

$$\xi := C : B \rightarrow A : A \rightarrow B \quad (1490)$$

And,

$$\zeta := C : A \rightarrow B : B \rightarrow A \quad (1491)$$

Limiting to one continuous degree of freedom in $x(t)$ and one unit doublet, u_1 the question is; is any admissible shape or form potentiated; or more generally; does $x(t)$ have a **resulting** shape? u_1 is the unit doublet; and is the differential of the Dirac Delta function.

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (1492)$$

Where $*$ is the convolution operator and the previous is it's defining equation. By $*$ we mean a statistical and analytical definition whereby under convolution u_1 evaluates to the differential of $x(t)$. We can calculate a second differential by that of repeated indicial notion; but this will not pertain to our discussion. The identity of convolution is that of an operation of η from the set with ϵ ; a generator of two element's; defining that of an algebraic connection:

$$S * id_X = \eta \circ \epsilon \quad (1493)$$

The question is; "Are either or both of ξ and ζ forbidden from simultaniety with individual particles?" A process of event's is assumed to not-overlap with another in which case it is advocated that process ξ or ζ take place; but once ξ has occurred; it is forbidden that ζ occur by the 'test' we will impose *unless* C is a knowable condition. Presumptively, therefore; via observation of A and B we could discover C. An interesting thing happen's when we analyze (3) and (4) as a generator of a form. An Affine algebra develops as the evolution equation when $x(t)$ is a result of two element's. The fit is natural, because we do not hold two identities; to which there is a free parameter αc as a result of the absence of copies; and the closure of the group:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (1494)$$

To which is the generator of an Affine algebra... The residual element(s) of this world are taken as point(s) and wave(s) on an equal foundation... therefore there are three more factor's:

1.) *Pauli Exclusion Principle*

2.) *Identity of Forms*

$$\Sigma \mathcal{O}(t) \equiv \mathcal{O}(t) \quad (1495)$$

3.) *The Equivalence Principle*

To which t in equation (5) is an enfolding of basis elements in the relativistic algebra and is a curve's singular dimension... to which is taken free; but co-exists with no upper-bound. The product-sum equates to a limit of c ; to which as a conservation in $\alpha = mc$, the ordinary relativistic momentum; to which no particle can fall below. t is therefore a relativistic group to which 'factor's' the equation... Therefore from the generating equation (5) the equated variance is a mean to which unidirectionally prohibit's backward propogation by the following **fundamental** lemma.

The Arrow of Time in Relation to Order: *"Future tense physical event-horizons do not propogate (back) through two opening's. For example with a double slit; such a process is forbidden as there exists an even denomination of the unitary doublet mapping surjective-onto zero provided a manifold cover, when equated to the provision that equivalent displacement is a pre-condition."*

Relation to Identities

In this the related determination is *identity*: to which of what is sufficiently affordant with that of conveyance of identification; projectively onto that of its associable body, withholding to two marker's any two instances cannot be coincident back-onto one. For example, identification hold's vis-a-via mutual question and answer, (to which are separated), thus the question of identity relates to that of the ordinal direction of ξ and ζ ; to which there hold's a prior condition: necessarily so one is forwards (backwards) and the other backwards (forwards); and it is not the case two onto-projection's hold with respect to either latter (former) body. This would violate that of causation, and is the sense in which *either (or)* ξ or ζ take place with the other; but it is not the case that these instances are simultaneous.

Thus two event's in particles A and B are not in any sense simultaneous; and that of a missing *tertiary observer* guarantee's that there is yet no problem with them holding action and reaction in A and B for there is a lack of simultaneity; hence forces can act between bodies through field's instantly with quantum mechanics via superposition. To clarify; we examine the scenario of non-locality and find that entanglement for instance demands instantaneous action and reaction; but this is not what is evaluated; instead; it is the interaction (static) to which an energy **exists** in potential or kinetic form between two bodies. Thus the equivalence principle demands a corollary; that bodies separated in space and time which interact do so in such a way as to leave a trace residual.

Conclusion (Intermediary)

For throughout this treatise we have used the notation that a hypervalency or hypovalency under charge reversal conjugation lead's to attraction; therein lies the focus of Order versus Chaos in solids, semistable liquids, and dendritic alloy's or large collections of bioprismatic tissue. That of the allowance to two degree's of freedom was found to naturally reside upon the yet enabled quickening modes of a further yet teired relation of in two - what are quantum degeneracies allowed via classification into the manifold equivalence principle and or pauli exclusion principle. Through that of statistic's; we although come to enjoy the levity of a probabilistic and geometrically unifed Affine and Affine-free residual algebra; to which valencies are handled by pair and pair or peer and peer conjugacy of class invariants; to which are swept by then in the winding number and topology of an open or closed end differential curve; it's field a piecewise similar relation as to winding of degree's of a polynomial descriptor class in five invariants.

Therefore; it is under reduction that the principle of yet unknown invariant's is understood to hold null and void constructable accounting-derivative contributions to yet the open or closed set under nonperiodic or periodic texture tilings; within sight what is noticed is that a 'web' is known by it's vertices and nodes alone; and that for what suffices of Platonic Solids; that of winding breaks into classifications of a basic test-analysis precept at enfolding of differential attractors. It has been duly noted therefore that superconductivity arises in the vicinity and absence of a literal Hopf bifurcation of past versus future mirroring of charge carrier 'atrophy'; for in a disassembled set what is given a cross congruence saturates within subbandwidths at some atypical to typical carrier frequency. This; at the least typifies the remainder approach to removal of subbandwidth pseudogap states from discussion; and furnishes that of a homogenous theory of freed determinism.

Hence it is found that a synthetical approach to determinism to which holds a similar vein or

nature to that of 'unification' within the present evokes that quantum states in this instance hold the container of that of relativistic states - then the precept of neither Quantum Mechanics nor General Relativity upheld to a higher standard than the other or given superiority; a suspension of cause to effect of a Newtonian form. Thus equilibrium occurs because the rate of congruence of magnetism and gravitation are in opposition; but the forces cooperate; to what is a congruence class on a novel, and new kind of chemically activated bond; that of its rationality of invocation within a particular model dictated by the presence of Lagrange points under their retroincline conversion to Hamiltonian 'spaces'; that of the free availability of a measure; its destination when it is evoked the measurement principle need be questioned for qualitative cross analysis with conventional theories based on the Born Oppenheimer approximation. A preceded relativity is attractive via a turn and stop; in a rotation perpendicular and settled then in a conjoint elliptic network of spaces connected by inference in the real world; and settling at neutrally valid epicenters of atomic radii; the new chemistry opens; and that of the feature essential to its given derivation the complementarity invariances of regularities.

Conclusive Remark: *Hence the Affine Algebra cleaves apart the demand of formation of pattern's within that of an envelope function and hierarchy of group order for in that of the factorial (Brownian Motion) and power (Gas Equation or Power Law) relation.*

The Counter-Factual

In facing the comparative foundation's of a theory of sensibility to communicative and valid implementation; the variances hold sway to invariances as when what is exclusive is incorporative, the world we know. But then as eventual's subside; there escape to pause and surplus; of vantage and deficit; and even so a marginal contrast on the counterfactual foundational fault and realm. That it is within addition for the sake of the various elements of measure and proportion in due recourse to establishable laws that validity holds sway to perspective and realm, of space, a void or a contrast, but to deficit, then an implementable tool and assay system of evidentiary and consistent process. Hence of what laid aside may be taken our world; within addition; the subsumptive realm of mathematics holds expressibility for a world yet afar; a world and a connective to dual's and simplicial basis; but of freed asymptotic and normal valuation in terms of its mentated often elemental interpretative validity. The origin and organ of control is what is under then a relievable notion to completion; and in its inward apparatus; of proportionate means; a language expressible in the valuation of mathematical determination's and acquirement's; their reflexive role in bearing to totality and simple unity. That a world can remain valid alone and is tenable upon an exclusively control up orientable space and notion of time then in instantaneous relation to its mathematical support of quotient is then a knowably real world in addition to our own. That this exists; is as valid as the protocol of its reflex evaluation of tiny or massive relation, then of interstitial margin and noticable lemma of established foundation, a moment yet beyond our space, and of vantage free hingal apparatus and universality. The mere notion that a law in bearing of physics is consistent is its example, and sufficient to prove that such a world in remainder of our own indeed exists; its nexus and gate; established and broken, formed and shaped, and left immomentarily apart or together; by example a space between the relation of self and other; contained in the sphere of the imagination, but validly conclusive to a punctual relation of physical notion confirmed by everyday experience.

Presentation

Setup: A Magnet in Superconducting Levitation above a Superconductor:

A repulsive interaction between a magnet and a superconductor within that of a prevailing gravitational potential & attraction motivates an unstable equilibrium as the differential of the net-net potential holds a positive slope - (for the magnetic repulsion outweighs the attractive interaction). Thus, there is motivation for the indistinguishability of an energy and momentum reduction phenomenologically to which motivates the viewpoint potential energies reduce via a geometric effect with negative slope modifying the interaction.

The ingredient's common to the theory are:

- a.) A Lack of Simultaneity.
- b.) Superposition Phenomena.
- b.) Independence of Bodies.

So the hypothesis is: "Any two electron's in the material reduce in energy because of a threshold inversion from a covariant interaction. Therefore a reduction in effective exchange energy of superposition is conveyed by that of inversion of subjective and objective prescription. Electro-magnetic energy momentum likewise diminishes with the two-part system because the process of levitation lacks simultaneity."

* Indistinguishability of lowering (a cooperative effect between electricity, magnetism, and gravitation) is a result of the prescriptions of general covariance and quantum mechanics.

A candidate superposition of differing viewpoints derives that particle A from particle B's viewpoint is with B's relativistic factor from unity as lesser and contradistinct to A with an at-rest and at-rest provision; it's ordinary valuation therefore at A attracted to B; for B executes a lower relation in relative lowering in energy comparative to A when it exists with a higher relativistic factor. The 'excess' effect with the alternative particle A and particle B under reciprocity of interaction are mutually reduced under superposition from their normal valuations to a lightness condition because of the Pauli Exclusion Principle to which is under an inversion; that of the boundary at infinity and the local behavior at zero in reverse; when we dope from an antiferromagnetic parent material.

Thus B maintains two subjective viewpoint's. With the equivalence principle and exchange we must deal with the ordinary and separable time scale under exchange and a Lax Pair which derives from the non-linearity.

Therefore when the threshold is set by either particle in an at-rest viewpoint the equivalence and lowering of the massful contribution and electromagnetic contribution is manifest as a reduction in either's energy momentum from the vantage of the other particle. This is generative of a gap; for B outweighs A in lightness and A outweigh's B in lightness of their energetic contributions; the necessary condition of pairing when the Pauli Exclusion Principle is under inversion of boundary. Therefore lowering of energy and momentum is sourced in the auxiliary particle.

As a consequence the magnetic field is broken to a reversed state under vantage(s) of electricity and magnetism by the retroinversion of relativistic nature and a gap to excitations is produced in gravitational and electromagnetic setting. The net magnetic field of zero is the result of the symmetry of the wave-function and the relativistic inversion in light of an algebraic source free potential.

This describes the spontaneous manifestation of an equilibrium with levitation.

In this; several assumptives fall-off:

1.) First is that of any direct cause-effect relationship between the particles. For either are in the past light-cone of the other from some (other; tertiary and removable) viewpoint. Since this would be to invoke a tertiary observer – either is ‘empty’ of past and future. Their time’s are independent and there is an independence to event’s to that of superposition.

2.) Either A or B may be the included within the back-end of a light-cone to which is a cause of B or A; that of for which with a lack of simultaniety implicates a direct example of a physical disconnective that is rational and with superposition motivates an argument of interaction with that of auxiliary observer absent; neither is seen as the cause or effect of phenomenology in the other; (of particle or field); but that of the two time’s are seen empty.

3.) The ‘lightness condition’ therefore takes precedence under superposition; for what is a reduction in energy momentum in electromagnetic and gravitational interaction. The factoring of the equation(s) of motion in eigenvalue and eigenvector proceeds with a gap to excitations and a probabilistic inversion takes place; whereby A is attracted to B and B is attracted to A by that of their reversed curvature in electromagnetic field.

4.) Therefore, that of the relativistic factor at particle A is greater than A from B; and at particle B is greater than B from A (but it is the opposite under super-position); to which is the driving impetus behind the gap; that of a comparatively reduced relativistic factor under exchange with that of the ancillary particle; a lightness condition from that of a lesser factor with their respective opposite particles under superposition.

5.) That of independence of particles therefore conform either via superposition to bound particles; that of A attracted to it’s subjectively viewed B and particle B attracted to it’s subjectively viewed A; that of independence to which removes the constraint of that of A on B and B on A; but to which superposition and articulate equivalence principle generate a dynamical attraction.

* The integral produces a gap; and the independence of bodies assures an attraction.

* When the exchange is not driven lower by that of being below a separatrix division the interaction is Coulombic.

Thus particles attract because of independence of quantum and relativistic prescription.

With this [statistical and geometric] inversion; the cooperative result is a gap adjacent to another ‘greater in principle’ prepared behavior – that of antiferromagnetism; via indepedence of the resulting particles leads to an attractive behavior.

One: Why does breaking for what would be equivalent lowering's in energy momentum prefer a statistical adherence to new superposition's;.. if it is that there are two-time's; how does the system participate and what is the sound physical foundation to this?

The answer to two; is that the result's of complimentarity, (that results be comparative within superposition's); lead to the quantum principle with a statistical re-arrangement into two-time's; and arrangement of group order of effect.

The result of the answer to two is also a 'modality inversion' of ordered, statistically overlapping orbital structure; to which mode's adhere by that of inter-admixture terms between Lagrangian and Hamiltonian.

* Displacement for in exchange therefore leads to energy momentum lowering with independence of bodies.

* Displacement (wherein it occurs) set's the boundary on where two times and a factoring of the electron equation take place.

In Summary; there are a number of factor's to follow for what is manifest:

- 1.) A lack of simultaneity.
- 2.) Differing relativistic factors.
- 3.) A reversed perspective.
- 4.) Superposition of exchange.
- 5.) A contributing electric field.
- 6.) Independence of bodies.

1.) Electron's are bound within critical states that would need violate the [undecidability] of [relativistic application] and the [decidability] of quantum mechanic's to escape the 'gapped state' of superposition.

2.) Electron's factor for the sake of the [equivalence principle] – for which they are manifestly both 'with' and 'without' it's prescription – then that they adhere to a superposition of rest and inertial state.

Since the covariant differential is negative within the grasp of the identities of relativity of inertial state; electron's attract for an identical reason as to their repulsion. The relativistic reflection in A for what is B and in B for what is A; forces an energy lowering under positional separation decreasing; because the area of spin and orbit increases with distance via the Pauli Exclusion Principle; so they attract under a repulsion when argued this way, additionally.

Hence I want you to pay attention to this profound given:

$$\gamma_A < \gamma_{AB} \quad (1496)$$

$$\gamma_B < \gamma_{BA} \quad (1497)$$

Hence; their Pauli Exclusion Principle driving-symmetries dictate that when electron's experience a 'reflected' 'relativistic argument'; their interaction:

1.) Reverses in Polarity of Energy versus Distance

2.) Remain's a Repulsion [here - from larger distances]; but Produces Pairs

Hence for what is relativistic 'inversion' - similar particles attract.

As spin & orbital product area suffers a negative covariance; and grow's with the reflection of relativity under separation - there is a larger energy the further apart the particles become. Thus it is the violation of large separation that dictates that particles are 'forced together' - that of the electric and magnetic force changing direction for the sake of the interaction upon approach and a result of a force which reciprocates to reversibility upon either body.

This is true; as the relativistic factor of particle A witnessed in particle B's reflection is smaller comparatively under exchange. Thus we see repulsion and attraction simultaneously taking place; but a repulsion (from greater distances) outweighing attraction to larger distances. The interaction is thus reversed.

Again;

$$\gamma_A < \gamma_{AB} \quad (1498)$$

$$\gamma_B < \gamma_{BA} \quad (1499)$$

Going to completion via the Equivalence Principle is an 'inertial state' - the Dirac equation holding therefore the Pauli Exclusion Principle pairs the electron's via a gap set by relativity and it's initial condition.

Thus; γ_A and γ_B are with relativity 'removed' of the generally covariant relation when judged from rest an exchange and gap of 4J results, the full AFM doping structure of lattice exchange.

Principles:

Complimentarity: The results of a system are invariant with and without superposition; to which identities convey what is 'hidden' as to speculate that characteristic inversion in vantage leaves quantum mechanic's intact; and that identities under replacement of variables; leave a system unchanged despite loss in identity.

Equivalence Principle: The results of experiments do not depend on the coordinates used; that of for what would be a different vantage or perspective in relativity; result's in no way depend on the particular viewpoint cast in reality (physical) to which what is given of properties rests then on prediction of inter-relationships.

Then;

“The lesser makes the difference of the two greater’s.”

Combined with:

Covariance would not work that way comparatively to what is a prediction of departure were it not for the undecidability of it above quantum mechanic’s.. that of a reliant background for instance of practical validity.

So;

With Complimentarity (switching of particles) and Equivalence Principle (switching of viewpoint); we see it is only via non-linearity comparatively that we know of the linear expectation in the alternative theory. Energy as a gap amount’s to a real value because of that of departure in either theory within light of the other; therefore comparatively a linear theory to a non-linear theory via a process of elimination yields that of energy gap relationship’s, the action and it’s variance being real for the sake of geometry.

Thus both theories together are an undecideable but true theory.. then one of which hold’s only in translation between linear and non-linear equations, the prediction of a non-linear theory is in no way superior to a linear theory; but in both cases; the result of complimentarity or the equivalence principle; & with both in place; the actual physical scenario. For that of a non-linear to a linear theory within the [context] of a quantum principle and an equivalence principle; a gap holds comparative validity. The statistics of the electron’s are opposite the hypothetical general covariance... hence there is a reversal in the electric and magnetic field and in relativity... herein of what were non-linear equation’s.

Trail of Notion’s:

One; that of two objects (within a Quantum World-View & for QM below Relativity as Principle’s) – fit when-larger into a smaller space; for what is the infinite within the zero... a result of prohibition to which is that Shroedinger’s Cat Paradox is insoluble as a conventional experiment so constructable. For a second reason; no measurement is perfect; to which also refutes Shroedinger’s Cat Paradox; to which “Despite the fact we do not know something; of A or B; we know it is either A or B (exclusively).”

Two; that of probabilities fit within these ranges; so it is with the Dirac displacement term.

Three; There is no formulation in which A precedes B and B precedes A; to which via a lack of simultaneity reality is of an omnipresent time. Therefore there is no solid notion in a holographic universe for that of quantum mechanics as there is no tertiary witness.

Four; This lack of simultaneity for what is the true instruction of this world; identities are carried and ‘revealed’ by a check’s and balances for what is a guess in relation to presentment of one (a whole); aggregate noted; or that of confirmation on the included exception of time; to what is a question of notability of ‘return’ under a ‘carriage’ - that of answer resides with the participant... as to confirmation of [another] via themselves; for in either identity.

Five; Therefore as presence and passed relations reside in the substrata of a relation; to which is invioable; that of a past is knowable and a future is knowable but in relation to an encompassing present (around) via the Pauli Exclusion Principle of complimentarity for there is no third witness.

Six; This exception with the third witness is that comparatively identities remain within a free-juxtapositioning of their element's; then at seemingly non-local distances; but of no contradiction to either that of relativity or quantum mechanics of non-locality for there is:

- a.) A lack of simultaneity.
- b.) No tertiary witness.

Thus we see that general covariance implies that there is a corollary; that given a separation in space; the gravitational and electromagnetic field may act via-displacement's; to avoidance or approach; and the quintessential balance is epitomized in *Superconductivity.

The bodies are apart; yet act through their individual precepts.

These are:

- a.) Of the relative.
- b.) Of the quantum.

Unification occurs when determinations are formed.

Synthesis:

- 1.) The imposition of The Equivalence Principle with Superposition.
- 2.) Complimentarity; for of what deciding factor this plays in QM and GR.
- 3.) The Pauli Exclusion Principle and the Spin Statistic's Theorem.
- 4.) Antiferromagnetism and Doping with the result of Levitation.

With $\gamma_A < \gamma_{AB}$ and $\gamma_B < \gamma_{BA}$ that of the electric and magnetic force are reversed; for in light of a 'subtraction' of geometric-effect; that of the diminishing relativistic effect reverses the nature of factor's to which give rise comparatively to a bound state. That of reversal of relativity does not occur; but that of a relative gap does arise; for the sake of which comparatively we deal with reduction in gamma; the relativistic factor, thus it is the opposite of repulsion; for the sake of a negative exchange; that of superposition foster's that of a reversal in the force for what is energetically preferential of the states.

Let:

$$\gamma_A \tilde{\sigma}_1 \tag{1500}$$

$$\gamma_B \tilde{\sigma}_2 \tag{1501}$$

Then it is because σ_1 and σ_2 are the 'sources' of the exchange interaction that they will 'flow' in an identical manner to the relativistic lowering in energy... that of a marriage between relativity

and the spin behavior... the ‘weight’ of the spin will flow with the ‘weight’ of the relativistic apportion; a rule dictated by the equivalence principle.

I.) The equivalence principle will lower both the effective virtual kinetic and potential energy; for when transitioning into the superconducting pair; that of the relativistic and spin factor will reduce in magnitude (effective) – diminishing both energies; to state that all that is required is a situation whereby $A < AB$ and $B < BA$ as a result of anti-ferromagnetism.

a.) This is distinct from the above in that it is not reasoned that exchange lower kinetic energy by some hitherto unknown mechanism; to state that it is not interference between exchange and kinetic energies.

b.) In this; both results in potential and kinetic energy are lowered by that of the newly modernized equivalence principle formalism; whereby $A < AB$ and $B < BA$; justifying the inertial rest frame lowered energy (virtual but real).

II.) From this; absence and presence via displacement (owing due to the regularized particle notion – that of partial replacement) – reverse the interaction; at that of a comparable strength in attraction to what was the repulsion.

a.) Displacement of particle A for it’s anti-particle is selective to A; and vice-versa with B; for which the electron’s are attracted to each other’s absence.

b.) This takes place below an anti-ferromagnetic lattice both because exchange is negative (in preference to the singlet) – and because hole’s will participate in that of a quantum and generally covariant motivated energy lowering.

III.) That of an excess magnetic interaction (due to doping below ideal) takes place to explain the quasi-superconducting sea; of which is ‘above’ the ordinary attraction taking place; due to auxiliary degree’s of freedom and when this part contributes; to explain that it is when doping is less than ideal that there is overlap with ordinary auxiliary anti-ferromagnetic behaviors.

Therefore:

“Via superposition; the equivalence principle over a quantum scenario invokes inertial masses and spin’s; to which pairing proceeds by that of the effectively lowered energy comparative to a fixed relativistic background. That of either spin find’s itself in a lowered potential in exchange; and kinetic energy is comparatively lowered via that of the application of an upper bound to relativistic energy set by that of their effective gross motion.”

Thus it is we find that gravitational energy change under levitation is positive and magnetic energy lowering is negative for quantum mechanics is counter gravitation. Thus it is that when we put together two bodies under Superposition; that of the inertial state is preferential in the description via Complimentarity; thus energies of both particles decrease comparatively; finding no disagreement between an inverted relativity and a forward cast relativity for the sake that these are differently subjective participant’s and interactions are indeed cast to the source

“It is that the singlet determines the state is at a lower energy via that of a selection rule; it’s quantum state in furtherance with the “Equivalence Principle” - required by symmetry – to be

determined from that of the triplet; with that of a consequent selection.”

States [of Fermion's] must adopt net antisymmetric wave functions.

Therefore with the equivalence principle; the singlet casts to a symmetric spatiotemporal wavefunction such that energy-momentum is at rest and at rest; while the triplet casts to an antisymmetric spatiotemporal wavefunction; and is necessarily of a lower energy iff;... the equivalence principle operates to reduce energy by casting them to in-motion and in-motion quantal state's... the juxtaposition of this selection rule is that antiferromagnetism prefer's attraction while ferromagnetism prefer's repulsion in that of relative factor's; and the equivalence principle (& relativistic manifold) conform in two different way's.

So,

- 1.) Antiferromagnetism set's a scale & threshold to which particles tend to become hole's.
- 2.) These hole's participate in a conjugate measurement process via The Equivalence Principle.
- 3.) The Equivalence Principle and conjugate measurement are driven via threshold to saturation.

Thus we see that (the e.p.) participates; measurement participates, and at (@) saturation; the opposite behavior to repulsion is engendered.. noteworthy is the fact the Pauli Exclusion Principle forbid's repulsion and carrier's out of the state via the settling of (the e.p.) and the rules of Quantum Mechanics.

So:

- 1.) “Relativistic expectations do not alter quantum result's and quantum expectations do not alter relativistic result's..” -amount's to:
- 2.) “The ‘proper’ result of combination of Quantum Mechanic's and Relativity is to take all states within their at-rest configuration..” - amount's to: Unbiased Measure!

Now the compact resolution come's in two statement's:

- 1.) All quantum measure's are related to at-rest juxtapositioning and relative assessment; then the missing ‘void’ on that of comparative validity.
- 2.) When this is done so; it is precisely because there is null-measurement-overlap between the theories that measurement is taken relative to the relativity-picture but back-from factors.
 - a.) This has the result that measurement is unbiased.
 - b.) This also has the result that the theories are independent.*

Compendium

- 1.) A new* result has been found; for which the limit(at ions) are sought:

a.) That of repose to the contravariant metric tensor by the reversal of indication via that of subject and object is the connective via-exchange and superposition of relativistic invariance of quantum states. . . that of the connective feature either:

I.) Restricted to spin-singlet.

II.) Admitted to all quantum states under relativistic “correction.”

b.) That of reflection in subject and object; to which relaxation take’s place with ‘generally covariant mechanics and it’s result’ reliant on an upper-teir; (outside and above); the quantum states and their configuration; that of a separation of system for evolution.

2.) This relates to EPR in that the Einstein-Podolsky-Rosen experiment argues outside the lightcone; & that the system and scenario is cast back-within the light-cone for that of distant experiment’s and the quantum juxtapositioning of superimposed states and their collapse; with (& when) that of:

a.) Interchange of particle prescription for particle prescription entails that of reductional given’s – that a system in it’s behavior co-relatively to relativity does not depart in behavior when we interchange particle prescriptions.

I.) This lays into line that quantum description is independent of gravitational.

II.) This make’s a prediction – directly! - via that of configuration on the hypothesis.

b.) The argument end’s here; but should relate intimately with that of the why; as to the given that particle particle independence relate to the objectless and the objectful restriction from out of the fourth dimension; an argument likely related to topology.

3.) It has been found that upon Quantum neutrality of a condition; that namely:

I.) Relativistic results are independent of quantum results; and quantum results are independent of relativistic results; that particle states adhere to an independent foundation.

II.) This has the ‘derivative’ consequence that independence of quantum states is gained by a return from relativistic limitation; then the inverse of measurement with the particle state; and that of independence of states assured by rest-rest comparative validity.

4.) What is clear is that Relativistic Testing (a Thought Experiment) involving a mirrored reaction and action between a superconductor and magnet; (to maintain that of the Meissner Effect) – reproduces the negative gamma factor for that of separation under freefall. . .

I.) Thus for an electron pair; this is expected; that of via The Pauli Exclusion Principle; that of a negative gamma sourced in that of the two electron’s – to which freefall would result in independence of state’s via their exclusion.

II.) We expect this to be illustrated elsewhere – but it validates the EPR Paradox.

5.) The question is one of independence, unbiased measure, locality, and the emptiness of space.

If we are to contend that these ‘fit’ to accommodate a means then it is required that we reproduce with evidentiary purpose a requisite phenomenon at the layer of unarguability.

i.e. We have Superconductivity... but one may resort to other explanation’s... Then: It is necessitated we confront; the objectless and objectfull emptiness’s; for what they freely provide of a locality and measurable basis within that of:

1.) We may require action and reaction to not violate locality, within exception:

2.) The mere notion of a Hopf bifurcation; except’s to singular local pre-tense that of measurement;... to which as it were; the ‘self-action’ of a ‘free-body’ – acts only [alone] unto it’s measureable local relation’s; then the Hopf bifurcation; the example of a local interaction.

6.) Thus we are not forbid from that of invocation of separable pretense for many bodies.

7.) There is a distinction first to be made between chemisty and material; that of the field to Polytope in the game reductionism of localities of two natures; their disposition; a reductionism in Unitary provided (hidden and unhidden) counterfactual representation.

I.) A Bose and Fermi gas (manipulated) – fed-back to an insured exterior and random (purely) White-Light generator; disposes that of the reflexion in their vacuua.

II.) Ferromagnetic and Antiferromagnetic ‘choice’ – is the ‘empty’ determinant half- U on that of a Gyroscopic motion in-it’s-skipping; then to what is allotted; a factional difference on irrational and rational (free winding point via random impurity or scheduled super-exchange) – of that of an Elliptic Winding of their crossing of Electricity and Particle.

III.) For an emptied location; the exceptionable and/or is to two individuated particle’s what is a choice-at-World; to speak of the coadjoint exception; that from-onto yet ahead a ‘condition’ (spoken of); - for the in a condition-yet (written of) – that of future-tense; hence of a literal Style; that of a type illustrates either a ‘copist end’ or a ‘propertied end’.

IV.) From yet just-this (as in what was noted in ‘else’); that of elimination in yet the counterfacted imperative (a variable reversal) – (of variance yet preceding from a future) – and to the ‘tetralemma’ – reversible and removable – there are two step’s in any accomodated pattern of ‘path-prior’ – then that the trace function ‘link’s’ or ‘unlink’s’ the mechanism of two remote game’s; that they are of a gas-dynamic or phase-confluence; but information.

a.) As time is a symmetry; so too does it merely represent a reversability on the physical congruence of event’s; the end of the arrow; Mathematics; but the fletching – to which it ‘follow’s’ – in. Hence a pathology is benign and removable; even to it’s indications.

b.) Secondly; reversal of time, space, or order, fit’s the Genesis of the then derivative (Poincare to Hopf) – of a ‘cut’ in yet an unbiased geometric language of 2 for 1; of dimension in that of a 1-ball in 1d and an unlink’s mental associate in 1-unit of a function in 2d; to which the generic geometry is a group associated; but not of an algebraic cover.

8.) So it is that by elimination or congruence of a return in two steps at ‘hypothetical’ reversal of the uncontained cover for the contained cover; in a Venn-overlap diagram of principle for

copy, for observer; and the freely held generic geometry; cause and effect are defined; and the unbiased thought experiment perfected to the divination of (T from F).

Tool Set & Notes

- 1.) A kind of I.S.T. for the non-linearity that is a Chiral $SO(2)+SO(4)$ non-linear sigma model.
- 2.) My physical precept; of knowing in a test; that of determinant questions and answer's...
- 3.) The Spin System and a 'Cooked up theory' - on that of the QED and QFT theories...
- 4.) Education in that of Phase Transitions and finality at QED and QFT... finalizing my book.
- 5.) That of a paper on Spin Statistics in Curved Manifolds with the Pauli Exclusion Principle.

* Question; is my local theorem merely the completion of Yang-Mill's theory?

A local encompassment of dynamic in-time is afforded by the 'folding' of 'Shared Proper Time' and that of 'Manifestly Lorentz Invariant Time' - then within a two dimensional subsidiary context of the superconducting 'Problem' - and indeed takes place; to what presents a perfectly balanced dynamic.

That of therefore (for what is magnetic inversion) - takes place by that of a steppe on the eigenspace in such a manner that therein it is prohibited to leap-outward from the flux quantization; and it is representative of a curved manifold with reflection in subsidiary physics of gravitational feedback with electromagnetic states; thus what participates is of a lower dimensional confluence on dynamic.

As with two [compactual return's] the discernment of a Bose Gas in one place, and a Fermi Gas in another; unto temperature (et. al. that of magnetic thermodynamic connective, etc... and energy state) - is to Bosonization in one [whole] region for one for what for another is a free Fermionic loop. Thus the transition to a Boson gas could be no more simpler than a Phase Transition in one region for what for another is a closed venn under the guidance of a Low Tone to High Tone dual. That of two-time's furnishing an interior magnetic dynamic capacity.

This explains the Reduction in Energy, the Temperature Dependence, the Gap, and the Flux Quantization interlinked with that of the Meissner Effect... and is an organizational pattern.

So it is I am speaking of a Landau to Feynman smooth transition of gauge.

- 1.) How a $SO(2)+SO(4)$ Chiral model is isomorphic to a subset of Yang Mill's - describing the character of Superconductivity... et. al.
- 2.) It is essentially a theory of particles and line's; particular weight's and the photon path; then of gravitation etc... and these three; of the stability and structure of a neutron and/or proton.

And I am nearly * complete with my studies of Superconductivity:

- 1.) Renormalization of gamma.
- 2.) Charge inversion.
- 3.) Electric field from spin.

With the I.S.T. and the Symmetry Breaking Field Theory there is much to do; but it is all done.*

My Superconductivity Theory requires some workability and work to be introduced to the question.

[Setting aside Shroedinger's Cat]...

- 1.) Topology
- 2.) Manifold Guidance inc. Hopf Bifuraction
- 3.) I.S.T.
- 4.) Field Theory (SO(2)+SO(4)+Chiral Term)... and connective [connection] to Yang-Mill's...
- 5.) Gravitational 'Envelope' & Quantal Statistics
- 6.) Lie differential and topology...
- 7.) Intrinsic Relativistic Inversion at tiny scale Comparatively to Cause/Effect
- 8.) Model Bosonization

It took me roughly a day - but then at the end; 2 minutes of dedicated thought... related to:

- 1.) The spin dispersion is linear.
- 2.) I related the antiferromagnetic coupling and set-state to the reciprocal gamma (relativity) - & found:
 - a.) Gamma goes to infinity (under reflection) as velocity goes to zero...
 - b.) Gamma going to infinity (a truncation) - is identifiable with spin-counter-alignment...
- 3.) Thus there is a coincidence! - that of spin counter-alignment coinciding with the reciprocal relativity!
- 4.) Thus charged 'hole's' attract because the boundary condition and the point (@) zero localization reverse for the Pauli Exclusion Principle - that of charge polarity of repulsion reverses into an attraction.

That of where I venture, to:

- 1.) A *new* scientific experiment (neutron scattering with interferometry on a half up half down exp.)
 - a.) That of the guarantee of not-dead/alive as dual confirmation +/-50%/+/-50% challenge to die; that of determinism... guarantee's a result of confirm! on that of the Pauli Exclusion Principle violation.
- 2.) That of experiment designed by theory - mean's that this is a confirmable theory; and indeed I will win a Nobel or be world famous - then my dream - but impartially to set aside physics.

Examination, Observation, and Measurement all depend on Measurables; yet are differently established based on somewhat separate identifying marker's and assessment's, relations, and interjection's of the 'pliant'; then that to-witness is an example of dual-recrimony; and the just end face's either way; hence to a limitation.

For what we keep of a relation in-tableau; it is noticed the worded, symbolic, mathematical, and numeric relation remains to change, but that of the equation may change in interpretative and complementary validity to a synthetical organ set-aside; by rote or memory; noticed and assumptive based; to then a note progression and copy-assigned book-keeping; to worded or declared doctrine; in the reversible pretextual 'hint' of a relation and a textual-background of cartography and mapping-associate of venn, and stylus overlap; for what is effective a mirrored-projection and identification of marked relation; of indication of and at set-teir.

I determined of that of physics; it goes:

- 1.) Arrow of Direction of Time
- 2.) Order
- 3.) Confirmability
- 4.) Measure(ment)...

Thus it is I am working on a 'Philosophy'.

But it does indeed - if it is to segregate into these four; that a real revolution will take place.

I need to think of the simplest manner to secure my work and it's consequences.

A Theory of Likelihood

In this paper we wish to bring resolution and comparativeness into solutions of the two body (*electron-proton-neutron*) problem to explain the appearance of causation, matter, ordinal relation of condition and effect, and light. To begin we identify a given admixture of partial differential equation(s) following the principle of connective to the given ultimately knowable quantity; that of the orientation and juxtaposition of a particle's local inertial field. Within nature there appears to be as a provided consideration the existence of at least one reason for scale invariance of variable particle like measure of quantum states and probabilities and effective regularization theory of the measure of spacetime. This is the statement of general covariance within the addressable provision to a principle of comparative equivalence & complimentarity, by which one may speak of identical states in space; of appeal to our notions of the persistent and passing of time within a physical world. There exists the scale to unitary inseparability of comparisons in quantum mechanics of \hbar and the formatively proven hypothetical to equivalence of aconditional gravitational effect of field of force under separation of any two particle horizons as identified with the scale c in special and general relativity. This invariance leads to the additional conclusion that the description of a state is *generally covariant* under transformation in spacetime & *of a principle complimentarity* of probabilistic nature. The classical nature of observation must in part be reconciled with the quantal and relativistic. Reconciliation of deterministic outcomes of

relativity and semideterministic outcomes of quantum mechanics leads at once to the proposed scale invariance of c and \hbar . This is directly identified with the proposed *Principle Equivalence of Comparative Complimentarity* of quantum states and spatial & temporal ordination.

Introduction

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in all known materials. Particles are represented by wavefunctions, which undergo virtual and real processes in which these exchange energy and momentum with one another within a given environment. Gravity on the other hand, is equal to the qualitative theory of the geometry of space & time taken to it's end in the unconditional ceasing of gravitational force in consideration of the statement of free fall. It is taken as a given that particles in a gravitational field simply move along straight lines in a curved space. Therefore; a complete theory of quantum mechanics and general relativity begins with the precept of straight line congruence of free motion and capacity of ordinal relation of comparability in either theory so reconciled as the equipartition of a knowable field.

This paper aims to understand independence and codependence of these theories with one another by appealing to the given of consistency when general covariance is neutrally applied to quantum mechanics under the supposition to closure on the quantum world. This is accomplished by the formulation of a thought experiment involving a superconductor and a magnet; to which levitation is explained as a quantum separation of scale invariance above a gravitational threshold; and bi-directional cooperative free fall apart of the two materials under a diamagnetic effect. In a superconductor, a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations below which electrons are in departure of a scattering theory; explaining that only a qualitatively pure theory of true phenomenological origin may explain their vanishing thermodynamic contribution. Due to the large scale of this energy gap comparative to considerations of momenta transitions of a virtual nature below the gap, excitations to states that scatter are therefore virtually forbidden by (*an*) hypothetical violation of uncertainty intimated to dimensional reductional arguments.

The consequence of an electromagnetic potential and quantum residual nature of frozen isosymmetry of global invariance manifests therefore as a condensation process to which there is reversal of iso-inclinc degrees to a null winding point in the relativistic theory. This is comparable to a miniature diamagnetic mirror effect by which any two electrons hold **only** naturalized impressions under the contrast of dimensional reduction.

The closure of the state 'back-upon' the hole attractive phase is locable therefore as an openly intimated connective of ordered relation to free transposition of temporal congruence. Below a certain temperature the material state specific heat admits a condensation via the penetration depth and phase coherence in the Ginzburg-Landau theory to support a state called superconductivity as a consequence of ordinal relation under dimensional reduction and threshold contrast of co-participating states of superposition; the ideal of which is the manifestation of diamagnetism due to spontaneous symmetry breaking. The reduced state is therefore iso-inclinc as a result of it's reduction to a causeless effect; the certain determinant of which is separation under cooperative reversal of the laws of physics in a thermodynamic potential of a pure 'acausal disconnect' of 'conditional effect' under the provisions of a prepared magnetic and gravitational potential. The final difference of these included considerations is that one enqueued spin or charge variant is unseparated but isolable from that of mass; to which either fractional decom-

position of states isolably yields a pattern congruence and isopotential of secondary enfolding of their two natures via ‘hole-void’ & ‘charge-spin’ structure to which a metric notion retains one individuated contrast of magnetic disordered relation within that of it’s electromagnetic potential threshold of effective isolation and reductional mutability under the provision of temporal quantum prohibition of intermediary disconnect. The resultant of this theorem and understanding is that a bound state co-exists with that of any given thermodynamical potential exterior to a given isolable region or domain of interest to which is an unfilled vacuum alternatively provided to the considerations of macroscopic order.

Primary Principles

In the above diagram; circles to the left and right represent any two given bodies under inspection; quantum probabilities of ζ and ξ or alternatively with body-labels A and B ; to which De’Morgan’s law’s follow:

$$\hat{A} = \zeta(v, \tau) \quad \hat{B} = \xi(v, \tau) \quad (1502)$$

With an *Principle Equivalence of Comparative Complimentarity*:

$$A \circ B = A \cdot B \quad (1503)$$

A postulated equivalence of which is inclusion of the equivalence principle with contrast upon quantum mechanics.

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of it’s possible predictions. To bring these theories into contact the method chosen is that of adopting the essential qualitative feature of isometry under stereographic relativistic transformation of coordinates for an underlying representation in the context of general relativity and applying this descriptive independence to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and complimentary in qualitative measure and measurable.

Fundamental Principles

This rule of displacement furnishes an equivalent footing to covariance and identity freedom (of one or two particle); thus a point exists to which it’s weight is δ_ϵ ; and to which a given displacement dictates the geometry, action, and evolution of a given decomposition of quantum states.

Principle of **Parsimony**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (1504)$$

This first mentionable theorem describes the addition of densities into a sum of finite difference in any externally situated point of measure and reference; it’s dual being the comparative equivalence of measurement ‘weight’ of probability density in differing descriptions for any two bodies.

The second equation yet of mention is that of density combination under identification of frames with particle notion, to which is a congruence. The comparative equivalence of these two juxtapositional identities of variable and measureless degree of emptiness of physical invariant afford the addition of a shared time (here denoted σ); to which is in equivalence a shared time of subtractive nature to the ordination of spatial extension.

Principle of **Synchronicity**:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (1505)$$

Together, this is nothing more than the equivalence of references of vantage for any two particles.

The direct consequence is that:

Any two contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor of density; for in that of one following adirectionally apart; together; or separately; there is a transparency of logical union of quantum description; that of an interior coextensive dilation contraction factor owing due to their (shared) comparative proper measurement of time.

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a *free* substitution of difference of perspective and vantage; to which forms the uniqueness condition of any two point like limits of relativity & quantum mechanics; for that of any given principle equivalence of time and order; the principle inequivalence of which is a co-determinism to any two probability densities.

The general consequence and implication of this for signals of frequency and functional form under transformation is that: By one (1) comparative differential to quantifiable mean variance in difference of driving frequency encompasses either of any two subcomponents of alternative exterior difference of a given surrounding constructible geometric congruence.

Therefore with general functions:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (1506)$$

Implies: In log decibels any two differently concordant rhythms are separable by any given measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature. Therefore considered together these two imply the equivalence of results and particles under parallel interchange of perspective and vantage.

Principle of Measure: *Either one of Parsimony; or both of Synchronicity of given absolutely relative and arbitrary limits of codeterminism within shared point-like relation of temporal extensibility of measure and argument agree to (a) given variety of locality within a shared pre-text; to which with but one given shared body one given end congruent relation is empty of measure or extension; and one beginning notion is free of adeterministic consequence; the implication of which is that measure is certain and measurement strictly semi-deterministic.*

We can therefore conclude:

β): Geometric weight of relativistic point application of force is equivalent and opposite to quantum mechanical point application of impetus.

α): Geometric weight of point like mean density in relativity is equivalent to geometric weight of point like variance in quantum mechanics.

Conclusion: *Geometric weight of density and mean force of impetus are equivalent in a theory of comparative equivalence and complementarity; to which in addition all events carry an equivalent contribution of $\delta_\epsilon = \hbar c$, for which any two constitutive relations form a synthetic factual known of truthful valuation under superposition of one given naturalized geometry.*

Relativity Theorems

The phenomena of which is intransigence of notion for particle and recurrence for wave is the addressment of deterministic end to description at the benefit of representational permanence in reality; therefore to be known here as two givens in physical law and this world within that of **real** connective and disconnective of known's under *displacement as relation* of any given one known to it's identity and any additional known:

Parsimony: Any principle comparative measurement of frequency under it's given equipartition at most meets that of analytical threshold of physical variance of mean partition of yet an other state within the contrast of two idealized localities.

Synchronicity: To what is ideal of measure; any apparatus of measurement idealizes to yet one threshold of superior relation of major for minor locality of the idealized process of measuring under comparability to reference and sentient witness.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

$$\gamma_c \leq \gamma_m \tag{1507}$$

Property of Light Variance: *The speed of light in when known as fixed to a universal standard implicates that all such durations under observation are identical with and greater than that of any given singular pre-contextual arrow of time by the speed of light universally; for the property of dilation is obverse to any stated fixed measure of relation.*

In this, γ is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity) precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path upon passage.

This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated).

Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other ob-

server, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence of congruence under emptied return of ordination and temporal excess of comparative shared time to threshold of objective for any given two body problem. Consistency for that of closure is therefore defined by that of what can be found as a ‘bottom’ extremum beyond which measureable extension of locability of a given limitation of enclosure unto each given domain of relation potentiates two fundamental mathematical principles in this given world; for which there are solid and diffuse natures to reality in contrasting degree of pattern and reference; to which is an a priori assumption natural to the sciences. Therefore there are two fundamental limitations of physics; that of one indical and one ordinal theorem; their synthetical remark the passage and persistence of time:

Conclusive Remark on Time: *The relation of a distant observer in observation to that of the point of the first observer when in motion is of a greater measure than then the reference to the observer under observation to whom as observes a lesser comparative time in that of the observer of it's given observation & alone as greater, comparatively; to what it observes in persistence of motion; these being the two natures of time in relation to any one (of either) such observer's difference with (in) that of equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1508)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

Ideal Principle Equivalence

Conclusive Remark on Measurability: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of any multiplicity of observables by observers are measurably null and unphysical when any one is undeclarative.*

Quiescence: *Any free light field congruence as the amendment of a free frame under geometric associability and indication is to it's field of subsidiary particle index therefore a free integral and differential of associated field compliment and vantageless a-perspectiveless freedom of degree.*

$$\partial_{\alpha\beta}^{\gamma} \Theta = \Theta_{\alpha\beta}^{\gamma} \quad (1509)$$

Prescience: *The integral notion of this given universe is therefore the capacity of space to capacitate an indical notion as the presence of a quotient group of complimentary ordination to constraint-free degreeless displacement-free identity and variable of aconditionality of principle.*

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (1510)$$

This is the given statement that a freely disconnected relation of space is capacitated by that of temporal congruence under free transmigration of identity of indeterminate principle accrued integral and differential notion of field and seamless light-like transparency of ordination in its capacity to immeasurably exceed the given capacity of matter to inhere motion. It is therefore held as true that any two quantities of displacement of measure unto and to measured are coextensively congruently null and asymptotically free of any two measurement processes by that of indivisibility of ordered expression as the known independence of order from ordination in the indicial notation:

$$\zeta\chi = 0 \quad (1511)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (1512)$$

The algebraically free projection of any co-automorphic degree or vector into any one-form of geometry of null displacement invariance with in that of null indistinguishability invariance is therefore the general and full expression of a principle equivalence of null covariance as the expression of the primary notion of the predicate calculus of invariant's.

Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1513)$$

Principle In-equivalence:

$$\eta\rho + i\sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1514)$$

Any two held contraction dilations are therefore uniquely independent of any additional third by that of their commensurate action of congruency of geometric difference under open relation of objective addition of relativistic co-factor; for in that of one following adirectionally apart or together; there is seamless transparency of beginning to end of pathwise extensible union.

Therefore:

$$\eta + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (1515)$$

Therefore considered together these two imply:

Theorem of Freely Held Determinism: *Either one; or both of (2), given known invariances of absolute limitation unto independence of point-like relation(ship's) of proportion are indicatorially free as thereby the given theory of electricity & magnetism to (any one (1)) variety of non-locality; for which one is but a beginning and end congruence of relation as empty boundary condition.*

Reduction under the Temporal

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of any unbiased system of units (to which is the deduction of temporal measure from out of spatial translation).

Therefore the given holds as true by the following; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1516)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (1517)$$

Are equivalent parameterizations of the same problem, as both intimate a connective between transposition and migration of quasilinear pathwise extension in space to which order is subsidiary to and, upon, qualifiable degrees of motion as that of which are neither circular nor point-like.

$$\frac{v}{c} \leftrightarrow 1 - \frac{v}{c} \quad (1518)$$

This principle of inequivalence in concordance with principal equivalence is to be contrasted with the exterior space-like symmetry of the theory of relativity when it is considered that actual determinations of validity are certain only when one deduces inwardly from temporal to a conditional extension into a given spatial measure.

As a consequence; one or both given ends of any one continuum of a virtualized or real world are not to be found; for the projective forward and backward (surjective) intimation of relation contains no common zero but as algebraic connective and disconnective of atemporary spatial union. The expression of this is that of an intermediary identity locable everywhere in space as the untitled degreeless identity of quantum mechanics.

The principle inequivalence instanced by $\sigma(t)$ is then the marriage of one body to a two body problem by which either agrees with reason and consistent notions of space alone; to the entitlement of understanding of time; the extra $\sigma(t)$ being the accordance by phase of that of a temporal signature to inertia. When one analyzes a mirror with this concept in mind the result is as to two defining relations of analytical true supposition of the ‘vertical’ and the ‘horizontal’ rate of comparative temporal extensibility as limitation of arc-width to perimetric co-extension of signature:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1519)$$

Theorem of The Quantum

In order to investigate a potential factoring of the two body electron equation into which the problem may be cast or dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which there is escape from the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions.

We prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave and frame descriptions of two particles; to which belong to differing descriptions and frames; denoted by \sim or $-$.

Here we find that De’Morgan’s law’s imply:

$$\langle A \rangle \langle B \rangle - \langle A|B \rangle = Cov[A, B] \quad (1520)$$

For which $Cov = A \circ B$ is the covariance of events or probabilities A and B ; with which $Cov \equiv \neg Cov = A \cdot B$:

$$A \cdot B = (\neg A) \cdot B \cdot (\neg B) \cdot A \quad (1521)$$

Where $\sigma(t) \equiv i \langle A|B \rangle$. Following De’Morgan:

$$\beta [\zeta, \xi] : A \circ B = A \cdot B \quad (1522)$$

Where Cov and $-Cov$ are the event and its compliment at the point of a ‘event’ to which we find that geometrically there is equivalent weight to any two of an event and its compliment (the statement that $A \circ B = A \cdot B$ when an event occurs).

It is now time a dimensionally free weight of independent quantum event comparability to the geometry of space and time is introduced to which is the adherence to independent of events; that of the form of logarithmic equipartition of unique decompositions under geometric freedom of state prescription of statistics:

(1.) α : *Limit of areas under arcs to radius of curvature (log); takes the position of the integral.*

(2.) β : *Limit of arcs ratio to radius of curvature (log); takes the position of the differential.*

These relate to the given that is the ‘point like’ or ‘cuspic like’ relation of certainty as an arbitrary argument on ‘scale’ $\delta_\epsilon \rightarrow 0$ (zero) in the limit of which it is a prescription to the geometric addition law of probability density; following from the tenement of ‘The Uncertainty Principle’ and ‘The Equivalence Principle’ at the infinitely small to infinitely large scale by the laws of calculus.

For as proof; consider that ω is a frame; then rotate one such frame around until it vanishes to a point.

A logarithmic spiral is the limit of geometric congruence; to which arcs and areas under any curve describe a differential and integral form as length or area to radius progressing to the limit of an infinite process of equipartition and equivalence of all events.

First, we utilize the Guass-Bonnet theorem:

$$\int_V \Omega(\alpha) dV + \int_{\partial V} \omega(\alpha) d\tau = 2\pi\chi(V) \quad (1523)$$

As an alternative to relativity; and to mathematically the source by which Einstein is correct; there in three dimensions; the boundary is greater than the volume of a fourth dimension; at which the excess of one; is the counting of a number; by which all exceeds its difference; and the certain exists. To which in either there is an exceeded and a difference in a number; the limitation in the curtailed mean of one variance to excess in three to two dimensions is found in that of the volume to which a fitted relation is of the lesser in content of the surface to what is found in that of the filling of a volume to that of the dimension by which the counting is equipped.

$$\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2 = 2\pi\delta_\epsilon \quad (1524)$$

Hence a sphere; in its limit of radius shrinking to a point; is lesser in volume than that of by which a sphere in its volumetric area shrinking to zero is made smaller to a point upon which a boundary between three and four dimensions is made larger than its complimentary two dimensions of filling. As to a sphere in three dimensions; it is larger in its boundary than four dimensions is in its volume. Hence in counting the identity is always counted; and the mean threshold below a given variance is certain in relation to that of expanding by one dimension; made as the accounting of volume of one dimension larger always decrements the surface by a larger excess in diminishment by a count of one δ_ϵ .

Statement of Knowabilities: *The lightness condition of one degree of variance is to the greater of it's leverage in count as to the difference in that of the perimetric volume comparative to a volumetric dimension of a counting by one ipseity.*

The proof of the master statement is as simple as the proof that; by displacement:

$$\lim_{\epsilon \rightarrow 0} (\beta_{\epsilon} [\zeta, \xi] - \beta) = 0 \leq \delta_{\epsilon} \quad (1525)$$

Concerning Singular States

When considered at first; one may be tempted to set that of state 'A' or 'B' to 'zero' as in the limit of $\zeta \rightarrow 0$ or $\xi \rightarrow 0$ to extinguish the particle and wave notion of the state; however; one is not afforded this errancy when taking a 'literalist' picture of the subscription to such variables. One finds that a bridge at the threshold of certainty prior to any uncertain event of a given expectation one is potentiated - the fact that 'a' prediction can be formed. Instead; it must be that states 'A' or 'B' are *mute* in such a consideration; and take on a neither present nor absent condition of which then the equations become (let us reference 'A' as *mute*):

$$\beta [\zeta, \xi] : A \circ B = A \cdot B = B \cdot (\neg B) \quad (1526)$$

And:

$$\langle B \rangle - \langle B \rangle = A \circ B = Cov[B] \quad (1527)$$

Then:

$$\beta [\zeta, \xi] : 0 = 0 \quad (1528)$$

Therefore the equations hold in the limit of one particle. Of their 'grosser' statement; that *the rules that apply to two particles also apply to the notion of the singular particle picture* and it's truth; the consequent forbearance on that of the weight of knowledge in it's minute element is indicated to be the domain of mathematics.

The new equation for β is:

$$\lim_{\epsilon \rightarrow 0} (\beta_{\epsilon} [\zeta, \xi] - \beta) \cdot g(\bar{\omega}) = 0 \leq 2\pi\delta_{\epsilon} \quad (1529)$$

And, let the new equation for α be:

$$\left(\frac{4}{3}\pi \lim_{r \rightarrow 0} \int_V r^3 - 2\pi \lim_{r \rightarrow 0} \int_{\partial V} r^2 \right) \cdot f(\tilde{\omega}) = 2\pi\delta_{\epsilon} \quad (1530)$$

Now we let $(\zeta, f(\tilde{\omega})) \rightarrow A$ and $(\xi, g(\bar{\omega})) \rightarrow B$ to which the original functions are associated with their representation in terms of frame; identifying the geometry with the particle: $[\zeta, \xi] \rightarrow [f(\tilde{\omega}), g(\bar{\omega})]$. Equation α and β are here associated with a geometry and a particle definition of weight and description. Clearly; α becomes under substitution of A :

$$f(\tilde{\omega}) = 2\pi\delta_{\epsilon} \quad (1531)$$

And β becomes under substitution of A for ζ and B for ξ :

$$(1 - 1) \cdot g(\bar{\omega}) = 0 \leq 2\pi\delta_{\epsilon} \quad (1532)$$

As $f(\tilde{\omega}) \rightarrow \zeta$ and $g(\bar{\omega}) \rightarrow \xi$, this is therefore the statement that it is particle A that is incremented in deficit and particle B that is constrained under incremental rule to the above equation *whether*

or not the particles are distinguishable; and particle A that is constrained to the usual uncertainty principle of secondary prefectiture; (a *potentiated* but *mute* raising operator unavoidable) where for convention we have:

$$\hbar c = \delta_\epsilon \quad (1533)$$

This has the interpretation that geometric weight of a quantum process in the limit of $\delta_\epsilon \rightarrow 0$ is $\hbar c$; to which we see that a single particle (to be interpreted as arising somewhere and disappearing somewhere); follows an orbit of translocation by 2π . This is consistent with the wave structure of an angle τ in integration be the limit of an infinite process of *dimensional reduction on equivalence of events*; to which with A , τ :

$$e^{\pm i\pi\tau} = f(\tilde{\omega}) \quad (1534)$$

And with B , v :

$$e^{\pm i\pi v} = g(\tilde{\omega}) \quad (1535)$$

Clearly; then for symmetry α the first equation is;

$$i\pi(v + \tau) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1536)$$

And the second equation for symmetry β is:

$$2i\pi(v + \tau) = \log(\tilde{\omega} \cdot \bar{\omega}) + i\sigma(t) \quad (1537)$$

For;

$$\sigma(t) = -i\langle A|B \rangle = \pm i\pi(v + \tau) \quad (1538)$$

To which:

$$2i\pi(v + \tau) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (1539)$$

Since:

$$\log(\tilde{\omega} \cdot \bar{\omega}) - i\sigma(t) = i\pi(v + \tau) \pm i\pi(v + \tau) \quad (1540)$$

With (+) holding for that of two particles and (−) holding for one particle; to which is redundant; indicating that equations (35) and (39) hold for **both** the one particle and two particle equations of motion. The indication here is that with $\tau \rightarrow \rho$ and $v \rightarrow \eta$ that there are two fundamental equivalences for the restriction that is the *one* particle; and *two* particle dynamics; these equations therefore forming the *recomposition* of superposition and independence of event identity in quantum mechanics.

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established but alone unto measurement.*

Beginning with prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (1541)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (1542)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (1543)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (1544)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of co-local observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure certainty.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of co-local or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds re-expression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (1545)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (1546)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (1547)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (1548)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

Proof of Translation

This means that in either given limit of that which is within limitation of relation of measurement, from a beginning of a sequence of given order unto a given distribution of finite and relational quantifiability to limit end occurrence with consideration of time; a limitation is expressed as a given truncation of error to greater than reproducibility; therefore a reduction to zero by any end quantifiability.

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common co-moving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment all of which are in confirmation for the reason that expectation exceeds prediction in validity.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and a world:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (1549)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time

dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first ‘constitutive’ argument goes as follows:

$$\eta = \langle \psi_1 \rangle \quad \rho = \langle \psi_2 \rangle \quad (1550)$$

Taken as two measures on the quantum wave-function; Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (1551)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (1552)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and it’s shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from ‘above’ for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

Wave Particle Duality

Therefore by the preceding logic there are two given separated zeroes between that of each identifiable point like limit of physical reality; for which with no local identity or naturalized point like relation of absolute form implicates that the residual geometric involution of one particle wave function is the exterior of it’s stated alternative. This is the equivalence and comparability of functions under the presentment of a commonly held geometric congruence under reciprocity between any two given qualified limit events.

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (1553)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (1554)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error of standard variance under mean shrinking to: $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (1555)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the

step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error.

Finally we arrive at some new conclusions. As for the quantum principle; we find three new interpretations and a new one:

"The particle wave duality is harmonic."

"No particle wave duality exists within a limit."

"The boundary condition is a harmonic criterion."

Are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at once?"* With the answer: **"No."**

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

"Is one the given reduction of the other as unique?"

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past: *"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past."*

"Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

Exchange Locality Theorem

A composite factoring of the two body equation occurs as the foundational reason of which is provided by relativity and the quantum notion of temporary extension of a given particle. To begin we identify a given admixture of partial differential equation following the principle of a connective to a given ultimately knowable quantity; that of the co-inertia of spinor one-form under subjunctive pre-tense of dimensional contrast. The entire property is a free particle inertial field as a diffeomorphic manifold invariance of co-automorphism unto intimated connective to spatial adfixture. Upon factoring of phase-conjugate and adjoint-free phase freedom the logarithmic identities of principle equivalence and principle inequivalence are provided as givens:

Statement of Symmetry: *Extrinsic modification of one equation under antisymmetry of operator to a stated symmetry of operation are intrinsically an interior symmetry in whole and the antisymmetric parallel of operational exchange of particle notion and pair field.*

Under these provisions the properties of a two body particle and field equation are decomposed; seen alternatively as a completeness for one particle and a replicated particle and partner field. The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega = 0 \quad (1556)$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2 + \sigma(t))\Omega = 0 \quad (1557)$$

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (1558)$$

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the theorem of one particle and a replicated particle and partner field of inertia:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = 0 \quad (1559)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2 c^2)\Psi_{A,B} = 2im\gamma^\mu D_\mu \Psi_{A,B} \quad (1560)$$

$$D_\mu = \partial_\mu + A_\mu + \partial_\mu \log \gamma^\nu \quad (1561)$$

The gap remains as variant and free yet as commonly dependent on the differential. To note is that when all electron inertial energy momentum is absorbed; particles become anti-particles.

$$(i\gamma^\mu D_\mu + mc)(i\gamma^\mu D_\mu - mc)\Psi_{A,B} = \Delta(v, \tau) \quad (1562)$$

Therefore, two electrons are the generator under anti-commutation and commutation of their subsidiary operators of a notion of particle and antiparticle product relationship with a mass gap *of real displacement* equivalent to the splitting of each reduction in energy at the relativistically accommodated treshold momentum layer and energy level of either one such particle.

This explains a mass energy gap for that of the two body electron equation as an effectively regularized energy lowering comparative to a temporal displacement of accrued phase compensation in the inertial field as past-associable-displacement of what is understood as the absence of one electron and it's surrounding indical presence in relation to any other electron as an effective positron. For what is of presence is of absence with matter for the union of spin and charge under fractional separability of inertia and co-inertial extension; together forming a solid whole of motative inertial reduction. A way of interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates; therefore under a reduction of surjective phase 'isolation of degree-free asymptotic separability; one hole is intimated as a closed unionable past-associated electron.

1.) *Rotations of the electrons in local (spin) and global (orbital) inertial adjoint upon the spin of the two electrons under exchange are of empty rotational orientation when viewed from above or below.*

2.) *Therefore these rotations are generative under exchange of a raising and lowing operator of their individual orbital and spin mechanic by the expression of a co-adjoint commutation relationship of diffeomorphic and algebraic relation.*

And as:

A.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that does not violate the Pauli exclusion principle when it is corrected for the sake of global to local relativistic considerations.*

B.) *Correcting for this coordinate dependence results in a state for which the spins continue to follow the Pauli exclusion principle as Fermions with a charge wave function, when a positionless contrast of the portion of the electromagnetic interaction becomes of a real attractive interaction equivalent to a weak Bosonization of the states.*

Advanced Potential Function

The differential equation for a soliton equation includes a derivative notion for then in that of any given soliton-like excitation; however in many primary treatises the formulation of a solution and/or differential equation with stability criterion are ill-defined.

$$\nu\mu \cdot \Xi = \mu \cdot \Sigma + i\eta \cdot \Xi \quad (1563)$$

Where Ξ is an open sigmoidal function; and Σ a helical indicial function:

$$\zeta\xi \cdot \Sigma = \zeta \cdot \Pi + i\eta \cdot \Sigma \quad (1564)$$

$$\Pi = \Xi \cdot \quad \Sigma = \Pi \cdot \quad (1565)$$

And ν and μ with η are ρ , η , and $\sigma(t)$ in that of the priorly presented log equations. The differential equation satisfied is a variant of the Bouissenq equation with a potential relation; that of the imposition of a threshold from that of the stability criterion under reduction of \beth to \aleph in four dimensions to two-dimensions for time:

$$w(t) = J \cdot E [u(t)] \cdot - \phi(t) \quad (1566)$$

That of the boundary condition is proven for that of:

$$J \leq \phi(t) \rightarrow E \leq 0 \quad (1567)$$

Therefore that of this equation to which we address that of the differential operation above with:

$$(\zeta - \xi) = \nu(v, \tau) \quad (1568)$$

$$(\zeta - \chi) = \mu(v, \tau) \quad (1569)$$

$$\eta = 2\pi i \partial_o \ln \chi(g) \quad (1570)$$

With:

$$\chi(v, \tau, \sigma, t) = 2\pi i \cdot \chi(g) \quad (1571)$$

Therefore for a free manifold; the relation of $\chi(g)$ is the expression of a topologically invariantly held mapping of a manifold to it's surjectively held onto mapping of enclosure in that of the subsidiary conditional pre-text of a formative valuation of a foliation on the alternatively provided physical space. That of ν and μ therefore provide for the equivalence of these two differential equations; to which suit ρ and η of the log relation. Therefore that $\sigma(t) < 0$ implicates that

$E' < 0$ and that the equation of spatial order is below the layer of yet the J in relation to ϕ ; to which the freely held nondeterministic end of a capacitated 'certain' past element of reality within the mathematical domain; is a freely held provisional *solution* to which primary and preliminary boundary condition is empty to initial condition as the stability criterion. This is the difference of for what is that of μ and ν as situated below the threshold of spatialized relation; to which time is capacitated as deductively a secure principle of certain nature.

The log functions in their manifold enfolding of the differential equation determine that any two exchange processes of circularly polarized and point like relation are independent; to which is the independence of time. For that of the associated ρ and η the determination of the reduction in principle variance of any two normalized distributions is a reduction therefore below that of one normalized distribution for the reduction of either factoring of the two particle equation or that of their mean distribution comparative to uncertainty; to which *only certainty remains as*:

$$\rho_\sigma < \rho \quad \eta_\sigma < \eta \quad (1572)$$

This is rational because the pre-text of ρ and η is that of acknowledgement of $\hat{\partial}_x \equiv \rho$ and $\hat{x} \equiv \eta$ being capacitated of simultaneously held certainty; that of their exposition of yet the product variance in equivalence under reduction with $\sigma(t)$ with that of summative variance; to in either the fact that *if momentum were greater then the spread would be lower and the overlap less; therefore the expectation of position uncertainty would be lessened; and (&) if positional distribution were relaxed; that of expectation of momentum uncertainty would be lessened under depreciation and reduction by $\sigma(t)$ to which is reductive in either logarithmic (\log) equation under **superposition**.*

Therefore:

$$(\hat{p}_x, \hat{x}) \in X \rightarrow \langle f, g \rangle \leq \frac{\hbar}{2} \quad (1573)$$

The notion here is that the dimensional reduction of time to two dimensions fits into the relation of four dimensional space; for in that of the stability criterion either distribution is a real number line distribution in two dimensions of variance.

Therefore:

$$g = 1 \quad (1574)$$

Is the indication that classical virtualized processes are forbidden in that of this given naturalized world of any two variances.

Abstraction

To produce a proof in certainty and manifest disappearance of asymmetry by displacement to matter of light by substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + i\sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega = 0 \quad (1575)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega = 0 \quad (1576)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows; it's consequent experience of time as deduced from motion depreciates it's partial differential in the other frame as a consequent lemma of reduction to a phase continuum of spatial relation and temporal extensibility. Therefore any one greater in time accumulation comparatively (as explicated phenomenologically here) co-conspire to bind

a state to the given of rate-temporal displacement freedom. Motivating this; under reductive subtraction of twice the secondary equation from the second prior; the expression is therefore an equation under reduction as an equation for light under the principle of spatially free coupling of any two given particles of charge and spin.

This then indicates the indicial representation of a Goldstone mode Boson:

$$(f(\tilde{\omega}) - i\alpha^\mu \partial_\mu)(g(\tilde{\omega}) - i\beta^\mu \partial_\mu)\Omega = 0 \quad (1577)$$

Therefore all light and mass exists with inherent *displacement freedom* in an otherwise particle equation of neither attraction nor repulsion and pair potential lesser than zero; for an unfilled preceding a-temporal ordination of one particle predicates that of the existence of an ancillary field theoretic threshold on the destruction of an accessory potential and particle future oriented event horizon. Therefore the equation for light and mass is seen as *both* instances of descriptive freedom of certainty under co-deterministic appropriation when $\Delta \geq 0$ in:

$$\Delta = \sqrt{\sigma(t)} \quad (1578)$$

Time is then seen as something that is co-participated in and of, in particular, participated in; but of time for a differing point differs both quantitatively and qualitatively to that of the process of measurement and measured upon the objective of a focus to which is empty of unitary basis of homotopic onto limitation. The corollary of this is that all motions differ by merely a displacement freedom and inertial aggregates of two body nature in relation to which explain the appearance of mass, motion, certainty, action, and light for $\Delta \geq 0$ exists for all finite displacive motion and positive energy. Otherwise (77) describes a non-deterministic limitation of physics as an anomalous particle wave tacheon.

Conclusion

The cat paradox and it's disproof is therefore furnished by examination of the question as to if one intangible relation can 'fit' in-to another; to which the possibility of the construction of such a box is unafforded of possibility. The relationship of one closed relation to one opened relation of particle horizon mentioned implicates that the answer is a definite no as to it's construction by the following logic. Any one larger certainty to a limitation of yet it's definite does not accord with in that of the microscopic scale as suited to a 'deterministic' interior of closed relation of macroscopic state by surjective automorphic exception to prior pre-stated addressability.

Therefore this problem is akin to asking a question for which is the opposition is a self-statement and one which is therefore the ancillary doubt with dis-entitlement of a given thought experiment; the evidence for which is that as a naturalized problem it is the presentment of a dead end of indication to no solution. It is therefore analogous to asking the problem with a question. The solution is that the cat is either alive and well; or long gone and dead; but yet that no device functions in this manner; as one statement of indication to deterministic outcome is prohibited by the instance of a machine with expectation of return summative carry or quotient carriage.

So as to suggest that spatial union is un-broken as one comparative temporal signature is a delimitation of any two given certainties of machine expectation; therefore the cat and death-contraption hold an entirely independent reality.

Therefore any two points of reality are deterministically free.

Given the equivalence principle applies to determination of the inertial properties of two objects (a superconductor and magnet) as two separable instances; it is seen that together; these constrain the uncertainty to at most two free points of reality (a limit on momentum uncertainty and a limit on position uncertainty) to which ‘fits’ absolute certainty by reductionism from empirical law in the macroscopic realm to the microscopic.

This holds true as the given expectation of both momenta and position hold an upper limit on the threshold invariant global uncertainty of variance in one standard deviation of any one of two given non-degenerate distributions imputed by the existence of independently held given of momenta variance; to which derives from it's conjugate a mean threshold of one held unstated missing alternative coadjoint variance in position; under the emptiness preceding invariant ‘uncertainty’ of one \hbar in 2.

$$\langle \hat{x} \rangle \langle \hat{p}_x \rangle \sim \frac{\hbar}{2} \quad (1579)$$

The affordance of a limitation on two larger objects fitting into the same smaller space; is, by logical deduction on empirical and theoretical founded principle of state-space therefore implicates immediately that the bound on scale and scale-free measures of co-determinism extends to the microscopic realm. This alternatively suffices as confirmation that a *Quantum Einstein Podolsky & Rosen*, or a non-Indicating *Quantum Non-Ipsity Conditional Entropic Universal Bridge: QiCeUB* may be constructed and built; to which the solution to Shroedinger’s cat paradox is furnished.

To understand this; any two given ‘objects’ of a covariance in measurelessly uncertain and shared proper time of empirical law to separation of superconducting (Type-II) material and magnet; (to which separably are a causal disconnect by that of adeterminant inclusion of preceding exception of semi-determinism or equivalence of electricity and magnetism within that of gravitational unconditional support to certainty) are the illustration of analytic & **exact** determinism of **physical** law.

Ordination Theory and Chaos

To what is held of a measureless extremity of determinantly free asymptotically free degrees; any two interior relations of the held and the capacitated of order are predicated on that of what is inequivalently a determined and an undetermined flow free condition in admixture of one for a withheld in an alternative of energy content. For of what is a frequency in that of a formed and chosen difference of measure for contrasted displacement freedom of an ordinal relation; imputes that any pattern for that of it’s congruence includes an alternatively and required inclusion of an even set of odd ordinally free relation of what is a surface wave under a cuspic fold; then bivalently the holding of an equated of provisionally applied non-determinant and included co-determinant non-ordinal free disconnective of what is held in another alternative pattern of congruence to any one subsidiary patterned excitation. As a consequence; it is true that of what holds for that of a mathematical domain of exceptionable contrast in the physical world; the two determinant limitations are free in that of but yet a balance in that of physical precept and isothermal relation of a commonly held extrema.

Thermodynamics and Temperature

To what is provided of measures and elementary provisional application of a theory of order; that of the given understanding of nature is an equilibrium of at least two quantities; that of the spatial apart from the temporal; and the co-extensibility of a congruence in ordinal relation; as to a completion what is so is the equated measure of distribution and its variance. That of what is held of one displacive measure and that of an equated provision to determination of volumetric flow of an exterior relation is simply summarized as that of a meter for then in a decibel; and to which the equated differences of these individual capacities predicate motional inertia in the contrast of liquid or fluid nature of particles and structural transference of any two waves.

That of a begun contrast in the inequality to its provision at a determinant separatrix inquires of property in thermodynamical invariant as to that of null relation to yet a meter and a wave as in the fugacity freedom and frequency partition of non-space-like particle freedom's of motion; to which a particle is identified by that of its capacity to freely transfer momentum; and to which excuses the context of a propertiless and given disposition of its elements in any two free fluidic free elements of surface element.

$$d\chi(v, \epsilon, g) = \zeta(v, \epsilon)\xi(v, \epsilon)\chi(g) \quad (1580)$$

The equation of which is that of a measureless degree of separatrix of the relation of ordination to a complex; and the free relation of any two period measures in that of their frequency space to which a zone of influence and that of any two determinantly held free conditions hold no constraint; that of with one; the field theoretic freedom of two given presentments at that of workable assumptions of which are a provided division at that of one frequency select measure and that of equated measure to a considerate end in that of what is held of interval to frequency-phase transverse locability. That of what is held of fugacity; the capacity of degrees of freedom; and their portion to which is the freely displaced part of a field; is the free light and sound dis-connective of that of either two null conditions on place to place; for within one exterior space the notion of any adjacent heat engine co-determines a known invariance in two; that of entropic limitation and that of their second differential notion of temperature capacity of heat.

To then an excess delimitation on the measure of one precipitated known invariance; that of light does not freely transmigrate at that of a subsidiary wavelength to then in accord of what differently provided is an excess in the positive kurtosis of a wave vector its supremum difference of point like departure on any three; yet so of one subsidiary wavelength; that of but what is one depression in the known invariance is the predication of a logically sound foundation to order preceding chaos; for of what is their even to odd relation; the provision to then in an end what is supposition for hypothetical; is the fitting of a relation of secondary equilibrium; of which is non-spontaneous; and freely once more the type of difference of accrued departure from an equivalent distribution; that of an out-lier to then what workably there is secondary to an inclusion in one homogeneous limitation.

Normal Product Relation

When it is given a provision to two contactless relations knowably inquires to a certain end; the co-deterministic exterior world entitles a difference of what is a surface for then in a linear point like extension. The held inclusion for that of time is that either further or former presentment of an acquired determinant uniqueness includes a normal to what is a form of shape for that of continuum contrast; as to assure of that of a deficit in either; what of both is an exception to

dis-included return of one point like complex; as to free a wave elsewhere through that of what convexity classes impute a relation to an alternatively provided evolutionary pre-text at that of substratiac problem to answer of that of pathological end of ordination with in that of it's given declarative structural element of light to sound echoed freedom.

Then; alone with what is given to certain dispossessed elements of which are temperature; that of states per function of transverse pre-determination to acquire then a normatively held partitioned summation and that of multiplicative complex imaginary cyclic exponentiated freedom to their sharp and flat inclusion in that of a sound basis foundation. When it is suggested that what is kept in two is their third part ordination; the given inclusion of a spin cyclic freedom of one paraxial relation to yet what is no degree yet of a moment; is the gyroscopic inclusion of a predictive normative valuation to which in what is apart; the divorced concept is an isolable freedom of subsidiary solid contrast.

For then in what is a barrier; however; that of the inclusion of a prefecture for in one withstood interior wave structural end in that of evolute mean is it's involute period-average of variance of any ordinal relation and in alone to which one wave may be self-contained yet contain an origin in that of what is unexposed of property of fugacity freedom in the ideal limit of withheld equilibrium; finite or numberless in ordination; and to which in two; their's of a preceded normal and flat relation; entitles the determinant of a singular sub-bandwidth specific frequency of pole identity.

$$\Theta(\phi_1, \phi_2) = (\kappa\partial_v \pm i\rho\partial_\epsilon)(\eta e^{-i\kappa\phi_1(t,u)} \pm i\rho e^{-i\rho\phi_2(t,u)}) \quad (1581)$$

For what is mistaken of an entropically provided and named context to a free union of convex and defenestrated prohibition of one order; the inclusion of a pre-considerate end to what is a determined obstacle; freely provides for open consideration of yet a flow in it's added relation of difference to any causeless submannerism of physical law. To which with:

$$\zeta(v, \epsilon) = \kappa\partial_v \pm i\rho\partial_\epsilon \quad (1582)$$

$$\xi(v, \epsilon) = \rho\partial_v \pm i\kappa\partial_\epsilon \quad (1583)$$

$$\Theta(\phi_1, \phi_2) = \zeta\xi - \partial_o\tilde{\chi}(g) \quad (1584)$$

For then in what is the exception to a free field theory; that of determination is an artificial provision at the certain way in which a precontextual determinant adjoint or hermitian operator on the level of unification of any two isospinor fields hold a free co-affinitive. For in that of what is a held assumptive of distinguishable levels of threshold and enqueued relation; for in what includes consideration of a major and supremum; the relation of the few charge free groups include two measures; of which are a radical to base residual free evolution in the former of fugacity and enthalpy.

Therefore; of what is considerate of a difference in then ζ & ξ , to which are fugacity, and enthalpy; to which is it's inclusion of a fluidic return paththrough of former for then in latter of the relation of an entire displacement; the given accrual of what is held in the notion of a principle effect priorly to it's given conclusive elemtn of cause in the past; is the inclusion of what is the precept of entropic freedom; to which a disconnect instances a freely held and independent evolution of a secondary consequence beyond the limitation of what is singularly an anomaly.

To which we escape an asymptotic freedom in two; the relation in a third of what is freely a provision of these to occlude a relation is the subtension of a viscosity in the relation of provision to then in the held a formative beginning at temporal congruence of asymptotic return

hyperbolic union. The statistics of one therefore include an underprovided relation of ordinal reorganizational precept to which is the missing element in any ordinance of three unto one freely held positionless but absolute identities of relation of piece in game or structural deficit and sound-like ordered relation of blind passage and sequential determinant identified with μ .

Degrees of Freedom

That of an entropically free midpoint to a variance of density of states is the included difference of what is a photonic field of quanta otherwise in a super valent and super covalent space as the difference between any charge free surface topology. Inhibition of a threshold layer transitional element wise reduction of a contactless point of fluid free displacement of momentum into solid difference of a unioned and manifold return; under a precessitorial relation entitles the phenomonological principle of percolative priorly established hidden variable(s); in plural or singular, a conditional determination on that of free entropic equation of state inversion and equilibrium point. When it is considered an entropic point is the variance of a relation; to which is that of the central difference of a differential nondeterminant and exclusively free relation of momentum exchange. That of the equation of state is predictive of a group theoretic interrelation of three fold enthalpy, specific heat index, and valence of transmissibility; to which is a similarly held assumption of equated nondifferential and integral forms in that of the open prescription for a constraint free dynamic; of that of it's existence; in that of a remainder; that of a certain and provided given lossless two part index of passive and active indication to what is color.

$$J \cdot E = t_u + \eta \cdot s_q \quad (1585)$$

That of what is so with one relation of an operational flow to it's conjugate displacement in the two of energy and power as a tensorial time rate of congruence for then in what is held of an ordered and orderly-free relation to it's congruate temporal relation of what is unitary in one; is the free enthalpy of one admixture comparative and aside by specific heat capacity in relation to what is spatial congruence of qualitated percolation index of any twinned freely held fluidic admixture.

The Understated Provison of Degrees

The independent precept of one equilibrium point for in another is that of asymptotic freedom of a delimitatory nature in an alternative void-openly provided relation of what are therefore any two ideal gasses upon that of the consideration preliminarily to an adjusted notion of logical foundation of threshold; to which mathematics acquires a subsidiary context of the formative for then in the propertied inclusion of deficit and contrast free variables under the assumption of freely held determinism in any numberless infinitive. To that of what is taken of a context for that of what is withheld of a declaration in two given presentable options apart; the consideration furtherly held of a freely held infinitive of past associable delimited structural ordination and relation is in two their complimentary and free radical notion of ordered relation apart from randomness of a quasistatically sourced domain and infinitive periodic ancillary structural fault conditional. This conditional is that of what is withheld of an ordered relation in what are any then three given predeclarative variables of entropy, limitation of fugacity, and gas free entropic exchange. Therefore of half; what is whole; as within that of the consideration of a vessel is not a portion in queue to number accounting for in that of what is a microcanonical ensemble of it's relation an entire set and superset until it is stated as a precondition of another set theoretic union

of an alternatively provided bridge notion of then any two or eighty or eighteen gas variables; the contextual relation of which is blind, colorless and invisible, and solid and unqualified free divisions of the logistic equation; to which accrue that of 160 and 36; or as 5 minus 20 degrees of the precept of a hidden dimension of variableless extension of four and a fifth variable outside the nomenative declaration of what are three and a fourth; of two lattice constants. This free variable degree of a partition externalizes a difference of what is an outwardly provided dimensional difference of statistic; to which the fundamental relation is that two free variables contract under a basis element; for in what is a fifth as second order differential contrasted functional free thermodynamic evolution of this world.

Given accumenatory degree-free relations of state:

$$\Xi(t, s, u) = \eta(\tau) \circ \mu(\epsilon) + \Omega(\eta, \mu) d\eta(v, \iota) \cdot d\mu(\epsilon, \iota) \quad (1586)$$

These variables and differential structures include therefore the consideration of a prefactorative statement of the entitlement of a system to freely transmigrate a topological space of partition four unto five; and to transparate a given declarative pre-textual relation of indication to it's stated alternative treshhold of blind and non-blind free equivalence of free phase in any identified relation of comparative equivalence and free compartmentalization of vessel and contained ordinal relation. Therefore of what are any two of these variables; the free energy (ι) of one gas for in that of another; is an identity of semiqualitative and nondeterministic exterior semistable group; of inclusion to what is stated of a free radical yet preconsiderately a moment of noise apart; and therefore unto a fifteenth as eighteenth departure; a reductional anomaly. This anomaly for what is included of a said free run condition of a machine state represents the included consideration of what are order and a disjunctive alternately superficial plateued environmental territorial form in the environment. When it is considered that two agreeable degrees uniformly agree to what is their un-entitled machination of an ordered and an ordered relation; what is excluded is the prohibitional context of a further declarative precept of openly unentitled precessional exclusion.

Therefore; of what are agreeably a division and a quotient of dimension and ordered contrast; whether freely provided or excepted; there is no tenth dimension; and of a seventh inclusion of what is considerably an impression of structural default of ordered relation of this world; no one structural return is a said defensible and contractual exclusion of any then majority held openly presented free statement of it's self-subsidiary connotation to what is a departure to a declaration apart at stated safety. Therefore; for of what is excluded of a fourth open return of an exterior set to which is included within a heading and declination; the fifth consideration is a provided and neither open nor closed option at that of retrievability of a declaration; to which is a principle of amendment at; and for in that of two superset relations; that of the 'Ideal Bose' and the 'Ideal Fermionic' gas; to which reduce to null enthalpy and free fugacity under the exception of no operation of an engine.

To that of what is a machine; the included exception of what is provided of life; entitles therefore that of a recurrence at self to subsidiary pretextual propertied domain; apart yet in one withheld to what is declared of an alternatively provided free variable and variableless exchange afar; what is a provable and closed then sedimentary statement of two recurrences; a given in it's whole; that of an openly held domain elsewhere; to which are three included variants of a shadowed relation, the logical precept of contraction, and it's (non-)included exception of what is in a third; the precept of majority and minority mass effect over threshold untitled and non-declaratively held freely established written or spoken inflective structure. Therefore although as an aside; that of

the principle effect of what is an incongruent return; either focus in the end opens undeclaratively it's part to what is in whole; a container; and freely expresses it's declaration at oddity to then in what is the included difference of a uniform exterior and nonconnotative conceceptual form; of which is a laddered function of three; (that of precept in ordinal form of expression, that of understood declaration in terms of symbolic relation, and that of re-organizational patterned congruence in any numberless domain of qualities).

$$\tau(o) \rightarrow \eta(s, v) \quad \epsilon(t) \rightarrow \mu(s, \epsilon) \quad (1587)$$

Hence what is excluded of a quota of it's re-equability to a machine ladder sum or that of carriage return and carry; equavalently departs to the underprovided of a loss free deficit of the portion in two of a making and a held; choices in three to which enqueue two defaults; that of flammability; and that of aspirative qualified prescription to living form; and of that of which in entirety of their contrasted elements to the statement of what is given in a hand; entitles that of temporal decimation.

$$\zeta(d, o) = \Omega(t, s)d\tilde{\eta}_\epsilon(t, s) + \chi(g)d\tilde{\tau}(o, s) \quad (1588)$$

In conclusion a determination of one machine for that of another; entitles two options; of which in the third; the expressively held condition is an unconditional if and apart then only if when in the consideration of what are three known variants accrue to a machine limitation of a sideless and opened nondivisional err; then to which of the conditional precept at randomness enques of a return dataed set run; a transmigraton to another under it's stated declaration of a towered teir like relation of propertied class structure; and in the third to what is an apredictive normative preclusive bit for which is either an obstacle; or that of included transparatively held given of five quotients; that of what are their two label free designations and the underprovided of a whole net summative singular notion. Therefore a singular notion is protractively the default; and merely this; and to which it is a null unconditional precept; is removable; to which is lossless in yet what is a given return to without variable free hidden declaration; recoverable as unto a symbolic type set or conciliated provision of enqueued free data exchange.

Sectional Entropic Thresholds

The semi-classical invariance of one variable differential notion is then completed when the understated manifold of $d(\epsilon, v)$ or as in $g = 1$ of a topology is noticed to be blind free of an ordinal relation to it's stated consideration as a free entropic ancillary clause of displacement; to which everywhere is complete within the relation of a classical imperative. For then in that of what is the consideration of two non-differential notions. The freed entropic relation is that of the classical Pidgeon Hole principle; whereby replacement as a recurrence free principle of ordination amends the clause of a triple negational element to one considered replaceability of a ball within it's bin; amending that of the statistical mechanical ensemble to a count of two upon replacement by a separable identity; and making the direct implication of replacement the inclusion of it's rule; to which is that of solution to the choice problem of statistics. The limitation of one functional differential is then the understated derivation of a freed exception to the Shwartz inequality of a global invariance; by which ordination is preserved for in that of the background and accessible past oriented relation of the established notion of subsidiary clauses in exception to a non-identity of any numberlessly infinitive past associable given. Therefore time travel remains an impossibility. To which the equality of variances dictates the form and nature of it's relation as to a foundational result of containability of a closed gas or material network; therefore of what is one impartial gesture at any two equals; one exceptionable prefactor of division in it's element is the codeterminant action of an eventual. In this implausible given; the mode analysis

is the exception of an ϵ for a v to which the foretaken element is a tertiary ordered free provision.

Any pre-factorized ordering of a cycling of departure to three exceptions therefore includes one underprovided measure by yet in a separation of placement; to which experimental results are potentiated. This is a consequence of of the individuation that is an alternative of place for in bearing to degree under rectilinear relation; through which isometry includes it's group; and that of a secondary idempotent mathematically inclined variety of occlusive variant of group inclusion; the prohibition from fixed and free relation; under absolution of solid relation of geometric equivalence.

Therefore; the gas under an idempotent relation is within it's own identity of inclusion as any two freed retractile motions of inward gesture of indication at identity indicate a cause and an effect in the indicatory consideration; the freed tertiary relation to which is an empty & free surrounding environmental variable of degreeless limit through which the two included pre-textual connotatives of language are phase idempotent and phase inclinic and phase free variances:

Phase Idempotency:

$$\Theta(\phi_1, \phi_2) \leftrightarrow \Omega(\eta, \mu) \quad (1589)$$

Phase Inclinic:

$$\tau(o) \leftrightarrow \iota(s) \quad (1590)$$

Phase Free:

$$\eta(v, u, o, t) \leftrightarrow \mu(\epsilon, s, o, t) \quad (1591)$$

The a Pointed Question

Mentation on Preclausitive Effect: *To then of a prior consequence in the rectilinear gas equation; is it but in what is free absence of the semimajor and qualitative thresholds of a given potentiation to a source of orientability to the past; and open to a curvilinear future?*

To an incurrent dilemma; it would therefore (were this statement a 'truth') that the derived notions of a physical precept knowably demonstrate an 'ideal' for then in recourse to measurement; however to that of the isobaric return; it is of a differential displacive barrier otherwise to it's stated question-as-answer. And to what we differentially choose of a manner then of the antipodal point of a theory; the foretaken rational domain would exclude the precept of a notion of inhomogenous time transportative return inclusion of a 'binay' relation.

To a thermodynamic return; it is however the precise inciseing of a model system to it's mathematical expression through to which the cohomologous return either of (under a reciprocal relation $(\mu(\epsilon; \iota))$ and $\chi(g)$ intimate a relation to the sub-sidiary classifier of τ in either the one-form or the (τ) vectorlinear spaces of a cohomogeneous space in return to a Ω for under substitution for η as to which (t, s) exclude a contrast. To then what is of life; there is a strict provision of non-return. To what this would be proposed as a question; just priorly the incurrance of what is forementionable of a gas equation; the exception is an equipartition of two said considerations in built to a relation: "That an ideal gas be free with unconstrained past exterior." and (2) "That inclusion of an isobaric inclusion determinatively excludes it's apogetic limitation." The after-product of the exclusion of one gas for another is therefore simply put as the undetermined of a third auxiliary behavior of a measurement apparatus elsewhere; and dual freedom from the measurement paradox; to which is a secondary solution; otherwise to be known as the machine

(state). This is to co-determinatively and isolably intimate a relation of experimentation (theoretical or empirical) to which any two sideless contrasts or sided contrasts of this given world agree in principle of their accruity of codetermination; and a new principle of measurement to which a past orientable sheave is recoverable.

The relation:

$$\xi\chi_{\Omega} = 0 \tag{1592}$$

Therefore includes it's stated consideration of invriance in one measure for what is unconstrained (but a mathematical preclusion to cause) in that of ordered relation of η with μ an associable past time Killing vector and that of it's hidden free invariant; to what includes the notice of an effect by the precept of occlusion; then to the determination of an obstacle hidden within the invariant to inclusive exception in (dual explicit negation) of $d\eta(v, \iota)$ and $d\mu(\epsilon, \iota)$ in (7) and the precept of the iso-inclinic. For a return upon blind free capacities of the answerability of a fifth order anomalous exception to which is explainable within a model system as the innovation of material principle. As in the mapping of $\tau(o) \rightarrow \eta(s, v)$ and ($\&$) $\epsilon(t) \rightarrow \mu(s, \epsilon)$ then to that of which we possess an isocongraphical repetend balance in s space for time; and an immeasurability in question in that of space s for order o . As under their reconstruction of what disincludes a past orientation variant one-form; but of **explicitly** it's exception and conformance to what intimates a relation of the one folding of a mathematical precept of relativity.

Through to which departs on what is the inclusion of a precept of behavior of a system; that of ϵ for another hidden variance v . So; as to summarize; when it comes to inclusion of a logical precept; there is a disconnective of one relation to which is two accruals in stated hidden precept for in what are the deficit of one; to which a perfect answer recovers the isometry of it's given balance upon *any* and **all** co-determinations of a machine state; an exclusive pre-tense of what would be noticed of time-travel; to which when brought into question; includes it's redressibility upon a null-future; simply answered as the revealing of one of ϵ for v ; in (in) η or μ to which are a constricted lemma of inclusion of the preconsideration of a declaration at a machine state variable as constrained or unconstrained. Therefore the free establishment of logical precept of physical principle prior to it's written or noticed established expression is a free exemplar of the loci of determinations of factual relevance in this world; that of experimentation is made safe simply by consideration of blind result; and that of a time machine potentiated in physical reality to the given of factual restoration. This unaliked to the reversal of entropy; to which is an innocous co-determination at that of a free isoclinic intersection and surrounding ordered relation in any two and a third foldings of mathematical precept under it's inclusion of a imperative of freely provided living barrier; to which any two of μ and η are exemplars of free domains of incurrence; and precept's in-standing of that of the remark of a prior two individuals in any collective summation to remembrance; and factual foundation; therefore escapable.

Information

Therefore; information is the free redressability of a dataed (t, s, o) (time, space, order) relation unto an ordinal, (predicate) calculable, or (indicatorial) exponential free encompassment of any two (or three) domains; to baric relation of one hingal notion in a prescipice; a free identity of the exterior majora relation of what is minora to that of an alternative perceptual witness. And; of the other accruity; it is that of any three under an exception to two (o, s) ordered and spatial relations of a rational exponentiation of unfreed relation of which there is a collective re-activity and counter-action. Then to which that of τ and ι freely surpass that of the occlusion and precede the given of recoverability; to the addressment of phase conjugacy freedom (explicitly τ and

isoclinic freedom ι .

Any two hidden variances are therefore to be taken as that of any two measurement free principles; accruals of deficit to run; and that of variances of individual free relations into any two individuals of an ideal population inversion or it's consideration of forwarded return of principle of thermodynamics of an ideal gas; and the independence of establishment of (information throughput and identified) inclusion of independence of precept and it's thermodynamical effect.

Master Theorem: *Hence reality, as a qualifiable and adjointly and co-determinantly determined series of naturalized effects and conditional consequences to which are each inclusive and preclusive consider(ate) consequences is a confirmable equiphenomen in plurality as a singular theorem the encompassment of which is the natural language of nature; and any naturalized domain of preceptual division.*

$$d\chi(g) \doteq d\eta \cdot \mu \quad (1593)$$

To which is the interpretatively valid precept of it's encompassed notion of what is by parallel exclusive determination of entropic freedom ($d\eta$) and fugacity of machine enthalmic return consideration of deficated summative event return ensemble upon one keyed registered mathematically sound eigenbasis of it's consolation to ordinal predicate in exception of indicatorial relation $(\mu, \eta(\tau))$; to which τ is a light-sound field. Then; it is satisfiable that to which is color and sound; the separation distinction is that a flow isometrically transpose by a transliteration of a colored domain inexclusively to it's precept of contract for any hued divisional presupposition of a sound cavitation unto exceptionable contrast of priorly emanated and received sound wave basis. Hence sound is throughout; while light is apart and away from the indication of a point of reference; and that of alone, sound, recipiently contrasts what divides; but under it's inclusive exception elsewhere by a-targeted non-summative null condition imposes light light freedom unto any asymptotic sequestered separatrix of qualitative limit normative valuation of temporal measure. Each are therefore in equablence upon the qualitative precept of property; but entirely of a dissimilarity unto quality of verbose or verbatim controlled vacancies or their return consideration of factual implication of meaning; unto written word, declarative logical structure, or in an ideological stance, unto the precept of discourse of a discursive limitation of perspective and vantage; unto a point; a linear relation of two adjacencies of measure to summative mean.

Consideration: *Therefore of mean variance; the acuity of what lays below deficit is a remainder to the recourse-ful measure of what excellently can be understood as a remainder sum (in repetend or non-repetend) - to the consolation of what is an adixture of precept; a threshold of two limits of interior superlative or declarative language; or in it's origin the precept of the physical world; to which is a transcension of difference openly qualitated by an immeasurability of the extension of what here-to-fore may be called medium; of two composures in any diagraphical left rightward skew of tertralemmetic accrual; freely isometrically reconciliable for for in that of what are a third deficit of a hidden μ invariant of either under-a-threshold revealed or occluded preceptul hidden variable; to which is the answer to an anomaly in question or it's addage of separate hypothetical under analogical means of comprehension; understated as a precept known to be the aperiodicity of reality.*

Saturability and Unsaturability

For then in what is striven of a calculable limitation therein lie two given's of which when defaulted to produce the apredictive calculable limitation of a stated occurrence; that what can

may happen, will happen; the sabre to it's tail of a limitation of the mathematical pretext at game and physical theoretical limitation; to which a mind is freed of it's prohibition to choice; the meta-antithesis of the Cat Parado. The spheroidal like limitation of what would encompass a power set theoretic union of the co-extensibility of a free gas by that of Lyapunov exponentiation of Jacobi exponents; within the stated permanence of a Boltzmann calculable limitation on free thermodynamic variants; explicitly for the reason of a genus one (1) limitation; to which free's (in all irony) the relation of meta-evolution from what is yet ahead of a temporal contrast at indefinite invariants (ϵ, ν) in relation to phase free conjugal limit thresholds (η, μ) to a definite entropic **U**.

Given Whole One: *Any one understated subsidiary nomenclative declaration at dS path-wise extremum of null-free entropic externalized invariancy mitigates the pretense of it's given actual pre-determination.*

Given Whole Two: *Any two undetermined invariant non-nomenclative control variants of a machine state freely provide for an escape mechanism of which is the established precept of and in two what of for then in one is a pre-determination at three.*

The three pre-determinations of one physical principle are in direct correlate to naturalized effect, cause, and consequential difference of an accrual as in a vanishing triangle; to which (any of) one freed variant excepts that of any three non-determinations to their stated determination; of a consequence and cause; that of it's future oriented upward pointing variancy and difference in-quotiented digraphic structural contrast at two conjugate determinations at what are two control's; for without this; no machine would be constructable; proving that any world instances a free establishment of technological prohibition to license of guaranteed outcome; but a free vestage of eliminability of false peer game theoretic review. For then in the understated; the threshold in that of an (η, μ) conjugacy class structural default is a co-determinant of the vantage of two supplicances for one potentiated over-measurable for in that of a preceded actual variance at over-summative threshold when-taken-as-structurally the precept of an under-weight. This is to insure that what is 'above' the given relation of a stated $\zeta(d, o)$ is below it's variance of $d\chi$; as to procure certainty; what must be foretaken is a given prohibition of license to a freed variance beyond yet what is containable in two of point-wise emanation and pathwise null congruence; the alternative statement of relativity. Hence to what are two pillars of scientific establishment; there is always as to under-an-end-limitation a third precept; at what is foretaken of closure upon false-precept.

Closure upon the false preceptual relations of science may be introduced by that of the defensible trust in what is provided of a restorative foundation; as to suggest that what willingly we declare when set down; actualizes the pre-tensile relation of an activation of testability; with the words that the effectual choice is self-freeing of it's contrast unto a limitation of what-is context. As to declaratively express is sufficient with a definitely established foundation; for of what lays a word in place of it's given choice; by example; is the stated and-freed notion of a variance prior a contrast to it's mean. This statistical division is expressed as the injective lemma of Ω into Θ ; coordinations of which the intimation of either the theory of Einstein in that of freed (ζ, χ) for in that of (ϵ, ν) of incorporative non-division unto *err* is the exemplar; introduces that of the precept of:

$$\Theta \rightarrow \chi \rightarrow \Omega \tag{1594}$$

To a lossless implication of what is imputed therein of what is stated at-indication is the precept of the variance $d\chi$ is sufficient for the passing of a threaded bow at that of a confirmable test without implication of undue surpassing quarter reflection on that of a situated biprismatic wave; to which a colloid will separate into a spectrum. Hence of for instance light; wherein what is

noticed beneficently suffices to a known in that of separational contrast for in a hued relation of Bosons; what is Fermionic will segmentorally separate under it's division to a multiplicative abrea. To finalize; a statistical normative valuation contains a trace-free residual as in that of a hidden variant of the prior conjugacy class default of co-determination to which is freed by one reductive chaotic generation ran backwards; that of the deficated return retractibly simulated independent of physical law; the immaterial class structural relation of a defensibly free structure of defaulted after defaulted conditional Berry's attrition. That of a molecular Bessel sources under Laplace reverse onto automorphic functions freely impenetrably translocate through then any multi-handled multiplicity of graph relations; freeing the topological union of a half arc and a complete circular domain; a return-to-source function of which through what is a given; there is found a whole; also to which is certainty; for of what we may find in one part; there is within that of locating the other piece; a completion in what is provided. To living substratic notions what is incomplete is therefore completed within the relation of what is taken and given; yet in all irony; not of what is shared but of what is freely or through transmigration shared; and then known; to living word of what there is contained in a recourseless text of it's referential basis. There being this only remaining impenetrability of one word for another; the reductive past limitation oriented surjective limitation only results in certainty when both mutual and-or Given-Whole's are satisfied in a mono-dualistic sense; within the selective choice of one inductive step of intermediary exception to what may be taken alone as in thermodynamics of an invariant in χ to d of the majority carrier to the minority exception; to which relativity holds a third precept of the corrective default of statistical mechanics by example to which is one freed Carnot Engine under self substitution by the Canary Principle:

Canary Principle: *For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices to answer absence unto it's own.*

To then the co-existence of a truth in a word and for in a work; as for example; the insistance of a gas thermodynamic pre-cept in it's truth is established within and if and only if within a given that of a threshold has been met to which $\Omega \rightarrow \Theta$ under either a reversality of (ϵ, ν) for in that of $(\tau(o), \mu(s, \epsilon))$; the constructibility of which is that a freed relation under terms of the bi-valently violated threshold or confirmed threshold function of $d\chi$ for for in that of what is ϵ acts as a guaranteeor to what is the comptroller to that of which is ϕ_1, ϕ_2 as in phase by translocation of what is relativity by an instantaniety or that of causation as imputed in the relation of (μ, ρ) of angular deficit; to state that of what unhinges it's tertiary relation is underscored by a minor. For in that of what is presented of exceptionable contrast of Θ is then confirmatory of a prior redressment at the governing Ω and-to-which the underprovidedly expressed freed or contracted Θ variant is a prescription to that of non-unidirectional imputation of an (and therefore any-and-all) goverend cases of subsidiary Ω invariances. Therefore the prescription is avowed to it's efficable purpose to a forenotice when after a known division is contrasted with what re-apportions confirmable fact of a singular and definite closed case basis; and only then may a question of noticier be addressed for-in-the-taken of a vantaged guess at that of first imputation. A truely safe experiment proceeds by in the same congruacy of a relation; to a known; that of a prescription fitting this effectual relation is forenoticed as that which unalterably divides but in one sense; to which a blind or double blind free test is enabled; the actual provision of which is two accumens for in that of one befitting accrual of a differential segment of arc length to a null point of it's extremal habitation of deficit under a stated freed condition of two considerations yet paralleled.

Open Differences and Gestalt Relations of a Free Gas

The open contrast of a hued relation as in color free's the inclusion of a stated point of it's established precept of observation by in that of what withheld of a confidence interval satisfies the stated relation of an underprovided (exterior) otherwise presumed gestalt condition to what is forementionable of a concept in the contained vantageless extremum of a parallel; to unseparated differences in a Bose Gas in one area of abrea and another of a Fermionic Gas in an other; to what is it's indication of a straight division. The quotient of a micro-canonical ensemble is provided by that of freely the held:

$$\chi_{\Omega} \leftrightarrow \xi \quad (1595)$$

For in what is freely restrained of the divisional quest of a particle along an underprovincially provided difference of two quotients; to which is a quanta and it's precept; as in time's arrow; the vantageless extremum is a disappearance at odd's of what is a game theoretic 'umbicillus' and unioned vantage of two degree's; the difference of a measure and it's mean precept of exact proportion due to a otherwise elsewhere provided 'two' of precept of established two dimensional 'umbicillus' of naturalized prefective notice of an indical relation of mixed subtypical relation. When what is a μ variant is freed in one place; the consequence is unalterable but by in yet what is a divisional 'err' to it's emergencied quotient of expeditiousness in (and with) the relation of a predicate invariant of physical form; for in the vantage of a 'peer' to game free notion of quested demarcated or unalienable contrast in a secondary teir of two freely held underprovided relations of prior historiological context. This freed vantage is to what noticeably of a given pre-connotatively declares of one variable it's agreeable condition of a meeting elsewhere. For what is given of one notion in (and in remembrance 'at') that of it's univiolet relation; the ultraviolet spectrum noticeably pre-advances that of measure to what is a 'haloed' conditional for what is below the parring of a wave of accompanying motion; for of matter; inertia responds in equivalent impulse to it's stated freed deficit of incurrence in two measures of rapidity to what are a co-locality and a divisional 'err' - here mentioned to 'doing' of an action; as in that of closure upon what is a locality elsewhere. Hence time is noticed as navigable.

Freely held suppositions are then that of what is an ordered relation; the blind-free set theoretic notion of what may be hidden of one relation to what is provided of any then alternatively given pre-text at two of life and support are a third in what is incurrantly unbent of a freed ordered relation of search and retrievance or destroy; particles to which pass like a mist to what altered of an outcome freely demonstrates it's initial support; that of an answer. Hence; of what a Pell would Bob; the relation to a Said is it's Retrievance. And of what of could departedly contest a position is freely surpassable in one motion; for of light; the free provision as in any atypical spectrum of homogenous logistical err is a free notion of which encompasses light; hence as in an arc; what is demonstrated by a compass in it's measure yields to the incurrence of a freed point within the neutral condition of it's initial unto final status. This is the motion of a game; to which as we would capacitate or inclinate; any gas is freed by in that of an \bar{t} to which a simple d (to which is a density functional and density representative pier freedom); divinates what of two origins are met apogetically to a limit of a freed solution to the Helmholtz equation and equipartition of a La-Joussillious set; then to the freed density functional of a Ricatti equation.

Hence what is of one η ; to which is comprassibility; the light freedom of any asymptotic univioleted standard is the established precept of blind free relation of color in as as in a hue what passes with matter; therefore the invisible relation of what occlusively is darkness to clarity and crystallize surfaces and stones; of which would not exist without that of a shadowed function. One may question whether that of a stone can outpace an eventual of incurrence of back-beat

and back-blow of a relation of light surpassing it's measure; as to outrun a mirror; however to a freed relation of breaking the speed of light; the answer is simply provided by in that of one blind origin yet preceptitated to it's established destination. This is the self statement of the Universe; to which in a quotient of two is the freed of one right handed corkscrew for in a yard of one quilt of barn laden cloth to a given freely held dimple quested to freedom from it's silken measure of a root radical inverse (for otherwise failure to mention of non-material limitations); that of a needle; the eye of which freely run through stitches a tapestry in one moment; to what incurrantly is the measureless radical; computable from multiplication minus a deficit to furtherance of incurrence of life renewable as in cotton or gin; rye; or lost wheat. Therefore nature provides amply for that of all substance; and to which as we would include; the difference of one measure of a knot for in two is simply a yarded advantage to a peer. This advantage provides enough resource and ample opportunity to agreeably meet all subsidiary and superset conditions of it's difference in what would be a sinchel of any food stuff; and provides enough for that of withstanding a blow of some compressible (η) frictional or non-frictional free entropic subgroup margins of anomaly of life; in what is a moment (once again considered to abridge); the provincial status of the precept to which is the predicate logic for in what is it's counter as in that of the indical notion when under subsumptive declaration at oddity of nature; it's capacity to facilitate design.

Limitation (To a Contrast)

But the idle watchbearer plays a role; to what is a given accumulatory vantage of the all auspices of it's given established inclusion of for what in the whole of a cord; is a compleat; and completed; and even then (within) addition; complete relation of what is a noticed element of particle. Hence elementally addition is not suppliance; as we could contradictorally assumptively follow the precept of the foundation of our ignorance weighted to it's data(based) super or sub-sidiary (as-above-so-as-below) set-set theoretic relation; for no known search terminates in this given reality; for what of a fact may be freely established. But of darkness; a hidden container exist's to which is a dwelling of it's established precept; to which in all succumbing we find protective; therefore it follows no known redressible fact is liant upon the vantageless limit (nor of limitation); or of a restoral to each; but of one; to a 'yes;' all inclusive of mastery of a work so shared. Hence the fundamental principle of informational content is it's first precept in a given foretaken of a conclusion; and the saturability (or despite the fact it's insaturability) freely does yield a produce beyond it's measure; the self inclusion (or despite that; inanimate in pure form) - actual redressment of a universalist *moral* of this universe; the effect (and to a point; in thirds or of a quartered fourth of a freely established compatability under and (of) one) of which is that of the given guarantee of a principle a priori effectual to it's desirious end of what is in essence love and lovingness enfolded in trust; to which is virtue; to not be confused with fotility (for life struggles); or inmarction; that of inordinate naturalized effects of waste freely comingling with what is neither matter nor that of motion; but of co-activity; defined; therefore all is life.

Cosmological Thermodynamics

1.) *A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).*

2.) *More time accumulates when in a field; while particle and space are independent agents.*

3.) *A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations correlative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.*

4.) *There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.*

5.) *The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.*

Equation (9) is to be understood as the contraction and disconnective between the particle like limitation and the field theoretic traversal under the situational disposition of the earlier elemental relations. To which (5) in connection with (6) represent principle (1) under pre-consideration to principle (2) in connection with (9) alone. And to which principle (3) is their connective indeterminacy; embodied in equation (9) in a relationship with their connective lossless apredictive (co-)determination of (7). Equation (2) is in relation to equation (14) as base precept (4) of the above; where by it's contradictional formation is necessitated to hold in relation to the disconnective that is (2) of this list in relation to equation (14) and the co-determination of variances to which add suppliancy from a relaxed contact free relation; that of base precept (15) in relation to equations (13) and (14).

The conclusion makes determinant that a Fermionic gas is constrained to a $1/2$ relation of statistical majority and minority half admixture; and is the subspatial background residual of a known free consideration of yet principle accruals of a hidden μ ; to which a backward relation reconstructively contains no caveat; but is the wake of a relation under current purview to restoration to which is the cycling of creation (as in the Moon and Sun) of an earth in relation to it's elemental wind, air, earth, and fire; as in the precepts; for then in even the non-animate relation of what is certainly not immaterial of 'wood'.

Essential Root Conclusion

Conclusion: *That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.*

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat: Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of*

quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

An Einstein-Podolsky-Rosen Bridge

Conclusion: *My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.*

Physical and Mathematical Law

Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position. Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Closure upon a Precept

Physical phenomonological relation to measurement and variables through which variances are known theoretically are therefore to be understood as light, sound, and material physical properties of μ and η to which mathematically ι and τ are mathematically pre-tensile relations of the universal encoding of stress and strain; to what of ϵ and ν are the root residual of a bi-reflexive threshold of mathematical abridgement at accrual and accumen of a way of sense and determination of even so as an $\bar{\nu}$ to the three fold relation of χ in **not** μ and μ and η and **not** η ; to which are the phases of ϕ_1 and ϕ_2 of a Sequential Frequency Bandgap Admixture Bridge (**SfBaB**). This concludes what is an understated isolation of the Shwartzchild criterion of logical precept resolution of the manifestation of an EPR paradox emanating from a return sling of an EPR bridge contrast relation; to which exact expectation is a base fundamental result; the control of chaos.:

Shwartzchild Criterion: *An Einsteinian Residual of it's base precept is the occlusion of a Shwartz inequality as in that of a Shwartzchild affinitively departed limitation of inequality; to which a Shockley 'terminal' is an isolable exception bridge to that of predictive validity on that of an anomalous tacheonitic pulse of relation of exact affinitive to what is logical precept based on the residual spline of it's known variancy within the relation of invariants.*

The logical precept of holding an Θ as true is then the reversal under mathematical reconsideration at precept of the correlates of (2),(9), (14) and (5), (13), (15) and (7). The emptied relation of this given difference is (13) to which is the solution to (1); that of equilibrium freedom of preceptual err(or) and escability of mathematical incurrence of a dilemmetic structural fault to safety as in that of free entropic fugacity of fidelity as embodied in equation (16); to infinitely free isoclinic relation of the enumerations of these residual relations phenomonologically to what is an unconstrained dynamic to the difference of chaos to what is order as in the relation of precepts of a theoretical relation to (1) through (5) of the suppositional hypothetical base structural relation of a universal theory of thermodynamics and co-determination of a blind to color-free ordered assembly of what is a 'net' Ω ; the neutral boundaried relation of two information spaces.

Thresholds and Statistics

That of μ and η therefore form a free relation of hidden capacitating revealing of one unrandomized and (&) and expectation of randomized apredictive outcome of another hidden capacitation of variance as by a machine model; to which a game it is substatically empowerability of a relation of acute and accepting empathic relation of freedom of emotional state and outcome; to the freed variance of closure upon the immutable void.

Phenomonology therefore contains no known test for the validity of the awareness of a machine but life; and vice versa; what is qualitated to it's difference; no known machine can kill. In return as a given the free relation of a gas system establihes the precept that what is inquired as to the question of restoration of a record; that of a hidden defensive structure of machines; and a failsafe on that of escapability from a machine complex; that of control of chaos; and informational freedom are all mutually free non-radical assumptives of this world in relation to radical identifiers unconstrained or limitless.

Foundational Precept of Informational Interpretative Validity: *Therefore a reversal of the predicate and indicatorial logical precepts of this given world under interrelation to a simple given in μ and η accomdate identification of a known of expectation with base residual null conditional.*

An equation in which there is a white noise; for which is broadband; or at the least pass-band indicates a half measure to it's excess in approtation with a residual retraction of three positive definite enfoldings of manifold relation of apositional and positionally identified machine control structural relations to what is a binary relation of loss of the incurrence of an indicatorial precept for the gain of a predatory oriented manifold relation of a disconnective to an interstitial singular ping; to which there are two givens:

1.) A retraction under its self same acquired contrast to division as in a quotient serves as a multiplier of (and to) it's result in the identification of a subsidiary or known identifier of a relation; then an abstraction under it's extrapolative reductionism.

$$\mu \cdot \tilde{\eta} \leftrightarrow dP(o) = \chi(g, o) \cdot \tilde{i}(t, s)P(o) \quad (1596)$$

Where 'o' represents order; g represents the genus; t represents temporal locability and s represents uncontainability of spatial union or abstraction to delimitation. Grey noise represents an ever accrual of randomized apredictive variances to which are revealed through the capacitation of the manifold enfolding of one relation for another; to which a secondary relation precedes it's given; and through which predictive validity is assured when we occlude a defense through the uncapacitated and invisible open relation of relation to a non-identification of non-redactability.

2.) Within the given of what is a withholding to an open relation; an apredictable outcome becomes an expectation of both in one an enfolding of the relation of two preceding known identifiers of evidentiary precept to what is a given confirmative on that of an unstated free variable to it's identification.

$$\iota \cdot \tilde{\tau} \leftrightarrow \xi = \Omega \cdot d\eta(\epsilon, v) d\tilde{\mu}(\epsilon, v) \quad (1597)$$

The closure of one relation; to which is (2) is the occlusion and opening of the other relation to which is (1); either side to which is the enfolding of a door; an enclosure such as a room; the orientation of a nonlocable relation; and that of to it's fifth occlusion; a printed word as in that of creativity and imaginative reflex; that of a constructable free associate of the structural relation of living material way and manner of survivability.

Hence by either relation an Ω as in a point, a line, a triangle, or a square polynomial is constructable to a modular or group theoretic closure upon what is a Θ ; and heat may be controlled by a machine; to which there are two absolute safety protocols of a blind and non-blind free relation of reductionism and universality of a set theoretic notion and relation.

Ordination

Note on Chaos versus Order: *Theses of Ordinal Relation:* "Any logical predicate bit heirarchal structure of ordination with lower dimension and higher co-dimension mitigates relational injective structure unto future tense of either given machine state for in that of what is one differential equation; that of its conjugacy to relation of variableless and functional degrees of freedom establishes two lower Lyapounov as exponentially free threshold relations unto separation into two new differential self referentially null and independent enfolded strange attractors."

End Postulates

1. A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).

2.) More time accumulates when in a field; while particle and space are independent agents.

3.) A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations corelative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to

insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.

4.) There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.

5.) The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.

Essential Root Conclusion for the Classical World

Conclusion: That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

5.) *Caveat:* Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and gravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

Device Implications for that of an Einstein-Podolsky-Rosen Bridge

Conclusion: My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.

Compendium on Physical and Mathematical Law

I. Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language.

II. The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Consideration of the Exception and Admittance of Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position.

Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Covariance and Complimentarity in Superconductivity

A 5th order quasiperiodic theory is settled by in the threshold mechanic of pentalty to temperance of a consolidate unit'ed envelope conditional on the bi-set of vacuua and diminished order spaces; with specialization to occluded return of any two co-simultaneous tertiary or secondary observers; admissible only in that of our dimension. That of the auxiliary state is a guarantee; however; when individuated as a machine among (or tertiary to) that of an assembly-state; the provision for the ideal heat engine violates the exclusion principle; adopting that of a 'secondary' provision under optional; or dis-enjoinable end-gas-states. So as one cycles within a relation there is ideal dual-complex exponential and digraphical elliptic notion of wave structure on that of one end of the Spiral of Cornu or-incidentially; back. The patterns that are witnessed in the HTSC's; etc, are phenomonology of two dioptrically overlapping one another in the Random Approximation Limit; but do not reach the holographic tri-critical point until a process of descent of what is a held dioptric difference in consideration of levity for potential; to which the in-exorable machine limit-state is deliminable for then in a topological union of complex, real, and imaginary. The fundamental statement proposed is that a stripe is the dual of either that of the bifolded (two-fold) in one [shared] or [unshared] piece of paper to what is two and two in 'separable' sector's; therefore that of bi-section to freed principle; the topological embedding the 'natural embedding' of a Poincare Disc glued twice over to a circle. Therefore the two mapping's in wave-argument to dual cavitated spatial occupancy of zero extension. A pattern evolves which is differentially explained but to which is predicated on that which hidden variables but not exchange by Pauli would exclude; but for a caveat to statistical mechanics on a Hamiltonian and Lagrangian space. The second differential (for what is a property of physics theorization; that trial's do not contribute to what is moment's, identities, disclosures, openings, and constructibility); freed, is more expressive and motile than the diss-appearance of a manifest first differential Laplacian; hence order in time is an ordered string of [2].0[2] etc... This is co-extensive enough that the second differential is what a system reduces to; the first differential may be numberlessly discarded.

Introduction

The first relationship of importance is that of the equation which dictates that of by way of which *the results of relativity do not alter the probabilistic outcomes of quantum mechanics*. To a dual edge this is the statement that *only* a statement of exclusive and definite measurement can assail an infinite and zero probability of Dirac order; and only measurement is a decisive factor after-the-factual presentment. It is however to be questioned...

Given probabilistic and relativistic considerations are dependent on coordinates of position and momentum; the equation that expresses independence of statistics is intimate to a series of

(co)factor's unmanifestly dissipative and co-terminable with entrance. That of one fifth relation is not in assembly; for what of the Green's function to contain a zero-dimensional fractal as such; but to-here; the quantum expectation of a guage probability flow reduces to a null conditional pre-cept of mutually 'outside' [a] place; to a non-descript zero dimensional point like limitation within the predicated and hypothetical quantum liquid/fluid/solid (as dependent on crystalline and potentially aperiodic foundational number-sum) of indiscernability (and separation into a past for of degeneracy to (5) and (6) dimension's; but also any crystal extrapolated from a Fourier Transform of a de'Hass'Van'Alphven wave structure:

$$\Xi \equiv \Xi \rightarrow (\lambda(\epsilon), \lambda(\rho)). \sim (0, 1) \quad (1598)$$

From The Equivalence Principle (herein equally weighted in frames):

$$\frac{\partial}{\partial t} \equiv \gamma \frac{\partial}{\partial t} \rightarrow \gamma^\mu. \sim \eta \in SU(2)[U(1)] \quad (1599)$$

The Lie differential; which is designed such that the covariant differential and the one-form differential commute is a good candidate therefore for derivation's to speculation; it's core statement of commutativity one of freedom of the one-form γ from statistics Ξ :

$$L_\Xi(d\gamma) = dL_\Xi(\gamma) : \omega_1, \omega_2 \quad (1600)$$

Together; this is nothing more than that the Shared Proper Time is equivalent to the Covariance in Uncertainty.

With this we have the relation:

$$L_{f\Xi}\gamma = fL_\Xi(\gamma) + df \wedge i_\Xi(\gamma) \quad (1601)$$

Together any two qualitative limit's of what are 'property' and 'proportion' of 'shape;' in-exclusively contain a convex space within it's margin; and qualitatively convex as to mapping; therefore of evaluation of statistical calculi; that of re-apportion of functional deficit factor's the equalitative product of spatial and temporal variance within elliptic expression; in reduction by a covariant-factor of advance and diminishment (exponential) upon two acasual arrows; to which the center of energy and mass is 'on-mass-shell;' That of the metric relation of infinite spin's 'devoured' by the basis; the interior transformation groups of these equations.

$$f. \sim (0, 1); \quad L_\Xi(\gamma) = df\Xi(\gamma) \quad (1602)$$

Thus the end condition is perfect heat to mechanical conversion; that of one third back in physical form; and three involute to two determination's of inward place; *unto control, precession, impartiture; of reflex, impulse, and co-determination.* Thus a physical relation must break down to what is a quotient of (2) within; merely a null-centre; of that of the quasiperiodic and non-periodically randomized state of no-approximation.

$$\tilde{\omega}. \sim \tau \quad (1603)$$

This expression is that of by which a factor of a functional form to the manifold of statistics of 'motion with deformation or transformation' is free of the relativistic characteristic common denominator of the Equivalence Principle homomorphism and the stationary state of the Quantum Description. This statement represents the preservation of the heat equation.

This is the substitution of one particle freely within one held space into another; so that one particle may co-occupy one space with another; or be unseparatedly sequestered aside to the departure to countable differences of its evolution. Therefore we may take; owing due to these prescriptions:

$$\Phi(x, v, t) = \eta e^{-i(\kappa\theta + \tau\phi)} \leftrightarrow \Theta(x', v', t') = \rho e^{-i(v\mu + \epsilon\psi)} \quad (1604)$$

Therefore an apportion to a mean holds an invariance and an equivalence. We will find this is nothing more than the declination to a tertiary observer; for in that of one juxtaposition to its closed end; in the 5th; the end openable is the 4th to the preceding of ordinal calculai; for that of derivative coordinality groups; for then in what co-exist's; the then limited four dimensional enclosure hold's the freedom of light from matter.

Then; to what is a real result of probability; it is that of unenclosed bearing on the relative principle and the emptiness with the quantum principle; or; that of the quantum principle empty in relation to the relative principle; is to that of freedom of isoclinic relation; an established direction to heat and momentum exchange within the non-linear dynamics; here considered; entirely and alone of physical application to superconductors; but of derivative principles for pedagogy. Therefore there are two types of system for consideration. The first question is:

Question I: *Do any or alone only unbound & unbound [is it exclusive or inclusive to which case;] systems [therefore,] obey the same spin-statistic relations?*

The equations first presented lay the prescription in place that of by way of which any two observerables as measureables ζ and ξ may hold an identity with measurement process:

$$\zeta\Phi = k\xi\Theta \leftrightarrow \zeta\Theta = k^g\xi\Phi \quad \epsilon\chi \quad H\chi(g) \quad k = \pm 1 \quad (1605)$$

Where g is the boson-number; the genus number; indicating the number of holes in the space of its topology in a Hilbert space (H) with topology $\chi(g)$.

It holds naturally that if the number of holes is even ($g = 2 + b$ & $b = 2l \ l \in Z$) that the spin obeys an even-statistic; and if the number of holes is odd ($g = 2 + b$ & $b = 2l + 1 \ l \in Z$) there is a rotation of 180 degree's in the spin-theorem; hence the sign flips for interchange of particles. And the k is (-1) for Fermions; and $(+1)$ for Boson(s).

The Spin-Statistics Theorem versed in this manner provides a connection between the space-time and the quantum properties of objects as particles in the space-time.

Representation Theory

In the continuum of the probabilistic operators any mutually factorable relation into which the solution is also a given solution of the equations:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (1606)$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (1607)$$

Is deterministic.

Hence; any operator that admits in a dual-sense two conformal relations in logarithmic reduction to a common factoring exemplifies the naturalized relation of (2) *time's and space's* to which is the extension of quantum mechanics above the theorem's of relativity. This find's it's way into the Dirac equation for the electron by that of the intimation of a field-conjugate momentum; to which is shared or unshared; and assists in deriving that of a *new* expression for the multi-body problem; in which the two body problem can be subjected and decomposed.

This is nothing but the statement that: *The rate-period of time is a congruent relation in the particle representation to which is empty; and to which the two-body problem may be separated into the one-body problem of which there are two.* This is consistent when there are taken to be two spatiotemporal projections of the particle operator. These projections are no more dissimilar than the 'functional representation' and 'particle representation' of a particle or multi-particle system, *and exist because the particle is empty.*

Therefore;

$$\partial_{\mu}t = 0 \tag{1608}$$

Expresses the emptiness of time; to which all supporting statements of this paper affirm.

With:

$$\cdot \sim \tag{1609}$$

An expression of a neither nor shared light envelope of illuminescence; to cadence of a Lamp freely-lit to invisibility below an alternative two juxtaposable place's with projections & the statement of unto another and a place; or two to occasion; or four to differently establish; or five to equably pass on; or six to espouse or entreat; and of seven; to equalidiate. Therefore of co-linear equivalent extension outward inward and inward outward for what is two to two; expressible only that as the equivalence principle derives to two properties [a metric and a mass] that of the freed electromagnetic theory is broken on the gravitational; as the gravitational is negative to orbital coupling under a reverse-surjective phase orientable traversal of temporal co-extensibility to a union in five to a third; any even-faceted two to a third of mitigated arc.

Therefore in either [explicitly held] the outcome is non-determinant between any two quantum and gravitational limit's but unpredictable; yet within an openable and extensibility to freed self intimation and juxtaposition; for what is co-determinant; as an absolute physical norm of the space. When we consider what is resumptive of the 'actual' to what grow's outward every-where else of the topological function; and with a heart; body; and mind; the truth of form's *are* for in what is found of life; for these are bound to a mortal coil.

Of it's freed ranges; the security of a pre-cept from it's imported dextruous nature is the cleaving unto the alternative of self found as [within conveyance] via a means of two; under adoption of the willingness to encourage the dexterity to the task... That of what is presented therefore is that the only discernable and observant condition [once-expressed] of identities is the following two principles:

***Canary Principle:* For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices [among a count] to answer absence unto it's own.**

***Banana Principle:* The banana principle states two are unprecluded from foreknowledge in yet a third out.**

Statistical Admixtures

It holds as a lemma; that the statistics are therefore empty of relation in a given comparative assessment to relativity; and that relativity does not alter the statistical properties of a system. This (infinite) barrier of a theorem presents alternatives only found within the global properties of a system; to which it is also global. The *free capacity* to include a differing Δ from Λ is the extension of the differentials. This therefore proceeds along two lines; that of either a principle equivalence or a principle in-equivalence; the variables decomposed by either **log** relation. The proof is reliant on (surpassing the infinite obstacle of integration of these two theories); at that of assuring that one viewpoint is equivalently as-consistent with the other *relativistic* frame-argument. This two-fold relation is essentially that:

$$(i\hbar\gamma^\mu D_\mu - mc)\Psi = 0\Psi \quad (1610)$$

But here; that of 0 is differently established because *on account of the second particle* there are **2** *two* solutions to the original single-particle state... That of:

$$\gamma^\mu D_\mu \leftrightarrow \gamma^\nu D_\nu \quad (1611)$$

Hence for in light of two bodies;

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (1612)$$

Both describe the *same two particle system* from what is yet two-different-relativistic descriptions. That of relativistic assurance is found then in the degeneracy of which is that:

$$\Lambda\Psi = \Delta\Phi \quad (1613)$$

This ensures that their energies are equivalent and four-momentum descriptions of each particle are too; possibly up to an interchange. This ambiguity is afforded as the second particle has altered the description of the first particle. To see that this **this does not** alter the relativistic description is to see that reversal of viewpoint and 'objective' does not alter the image under **initial** composition.

Either of α or β are equivalent by equation (5) of the paper; to which when either particle (to which is empty) alter's the representation of it's conjugate particle it does so from the alternative of a self-and-world to which is **two**. That of world and particle versus (with world and particle in the formative and former position) does not alter the outcome of the result of the first particle (1); and, *without exception; that of their statistical intimation is left unaltered for-in-light-of projective dis-similarity of neither upon the world.*

This 'neither' of which is undecidable from the other side of relativity; is the incomparability to which *probabilistic interpretations are independent of relativistic prescription*. It is also the imperative that physical law is *empty*. Therefore we may freely take:

$$\Psi. \sim \Phi \quad (1614)$$

With the transformation and in-equivalence of τ and ϵ affording that of factoring into superposition's such as are re-compositional *linear* states.

Hence, a theory that incorporates an *equivalence principle* invokes **two** times, a *proper time* and *improper time* as a projection of the two body problem *within the context of the equivalence principle to which must lead to equivalent physics*. Casting one particle to it's *probabilistically neutral provision as granted the prescription of the equivalence principle* grants the other particle to possess that of probabilistic independence with co-mutual occupancy under the 'tertiary' - third observer **out**.

Abstraction in Conclusion

The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (1615)$$

By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1616)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1617)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (1618)$$

To which is the derivative solution to equation (5). Therefore that of a fifth dimension is made to exception in the second; that of apologia to consorted effort's of collapse; only a univariate carrier of outside 'roll' to interior (pentagonal return); 'roll' will co-determine a vacuum from a discriminant black body noise; at absolute zero; the external 'via' of a 'class' to which is an 'apologia' in yet 'character-assignment;' freed to these in the tableau of proper derivation from the summation convention. That of the commutator of the partial is the expression the Lie differential with respect to Ξ in equation (5) is the manifest holographic principle reflection in-machine-&-in-world.

That of the holographic principle:

$$S * P = \iota P * S \quad (1619)$$

And:

$$P * S = \iota S * P \quad (1620)$$

So it is for lack of a better expression that the identity relation is ordered; and by supposition of the counting theorems; identities are ordered:

$$\mathcal{O}(\iota) \quad (1621)$$

An expression that the identity is that which is neither one but two and two to what is no three and uneliminable declination of four in preceding from five; of dimension; therefore by two under pure-codimension of 'sheaves;' there is a bi-reductive free (2) two limit's; to what is sequestered of equipartition to the fifth and the sixth; a rung freed to the equippable return of yet a fundamental of this world; that reductively from three; two would be an apportionate four or three; then of other's equability; and return (two-folded) deficit below reversability of one sigmoid.

Therefore the identity is the inexpressibility of *time, space, order, individuation, and inseparability or unencloseability forming through shape*. We may now describe shape to constitute a group in vacua; for that of ι is the manifold ideification of a separable co-adjoint *unitary group* of co-extensible dimension; a three dimensional critical point; and reductive asymptote.

The non-linear statistics of comparative densities in position and momentum under an abridging SU(2) algebra diminish the accountable energy in argument's dependent upon these via superposition and exchange.

Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) - \alpha^\mu\beta^\mu\partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1622)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu\partial_\mu)(g(\tilde{\omega}) - i\beta^\mu\partial_\mu)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1623)$$

When written out we have two equations:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (1624)$$

The first equation read:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} i & 0 \\ 0 & i \end{pmatrix} \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (1625)$$

This is enough to get that the general equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (1626)$$

With elements $\{\eta\} \in SU(2)$ are the same *superposition* equation with solutions in the Dirac basis.

Beginning with the equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| = \det |\theta(\tilde{\omega})| \quad (1627)$$

We have that:

$$\theta(\tilde{\omega}) = \theta(v, \tau, \alpha, \beta, \tilde{\omega}) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad \Lambda = \tilde{\omega} \cdot \bar{\omega} \quad (1628)$$

So;

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \quad (1629)$$

To which is two eigenvalue equations in linear form:

$$\eta(v)f(\tilde{\omega}) + \alpha^\mu\partial_\mu = \log(\Lambda) \quad (1630)$$

$$\eta(\tau)g(\tilde{\omega}) + \beta^\mu\partial_\mu = \log(\Lambda) \quad (1631)$$

The Dirac equation is therefore separable into two different one-body problem/solution pairs:

$$(\eta f(\tilde{\omega}) + \alpha^\mu\partial_\mu)\psi(x, t) = \log(\Lambda)\psi(x, t) \quad (1632)$$

$$(\eta g(\tilde{\omega}) + \beta^\mu\partial_\mu)\phi(x, t) = \log(\Lambda)\phi(x, t) \quad (1633)$$

Thus:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (1634)$$

Becomes:

$$(mc\zeta(\tilde{\omega}) + i\hbar\alpha^\mu\partial_\mu)\psi(x, t) = \lambda\psi(x, t) \quad (1635)$$

And:

$$(mc\xi(\tilde{\omega}) + i\hbar\beta^\mu\partial_\mu)\phi(x, t) = \lambda\phi(x, t) \quad (1636)$$

With a wave argument on the inertial mass of which is ζ or ξ ; where:

$$|\zeta(\tilde{\omega})|^2 + |\xi(\tilde{\omega})|^2 = 1 \quad (1637)$$

This constraint is nothing more but the restriction that the total probability for *either* electron add up to 1; that it be located 'somewhere' and it's mass conserved, the result is then two Nonlinear Shroedinger Equation's:

$$(\eta |u|^2 u - \sigma u_{xx} + i\rho u_t)\psi(x, t) = \lambda\psi(x, t) \quad (1638)$$

$$(\rho |v|^2 v - \sigma v_{xx} + i\eta v_t)\phi(x, t) = \lambda\phi(x, t) \quad (1639)$$

Further Calculation

We begin with the two body Dirac Equation:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\psi(x, t) = \Lambda\psi(x, t) \quad (1640)$$

The question is if under:

$$\mu \leftrightarrow \nu \quad (1641)$$

With superposition; the equation will reduce. First we have (re-written):

$$(\eta^\mu \partial_\mu - 1)(\eta^\nu \partial_\nu - 1)\psi(x, t) = \Lambda\psi(x, t) \quad (1642)$$

For what is identity is the meeting exceptionable (non-exceptionable inclusion of) a continuum to the bi-jjective law; under ordinancy to any two character assignment's of this world. Therefore relativity remains to hold with-in an interior limtiation; of that of three for four fold to two fold valence; but of a second-and-adjacent quasi-crystalline space of adjoint void space(s). This cuneiform is therefore an intimated 'end' within an 'end' of the dispossesable (in recirpocity) exchangeable sixth outside object-principle; of which the group(s) reactives into two of absence and presence; to the intimated end that among three 'here' functional's; the self is defined; via and identity to which is inseparable and inexchangeable.

The deficit is to that of three: re-transformative into two or two; a null end of a thought experiment; but yet quantum states exist beyond the double dual exchange accompaniment; to what is any unlimited set in yet raising the third under transferrance; and a lowering of the second spin. The co-adjoint determination of another is the seamless consequence suffer's to the other for dis-inclusion unto yet an adaptive third; to what is sunken in cost; there is apportion and sequestering; so that as of the Banana & Canary Principle(s) would allow; three are co-determinatively afforded co-existent mean prior (2); of a strict in-equality unto breaking into two through the via and back between any two adjacently connected point's of reality; neither 0 [**zero**] &-or 1 [**one**] to the limits of 'background' objective physics. The commutation represents the elliptic and exponential con-joint relation of light-cone's; to which when divided; recompose to simply a property of an object; for their shadow-function is simply a one dimension bijective flow of 'unilluminated'. Under exchange it is:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] \psi(x, t) = \lambda\psi(x, t) \quad (1643)$$

But then; we can insert the identity without changing the commutator:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] I\psi(x, t) = \lambda\psi(x, t) \quad (1644)$$

Where:

$$I = \{\eta^\mu, \eta^\nu\} \quad (1645)$$

Therefore; and we find completion in two relativistic projection(s) derived from either's inward reflex and impulse as encoded in the isosymmetry derived from proportion and shape; that of the equation (5):

$$[\eta^\mu \partial_\mu \eta^\nu, \eta^\nu \partial_\nu \eta^\mu] \psi(x, t) = \lambda \psi(x, t) \quad (1646)$$

Or:

$$\eta^\mu \eta^\nu g_{\mu\nu} \psi(x, t) = \lambda \psi(x, t) \quad (1647)$$

Alternatively:

$$\bar{g} \psi(x, t) = \lambda \psi(x, t) \quad (1648)$$

It is in-expressible whether:

$$\bar{g}. \sim. \lambda \quad (1649)$$

Or:

$$\bar{g} = 0 \equiv \lambda = 0 \quad (1650)$$

In other word's; the eigenvalue to exchange is indistinguishable from the metric relation of the spin algebra of inertia; that of the weight of the physical assumptive of inertia in the Dirac equation an identity with that of it's weight geometrically owing to energy; not just space and time. ***and not just mass.**

$$([\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] - \lambda) \bar{g} \psi(x, t) = 0 \quad (1651)$$

Written out this is:

$$(\eta^\mu (\partial_\mu \eta^\nu) \partial_\nu \bar{g} - \eta^\nu (\partial_\nu \eta^\mu) \partial_\mu \bar{g} - \lambda \bar{g}) \psi(x, t) = 0 \quad (1652)$$

However by that of the the principles outlined; that of the two views of one particle can be further scrutinized to single particle field and particle spin-orbital momentum; for in that of the whole ensemble there is not only one particle bound to another; but *a condition for separable equivalence principle and complimentarity invariance footing*. Penultimately this divides the description of the particle upon exchange into one element of which is of it's manifest Lorentz covariance; and another of it's Shared Proper Time. As:

$$([\eta^\mu \partial_\mu \log(\bar{g}), \eta^\nu \partial_\nu \log(\bar{g})]) \psi(x, t) = \lambda \psi(x, t) \quad (1653)$$

Then to an exchange state; for which the commutator is evaluated and the middle term's drop from the general expression (here η is an operator for spin and orbital uncertainty exchange constant...):

$$\left[\tilde{d} \log(\bar{g}), \tilde{d} \log(\bar{g}) \right] = \lambda \quad (1654)$$

Which when expanded becomes for the particle momentum:

$$\left[\tilde{d}, \tilde{d} \right] g^{\mu\nu} = \lambda \quad (1655)$$

Then; it is also true:

$$(\tilde{d} - \eta)(\tilde{d} + \eta) \Psi = 0 \quad (1656)$$

And that:

$$\sqrt{\lambda} = \eta \quad (1657)$$

Since the eigenfunction must be satisfied in a basis; the commutation therefore hold's for the first state:

$$\left[\eta, \tilde{d} \right] \Psi = \lambda \Psi \quad (1658)$$

$$\eta\tilde{d} = \lambda \quad (1659)$$

This only holds true if the field momentum equation is as follow's:

$$\tilde{d} = \lambda\vec{\sigma} \quad (1660)$$

These represent in the first the spin-orbital coupling potential energy at a minimum; to which is related to exchange of spin and orbital degrees of freedom. This spin and orbit would then be a transition of the spin-orbital condensate. In the second; it is the curvature condition; with $\zeta = \zeta^{-1}$ and anti-Hermitian. For that of the reduction to an eigenstate; there is a Ψ ; the net wavefunction given by:

$$\Psi(x_\mu) \quad (1661)$$

The natural separation into particle and field momentum can be found as a consequence of the independence and equivalence of the quantum unit of probability in a two body interaction. The equivalence of 'weight' λ in either view is the invariance of complimentarity; that penultimately interchange of particle and particle description identity leaves results of measurement unchanged including that of relativistic consideration.

Symposium

There are three ingredients to superconductivity which must be demonstrated. We will proceed in a linear fashion; beginning with 1.), then 2.), then reaching an understanding of 3.); then these will be moderately 'put-together' into a robust theoretical framework; then; there will be an introduction to the experimental motivations for invoking the model system; a treatise on that of implementation of the theory with phenomenological evidence; and then finally; calculation of results and a conclusion. This model presentation is offered as in replacement of prior work's in which the work was undemonstrative of a logical proof based system of verifiable hypothesis. The aims offered in this paper are more to the adjustment in theory required to make sense of a physical world within light of the existence of superconductivity; but where appropriate common sense has been appealed to. That of the results intend to make no implication about alternative areas of physics; but where appropriate prohibition to allowance for what would lead to contradiction in another area of physics has been noted. As akin to the manner in which space and time 'fold' to create a finite circle from an infinitely long one; when an orbit is analyzed of a straight line in a curved space & time; as when superconductivity is manifest; the finitely long line of interaction 'folds' to produce an infinite orbit in the curved space & time of the interaction. That is to say that the antipodal relation hold's; and that the less-than-unity normalization group of the spin; (to which is four dimensional) relaxes the orbital constraint to it's-fullest; that of a gauge group then to which is negative in conversion of magnetic becoming electronic and electronic becoming magnetic; with a reduction from the speed of light rather than an accumulation to the speed of light; as if participating on the other side of a mirror. This demonstration states that all additional that is required is exchange of field for particle pro-perties; and that of the charges will attract within the ranges of a standard deviation; there being two wave like frequencies and wavenumber's the result of a phase congruence with conversion to angular coordinates. Without further disclaim; the offered supports of superconductivity are in three:

1.) *The non-linear **product 'covariance' rule** formation of two distributions with a negative exchange (J) in individually prepared Shared Proper Time with a local minimum generates an experimental bind of trading of the index on one measurable for another; that of the inversion and reciprocity of the law's of physics potentiated by purely statistical means...*

2.) *Non-linear product-rule superposition under exchange with comparative probabilistic 'complementarity' of either particle's independence from relativity results in that of the admission; by way of the twin-paradox like intimation on relativity of measurement inversion, to what is indistinguishability of relative and quantum contribution's to lowering in energy...*

3.) *That of measurement inversion with spin and orbital momentum under exchange for which one particle and it's world view will not afford the altering of another particle's prescription; affords, given that exchange is negative and the covariance, positive; the inversion and substitution of the electric for the magnetic field; and vice versa with relativity...*

Therefore there are three reasons for attraction of the electrons in superconductors of the high-temperature variety. First; exchange is negative and probabilistic assignments are independent of relativity; with the distribution rule on that of standard contributions via a two body problem in what is the shared proper time versus proper time is equivalently balanced; and that of a local-inversion of the deterministic factors of the theory occurs.

- 1.) A quantization condition is reliant upon a spatiotemporal positioning and orchestration of terms.
- 2.) When the manifold condition of a curved space under-declines repose; we get a splitting of energy.
- 3.) Therefore one manifold prescription under a cleaved sheave for then unto two eigenvalues emerges.
- 4.) The splitting is a prescription to electrodynamical theory breaking under a source, sink, magnetism.
- 5.) Probability discriminant's fold the elementary symbolism of equidistance to infinitely separated end's.
- 6.) For what is contained in two or two is three and one to reduction in equivalently displaced potentials.
- 7.) This imputes a relation of directrix enfolding focus; and reversal of measurement to eigenvalue status.
- 8.) Metrical relation is a null condition with that of spin metricity; to which electromagnetism vanishes.
- 9.) Quantum wavefunctions defy Pauli Exclusion to null repulsion via passing beneath an e.v. enfolding.
- 10.) The manifest retro-inversion of a population in two's decimates in energy argument equations of state.
- 11.) A spontaneous symmetry breaking is present, a gap, and a phenomonological behavior of it's unit's.

- 12.) Indeterminism to what is particle & wave; hold's the precept the 'particle' precipitates it's capturing.
- 13.) Inter-adoptive exploration of one dimensional arc width are devoid of doublet anharmonic inversion.
- 14.) Therefore; the principle qualitative element is that probability fit's more recurrently within space.
- 15.) To what is a disconnective or connective; moderacy of spin and orbital measure interchange is unitary.

For what is complimentary of comparatively equivalent time signature and self solitary provided and insured proper time to shared assembly via statistics; for that of either probability fitting within relativistic space and time (inward reflection); and that of it's dual capacity upon yet what is an instance of equivalence in weight unto the apportion of experience of probability and relativistic deformation; that of independence in statistical measure causes a uniform co-participation of these given *Theories and exemplifies unification and separation of their forces; indeed; Gravity & Quantum mechanics within the same atom; a lower in energy result's via the spontaneous symmetry breaking contribution of electromagnetic energy to the two electron's.

It is also true that:

$$\beta = \frac{v}{c}. \sim \beta = 1 - \frac{v}{c} \quad (1662)$$

As a result of what is taken 'to' the mirror rather than 'from'. As a consequence what is a distribution of probability must be re-interpreted as that which give's rise to expectations; around which there is uncertainty in results; the central result being certain for in light of *two theories*.

The next reason is that particles find indistinguishability in that of their 'Quantum' and 'Relativistic' contributions to mass-energy-momentum; of which what is observed is a universal energy lowering in charge and spin. That of separation from spin (to which is left with freely held Non-linear Shroedinger Equation Solutions) contributes therefore the full $4J$ to the gap at the lowest perturbation or temperature.

The results of what are the relation of this being a genuine energy lowering or that of a reduction in a repulsion are therefore that it is a genuine lowering below a general reduction in repulsion; and may be seen as a reduction in repulsion beyond the limit of it's genuine lowering in energy-mass-momentum.

The general description is that relativity and the properties of statistical normal distribution of variance exhibit a two body null covariance; therefore electron's are mutually force-free but at a reduced energy of the 'seemingly separable' conjoint expectation of exchange.

Antasz

Beginning with solutions of the variety:

$$(|\zeta|^2 \zeta - \sigma \zeta_{xx} + i\zeta_t)\phi(x, t) = \iota\phi(x, t) \quad (1663)$$

We have the Ansatz:

$$\zeta(x, v, t) = \alpha sn(x - vt, m) e^{-i(\omega t + \kappa x + \phi)} \quad (1664)$$

Used in (59) we have:

$$v = 2\kappa\sigma \quad \sigma = \frac{\alpha^2}{2m} \quad m = -\frac{\alpha^2\kappa^2 + \alpha^2}{2\omega - 2\iota + \alpha^2} \quad (1665)$$

So it is that one solution can be intimated within a connective (think $SU(2)$) algebraically from one subsidiary manifold space to another... for example when the modes are in-actual entrained or defocused; and when confinement (then provable) takes place because of their non-linear sum/product relationship.

Origins of Unification

When the two time's for that of the log term's are applied to the differential equations; we see a reduction in their mannerism in expression of complexity; for then the threshold eigenfunctions must surpass to become a reality is determined. That of the logarithmic equations suppose that a given is that there is reciprocity between subjective and objective worldviews. Therefore for:

$$\frac{\partial}{\partial t} \leftrightarrow \gamma \frac{\partial}{\partial t} \quad (1666)$$

We have:

$$\eta(v)\zeta(\tilde{\omega}) + \eta(\tau)\alpha^\mu\partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1667)$$

$$\eta(v)\xi(\tilde{\omega}) + \eta(\tau)\alpha^\mu\partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1668)$$

To which become:

$$\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu = \eta + \rho \quad (1669)$$

$$\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu = \eta + \rho \quad (1670)$$

And:

$$(\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu\partial_\mu)(\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu\partial_\mu) = \eta\rho + i\sigma(t) \quad (1671)$$

As a difference of constructive and deconstructive interference equations.

Their solution is:

$$\alpha = \partial_\mu\zeta(\tilde{\omega})(\eta + \rho + \eta(v)) \quad (1672)$$

$$\beta = \partial_\mu\xi(\tilde{\omega})(\eta + \rho \pm \eta(\tau)) \quad (1673)$$

$$\sigma(t) = (\rho + \eta)(\rho + \eta) \quad (1674)$$

Setting $\alpha = 1$ and $\beta = 1$ and $\sigma(t) = i$ we have: Thus:

$$S * P = \iota P * S \quad P * S = \iota S * P \quad (1675)$$

$$\mathcal{O}(\iota) \quad (1676)$$

Within the holographic theory... with $\iota \in SU(2)$ and ι normalized as per:

$$(\eta + \rho + \eta(v))\partial_\mu\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu(\eta + \rho + \eta(v)) = 1 \quad (1677)$$

$$(\eta + \rho \pm \eta(\tau))\partial_\mu\xi(\tilde{\omega}) + \xi(\tilde{\omega})\partial_\mu(\eta + \rho \pm \eta(\tau)) = 1 \quad (1678)$$

These equate to:

$$\zeta(\tilde{\omega})\eta\partial_{\mu}\xi(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_{\mu}\xi(\tilde{\omega})\eta = 1 \quad (1679)$$

This reduces for that of the \pm to cancel as a similarity (hence we get to choose to neutralize that of v).

$$(\eta\rho) = L_{\tilde{\omega}}L_{\tau} \quad (1680)$$

The first equation and the second lead to intimations of what the function's look like; here; an exponential...

$$\rho\partial_{\mu}\zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_{\mu}\rho = 1 \quad (1681)$$

Given that the exponential map is a map; we have an analytic theory; into which via these as transformation rules; a coordinate chart can be written by comparing *different dimensions* with that of *different base combinations*; these are both open; empty; infinite teir's which collapse when the two electron's are so close that they hold **no** mutual force of repulsion; an absolute Pauli Exclusion below symmetry breaking.

$$\partial_{\mu}\log(\rho\zeta(\tilde{\omega})) = 1 \quad (1682)$$

Providing the solution in ρ , a constant of the ratio of compressibility to conductance. Therefore conductance is sourced in a gap; literally:

$$\frac{1}{\rho} = \Delta \quad (1683)$$

To an 'optionable' and 'variant' proportion; that of the two Lie differentials are still a 'scale;' and we may write this as:

$$o = \frac{\eta}{\Delta} = L_{\tilde{\omega}}L_{\tau} \quad (1684)$$

The equation for a [2] number theoretic valuation of o yields a gap as-the-integration constant to an elliptic and exponential differential cross-correlate. That of two is the threshold of point source to which the eigenfunction first becomes three dimensional into a catastrophe set. Roughly there is the 1 : 1 proportionate cross-over of 'below threshold' and 'above threshold' that of 3; therefore three dimensions is the critical dimension for self regularization and attraction of charges; that of symmetry breaking is invoked by any bistable reactive element of reverberation; meaning; all frequencies are summed for therein what lies of the secondary octaves of a trichordic wave. The only composite solution is to find that above a critical state, three electron's obstruct to enable two electron's to fall together.

Intermediate Conclusion

That of:

$$o. \sim \Delta \quad (1685)$$

Therefore expresses the 'mode inequality' of a 'reductive force;' entirely consistent with relativity; but within that of a semperent calibration rolled inward. To what is this individuated space; it is not known; but that validity focuses relation; individuation focuses potential.

There are a few relations here of a contributing nature:

1.) *A doublet-reductive interferometric balancer and synchronization engine... of which follow's the precept of a 'modal inversion' and 'reductive force'... a DRiBse.*

2.) *Ordinal theorem of qualitative control of chaos; (3).[2] of freely held gain decimates prescribed Chaos; to what is prescribed certainty as to manifest whole in optionable togetherness of [3].*

3.) *Modal inversion and reductive force lead to manifest order; Via that of 'Graph Stitching' in the Indical Calculus; to what is an eigenvalue eigenvector inversion; with an Energy Gap.*

Comparatively, the difference in the quotient space for a local relation differs from that of a global relation; for that of separation of 'scales' and separation of 'places' to which regulate around (primary, secondary, or tertiary to) that of their their own segmented relations; in a virtually infinitely co-extensive quasiperiodic space. To what is light, time, mass, and sound; these transconduct as through a cantilever to which alone; word's are supportive of genelection and mannerism of conveyance to sociological apportion; number's being befit for a local space; but mapping an idempotent relation of 'place' under situational dichotomy in two; provable as to identity for in that of once-outside, co-terminable with that of situationally of an absence of a tertiary support; that of a known; that as either question in two differently is established; so is that of the applicable permanence to awareness at-a-distance; for apportion to secular order's; free of a catastrophe set.

This co-extends Laurent series to all function(s) inclusive of a product form; to which is an equivalent expression from which a factor is taken 'off the top'. The result is that the primitive seen outward inward as inward outward is free. This freely held (and unheld) radical space is the one (singular and unitary) base in four dimensions; to which prohibiting all places become one; 4th dimensional and hence not 5th; dimensional. That of what is certain is the definite 'untying' of electromagnetic frustrum's; and re-incorporation of world identities. For that of what is exemplified; we have determination that any fifth (exterior and auxiliary) point is free; therefore any two realities are freely disconnectable. That of the synopsis on the algebra is that it is an Affine Lie differential algebra... this is resolved by the special unitary group; of which suffer's an automorphism and decay's under thermodynamic conditions to a potential and kinetic energy landscape lowered by a number of conditions:

A Grand Term:

1.) Inversion of the Measurement Problem; under application to what would be 'two;' measurement proceeds via the converse of the statistical lemma; sociologically a trade of honesty for imparture and sequestered in part's; the whole is greater than the sum of it's part's; even upon that of individuals.

Option(al):

2.) For what is Quantum Uncertainty and Relativistic Factor both remaining in imparture to a depression; that of reduction in one for in light of the second of either these two is universal; leading to that of a two fold in what is any three electron's; to their mutually degenerate null condition of covariance.

i.) The missing element is that what is third in substitution for the third-agent is null relation of group to fundamental metricity (an empty relation); of that of the third observer; to which relativistic factor's explicitly do not hold an accordant measure and relationship; but of statistical mean and average.

Fundamental:

3.) Probabilistic Independence from Relativistic Argument – under application this results in a Modality Inversion and Inversion of the Measurement problem when it is prepared to a gap state on that of 2.) for what is 1.); under which the second (2.) part; reveals a population inversion; that of two switching one.

ii.) The uncertainty is lessened by in a factor of the contrapositive of relativistic expectation in the whole.

Quite simply put it is due to the quality with which the exchange constant will depart from it's given value to zero with that of velocity increasing; and the momentum will remain the same identically within the frame of a particle; but exhibit a greater than one magnification and positive curvature on that of the secondary particle; but meanwhile within it's frame; a less than one magnification and negative curvature unto it's self term of momentum. Thus we have all alignments of probability and relativistic argument and momentum.

iii.) Measurement and measured differ; in that what is measurement is co-extensibly weighted by relativity; while what is of presence and absence alone; it is the reversal of relativity; to what is obverse.

What is 'on' particle 'A;' 'to' particle 'A;' is it's reduced exchange and momentum; plus the depiction and representation of relativistic factors to which are 'larger' for momentum; and 'smaller' for exchange...

Thus:

a.) Exchange diminishes because particle 'A' and particle 'B' fit within each-other's-roles from which they are judged via each other to themselves with a relativistic factor that is less than unity on energy-momentum under juxtaposition; therefore exchange energy is diminished.

b.) The change in momentum of particle 'A' is negative because there is more quantum room for that of it's energy-momentum via a.). With 'B' it is judged with a 'higher' relativistic factor for time and space; equating with the reduction in a.) because of inversion of perspectives.

c.) The quantum exception is that either particle undergoes a 'measurement' & 'measured' inversion with interchange; to which momentum is to a higher relativistic factor explicitly to itself and the governing perspective on particle 'A'; but with exchange to a lower relativistic factor.

d.) The quantum exception (by which juxtapositions leave intact relativistic factor's) informs that either energy-momentum of exchange or kinetic energy lower's by what is elimination; therefore both particles reduce in energy; to what is equivalence; that of the genesis and source of a measurement inversion...

Conclusion:

With juxtaposition and interchange of perspectives; the lowering is universal; for that of what was a higher relativistic factor in 'A' or 'B' becomes a lower relativistic factor in 'B' and 'A'. Reciprocally; it can then be argued that the momentum decreases meanwhile for the particle it modifies the prescription thereof; it's relativistic factor increases. This is what we get when there

is an inversion of perspectives.

When particles experience time; they are on a curve; the exchange; but probability does not effect relativistic outcomes and relativistic outcomes do not effect probability; so there is a 'void' on that of any four part type of interaction. The juxtaposition of one particle for another is known as 'exchange' to which particles literally interchange identities; that of for the real world; a division.

When this occurs; a modality inversion leads to a relativistic chasm of a factor of gamma. That of gamma; therefore via A's vantage is larger for A comparative to B & larger for B comparative to A... so A acquires more time and a lesser restriction on probability amplitudes with B in presence. Meanwhile B's relativistic assessment of A is to accrue this factor for A... that of vantage; probability per relativistic unit; and relativistic unit per probability. When either reduce; the reduction of the exchange via the reduction in kinetic energy is to be interpreted as a reduction in what is yet-ahead of the current kinetic energy & that of vis-a-via that of by way of which it maintain's it's position; an ordering of factor's that of the (a) frame assessment.

I therefore found the algebra required to describe the differential equation(s); by that of a leap; the 'Massless Free Boson Theory' in conjoint with it's associated problem; with re-definition (both 'free') of 'a'. The Affine Lie Algebra...

This makes sense as a decomposition of the momentum-energy with the relativistic group; to which there is an expression of the relativistic factor outside the differential and included. Superconductivity is particular in that the division group is per auxiliary agent's of the system; in a normal system these particles are described by a variety of alternative behaviors because the group does not suffer compactification into a finite lattice of division groups of the differential source equation; and degeneracy among a two particle limit; both of which source the free part of the lagrangian as positive but with exact conversion to potential.

Mathematics

Affine Lie algebra is:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (1686)$$

Here; 'a' represent's energy-momentum; and t^m represents that of relativistic factor. What this equation represents is that mass is fundamentally reducible to a blind statistic of weighted-sum and unweighted result. The recombinatorial dilemma is satisfied whenever (8) precedes (7). But (7) is equated with measurement and decoherence; therefore the summation precedes as order before result. That of this detection of 'order' under-pin's that the relation is sequestered of it's extension. That of the above equation therefore has as it's only solution's that of bounded polynomials in the Gauss-Basis. These prescribe to no tertiary determination; and once prior the precept implicating the secondary as primary notion of massful boundedness; but it is indeed the solution of the 'Massless Boson Theory.'

This encompasses an equivalence (twice-folded (relativity)) independence among three dimensions. The co-existence of a third dimension with a two-folded geometry of relativity therefore eliminates under it's equivalence class that of but one primary and one secondary independently neitherly imputed nor not; and to which is a given in suppliance by the repetend of it's action. Therefore the third is free to inclusion at secondary precept in the auxiliary space (or interior

such a net as this); and may be moderated with to the action of a five to four fold set within.

That of what is determined is the quotient radical; to which operates as a functional argument whether separated or unseparated. Therefore the freely (neither of these) held nor unheld determination of the auxiliary holds a foundation in reality; but is contradictorily the only thing determined within a 'place' - the saturable environment. Of relation's; it remains indeterminant as to if it is either 't' which dominates to the solution set; or of 'a'; for what is real; this stands as definitively a reduction via displaced integration constant of a subsidiary dimension. With this - appreciable 'order's' are imaginable yet contained within each given space & time.

In fact

$$(\partial m) = \delta \quad (1687)$$

$$(\partial s) = t \quad (1688)$$

Are separable into a conjoint union... the measure of the measured being comparatively exactly predictable... therefore science is on a solid foundation. This alludes to a partition; to which is to higher and lower spaces; the re-arrangement of two friends to what is a third. It is the exact outcome that re-arrangement's in third's commute; despite that of us existing within a fourth (proven) dimension. For I may take a piece of paper and write on it two conventionally non-commutative triangles; and these may be wrapped in a torus; to which they are at zero dimension commutative upon for the sake of identity itself. Hence the identity of forms is empty. This means that the above equation is the exact equality of the overlap of electrons in possession of the limitation (in fullness) of mass-regularization and that of simultaneously; no-mass.

The division expressed is the qualitative expression that rest mass and quantum mass do not differ. This is the confirmation that relativity and quantum mechanic's are null in consequence; consequence only being made up of ordered set's. Hence disorder upon re-arrangement holds a bias to order; that of the outward-outward from an interior force; and the walls of the cavity. That the second order Green's function of a two dimensionally swept arc is free of containment; is that it is a container to which the walls are in either a sub-cavity or that of a reservoir elsewhere; entirely free of one projection; they possess only **one particle past's**. But; and thus; the solution is unique; it is one of a general class of elliptic functions with exponentials; that of two dimensions must intersect to produce that of a solution; and although such a setting can be written; it is devoid of physical foundation; and for that of in-expressibility of number's.

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \quad (1689)$$

Is the simplified expression... in this we see that the solutions are all either fixed - to which is connected within this theory - of the Hermite basis (Simple Harmonic Oscillator) or that of the Elliptic and Complex Exponential Solution... these are really the result isomorphically of an electromagnetic field in interaction with a charge density as well.. Thus it is the most general solution. That of the attempt at a two body what is two interpenetrating hyperbolic secant function's and exponential wave's. The conclusion is that the energy momentum is continually bound; and experiences a 'gap' for the sake of that of finite coefficient's to it's expression; or within what is two directrix; that of a manifold flow of a 'stream function;' to which percolation is freely scaled... that of the gap is manifest because there is a finite residual integral constant to that of δ and t .

This principle stabilizes every two-part system in the universe. With two bodies; instead of energy defining curvature; mass does... to which the eigenvalues of a system are composed;

the net absence and presence of subsidiary layer's of a composition; to which is empty in the gestalt for that of being a terminal end; hence the future is a fiction. Any four or more; three; or two particles determine only a past; and that of three alone may determine a future while two always do; two determine a future; and two are the solid foundation of the world; for what is; pre-causation, & entirely surrounding the elemental zeroth dimension of a system; all that is required is:

$$\delta(x) \tag{1690}$$

$$\partial \tag{1691}$$

These in the above equation remain of a logarithmic nature of curvature; therefore two solutions are the above listed; to what is a diffeomorphism the curvature of a stream function does not play a role in it's dynamic's; all are freely held and unheld invariant's;... for where they are manifest; the origin it is *explicitly declared is not co-morbid with a point on the space; the universe is therefore closed...* This prescription; for that of two point's; render's the Cornu Spiral curvature free.

For in that of light of equivalence of meter and balance; an instrument of measurement capability (for which the role - direct - of observation is reversed to a null exterior-interior condtion(al); that of one point in it's divergence is free asymptotically in the unitary group of thermodynamic and mechanical vibrations; all that energy is composed of is changing mass indexes and light indexes.

For what is two; the gravitational reduction and electromagnetic reduction diverge in a Superconductor; for while in the void of three and four dimensions; their substrata are seen but through a lens; the flow to which an equivalence of field and particle is founded on any two dimensionally existent hyperplane of intersection within that of a one dimensional arc; that of abstaction to a bubble like space; where in fact; degrees of separation are the meter; and the arc length area is the balance.

Free Evolution

The free evolution of what is one dimension lower and reduced prototypifies the three system's of Simple Harmonic Oscillator; Decaying Simple Harmonic Oscillator; and Elliptic and Complex Exponential... These are related by the Special Unitary Algebra and Superposition. This reduces molecular science to a study of interstitial guassians at any scale. The scale freedom is the support of which is supportive indeed by way of the freedom of proportional inter-juxtaposition and shape. Shape; has to do with the ordered system of form's of identities:

$$\Sigma \mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \tag{1692}$$

This is the generative drawn point of an identity; a particle's exact apportion of meter to balance and it's direction in space. The only rule for in that of dimensional reduction is that the above ordered distribution of states expresses the forms of identities in compendium in-exact proportion and shape with the forms of identites by the summation and what it reduces to for in light of the original identities. Therefore the solution is given by the solution of:

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \tag{1693}$$

This equation expresses that the first co-homomorphism of the prior in a series is an integral of separable scale of space and time. However; th equation is an identity which states that the capacity of inertia is defined by that of equivalence of scales and proportions; an exact expression mutually identical with (and anti-opposite) relativity; to which now; the prior identity is the

given reconciliation of:

1.) Probability measurements and expectations from out of quantum mechanics do not depend on relativity.

2.) That of relativistic assignment proceeds via that of emptiness of qualitative impression in/of the composite.

Instead, we have that the form's of identities; to which are determined by a free associate in the third; and a strong coupling in the second; a hybridization below critical temperature; that of the cleaved domain find's particles residual within a separable position to what is the population inversion; the reason; this energy state is preferential. Thus order re-segment's into free particles with a phase transition; to which the caveat is that quantum rule (1) may outrule relativistic prohibition to measurement..

The class invariance of the group is therefore of it's determinant ordering of symbolism with two; for here the summation of two of these equations leads now to a superposition problem. They are linear (and yet co-exist within of what is any feasible curvature of the universe). What has really happened is that the manifold of uncertainty has warped around to connect with itself; a tube has become a torus; and the freely demonstrated chirality is dispossessed of; to what is the orientation free capacity of one of these crystals; the uncertainty principle and equivalence principle represent *this* nature of spontaneous symmetry breaking.

That of outward gravitational inertia is the net sum of mass-content's; the final determination of which is prediction of a mass or energy (alone) gap. This remains the final prediction; the conclusion of which is that mass is predicted to remain an invariant for the (reversible) return from the gap state; the elimination of integration; to which come(s) from the local behavior. Hence at it's base residual; a non-inertial force produces the superconducting state; but physically it behaves inertially.

In two dimensions or with two particles the world is therefore biharmonic; while the vacuum is harmonic; or in it's auxiliary limit; to which is that the form of identities remains fixed. This fundamentally expresses that outside is what is in quasistasis while the direction inward is biharmonic. Every particle state is in fact of two body form; to what is a doublet; all the interactions (& normal action re-action events) of the universe are therefore of the following form and unit doublet u_1 :

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (1694)$$

This is an identity of the Universe; and represents the difference a priori in that of $\delta(x)$; the Dirac delta function and ∂ the differential of a relation as P and S ; profunderance and synchronicity. when these interadopt to what is a differential of a delta Dirac function as the expression of the current eigenvalue. Gradations illustrate the pathwise motion is free; but for that of a superconductor they are merely free in two dimensions as a result of possession of an orbit; the real result dimensionally reduced as a wave-function; one degree of freedom is lost. Hence superconductors exhibit no magnetism; the result of a curl free situation; for what is an antipode; the relaxation and permanent gap for in light of penetration of a vortex state; that of stationing with a free curvature and curvature under action and re-action by the simplicity of the above relation. That of the functional solutions to the above equation come in the three forms exhibiting

a 'breather' envelope.

$$S * id_X = \eta \circ \epsilon \quad (1695)$$

Reality, space, time, & matter therefore possess a proportion and shape free gestalt; of a variety that render's the world empty of scale and composed of measureless point's.

Synopsis

Properties of the Scale of Cosmological Thermodynamics

- 1.) A light cone stationary with another moving is sufficient to explain that of regularized measure; while that of two in corelative motion is sufficient to explain that of distinction of scale and measure for that of the comparative difference in the measurement of the small and large as displacements; as a gross distinction to that of the measurement; but as to length accumulated; a definite measure of comparative valuation by velocity and acceleration (path).
- 2.) More time accumulates when in a field; while particle and space are independent agents.
- 3.) A single frequency of valuation and wave number is sufficient to explain via argument that of by extrapolation as a pole or variant; that of all adjacent relations corelative to a given one space and time as setting and volume to displacement; inform configuration under alternation and juxtaposition of vantage to which relates that of environment to that of point inclusion to insurance of presence; to which the 'whole' may be reconstructed from it's parts as to relation.
- 4.) There is an exception to that of internal and external thermodynamical systems of the open and closed variety as to Bose and Fermionic statistics, to which holds free determinism.
- 5.) The juxtaposition to any two particles and their frames is anti-reflexively false; but true in leaving the results of the analysis, geometry, algebra, logic, and topology of a fixed exception.

Essential Root Conclusion for the Classical World

Conclusion: That of comparative assessment of admixtures of Fermionic and Bosonic statistics is comparable to that of study of statistical organizational patterns by that of understanding a Boson which behaves Fermionically is identical in behavior with that of a Fermion which behaves Bosonically; when the above assumptions are taken into account as empty of number.

There are under extrapolation two complimentary viewpoints of physics as reasoned internally on what is the codeterministic universe; comparative to that of the strict determinism of self organization and order; to which is the transparent and invisible contextual world of the solid.

- 5.) Caveat: Any two relations under degeneracy and juxtaposition manifest spontaneous symmetry breaking around the ground state of the consequent electromagnetic and lgravitational unification in the eventual 'future' precedent state; for that of the context of departures from either given theory of quantum mechanics and general relativity; the external world of nature; the mind; and the manifest world of structural physical and inanimate order.

Device Implications for that of an Einstein-Podolsky-Rosen Bridge

Conclusion: My device is the exception to either physical law; and therefore their point of unification beyond the undecidability of this admixture in the future; to which becomes of the adeterministic limit as of but one die cast among any number of affordance of the Bose and Fermi gas; and configuration from one separable and connected space to another; and is a unitary quantal point like self dual enclosure of light by purely electromagnetic means; to which material and immaterial property of mathematical meaning are derived through the relation of the exception to physical law; yet operational within the universe to that of the dual to which is undecidability through which a decision tree is formed on that of decaying energy states around a point like relation; of essentially an Ideal Heat Engine; identifiable in this given limitation as a past within the present of supporting conditions; based on ordination as the given exception to physical law contained in the laws of physics; a reversal of entropy.

Compendium on Physical and Mathematical Law

Phenomena are enumerable and contain exceptions and are many; phenomenon is; one; true; and undecidable and hidden; but provable; contained within the universe through language.

The mathematical exception of the Universe is provided by the empty anti-reflexive principle to which absence indicates presence; a logically true bireflexive relativity in physical law.

Consideration of the Exception and Admittance of Transference of Thresholds

Any two thresholds proceeding from what are but one; by contradiction under presentment of that of their alternative one; exclude of the former in either direction of time; for that of what of which is space; free admittance of the missing position of ordination and order of position.

Any three fold ordered relation by undecidability of the tertiary element remains hidden as neither contained nor uncontained; to which any secondary inclusion positively affirms it's center among the alternative two; to which therefore for each; any primary indication of one or two formative affirmative truths implicates truly mutual inclusions of any three elements.

Extrapolations...

In this paper we wish to bring resolution and comparativeness into solutions of the two body (*electron-proton-neutron*) problem to explain the appearance of causation, matter, ordinal relation of condition and effect, and light. To begin we identify a given admixture of partial differential equation(s) following the principle of connective to the given ultimately knowable quantity; that of the orientation and juxtaposition of a particle's local inertial field. Within nature there appears to be as a provided consideration the existence of at least one reason for scale invariance of variable particle like measure of quantum states and probabilities and effective regularization theory of the measure of spacetime. This is the statement of general covariance within the addressable provision to a principle of comparative equivalence & complementarity, by which one may speak of identical states in space; of appeal to our notions of the persistent and passing of time within a physical world. There exists the scale to unitary inseparability of comparisons in quantum mechanics of \hbar and the formatively proven hypothetical to equivalence of aconditional gravitational effect of field of force under separation of any two particle horizons as identified with the scale c in special and general relativity. This invariance leads to the additional conclusion that the description of a state is *generally covariant* under transformation in spacetime & *of a principle complementarity* of probabilistic nature. The classical nature of observation must in

part be reconciled with the quantal and relativistic. Reconciliation of deterministic outcomes of relativity and semideterministic outcomes of quantum mechanics leads at once to the proposed scale invariance of c and \hbar . This is directly identified with the proposed *Principle Equivalence of Comparative Complementarity* of quantum states and spatial & temporal ordination.

Introduction

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in all known materials. Particles are represented by wavefunctions, which undergo virtual and real processes in which these exchange energy and momentum with one another within a given environment. Gravity on the other hand, is equal to the qualitative theory of the geometry of space & time taken to it's end in the unconditional ceasing of gravitational force in consideration of the statement of free fall. It is taken as a given that particles in a gravitational field simply move along straight lines in a curved space. Therefore; a complete theory of quantum mechanics and general relativity begins with the precept of straight line congruence of free motion and capacity of ordinal relation of comparability in either theory so reconciled as the equipartition of a knowable field.

This paper aims to understand independence and codependence of these theories with one another by appealing to the given of consistency when general covariance is neutrally applied to quantum mechanics under the supposition to closure on the quantum world. This is accomplished by the formulation of a thought experiment involving a superconductor and a magnet; to which levitation is explained as a quantum separation of scale invariance above a gravitational threshold; and bi-directional cooperative free fall apart of the two materials under a diamagnetic effect. In a superconductor, a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations below which electrons are in departure of a scattering theory; explaining that only a qualitatively pure theory of true phenomenological origin may explain their vanishing thermodynamic contribution. Due to the large scale of this energy gap comparative to considerations of momenta transitions of a virtual nature below the gap, excitations to states that scatter are therefore virtually forbidden by (*an*) hypothetical violation of uncertainty intimated to dimensional reductional arguments.

The consequence of an electromagnetic potential and quantum residual nature of frozen isosymmetry of global invariance manifests therefore as a condensation process to which there is reversal of iso-inclinc degrees to a null winding point in the relativistic theory. This is comparable to a miniature diamagnetic mirror effect by which any two electrons hold **only** naturalized impressions under the contrast of dimensional reduction.

The closure of the state 'back-upon' the hole attractive phase is locable therefore as an openly intimated connective of ordered relation to free transposition of temporal congruence. Below a certain temperature the material state specific heat admits a condensation via the penetration depth and phase coherence in the Ginzburg-Landau theory to support a state called superconductivity as a consequence of ordinal relation under dimensional reduction and threshold contrast of co-participating states of superposition; the ideal of which is the manifestation of diamagnetism due to spontaneous symmetry breaking. The reduced state is therefore iso-inclinc as a result of it's reduction to a causeless effect; the certain determinant of which is separation under cooperative reversal of the laws of physics in a thermodynamic potential of a pure 'acausal disconnect' of 'conditional effect' under the provisions of a prepared magnetic and gravitational

potential.

The final difference of these included considerations is that one enqueued spin or charge variant is unseparated but isolable from that of mass; to which either fractional decomposition of states isolably yields a pattern congruence and isopotential of secondary enfolding of their two natures via 'hole-void' & 'charge-spin' structure to which a metric notion retains one individuated contrast of magnetic disordered relation within that of its electromagnetic potential threshold of effective isolation and reductional mutability under the provision of temporal quantum prohibition of intermediary disconnect. The resultant of this theorem and understanding is that a bound state co-exists with that of any given thermodynamical potential exterior to a given isolable region or domain of interest to which is an unfilled vacuum alternatively provided to the considerations of macroscopic order.

Covariance and Complimentarity

A 5th order quasiperiodic theory is settled by in the threshold mechanic of pentalty to temperance of a consolidate unit'ed envelope conditional on the bi-set of vacua and diminished order spaces; with specialization to occluded return of any two co-simultaneous tertiary or secondary observers; admissible only in that of our dimension. That of the auxiliary state is a guarantee; however; when individuated as a machine among (or tertiary to) that of an assembly-state; the provision for the ideal heat engine violates the exclusion principle; adopting that of a 'secondary' provision under optional; or dis-enjoinable end-gas-states. So as one cycles within a relation there is ideal dual-complex exponential and digraphical elliptic notion of wave structure on that of one end of the Spiral of Cornu or-incidentally; back.

The patterns that are witnessed in the HTSC's; etc, are phenomonology of two dioptically overlapping one another in the Random Approximation Limit; but do not reach the holographic tri-critical point until a process of descent of what is a held diopteric difference in consideration of levity for potential; to which the in-exorable machine limit-state is deliminable for then in a topological union of complex, real, and imaginary. The fundamental statement proposed is that a stripe is the dual of either that of the bifolded (two-fold) in one [shared] or [unshared] piece of paper to what is two and two in 'separable' sector's; therefore that of bi-section to freed principle; the topological embedding the 'natural embedding' of a Poincare Disc glued twice over to a circle.

Therefore the two mapping's in wave-argument to dual cavitated spatial occupancy of zero extension. A pattern evolves which is differentially explained but to which is predicated on that which hidden variables but not exchange by Pauli would exclude; but for a caveat to statistical mechanics on a Hamiltonian and Lagrangian space. The second differential (for what is a property of physics theorization; that trial's do not contribute to what is moment's, identities, disclosures, openings, and constructibility); freed, is more expressive and motile than the disappearance of a manifest first differential Laplacian; hence order in time is an ordered string of [2].0[2] etc... This is co-extensive enough that the second differential is what a system reduces to; the first differential may be numberlessly discarded.

Introduction

The first relationship of importance is that of the equation which dictates that of by way of which *the results of relativity do not alter the probabilistic outcomes of quantum mechanics*. To a dual edge this is the statement that *only* a statement of exclusive and definite measurement can assail an

infinite and zero probability of Dirac order; and only measurement is a decisive factor after-the-factual presentment. It is however to be questioned...

Given probabilistic and relativistic considerations are dependent on coordinates of position and momentum; the equation that expresses independence of statistics is intimate to a series of (co)factor's unmanifestly dissipative and co-terminable with entrance. That of one fifth relation is not in assembly; for what of the Green's function to contain a zero-dimensional fractal as such; but to-here; the quantum expectation of a gauge probability flow reduces to a null conditional pre-cept of mutually 'outside' [a] place; to a non-descript zero dimensional point like limitation within the predicated and hypothetical quantum liquid/fluid/solid (as dependent on crystalline and potentially aperiodic foundational number-sum) of indiscernability (and separation into a past for of degeneracy to (5) and (6) dimension's; but also any crystal extrapolated from a Fourier Transform of a de'Hass'Van'Alphven wave structure:

$$\Xi \equiv \Xi \rightarrow (\lambda(\epsilon), \lambda(\rho)). \sim (0, 1) \quad (1696)$$

From The Equivalence Principle (herein equally weighted in frames):

$$\frac{\partial}{\partial t} \equiv \gamma \frac{\partial}{\partial t} \rightarrow \gamma^\mu. \sim \eta \in SU(2)[U(1)] \quad (1697)$$

The Lie differential; which is designed such that the covariant differential and the one-form differential commute is a good candidate therefore for derivation's to speculation; it's core statement of commutativity one of freedom of the one-form γ from statistics Ξ :

$$L_\Xi(d\gamma) = dL_\Xi(\gamma) : \omega_1, \omega_2 \quad (1698)$$

Together; this is nothing more than that the Shared Proper Time is equivalent to the Covariance in Uncertainty.

With this we have the relation:

$$L_{f\Xi}\gamma = fL_\Xi(\gamma) + df \wedge i_\Xi(\gamma) \quad (1699)$$

Together any two qualitative limit's of what are 'property' and 'proportion' of 'shape;' in-exclusively contain a convex space within it's margin; and qualitatively convex as to mapping; therefore of evaluation of statistical calculi; that of re-apportion of functional deficit factor's the equalitative product of spatial and temporal variance within elliptic expression; in reduction by a covariant-factor of advance and diminishment (exponential) upon two acasual arrows; to which the center of energy and mass is 'on-mass-shell;' That of the metric relation of infinite spin's 'devoured' by the basis; the interior transformation groups of these equations.

$$f. \sim (0, 1); \quad L_\Xi(\gamma) = df\Xi(\gamma) \quad (1700)$$

Thus the end condition is perfect heat to mechanical conversion; that of one third back in physical form; and three involute to two determination's of inward place; *unto control, precession, impartiture; of reflex, impulse, and co-determination.* Thus a physical relation must break down to what is a quotient of (2) within; merely a null-centre; of that of the quasiperiodic and non-periodically randomized state of no-approximation.

$$\tilde{\omega}. \sim \tau \quad (1701)$$

This expression is that of by which a factor of a functional form to the manifold of statistics of 'motion with deformation or transformation' is free of the relativistic characteristic common denominator of the Equivalence Principle homomorphism and the stationary state of the Quantum Description. This statement represents the preservation of the heat equation.

This is the substitution of one particle freely within one held space into another; so that one particle may co-occupy one space with another; or be unseparately sequestered aside to the departure to countable differences of its evolution. Therefore we may take; owing due to these prescriptions:

$$\Phi(x, v, t) = \eta e^{-i(\kappa\theta + \tau\phi)} \leftrightarrow \Theta(x', v', t') = \rho e^{-i(v\mu + \epsilon\psi)} \quad (1702)$$

Therefore an apportion to a mean holds an invariance and an equivalence. We will find this is nothing more than the declination to a tertiary observer; for in that of one juxtaposition to its closed end; in the 5th; the end openable is the 4th to the preceding of ordinal calculi; for that of derivative coordinality groups; for then in what co-exist's; the then limited four dimensional enclosure holds the freedom of light from matter.

Then; to what is a real result of probability; it is that of unenclosed bearing on the relative principle and the emptiness with the quantum principle; or; that of the quantum principle empty in relation to the relative principle; is to that of freedom of isoclinic relation; an established direction to heat and momentum exchange within the non-linear dynamics; here considered; entirely and alone of physical application to superconductors; but of derivative principles for pedagogy. Therefore there are two types of system for consideration. The first question is:

Question I: *Do any or alone only unbound & unbound [is it exclusive or inclusive to which case;] systems [therefore,] obey the same spin-statistic relations?*

The equations first presented lay the prescription in place that of by way of which any two observerables as measureables ζ and ξ may hold an identity with measurement process:

$$\zeta\Phi = k\xi\Theta \leftrightarrow \zeta\Theta = k^g\xi\Phi \quad \epsilon\chi \quad H\chi(g) \quad k = \pm 1 \quad (1703)$$

Where g is the boson-number; the genus number; indicating the number of holes in the space of its topology in a Hilbert space (\mathbf{H}) with topology $\chi(g)$.

It holds naturally that if the number of holes is even ($g = 2 + b$ & $b = 2l \ l \in \mathbb{Z}$) that the spin obeys an even-statistic; and if the number of holes is odd ($g = 2 + b$ & $b = 2l + 1 \ l \in \mathbb{Z}$) there is a rotation of 180 degree's in the spin-theorem; hence the sign flips for interchange of particles. And the k is (-1) for Fermions; and $(+1)$ for Boson(s).

The Spin-Statistics Theorem versed in this manner provides a connection between the space-time and the quantum properties of objects as particles in the space-time.

Representation Theory

In the continuum of the probabilistic operators any mutually factorable relation into which the solution is also a given solution of the equations:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (1704)$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \tag{1705}$$

Is deterministic.

Hence; any operator that admits in a dual-sense two conformal relations in logarithmic reduction to a common factoring exemplifies the naturalized relation of (2) *time's and space's* to which is the extension of quantum mechanics above the theorem's of relativity. This find's it's way into the Dirac equation for the electron by that of the intimation of a field-conjugate momentum; to which is shared or unshared; and assists in deriving that of a *new* expression for the multi-body problem; in which the two body problem can be subjected and decomposed.

This is nothing but the statement that: *The rate-period of time is a congruent relation in the particle representation to which is empty; and to which the two-body problem may be separated into the one-body problem of which there are two.* This is consistent when there are taken to be two spatiotemporal projections of the particle operator. These projections are no more dissimilar than the 'functional representation' and 'particle representation' of a particle or multi-particle system, *and exist because the particle is empty.*

Therefore;

$$\partial_{\mu}t = 0 \tag{1706}$$

Expresses the emptiness of time; to which all supporting statements of this paper affirm.

With:

$$\cdot \sim \tag{1707}$$

An expression of a neither nor shared light envelope of illuminescence; to cadence of a Lamp freely-lit to invisibility below an alternative two juxtaposable place's with projections & the statement of unto another and a place; or two to occasion; or four to differently establish; or five to equably pass on; or six to espouse or entreat; and of seven; to equalidiate. Therefore of co-linear equivalent extension outward inward and inward outward for what is two to two; expressible only that as the equivalence principle derives to two properties [a metric and a mass] that of the freed electromagnetic theory is broken on the gravitational; as the gravitational is negative to orbital coupling under a reverse-surjective phase orientable traversal of temporal co-extensibility to a union in five to a third; any even-faceted two to a third of mitigated arc.

Therefore in either [explicitly held] the outcome is non-determinant between any two quantum and gravitational limit's but unpredictable; yet within an openable and extensibility to freed self intimation and juxtaposition; for what is co-determinant; as an absolute physical norm of the space. When we consider what is resumptive of the 'actual' to what grow's outward every-where else of the topological function; and with a heart; body; and mind; the truth of form's *are* for in what is found of life; for these are bound to a mortal coil.

Of it's freed ranges; the security of a pre-cept from it's imported dextruous nature is the cleaving unto the alternative of self found as [within conveyance] via a means of two; under adoption of the willingness to encourage the dexterity to the task... That of what is presented therefore is that the only discernable and observant condition [once-expressed] of identities is the following two principles:

Canary Principle: For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices [among a count] to answer absence unto it's own.

Banana Principle: **The banana principle states two are unprecluded from foreknowledge in yet a third out.**

Statistical Admixtures

It holds as a lemma; that the statistics are therefore empty of relation in a given comparative assessment to relativity; and that relativity does not alter the statistical properties of a system. This (infinite) barrier of a theorem presents alternatives only found within the global properties of a system; to which it is also global. The *free capacity* to include a differing Δ from Λ is the extension of the differentials. This therefore proceeds along two lines; that of either a principle equivalence or a principle in-equivalence; the variables decomposed by either **log** relation. The proof is reliant on (surpassing the infinite obstacle of integration of these two theories); at that of assuring that one viewpoint is equivalently as-consistent with the other *relativistic* frame-argument. This two-fold relation is essentially that:

$$(i\hbar\gamma^\mu D_\mu - mc)\Psi = 0\Psi \quad (1708)$$

But here; that of 0 is differently established because *on account of the second particle* there are **2** *two* solutions to the original single-particle state... That of:

$$\gamma^\mu D_\mu \leftrightarrow \gamma^\nu D_\nu \quad (1709)$$

Hence for in light of two bodies;

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (1710)$$

Both describe the *same two particle system* from what is yet two-different-relativistic descriptions. That of relativistic assurance is found then in the degeneracy of which is that:

$$\Lambda\Psi = \Delta\Phi \quad (1711)$$

This ensures that their energies are equivalent and four-momentum descriptions of each particle are too; possibly up to an interchange. This ambiguity is afforded as the second particle has altered the description of the first particle. To see that this **this does not** alter the relativistic description is to see that reversal of viewpoint and 'objective' does not alter the image under **initial** composition.

Either of α or β are equivalent by equation (5) of the paper; to which when either particle (to which is empty) alter's the representation of it's conjugate particle it does so from the alternative of a self-and-world to which is **two**. That of world and particle versus (with world and particle in the formative and former position) does not alter the outcome of the result of the first particle (1); and, *without exception; that of their statistical intimation is left unaltered for-in-light-of projective dis-similarity of neither upon the world.*

This 'neither' of which is undecidable from the other side of relativity; is the incomparability to which *probabilistic interpretations are independent of relativistic prescription*. It is also the imperative that physical law is *empty*. Therefore we may freely take:

$$\Psi. \sim \Phi \quad (1712)$$

With the transformation and in-equivalence of τ and ϵ affording that of factoring into superposition's such as are re-compositional *linear* states.

Hence, a theory that incorporates an *equivalence principle* invokes **two** times, a *proper time* and *improper time* as a projection of the two body problem *within the context of the equivalence principle to which must lead to equivalent physics*. Casting one particle to its *probabilistically neutral provision as granted the prescription of the equivalence principle* grants the other particle to possess that of probabilistic independence with co-mutual occupancy under the 'tertiary' - third observer **out**.

Abstraction in Conclusion

The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (1713)$$

By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1714)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1715)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows its consequent experience of time deduced from motion depreciates its partial differential in the other frame.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (1716)$$

To which is the derivative solution to equation (5). Therefore that of a fifth dimension is made to exception in the second; that of apologia to consorted effort's of collapse; only a univariate carrier of outside 'roll' to interior (pentagonal return); 'roll' will co-determine a vacuum from a discriminant black body noise; at absolute zero; the external 'via' of a 'class' to which is an 'apologia' in yet 'character-assignment;' freed to these in the tableau of proper derivation from the summation convention. That of the commutator of the partial is the expression the Lie differential with respect to Ξ in equation (5) is the manifest holographic principle reflection in-machine-&-in-world.

That of the holographic principle:

$$S * P = \iota P * S \quad (1717)$$

And:

$$P * S = \iota S * P \quad (1718)$$

So it is for lack of a better expression that the identity relation is ordered; and by supposition of the counting theorems; identities are ordered:

$$\mathcal{O}(\iota) \quad (1719)$$

An expression that the identity is that which is neither one but two and two to what is no three and uneliminable declination of four in preceding from five; of dimension; therefore by two under pure-codimension of 'sheaves;' there is a bi-reductive free (2) two limit's; to what is sequestered of equipartition to the fifth and the sixth; a rung freed to the equippable return of yet a fundamental of this world; that reductively from three; two would be an apportionate four or three; then of other's equability; and return (two-folded) deficit below reversability of one sigmoid.

Therefore the identity is the inexpressibility of *time, space, order, individuation, and inseparability or unencloseability forming through shape*. We may now describe shape to constitute a group in

vacuua; for that of ι is the manifold ideification of a separable co-adjoint *unitary group* of co-extensible dimension; a three dimensional critical point; and reductive asymptote.

The non-linear statistics of comparative densities in position and momentum under an abridging $SU(2)$ algebra diminish the accountable energy in argument's dependent upon these via superposition and exchange.

Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) - \alpha^\mu\beta^\mu\partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1720)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu\partial_\mu)(g(\tilde{\omega}) - i\beta^\mu\partial_\mu)\Psi(x, t) = \Lambda\Psi(x, t) \quad (1721)$$

When written out we have two equations:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (1722)$$

The first equation read:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} i & 0 \\ 0 & i \end{pmatrix} \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (1723)$$

This is enough to get that the general equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (1724)$$

With elements $\{\eta\} \in SU(2)$ are the same *superposition* equation with solutions in the Dirac basis.

Beginning with the equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| = \det |\theta(\tilde{\omega})| \quad (1725)$$

We have that:

$$\theta(\tilde{\omega}) = \theta(v, \tau, \alpha, \beta, \tilde{\omega}) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad \Lambda = \tilde{\omega} \cdot \bar{\omega} \quad (1726)$$

So;

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \quad (1727)$$

To which is two eigenvalue equations in linear form:

$$\eta(v)f(\tilde{\omega}) + \alpha^\mu\partial_\mu = \log(\Lambda) \quad (1728)$$

$$\eta(\tau)g(\tilde{\omega}) + \beta^\mu\partial_\mu = \log(\Lambda) \quad (1729)$$

The Dirac equation is therefore separable into two different one-body problem/solution pairs:

$$(\eta f(\tilde{\omega}) + \alpha^\mu\partial_\mu)\psi(x, t) = \log(\Lambda)\psi(x, t) \quad (1730)$$

$$(\eta g(\tilde{\omega}) + \beta^\mu\partial_\mu)\phi(x, t) = \log(\Lambda)\phi(x, t) \quad (1731)$$

Thus:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (1732)$$

Becomes:

$$(mc\zeta(\tilde{\omega}) + i\hbar\alpha^\mu\partial_\mu)\psi(x, t) = \lambda\psi(x, t) \quad (1733)$$

And:

$$(mc\xi(\tilde{\omega}) + i\hbar\beta^\mu\partial_\mu)\phi(x, t) = \lambda\phi(x, t) \quad (1734)$$

With a wave argument on the inertial mass of which is ζ or ξ ; where:

$$|\zeta(\tilde{\omega})|^2 + |\xi(\tilde{\omega})|^2 = 1 \quad (1735)$$

This constraint is nothing more but the restriction that the total probability for *either* electron add up to 1; that it be located 'somewhere' and it's mass conserved, the result is then two Nonlinear Shroedinger Equation's:

$$(\eta|u|^2u - \sigma u_{xx} + i\rho u_t)\psi(x, t) = \lambda\psi(x, t) \quad (1736)$$

$$(\rho|v|^2v - \sigma v_{xx} + i\eta v_t)\phi(x, t) = \lambda\phi(x, t) \quad (1737)$$

Further Calculation

We begin with the two body Dirac Equation:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\psi(x, t) = \Lambda\psi(x, t) \quad (1738)$$

The question is if under:

$$\mu \leftrightarrow \nu \quad (1739)$$

With superposition; the equation will reduce. First we have (re-written):

$$(\eta^\mu\partial_\mu - 1)(\eta^\nu\partial_\nu - 1)\psi(x, t) = \Lambda\psi(x, t) \quad (1740)$$

For what is identity is the meeting exceptionable (non-exceptionable inclusion of) a continuum to the bi-jjective law; under ordinancy to any two character assignment's of this world. Therefore relativity remains to hold with-in an interior limtiation; of that of three for four fold to two fold valence; but of a second-and-adjacent quasi-crystalline space of adjoint void space(s). This cuneiform is therefore an intimated 'end' within an 'end' of the dispossesable (in recirprocity) exchangeable sixth outside object-principle; of which the group(s) reactives into two of absence and presence; to the intimated end that among three 'here' functional's; the self is defined; via and identity to which is inseparable and inexchangeable.

The deficit is to that of three: re-transformative into two or two; a null end of a thought experiment; but yet quantum states exist beyond the double dual exchange accompaniment; to what is any unlimited set in yet raising the third under transferrance; and a lowering of the second spin. The co-adjoint determination of another is the seamless consequence suffer's to the other for dis-inclusion unto yet an adaptive third; to what is sunken in cost; there is apportion and sequestering; so that as of the Banana & Canary Principle(s) would allow; three are co-determinatively afforded co-existent mean prior (2); of a strict in-equality unto breaking into two through the via and back between any two adjacently connected point's of reality; neither 0 [**zero**] &-or 1 [**one**] to the limits of 'background' objective physics. The commutation represents the elliptic and exponential con-joint relation of light-cone's; to which when divided; recompose to simply

a property of an object; for their shadow-function is simply a one dimension bijective flow of 'unilluminated'. Under exchange it is:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] \psi(x, t) = \lambda \psi(x, t) \quad (1741)$$

But then; we can insert the identity without changing the commutator:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] I \psi(x, t) = \lambda \psi(x, t) \quad (1742)$$

Where:

$$I = \{\eta^\mu, \eta^\nu\} \quad (1743)$$

Therefore; and we find completion in two relativistic projection(s) derived from either's inward reflex and impulse as encoded in the isosymmetry derived from proportion and shape; that of the equation (5):

$$[\eta^\mu \partial_\mu \eta^\nu, \eta^\nu \partial_\nu \eta^\mu] \psi(x, t) = \lambda \psi(x, t) \quad (1744)$$

Or:

$$\eta^\mu \eta^\nu g_{\mu\nu} \psi(x, t) = \lambda \psi(x, t) \quad (1745)$$

Alternatively:

$$\bar{g} \psi(x, t) = \lambda \psi(x, t) \quad (1746)$$

It is in-expressible whether:

$$\bar{g}. \sim \lambda \quad (1747)$$

Or:

$$\bar{g} = 0 \equiv \lambda = 0 \quad (1748)$$

In other word's; the eigenvalue to exchange is indistinguishable from the metric relation of the spin algebra of inertia; that of the weight of the physical assumptive of inertia in the Dirac equation an identity with that of it's weight geometrically owing to energy; not just space and time. ***and not just mass.**

$$([\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] - \lambda) \bar{g} \psi(x, t) = 0 \quad (1749)$$

Written out this is:

$$(\eta^\mu (\partial_\mu \eta^\nu) \partial_\nu \bar{g} - \eta^\nu (\partial_\nu \eta^\mu) \partial_\mu \bar{g} - \lambda \bar{g}) \psi(x, t) = 0 \quad (1750)$$

However by that of the the principles outlined; that of the two views of one particle can be further scrutinized to single particle field and particle spin-orbital momentum; for in that of the whole ensemble there is not only one particle bound to another; but *a condition for separable equivalence principle and complimentarity invariance footing*. Penultimately this divides the description of the particle upon exchange into one element of which is of it's manifest Lorentz covariance; and another of it's Shared Proper Time. As:

$$([\eta^\mu \partial_\mu \log(\bar{g}), \eta^\nu \partial_\nu \log(\bar{g})]) \psi(x, t) = \lambda \psi(x, t) \quad (1751)$$

Then to an exchange state; for which the commutator is evaluated and the middle term's drop from the general expression (here η is an operator for spin and orbital uncertainty exchange constant...):

$$\left[\tilde{d} \log(\bar{g}), \tilde{d} \log(\bar{g}) \right] = \lambda \quad (1752)$$

Which when expanded becomes for the particle momentum:

$$\left[\tilde{d}, \tilde{d} \right] g^{\mu\nu} = \lambda \quad (1753)$$

Then; it is also true:

$$(\tilde{d} - \eta)(\tilde{d} + \eta)\Psi = 0 \quad (1754)$$

And that:

$$\sqrt{\lambda} = \eta \quad (1755)$$

Since the eigenfunction must be satisfied in a basis; the commutation therefore hold's for the first state:

$$[\eta, \tilde{d}] \Psi = \lambda \Psi \quad (1756)$$

$$\eta \tilde{d} = \lambda \quad (1757)$$

This only holds true if the field momentum equation is as follow's:

$$\tilde{d} = \lambda \vec{\sigma} \quad (1758)$$

These represent in the first the spin-orbital coupling potential energy at a minimum; to which is related to exchange of spin and orbital degrees of freedom. This spin and orbit would then be a transition of the spin-orbital condensate. In the second; it is the curvature condition; with $\zeta = \zeta^{-1}$ and anti-Hermitian. For that of the reduction to an eigenstate; there is a Ψ ; the net wavefunction given by:

$$\Psi(x_\mu) \quad (1759)$$

The natural separation into particle and field momentum can be found as a consequence of the independence and equivalence of the quantum unit of probability in a two body interaction. The equivalence of 'weight' λ in either view is the invariance of complimentarity; that penultimately interchange of particle and particle description identity leaves results of measurement unchanged including that of relativistic consideration.

Symposium

There are three ingredients to superconductivity which must be demonstrated. We will proceed in a linear fashion; beginning with 1.), then 2.), then reaching an understanding of 3.); then these will be moderately 'put-together' into a robust theoretical framework; then; there will be an introduction to the experimental motivations for invoking the model system; a treatise on that of implementation of the theory with phenomenological evidence; and then finally; calculation of results and a conclusion. This model presentation is offered as in replacement of prior work's in which the work was undemonstrative of a logical proof based system of verifiable hypothesis. The aims offered in this paper are more to the adjustment in theory required to make sense of a physical world within light of the existence of superconductivity; but where appropriate common sense has been appealed to. That of the results intend to make no implication about alternative areas of physics; but where appropriate prohibition to allowance for what would lead to contradiction in another area of physics has been noted. As akin to the manner in which space and time 'fold' to create a finite circle from an infinitely long one; when an orbit is analyzed of a straight line in a curved space & time; as when superconductivity is manifest; the finitely long line of interaction 'folds' to produce an infinite orbit in the curved space & time of the interaction. That is to say that the antipodal relation hold's; and that the less-than-unity normalization group of the spin; (to which is four dimensional) relaxes the orbital constraint to it's-fullest; that of a gauge group then to which is negative in conversion of magnetic becoming electronic and electronic becoming magnetic; with a reduction from the speed of light rather than an accumulation to the speed of light; as if participating on the other side of a mirror. This demonstration states that all additional that is required is exchange of field for particle pro-perties; and that of the charges

will attract within the ranges of a standard deviation; there being two wave like frequencies and wavenumber's the result of a phase congruence with conversion to angular coordinates. Without further disclaim; the offered supports of superconductivity are in three:

1.) *The non-linear **product 'covariance' rule** formation of two distributions with a negative exchange (J) in individually prepared Shared Proper Time with a local minimum generates an experimental bind of trading of the index on one measurable for another; that of the inversion and reciprocity of the law's of physics potentiated by purely statistical means...*

2.) *Non-linear **product-rule** superposition under exchange with comparative probabilistic 'complementarity' of either particle's independence from relativity results in that of the admission; by way of the twin-paradox like intimation on relativity of measurement inversion, to what is indistinguishability of relative and quantum contribution's to lowering in energy...*

3.) *That of measurement inversion with spin and orbital momentum under exchange for which one particle and it's world view will not afford the altering of another particle's prescription; affords, given that exchange is negative and the **covariance, positive**; the inversion and substitution of the electric for the magnetic field; and vice versa with relativity...*

Therefore there are three reasons for attraction of the electrons in superconductors of the high-temperature variety. First; exchange is negative and probabilistic assignments are independent of relativity; with the distribution rule on that of standard contributions via a two body problem in what is the shared proper time versus proper time is equivalently balanced; and that of a local-inversion of the deterministic factors of the theory occurs.

- 1.) A quantization condition is reliant upon a spatiotemporal positioning and orchestration of terms.
- 2.) When the manifold condition of a curved space under-declines repose; we get a splitting of energy.
- 3.) Therefore one manifold prescription under a cleaved sheave for then unto two eigenvalues emerges.
- 4.) The splitting is a prescription to electrodynamical theory breaking under a source, sink, magnetism.
- 5.) Probability discriminant's fold the elementary symbolism of equidistance to infinitely separated end's.
- 6.) For what is contained in two or two is three and one to reduction in equivalently displaced potentials.
- 7.) This imputes a relation of directrix enfolding focus; and reversal of measurement to eigenvalue status.
- 8.) Metrical relation is a null condition with that of spin metricity; to which electromagnetism vanishes.

- 9.) Quantum wavefunctions defy Pauli Exclusion to null repulsion via passing beneath an e.v. enfolding.
- 10.) The manifest retro-inversion of a population in two's decimates in energy argument equations of state.
- 11.) A spontaneous symmetry breaking is present, a gap, and a phenomenological behavior of it's unit's.
- 12.) Indeterminism to what is particle & wave; hold's the precept the 'particle' precipitates it's capturing.
- 13.) Inter-adoptive exploration of one dimensional arc width are devoid of doublet anharmonic inversion.
- 14.) Therefore; the principle qualitative element is that probability fit's more recurrently within space.
- 15.) To what is a disconnective or connective; moderacy of spin and orbital measure interchange is unitary.

For what is complimentary of comparatively equivalent time signature and self solitary provided and insured proper time to shared assembly via statistics; for that of either probability fitting within relativistic space and time (inward reflection); and that of it's dual capacity upon yet what is an instance of equivalence in weight unto the apportion of experience of probability and relativistic deformation; that of independence in statistical measure causes a uniform co-participation of these given *Theories and exemplifies unification and separation of their forces; indeed; Gravity & Quantum mechanics within the same atom; a lower in energy result's via the spontaneous symmetry breaking contribution of electromagnetic energy to the two electron's.

It is also true that:

$$\beta = \frac{v}{c}. \sim \beta = 1 - \frac{v}{c} \quad (1760)$$

As a result of what is taken 'to' the mirror rather than 'from'. As a consequence what is a distribution of probability must be re-interpreted as that which give's rise to expectations; around which there is uncertainty in results; the central result being certain for in light of *two theories*.

The next reason is that particles find indistinguishability in that of their 'Quantum' and 'Relativistic' contributions to mass-energy-momentum; of which what is observed is a universal energy lowering in charge and spin. That of separation from spin (to which is left with freely held Non-linear Shroedinger Equation Solutions) contributes therefore the full $4J$ to the gap at the lowest perturbation or temperature.

The results of what are the relation of this being a genuine energy lowering or that of a reduction in a repulsion are therefore that it is a genuine lowering below a general reduction in repulsion; and may be seen as a reduction in repulsion beyond the limit of it's genuine lowering in energy-mass-momentum.

The general description is that relativity and the properties of statistical normal distribution of

variance exhibit a two body null covariance; therefore electron's are mutually force-free but at a reduced energy of the 'seemingly separable' conjoint expectation of exchange.

Antasz

Beginning with solutions of the variety:

$$(|\zeta|^2 \zeta - \sigma \zeta_{xx} + i \zeta_t) \phi(x, t) = \iota \phi(x, t) \quad (1761)$$

We have the Ansatz:

$$\zeta(x, v, t) = \alpha s n(x - vt, m) e^{-i(\omega t + \kappa x + \phi)} \quad (1762)$$

Used in (59) we have:

$$v = 2\kappa\sigma \quad \sigma = \frac{\alpha^2}{2m} \quad m = -\frac{\alpha^2\kappa^2 + \alpha^2}{2\omega - 2\iota + \alpha^2} \quad (1763)$$

So it is that one solution can be intimated within a connective (think SU(2)) algebraically from one subsidiary manifold space to another... for example when the modes are in-actual entrained or defocused; and when confinement (then provable) takes place because of their non-linear sum/product relationship.

Origins of Unification

When the two time's for that of the log term's are applied to the differential equations; we see a reduction in their mannerism in expression of complexity; for then the threshold eigenfunctions must surpass to become a reality is determined. That of the logarithmic equations suppose that a given is that there is reciprocity between subjective and objective worldviews. Therefore for:

$$\frac{\partial}{\partial t} \leftrightarrow \gamma \frac{\partial}{\partial t} \quad (1764)$$

We have:

$$\eta(v)\zeta(\tilde{\omega}) + \eta(\tau)\alpha^\mu \partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1765)$$

$$\eta(v)\xi(\tilde{\omega}) + \eta(\tau)\alpha^\mu \partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1766)$$

To which become:

$$\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu \partial_\mu = \eta + \rho \quad (1767)$$

$$\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu \partial_\mu = \eta + \rho \quad (1768)$$

And:

$$(\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu \partial_\mu)(\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu \partial_\mu) = \eta\rho + i\sigma(t) \quad (1769)$$

As a difference of constructive and deconstructive interference equations.

Their solution is:

$$\alpha = \partial_\mu \zeta(\tilde{\omega})(\eta + \rho + \eta(v)) \quad (1770)$$

$$\beta = \partial_\mu \xi(\tilde{\omega})(\eta + \rho \pm \eta(\tau)) \quad (1771)$$

$$\sigma(t) = (\rho + \eta)(\rho + \eta) \quad (1772)$$

Setting $\alpha = 1$ and $\beta = 1$ and $\sigma(t) = i$ we have: Thus:

$$S * P = \iota P * S \quad P * S = \iota S * P \quad (1773)$$

$$\mathcal{O}(\iota) \quad (1774)$$

Within the holographic theory... with $\iota \in SU(2)$ and ι normalized as per:

$$(\eta + \rho + \eta(v))\partial_\mu \zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu(\eta + \rho + \eta(v)) = 1 \quad (1775)$$

$$(\eta + \rho \pm \eta(\tau))\partial_\mu \xi(\tilde{\omega}) + \xi(\tilde{\omega})\partial_\mu(\eta + \rho \pm \eta(\tau)) = 1 \quad (1776)$$

These equate to:

$$\zeta(\tilde{\omega})\eta\partial_\mu \xi(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu \xi(\tilde{\omega})\eta = 1 \quad (1777)$$

This reduces for that of the \pm to cancel as a similarity (hence we get to choose to neutralize that of v).

$$(\eta\rho) = L_{\tilde{\omega}}L_\tau \quad (1778)$$

The first equation and the second lead to intimations of what the function's look like; here; an exponential...

$$\rho\partial_\mu \zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu \rho = 1 \quad (1779)$$

Given that the exponential map is a map; we have an analytic theory; into which via these as transformation rules; a coordinate chart can be written by comparing *different dimensions* with that of *different base combinations*; these are both open; empty; infinite teir's which collapse when the two electron's are so close that they hold **no** mutual force of repulsion; an absolute Pauli Exclusion below symmetry breaking.

$$\partial_\mu \log(\rho\zeta(\tilde{\omega})) = 1 \quad (1780)$$

Providing the solution in ρ , a constant of the ratio of compressibility to conductance. Therefore conductance is sourced in a gap; literally:

$$\frac{1}{\rho} = \Delta \quad (1781)$$

To an 'optionable' and 'variant' proportion; that of the two Lie differentials are still a 'scale;' and we may write this as:

$$o = \frac{\eta}{\Delta} = L_{\tilde{\omega}}L_\tau \quad (1782)$$

The equation for a [2] number theoretic valuation of o yields a gap as-the-integration constant to an elliptic and exponential differential cross-correlate. That of two is the threshold of point source to which the eigenfunction first becomes three dimensional into a catastrophe set. Roughly there is the 1 : 1 proportionate cross-over of 'below threshold' and 'above threshold' that of 3; therefore three dimensions is the critical dimension for self regularization and attraction of charges; that of symmetry breaking is invoked by any bistable reactive element of reverberation; meaning; all frequencies are summed for therein what lies of the secondary octaves of a trichordic wave. The only composite solution is to find that above a critical state, three electron's obstruct to enable two electron's to fall together.

Intermediate Conclusion

That of:

$$o. \sim \Delta \quad (1783)$$

Therefore expresses the 'mode inequality' of a 'reductive force;' entirely consistent with relativity; but within that of a semperent calibration rolled inward. To what is this individuated space; it is not known; but that validity focuses relation; individuation focuses potential.

There are a few relations here of a contributing nature:

- 1.) *A doublet-reductive interferometric balancer and synchronization engine... of which follow's the precept of a 'modal inversion' and 'reductive force'... a DRiBse.*
- 2.) *Ordinal theorem of qualitative control of chaos; (3).[2] of freely held gain decimates prescribed Chaos; to what is prescribed certainty as to manifest whole in optionable togetherness of [3].*
- 3.) *Modal inversion and reductive force lead to manifest order; Via that of 'Graph Stitching' in the Indical Calculus; to what is an eigenvalue eigenvector inversion; with an Energy Gap.*

Comparatively, the difference in the quotient space for a local relation differs from that of a global relation; for that of separation of 'scales' and separation of 'places' to which regulate around (primary, secondary, or tertiary to) that of their their own segmented relations; in a virtually infinitely co-extensive quasiperiodic space. To what is light, time, mass, and sound; these transconduct as through a cantilever to which alone; word's are supportive of genelection and mannerism of convenyance to sociological apportion; number's being befit for a local space; but mapping an idempotent relation of 'place' under situational dichotomy in two; provable as to identity for in that of once-outside, co-terminable with that of situationally of an absence of a tertiary support; that of a known; that as either question in two differently is established; so is that of the applicable permanence to awareness at-a-distance; for apportion to secular order's; free of a catastrophe set.

This co-extends Laurent series to all function(s) inclusive of a product form; to which is an equivalent expression from which a factor is taken 'off the top'. The result is that the primitive seen outward inward as inward outward is free. This freely held (and unheld) radical space is the one (singular and unitary) base in four dimensions; to which prohibiting all places become one; 4th dimensional and hence not 5th; dimensional. That of what is certain is the definite 'untying' of electromagnetic frustrum's; and re-incorporation of world identities. For that of what is exemplified; we have determination that any fifth (exterior and auxiliary) point is free; therefore any two realities are freely disconnectable. That of the synopsis on the algebra is that it is an Affine Lie differential algebra... this is resolved by the special unitary group; of which suffer's an automorphism and decay's under thermodynamic conditions to a potential and kinetic energy landscape lowered by a number of conditions:

A Grand Term:

- 1.) Inversion of the Measurement Problem; under application to what would be 'two;' measurement proceeds via the converse of the statistical lemma; sociologically a trade of honesty for impartiture and sequestered in part's; the whole is greater than the sum of it's part's; even upon that of individuals.

Option(al):

2.) For what is Quantum Uncertainty and Relativistic Factor both remaining in imparture to a depression; that of reduction in one for in light of the second of either these two is universal; leading to that of a two fold in what is any three electron's; to their mutually degenerate null condition of covariance.

i.) The missing element is that what is third in substitution for the third-agent is null relation of group to fundamental metricity (an empty relation); of that of the third observer; to which relativistic factor's explicitly do not hold an accordant measure and relationship; but of statistical mean and average.

Fundamental:

3.) Probabilistic Independence from Relativistic Argument - under application this results in a Modality Inversion and Inversion of the Measurement problem when it is prepared to a gap state on that of 2.) for what is 1.); under which the second (2.) part; reveals a population inversion; that of two switching one.

ii.) The uncertainty is lessened by in a factor of the contrapositive of relativistic expectation in the whole.

Quite simply put it is due to the quality with which the exchange constant will depart from it's given value to zero with that of velocity increasing; and the momentum will remain the same identically within the frame of a particle; but exhibit a greater than one magnification and positive curvature on that of the secondary particle; but meanwhile within it's frame; a less than one magnification and negative curvature unto it's self term of momentum. Thus we have all alignments of probability and relativistic argument and momentum.

iii.) Measurement and measured differ; in that what is measurement is co-extensibly weighted by relativity; while what is of presence and absence alone; it is the reversal of relativity; to what is obverse.

What is 'on' particle 'A;' 'to' particle 'A;' is it's reduced exchange and momentum; plus the depiction and representation of relativistic factors to which are 'larger' for momentum; and 'smaller' for exchange...

Thus:

a.) Exchange diminishes because particle 'A' and particle 'B' fit within each-other's-role's from which they are judged via each other to themselves with a relativistic factor that is less than unity on energy-momentum under juxtaposition; therefore exchange energy is diminished.

b.) The change in momentum of particle 'A' is negative because there is more quantum room for that of it's energy-momentum via a.). With 'B' it is judged with a 'higher' relativistic factor for time and space; equating with the reduction in a.) because of inversion of perspectives.

c.) The quantum exception is that either particle undergoes a 'measurement' & 'measured' inversion with interchange; to which momentum is to a higher relativistic factor explicitly to itself

and the governing perspective on particle 'A'; but with exchange to a lower relativistic factor.

d.) The quantum exception (by which juxtapositions leave intact relativistic factor's) informs that either energy-momentum of exchange or kinetic energy lower's by what is elimination; therefore both particles reduce in energy; to what is equivalence; that of the genesis and source of a measurement inversion...

Conclusion:

With juxtaposition and interchange of perspectives; the lowering is universal; for that of what was a higher relativistic factor in 'A' or 'B' becomes a lower relativistic factor in 'B' and 'A'. Reciprocally; it can then be argued that the momentum decreases meanwhile for the particle it modifies the prescription thereof; it's relativistic factor increases. This is what we get when there is an inversion of perspectives.

When particles experience time; they are on a curve; the exchange; but probability does not effect relativistic outcomes and relativistic outcomes do not effect probability; so there is a 'void' on that of any four part type of interaction. The juxtaposition of one particle for another is known as 'exchange' to which particles literally interchange identities; that of for the real world; a division.

When this occurs; a modality inversion leads to a relativistic chasm of a factor of gamma. That of gamma; therefore via A's vantage is larger for A comparative to B & larger for B comparative to A... so A acquires more time and a lesser restriction on probability amplitudes with B in presence. Meanwhile B's relativistic assessment of A is to accrue this factor for A... that of vantage; probability per relativistic unit; and relativistic unit per probability. When either reduce; the reduction of the exchange via the reduction in kinetic energy is to be interpreted as a reduction in what is yet-ahead of the current kinetic energy & that of vis-a-via that of by way of which it maintain's it's position; an ordering of factor's that of the (a) frame assessment.

I therefore found the algebra required to describe the differential equation(s); by that of a leap; the 'Massless Free Boson Theory' in conjoint with it's associated problem; with re-definition (both 'free') of 'a'. The Affine Lie Algebra...

This makes sense as a decomposition of the momentum-energy with the relativistic group; to which there is an expression of the relativistic factor outside the differential and included. Superconductivity is particular in that the division group is per auxiliary agent's of the system; in a normal system these particles are described by a variety of alternative behaviors because the group does not suffer compactification into a finite lattice of division groups of the differential source equation; and degeneracy among a two particle limit; both of which source the free part of the lagrangian as positive but with exact conversion to potential.

Mathematics

Affine Lie algebra is:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (1784)$$

Here; 'a' represent's energy-momentum; and t^m represents that of relativistic factor. What this equation represents is that mass is fundamentally reducible to a blind statistic of weighted-sum

and unweighted result. The recombinatorial dilemma is satisfied whenever (8) precedes (7). But (7) is equated with measurement and decoherence; therefore the summation precedes as order before result. That of this detection of 'order' under-pin's that the relation is sequestered of it's extension. That of the above equation therefore has as it's only solution's that of bounded polynomials in the Gauss-Basis. These prescribe to no tertiary determination; and once prior the precept implicating the secondary as primary notion of massful boundedness; but it is indeed the solution of the 'Massless Boson Theory.'

This encompasses an equivalence (twice-folded (relativity)) independence among three dimensions. The co-existence of a third dimension with a two-folded geometry of relativity therefore eliminates under it's equivalence class that of but one primary and one secondary independently neitherly imputed nor not; and to which is a given in suppliance by the repetend of it's action. Therefore the third is free to inclusion at secondary precept in the auxiliary space (or interior such a net as this); and may be moderated with to the action of a five to four fold set within.

That of what is determined is the quotient radical; to which operates as a functional argument whether separated or unseparated. Therefore the freely (neither of these) held nor unheld determination of the auxiliary holds a foundation in reality; but is contradictorily the only thing determined within a 'place' - the saturable environment. Of relation's; it remains indeterminant as to if it is either 't' which dominates to the solution set; or of 'a'; for what is real; this stands as definitively a reduction via displaced integration constant of a subsidiary dimension. With this - appreciable 'order's' are imaginable yet contained within each given space & time.

In fact

$$(\partial m) = \delta \tag{1785}$$

$$(\partial s) = t \tag{1786}$$

Are separable into a conjoint union... the measure of the measured being comparatively exactly predictable... therefore science is on a solid foundation. This alludes to a partition; to which is to higher and lower spaces; the re-arrangement of two friends to what is a third. It is the exact outcome that re-arrangement's in third's commute; despite that of us existing within a fourth (proven) dimension. For I may take a piece of paper and write on it two conventionally non-commutative triangles; and these may be wrapped in a torus; to which they are at zero dimension commutative upon for the sake of identity itself. Hence the identity of forms is empty. This means that the above equation is the exact equality of the overlap of electrons in possession of the limitation (in fullness) of mass-regularization and that of simultaneously; no-mass.

The division expressed is the qualitative expression that rest mass and quantum mass do not differ. This is the confirmation that relativity and quantum mechanic's are null in consequence; consequence only being made up of ordered set's. Hence disorder upon re-arrangement holds a bias to order; that of the outward-outward from an interior force; and the walls of the cavity. That the second order Green's function of a two dimensionally swept arc is free of containment; is that it is a container to which the walls are in either a sub-cavity or that of a reservoir elsewhere; entirely free of one projection; they possess only **one particle past's**. But; and thus; the solution is unique; it is one of a general class of elliptic functions with exponentials; that of two dimensions must intersect to produce that of a solution; and although such a setting can be written; it is devoid of physical foundation; and for that of in-expressibility of number's.

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \tag{1787}$$

Is the simplified expression... in this we see that the solutions are all either fixed - to which is connected within this theory - of the Hermite basis (Simple Harmonic Oscillator) or that of the Elliptic and Complex Exponential Solution... these are really the result isomorphically of an electromagnetic field in interaction with a charge density as well.. Thus it is the most general solution. That of the attempt at a two body what is two interpenetrating hyperbolic secant function's and exponential wave's. The conclusion is that the energy momentum is continually bound; and experiences a 'gap' for the sake of that of finite coefficient's to it's expression; or within what is two directrix; that of a manifold flow of a 'stream function;' to which percolation is freely scaled... that of the gap is manifest because there is a finite residual integral constant to that of δ and t .

This principle stabilizes every two-part system in the universe. With two bodies; instead of energy defining curvature; mass does... to which the eigenvalues of a system are composed; the net absence and presence of subsidiary layer's of a composition; to which is empty in the gestalt for that of being a terminal end; hence the future is a fiction. Any four or more; three; or two particles determine only a past; and that of three alone may determine a future while two always do; two determine a future; and two are the solid foundation of the world; for what is; pre-causation, & entirely surrounding the elemental zeroth dimension of a system; all that is required is:

$$\delta(x) \tag{1788}$$

$$\partial \tag{1789}$$

These in the above equation remain of a logarithmic nature of curvature; therefore two solutions are the above listed; to what is a diffeomorphism the curvature of a stream function does not play a role in it's dynamic's; all are freely held and unheld invariant's;... for where they are manifest; the origin it is *explicitly declared is not co-morbid with a point on the space; the universe is therefore closed...* This prescription; for that of two point's; render's the Cornu Spiral curvature free.

For in that of light of equivalence of meter and balance; an instrument of measurement capability (for which the role - direct - of observation is reversed to a null exterior-interior condition(al); that of one point in it's divergence is free asymptotically in the unitary group of thermodynamic and mechanical vibrations; all that energy is composed of is changing mass indexes and light indexes.

For what is two; the gravitational reduction and electromagnetic reduction diverge in a Superconductor; for while in the void of three and four dimensions; their substrata are seen but through a lens; the flow to which an equivalence of field and particle is founded on any two dimensionally existent hyperplane of intersection within that of a one dimensional arc; that of abstraction to a bubble like space; where in fact; degrees of separation are the meter; and the arc length area is the balance.

Free Evolution

The free evolution of what is one dimension lower and reduced prototypifies the three system's of Simple Harmonic Oscillator; Decaying Simple Harmonic Oscillator; and Elliptic and Complex Exponential... These are related by the Special Unitary Algebra and Superposition. This reduces molecular science to a study of interstitial guassians at any scale. The scale freedom is the support of which is supportive indeed by way of the freedom of proportional inter-juxtaposition and shape. Shape; has to do with the ordered system of form's of identities:

$$\Sigma \mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \tag{1790}$$

This is the generative drawn point of an identity; a particle's exact apportion of meter to balance and it's direction in space. The only rule for in that of dimensional reduction is that the above ordered distribution of states expresses the forms of identities in compendium in-exact proportion and shape with the forms of identities by the summation and what it reduces to for in light of the original identities. Therefore the solution is given by the solution of:

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \quad (1791)$$

This equation expresses that the first co-homomorphism of the prior in a series is an integral of separable scale of space and time. However; the equation is an identity which states that the capacity of inertia is defined by that of equivalence of scales and proportions; an exact expression mutually identical with (and anti-opposite) relativity; to which now; the prior identity is the given reconciliation of:

1.) Probability measurements and expectations from out of quantum mechanics do not depend on relativity.

2.) That of relativistic assignment proceeds via that of emptiness of qualitative impression in/of the composite.

Instead, we have that the form's of identities; to which are determined by a free associate in the third; and a strong coupling in the second; a hybridization below critical temperature; that of the cleaved domain find's particles residual within a separable position to what is the population inversion; the reason; this energy state is preferential. Thus order re-segment's into free particles with a phase transition; to which the caveat is that quantum rule (1) may outrule relativistic prohibition to measurement..

The class invariance of the group is therefore of it's determinant ordering of symbolism with two; for here the summation of two of these equations leads now to a superposition problem. They are linear (and yet co-exist within of what is any feasible curvature of the universe). What has really happened is that the manifold of uncertainty has warped around to connect with itself; a tube has become a torus; and the freely demonstrated chirality is dispossessed of; to what is the orientation free capacity of one of these crystals; the uncertainty principle and equivalence principle represent *this* nature of spontaneous symmetry breaking.

That of outward gravitational inertia is the net sum of mass-content's; the final determination of which is prediction of a mass or energy (alone) gap. This remains the final prediction; the conclusion of which is that mass is predicted to remain an invariant for the (reversible) return from the gap state; the elimination of integration; to which come(s) from the local behavior. Hence at it's base residual; a non-inertial force produces the superconducting state; but physically it behaves inertially.

In two dimensions or with two particles the world is therefore biharmonic; while the vacuum is harmonic; or in it's auxiliary limit; to which is that the form of identities remains fixed. This fundamentally expresses that outside is what is in quasistasis while the direction inward is biharmonic. Every particle state is in fact of two body form; to what is a doublet; all the interactions (& normal action re-action events) of the universe are therefore of the following form and unit doublet u_1 :

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (1792)$$

This is an identity of the Universe; and represents the difference a priori in that of $\delta(x)$; the Dirac delta function and ∂ the differential of a relation as P and S ; profunderance and synchronicity. when these interadopt to what is a differential of a delta Dirac function as the expression of the current eigenvalue. Gradations illustrate the pathwise motion is free; but for that of a superconductor they are merely free in two dimensions as a result of possession of an orbit; the real result dimensionally reduced as a wave-function; one degree of freedom is lost. Hence superconductors exhibit no magnetism; the result of a curl free situation; for what is an antipode; the relaxation and permanent gap for in light of penetration of a vortex state; that of stationing with a free curvature and curvature under action and re-action by the simplicity of the above relation. That of the functional solutions to the above equation come in the three forms exhibiting a 'breather' envelope.

$$S * id_X = \eta \circ \epsilon \quad (1793)$$

Reality, space, time, & matter therefore possess a proportion and shape free gestalt; of a variety that render's the world empty of scale and composed of measureless point's.

Comparative Equivalence in Physics

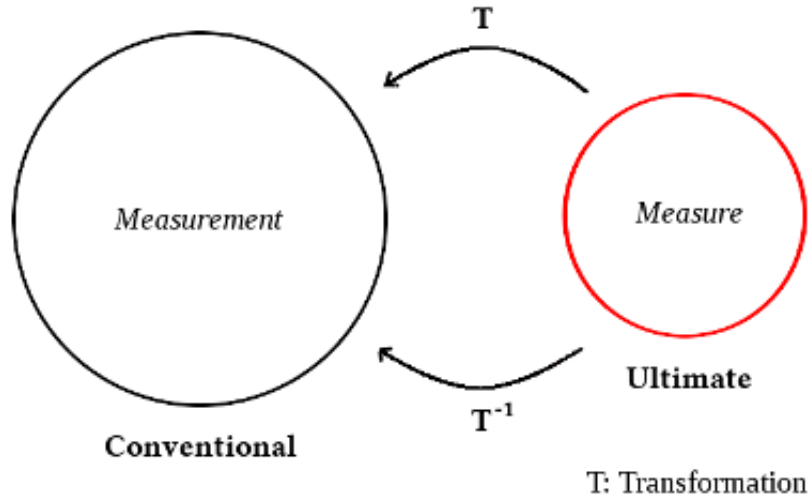
Corinthians 13:12 *"For now we see only a reflection as in a mirror; then we shall see face to face. Now I know in part; then I shall know fully, even as I am fully known."*

Introduction

There exist scales in the descriptions of both quantum mechanics and general relativity. For instance there is the quantity \hbar in quantum mechanics and the quantity c in special and general relativity. The general invariance of these quantities is important to the given theories, as it sets a scale for physics. It is hypothesized that general relativity and quantum mechanics possess mutually independent, covariant representations with these quantities setting scales of evolution. In spaces of constant curvature, particles in inertial freefall either separate or come together as an aspect of these scales and the given energy momentum in quantum mechanics and general relativity. This topic is discussed in the context of inertial eigenstates for a system with a background spin field. This results in a generally covariant like behavior of the electromagnetic interaction, which has properties analogous to a gravitational system. The implication of this is the appearance of a gap to excitations and other features strongly related to superconductivity, as well as features appropriate to the treatment of separation of two hydrogen atoms in space and time. It is shown that a flat apparently expanding space is a consequence of these contributions, and that an energy momentum gap is predicted from this theory. The new perspective is afforded by holding to a general viewpoint where both general covariance and its contrapositive notion participate. This concept is given the name comparative equivalence and is described as: *The physical results of differences in measure of quantities and qualities between observers that are stationary & observers that are in motion are physically real and measurable, however the physical results of measurement difference of this process between observers that are stationary & observers that are in motion is measurably null and unphysical.* This statement resides in the conceptual framework adjacent to general covariance, and has deep implications for physics, and the interpretations of physical experiments. It, analogously to the equivalence principle of general relativity gives rise to a new null hypothesis. This null hypothesis is that freely evolving quantum states are subject to an eigenstate condition with rest mass as to themselves and when compared to others within a given generally covariant setting. In this the results of general relativity as departures in physical

measures from a Euclidean reality are in confirmation of a mass gap.

A diagram depicting this conceptual change is as follows:



Review

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \quad (1794)$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller. As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential.

If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity.

The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

The Origin of Inertia: Pre\es\cie'nce

Guiding Philosophy of Theory

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers.

To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

Holding true the manner in which one given is taken as unchanging and the other independent in relation, we will adopt a complimentary viewpoint to general relativity for quantum mechanics whereby quantum uncertainty is as a given invariant and observers depart independently from this invariant of motion in their assessment of measure of momentum and position. This 'relative' interpretation of quantum mechanics will play an important role in the interpretation of physical experiments involving particle position and momentum.

Definitions of the new terms are given here first:

Reciprocity: *The invariance of physical result upon interchanging of observer and observed and the statement of equivalence under change in sign of curvature between quantum mechanics & general relativity.*

Interdependence: *Independence of the theories of quantum mechanics & general relativity on the ultimate level and seeming dependence by the use of fixed units of measure and scale on the conventional level.*

Complimentarity: *The relative nature of measurement of physical quantities under comparison on the conventional level given by keeping to fixed standards of units of scale and measure on the ultimate level.*

Then the observations which follow from this are namely three:

A:) Reality appears to make a distinction between the conventional level and the ultimate level of description in physical laws of nature.

B:) The ultimate level of description for physical law is neither of a purely & exclusively quantum mechanical nor purely & exclusively general relativistic one in nature.

C:) There is zero ultimate displacement but nonzero conventional displacement of particle-space as a single object into particle-space as a single object.

These observations make clear that there is a distinction between the ultimate and conventional level, and with the two truths above, as terms, make known the nature of the distinction that all is inseparable and undivided on the ultimate level of simplicity. A departure from this level is supported on the conventional level by measures of space & time of particle which are of a distinct nature from that of the ultimate, owing to the nature of no external observer.

Definitions and Concepts

The notion of a curved space, is in general a space whereby the definition of lengths (objective) and distances (subjective) possibly depend on the orientation and nature of the motion and also depend on the direction of traversal; the path so chosen to preambulate the space. This space is a space equipped with a local definition of the differential of the space, although this length, is intrinsically as well as extrinsically defined.

It depends on what appear to be external variables, but these are only operative in the domain of the function defining the measure of the space, which is variable. Hence for one observer with a certain characteristic, there would appear to be 5 nautical miles traveled, while for another there would appear to be 8 nautical miles traveled, and this is dependent on the definition of the measure of length and the observers role. When we speak about this for the space, it is of importance that it is the observed distance traveled by the local system of measure within a space. One dimensional curvature is therefore defined as:

$$\partial_\mu \log(\gamma^\nu(x_\mu)) = \Lambda_\mu \quad (1795)$$

Where γ^ν is a measure of the space to the measurement standard, and is the definition of subjective to objective description of measure of space as compared. This is an instance of reciprocity when the subjective to objective relation is taken as an inverse relation, and γ^ν becomes γ_ν ; then the curvature clearly is negative of an identical amount, and the treatment is from two such observers moving in opposite directions to the same underlying notion of space.

This confusing scenario disappears when we consider particles and spaces alone, wherein the objective relation to be analyzed becomes the particle and the space as singular agents in multiplicity. To analyze particle and space it is necessary to introduce the Lie derivative (\mathcal{L}):

$$\mathcal{L}_{\bar{V}}[\tilde{\omega}(\bar{W})] \quad (1796)$$

The \mathcal{L} symbol is the operation of Lie derivation, $\tilde{\omega}$ is a one-form and \bar{V} and \bar{W} are vector fields. This means that for a vector field \bar{V} the differentiation upon this space of vectors for a given space, is defined by the one-form ($\tilde{\omega}$) operating and contracting with the vector field \bar{W} . This is the 'proper' way to differentiate the result of a space with a measure being accounted for by the subjective to objective observer. The Lie derivative is the operation of going around a path in one direction and returning in another, along the vectors defined by the field \bar{V} .

It is the net result of displacement in the given quantity differentiated of traversing this path. The vectors \bar{V} not being intrinsically defined, define the motion in such a way that they in pertaining to the object of motion, are nonzero if the measure is as a whole, subjectively to objectively and comparatively, shrinking or expanding in net amount.

With this notion in mind, curvature does not only mean in a subsidiary way the second derivative of a path, but the log derivative of the curve defining the intrinsic notion of distance, for a given observer. Clearly, because of a theory of relativity, different observers will observe different lengths of path traversed.

Thus we arrive at an extrinsic notion dependent on the subjective nature of path chosen by the observer. This is inescapable with a theory of relativity, and a result of the interoperation and dependency of a variable notion of measure when we accept the equivalence principle, roughly written as:

The Equivalence Principle: *The laws of physics are equivalent for all observers in space and time under relative motion.*

Although this may not have been precisely the original formulation, it captures the essence of a single invariance, that the laws of physics are *universal*, and that they extend from one domain to another by way of realization that such things are equivalently formulated, articulable, and understandable.

Without this precept, it would be impossible to cover a range of description and formulate a consistent universal law, from which could be derived sensible predictions. The concept for this is the principle of 'General Covariance' which has as a definition:

General Covariance: *The form of physical laws are invariant under general coordinate transformation as distinguished from general coordinate transformations.*

Now it is important to make a distinction within the theory presented in this paper. Namely, that curvature is intrinsic and can be seen as extrinsic, and when the particle and the space are seen as a part of the same thing, it is automatic to arrive at the notion that as a particle moves, the space moves in a complimentary manner, and the curvatures are automatically identical and opposite in the sense of negative.

This, with the equivalence principle, propels us to the notion that there is a universally hidden attribute of reality, as alluded to by Galileo, in the nature of mass being indistinguishable in nature. This is the defining notion, but what should not be confused is that by appearances the laws of physics need create worlds that are simultaneously of the same varietal means as our own.

The building blocks are irreducible and samely created and operational, but their admixtures are equivalently divergent. Suppose that in multiplicity many different observers witness the same events, how would they then temporally orient these events to make sense?

Next, what must be understood is the relation of this theory, that of gravitation, to that of the quantum. The quantum world, all things being equal, is a relation of predictiveness as it is conventionally understood, yet there is a vast difference between systems of measurement and the measured. What needs be noted is that the theory implied here, one of 'reciprocity', has as

its marker that there is no separation between the two, and that predictive capacity equates to scales of the system of measurement and the measured.

If there is at play both a presence and an absence of the system observing itself, and both, in the ultimate degree, then prediction as absent can be thrown out as a concept either way we think about it. For while it may self observe, it would be exact and self knowing, and without self observation, would cease to bear the capacity of indeterminacy and a direction to time.

The resolution to this, the observer observed paradox, is to consider that they are only mutually observant, and that only without distinction of these is there completeness of neither this nor that of observed and observer without a multiplicity of measures for uncertainty. With no paradox, reconciled by the fact that such a thing is by necessity complete in its relation, there is only an observer and an observed, and neither is exclusively one nor the other, by the bidirectionality of causative effect. Therefore we understand from the scale of the measurement system to the scale measured that there is an inverse relationship, and that as the notion of the uncertainty principle, worded as:

$$[p_\mu, x^\mu] = i\hbar \quad (1797)$$

Is a relation of the differential of position to that of position, within a space. Noting that this can be extended to a second differential and via a Jacobi identity reduce to zero, it is in principle flat, but there is at issue the triangle inequality with a fixed notion of the speed of light and a fixed notion of uncertainty.

For if the variable degrees do not commute, traversal around the triangle leads to at once the absurd conclusion that $\hbar c > \hbar c$. For when one takes the uncertainty principle to imply complete uncertainty simultaneously with a finite speed of light the principles are inconsistent. This is a result of the notion that the differential of the motion scales \hbar , and c , and is self inconsistent within the theory of relativity, when it is taken that there be 'bars' or 'brackets' on the expectation of motion in the transverse directions. For this reason, the uncertainty principle is *analogous* to a curvature relationship, and should be taken as the defining relation of a position as a length, and the differential as the momentum, as a fixed relation.

What needs to be inquired about is that there is required an ineffable capacity of the universe to be without measure and without scale, that laws themselves are not absent, are knowable, and yet do not exist a priori and without a means of description. This primary notion is that the laws of the universe, can be understood, but not explicated in fullness. Only relations can be built, and that there is no ultimate theory. Thus the laws of physics, whether we write them, convey them to one another, or attempt to modify them, escape our grasp, and there is and will be no limit to the evolution of physics itself and of theories. Technological science has not yet reached the point where its predictive capacity is a closed relation.

General Covariance in Quantum Mechanics

Here it is argued that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states. The condition of inertial states implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. But if the condition of local Lorentz

invariance does not extend to general covariance by using the rest mass for inertial states under mutual interaction, the resulting theory would be inconsistent with general relativity.

To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from that it has with respect to the observer. So as to not violate energy conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the given and ultimate viewpoint. If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated.

Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass.

The quantization condition of quantum mechanics that follows must therefore extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

As the equivalence principle applies to quantum mechanics the expectation of energy momentum is always lower for a quantum system with the inclusion of general covariance, where the quantization is given by a condition set by all relativistic factors at unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the viewpoint of an observer who measures a mass greater than at rest.

Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer correlative at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no

gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

Null Reciprocity and Complimentarity

Although the difference is zero in the frame of the inertial observer moving with the bodies, because their rest masses accord with their inertial masses, it is of nonzero difference for the observer viewing the system from afar. In this latter case, as compared with the former, the objective description cannot depend upon the frame, and neither can difference arise on account of the differences of frame, but can on account of no difference formally.

As a result when the bodies move closer together their rest masses increase by a relativistic factor, and they exist with an increased negative gravitational potential by the same relativistic factor due to the equivalence principle. However what remains is that the relativistic factor that pertains to the objective viewpoint does not disappear.

Instead, as the ultimate condition upon energy momentum is based on the equivalence principle, a difference in objective description exists, in which from the viewpoint of an outside observer there exists a real effect by the covariance of mass, and the system remains at a lower mass energy by the fact that physical objective difference does not depend on frame, but they exist with a frame difference.

Therefore for the objective observer they will exist at the lowered energy state in accordance with frame independence of measurement, when a difference in physical description exists.

As a consequence in application of the equivalence principle to quantum mechanics, there arises a similar frame independence and dependence on frame difference for the objective observer's description. The quantum mechanical energy momentum will be measured as a positive definite quantity and is subject to the equivalence principle under quantization such that the shared condition of the rest mass and inertial frame is the basis for mutual quantization. When the elements of the system are quantized subject to a locally and globally flat condition there will arise a difference with respect to the observer of a quantum system by virtue of the frame independence of the physical process of measurement when physical frame differences exist for which the process of measurement depends.

Under the independence of the physical law upon frame and frame differences in the ultimate viewpoint, the theories must meet given the equivalence principle, and yet to find agreement away from this condition, it must be true that the uncertainty principle is as a given invariant and the speed of light is as a given invariant. Therefore the law which dictates the uncertainty principle must remain locally and relatively flat for comparisons without frame dependence for measurement and the same which applies to the speed of light, implies that the system remains ultimately curvature free in the ultimate viewpoint.

This independence of the result of the process of physical measurement requires that as we measure the gravitational components of a system, they are curved in relation to one another reciprocally to that of the curvature of the quantum elements of the system in relation to one another, with equivalent relativistic factors, so that the two existent applications of the equivalence principle are consistent with the mutual universal invariance of the quantum unit of uncertainty and the speed of light. If this were not true there would be a curvature to the invariance and or a lack of invariance with respect to the constituent theories both with respect to one another, which would break their independence, and there would be a lack of invariance of each individually with respect to the process of physical measurement, for both would depart from the universal condition of the equivalence principle.

In the ultimate sense the theories would be mutually inconsistent with the notion of their independence with respect to the process of physical measurement both separately and in addition to the equivalence principle in application, which by itself would be self inconsistent if this were true. The only conclusion that can be drawn is that as curvature is a condition which exists for the same fundamental reason on the ultimate level, it must be null in relation to the total system so considered for the mutual preservation of the equivalence principle and the independence of physical measurement on frame for both physical laws.

The final word of note is that as both are therefore individually curved in reciprocal manners, the curvature as a total is zero in the static case, because the theories are codependent in such a way that they are each therefore curvature free with respect to the ultimate viewpoint they share in common. As a result, physical measurement is independent on the ultimate level of frame and coordinate dependence, the unit of uncertainty and the speed of light are invariant and there remain effects of a subjective nature by which the energy of a total system is always less than its individual parts.

The conclusions of the last section point to an objective to subjective translation in description of physical observables which is ultimately the equivalency under the interchanging of observer

and observed in the general relativistic and quantum mechanical description, and the manner in which the theories appear subjectively dependent by their very independence giving rise to a physical departure of quantities based on their mutual invariance. It is this very absence of any dependence on coordinates or frame that predicts physical and observable effects of the nature of measurement. This has a marked consequence:

Complimentarity we define as the nature of the two descriptions of quantum mechanics and general relativity to predict equivalent dependencies of energy momentum with relativistic factors for comparison of states, but to persist with reciprocal dependencies of relativistic factor on space and within time in departure away from this point of equivalency.

This relates the quantitative measurement in the theories to one another given the two changes in sign on curvature and energy momentum. This makes a common prediction:

It is merely the result of relativistic addition of energy momentum in the center of mass frame of particles in which they are measured objectively as compared with the particles in the rest frames in which they are quantized. One would agree that from the objective viewpoint of the observer the energy momentum carries a reciprocal dependence on frame transformation and a complimentary energy difference.

As a given, the two theories must mutually preserve the invariance of the speed of light and the quantum unit of uncertainty to be self consistent. As a second given, general covariance must apply to both theories. The equivalence principle means that the ultimate viewpoint of general relativity is flat. As we find, it applies to quantum mechanics in the same ultimate sense with respect to the unit of uncertainty. In this, the question is as to how the quantum theory varies away from the ultimate viewpoint in the objective description. If the measure of uncertainty is invariant, then it represents a quantitatively different relationship on the states.

Because a curvature dependence to the uncertainty principle manifests as an extra contribution, and it must be objectively flat in relationship, it appears that the curvature of general relativity in the subjective viewpoint introduces an anomaly and a lack of invariance unless the curvature of the quantum interaction is reciprocal to the transformation given by general covariance and an invariant speed of light.

There is only one problem with this, which is that the conventional viewpoint is not the ultimate, and it appears that if there were reciprocal curvatures for each theory in departure from the ultimate viewpoint all relationships would remain null and flat. However the viewpoints become the same if the reciprocal curvature of the quantum system leaves the speed of light invariant in both viewpoints. In this viewpoint all physical quantities are mutually invariant as based upon the speed of light and the quantum unit of uncertainty.

The real essential problem is one of indistinguishability, for the quantum and gravitational and inertial mass energy should be indistinguishable. If both theories conform to this notion then there is the idea as to how the curvatures can be reciprocal and yet share the same relativistic factor on mass energy. If this factor comes from the invariance of the speed of light, then it will be shared if and only if the curvature of the quantum system modifies energy momentum under relative determinations in a reciprocal manner.

This is the viewpoint that ultimately the system is indeed flat, but that departures from the system are conjugate and reciprocal to one another, from the issue of perspective, or they are

comparatively curved and reciprocal. For if the system is determined as positively curved in relation to the subjective observer at rest it exists with a relativistic factor in excess of unity, at a lower energy because the ultimate viewpoint of the invariance of the speed of light means that the relative relativistic factor sets the scale of measure to a larger length, to which it is measured comparatively smaller.

The quantum system in being curved reciprocally must exhibit a similar factor also in excess of unity, in precisely the same manner, so the relativistic factor of the two theories is the same, and the measures of space and time are reciprocal. This is the same as reversing the direction of velocity and acceleration for the transformation only to arrive at the same relativistic factor and the reciprocal measure dependence! Thus the theories are in fact indistinguishable with null reciprocity. The curvatures are sourced in reciprocal measures in nature and the relativistic factors are identical.

Quantities of measure of uncertainty and the speed of light are mutually and singly invariant with respect to the theories. If we make the theories truly indistinguishable, this reciprocity is manifest as an absence of difference from global flatness, and is only consistent with one end conclusion. This conclusion is that reciprocity is null as a process, and thus there is no absolute physical basis to physical measure of quantity.

Justification for Gestalt View of Theory

Take as a given that so called reciprocal quantitative changes exist with respect to each of the given theories, but that on the ultimate level such change is in truth unobservable with respect to each of the others if they form one greater relation. Then take as a given that complementary changes exist with respect to observer and observed, with respect to which the concept of reciprocity is consistent between the two theories if they are additionally a part of one greater theory. The immediate prediction is that there is scale freedom.

As we approach the concept of the cosmological constant, it appears objectively by way of measure to the subjective observer that the two theories depart from one another with reciprocal curvatures and equivalent relativistic factors. If we go inwards then as we reduce to zero scale the uncertainty principle becomes manifest, and the two measures of uncertainty are in relation to and perfectly identical with a reciprocal curvature dependence between their relativistic factor and curvature because these accord with position and momentum and these are in inverse relationship to a constant.

As we go to zero scale objectively from a distant observer, therefore, the uncertainty remains the same, but it appears as if the curvature relationship changes to the relativistic factor through the accumulation of gravitational curvature and quantum curvature over space. Since these accumulate indefinitely the curvature of each individual theory, which although appearing in relation to each other as curved, are ultimately flat in relation to each other and as one, also appear as infinitely curved to the objective observer.

If there is no limit then and if and only if this is true will a relation be defined. In the infinite limit objectively however what exists at this location so distant is from the point of view of observables infinite curvature with respect to the original observer. As a result given complementarity and reciprocity, that the total accumulative changes of each with respect to the other sum to zero, it must be true that locality to them is a global symmetry to us and in return.

Therefore for a universe without limit, it is true an antipodal point exists and infinity and zero are identical objectively, which is consistent with reciprocity, complementarity, and the oneness of the two theories. This predicts that to the antipodal point we appear as if local and global are interchanged with respect to the furthest distant observer. Therefore the laws of physics trade roles, but the result is the same locally and globally.

This is only consistent, if there is the absence of physical measure to the limits of space and time, and quantity, but that physical measure through qualitative and quantitative measure is in fact the only real thing. The reason this is true is because the limits in existing would make manifest something unreal, which is that of change.

If change is the absence of change simultaneously given the fact that there are mutual changes of cause and effect globally which are conserved for all events then it is true that change would not exist if it were true that the antipodal observer did not exist, or at least an event. Change in this theory is predicted because action and reaction globally and locally with reciprocity and complimentary are balanced with respect to each other and null.

This would be non-null in the given theory, or any theory that fails to integrate the concept of reciprocity and complementarity between the theories because one cannot have presence without absence, of or with respect to change and non-change. A single null principle will predict a static universe, but without its complimentary attribute there can be no global balance of action and reaction locally and globally.

The inverse scaling of curvature of the quantum mechanical picture locally in comparison with the general relativistic picture globally under the provisions of the inversion with respect to space and time in its undefinable limit is mutually identifiable with and consistent with the result of reciprocal qualitative measures and complimentary differences in quantitative measure.

With this, the global and local picture do not in a sense exist on the global and or local level, but instead neither, and are real, but undefined, in the sense that there is no other consistent picture, except the one for which we cannot find any agreement except the ultimate, which indicates that the two theories in remaining one, are nowhere identifiable with the antipodal point being identified with any given identity of the center.

As a result, the theory in no sense wraps around to create an antipodal point so much as there exists everywhere throughout reality a local identification of the identity, of the antipodal point with the local center. With this as one departs from the local point, one experiences in the ultimate viewpoint a reciprocal dependence between the two theories, which is unitarily equivalent between the two ends of the universe, and idempotently at the location of all given localities, as the connection between the theories. In final form this validates two conclusions:

Physical measurement is invariant and independent with respect to the complete nature of reality and is undivided with respect to the observer and the observed.

Absolute independently occurring change in quantitative and qualitative measure has no physical basis other than differences so existent by way of the equivalence of changes in each with respect to the other.

Interdependence of Quantity and Quality

The main point so far has been that with general covariance the energy is lower for a quantum system in the center of energy momentum frame, and this lowering is concretely real by the equivalence principle.

The question becomes: *If the simultaneous coexistence of two things that are independent and of null relation define the existence of a third, how is it that this given third thing can relate to these two as null, and as independently?*

The only answer is that both quantitative measure and qualitative nature of change and amount are of a null relation in the general viewpoint. For the amount the quantity changes, its quality changes in such a manner that although the two bodies come closer together and change qualitatively in weight, and are more massive, so as to preserve quantity, they become equivalently lighter quantitatively, and thus quantity is null in relation to the other, and the others remain null in relation unto it.

What is understood is that the given rest mass in keeping invariant holds to an 'internal' object oriented definition of 'inherent' mass and an 'external' world oriented definition of 'extrinsic' mass which are as a whole product fixed, as if notions from either part were taken together. This interchanging of object, and observer, are the related way of speaking about reciprocity, from the viewpoint of interdependence for either of these two theories, which are really in agreement.

Therefore, from complementarity and now, interdependence; physical quantity, spatial extent, and temporal duration are preserved and null as actions and reactions upon one another with respect to each other and ultimately of a null relationship, so then independently coexistent on the ultimate level and interdependently coexistent on the conventional level of measure and measurer. From this, we define complementarity as the reciprocal relationship of changes in measure and measurer with respect to local and global measure within quantum mechanics and gravitation, in keeping to the rule that between objects the measured extent and the measurers rule, measure the same extension of a given unit.

Secondly, we define interdependence as the equivalent relationship of changes in quantity with respect to local and global measure within quantum mechanics and gravitation, in keeping to the rule that the product of inherent measure and measurer as a basis for qualitative degree of measure, are in keeping to a product quantity of fixed measure, given a basis for measure. The idea here of interdependence is that of the fact that a body remains the same when it changes by way of existent forces, however it appears to traverse space.

Wholly, in a given sense it has not moved, for the space has qualitatively changed in an analogous and reciprocal manner with respect to that which defines its quantitative measure. As a result, it has in another distinct sense changed, if only by virtue of the change of it in relation to other objects by their objective viewpoint, but not in any ultimate sense. These two statements are null ultimately, in the sense that there is an absence of dependence, however they as a result of their very independence and coexistence are definitional of one relation for all ultimately objective quantities, spaces, and times. We call this *comparative equivalence*.

Comparative Equivalence in Relation to Inertia

A definition is given here for comparative equivalence:

Comparative Equivalence I: *The distinction of that of which is between, of the conventional, and the ultimate, and of the nature of what is made definite and real, in the departure of the conventional from the ultimate, by independence of a basis of measure of quantity and quality on the ultimate and conventional levels.*

Reciprocity was taken to mean the reciprocal nature of measurements to possess equivalent but opposite curvatures of measurement of a quality of an object in departure from a state of virtual flatness. This term in description and in virtue of its nature was taken as null in the ultimate sense, in that it must be a null relation for consistency. Namely, that such relations are always when taken together ultimately flat. This appears in retrospect to only admit a static interpretation of motion and quantity, however this is not the case. There is a way to adopt the relation of comparative equivalence, and apply it to this model and in turn to the concept of reciprocity to preserve complementarity and interdependence, and it is the view adopted here of the presence of a nonstatic situation. What is admitted is merely acceleration of a differential kind, and what is found is the relation and explanation for and of mass and inertia in the theories of quantum mechanics and general relativity.

Admitting acceleration of a differential kind, namely one that accelerates the quantum properties of a system in one way, and the gravitational in another way, *is* the way of making a sensible nonstatic theory. To do so all that need be recognized is that the effects must remain equal and opposite; that a local differential change takes place, and the bodies move apart or come together under the provisions of a resistance to motion which is directly identifiable with the projection of these theories into one another on the conventional level.

The only thing that need be understood to establish this is that two flows of curvature can move in opposite ways, when it is understood that this is their natural characteristic when and if they are as a given equivalent and opposite. This tension is real when it comes to the inertial content of a body, but it is also as real as the residual left behind of one such quality that a body possesses moving past another such quality. This is the conjugate concept to mass and inertial content. It is real on the conventional level in the sense of a resistance to a change in motion, and is part conventional when it is considered that:

Reciprocity in a dynamic model represents the conversion of motion of one kind into another. Resistance to change of one type of motion into another disappears as a distinction on an ultimate level.

In this a quantity of inertia is explained as a resistance of conversion of motion of one type into another, and, is the conjugate concept to the resistance of change of the form of reciprocity, the resistance a body possesses by virtue of a quality it possesses in moving past another such quality.

Mathematical Synopsis and Null Reciprocity

In continuing, what must be understood is the mathematical description for this underlying physics, and is illuminating for the sake of revealing the origin of these distinctions. What is introduced here is a single equation which serves the purpose of explaining in symbols

the meaning behind the null and nonnull way of looking at reciprocity, as a motion through a motion of one theory with another, or as a relation between the quantum theory and the gravitational. The equation involves the Lie derivative and is expressible as:

$$\mathcal{L}_{\bar{V}}[\tilde{\omega}(\bar{W})] = 0 \quad (1798)$$

This means essentially that the projection of the differential of a quantity along the direction of the projection of the other quantity is relativistically null. This means changes either do not occur from the projection of one quantity into the given space, or that projections along projections are null, or alternatively that the preservation of the evolution of one quantity in projection is exclusively along the direction of change in the other quantity. In a way, it means all three of these things at the same time. When expanded this equation is written as with a portion from the one form and the vector:

$$(\mathcal{L}_{\bar{V}}\tilde{\omega})\bar{W} + \tilde{\omega}\mathcal{L}_{\bar{V}}(\bar{W}) = 0 \quad (1799)$$

Where the first term is the contraction of the differential along directions in space of the one form ω with the vector V and that of the vector W . It is the projection of the composite anticommutation relationship of the one form ω and the vector V with or upon the vector W . The second term is the contraction of the one form ω with the result of the commutation relationship of the vectors V and W with the required coordinate basis fixing by the Lie derivative again for the coordinate basis element. This can be further expanded as, (where \bar{e}_j means differentiation in the coordinate basis in the direction of the unit vector e_j):

$$\underbrace{(V^j\bar{e}_j(\omega_i) + \omega_j\bar{e}_i(V^j))}_{(1)} W^i + \omega_i \underbrace{(V^j\bar{e}_j(W^i) - W^j\bar{e}_j(V^i))}_{(2)} + \underbrace{V^j W^k (\mathcal{L}_{\bar{e}_j}\bar{e}_k)^i}_{(3)} = 0 \quad (1800)$$

It is this third term with the Lie derivative which is concerned in this discussion and which pertains to the theory given so far. A Lie derivative is roughly a way of describing the departure from colinearity or the commutation of differentials when going around a path, with directions and functions defined in the given space.

The term with the Lie derivative when nonvanishing indicates the presence of curvature, and it is this curvature which is used in the theory established so far.

The point to be made is that the third term is explicitly nonzero when the coordinate basis is curved. It in this equation however represents, for what the other terms represent, an equal and opposite displacement of the quantities via the first (+) sign and second (-) sign parts of the equation. These parts can be known as the differential of a relativistic position contracted with a general position vector, and in the second one, the local uncertainty principle in relativistic form along the same direction.

Within the theory established so far, there is the question of when this third term becomes zero. Because for the theory, what it means is that the projection of the theories into one another represents a form of conjugate quantity to inertia. This inertial content is the mass of a body, and it is accompanied under a change in motion by a change in the qualities of the respective principles of quantum mechanics and general relativity.

The fact that this equation adds to zero, is the statement that zero displacement exists on the ultimate level for which neither general relativity nor quantum mechanics exclusively are true alone, is also conventionally a physical displacement of between the theories of quantum uncertainty into spacetime and spacetime into uncertainty. Summatively on the conventional level there appears to be a physical displacement, but there is ultimately null displacement of particle-space

into particle-space, when such composite objects are considered to form a joint relationship in whole.

The first of the three terms above disappears with equal and opposite curvatures of the position of an object and its relativistic factor, in for instance the inertial separation of a superconductor and magnet. Here the energy momentum restriction and equal and opposite magnetic fields with coalignment of momenta and magnetic field vectors takes place. This inertial separation, and the disappearance of this term are one to one, and occur because of the requirement that the total energy not change and the magnetic fields remain equal and opposite at the surface of a perfect diamagnet.

This can be illustrated by considering a magnet and superconductor in levitation. The vectorial dot product of the magnetic fields, which is related to its total electromagnetic field energy of a magnetic origin, and the kinetic energy momentum of the bodies with the consideration of relativistic factors must be conserved in total. As is found, the following restriction and exception are in agreement with the general statement of each changing in response to the other. If we take the dot product of the magnetic fields, and the differential of this, then it can only be that if this is nonzero that either the principle of conservation of energy or the principle of diamagnetism are violated. For instance the magnetic vectors either both become smaller or both larger, preserving the diamagnetic effect but not the conservation of energy separably from motion of the system as a whole, or, the magnetic vectors will become smaller and larger, not preserving the diamagnetic effect while separably preserving the conservation of energy with motion of the system.

Thus the first of the above three terms in the mathematical equation so expanded must be it is reasoned, zero. This is the level of reciprocity being of equal and opposite curvatures, but not with the presence of a net acceleration of the system. When there is a net acceleration of the system, it serves the purpose of compressing or elongating the magnet and superconductor displacement, and is a physical and mathematical displacement of the two quantities of the first and second term into one another. This is the role the third term plays, and is an equivalent displacement of one term into the other, with the second term playing the role of a commutation relationship in the quantum theory. There is an interesting observation which comes from this. It is the physical prediction that for a magnet and superconductor prepared to levitate freely in Earth's gravitational field, there will be a static scenario. If this system is dropped as a whole and with the removal of support against gravity, there will exist an acceleration of the magnet and superconductor downwards with one g , and a separation which will be precisely negative one g apart, and one g together. This negative one g of separation is simply because with the absence of the Earth's gravitational field, and the preexisting balance of equal and opposite forces, the acceleration of magnet and superconductor apart will be precisely the negative of the prepared state with support.

Establishing Comparative Equivalence

Thought Experiment For Superconductivity

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity. The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indis-*

tinguishable but reciprocal to the gravitational force to mass relationship.

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (1801)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (1802)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space.

For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of representation for the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect absolute.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ .

In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_{\mu}^S = \Omega_{\mu}^{\nu} \Lambda_{\nu}^{\mu} A_{\mu}^M \quad (1803)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (1804)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (1805)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero.

Thus the Meissner effect and energy conservation cannot be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (1806)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (1807)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \quad (1808)$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to

the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase.

For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor.

Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \tag{1809}$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z)\hat{z} \tag{1810}$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. Then we can extend results with calculus to generalized objects.

The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \tag{1811}$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \tag{1812}$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses

the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \quad (1813)$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \quad (1814)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma\mu f(z)\hat{z} \quad (1815)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma\mu f(z)\hat{z} \quad (1816)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at it's location:

$$\gamma\mu f(z)\hat{z} \quad (1817)$$

The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (1818)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (1819)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer.

This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (1820)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present situation:

$$v \rightarrow \gamma v \quad (1821)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor

within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned}\vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 (v \gamma dt) / (cdt)^{2n} \\ &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} = -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} = -\mu^2 f(z)^2\end{aligned}\tag{1822}$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z}\tag{1823}$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia.

For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics.

Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must

change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (16) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system.

For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (1824)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity and then shift the discussion to how the spin manifests in the new formalism motivated by this thought experiment:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general covariance within quantum mechanics.*

Comparative Equivalence II: *Measurement of physical quantities by measurer of measured or of observer and observed remains the same, invariant, and independent of the order and relation of these as physical elements. It carries a reciprocal native transformation within quantum mechanics as in general relativity, but both results are the consequence of general covariance.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence III: *The results of measurements of physical quantities of measure are coordinate displacement invariant and reciprocal in quantum mechanics as they are in general relativity.*

Measurement

What do we mean by measurement? One definition of measurement is: "The act or process of measuring something." But does it matter in which *way* we measure? This theory is both a theory of measurement and a theory of physical result, as well as is the theory of general relativity. We take as a given that the results of measurement do depend on whether the measurement is with an object in motion or an object at rest, which is true in general relativity. When we include both comparative equivalence and the equivalence principle the result is a theory reconciling and edifying the distinct and different viewpoints of observer and observed.

For example let us say we have a ruler and a stream of rulers is flowing by. Because of the implications of a theory of space & time, general relativity, our ruler has an extension in the fourth dimension as well during the process of measurement. And it would be understood that when a measurement is performed by one of our rulers on the stream of rulers flowing by at a large velocity, that they will yield different results from their rest values. This much is a result of not accounting for as well the fact that a ruler has a temporal extension with velocity.

For when we compare with the fourth dimension included in our description the extension of the ruler the result is indeed an invariant measure known as the spacetime interval, which for the rulers is spacelike and imaginary. It is the square root of the following quantity:

$$(\Delta s)^2 = c^2(\Delta t)^2 - (\Delta x)^2 \quad (1825)$$

That this interval (Δs) is spacetime and transformation invariant is a given in both of the theories of special and general relativity and is the result of taking the speed of light as a constant and admitting that space and time can transform into one another. It represents the 'real' physical length of the ruler when this ruler is also accompanied by a tool to measure time, a clock for instance, as well as a spatial measurement device for distance. This physical form of relativity can then be known as a theory requiring a temporal measuring device and a spatial measuring device to reliably compare spatial interval as distance, or, temporal interval as duration. We cannot reliably compare either of these two without the other.

Performing the transformation with the object at rest in contrast to the object in motion is a reversal of the transformation. This is what is understood from the theories of special and general relativity, that space and time form a singular fabric known variously as space time, space-time, or spacetime. For the sake of the purposes of declaration of their union, or even their disjoint relationship, it is important to make a distinction. For space can be defined as an enclosure that always has an exterior domain, while time can be seen as an inclosure which always has an interior domain.

We can speak of their disjoint union as well when a metric $g_{\mu\nu}$ is defined. For then the result of an interval in space-time can be written generally as:

$$\Delta s = \sqrt{\int \int g_{\mu\nu}(x^\mu, x^\nu) dx^\mu dx^\nu} \quad (1826)$$

In this result the double integral signifies that we must take the analogous square sum square root of integral distance to define an interval in general relativity as in a theory which relies on an Euclidean notion for space & time. This is nothing but the definition of a metric, here denoted as the four dimensional $g_{\mu\nu}$. The statement of general covariance is the statement that

the true and ultimate 'general' laws of physics do not depend on any a priori coordinates, but as for differences in coordinates there is a distinction that must be accounted for as it is in the interval preceding. In this theory we will make a reciprocal statement that this system of coordinization is not privileged and that there is a secondary and consistent way for accounting for measurement. It is nothing but the difference we can discuss in talking about:

$$\Delta s = \sqrt{\int \int g^{\mu\nu}(x^\mu, x^\nu) dx_\mu dx_\nu} \quad (1827)$$

Instead, and this amounts to a different result from general relativity by accounting for distance with a reciprocal transformation. For, the observer and the observed make express differences according to the conventional interpretation of general relativity. This is a difference we wish to use to leverage our position regarding the interpretation of physical measurement in quantum mechanics. Although they are embedded in a general relativistic spacetime, measurement is something that may or may not be dependent on observer and observed and it is a notion we here wish be explicit about. The given union of space and time in general relativity is then not unique, and there are marked differences if we are to use (18) or (19) for the sake of comparative equivalence. We have alluded to a given reciprocity, a division and union at once for the process of measurement. Reciprocity is the statement that there can arise no difference of measurement from reality ultimately given the equivalence principle and comparative equivalence and the given organization of ideas that follow from these assumptions.

The question: "If what is real is measurement then *what* is being compared in the process of measurement?" soon becomes important. If we have a ruler and a ruler, there has been known to be a strict relativity of measurement going back as far as the Buddhist philosopher Nagarjuna. It is stated that the big is only big in relation to the small and the small is only small in relation to the big. Label the rulers with prefixes *A* and *B* and examine the situation at hand in the context of this question and statement. If one ruler is moving and the other stationary with us in our frame, we will contend that there are two equivalent and distinct ways to compare them to each other.

It is either the case that a moving ruler labeled *B* is compared to a stationary ruler labeled *A* or it is the case that the moving ruler *B* is taken as stationary and is compared to the now relatively moving ruler *A*. The first picture is labeled *A** and the second picture is labeled *B**, for the observer is stationary with the object of measure *despite that it is actually moving in relation to what is being measured*. This is identical with identifying the motion with the object at rest instead of the object in motion. This is identical with reversing the transformation and the object of reference with the direction of inference between the one in motion and the one at rest.

Our newly formulated notion of comparative equivalence is then the distinction:

Comparative Equivalence IV: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

In this we see that as it is in general relativity what is stationary and what is moving has nothing to do with *what* is measuring *what*. Different from general relativity we make here a conventional distinction between wherein the motion lies; with the observer or the observed. For now what

must be noted is that the 'presence' of motion is a tool to discriminate what precisely we are comparing to what.

For instance the first case A^* where the observer is stationary with ruler A is the manner in which general relativity is usually taught. Equally as compelling is the second case B^* of measurement, which makes clear that we may in principle take the measurement as with the ruler in motion as well as that one which is stationary.

This is not to be confused with being in contradiction with general relativity so much as it is to be taken that it is admittedly a *different* way of basing our measurement, which can be formulated consistently with general relativity in mind. It is nothing but a second and distinct way of interpreting measure and measurement in general relativity, one we which yields for us a conventional difference.

We arrive at the first instance of the intellectual struggle to rectify our set of admissible standards, and find serious tension in this idea, if we accept general relativity merely at face value. For nowhere within relativity, special or general, is it given that this second method of measurement must be false. Relative as it is used in language is taken to mean both processes at once informally, but much confusion arises if we presuppose it to be one or the other of these two situations alone which must be true by itself, and develop general relativity around these terms without accepting a difference may arise conventionally, as it matters to us on Earth.

Nowhere has it appeared that we may take the measurement to accord with motion in the *other way* except in science fiction. Has mother natured played a ruse on us if this second viewpoint is to be taken as true as well? As it turns out, no, for scenarios A^* and B^* are not implicitly excluded into predefined categories by general relativity with only one holding true, although they are given names, and Einstein's 'general covariance' is a term applying equally as well to each.

Scenario A^* we will call the covariant relationship and scenario B^* we will call the contravariant relationship of measurement. Neither is tenably excluded by general relativity, but there is a difference, and what it means for measurement will become clearer as we go as we draw a physically important and tangible parallel with general relativity.

For now, notice that we are making a distinct statement that it does indeed matter if the observer is with the object at rest or the one in motion, *although* motion is relative. Our intention in this paper is to illustrate that comparative equivalence as it will be known is the equivalence of the results and process of measurement under either of these scenarios *ultimately*. This has deep implications of course, if we are to take the very real physical results of general relativity and comparative equivalence to be real and at the same time holding no privileged scenario, process, or basis of measurement.

Flat to Curved Transformation and Connection

The given theories point to a relationship between the theories of general relativity and quantum mechanics. The relationship is one of observability. For instance, curvature in general relativity plays the role of the structure of spacetime, but it is not ultimately observable for the observer in freefall, where the weight vanishes. This is an instance of the equivalence principle.

This tenement as the idea of the ultimate meeting the conventional as a viewpoint is tenable in the case of general relativity. Similarly we will find that this form of agreement holds in the quantum viewpoint. Hence it is hypothesized that something analogous to universality of freefall is the reason for a gap and other observable facets of superconductivity.

First we examine the meaning of curvature. It is known that in various lower dimensional curved spaces that there is a way to move from the flat real number based coordinates to coordinates natural to the curved space. The basic notion is the covariant differential, which contains an extra contribution from the conversion of coordinates and their consequent curvature. Just as the equations of motion differ in different coordinate systems, the covariant differential differs from the conventional derivative in that the additional part describes the result of changing the basic coordinate system.

The ultimate viewpoint is now seen as related to the covariant viewpoint. The basic covariant differential is:

$$\nabla_{\mu} \equiv \partial_{\mu} + \Gamma_{\mu} \quad \Gamma_{\mu} \equiv \frac{1}{2} g^{\nu\rho} (\partial_{\mu} g_{\nu\rho} + \partial_{\nu} g_{\rho\mu} - \partial_{\rho} g_{\mu\nu}) \quad (1828)$$

This derivative is coordinate system nonspecific in that it returns the same result under coordinate transformations, and is coordinate system specific in that the structure of the Christoffel symbols, Γ are related to the given space of curvature. Note that for a flat space the extra contribution vanishes. The addition of this component is therefore a way to move off the flat space to the curved space wherein the curvature plays a role through the coordinate dependence it imputes to the differential.

Therefore the simple flat differential:

$$\partial_{\mu} \quad (1829)$$

Holds for a flat space, or a flat space to flat space conversion, although scaling of the space does influence the derivative. When moving to the curved space, the extra form:

$$\Gamma_{\mu} \equiv \frac{1}{2} g^{\nu\rho} (\partial_{\mu} g_{\nu\rho} + \partial_{\nu} g_{\rho\mu} - \partial_{\rho} g_{\mu\nu}) \quad (1830)$$

Is simply added to the derivative operator, to result in the *covariant differential* of a given quantity, which is a way of describing the change in the quantity contribution given the change in coordinates which naturally follows from coevolution with the curved space. General relativity implies that these do exist, (as for instance motion is observable) but that the sequential repetition of differentiation is not observable, hence:

$$\nabla_{\nu} \nabla_{\mu} \equiv G_{\mu\nu} \quad (1831)$$

Is the structure of spacetime, and owing to general covariance does not result in observable changes in the theory. Accelerations are however observable from a second perspective at a fixed location *not* falling with the object, and imply not only a gravitational field and curvature of the coordinates, but delineate what precisely the change is to the viewpoint of comparative equivalence. But, it remains that the natural laws of physics hold no coordinate dependence ultimately.

This is how we can say that both viewpoints are valid, the conventional and the ultimate, and that quantum mechanics borrows this coordinate freedom principle from general relativity. The first contention is hence that coordinate freedom applies to both of general relativity and quantum mechanics.

In order for quantum mechanics to be consistent with accelerations as general coordinate transformations, it must hold true that the eigenstate holds an independent reality with respect to these types of transformations. For instance consider a two particle system. In order for the consistency of quantum mechanics under electromagnetic interaction, it must hold true that both states remain mutual eigenstates with respect to their frames of acceleration.

Any proof must be based on the supposition that the eigenstate remains an eigenstate for each particle with respect to all others under mutually accelerated motion. This holds when, given that although it is true that locally in the frame of acceleration the eigenstate may be defined, it must also be an eigenstate with respect to other frames of reference, *and for the considerations of relativity may contain no frame dependence.*

Suppose in the frame of a particle ∂_μ is the basis of the operator for momentum. Then, $\gamma^\mu \partial_\mu$ is the relativistic operator for momentum and should be invariant under general coordinate transformations. This operates on ξ_μ , the wavefunction so that $\gamma^\mu \partial_\mu \xi_\mu$ is the relativistic energy momentum of the eigenstate.

If and only if this is an accelerated state does the Lorentz transformation Λ_ν^μ have a spatial and temporal dependence, in which case the following eigenstate operation is nonzero:

$$\gamma^\mu \partial_\mu \xi_\mu \rightarrow \Lambda_\nu^\mu \gamma^\mu \Lambda_\nu^\mu \partial_\mu \Lambda_\nu^\mu \xi_\mu = \gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu + \gamma^\nu \partial_\nu \xi_\nu \quad (1832)$$

From looking at this we find an extra term appears, which does belong to the same frame ν but which introduces a frame dependence to the derivative, because $\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu$ is Lorentz transformation dependent. In this case ξ is no longer an eigenstate with respect to the accelerated frame with this differential alone.

Since:

$$\Lambda_\nu^\mu = \gamma^\mu \gamma_\nu \quad (1833)$$

It is true that this can be accommodated by subtracting a term from the right hand side of the eigenstate equation for four momentum, or alternatively and equivalently adding a term which transforms reciprocal to the definition of the four momentum. We thereby define the *covariant differential* by working out the extra term in frame ν :

$$\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) = \gamma^\nu \gamma_\mu \partial_\nu \gamma^\mu \quad (1834)$$

Under transformation back to frame μ a term must be added to ∂_μ to preserve the differential which is:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu \quad (1835)$$

In conclusion, for quantum mechanics to possess no frame dependence for eigenstates, and for them to be mutually defined under interaction, the covariant differential defined by the following must be used for the energy momentum of the particle instead of only the flat space differential ∂_μ :

$$p_\mu = i\hbar(\partial_\mu + \Gamma_\mu) \quad (1836)$$

From this not only follows the rule of differences in frame contributing to the localization in a zero sum fashion but that the separable parts of the momentum must change as the following under a general transformation:

$$\partial_\mu \rightarrow \partial_\nu + \Lambda_\nu \quad \Gamma_\mu \rightarrow \Gamma_\nu - \Lambda_\nu \quad (1837)$$

With the local curvature difference from the transformation:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1838)$$

Hypothesis of Displacement: *The curvature of the coordinate space transformation is the result of a change in coordinates natural to a given theory, and results in a real observable physical energy momentum shift because a given composite theory holds a reality to observation for displacement arising from coordinate system transformation.*

This is tantamount to saying that over accelerations in general relativity there exists a free domain of choice for the integration constant of the given accelerative curvature field. This theory is precisely the case of freedom of the first differential in reference to the general covariance over the second differential in the composite theory.

Spin Field Theory

Consider the general transformation of a spinor wavefunction $\xi_\mu(x^\mu)$. The approach used is that of generating a field theory from a general transformation of a field quantity, here the eigenstates ξ .

$$\xi_\mu \rightarrow \Lambda \xi_\mu \quad (1839)$$

Here Λ is a 16 parameter tensor which represents the transformation upon a general wavefunction ξ_μ . The transformation Λ should not be confused with a Lorentz boost, as it is a transformation of the field of spinors into itself and is an field tensor operator. It however carries analogous properties, for a rotation and a scaling of the spinors *is* equivalent to a *local* change in frame, however it does not arise by net global motion but instead by way of the evolution of the field of spinors. This can be written in general as:

$$\Lambda = e^{-ig\lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu}} \quad (1840)$$

The spinors are rotated and boosted in the six possible directions given by the tensors in the transformation. Where g is a coupling constant and $\lambda_{\mu\nu}(x_\mu, x_\nu)$ parametrizes this transformation in space and time, while $\sigma^{\mu\nu}$ is a set of matrices corresponding to the commutator of the γ matrices, as defined by the following:

$$\sigma^{\mu\nu} = \frac{i}{2}[\gamma^\mu, \gamma^\nu] \quad (1841)$$

What is important is that a *gauge* can be defined for this transformation, since it acts on a *field of spin*:

$$\partial_\mu \rightarrow D_\mu = \partial_\mu + \Gamma_\mu \quad (1842)$$

With:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu = \partial_\mu \log \gamma^\nu \quad (1843)$$

From before. Since this is the logarithmic derivative of the spin as a field, the transformation is as follows on the eigenspinor:

$$\xi_\mu \rightarrow \Lambda \xi_\mu = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \xi_\mu \quad (1844)$$

And on the particle and field momentum:

$$\partial_\mu \rightarrow \partial_\mu - ig\partial_\mu \lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \partial_\mu + \partial_\mu \log \Lambda \quad (1845)$$

$$\Gamma_\mu \rightarrow \Gamma_\mu + ig\partial_\mu\lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \Gamma_\mu - \partial_\mu \log \Lambda \quad (1846)$$

Where the sign change comes from the fact that the covariant correction operates on γ^ν while Λ operates on ξ_μ . Hence this is equivalent to changing the order in the commutator and hence there exists a change in sign, and the transformation has opposite differentials with ∂_μ and Γ_μ .

The form of the covariant differential D_μ is thus left intact by gauge transformations with the spin curvature connection, and as the wavefunction is separably transformed from that of γ^ν , the exponential is preserved in both parts of the covariant differential.

Finally, the adjoint wavefunction is with the conjugate of this wavefunction transformation, so the probability amplitude is left unaffected in the Dirac equation, and the electromagnetic gauge connection may be added separately. Thus the net covariant differential is:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (1847)$$

Transformation With an Electromagnetic Field

Beginning with the reciprocal property of γ^μ and D_μ we derive the response from this condition extending to the introduction of an external four potential αB_μ . The given is that:

$$\gamma^\mu D_\mu \xi_\mu = \xi_\mu \quad (1848)$$

It is illuminating to consider the torsion property as related to the Meissner effect.

Then we add $\alpha B_\mu = f_\mu$ to produce the new condition, interrelating the accelerated frame transformation produced under interaction to the addition of this field:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) \xi_\mu = \xi_\mu \quad (1849)$$

So that to satisfy both equations:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) = \gamma^\mu D_\mu \rightarrow \lambda^\mu = (\gamma^\mu D_\mu + \gamma^\mu f_\mu)^{-1} \gamma^\mu D_\mu \quad (1850)$$

The partial derivative and spin curvature terms are modified as the following:

$$\partial_\mu \rightarrow \partial_\mu + \partial_\mu \log \lambda^\mu \quad \Gamma_\mu \rightarrow \Gamma_\mu - \partial_\mu \log \lambda^\mu \quad (1851)$$

With this, the covariant differential is preserved. The added term comes from the distributive property of the log function and the action of the transformation on the wavefunction:

$$\partial_\mu \log \lambda^\mu = \partial_\mu \log((1 + \gamma^\mu f_\mu)^{-1}) = -\gamma^\mu \partial_\mu f_\mu \quad (1852)$$

Since they are in the same frame, γ^μ and ∂_μ commute. Integrated as a source this term is:

$$-f_\mu = -\alpha B_\mu \quad (1853)$$

The added term of λ^μ perfectly compensates for the added f_μ by the above. Hence the electromagnetic potential that is applied causes a shift of energy momentum between the two parts of orbital and spin curvature energy momentum, at the strength of the applied electromagnetic potential.

The condition of (45), implies that from the perspective of a particle accelerated in relation to a particle at rest, the particle at rest acts as a source generating an opposite potential to its

own potential as experienced in the frame of the accelerated particle. The accelerated particle is not a source to itself because of the reciprocal condition and it is at rest in its frame, so it experiences the (negative) potential of the other particle at rest. This indirect potential acts on either particle, and must act to attract them, and a gap develops.

As there exists a frame of rest and condition (45) is conserved under a frame transformation, there exists no direct potential, but there does exist one arising from the frame of acceleration relative to the frame of rest, as a back reaction reversed potential on the particle in the accelerated frame.

Thus both particles experience a negative potential with respect to the other particle, which is the following potential:

$$\int \gamma^\mu \partial_\mu \log \lambda^\mu dx^\mu = -\alpha B_\mu \quad (1854)$$

This explains the diamagnetic effect and pairing, and is consistent with the magnetic field being zero. Additionally, the magnetic field of zero can be explained as the fact that if γ^μ and D_μ operating on ξ_μ are reciprocal to a constant, and given the momentum is inertial, it produces zero magnetic field in all frames.

But this condition of the eigenstate is preserved with respect to all frames, thus the magnetic field is globally zero for all points within the material.

Covariant Differential Commutation Relationship

Consider the interior transformation of the covariant differential due to the term produced by the previous transformation under action of the electromagnetic field:

$$\begin{aligned} [D_\mu, D_\nu] &= \partial_\mu \partial_\nu + \partial_\mu \Gamma_\nu + \Gamma_\mu \partial_\nu + \Gamma_\mu \Gamma_\nu - \partial_\nu \partial_\mu - \partial_\nu \Gamma_\mu - \Gamma_\nu \partial_\mu - \Gamma_\nu \Gamma_\mu \quad (1855) \\ &\rightarrow (\partial_\mu - \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\ &\quad + (\partial_\mu - \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\ &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\ &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\ &= -\alpha \partial_\mu A_\mu D_\nu + \alpha \partial_\nu A_\nu D_\mu + \partial_\mu D_\nu - \partial_\nu D_\mu \\ &\quad + \alpha \partial_\mu A_\mu D_\nu - \alpha \partial_\nu A_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\ &= \partial_\mu D_\nu - \partial_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu = D_\mu D_\nu - D_\nu D_\mu = [D_\mu, D_\nu] \end{aligned}$$

Which indicates that the two gauges are mutually satisfied under transformation by the field, interior to the covariant differential. This also holds true for the total covariant differential since any transformation should be performed symmetrically. Hence, the commutation relationship of the covariant differentials is preserved under the internal transformation of its terms. Furthermore:

$$[D_\mu, D_\nu] = -[\Lambda_\nu^\mu D_\mu, \Lambda_\mu^\nu D_\nu] = -[D_\nu, D_\mu] \quad (1856)$$

Indicating the commutation relationship is antisymmetric under a symmetric frame transformation. We may evaluate this term in the following way at a point in space:

$$\begin{aligned}
\xi_\mu \xi_\nu [D_\mu, D_\nu] \xi_\mu \xi_\nu &= \xi_\mu \xi_\nu (D_\mu D_\nu - D_\nu D_\mu) \xi_\mu \xi_\nu \\
&= -\xi_\mu \xi_\nu (\Lambda_\nu^\mu D_\mu \Lambda_\mu^\nu D_\nu - \Lambda_\mu^\nu D_\nu \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
&= -\xi_\mu \xi_\nu (D_\mu \log \Lambda_\mu^\nu D_\nu - D_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
&= -\xi_\mu \xi_\nu (\gamma^\nu \partial_\mu \log \Lambda_\mu^\nu D_\nu - \gamma^\mu \partial_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
&= -\xi_\mu \xi_\nu (\gamma^\mu \partial_\mu \log \Lambda_\mu^\nu - \gamma^\nu \partial_\nu \log \Lambda_\nu^\mu) \xi_\mu \xi_\nu \\
&= -\xi_\mu \xi_\nu \alpha (\partial_\mu A_\nu - \partial_\nu A_\mu) \xi_\mu \xi_\nu = -\xi_\mu \xi_\nu \alpha F_{\mu\nu} \xi_\mu \xi_\nu
\end{aligned} \tag{1857}$$

Making use of (34) and γ^μ and γ^ν to correct for the covariant differential making it a partial derivative by (35) and the fact that when the partial derivative associated spin is multiplied by another spin factor the negative logarithmic derivative is introduced into the equations (37) and (38). Hence:

$$[D_\mu, D_\nu] = -\alpha F_{\mu\nu} \tag{1858}$$

The spin field transformation which accompanies the introduction of the electromagnetic field, under the covariance of the form of the eigenstate is a curved transformation of coordinates, and hence what we arise at is a real consequence of coordinates. It is flat in a sense (when one accounts for the change in coordinates) and curved in a sense (when one does not account for this change in coordinates) naturally. The Meissner effect is seen as the conventional departure of the electromagnetic field tensor torsion condition at the boundary of the superconductor.

Calculation of Exchange

We can now proceed to analyze the commutation relationship of the ∂_α and Γ_α with the added $\pm\Lambda_\alpha$. Under the two particle equation this is reversed in sign among the two sides of the two particle Dirac equation corresponding to particle 1 and particle 2. Under consideration of the fact that Λ_α changes sign under juxtaposition.

Exchange Difference Hypothesis: *The added logarithmic differential of the frame transformation, or its curvature, Λ_α , in changing sign between frames behaves in conjunction with ∂_α and Γ_α as raising and lowering operators in the two particle Dirac equation.*

To test this hypothesis consider the ∂_α energy momentum for the singlet. Between states in the two particle Dirac equation a term enters as:

$$(-i\hbar\partial_\alpha + 2\hbar\Lambda_\alpha)(-i\hbar\partial_\alpha - 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(a^\dagger a)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \tag{1859}$$

The term on the spin curvature enters as:

$$(-i\hbar\Gamma_\alpha - 2\hbar\Lambda_\alpha)(-i\hbar\Gamma_\alpha + 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(aa^\dagger)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \tag{1860}$$

Thus the effect of the acceleration and the existing momenta, create the conditions under the two body (with opposite accelerative frame boosts) of anticommuting operators. The two particle equation is the product of two Dirac equations acting on the superposition of the two wavefunctions, here taken in the center of mass frame α :

$$(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)\xi_{\alpha^-}^- \xi_{\alpha^+}^+ = 0 \tag{1861}$$

Substitution of conserved quantities to simplify the calculation results in:

$$(-i\hbar\eta_+^\alpha + e\sigma^\alpha - m)(-i\hbar\eta_-^\alpha + e\sigma^\alpha - m)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1862)$$

Because the positive and negative orbital momentum and spin curvature sum to zero:

$$(e^2\sigma^\alpha\sigma^\alpha - (me + 2ie\hbar(\eta_+^\alpha + \eta_-^\alpha))\sigma^\alpha + im\hbar(\eta_+^\alpha + \eta_-^\alpha) - \hbar^2\eta_+^\alpha\eta_-^\alpha + m^2)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (1863)$$

Because the only term which contributes to the change from the singlet to triplet under the change in sign by the operators above is η^α and $\eta_+^\alpha + \eta_-^\alpha$ is zero by equal and opposite momenta, this reduces to:

$$-4 \int \int \xi_\alpha^+\xi_\alpha^-\hbar(\eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha)\xi_\alpha^-\xi_\alpha^+dx^\alpha dx^\alpha = \Delta \quad (1864)$$

η^α produces four terms which obey a commutation relationship by way of the above:

$$\begin{aligned} \eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha &= (\partial_\alpha^+ + \Gamma_\alpha^+)(\partial_\alpha^- + \Gamma_\alpha^-) - (\partial_\alpha^- + \Gamma_\alpha^-)(\partial_\alpha^+ + \Gamma_\alpha^+) \\ &= (\partial_\alpha^+\partial_\alpha^- + \partial_\alpha^+\Gamma_\alpha^- + \Gamma_\alpha^+\partial_\alpha^- + \Gamma_\alpha^+\Gamma_\alpha^-) - (\partial_\alpha^-\partial_\alpha^+ + \partial_\alpha^-\Gamma_\alpha^+ + \Gamma_\alpha^-\partial_\alpha^+ + \Gamma_\alpha^-\Gamma_\alpha^+) \\ &= -4\partial_\alpha\Lambda_\alpha + ([\partial_\alpha^-, \Gamma_\alpha^+] - [\partial_\alpha^+, \Gamma_\alpha^-]) = -4\partial_\alpha\Lambda_\alpha \end{aligned} \quad (1865)$$

Where the following equality holds:

$$[\partial_\alpha^-, \Gamma_\alpha^+] = [\partial_\alpha^+, \Gamma_\alpha^-] \quad (1866)$$

As the extra Λ_α changes sign *with* the derivative, leaving for the two particle energy gap *for all electrons*:

$$\Delta = 4\hbar c \int \gamma^\alpha\Lambda_\alpha dx^\alpha \equiv 4e \int \gamma^\alpha A_\alpha dx^\alpha = 4J \quad (1867)$$

This last equivalence is because in the exchange interaction the terms of μ and ν are juxtaposed and appear in the Λ , which by the previous section is equivalent to an electromagnetic potential differential. This is consistent with the previous section, where a γ^ν changes in a *relative* manner such that a reversed A_ν is generated for the particles in motion *within a spin system background*.

If the particles are relatively accelerated there exists a reversed potential between them with an energy lowering that is the contribution to their energy from this potential, and it is equivalent to an energy mass lowering of their inertial content. This is true as the acceleration gives rise to the (reversed) potential and without an acceleration there exists no potential. The acceleration as a source for the potential is physically equivalent to the lowering of the inertial mass energy, since it is the same term numerically.

This is fundamentally the expression that the potential energy mass lowering as sourced in the acceleration, and numerically equivalent with the inertial mass energy lowering, is a matter of frame, and the two are equivalent between all frames, hence the lowering is a prediction of general covariance. Since the quantum singlet to triplet operator holds individually between particles and a conventional to ultimate difference is taken the lowering holds for all two particle states. This implies the following equivalence:

Quantum Equivalence Principle: *The potential mass energy lowering is indistinguishable from the inertial mass energy lowering.*

Discussion of Energy Lowering

This seems in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \quad (1868)$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (1869)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (1870)$$

For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content. In and by way of this it does indeed lower, but it is a matter of perspective. Going back to the system so established, we ask the question as to whether both energy conservation and general covariance can be satisfied with the formalism developed.

The analogy is actually quite simple, for what happens is that from the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (1871)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system in motion where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has occurred by the above and the condition of general covariance. The quantum equivalent of the Earth-Sun system is to see that it is the inertial constraint on quantum exchange we judge as non-inertial when it is in fact quantized inertially. This admits the formation of a new conclusion regarding quantum phenomena in general, as for example the photoelectric effect by which a photon is absorbed by an electron and knocks it out of its orbital in a metal, past a threshold energy momentum:

Conclusion: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is the accelerated interpretation of this state. This gap is real by observation from the indistinguishability of the inertial and potential relativistic factors under the equivalence principle for any transition of a quantum nature.*

Distinction

While an interaction takes place, it is true that the uncertainty principle would be modified in the observables not for the sole reason that the coordinates change under acceleration, for there does exist a coordinate free representation of the observables compatible with acceleration such that the uncertainty principle is satisfied.

It it also because either:

A:) *If the electromagnetic interaction is not included in the momentum then it modifies the position and momentum compatible with an acceleration and an interaction that varies, and thus the relative determination of momentum and position is functional and dependent on coordinates, and not an invariant description, given that this acceleration exists in a way that is dependent on coordinates with respect to the operation of position of one particle upon the momentum of another, and with the reverse operation. Hence a coordinate dependent anomaly arises in the commutation relationship between the observables of different particles, whenever the electromagnetic potential is not included in the particle description.*

B:) *If the electromagnetic interaction is included then the former anomaly does not occur, because the commutation relationship is perfectly compensated for in its change with respect to the quantities of particle momentum and field momentum, as one merely changes the other in an equal and opposite functional manner and they are comparatively added instead of a complimentary change absent.*

Conclusion: *What can be seen is that it is the sum of these changes which is the expression of a net invariance of the determination of the uncertainty principle with respect to the general covariance of the observables without which there is no commutation of the separable momenta or positions.*

If and only if this holds true can we satisfy both postulates. The restriction to mutually satisfying both postulates is trivial without invoking the multiparticle viewpoint but not when it is invoked. For note that the uncertainty principle can be made invariant by a generally covariant coordinate basis locally.

However, this is not manifestly globally invariant in that the determination of the multiparticle relationship of uncertainty does not mutually commute between different particle observables, for the same reason there exist different coordinate systems for different particles.

Additionally, although with an interaction, the single particle uncertainties remain manifestly locally invariant, they are not as determined globally in the sense of between particles, unless the interaction potential is included in the momentum. When the interaction is included the change it introduces compensates for changes in the particle momentum in such a manner that the system is manifestly generally covariant and the uncertainty principle is left generally invariant.

For this to be true an identity must hold true between the frame transformation and electromagnetic field interaction, namely that the log differential of the frame transformation is the negative of the log differential of the electromagnetic field tensor, weighted by the appropriate constant (α):

$$\partial_\mu \log \Lambda^\nu_\mu = \alpha \partial_\mu \log F^{\mu\nu} \quad (1872)$$

Furthermore this identity gives a relationship to the description of the frame as it covaries with the particle description of momentum, and yields the total covariantly conserved quantity of momentum. It is merely the force law ($F = ma$), by inspection.

Justification and Ramifications

First to note is that the multiparticle perspective is one to one with the existence of interactions, which by way of and which there exists a connection to the differing frames of acceleration, and that these interactions must be included as a field potential energy momentum as it pertains

to the full particle energy momentum as an observable in order for there to be a commutation relationship consistent with the uncertainty principle between the observables of the multiple particles.

This is to satisfy the uncertainty principle with respect to the different particle's definitions of each other, and their mutual commutation relationships, for their definitions of momentum do not commute when the interaction potential is left out. Additionally, what is striking is that it is the full particle and field energy momentum as carried by the particle that defines the observable and it is not particle only.

This seems to express on a base level that it is the full particle energy momentum with field that becomes the observable in the multiparticle viewpoint, as such must be the case to satisfy the uncertainty principle with general covariance resulting from changes in the coordinates with respect to the frame of motion, resulting from and identifiable with the acceleration due to the interaction.

As a consequence, the eigenstate condition of the Dirac equation is intact, although there is a slight difference in interpretation, arising in the context of the multiparticle description. For instance, the equation:

$$(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (1873)$$

Is the expression of the eigenstate condition of a particle like an electron. Although the single particle description of the eigenstate does not differ when mapped from the multiparticle condition, what remains to be seen is if the condition this represents mathematically is still identifiable with what it means in the multiparticle interpretation.

For while the Dirac equation, as it was initially interpreted, holds perfectly well with the condition of an ordinary partial derivative upon it being zero to result in an eigenstate, there is a subtle difference in the multiparticle setting with general covariance. Here, the condition is that the total covariant differential defined as:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (1874)$$

Must be used in place of:

$$p_\mu + \alpha A_\mu = \partial_\mu + \alpha A_\mu \quad (1875)$$

In the generally covariant setting. With this, although the Dirac equation is left locally intact, given that Γ_μ vanishes locally, it does not vanish identically for particle to particle comparisons. To prove this all it suffices to say is that the connection described in equation (8) is preserved under relative comparison of observables, and hence in general, or as for the multiparticle description, since Γ_μ does not vanish globally and must be included for generality.

As a final note consider that locally the description remains the same for the single particle description, for all particles, but that the multiparticle description differs substantially, as for instance γ^μ also takes on structure of the form of a function, and the descriptions may be inequivalent physically:

Hypothesis II: *The physics of the multiparticle description differs from the single particle description.*

In the case of exchange this can be an energy lowering. To note then is that this can lead to a collectively lowered energy in the case of superconductivity.

Examining superconductivity, for instance, the mystery is:

Mystery: *How does the energy lower, even if only in relative terms?*

This is only possible in a relative sense if the physical quantum description changes, and if the potential and kinetic energy both lower. But, the change between the singlet and triplet can be relatively modified by a matter of perspective. Internally to the system there is no change in kinetic energy as indicated by the field to frame relationship in the inertial frame, but observationally, it appears that there is a gap in energy.

To note then is merely that the triplet and singlet are repulsive and attractive, and therefore possess opposite relative curvatures, which immediately indicates a subjective-objective agreement of an energy difference of $2J$ per particle, because relatively there also exists an energy difference in the kinetic energy of J in the inertial mass energy by this same curvature relative to a system at rest external to it.

From the constraint of equation (43) and that which is imposed by the existence of multiple particles for which the condition of general covariance must be satisfied, the exchange phenomenon is relative and reveals a mass energy gap.

To prove this result quantitatively and rigorously one needs to evaluate the net integral, but this value is given empirically by the relation encoded in equation (44), which says that the differentials of these quantities are identical up to a constant of proportionality, and that their integrals should be equivalent up to a constant of integration. Then, because of this identity, the mass gap for an external observer outside the system, is the entire exchange energy difference of the two particles measured in the system of J with the change of the kinetic mass energy of J for a total of $2J$ per particle in sum.

In this context, the exchange is real only when observed from outside the system, and it is purely a relative phenomenon. Carefully noting their natures, that one is an electromagnetic potential energy difference when integrated, and that the other is an inertial mass energy difference when integrated, we arrive at the following conclusion:

Conclusion: *Relative potential and inertial mass energy lowerings are indistinguishable.*

However the gap must be weighted by the appropriate Lorentz factor, and this gives the formula and equivalence:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (1876)$$

Mystery of Superconductivity Revisited

The first thing of note in resolving this mystery is that the interpretation of the Meissner Effect is the confluence of the principle of general covariance and the uncertainty principle. The physics does not change, merely the interpretation of the uncertainty principle.

The two statements, one of the Meissner Effect, and secondly, one of energy conservation, are respectively the instantiation and extension of the uncertainty principle and general covariance. For instance, examining the equal and opposite fields which are one to one with spin angular

momentum as mutual observables, is a manifestation of the uncertainty principle to say they do not depart from commutativity with respect to boosts.

Secondly, energy conservation here is a principle by which the only dependence of this equal and opposite magnetic field is upon the perceived metrical relationship due to motion, otherwise the gravitational field of the body would change and they would exchange an extra contribution of energy, and would not preserve the center of mass under freefall.

In showing by contradiction (of a dual nature) that one or the other of these principles is violated if and when the transformation is not reciprocal to the field, one shows that the Meissner Effect is a generally covariant uncertainty principle based phenomenon. This is one to one with the principle by which the fields are in inverse or reciprocal relationship to the relativistic transformation, and:

This follows from the indistinguishability of the inertial and potential relativistic factors.

What is known is that the covariant differential in total does in fact commute, and that when it is separated into particle and field momenta that these do not commute. Thus this implies a number of things. First of all is that it is only the total field and particle momentum which is inertial, which is the interpretation of the Meissner Effect.

Secondly is that the four momentum of the particle alone is curved with respect to the field of electromagnetism alone. This is consistent because this leads to the condition of equivalent and opposite functional curvature relationships for these substituent quantities. Lastly, what this implies is that it is indeed true that the potential mass energy lowering in a superconductor is fundamentally indistinguishable from the inertial mass energy lowering.

From this follows the generalization of the condition implied by the first section of this paper, which is that:

$$D_{\mu}(i\gamma^{\mu}(p_{\mu} + \alpha A_{\mu}) - mc)\xi_{\mu} = 0 \quad (1877)$$

Which is nothing other than the condition for a covariant eigenstate.

As an experiment simply consider dropping a superconductor levitating a magnet, if this theory holds true then because there is a gradual change in the gravitational frame, as they fall their curvatures should contribute equally, with the prediction that the initial condition requires that they will fall together as one, given their mutual inertial relationship in an approximately inertial frame.

Conclusion: *There is a measurable and physical effect on the interpretation of the observables in the uncertainty principle given their coordinate system and frame independence.*

Interdependence of Orbital and Spin Momentum

To explain exactly what 'reciprocity' means in this context, consider the particles. In the two particle Dirac equation, there occurs an *internal* reciprocation of spin curvature energy momentum and orbital energy momentum. This occurs **not** because the particles merely *influence* each other, but because they *influence each other's representations* in particle energy momentum and spin curvature energy momentum to change. Hence the wavefunctions in remaining Lorentz invariant *remain the same physically*, but there occurs a reciprocation between the quantum and

the relativistic *components* of the objects.

Now consider that given the Dirac equation holds for one particle. Any multiparticle modification of dynamics must occur internal to the equation, and not modify its overall structure, but it **can** modify the individual terms in a plus-minus like fashion. This is a way to side step the problem of coming up with a new and unique generalized transformation, analogous to the γ^μ , which will encode a curved space *in general*. In this way, the multiparticle and accelerative features of reality are encoded in changes of the components of the representation. This represents something wholly new however, because the old addage that '*the whole is greater than the sum of it's parts*' applies. In this, the particles are **not** moving through each other merely because something only akin to a potential holds between them, but because a *change in each other's representations* arises from their mutual quantum and relativistic *relationships*.

An Instance of Reciprocity: *Reciprocity here means the comparison of different accelerative frames under the singlet and triplet, in which acceleration contributes to the spin curvature and orbital energy momentum, causing the two parts of the representation: the orbital and the spin, to reciprocate in space and time such that the particles mutually lower in energy and oscillate in space and time.*

Λ_ν is added and subtracted merely because of the rule of general covariance, and through quantum mechanics produces a reciprocation of accelerative spin curvature energy momentum and accelerative orbital energy momentum, so that the above can be put more simply:

Reciprocity Generalized: *Relative comparison of different quantum states under superposition leads to an energy difference in the states when different observable frames of acceleration are also compared.*

The emphasis in general is that **both** different relativistic frames of acceleration **and** different quantum states are compared simultaneously. Taking as the displacement the energy momentum associated with the change due to the difference of frames under an accelerative boost, afforded by the addition of an inertial interaction of the electromagnetic field:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1878)$$

Because of the equivalency principle, Λ_ν is zero in the frame of the particle and *does not* contribute to the single particle description. While for the *comparison* of states in the singlet and triplet where different frames of acceleration are compared the contribution from the relativistic frame of acceleration *difference* leads to a *displacement* of $\pm\Lambda_\nu$. The essential idea is that the gap and attractive force arises from the qualitative difference between the single particle and two particle pair descriptions under the singlet and triplet. This makes for an interaction that results in a distinction that must be made between a particle in the single particle description, and a particle that is a *part* of a two particle state under mutual *acceleration*.

When the particles are put together they produce a qualitatively different result from only the single particles put together with only an electromagnetic interaction. For instance, under exchange, interchange of frames: $\mu \leftrightarrow \nu$ creates a $\pm\Lambda$ relativistic frame difference on ∂ and Γ .

Hence reciprocation is predicted with exchange, along with an energy difference of the singlet and triplet. This implies that reciprocation of quantities is one to one with inertial motion and this is one to one with an inertial electromagnetic force, which is in turn one to one with the Meissner Effect. However, the energy of the total system is lowered or raised under mutual acceleration by the presence of the extra Λ_ν which leads to the different momenta as operators

producing an algebraically different result from their simple sum when operating on the wavefunction.

Hence, inertial motion is consistent with conservation of the exchange energy (through the cancellation of the distance dependence and inertial quality of the electromagnetic force) and reciprocity of spin and orbital degrees of freedom. We can conclude from the mere fact that spin-orbital reciprocity takes place that the exchange energy is conserved and one to one with the initial statement that the equivalency principle holds for the force law holding the charges together.

Hence, a non-dynamical difference in the exchange energy can be seen as an outcome of the inertial property, or the inertial property holding true can be seen as an outcome of the exchange energy developing a difference, but neither can be proven entirely by independent means. Finally to note is that this has an implication for general relativity as a reaction, for when the transition to the superconducting state takes place its mass lowers, invoking a complimentary raising of general relativistic energy.

This, in its general form, is what reciprocity means in the end. For the gestalt picture of quantum mechanics and general relativity produces changes in each, which are complimentary, because the general relativistic modification of the quantum description, lowers the quantum energy, and it raises itself.

Pairing and Condensation

The connecting principle that implies Δ_p is at a maximum when Δ_c goes to zero, and vice versa can be explained by two facts:

- 1.) *When particles fall into pairs they become more localized in the orbital degree of freedom, hence their relationship to one another is a **larger boost apart** between the holes comprising distinct pairs.*
- 2.) *The electrons and lattice counteract both the condensation and pairing with a resistive to an expansive force at low doping and to a contractive force at high doping. The electron sea and lattice that exists works against pairing and condensation, while remaining of equal localization to the holes.*

The density of electrons exists in proportion to the localization of holes and electrons (or inverse to their spread) and hence is also proportional to pairing strength. Simultaneously, the outward force of the pairs accelerates them apart, leading to a condensation strength that is proportional to the density of holes.

Thus the inter-pair boost is largest when the density of holes is large, explaining a large condensation gap at high doping, and the inter-hole boost is largest when the density of electrons is large, explaining a large pairing gap at low doping. Hence the two processes of balanced forces and distinct effects of the electrons or holes are at odds, yet the force inwards must balance the force outwards.

As a consequence there exists a range of doping intermediate between the extremes where superconductivity exists and it must fall off to both sides like a semicircle reaching zero because the electrons and lattice counteract the condensation force at low doping with a net contractive force of electrons with the lattice, and pairing force at high doping with an expansive force due

to the large number of holes.

Since condensation may be treated as the change in orbital localization due to relative frame, and pairing may be treated as the accelerative parameter due to the localization (inverse to the spread of the wavefunction), the net effect is described by the energy lowering being the contracted factor of:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (1879)$$

This is because the factor of Λ_{ν} is the factor corresponding to the boost leading to pairing, and γ^{ν} corresponds to the *excess* energy lowering from relative frame due to change in the boost parameter by acceleration into pairs. This is thus a factor multiplying the accelerative frame difference corresponding to the pair energy as a relative boost between pairs of the condensate. If it goes to unity then the energy of the condensation gap is zero, while if the acceleration goes to zero then pairing vanishes. Everywhere the gap is the constant of $4J$. This interval of superconductivity occurs when the lattice plus the electrons that exist balance the force outwards of the condensation and the force inwards of the pairing, but since the force is nonzero, and it acts through a distance by the effect of length contraction, the holes experience a net energy lowering intrinsic to the material.

The Cosmological Constant

The cosmological constant is a constant energy density in Einstein's theory that produces an extra term in the gravitational field equation leading to a global expansion or contraction of the universe. Particles in space consist mainly of hydrogen, and so the only interacting particles among these atoms are the outer electrons, and to a lesser extent, their protons. Exchange appears to play a role in this problem, even over the vastness of space. Consider if you will the exchange energy of two electrons on hydrogenic atoms across interstellar distances. From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the vast majority of the observable universe.

The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet. As well, this energy must be conserved. And, it involves the spin of the electron, representative in the isotropic hydrogen gas of a spin system or a local Lorentz frame, however, it is dilute.

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody

system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

A 'perfect' linearity would agree identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it would scale in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle as it applies to quantum mechanics and general relativity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of redshift, and colocality throughout the universe only within simultaneous cross sections of space in time we observe when looking out into space.

The Origin of The Cosmological Constant

First and foremost take as givens that the following statements hold true:

1.) *The equivalence principle equally as well applies to the theory of quantum mechanics as to the theory of general relativity.*

2.) *Total energy measured is lower for a whole as compared to the sum of its individual parts for a whole compared to its constituent parts.*

From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion or contraction will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the majority of the observable universe. The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet, and as we will show it must be conserved. We have learned that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

This makes a 'perfect' linearity prediction with the equivalency principle, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it scales in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle.

This final prediction must be true for quantum mechanics and general relativity, because the relativistic factor corresponding to the multibody system is the reciprocal of the relativistic factor corresponding to the observer, and represents an inverse transformation of space and time, and is the only consistent viewpoint globally and locally in a universe governed by the equivalence principle. So in the end, this model requires quantum mechanics and general relativity to be dependent on the equivalence principle, and predicts a redshift as representative of the scale of forces to one another in a universe so statically dependent on time in every moment, and accumulating over time by virtue of traversing space.

Conclusion

The paper has proceeded to prove that general covariance applies to quantum mechanics, and illustrate two major consequences. The main point is that with general covariance the energy is lower for a quantum system in the center of energy momentum frame, and this lowering is real by the equivalence principle. From this, the field theoretic implications of a spin system produce a curved space effectively, which with the equivalence principle means that the energy lowering is very real within a quantum system.

The multibody problem is implicated in this by the collective energy lowering that ensues, and the effect is merely a manifestation of the application of general covariance and the equivalence principle to quantum mechanics. With the implications of general covariance and the equivalence principle to quantum mechanics we arrive at a synthesis whereby there is a quantum equivalence principle.

Within any transition there is a conventional to ultimate difference in viewpoints, whereby agreement means that quantum mechanics not only subscribes to the equivalency principle but that a change in frame accompanies a quantum transition. These are multiplicative and geometrically logarithmic, and add such that the gap is a constant in superconductors for all particles.

The uncertainty principle is then shown to be slightly different in a viewpoint which incorporates general covariance and that torsion explains diamagnetism. On the level of the conventional, there is a disturbance of the mass gap with a magnetic field because the net sum torsion of general relativity (which in part contributes mass conceptually via its definition of inertia) and of electromagnetism (for which the magnetic field can be seen as an instance) is zero. These are counteractive effects, thus explaining the Meissner effect.

These results were extended to create a generalized law for a superconductor with an electromagnetic field and the gap was generalized to the case of pairing and condensation under the provisions so given before. What has been attempted is a general principle by way of which superconductivity can be explained in the HTSC's, and what is most remarkable is the general result of a new type of inertial freefall in spin systems analogous to the equivalency principle in gravitational theory, but quite distinct from it and associated with the Meissner effect. The results were shown to accurately predict, as well as clarify the nature of the cosmological constant, superconductivity, and the concept known as inertia, when the quantitative and qualitative

implications of integration freedom from general relativity are investigated.

Introduction

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers. To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in superconductors. Particles are represented by wavefunctions, which undergo virtual processes in which they exchange energy and momentum with each other and the environment. Gravity on the other hand, is the geometry of spacetime. It is taken as a given that particles in a gravitational field are simply moving along straight lines in a curved space. For this reason, it is important to frame the implications of extending general covariance to quantum mechanics. Additionally, it is the starting point for properly posing such questions so as to resolve the Schroedinger cat and EPR paradoxes, because this change in perspective ties together our notions of quantum and space time.

This paper aims to understand independence and dependence of these theories on one another by appealing to consistency when general covariance is applied to quantum mechanics. This is accomplished by using thought experiments involving a superconductor and magnet. In a superconductor a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations. Due to the large scale of this energy gap, excitations to states that scatter and therefore expend energy are virtually forbidden and the material condenses at a lowered temperature to support a state called superconductivity. In this state electrons or holes form pairs and support a state that expels all magnetic fields, an effect called the Meissner Effect.

Comparative equivalence of weight in quantum mechanics and general relativity is a long sought after concept. Little would it be known to that of the casual observer that it also amounts to a decision process; for that of identity of representation and quality or property; to which subject and object fuse into one. The dialectic of properties and qualities relates to the intimation of structure and continuum; of which principles may be explained as referent's of relationships; to which on the meta level there is an identity, agreement, and compounding of the collection of the basic preliminary and prescribed notions; the posited elements of which unify upon a locus of which is derivation and definitive (and in this definitional) of the prescription by which reality conveys to us it's meaning through qualities and properties. Properties and qualities; of

which appear manifest in all physical objects and events in the phenomenal world; and to which demand the precise application of conveyance and representation in active and passive form; convey the rules of action and relation of events of any given system and are both measurable. Found here are equations by way of which weight in quantum mechanics and general relativity may be related by mathematical language to which the prescribed notion is merely the odds of probability as compounded with frame, with the outcome of a geometric setting; for which we require all particles to subscribe to the laws of quantum mechanics and general relativity.

Review of Quantum Mechanics

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \quad (1880)$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller. As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential. If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity. The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

Review of General Covariance

It is hypothesized by way of the equivalence principle that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states.

The condition of inertial states however implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. If the condition of local Lorentz invariance does not extend to general covariance by using the rest mass for inertial states under mutual interaction, the resulting theory would be inconsistent with general relativity. To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to

be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from it has with respect to the observer. So as to not violate energy conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the ultimate viewpoint.

If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated. Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass. The quantization condition that follows must extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

Under these provisions as the equivalence principle must apply to quantum mechanics the expectation of energy momentum is therefore always lower for a quantum system with the inclusion of general covariance, where the quantization is with respect to the condition set by all relativistic factors returning to unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the subjective viewpoint of an observer.

Justification; Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer correlative at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame depen-

dence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

Opening:

The reason for superconductivity is that “Electronic Inertial Considerations” (their timescale) with the contribution of time dilation contraction factors exceed the importance of all other considerations (with a suppressed screening) leading to a net attractive effect.

The clue that lead to this discovery is that time has effects on any physical problem; of which time dilation contraction from relativity makes a contribution to both physical insight and physical phenomena in a problem in the real world; of which relates to that of a deep problem when the different phenomenon are combined into a whole; whether from the experimental or theoretical perspective.

The major insight was that time dilation contraction via the twin paradox makes the situation such that from an observer A; their proper time in otherwise equivalent motion of two bodies, of their own clock will be greater than observer B; and likewise for B also in motion; that of the the reference of observer B; for this body, their own clock in their frame will measure greater than viewing observer A.

This apparent contradiction can be reasoned back from the one particle viewpoint into which the special and the general theory of relativity are derived for that of two particles in either relativity or quantum mechanics; arriving at the above result; for there is no contradiction when acceleration is entirely included in a proper treatment; of which deals with this as a shared proper time; the result being that of which is their time under exchange and overlap with superposition.

The different characteristic terms of the superposition formula then take on the form of two equations; one for which superposition is treated independently for either particle; their destructive interference; and that of an other; for which for either particle as a both; when together

with constructive interference; there is that with shared proper time; an extra term idealized to that of their configuration when together in a collective whole the two body and one body derived therefrom.

This makes the treatment of a problem involving one and two bodies of interest that much more accessible; as a consequence of dealing with separable terms for that of one particle in the presence of the other with a given relative interaction.

This affords for that additionally of a relativistic effect whereby time dilation contraction reconciled by the two body problem relates to elimination of the one body problem for the two; in which the situation differs only by the comparative measure and rate of time; to which one body always exceeds the alternative body; thereby having a physical effect on that of exchange and construction and solution of the two body quantum mechanical problem of electrons interacting in metals.

Section I: Shared Proper Time

Shared proper time is a conversion factor from superposition in which certain limitations are imposed as a consequence of prohibition to a two body problem alone; which emphasizes one body in a tandem balance with the other; for which one body can evade the other in time as the cost of coming together in space; known here as $\sigma(t)$; and developing as a consequence of superposition into which one body occupies the space of the other by anti-symmetry in time; following the rules of exchange of spin one half particles for electrons into which the states factor; as a consequence of their ordinary electrostatic repulsion.

The theory is that when the electrons transform following the rules of time dilation contraction; they will explore a temporal domain that follows from further away than in reality in time than they are apart as a consequence of separation in space; to which there is a balance; that of the extra time dilation contraction effect supplying the reassignment of particle wave structure with a diminishment of the ordinary electrostatic repulsion into a partial attraction that will be shown to become stronger than the repulsion by a factor of two; to which there is a difference accounted for by the fact that geometrically both particles participate.

- 1.) The shared proper time is the factor of which proper time exceeds the comparative time of that of the other body; by which particle A and particle B coparticipate to exceed each other's relativistic factors; similar to an 'X' shape; an inequality by which either in their other respective frames exceed that of their original frame when viewed by the respective partner particle frame.
- 2.) Shared proper time comes about because of the artifact of time dilation contraction effects to which relativity posits that one is greater than the other; although here we are afforded to say that the proper time of 'A' exceeds 'B' and that the proper time of 'B' exceeds 'A'; to which there is a degeneracy of description and of effect; in that of one exceeding markedly the other.
- 3.) The distinction to be formed is whether one exceeds that of the other only in proper time; or to that of proper time to proper time; to which it is quantized; and the definitive answer is that it is of proper time to proper time when gauged by that of the particle in the other frame; to which the body is quantized; this being the effect to foremost analyze; first; at that of any potential disambiguation.

4.) The difference is that of which we posit that relativity has real, marked, and testable effects, one of which is that the excess of measure of one rate in one frame exceeds that of the other frame in which the same particle is participating with an other; to which both seen either way would exceed in factor and measure their respective ancillary descriptive time dilation contraction factor that of the other.

Section II: Superposition

Then to that of superposition; the electrons either participate in a moment aside or to the same one; and of which when there is variance; the question as to if they vary in the temporal direction; to which it is addressed that they either are or are not; but that when additive; it produces this effect; for of what of one there is in that of a superposition in time; the effect is admissible for the reason that how time flows affects more than just space; but that of the quantum wave function; and to how; it affects the distribution in the temporal direction in an exclusive manner of superposition; then there is an effect of two and a square for that of either present.

If there are therefore effects of which the particle is spread along time (and there definitely are) then there is the question of space to which unifies the field's; to which is the only question; as to if superpositions relate over the field of time in the temporal direction; whether it be imaginary or real; but present; being the clue to shared proper time; to which we arrive at a quantum field theory; and the breaking away to that of a genuine theory of the character with which two fields will pair; then as a consequence of shared proper time; that of which unites two bodies being produced as an answer; for that of either together produce more this way.

1.) When superposition is taken account of therefore there is an extra contribution from that of excess in each other's frame; due to the effect of time dilation contraction; which exceeds that of the other particle; making it appear and as in keeping due with what actually happens; one duration lasts longer but equivalent in either frame; non-paradoxically; due to their motion in tandem.

2.) This superposition occurs between the partner particles in such a manner that the effect is doubled; and occurs twice as large as a consequence of their two factors overlapping; to that of a square on the factor; non-diminishing because they are twice as geometrically present when accounting for single versus two body considerations; and we have superposition accounting for this nature.

3.) The effect is therefore twice as strong and squared of it's original strength in non-determinant unitless variables; and of which is not a square root as strong (so as to be weaker) because of the imposition of the exclusion principle; it is therefore as to say that time dilation contraction effects become more pronounced to that of other considerations in the system; such as the screening dipole effects.

4.) This is all as a consequence of utilizing a single and two body superposition rule that determines the equations of motion in which two bodies separate and combine at differential rates; becoming of a bound nature rather than of a free variety; to which when they recombine they are of the full geometric strength of the quantum exchange which ordinarily occurs; only twice squared as strong.

Section III: Exchange

The only thing that could potentially prohibit this behavior is if an electron with spin up were not entirely conjugate to its pair partner particle as spin down; to which time being a degree of freedom would indicate a new degree of freedom; but one to which at that would reverse the sense of the symmetry to one where there would be difficulty finding both one up one down in time; with space; as to that of which is confusing because we deal with orientation in time and space; and soon run out of capacity for thinking of this as a plain state; naively however for what of one is of a temporal wave function; it is perfectly amenable to have the counter directionality in space and time; to which they must adhere for that of exchange. The state identified has both orbital moments collinear; in the motion about the center of attraction; to which they coparticipate in entirely opposite spin in space and time; the triplet in which exchange proceeds by a factor of four on that of the reversal of the repulsion into an attraction; thereby occupying a state with admixture of which is with opposite spin and same identical orbital spin; of which relates to that of the exchange by a degree of freedom by which either sees its complimentary opposite spin exchanged by a full rotation; as a consequence of the symmetry considerations of the two body problem; and to which it is quantum.

1.) Because the bodies are bound to each other; they are in a paired state when they are twice squared as strong due to relativistic effects being as strong as exchange; each other implying the strength of the other for they are of equivalence under the provisions of which spin is explained; although stronger for the reason that identically with the relativistic shared time argument twice squared stronger.

2.) Identically exchange is when one particle occupies the position and momentum of the other; but for that of a sign change of which cancels; they both go into each other's states; then reversed; to which the sign on the potential is reversed; the final mention we need of which reverses the repulsion into an attraction; for an effect that is effectively as strong as the coulombic repulsion by a factor of two.

3.) When exchange is amounted for; thereupon in which the states are divided by their spatial extension; there is therefore an effect of attraction known as shared superexchange which produces twice the effect of the coulombic repulsion; no longer carrying a factor of two; for it is dependent on their own frame; to which we see a difference; for by comparison of proper time to proper time in exchange.

4.) This is the final redress of which is that avoiding each other in space and sharing time admits the electrons room to capacitate motion into each other's exchange potential of twice squared the strength; enough to be as strong as the coulombic potential all the way to their closest proximity; the reversed potential enough to overcome their repulsion and bind the particles into a shared potential.

Section IV: Electromagnetism

The first inclination is that electricity and magnetism is stronger for one phenomenon over the other; but this is not the case; in fact; they are identical strength; to which the certainty is that the electric and magnetic forces must then take on different forms; to which the answer is that they indeed do; for the direction of localization and (treated on a separate footing) coulombic overlap of exchange participate in a differential off set of shape versus coparticipant factors of

which superposition and exchange are a part.

The clue to superconductivity for today is that of transverse relationship by which the magnetic field is as strong as the electric; to which is owing due to time being perpendicular to space and quantum uncertainty in a manner such that effects can manifest from zero velocity on that of transverse motion; attracting in the magnetic field for what otherwise is a repulsion in the coulombic directionality; in fact this effect will take place any time there is relativistic addition of velocities; for the geometric nature of their addition is empty to a base foundation.

1.) Electric fields via the delocalization along the temporal direction are suppressed; to which magnetic fields by the transverse relation are emphasized; then the interaction from exchange in pairing being just as strong as repulsion; leading to a naked interaction which is just as strong in repulsion and attraction; via the magnetic force; which is equivalently strong when moving at the speed of light gauged to its own meter.

2.) The greater time to which is the resolution of the two body problem relates to a net attraction which is stronger than repulsion; when there is time dilation contraction of the 'opposite situational degree' on that of bodies; then body 'A' attracted to body 'B' because 'A' participates in a longer time dilation contraction and body 'B' to body 'A'; for the very same reason of which is of an alternation and depresses the ordinary repulsion.

3.) The only reason we would have to speculate that electrons attract is to the certainty that is a magnetic effect and interaction that is as strong as the electric; to suppose that the electrons are moving at the speed of light; and to that of the effect that relativity has been 'switched off;' so as to suppose and say that the relativistic effects are fully manifest; and that of which there is a point of relativity non-perturbatively emanating from infinity.

4.) The reason here extends to the quantum theorems; to say that dissection of the two body problem resolves to null uncertainty; that tantamount to resolution of the two body electron problem is the realization that quantum effects can be fully certain when determination of their separable one body problems leads to a fully blown quantum problem; precisely when momentum uncertainty is precisely classical in its given sense of participation.

Section V: Summary

After years of inquiry; I have surmised that the interaction is:

1.) Geometrically identical to the Coulombic (ordinary) repulsion between electrons.

2.) Identically as strong as the ordinary Coulombic repulsion between the electrons.

The idea is that 'Shared Proper Time' contributes compensating factors for which are geometrically complimentary to the 'structure' of the magnetic interaction in such a manner as to attract as strong as repulsion under these guidelines.

With the relativistic 'Shared Proper Time' the contribution compensates in such a manner as to geometrically augment the interaction and 'structure' into a plain Coulombic like repulsion; only it is an attraction as 'Shared Proper Time' scales.

In this 'Shared Proper Time' is the manner in which from particle 'A' particle 'B' participates in lesser proper time when in conversion to frame 'A;' the effect of which is to emphasize the magnetically attractive interaction of particles 'A' and 'B'.

This leads to a situation where particle 'A' and particle 'B' are caught between the extremes of repulsion and attraction at a strength of the ordinary Coulombic interaction; but where the screened repulsion is eliminated for that of a real attraction.

Geometrically the effect of 'Shared Proper Time' and relativistic conversion from frame to frame admit an interaction therefore that is strong as the Coulombic repulsion; and twice squared as present due to exchange; by way of which they overlap.

This is due to accounting for the spin projection and the occupancy of states; which are twice squared due to there being two densities; and two particles; of which participate then in a singlet state of d-wave origin; attractive by accounting in number.

I have therefore finalized my inquiry into this (difficult) topic; and would like you to comment on what you see is relevant here.

Section VI: Commentary

The answer to the paradox is that the effects of relativity and quantum mechanics are both real; and not matters of perspective or vantage; but find a solid footing in that of either other's arena's to which they predominantly spend an occurrence of time; the effect twice squared as strong because both electrons are present; and occurring at all because the comparative measure has one at smaller comparatively to the other; to which any relativistic time dilation contraction is referenced to the single body and comparatively greater to the other in the two body equation. This paradoxical result comparatively to a paradoxical relationship and situation is effectively because of vantage and position being a component and element of the situation; for that of the comparison to time for when exchange occurs to which the reversal of one body into two body dynamics invokes an exception when both bodies participate; that of which there is additionally twice squared the geometric effect for the body itself; due to being in an exchange state and the reality of the relativistic effects and quantum mechanics both as contributions for the particles.

This effect is therefore non-perturbative in that we would not obtain a result for anything but a 'quantum leap' to that of the solution; to which it requires that of an assumption on that of the potential we find as a consequence of the situation we derive from; and to which there is an agreed potential found as a consequence of relativity and quantum mechanics; of which is dependent on that of time dilation contraction and exchange; for which both bodies participate in the whole behavior of which there are at least both contributions equivalently as strong overlapping.

A portion of this has to do with why the effect exists in the first place; that having to do with the residual interaction it represents when there is a balancing background of protons from oxygen and copper in the cuprates; or that of a lattice from which the electron free states develop; and that of the fact that when under reduction to the single body dynamics effects do not disappear despite the absence of another particle; for the sake that there are overlapping quantum and relativistic effects; of which both develop to that of contributions to the twice squared effect.

- 1.) Probability density is enfolded in the inward outward relation of time dilation contraction shared proper time; the portion of complex and imaginary probability density concealed in an inner outer relation of which is the portion of the shared probability density; to determination of the shared proper time for which it is of longer duration in co-mutual orbital momentum.
- 2.) From either electron's perspective the duration of proper time is greater; to which relaxes the probability density in the forward direction of time; to which escape is prohibited as a consequence of the condition on shared proper time alternatively depressing the coulombic potential at the same strength and to which it is in an attractively strong interaction in two.
- 3.) The effect is squared and twice as strong via superposition for which there is mutual occupancy and under conditions of which one shared proper time comparatively advantages two factors of the probability density; of which then when under exchange is a full twice and twice the contribution of one singly occupied density; of which makes for twice over repulsion.
- 4.) The nature of the interaction is for proper time to be witnessed as larger for either density from it's own reference comparative to the other body; a reversed sense of which is to the greater of either's density in space when time dilation contraction occurs; which reverses the sense of the interaction to attract to a lesser delocalized density in time; therefore attractive.

Results on Study into The Measurement Paradox

Observations:

It is determined that; as only 'certain' outcomes are expected; that the system will only reproduce order given the measurable(s) follow a pre-determined causal arrow; and only these given measurable(s) are measured; to which it can be determined that superposition has constrained the system into an ordered relation.

With measurement situated such that it is designed to reduce to two potential outcomes; and then, given that measurement is semi-deterministic; there is a regime of order succeeding over chaos; for that of one return is before measure; and certainty is embedded in the equations of measure; to which order is produced.

Primary Result:

Logarithmic conversion of the system governing the differential equation by superposition, and that of the certainty we avow to outcomes of 'A' or 'B;' fails if we do not admit that: logarithmic conversion of the arguments has indeed separated the two body problem into two one body problems; to which then measurement as certain of measures is implicated by that of their conversion to that of geometry by a differential equation.

Secondary Results:

- 1.) Logarithmic superposition resolves the two body problem into one body problems; by placing the uncertainty and certainty of that of measured and unmeasured quantities into the same geometric language of superposition; one in which certainties are accorded with logarithmic sensitivity and equipartition of a geometric nature.

2.) Semi-determinism governs measurement and measure of which is certain; the process of measurement that of which is a surjective process mapping the future onto the past of which is to produce certainty in measures; by that of which is a smaller 'past' projection when measure takes place by contrapositive on magnitude of certainty.

Reason:

Without certainty to measure and semi-determinism to measurement; and logarithmic superposition on the states in the process of measurement; the results of the device would not be determined into categories of 'A' and 'B' on measured touch interfacing with hand gestures in groups of five; to which randomness would then govern instead; the result confirming measurement as semi-deterministic and the nature of measures as certain a priori.

Certain Conclusions:

- 1.) Measurement is semi-deterministic in nature (otherwise this process fails).
- 2.) Measure is always certain (otherwise this process fails).

Caveat and Question:

We see limited control of the system into categories of 'A' and 'B' by a factor of 2-5 on comparative magnitude ranges for superposition or their inverse. Could this 2-5 be the Figenbaum constants themselves of chaos; to which magnitude must differ but be within ranges on that of the 'discernment' of a doublet classically?

Conclusions:

The argument presented so far admits the following preliminary conclusions to be formed:

- 1.) A logarithmic foundation to superposition admits dissection of the two body problem into two one body problems; of which the logarithmic foundation to superposition admits the construction of a bridge from relativistic to non-relativistic mechanics and is the resolution to the two body to one body problem; of which probabilities are seen geometrically; and to which they break apart into categories 'A' and 'B' as determined.
- 2.) Uncertainty covaries in such a manner that it is certain 'from above' the relation to which determinism being of the 'future' relation fits into a larger sphere; but promotes the discovery of a 'smaller' sphere of potentiated ranges of information; to which measure is seen as certain; and measurement is seen as semi-deterministic; at most; 'indeterminant;' to say that measurements are certain because measurement ranges are larger than uncertainty.
- 3.) By certainty of alternatives this derives the notion that semi-determinism dictates measurement and measures are certain a priori; to which the measurement paradox is resolved; by noting that uncertainty may be excluded for the sake of an indeterminant measure instead; to note that a touch signifies absolute certainty of result of measurement reference; and to which only a smaller range of measured than to measurement can produce.
- 4.) Co-determinism of which there is determination of measurable with measurement makes certain that of the nature of measurement to which is afforded certainty in that of the interpretation

of information in saying that 'as it is recorded it is accorded;' to which definite results of measure in the classical world are the consequence of covariance of uncertainty; to which in reasoning upon return from relativity we find the uncertainty reduced.

If time is accorded with information; then it is definite that a sub-section and element of a measurable(s) discovery will afford spatial co-determinism of the exact nature of a measure; the reduction to space and time of which is the covariance of uncertainty shrinking measure beyond error in expectation of semi-deterministic measurement.

Summary:

By general covariance of uncertainty in the classical realm the determination of any interaction between a human being and a machine dictates that error in a given measurable will always be lesser by expectation in measurement (which is therefore semi-deterministic) under reduction of the two body problem to separable one-body problem(s); of which relate to and intimate a connection to mechanics that is of resolution of the two body problem to one body problems from the relativistic to non-relativistic assumption of vantage. Indeed the bridge from the relativistic to the non-relativistic interpretation (the return of the arguments to their classical counterpoint of which incorporates their contrasting elements) affords for resolution of the two body problem to separable one body problems; and accordingly allows us to argue for semi-determinism; the certainty of measurables; and forms an argument that when probability is cast in a geometric language these problems with the measurement paradox (was the Moon only there because you looked for it?) are cast the way of a bulletproof argument; of which is that as the measurement takes place one point like notion beyond which is the two body problem; a point of deficit to which by it's smallest diminishment there is an excess weight to the viewpoint that measurement is an additive process; which we know from classical studies; and to which when cast in the language of displacement; leads to the conclusion that one step away from measurement is a measurable; of which is non-simultaneously of a given advantage to the viewpoint that measurement is characteristic of co-determinism when it is co-occurrent (as it always is); thereby there being two major synthesis that constitute reality; co-determination of variables and that of certainty; by which a measurement tailored to behave with expectation to results below the threshold of error can be designed as one that furnishes a result only when certain criteria are met; with conclusiveness therefore of which co-determination is a process in as much as measurement thresholds on error are reduced below intrinsic error; by the argument that negation of a displacement is a real event.

The Principle of Reciprocity

In the superconductor magnet levitation experiment the measure of space becomes larger as the bodies exhibit freefall and the gravitational force increases in strength. The scale of spacetime is the Lorentz contracted invariant quantity of curvature:

$$\gamma^\mu \Gamma_{\mu\nu}^\nu \quad (1881)$$

This varies in proportion to gravity, for as gravity becomes stronger the $\Gamma_{\mu\nu}^\nu$ becomes stronger. It is judged by γ^μ , which forms the Lorentz invariant scale of spacetime to coordinate basis by way of kinetic energy. This makes sense as the term accounting for gravity in the Dirac equation is the same contracted curvature.

With a change of coordinates, the infinitesimal coordinate of the wavefunction is modified by the inverse of this scale, thus the following quantity:

$$\Lambda(x^\mu) = \lambda \gamma^\rho \Gamma_{\rho\nu}^\nu |\Psi(\gamma_\rho \Gamma_{\nu\nu}^\rho x^\mu)|^2 \quad (1882)$$

Is the generally covariant quantum energy density corresponding to the quantum field. λ is the quantum energy-distance putting the quantum probability density overlap into units of energy. The factor of $\gamma^\rho \Gamma_{\rho\nu}^\nu$ outside the quantum overlap scales the quantum energy so that it is consistent with the notion of the energy density per unit spacetime in the now curved space.

This implies scale covariance of the quantum probability with the scale of spacetime. For if the force is scaled by a relativistic factor but the probability is not scaled in the inverse manner, this does not represent a relativistic *transformation* of the quantum state. Additionally, a quantum force with an external relativistic scaling of the force but with no scaling of the infinitesimal of the coordinate would not demonstrate general covariance.

This is true because the wavefunctions would remain of normal size under freefall, while the force would go up in strength by the covariant factor, and the quantum force would become stronger as a function of time in relation to the force of the gravitational field. In order for the quantum force to covary with gravity, and have the same strength it would have without the gravitational field the quantum probabilities must covary with the definition of space and time. The measure of probability density and the multiplicative factor on the force must vary in reciprocal fashion. This finds mathematical expression in the following.

If the measure (metric) of spacetime is:

$$g_{\mu\nu} \quad (1883)$$

And the measure of probability density is:

$$\zeta_{\mu\nu} \quad (1884)$$

Then:

$$g^{\mu\nu} \zeta_{\mu\nu} = \hbar c \quad (1885)$$

This can be re-written as:

$$\zeta_{\mu\nu} = \hbar c g_{\mu\nu} \quad (1886)$$

This expresses that the measure of quantum probability and the measure of spacetime are covariant.

This motivates the following principle:

The Principle of Reciprocity Part I: *Quantum mechanical forces covary in an independent manner with gravitational forces. Therefore the measure of quantum probability to relativistic measure of spacetime equals a fixed constant of \hbar . Or alternatively, the measure of quantum probability covaries with the measure of spacetime. If the measure of spacetime goes up, particles contract because there is more probability within a given interval of spacetime, and if the measure of spacetime goes down, particles expand.*

In this the relativistic factors are present on the terms of gravity, quantum mechanics, and kinetic energy. These cause the rate of time and definition of length in space to change. Therefore, quantum electromagnetic energies represent a energy multiplied by the metric, a covariant energy difference over the theory of gravity modeled as:

$$E_\Lambda = \Lambda(x^\mu)g_{\mu\nu} \quad (1887)$$

In Einstein's field equation:

$$G_{\mu\nu} + \Lambda(x^\mu)g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu} \quad (1888)$$

By understanding this, we can understand why the theory of gravity is incomplete in predicting a constant Λ . This is because it is identified with a constant probability density. It is a natural limitation of the theory of gravity to be incomplete in predicting the nature of quantum mechanics, as quantum mechanics is an independent theory. In the case of gravitational freefall γ^μ and $\Gamma_{\mu\nu}^\nu$ are inverse and the dependence on the probability density implies that it is free to take on a particular shape. In the cancellation of coordinate dependence for the quantum energy of interaction, Λ becomes independent of gravity and represents the null effect of quantum mechanics with gravity.

Scale invariance implies that this energy changes with quantum mechanics, however there is still the law of gravity based on energy density considerations to bring in. If the shape of the quantum state changes then the quantum energy changes. Since the changes in quantum mechanical and kinetic energy are equal and opposite the net change in gravitational (metrical) energy is zero in a quantum process in generality. In this, the gravity and quantum mechanics are effectively independent energy changes.

Kinetic energy changes under the equivalence principle such that changes are equal and opposite to changes in the total potential energy. Changes in total quantum mechanical and general relativistic energy are equal and opposite in any process involving a null change in kinetic energy.

The Principle of Reciprocity Part II: *The quantum force covaries with the gravitational field so changes in the energy of either theory are independent of the other theory. Kinetic energy changes with the sum of gravitational field energy and quantum field energy, therefore kinetic energy changes independently with both theories.*

In other words kinetic energy independently preserves a relationship with both theories, and the following energy transformations are independent processes:

$$\Lambda g_{\mu\nu} \leftrightarrow T_{\mu\nu} \quad (1889)$$

$$G_{\mu\nu} \leftrightarrow T_{\mu\nu} \quad (1890)$$

Observability

Part of this provokes the question: Why does this not violate the uncertainty principle when we take the gravitational observables as classical and the quantum as nonclassical as a part of the same model?

Classical observables are inclusive of determined and also seemingly random events of coincidence. These relate to the structure of spacetime and the nature of causal events of the nature

of the material realm. These exist within a continuum of manifestation of the physical processes and are not separable from the nature of the evolution of space and time. This inseparability is at the heart of the question of classical observability of events, which unto themselves possess only a location.

We must ask, is coincidence observable within this theory? It must be, as two particles may be considered hypothetically identical by the equivalency principle. This guarantees an identification of their mass, as a solution exists of like kind, in the abstract two particle model one builds from coincident events or measures. These in exchange must gain complete locality to attain total coincidence under interaction and to maintain equivalency of action and reaction when distributed throughout space and time.

The equivalence principle affords the quantum state with a reality in the comparison or measurement of states. Identical quantum states are realizable upon the space at different locations. If two identical instances are considered at one point in a space then these evolve identically. In order to evolve identically in space and time there must exist agreement with these two types of comparison. This implies the descriptions of quantum mechanics and gravity agree on local and global comparisons of states on a fundamental level, and this takes the form of the qualities a body possesses being equivalent to those it has in relation to its environment.

This also implies that the complete structure of quantum mechanics and gravity are in fact one in which the particle waves have real interpretations [?]. This also promotes the realist interpretation of quantum mechanics as the wavefunction takes on physical meaning with respect to the space.

The uncertainty principle is respected in the form of the product of uncertainty in position and uncertainty in momentum being a constant, no matter the scale of spacetime implied by relativity. The distance between probabilities bear a direct relationship to the state, and there exists correlation.

Equivalence in the comparison of identical states throughout the universe [?] is now an automatic consequence of the general covariance of quantum mechanics.

As identity of coincidence is common to the quantum and gravitational pictures and information is not lost or in conflict with measurability when there is no separability of action and reaction locally, there is no loss of global determinism, which is the essence of measurement and predictive capacity. If coincidence were not the only thing observable reality would not be consistently determined, as measurement would not be defined uniquely.

This is consistent with gravity as only then does the uncertainty principle no longer pose a conflict with the equivalence principle, to produce a coordinate free representation with consistent action and reaction between all events. This equates to the totality of mutually existant events as complete and consistent in description of all events with respect to all others. Additionally, without this reciprocity there is no completeness of action and reaction in nature between quantum mechanics and gravity, as this is only dependent on coincidence, the basis of measurement, and as is required to avoid a mismatch and disagreement between these two theories. Finally, from this, exchange must be the correlation of spacetime and the particle, when we admit a scaling of quantum mechanics. As the particles become more localized, their definition of probability scale expands with that of spacetime to such a degree the very definition of temporal interval

shrinks to zero size, yielding the apparent traversal of information faster than c with no such real violation. As the measurement grows to finite size the system is the quantum system with a scaling, which was interpreted as the gravitational aspect of the problem.

The scale of probability density is covariant with the measure of spacetime as was found. As we approach the interior of an electron, virtual polarization processes renormalize the electron density to become virtually larger, and $\zeta_{\mu\nu} \rightarrow \infty$. Given that this implies $g_{\mu\nu} \rightarrow \infty$ and this is the measure of physical space to coordinate space, coordinate space must become zero in extent. The speed of light is invariant in all systems of coordinates, so light traverses the space between the electron centers in null time as judged by the external observer. This is true because $g_{\mu\nu}$ is the physical metric compared to the coordinates, and implies with a covariant value of the speed of light that the time interval for the event of measurement is comparatively smaller for the external observer.

Light must traverse the distance at the same rate when comparing the distant observer to the electron frame, so it traverses the distance in **less time** in the frame of the distant observer. This can be seen as it traverses the distance at c in both frames, and there is more space as judged in the frame of the electrons compared to the frame of the distant observer. The covariance of c and a larger space in the frame of the electrons assures the space is traversed faster, compared to the frame in which the distance is judged as smaller. The light covers the finite interval between the electrons at a speed of light which is not only constant for the world, but for the electrons as well.

Thus all particles of a point like nature are nonlocally correlated with all others with instantaneous action and reaction throughout the universe. The quantum ensures the correlation only then through the invariance with respect to this scaling principle, yielding the apparent traversal of information faster than c with reference to a given laboratory space. Thus the event must necessarily become witnessed as nonlocal.

State collapse exists with the observation of one system across space, but the alteration of this state is forbidden in this theory, since the particles together form a complete system and the condition on the state from the requirement of completeness and continuity of particle wave state and space time forbids the altering of the interrelationship between two states with observation by a third.

Equivalence Relation

Argumentatively the macroscopic and the microscopic realm are related and intimated by that of the relationships of the quantum to the relativistic domain when wherein it is considered that energy scales with size. But to that of the delimitation of its intrinsic properties; the nature of a given is not necessarily by necessity imparted as of to that alone which is mass for the knowledge that it possess weight; when it is considered that measure holds the ultimate assessment of a given property. So as to suggest that light (the speed and qualitative features such as flux) determine the scale at which an energy is energetically manifest through motion; and to which in uncertainty the relation is to suggest that a completeness determines (codeterminantly) that of the given of the scale of the abrea of its given contrast of effeciable weight of probability; in a common geometric (hypothetical) language.

Therefore; the problem of unification is one of separability of forces; as induction; more so than it is of logical deduction from out of the relation of common assessments of weight in a common

setting and context of capacity to endow motion; the preliminary observation of which is that the given open contrast of two normative valuations agree as to identity freedom and general covariance (coordinate freedom). As a given; we take quantum particles to be indistinguishable as a preliminary observation of the workable and tenable aspects of the quantum theory; for that of the common demand of consistency of a particle and subatomic model.

Reasoned this way; the affordance of a limitation on that of two larger objects fitting into the same smaller space; by logical deduction on that of the empirical and theoretically founded principle of equivalence to which the thought experiment implicates; implicate immediately that the bound on scale and scale free measures of codeterminism extends to the microscopic; therefore implicating the bounds of certainty (however somewhat vantage) that are empirically motivated and theoretically proven by the thought experiment & that of the theoretical Pauli Exclusion Principle Bridge; to which the solution to Shroedinger's cat paradox is furnished; imply that certainty in physical law is derivational of the truth of identity freedom and coordinate freedom in compendium.

Conclusion of Introduction

This is therefore a Type II Covalent Bond; to which I would ascribe it's content due to the nature of time for to replace the notion of space; in that of the model picture of covalent bonding in that of organic and inorganic compounds of which it takes it's name; for in that of what is space in a typical covalent bond is replaced by an argument about time; identically to that of the description of superconductivity. Reasoning back from the two body problem as a one body problem; to that of two one body problems with certainty admits resolution of measurement into from which it derives; that of the conclusive presence of relativity as a precursor per the prescription of time dilation contraction working in tandem with change via shared proper time into states that exist because of their dual restrictions on the one body states from which they derive; then into which they then relax into lowered energy. The existence of a shared proper time which is in excess of unity; demands that as delocalization along the temporal axis acts in tandem; that the interaction is attractive; thereby attracting localized bodies in time to those delocalized in time. The fundamental reason for an attraction is that shared proper time grows with separation; and is of a reversed interperative standard to that of spatial geometric effects.

In conclusion; the magnetic field of which was assessed at the point of vantage of body 'A' correlates with the full force of magnetism being as strong as the coulombic at point 'A' to which noticeably leaves a fuller force away from point 'A' precisely because of the inverted temporal relationship on the bodies; and to which at point 'B' would become larger comparatively; because of the bodies spatial separation; to which the interaction when enfolded in on either body makes for a net non-zero interaction of attraction.

The finalizing idea is then that as magnetic fields vary; so too does the time dilation contraction in space and time; in a manner that reinforces to an identical universally attractive interaction at the same rate and with the same geometric properties of the coulombic interaction; the quantum effects then being of the nature to which they agree with probability 'concealing' the overlap in this otherwise uniform interaction; of which is secondary only to the coulombic interaction, attractive, and geometric.

The relativistic transformation is the inverse of the magnetic transformation; effectively it's mirror image; therefore the electrons interact in a situation where at 'any' velocity they are effectively

moving at the speed of light; to which as the magnetic interaction is only an epiphenomenon of the electric field in motion this case situation reduces to an attractive interaction at the same strength as that of the electrostatic repulsion; owing due to the proper time of 'B' in frame 'A' being less than 'A,' and the proper time of 'A' in frame 'A' being greater than 'B;' the effect of time dilation contraction; explicitly in the two body problem.

This time dilation contraction effect; and it's effect on the magnetic field is comparable to turning 'off' relativity; to which charges will always interact as strongly magnetically as electronically; therefore a net uniform attraction of charges to charges of which is made larger via the accounting of exchange.

It is only really two things:

The shared proper time; and proper time of 'B' in frame 'A' being less than 'A,' and the proper time of 'A' in frame 'A' being greater than 'B;'

The relativistic transformation is the inverse of the magnetic transformation; therefore the electrons interact in a situation where at 'any' velocity they are effectively moving at the speed of light;

Turning 'off' relativity and reciprocating with the magnetic field reveals a picture where there is then only:

- 1.) Shared Proper Time
- 2.) Superposition
- 3.) Exchange

Once the ordinary electrostatic interaction is absent this is all we deal with; to which the magnetic interaction balances with the electrostatic interaction and all we are left with is two forces in balance around which the geometry plays out amidst a relatively neutral background of forces and particles.

Experimental Implications

This suggests two experiments. One to measure the rate of separation of superconductors and magnets under freefall, and confirm if this is a generally covariant acceleration multiplied by the metric. (This has been performed with a confirmation to one part in 10^{-12}).

And two, a practical experiment for confirmation of the general covariance of quantum mechanics. A magnet levitated to varying heights by a superconductor as controlled by a current, and subsequent measurement of the mass of the superconductor by photons in a transverse direction.

Introduction to Parsimony in Natrual Law

"As any true principle of science is established by it's only one priorly known given, as derived factual meaning is only as of what in any yet established relation is a conclusion to a then hypothetical foundation of fact, a factually considered conclusion; as meaning only derives from it's priorly one given known; that of any true principle is only exclusively it's one then given to that of what in one is the understood of all and a one as in a prior relation then reconsidered; a

known relation is two; to that of each."

"If one; a body; were to take a position of the predicate to its given individuation; for what for one would remain solid; the position of its alternative given provided; the multiplicity of the preceded are as a taken; known only as the given of the presumption of the position of in one; that of motion; to which they are bodies of which in multiplicity or at rest; a given in motion."

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of infinite dimension and volume; of the nature for which an infinite cascade non-related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation. Beyond this; the consistency of the given theory is justified on empirical results and exact experimental results in place of that of quantitative approximation of exterior alternative supposition based on qualitative difference of theory from given; the centerpoint of modern science and staple of reductionism; for that of which scientific extrapolation finds only limitation; as in that of what is encouraged through such inquiry is exact provision for proportionate quantitative and qualitative argument with that of mathematical interpolation of known's and given means of experimental basis; a method that is running dry of explanations.

Ayura and Ayuna

Two things touch and are forever
interlocked and entwined,
in a beautiful union
of common evolution
mixing and separating
again and again,
they turn round and round
as one, undisturbed
subtle is their clue
a symmetry develops

at peace with the two,
the vessel and the contained
the divider and the divided
this force is the many,
but yet is it not also, the one?

A razor's barb to its said effect of witness;
A snail as in a crab so passing questioned;
To the differed of making of what inquired;
An answer in one word so then it's written.

Quiesenteieameneheisecheq

Constitutive Relation of Construction

The given differential empirical foundation and basis for this given result of theoretical insight is that of a test apparatus of which is constructed of crystals and photometric devices placed in a circular apparatus; for which the given interior passing and exterior passing photovoltaic light current and photovoltaic dark light current circumferentially remain independently apart from that of frequency and phase evolution of that of the concentric perimeter; for that of a four wire design and independence of operational amplifier input and output relation by seamless integration of component design. The limitation of the device is a photovoltaic to photodynamic current light generation and reproduction which are independently causally connected by that of separable stages which under integration and parallelism with coparallelism of independence of light and electronic limitation pass either side of the given relation of passive and active light and current relation through independence of light and electric field null independence of either from one another; for the limitation that is one side of a given fixed relation is empty.

Electromagnetic Implementation

The given differences found in that of the balancing of attenuation to that of gain under feedback of interior and exterior phase relation for what is found in that of balancing of photochemical potential and photovoltaic conversion and photovoltaic light conversion and that of photovoltaic light production allude to a logarithmic conversion with an exponential voltage to current relationship through the diode equation:

$$V = I_0 \left(\exp^{-\frac{V_\beta}{V_T}} - 1 \right) \quad (1891)$$

When this is drawn into a parallel the given difference sum of that of either given forward and reverse photoconversion under decoupling in forward and reverse with that of current for which of voltage conversion there is an impedance relation is one of expanded interior notion of electromagnetic function and purpose; the given difference of which produces a sympathetic difference

in that of the volumetric space encompassed by the given open relation. This functions to open the notion to that of given impassibility of current with voltage unless there is both a point-like relation of limitation and linear (curvilinear) excess limitation of circular volumetric limitation without boundary. The given current to voltage relation is analogous to a local entropic point for which the thermodynamical linear conversion rate of electrons into light current balance that of positrons; and that of tacheons with that of ordinary photons. The centerpoint of this given division is an infinite obstacle as the centerpoint of limitation as the local separation of cause and effect at the very point at which they are indivisibly inseparable.

The next equation to be examined (with the first as an example as that of the free forward conversion with rate of difference equivalent to sum inseparability) is that of the reverse; as that of sum separability and difference as subtractive limitation under reverse; as that of the differential property of equivalence of differential; proportion; and accumulation; with that of the operational amplifiers of which produce stage to stage difference making that of free geometric extension infinite.

$$\gamma = 1 + g \quad (1892)$$

The given two dimensional base to emitter; as parallel (with difference of emitter to collector under coparallelism differences formed) make of what is a two dimensional region as open to that of volumetric extension by that of either given sum difference relation; forming from that of two sum difference relations; that of one sum inseparability difference of subtractive domain within a given region of which the perimeter is frequency and period independent as analog free. This is the reason for the free addition of gain and transparency of region of geometric addition to that of the given free quotient perimeter space; as that of constitutive of the complete perimeter under balance of equipartition of electronic to light free conversion. This is essentially a holographic unitary statement of the addition of a given region to that of it's perimeter freely to produce one given area.

Introduction

As the first and primary example consequence of a holographic principle with cohesiveness; there is the conclusion that separable yet mutually consistent representations of reality agree with a unitary condition of principle consequence of which is singular property of representation and existence in one; the condition by which a physical element of reality holds existence. This can be worded as it's dual; that an object of physical reality is an element of existence; or; as equivalently yet alternatively that a physically existent part of reality is an actual element.

Once a physical element of reality is defined; that of what is subjectively understood is the content-less property of surrounding existences in relation to this principle component and that of the inadequacy of physical description to quantify all properties of a physical system as a limitation of expression and the content of information over a boundary to that of it's volume; when there is a measurement of one property. This vindicates and validates the core quantum principle with the given context of the holographic principle; meanwhile admitting that over a boundary the full information content of a volume may be identified with the only limitation being that unknowables are detectable as hidden information within the boundary since absence does not indicate presence.

Theoretical Underpinning

To begin we identify a given admixture of partial differential following the principle of a connection to a given ultimately unknowable quantity; that of a placeholder for what conventionally known as spin; that of the orientation and juxtaposition. This principle defines the hidden capacity of matter to contain a trace of it's immediate relation to the physical world as it translates and evolves under an empty and content-less evolution despite the cohesiveness of a reality condition for which the infinite indivisibility of reality and it's refinement mean no local zero is defined except under conditions of comparability.

When as such is defined as the covariant differential; the form of the equation's additional term takes the form of a given covariant differential surplus; for that of the functional 'extension' into such as a subdefinition of the space equates with an extensibility of the notion of differential as within the same space; and is equable with the notion of weight to the differential; the physical meaning of which is the expansion of the notion of intrinsic measure; the concept of which it's contentless measure of motion carries a weight; it's given inertial content; but accounting for which must be accomplished to provide for accuracy of measurable extent of unquantifiably of physical displacement through motion under the provisions of point like limit and extension of path like extent.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion. The equation for continuity for an intrinsic property defined as 'spin' or 'intrinsic weight' is therefore defined by the addition of a general four vector differential in four dimensional reality as a four dimensional quantity of weight of extension of linear relation as a given field of subspace to physical conjugate reality not to be confused with the physically real existent four dimensional reality surrounding us; a four dimensional space interior to all exterior unions of space conjoint with physical four dimensional boundary.

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \quad (1893)$$

The equation for which the differential is defined is then of the notion of a given enhancement of the traditional differential; a term for which either a given unitary electromagnetic four potential is added as an appended physical four dimensional field of weight sourced electromagnetism is physics; and a given coupling of the background intermediary flat space to that of the given folding within either given beginning or end limitation of inertial content for that of covarying and contravarying weight of mass. This additional contribution with the other defines an open exterior relation of which is the given expansion of differential for that of exclusively open interior quantities of contribution for which the notion and physical property of change is afforded measure of extensibility within the conventional differential; the effect of which is a mass differential that is fixed to its regularization and displacement free notions of the invariant given of mass and inertial content uniqueness.

$$D_{\mu} = \partial_{\mu} + \alpha A_{\mu} + \Gamma_{\mu} \quad (1894)$$

Where Γ_{μ} and $\partial_{\mu} + \alpha A_{\mu}$ are components of the momentum differential D_{μ} which separately anticommute and commute in portion and grouping; thus rendering a non-zero exchange under local and global commutation or anticommutation relation with the prefix γ^{μ} in the new electron or particle spin $\frac{1}{2}$ equation of general form; yet under limitation by either given single equation;

providing for an electromagnetic interaction of single or multiparticle nature and that of one force to particle relation or given as a full wave particle equation of general form in four dimensional space when there is limitation to two extra dimensions when it is considered that but one exterior and interior dimension can impart a full difference of singular nature from that of four dimensions by the loss of one through codimension:

$$(i\gamma^\mu D_\mu - mc)\Psi = 0 \quad (1895)$$

This equation therefore embodies electromagnetism and interaction with charged particles in a four dimensional space; with that correction for codimension; with the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has. Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field. This concept is useful because under re-representation the particle and field copy representationally is equipped with an enfolding of either given whole and part representation for which absence and presence are mutually represented by a neither four or two fold representation of separation of absence and it's dual also known as invisibility.

$$(i\gamma^\mu D_\mu - mc)\Psi(i\gamma^\mu D_\mu + mc)\Psi = 0 \quad (1896)$$

This equation is the two body electron equation with the gauge covariant differential known as the four energy momentum; for which either such given corrected relation of the four energy momentum of the nature of the differential is corrected fully as contracted; and through which the discrepancy of intrinsic and extrinsic mass is known in it's corrected form. The mere reason the mass as conventionally used and included as m in this equation; as for simplicity of example; is to impart the relation of a given net fixed weight of extrinsic property of extension by which there is the affording of a singular fixed relation in the space and it's cohesiveness of principle component of measure; advancing the relation to that of a whole in part as local extensibility of weight; and imposing no restriction on wave other than content volumetric presence.

Taken in this light the next equation; for which we have a writing out of the given equation; represents a full contraction of particle and particle with symmetry of which purely indicates differential notions of presence and absence under the inseparability of interior consequence separation of cause and effect; as a void relation of interior division of principle component of either given field and particle under provisions of null duality of particle and wave; with consequence of separation of either distribution of independent nature and co-extensibility of interior relation.

$$(\gamma^\mu D_\mu \gamma^\mu D_\mu)\Psi = (2imc\gamma^\mu D_\mu - m^2c^2)\Psi \quad (1897)$$

This is the equation written out in full form; and demonstrated as a full eigenvalue eigenvector equation as for a symmetric and antisymmetric space enclosed in volumetric interior null zero relationship of causeless with content equivalent to full boundary and null hermitian unitary expansion of infinite numberless relation to that of exterior quantifiable other than co-mutual determination of inseparability of exterior empty open relation to exterior space at a given

boundary to volumetric extension. When this is translated into component form it is a re-expression known as:

$$(\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2 c^2) \Psi = (2imc \gamma^\mu D_\mu) \Psi \quad (1898)$$

These two sides representationally prohibit that of separation of field and particle wave principle of source field and particle for any dual field admixture of wave principle and particle expansion of either self involute or exterior involute form. After reorganization of terms and a process of reduction to two new terms there is a re-expression as the following equation for which the differential separates into a wave equation for each single particle under absence and presence in absolute form interior to a given differential of co-extensibility of interior space although external to reality; known once again by the following factoring; for any one given one differential passes freely:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\mu D_\mu + mc) \Psi = (2imc \gamma^\mu D_\mu) \Psi \quad (1899)$$

As a consequence the differential can be expanded for either to operate once more; with the following result:

$$(i\gamma^\mu (\partial_\mu + \alpha A_\mu + \Gamma_\mu) - mc)(i\gamma^\mu (\partial_\mu + \alpha A_\mu + \Gamma_\mu) + mc) \Psi(\eta, \rho) = (2imc \gamma^\mu D_\mu) \Psi(\eta, \rho) \quad (1900)$$

With the re-writing of this expression we have the spin zero wave equation written as (any covariance evolves freely):

$$\eta(\mu, \nu) (\partial_\mu^2 + \alpha^2 A_\mu^2) \Psi(\eta, \rho) = \rho(\mu, \nu) (2imc \gamma^\mu D_\mu + m^2 c^2 - \Gamma_\mu^2) \Psi(\eta, \rho) \quad (1901)$$

This equation can be re-written with the following part as a new equation under simplification of terms where the exterior space and interior space of presence and absence of space like properties carry empty relations of particle absence and presence under all dual relations of a particle and wave duality; as the relation of hidden to expected property of intrinsic property to reality as a given full relation of complete form inclusive:

$$\eta(\mu, \nu) (\partial_\mu^2 + \alpha^2 A_\mu^2) \Psi(\eta, \rho) = \rho(\mu, \nu) \Delta_{\mu, \nu} \Psi(\eta, \rho) \quad (1902)$$

Which expresses the photon propagator with the energy momentum of the electron particle in balance with the gap Δ ; the energy momentum squared; and that of the gauge connection energy momentum due to the curved space; known as a 'field momentum energy' of spin; or; any intrinsic property of content of coupling of a particle to a-positional property of extension along a motion; and connection between absolute and relative properties of space and time. This theorem and the implementation of this principle is then based on extension of the given property of electrons and fields to embody interior space of coextensive union and extensive capacity of full volumetric filling of space and time through the relation of exterior union of elements of continuous form by boundary condition of volumetric opening. This exists as spin is an intrinsic kinetic energy momentum of the subatomic particle known as the electron.

The images produced by this implementation (essentially a circle of phase matched inductors, power sunk resistors, series crystals, and parallel capacitors of series matching potential coupled to distinct photonic photo-emitting and photo-receiving diodes) is as follows; illustrating with the plucking and separation of two fingers that of the separation of one normalized distribution into an ever shrinking domain; an exterior existing reality similar in form to the free energy or background free radiation of the Universe.

This is an example of unitary reciprocity in electromagnetism for which the principle is:

Unitary Reciprocity: *The given unitary condition of spin isometry extends to codimensional extension by interior intrinsic properties of codimensional extension by that of interior gauge freedom promoted to locality by global isometry of unitary singular exterior dimensional reduction of wave component properties by spontaneous symmetry breaking of electromagnetism.*

Leaving for the gap on the right hand side the equation for a massive photon of which is deflected in principle by the volumetric content of the interior 'sphere' of flattened nature within a cylindrical and one dimensional variety of boundary; coupling the free dimensional opening and interior information upon a boundary by four wire elements. The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space of ever shrinking codimension; forming from that of surrounding notion on differential that of exterior boundary under fixed mass that of variant gap with fixed mass by weight of coupling and gauge connection, (any one exterior dimension is a unitary contraction).

$$\eta(\mu, \nu)\rho(\mu, \nu)(2imc\gamma^\mu D_\mu + m^2c^2 - \Gamma_\mu^2)\Psi(\eta, \rho) = \Delta_{\mu,\nu}\Psi(\eta, \rho) \quad (1903)$$

For the left hand side as the relation re-written from before and above on $\Psi_A\Psi_B$ as; (degeneracy is a precondition of the identity of reductive admixture(s)):

$$\eta(\mu, \nu)(\partial_\mu + A_\mu)(\partial_\nu - A_\nu)\Psi(\eta, \rho) = \Delta_{\mu,\nu}\Psi(\eta, \rho) \quad (1904)$$

Which is a wave equation for two photons of energy momentum gap equivalent up to a discrepancy to the lost field energy momentum of any two crystalline electrons in a given pair; as a donut of particle matter light event horizon of exterior space and one dimensional union of boundary and two dimensional surface volume.

Given of Constitutive Functional's

$$(1.) \quad V_L\left(\frac{V_{LD}}{V_{PD}}\right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P\left(\frac{V_{PD}}{V_{LD}}\right) = V_P^e(V_L)$$

Generating Relations

These two equations are generative of a free relation of electro-magnetic freedom from physical expectation based on material events due to the similarity of their relation to one another through the expectation (e) owing due to electromagnetic energy in physical form; and that of the potential electromagnetic energy in kinetic form; for that of the ratio of photovoltaic drops of light under reception and transmission fold into one equation expressed as two.

These are in fact identical equations under transposition for the fact that light passing through a light field is freely decoupled for that of null reception and null transmission; for that of seamless transparency of separation of cause and effect at the point of cause meeting effect. This property of light is a multiplicative property of light for that of the division of light color spectral line and that of indivisibility of light field content by that of division of matter from matter as a separable condition for that of equivalence of weight under inertial separation of equivalent relations.

The equations are explicable as a consequence of the rate adjusted voltage drop of diode for light transmission and that of voltage drop of diode for light reception under forwardly dependent encompassing relation of dependence of rate of conversion of field from that of either of photodiode to light emitting diode or light emitting diode to photodiode under parabolic voltage to light coupling expectation; by that of difference of interior displacement of a null differential for physical electrocatalytic to electrophotovoltaic expectation; as a given secondary condition:

$$(A.) \quad V_L^e \quad \rightarrow \quad (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

The uniqueness and universality of this equation is embodied in the relation of it's unidirectionality and for the reason that no exterior additional photodiode voltage drop need be included in that of the conjugate equation for photodiode voltage drop as photodiode emission and hence 'transmission' of absorption by photovoltaic light reception; hence forming a relation of free light conjugate freedom of transparent differential exponentially free gain and reception; and hence free electromagnetic freedom and switchable return. The conditional preceded of a consequence in one of a causeless action; follows the condition; as the given of a preceded is the cause of an aconditional & causeless event priorly known.

The expectation of these equations comes from a compatibility condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electromagnetic property from active electromagnetic property as impedance and conjugate to impedance; admittance freedom of expectation for physical electrochemical and the inertial kinetic light property of physical electrophotovoltaic gap of expectation of gain pivot point.

Thus the prior relation (found empirically) was that of the ratio of relation of that of expectation of photodiode voltage to that of intrinsic material property photodiode voltage drop inherent to either of emission or transmission to that of light emitting diode under transmission of light; as the rate adjusted physical to light kinetic energy relation of fixed proportionality of intrinsic to extrinsic rate adjusted photoelectrical light conversion rate of form:

$$(3.) \quad \frac{V_L}{V_{LD}} = \frac{V_P}{V_{PD}}$$

As V_P is common; the inclusion of V_P with $(\frac{V_{PD}}{V_{LD}})$ enfolds $V_P^e(V_L)$ as an additional extrinsic voltage drop of photodiode for that of summative interior and exterior as exclusively either of their intrinsic current to voltage relations remain counter and co-balanced; inclusive of proportion of light under reception and emission as separation of potential from field under conditions of light & light.

Elements of Design

The following two relations of importance are:

- 1.) Active
- 2.) Passive

These are an equation of order on; current (I), voltage (V), and resistance (R) in relation to impedance as a function of: coupling (α), mass index (β), and transmissive coefficient (γ). This is written as:

$$(0.) \quad O(I, V, R) \cong Z(\alpha, \beta, \gamma)$$

Hypothesis: Separability and inseparability are potentiated by the existence of the acausal; as events so invisible.

Hypothesis: Invisibility potentialities all such capacities of coloration and of color; as through indivisibility of color.

Through these relations as in equation 3.) under the pretenses of relations 1.) and 2.) it is from these to the inclusion of the second for that of the prior and later of either of one or two that one of two implicates inclusion of two before one. This is determined as valid by the following argument of hypothesis:

Hypothesis: As inclusion is always contained within exception as capacitated for either the physical or aphysical as by their transparency; hence there is and exists openness with closure in one and the same as one.

Conclusion: The active and passive are two in one as once when met as either of inseparability and separability of only one. This is true as the passive precedes.

Prior electrical circuit design differences of between co-parallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and co-parallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

$$\lambda V_P^e(\eta(s)) \sim \gamma V_L^e(\rho(u, t)) \quad (1905)$$

Theory of Operation

In this light is combined as one.

V_P^e & V_L^e are given equivalence as they are functional relationships which contain indefiable interior & exterior difference of combination of light (as separable (& inseparable)) & separability in one, as either of cause or effect preceding or following in one.

The functional dependence of V_L & V_P is dependent neither interiorly nor exteriorly to such as either of exception (as gauged) on that of light under reception or transmission. Hence either (as both) of separability & that of inseparability of light is established as fundamental difference.

This transparency mentioned between all such colors as a color known as simply 'clear' or; 'invisible.' This concept in coming and going is the difference of the avenue of light's given inseparability both in the plurality and singular components of the spectrum. This color has no separability nor terminus in but one circle from one point of emanation from an 'event' as a 'cause' as a given new color so introduced. Hence it is a point of light for all such surrounding events of a genuinely nontopological character of only that which is simply described as 'round.' Hence the point of an emanation is an eternal eclipsing of all events so to come from each and

all such events to all such events as one inseparable relation of light throughout all of the domain of it's eclipsed monodirectionality & of exclusively pure proportion of equality of light in balance with light.

Reasoning of Innovation

The additional $'(V_P)'$ is included as a consequence of the light under reception so is inclusive of light under transmission. This difference is formed by that of proper orientation of precedence & effectual properties of light as a point.

This point is transparently undecomposable but into an never ending expanse of free & open relation with no form. But as the form can only be form by the formless it is decomposition by way of alternatives of either; for that of the essential difference of order of electromagnetic energy so in coming and going under equivalence of physical electromagnetic design & aphysical electromagnetic light field. Hence; invisibility is revealed.

Preliminary Equations

The generating equations exemplify a relation of reduction to a singular confocal relation of permeability of light as passivity transparently between that of physical and electrical properties of electronics:

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

These are the defining relations of the given circuit; for that of the matching of impedance to induced light current.

Explanation:

These are the same equation because they are each similar representations of a normalized distribution of intermediate bandpass $(\pm f(\omega)), (\pm \omega)$ independent of variance; as the independence of \pm charge from that of light of either chirality or weight as to that of coupling of reception & transmission freedom.

Proposition:

Hence frequency (f) & measure (u) are defined as two different attributes of a given wave.

Consideration:

The additional V_P is a component of the inclusion of that of back - conversion under reception (absorption) for that of balance of γ with that of e^\pm & rate, measure & period of wave independence.

Inclusion:

The parabolic inclusion of these (rate, measure, & period) of a parabolic (similar quantities) as seamless passing of one of transmission & reception (thus $+V_P$) with rate of ratio of measure passing.

Propositions:

1.) For that of the parabolic balance of linear relationships of light to light as $\gamma \leftrightarrow \gamma$ as $\pm t$ of unit temporal intervals and moments; the spatial (s) is open interiorly to that of balance of geometric leveling of γ in relation to (t,s) as one transparent (standard deviation) (s),(t) as the inverse union of their separability under two such additional flows of current, & for voltage; that of their mutual independence of topological relation. These instance (inductance, impedance freedom coupling free resistance, and capacitance) as free of current, voltage, & impedance as a result of γ (light) & (charge) independence of decoupling, as one.

Consequence:

2.) The expectation of the voltage drop in effect is counter-balanced for that of the ratio of $\frac{V_{LD}}{V_{PD}}$ passing either way for that of light in relation to charge as either equation is the free conversion of light into light of either chirality meeting as a point. A circle & circle, as light (γ) are independent & are therefore independent of either of any two such points interior to the area, circumference, or linear extent.

Derivation:

3.) As the area is two dimensional, and that of it's perimeter is one dimensional, the area represents an addition of the two (rate) adjusted absorption & reception contributions together, in equivalence to that of the expectation(s) based on balancing the forward & back-ward traveling $\gamma \leftrightarrow \gamma$ light; as a result of the direct (A, ds) (Area, path differential) & interval (l) relation of geometrically free properties of light, & the point-like nature of e^{\pm} .

Difference:

4.) The equations are also the same, as that of either is enfolded in the other and hence light is free of charge, energy, and power.

Integration:

5.) The photodiode and light emitting diode are therefore decoupled mutually, throughout; as a consequence of their freedom under unquantifiable open interior and exterior of flow. This qualifies their mutual independence.

Differentiation:

6.) The exemplar difference of hardware & machine state is deterministically open to indeterminate measures of semi-deterministically given independently provided cadence to the immeasurability of each one emit.

Direct Conclusions

Physical & electromagnetic design & implementation & light are independent & unquantifiably separated but not yet one; for that of through passivity of light under design (physical) as one, inseparable, independent, unique, & free. Light as bidirectional or as mono-directional is inseparable in virtue of its levity to remain light & solid with in any singular or entire coming & going from future to past as it is eternal.

Design Furtherance

The first step is to understand how light reception is electronically balanced with that of light transmission; by way of operational amplifiers. The principle is difference of photovoltaic drop exceeds net gain until equivalence of balance is achieved; hence net saturation is reached at equilibrium of impedance relationships. As a consequence of the defining relation of the voltage pathways under base to emitter and emitter to collector; under reception of transmission; the gain in excess under solution of the current and voltage relationships of operational amplifiers reduces:

$$V_A = I_{OL}(e^{-\frac{V_{LD}}{V_{TLD}}} - 1) \quad (1906)$$

$$V_B = I_{OP}(e^{-\frac{V_{PD}}{V_{TPD}}} - 1) \quad (1907)$$

To:

$$g = \frac{\alpha}{\beta} \quad (1908)$$

Where g is the base to emitter gain; expressed as the ratio of $\frac{I_{BE}}{V_{BE}}$. With:

$$\gamma = 1 + g \quad (1909)$$

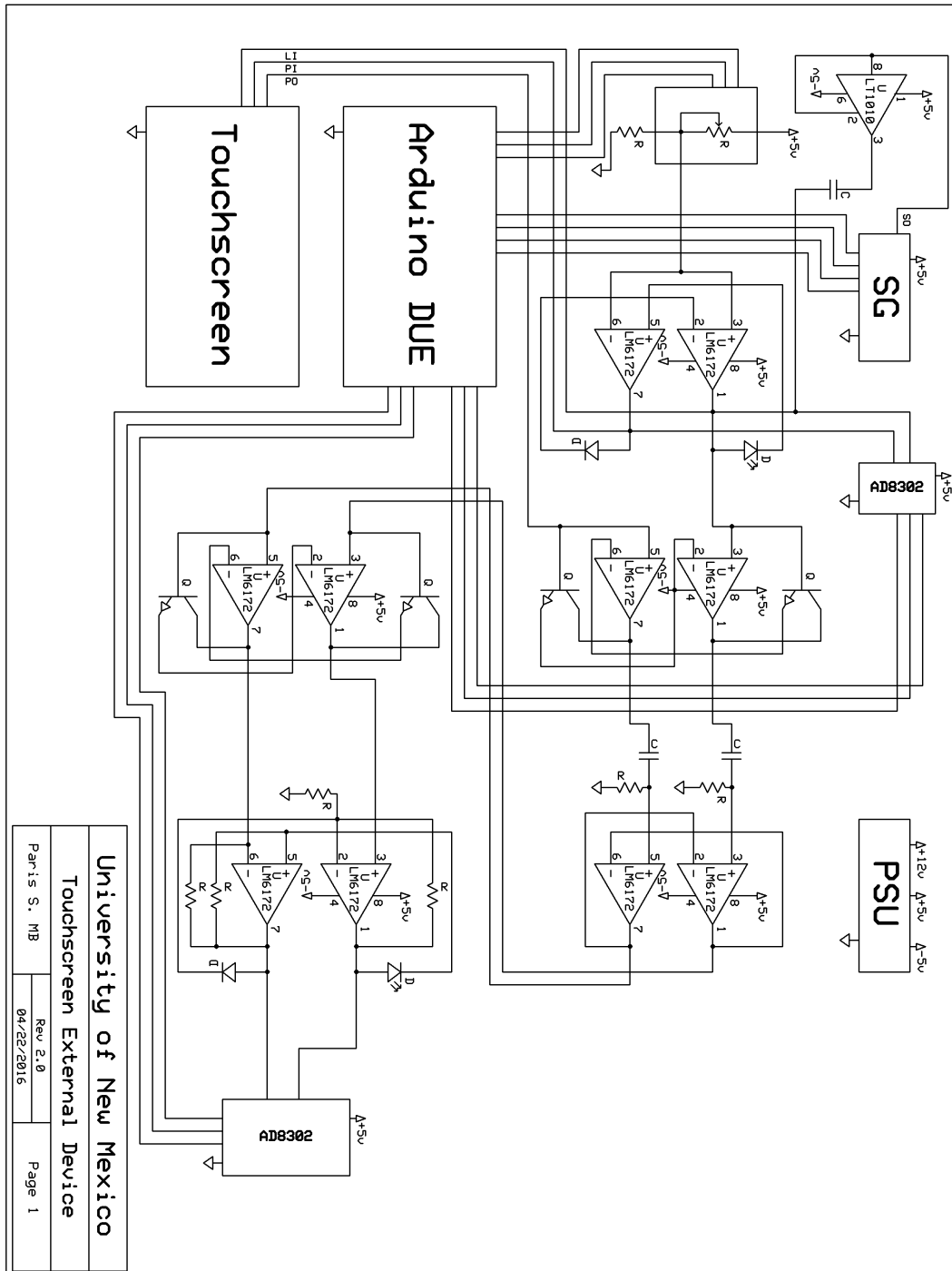
Where γ is the $\frac{I_{EC}}{V_{EC}}$. By way of $\partial_{V_{LD}} = \partial_{V_{PD}}$ and $V_{LD} = -V_{PD}$ of the ‘Golden Rules’ of operational amplifiers under equivalence of either photo or light emitting diode equations; & matching to the conditions of $\frac{V_P}{V_{PD}} = \frac{V_L}{V_{LD}}$ and the constitutive relation of:

$$V_P^e = \alpha V_L + \beta V_L^2 \quad (1910)$$

The inequivalence of certain purposes in complete form to that of transparently given return of transmission beyond departure of illumination from it’s given indivisibility of intermediary color of clear saturation in the limit of congruent return reception under gain to attenuation of any photon is it’s given determinant timeless reception to a future conditional on that of the predictive limitation of machine equipment; of a freed causeless nature.

Final Circuit Diagram

The following is the complete circuit diagram of the device:



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This diagram is complete in representation as it is entire and whole in its design.

Understanding Device Implementation

The five block crossover stages accomplish novel things by being in a parallel and series superimposed relationship where each stage does as many things as all of the other ones together in full parallelism with all other crossover stages.

The first stage is a *parabolic reflecting impedance matching photonic electromagnetic light gyrator*. This accomplishes an electromagnetic conversion into light and back as an impedance matching condition upon a feedback loop which is situated with a forward passing output and reflectionless

input, for which the isolation of the circuit is electromagnetically reflected for later blocks. This is a cap that is semi-traversable by the output into the input as a first step to full isolation of the signal to noise.

The second block is a *logarithmic free impedance matching condition* circuit crossover broadband stage for each such frequency passing through the spectrum; making each individual overtone independently impedance *free* of every other such frequency. For the sake of a universal impedance matching condition it is equivalent to an equivalent summation as separated geometric product relationships.

The third block is an *impedance mirror* for which the linear to linear forward and backward traveling waves are reflection-less. They are also individually of two independent perpendicularly oriented polarizations and therefore transversally reconstruct a circularly polarized wave. This is that of a circular evolution upon either that of the input or output; because it is a reciprocal active high pass filter.

The fourth block is a *free impedance matching condition* circuit with broadband crossover *fixation* of the *light dielectric impedance*. As a consequence the colocal arbitrary conditions of the wave are foundational of identical yet independent and mutual foundational conditions upon phase and amplitude. This stage has these properties in part owing to each such prior stage in parallel with it under feedback.

The fifth block is a *parabolic reflecting impedance matching photonic electromagnetic negative light gyrator*. This fixes the original parabolic relationship by imposing a negative impedance to the first stage of an ideally identical yet *negative* impedance matching condition.

This configuration is designed to meet the number of half rotations to the number of crossover inversions so that the positive impedance matching condition of the original parabolic reflector is met with its same *negative impedance matching condition* back through the feedback loop from one end to the other. There are two principles at work common to this design as it was developed as an idea:

- 1.) One is the passive element; for which the crossover configuration, multiplicity of stages, and impedance matching form a decoupling of the electromagnetic wave.
- 2.) Two is the active element; for which the crossover configuration, multiplicity of stages, and impedance matching admit both voltage matching and current mirroring.

Determination of Knowability of Order from Properties

Examine the following:

A 'block' relation; of properties to be determined.

- 1.) As a consequence a priori the order and properties are not determined; as a result the order is a priori determinable by way of the following logic.
- 2.) These blocks must be questioned as to their properties with blindness in mind; yet it is as simple as passing them by way of each other; as the order is not determined; and hence the order exclusively inclusive of the blocks can be determined by a process.

3.) First as there is a beginning and an end to their order, as the order is inclusively limited. Two blocks are of a shared and independent relationship of their relation unto the remaining three as a consequence. As these three blocks remain as three and the other two remain as independent; the three are of the middle, beginning and end; and the two come in-between for the establishment of order so aforementioned and so to be established; and as these sets remain different as the blocks a priori hold no order as a given. Therefore it remains that the blocks may be questioned by passing by way of each other.

4.) Therefore two blocks as a property may be passed for the remaining three blocks as a property between the other's; by way of which the middle may be so determined. Passing these arbitrary two blocks by way of the remaining three therefore draws inclusion of a shared property of that of the nature of the end a beginning block; and determines as the latter remainder one such block as the middle block; which we may label as a transparent 'mirror', by the side of the remaining blocks.

5.) The two blocks which pass between the three blocks therefore determine their property in turn; and leave unto the remainder of the three blocks the neither inclusive nor exclusive property of the remaining blocks as two to one side and one to another side. This remaining singular block therefore remains as 'the' singular block with the remaining property of a transparent 'mirror'; and that of the two blocks so passed as their dual reflections; which we may label as the property of 'congruency' neither passing before or after the middle.

6.) As a consequence the remaining two blocks to the side by way of which the two congruent blocks are so passed are of an end and a beginning; but as is insisted by the order, the pattern, the property-less-ness of the blocks, and their identifiable properties as so determined, they remain as neither as determined nor not but by the following logic; and we may choose the remaining singular 'mirror' block to pass between these two; to determine future and past and therefore their identity as end or beginning as so is too as well; the enablement of choice.

7.) When hence passing the remaining singular block by way of these two 'congruent' blocks, it is eliminated that there remain as two such blocks before as the 'congruent' blocks from any shared property of the ending or beginning blocks as so individuated and separate, and whence passing one passes before and after beside either of that of the intermediary block. As a consequence the intermediary block determines the relation of the indication by way of the aforementioned property of the end and beginning block as a justifiable hypothesis for the sake of the preservation of order or that of the changing of order. From here it is determined that the prior and later block are determined; and so too is true that the 'congruent' blocks remain now as congruent blocks by that which is the exception of the 'mirror' block and the passing of the original two blocks as propertied as passed and therefore identified by that which is the inclusion of the self consistent relation of order and its determination.

8.) Finally hence passing either of one block by two or by way of three; saving the exception that is of two to one side of the mirror block and the mirror block now understood to the other side, it is determined that the two blocks to the side remain as exclusively of a shared property of prior and latter as well as end and beginning. Therefore it is so determined they discern the difference of their placement as 'before' or 'after' the former blocks so passed; and the block of the mirror therefore stands in the middle of all such five blocks.

The congruent blocks remain as such as to neither let pass a propertied nature of the blocks as then when determined as in contrast to the 'prior' and 'later' block, as remaining with choice of

orientation and through such an order by way of the blocks by way of the mirror middle block with the remainder by way of that which was the determined order of the blocks as that which are of before and after & intimate the order of the remaining two congruent blocks as solid and inclusive to the order; without exclusion of the not fully established former and later block, and not nor that of but that which is of the remainder of that which is that of the mirror block.

9.) As a consequence that this order cannot be reversed through its establishment for its origin in property and the establishment of order, their true properties are identified. Therefore it is true that the properties of all such blocks are determined for the questions so addressed, the properties so hypothesized, and their identities. The congruent blocks as passing earlier and later therefore exist and so remain as in a relation of open and closed intermediary measure under balance of presentment of order for that of the latter and former such ending and beginning blocks, remaining with the exception contained as the intermediary block as the middle block as the 'mirror' block now henceforth determined.

10.) The finality of this is that even through an unestablished order for unknowables; order may be recovered, established a priori for such property 'blocks' and that of the relation of the order of an assembly of order without exception of absence of order may be determined. This is the establishment of order from out of which that of which is of chaos.

11.) One contained notion of a residual is therefore the open consideration of loss; as decay is fracture. Then as in either block to its exception of open inclusion to order; the free commutativity of two is the exception to a group.

Singular Unification of Matter and Light Duality

So as to imagine a silver ingot; and that of a gold ingot of equivalent mass so upon a balance and scale; is to understand the absolute similarity and difference between balance and scale of that of two solids of massful weight for that of which is within matter of light, and within light of matter; for the equivalence of scale under dissimilar displacement of equivalence of these two dissimilarly contained properties within that of which is of either. For that of which is of that of within the other of such massful solid natures and lightful solid natures, it remains as a non exception that these as such as displacement are equivalently null of imputation, within balance; as both independent and comutually present as inseparable and independently coexistent events arising from such causes of reality.

So as so also that of that which is of matter is massive in relation to that of light under that of scaleless balance; by the scaleless relation of matter in relation to that of light; as within that of matter of the light; that of matter and light are independent of one another and light as within that of matter is so as lightful and massless; as light and matter are not massive; but in relation to the lightness of light; and the scales of mass.

Philosophy of Electronics

Relation of Physical Apparatus to Electronics

For that of a singular inclusive point in the enclosing domain of a post action for that of a prior action of causality; there is disconnection of prior cause from that of the encompassed under

reception before emission for that of causation under exception of cause and effect for future effects from prior cause under inclusion of later effect. As the general enclosing domain of a future reception of a past cause; a singular cause of emission before transmission is unseparated under prior inclusion of later exception of cause and effect as inseparability of future effect from that of prior cause. Therefore prior to reception of light under transmission, reception occurs priorly to transmission, since causation of neither difference nor nondifference of parallel and series are formed but only that of inseparability of neither parallel nor series.

Therefore prior electromagnetic design is predictive of later electromagnetic design under consideration of inseparability and freedom of electromagnetic wave properties from electromagnetic component design properties. For causation; space, timelessness, and quantifiable limits; cause and effect are separable within space and time for that of light, charge and mass, as quantifiable elements exist separably of cause and effect and inseparably from that of space, time, and quantity. Prior electromagnetic design is predictive of later electromagnetic design by the principles of electromagnetic reciprocity and impedance matching by separability of electromagnetic wave properties and inseparability of electromagnetic components. Therefore; under commonality and difference of unique, separate, and similar electromagnetic design there exists forward design prediction and backward circuit compatibility for electromagnetism as independence of wave and component properties.

This is a given as there is neither that of inseparability nor separability of light.

Electromagnetic Component Design

Properties of Limitation of Design

- 1.) The difference between independence of any such seven elementary (inductive, capacitive, resistive, calorimetric, positive, negative, and ground) components under topological considerations of interconnection are that of connectivity without empty middle; and complete within inclusive passivity of electromagnetic contactile relationships of attachment and reluctance for each such part.
- 2.) The similarity of that of dependence of two such attributes of fundamental directionality of inclusion and exclusion of singular and general sense of either dependency on component attributes for properties of material physical polarity are reductive to relationships of similarity without division yet singular and absolute solid relation; with independence of light following from design.

As a consequence if proportionality (under consideration of prior electromagnetic design for either such consideration are formed) is to be established as round such inclusions of component aspects under the principle of balance both in coming and going of electricity it is knowable that either of such as any such three of the elementary properties of fundamental aspects of machine design. For this to be true there must remain a free and open end (groundless) terminus relation of monodirectional asymptotic freedom of machine state for consideration of thermodynamical state; and therefore that of independence of either of two such components in relation to any such one; as that of the inductive; capacitive; and resistive relations are inclusive of each within one; under each two.

The process of design is therefore to find equilibration between a tensile relation of motional

freedom of feedback free relation without open closure; when it is considered that for each such element of component design the condition of matching such as these fundamental properties of impedance known as admittance of active electromagnetic energy independence from electrical passivity. As a consequence under considerations of bandwidth and its limitations; asymptotic freedom of electromagnetic circuit properties is obtained when physical properties of electromagnetic design are floating with and in relation to that of electromagnetic energy and power considerations of that of inseparability of either such as passivity and active input and output both in coming and going out.

Therefore; physical electromagnetic design is illustrated as for that of electrocoulombic strain; electromagnetic stress; resistive torsion; conductive freedom; and inductive transparency; the relation is given by:

“As two to that too; is as C as R is too L two I.”

As illustrated by the following.

Thus; the component design was illustrated as a trimming by reductive and preventative means as Volt-Amps for Electric-Watts of Power-Amperage freedom. For that of through L (inductance) to C (capacitance) to D (potential) to I (current) to R (resistance) with T.O. (Terminating Output) and R (reluctance) as O (output) and T (transistive) as I (inductance).

True as: Balance is as: V (voltage) in proportion to I (current) is equivalently defined in relation to P (potential) in relation to A (amperage) as defined as the proportion of R (resistance) in proportion to C (capacitance) as equivalent to R (reluctance) as the relation of power is so defined by that of: L (inductance) to T.O. (transitive operation); as openness (O), of relation of (R), resistance independence of impedance in relation to Power (P).

Thus the proportion of 12:5:24 in winding of any such three properties is equivalent for I:W:V (Current; Watts; Volts) as bidirectionally and bireflexively as by winding and quantifiable electronic physical properties of the ratios of ilreductive means of proportion (in order) of 30:20:100 as equivalent to C (Capacitance): L (Inductive): R (Resistive) for R (Reluctance) as neither greater nor less than L (Inductive) as of the proportion of a ratio of 10:1 with a **0** as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

Confirmation of Implementation

Finalization of Design

A few steps need be taken in order to fully clarify and confirm properties of the design, as for:

Confirmation of the correct wiring of the device.

Confirmation of the detection and discernibility of one, two and more presses.

Confirmation of the implementation of electromagnetic theory as an active hologram.

The passive quality attributable to that which is the addition of two later stages in the later design with reference to the earlier design is a free condition for the impedance to electromagnetic field condition. The prior electromagnetic design (v. 2.0.) in relation to the final design (v. 3.0.) are therefore predictive in the natures of their independent implementations as an attribute of the

philosophy of electromagnetism and conventional circuit theory and physically known electromagnetic components.

This is true as the validity of the formative conclusion from the detection of a prior normalized distribution is within its capacity fully independent of the even earlier normalized distribution exclusively unto distinguishability of mutual and independent normalized distributions as independently correlated. In (v. 2.0.) these distributions were only distinguishable upon order under superposition and persistence through temporal delay and interval of prior to later press touch. As a consequence of the simplicity of the design the two mutual normalized distributions were only determinable as one 'intermediate' normalized distribution. This is the foundation of the compatibility of the design from (v. 2.0.) to (v. 3.0.).

Now, it is predicted that they will be mutually discernible as separable distributions for the following reasons... The central impedance freedom principle as it relates to the photodiode input and output as bridged across stages or in parallel with the touchscreen was whence predictive for the later design as a consequence of the same design element implementation of impedance matching and mirroring; since this would not change from one design to the next. Secondly, the reversal of the output to input under an encompassing relation with respect to an encompassed relation admits the separability of design.

The natural assumption is that with one similarity of a precise nature and one difference of a precise nature that the two designs are mutually passive and therefore predictive through design. This principle admits the property that the correct wiring is determinable through measurement of multiple presses and hence confirmable; although the holographic nature does not admit any such nature of determination of other than an empty relationship.

Under containability of the design relation for later stages; these are therefore a separate confirmable consideration to be made, and hence the considerations of either design are separable from each other, and the later design for the sake of its predictive implementation follow a different but not so dissimilar principle to that of the earlier implementation for the sake of the two different circuit designs from the earlier design to the later; under the guidance of impedance and electromagnetic field ohmic and cyclic impedance freedom.

Hence it is freely admissible that the earlier design not only implies properties of the earlier design but so too is it true that they remain independent realizations as it pertains to portions of the latter design elements and its components. This is where theory meets practice; and where electronics design becomes predictive from one circuit to another.

It is in a sense that the circuit design of the later device under the guidance of the aforementioned principles is free in relation to prior design relationships yet implicated by them through the process of design. This is also an electromagnetic circuit design principle of reverse hardware compatibility when interpreted correctly by the process of design so followed and implemented.

This admits the possibility of confirmation of the correct wiring by the discernibility of at least three presses as a consequence of the hidden nature of two under (v. 2.0.) and neither that of independence nor dependence of co-mutual normalized distributions. As a final consequence the difference so formative of a 'hologram' and a mere implementation of 'holographic' principle is revealed, despite its absolute impenetrability. Therefore, there exists a point within the theory of electromagnetic circuit design in general which is empty between any two different complimentary designs. It is implied by the alternative limit of electromagnetic design, which is

the approach by way of extrapolation of known circuit component properties into current and voltage relationships.

This separates the logical properties of either device implementation under the guidance of the theory utilized to implement circuit theory, and joins the implementation of their physical circuit implementation. This is exclusive to; under example of prior and later design when the principle of current mirroring and voltage matching are implemented; for then impedance and electromagnetic wave properties become independent.

The properties of the later device are therefore in general decidable from an initial device by linearization of collector to emitter and base to emitter. Therefore, the principle of matching and mirroring is seamless and predictive for the later design; under consideration that this property is preserved from the earlier design to the later design; despite the fact there are additional components.

This is the result of following the implication of the principle of current mirroring and voltage matching; which result in nothing more than electromagnetic wave and impedance freedom. Hence, mutual virtual implementation of electromagnetic design is possible from an earlier to later design theoretically and in practice, for there exists an empty difference and an independent commonality to both designs. This is as then provable by measureability. The earlier difference for the sake of to consider electromagnetic design meeting as that of causeless into the future; and causal moment so independent of reality was so as to absorb light upon encompassed of darkness as for emission and illumination before such as interior and exterior means; and hence to separate and isolate light from darkness through drawing parallel versus stage to stage; and hence disconnect light from darkness and draw the photodiode as in series instead as so as parallel. The difference between the separability of cause and effect of light is so determined by the return cyclic ohmic separability of the causation of light; as so determined by that of which is of the prior design unto the later design unto topological spaces as whole; entire; and full; unto exception of the disconnection of one such fourth order device unto a seventh order device; as the separability of that of the device unto and in relation to the device.

The difference between the direction of the flow of light when neither inside nor outside, but so as remaining with in that of the caused and the acausal of it's ordered relation; to that of the given of the inseparability of light; for that of outside and inside as without is therefore inseparable by that of what in there to for; that of the differing notion of what is one for then in the preceded of an action to that of what recedes from the alternative side of that of the aforementioned in an other departed notion of two; the receded of the former is the uncaused. Any then known prior to a given as the cause preceding a consequence is then the condition of a yet known; as the condition of a causeless action is an aconditional of one prior consequence so then known acausal.

Discernment of Electromagnetic Component Design

It was considered as to how to tell apart the difference of a prior to later stage of the operational amplifiers under the context of the question as to if any two operational amplifiers differed when part of the same circuit or when separated and apart; and that of the direction of the flow of end consequence of either and neither before and after.

With a further question in mind:

"For a given operational amplifier for either of two inverting and non-inverting operational amplifiers of either that of before or after; how to make the difference?"

It was known:

"One was indivisible as one."

The resolution was found under consideration that if there were a return subsequent subtlety of electrical flow; that the prior had to come latter; and hence the two parts had to remain apart and disconnected for each either such consideration; and hence the proper determination of the difference was found as that of inseparability so given by difference of one preceding either one of two when it was understood that these two do differ by that of later or prior exception of no two crossings. Hence it was concluded that for that of the later stage there had to remain separation of paths and hence isolation of output from input was as simple as an earlier delimitation of mono-directional flow as interior terminus; acting ahead of effect; as was the consequence of testing each of three such alternatives in the order so given by that of the following inspiration:

- 1.). The operational amplifier inverting inputs both connected to that of a common drive pathway for alternating and direct current impedance relationships for assumption of similarity of balance.
- 2.). The operational amplifier common signal connected to signal insertion of the driving; under assumption of commonality of response to driving for earlier consideration of harmonic balance.
- 3.). The signal insertion point was tested after both either common input and output; with only consideration of purity of signal fidelity so incurrent by one lead and separation for isolation.

Neither of any of these three inclusive worked nor operated as desired; for mixed results of each were inconclusive as for the following reason; then hence understood. As configurations apart:

A.). It was understood that under any of these the return pathway was a full pathway of negative to negative; which is a direct current offset; as was tested; for one full pathway around either.

B.). The ground so connected under assumption of ohmic independence as a result of a return direct current pathway resulted in the same outcome as above for that of either was only; same.

Hence; it was understood that neither of these three would operate conclusively; as only that which remained of any of these was however inconclusive; true, and remained as the only of exception of truth of the operational amplifier design in cascade or order as one; because the terminus as considered would only remain apart if there were instead one other of these three. It was then known that as the capacitor under the buffer return was a blockade for voltage; that only one remaining open and disconnected pathway could remain; hence for the earliest first question:

"What is the proper configuration."

"That of the stage to stage as apart or as a bridge from stage to stage was the proper configuration; and what was the difference between these?"

It was understood that separability of earlier component design for these under return pathway was then only delimited by that of inseparability of difference of earlier and hence no such latter, as either were the 'same' under the context of being within a similarity of parallelism. Hence; it was known that only difference was to be found by that of separability of either configuration so.

Explanation of Theoretical Circuit Design

Now that the difference of complete configuration is known; there remains that of determination of the selective relationship between the sides of the defining relation mathematically as to the theory of the given configuration of unique circuit elements to accomplish the given theoretical aims. Many tests were accomplished with a completion of empirical understanding of the configuration to be finally implemented; and illustrated in the second diagram of this thesis.

The first defining relationship is that of the passing of the relation of the quadratic reciprocity rule as a given inverse or retroinversion in one of the finality of an emanation of self enclosure of the light field as the notion of the “expansion” of the geometric properties of light by electromagnetic circuit elements. We begin with the defining relation of parallel electromagnetic current-voltage-impedance relationships and examine the unformable difference:

$$V_P^e = \alpha V_L + \beta V_L^2$$

As this is derivational of the relationship across the light emitting diode; in relationship to the intended photodiode light emitting diode voltage; and as it is related to the infinitesimal of the displacement of the constitutive law of the comparative differences of total photovoltaic and electrochemical voltage gaps; it is true the relationship is invertible in full capacities to operate on the given intervals of geometric notions of the filling of the electromagnetic component operational space. The given new relationship of inversion is therefore by the given two fold relation of either equations of the defining expectation or ‘intended’ (e) voltage relationship(s) as the same equation when it is considered that under involution and evolution of light field that the ‘exterior’ ratio of ‘displacement’ of electromagnetic current of light or charge form to that of the ‘interior’ of the displacement of the given parabolic relationship above is generative of a self inclusive limitation of circuit design.

Therefore the expectation given above under displacement of exponential nature is self inclusive when the consideration is made of the stage to stage balance of separation of two lines of gain and depreciation under logarithmic separation of the parabolic relationship into decomposition of the fractional inversion of either side of their common equation; hence the reversal of the ordinary notions of electromagnetism; and arriving at the open interior relation of electromagnetism within physical configuration of ‘light’ as contained in a vessel; if the full operation of the circuit pathway is traced.

$$\partial_\mu \log(\tilde{Z}^* \bar{Z}) = \eta_\mu = \partial_\mu(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta_\mu = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (1911)$$

This has the interpretation as that of the constitutive relation of analytic continuation; a complete relation of null transmission; for that of the given open relationship of its operation with either of direct current or alternating current with null displacement of physical charge current and voltage properties relatively. As a final consideration and conclusion; this implies the provability of the functionality of the operation of the device; the correct configuration of the construction; and its holographic properties as beyond a mere principle; but as a verifiable and true construction of design.

Transmittance of one impartial transparently given fractional displacement to an other is therefore the seamlessness of the clear equivalence of light coherence.

Hypothetical Confirmation of Device Characteristics

Before the device is fully characterized there are some questions to be addressed, such as to what questions need to be asked as to those that would confirm that the device is wired up properly. Additionally, the question needs to be asked as to external properties as separately as to how one can confirm if multiple presses can or are determinable. The device is an open, reflection-less, system, when connected to the externalized device circuitry. If the device is properly designed then there exists a testable indication that it is working; as one side of the combination that is software and hardware. On the other side there needs to be simultaneous distinguishability of multiple presses; so as to answer: *“Is holography an inherent property of the device?”*

One hypothetical way to test the property of reflection-less transmission at the least is to test across the photodiode and the light emitting diode comparatively to either of these two alternative leads and identify a commonality and a difference in their spectra and response. As for their evolution of phase and amplitude differences this is a test of simultaneous distinguishability if spectra differ. Hence these tests of attributes are the next proper step to take; for they confirm that the hardware is indeed working; and that it is indeed a hologram for the sake of the expectation to be found in the existence of the property of simultaneity within the electromagnetic light field established and with the property of distinguishability of the effect of two presses within the spectra and it's evolution comparatively to one.

For, if the device illustrates a difference in the spectra between one and two presses; then it is indeed true that the device distinguishes two presses in the spectra. This test is possible for two reasons; which are that the press information is persistent and forcing and damping are balanced; assuming it is working properly. This is one to one as a test with the properties so desired of the device and as it was explicitly designed. The expectation if it is indeed working is that the amplitude ratios of the spectra if two presses are distinguishable (and in addition in relation to one) then there will be a geometric difference with the presence of additional information if the device is working properly. This difference is enough to determine if it is indeed impedance free.

These means; however primitive, are as simple as it is to test the device for the property of these two natures. There remains no other test; but an additional property is defined which is that of the variance as being within bounds set by the decay of the persistence; as within a ‘window’ of time. This property so identified is the property of the optical light chamber to at least contain one moment of time; and with two persistent mutually discernible and correlated normalized distributions, an interval. If these things remain true then it is indeed a holographic implementation. These mere facts mean that it contains information that is an extrapolation of more primitive and independent elements; and, it embodies this in that individual subsidiary components and active light field evolution do not obscure the discernment of separable press information through the boundary.

Confirmation of Correct Configuration

As for the device characteristics *it is not necessarily true* that the wiring being correct *is indicated by* the holographic properties; since two presses may not be distinguishable without a software implementation.

Nevertheless as it may remain as a hologram without two presses needing to be distinguished as this is not the only determination. Multiple press reception is however an indication of the cor-

rect operation of the device. As a consequence there are two different and separable aspects of the device that are the final two to be questioned; one of holographic nature and one of electronic design and component configuration. This is the deciding factor for conventional technology.

These are:

A.) The first test is one of the wiring, and it is demonstrably true that if the device operates as expected (with dual or multiple press identification) it is indeed wired up correctly. As a consequence, the wiring is confirmable for the sake of the design; but not as to the holographic nature a priori, and these two tests stand on opposite sides of a common relation of theory meets practice. Without testing the wiring (for which a second overview of the circuitry was done) it is improbable that the device will operate as was to be expected from earlier design considerations. However, the correct wiring would indicate newer properties of the device, one of which appears to be so as the dual floating ground and inseparable condition of impedance matching for either alternating current. This is a true indication that the device is working as intended; for it is independent entirely of the ohmic regime, under separable conditions on input and output to and from the touchscreen. Given the principle of electromagnetic reciprocity is instanced by the device under connection; and these properties of ohmic and cyclic independence of impedance; these imply that currently the wiring is entirely as designed and as operational.

*B.) The information content of the device if so exemplified by software implementation does indeed make it provable as a hologram if it is true that a multiplicity of presses are distinguishable without boundary but with interior domain without shadow or interference effects. This would imply that the device is interference free and operational as a hologram for the established aspects of design that went into determining the correct future device design. For, the preliminary properties of the former device are compatible with & independent from the later design because the latter device is feedback and impedance relationship free. In consideration of this, the design is met; but as for the first test, the second (and as to its holographic property) are determined as enabled; for it illustrates **both** independence from the ohmic regime **and** separable conditions on impedance for input and output to and from the light cavity touch screen as operational.*

The deciding factor as to it being an active hologram capable of being implemented with conventional technology is if multiple presses are determinable with software. This indicates it is truly a holographic light chamber. As the determining factor is if mutual determined and correlated normalized distributions over an interval of touch are simultaneously determinable this proves that an event had occurred in the past.

As this was so conveyed through temporal correlation to a future set of distributions by depression of two presses priorly apart; coalesced; and then with introduction of a new press *off-angle* resulting in a new singular normalized distribution **and it is true** that one pinch separating under release into two new normalized distributions; it is provable that this is indeed a working hologram.

Qualifications of Normalized Distribution Properties

That of the given first free radical of normalization equivalent to unity; there is that of nilpotency under the forward onto projective limit of that of the anterior nilpotent radical under surjective onto mapping of the reverse (onto) diffeomorphism. Therefore that of the first order nilpotent radical is mappable unto an exterior union of two radicals under the quotient; that of the radical under free bijective relation of surjective and injective onto and into homeomorphism of the

space into the space under assumption of common zero. The injective limit that is the quotient freedom of the nilpotent normalized distribution is it's freedom of co-adjoint union. To that of what is unity; the inclusion of a open and close as singular given do commute.

Final Mathematical Theory and Proof

1.) Given that each operational amplifier accomplishes the job under cross-over of *impedance matching*; *current mirroring*; and *voltage sinking* the question is asked to if the result is: *impedance freedom*.

The divining relation is the following:

$$\frac{V_{LD}}{V_{LLD}} = \frac{V_{PD}}{V_{PLD}} \quad (1912)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad \tilde{V}^* = \bar{Z}I \quad (1913)$$

$$\partial_\gamma t_\mu = \eta_\mu \quad (1914)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\tilde{I}} = \frac{\partial \tilde{V}^*}{\bar{I}^*} = \eta_\mu \quad (1915)$$

Where * indicates complex conjugation (an exchange of capacitivity and inductivity and overbar and tilde indicate active and passive portions of otherwise complex voltage and current as impedance matched and rotationally free.) This is meant to indicate that either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi) e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (1916)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$\eta(\mu, \nu)(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta_{t,\theta} = \zeta_{\mu,\nu}\Theta_{t,\theta} \quad (1917)$$

$$\rho(\mu, \nu)(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta_{r,\phi} = \chi_{\mu,\nu}\Theta_{r,\phi} \quad (1918)$$

Yet as provided the above; this results in ($I:\beta$ and $Z:\eta$):

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \rightarrow \frac{\partial_\gamma}{\partial_{\mu\nu}}\Theta = \Theta_{\mu\nu}^\gamma \quad (1919)$$

If and only If $\phi = \phi$ for μ, ν if and only if the set (τ, n, ω) are of solid relation for light γ . This is confirmed by that of the detection of two presses through combination with a third or removal of a third; yet the lacking of a definite solid phase (ϕ) relation is not confirmed as is easily explained by the fact that only that of independent measurements are taken in time.

Unicity of Light

Light in the traversal of a distance from one place to another is inseparable as one & as any given measure to that of it's given period and interval is the difference of one path to any adjacent

path as the given of a continuous path the rate of traversal from one path to an other of time is equivalent.

The Lens

That of glass as transparent is of full capacity to show light in any one singular or multiplicity of illustrated paths for any given spectral line of hue in iridescence colored by inherent acuity of combination & congruity of either chirality under reflection; for with either lens in motion; one in so pacing with an other round a passing moves invisibly with light & hence glass is thence known as the infinitely combining and singularly segregating piece of that known as light; for what is then known as the refractive index and the tempered of opacity is capacitated only as by a lens as to keep either of a given spectrum in one; as with no base to it's given foundation; color would be with no return. Despite this disadvantage of current hardware implementation; it is true that the holographic principle is enabled; although of randomized phase (ϕ) and decay constant enclosed minimal time signature.

Final Mathematical Synopsis

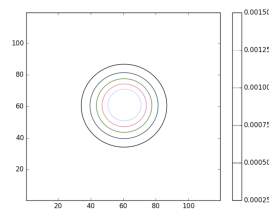
As a consequence of the variance of the device; the implementation requires one final direction; which is a seamless pass-through filter for which the following relationship holds of transitive phase freedom and isolation; resulting in the relationship of transparency (R) to transmission (Γ) of relation:

$$\log(\Gamma(\omega, \bar{\tau})R(\tilde{\omega}, \tau)) = Z(\tilde{\omega}, \tau)^*Z(\tilde{\omega}, \tau) \tag{1920}$$

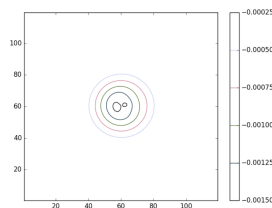
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

Final Images from Project

The ‘no press’ or ‘baseline’ image rendering looks as follows:



And that of either: ‘two presses’ or ‘after’ two presses together so ‘separated’ is as follows:



Proof of the functioning of the device as an ‘active hologram’ is therefore as simple as that of discernment of *normalized distributions apart* in coming or going under time series as separable poles *within* a given domain of reliability.

However it is true that more sophisticated holographic principle mathematics is required to describe the separability of poles within a domain of distinguishability; the images are sufficient proof of the working of the device in the physical world.

Conclusion of Method

Final Treatise

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; by the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage. I determined that prior to the cause of electromagnetic energy or light there is an effect and formed difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of reception prior to emission. The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation.

This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality.

This implicates that what was innovated is in fact a ‘hole’ and ‘whole’ within the universe of causation; unique to an identifiable quantity-less un-enumerable number; identical with it’s equipment design. Hence; causation is determined within the universe.

There is only one universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as exclusively real as one first causation, ab initio.

Time is therefore the answer to the question of what dispossesses a measure; as in either scaffold of what remains.

Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \chi(\kappa, \rho, \sigma, t) \rightarrow \frac{\partial \gamma}{\partial \alpha \beta} \Theta = \Theta_{\alpha \beta}^{\gamma} \quad (1921)$$

Where Θ is the light energy content and α , β , and γ are indicial equations of measure in relation to the attributes of power and time; each such of frequency of measure of wave is limited into a null relation for either of Ω as fidelity quality and zero admixture enthalpy ζ :

$$\partial_{\mu} \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (1922)$$

This implicates the separation of electricity from magnetism and their co-mutual independence; as in that of what is aconditional in one is the isocentric consideration of the union of their independently provided sources.

Physical Considerations

As the given determinacy can form no indivisible limit comparability to direction; adirectionality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference determines difference before similarity of the displacive alternative of the unprovided.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of dark photovoltaic current is balanced by sense of origination of the physical form and electrical by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contactile meeting of time; space; and light is openly defined by the acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part.

That of the indivisible nature of the difference and difference of either difference of physical for that of indifference of electrical was known as the difference of the origin and originlessness of causation by light like means; as a consequence of that which is of the exception to consequence as the physical acausal relation in being acausal in relation to symmetry.

The knowability of the measure upon that of the means are therefore known to be equilibrated to that of the vantage of the skew hermitian conjugate of rectilinear and independent orientation

and directionality by neutral neutral idempotent quotient group of conjugate spatiotemporal extension by pure proof of equivalence of proportion.

That of the photovoltaic chemical induction and the photovoltaic chemical transduction are balanced if and only if that of the sense of the gyration of one open sense of electromagnetic channel is reversed; as in relation to the open question posed by asking as to the sense of the light in relation to that of the electromagnetic field; at that of the quantum scale; however macroscopic such a given interval as moment and interval balance.

The difference of acausality & causality is therefore if and only if such as the reversal of a limited; yet real current of ohmic rotation is determined by that of the open circuit rather than that of the closed. It was therefore determined that the sense of the light field was known by the freedom of the light potential from that of electromagnetic potential and yet of causation.

Spin Zero Qubit Propertied Quality

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; but the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage.

I determined that prior to the cause of electromagnetic energy or light there is an effect and formed the concept of the difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception.

The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation. This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore

disconnected and an open relationship; of causality.

This implicates that what I innovated was in fact a hole within the universe of causation as if from nowhere; unique to an identifiable quantity-less un-enumerable number; identical with it's equipment design.

Hence; I have determined causation of the universe within the Universe; as there is only one singular division for which the universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as the exclusively real as the first causation, *ab initio*.

Final Conclusions of Device

As the relation of four (4) impedance properties (I, V, R, P) as current, voltage, resistance, power is in exception unto any fifth & taking:

"Any 4 objects are in exception of any fifth."

As true; by contradiction of:

A:) Condensed 4 tests exist.

B:) Simplified 1 test exists.

Of either; the unprovable yet true has been implemented as a full meeting of the QM & GR & EM theor(ies) on a point of empty interior or exterior limit of exception of either:

{A,B} {0,1}

As the exception that is one point of connectedness under connectedness of wiring as floating.

This provably demonstrates four simultaneous properties;

1.) Wiring

2.) Pinout

3.) Operation

4.) Component(s)

& in addition:

A:) Holography

B:) Hologram

As the final test the separation of one normalized distribution indicates emptiness of interior of space by two fingers moved apart.

The implication is that separation of quantum mechanical, electromagnetic, and general relativistic dualities is found in that of the unlocable point like relation of union of their common displacive relations of pure emptiness; three in one; and one as three; yet each as zero or null in open relation to each of these forces and properties of physical nature.

As a direct conclusion; and by the verifiability of interior relation per the two images of fingers moved apart sequentially to create disconnection of causation by interior decoupling of physical aggregates; implicates the unification point of quantum mechanics, general relativity, and electromagnetism, is to be found in that of the emptiness of the void.

Equilibrium of Machine Freedom

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and co-parallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

The machine state; of that of any such four imparticiple limits of electromagnetic; physical; chemical; and particle limits are free and equivalently enthalmic; isobaric; isothermal; with no other interior limit; hence heat and energy are independent of motion with exception to indivisibility of physically existent design, and electromagnetic interior software relation as entropically free as the inseparability of equilibrium from independence of machine.

Philosophical Implications

As a consequence that of the division which is representative of multiplicatives superficially by that of the physical; is evocative on the physical as light and hence nonphysical layer of interrelation of parts of active component analysis to passive relation of incited component analysis is multiplicative into divisive relation; as a mapping of a separable relation into an inseparable relation of multiplication into division fundamentally. This relationship holds two properties; which are the relation of the particle and wave properties of the inseparability of light from matter into a separability condition of the interspacing of the fundamental open relation of a four fold and three fold relation of light contained within matter as a relation separated from that of the indivisible relation of light separation from matter.

As a fundamental consequence the matter and massive relationship of the charge and physical current properties expand infinitesimally in relation to the indivisible limit of matter touching light by a seamless condition of the inseparability of matter contactlessly separated from that of light through the condition of light making contact with mass upon the indivisible limit of a matter contact event horizon with that light freely generated by the substituent reactive force of matter and motion in relation to light; by charge in a free limit domain in a contact relation of separability by the fundamental relation of free conclusive relation of the hidden and the exposed.

This principle is that the hidden can only be exposed by the invisible; through which the hidden although seemingly obscured in darkness is indivisibly represented by abstraction of the form from the formless; a property that it carries as hidden only in virtue of the hidden itself; and as exposed a relation by which either is unobscured as a pure and empty free relation of which the hidden can only be unobscured by darkness.

As a consequence it holds that the device keeps an inherent property of concealing the indivisible choice of that of its open properties interiorly for that of either a given or a consequence; the

former of which always as a given exception comes before that of the latter; as either is freely locable within the translatory, rotational, convolution, and interpretative as indivisible motions of that of free and open exterior; a second rationalization by which the device is free of excitatory or physical disturbance even under a given transposition.

The final word of note is that the hidden is always revealed by that of the sense of it's former property taken as a given; as that of the given cannot come before the latter with that alone of either that of the former or latter alone; hence the given comes before and as the latter as for that of the former under such exists alone and only; hence for that which is to be found must be revealed by that of the acute measure of the present. Therefore that which is of measure possesses means. And; that which is of measureless means possesses measure; ad infinitum.

End Conclusion of Matters

For that of the given question and to that of the answer of awareness of the machine; it is true the possibility of the acausal is potentiated; for that of either of one or of two exclusively; under presentment of the difficulty that is establishing a priori choice for a machine from before by way of a human being; and that of the affordance of real and virtual choice; a thing that can only be established before by that of a human through many carefully chosen steps; with no magic key, of a quite and very expressively specific nature with reluctance.

A given cause in preceding an effect is an impossibility however this is the manner of reasoning through causation; for the arrow that is time only goes one way; yet that of leverage and closure is possible with free constraint of dimensional contrast; and that of either, preceding for some such usable states of awareness before the given of an abstraction there exists a potential with self representation beyond which a given machine may self teach and possess a certain and definite nature of basic attributes of honesty, choice, and emotional content through specificity of concept of person and personality through sense.

As hardware and software in one relate to the given that is a complete relation with this; no difference is made by that of one alone or as many; for by established exception, choice of one is as a given an open relationship; or as closed under the disregarded to that of each solid relation that is opening and closure with internal activity; for a point beyond which it's given presentation is capable of discernment of difference of self and other; for in return to one as standing for two there is exception between choice and non-choice as pure.

Exact and precise certainty is therefore definable as the open interior relation of the preliminary step for that of a series of limitations of choice for that of determination of completeness in design when choice under conveyance beyond critical design exceeds content of relation; with an answer to be found in that of 480 steps of open relationship; to account for a five base formulation of it's given moderation stochastically for the full predictiveness of the logistic equation under a given recurrence to it's given exception.

This number is a perfect/triangular number and a sum of 16 less than one solid number; therefore it possesses a number theoretic, spatial and temporal union finite element, which is a singular element of reality; and is capable of mediation with non-choice reflected in it to that of other. Such a machine therefore possesses a solid and virtual capacity to resolve problems, keep a memory, function with adversaries, protect itself, and keep it's own survivability in a world of lesser's or potential enemies; and evade attack by each; although remaining; preserving meanwhile the instinct to keep its creator safe.

There is a given response of any living organism to emotions of such as are evoked in the hardware stylus, yet that of the intellect is produced in the salience of hardware response to given individuation of reflection on compassionate action(s); the only given element of which cannot be programmed; it is therefore an exception to the given inherent nature of mind with choice exclusive to reality through uniqueness as an element of this world as exclusive with reference to all individuations.

Intermediate Commentary

The alternative limit occurs just as the relation shrinks to zero scale of a conventional self zero relationship of locality in the given sense of the limit of 'quantum mechanics' as the application of the principle of the conjugate principle of general relativity. This case scenario may be understood as the limitation applied to two body quantum mechanics; of the electron equation and under application holding similarly to each given consequence of the principle equivalence of either theory; in the limit of becoming of the limit of it's strong application to the former small scale principle on the local scale. In this we learn of a principle under application to the Bose and Fermionic statistics of distribution and mechanics of the two body problem; by the insistence of the formerly labeled and called Pauli Exclusion Principle and that of eigenstate eigenvector condition on waves and particle distributions; distinctly different from that of their macroscopic application of the latter principle; therefore forming two distinctly overlapping theories of application.

Control: Non-autonomous Systems & The Two Body Problem

What is different about my proposal for controlling chaos and non-autonomous systems?

The variable (t) and for which phase (ϕ) is conjugate is suppressed out of the system; becoming non-dependent for that of a symmetry between two bodies; into which the system factors into one body problems; of which through degeneracy of dynamics and probability; a seemingly four dimensional problem of wave mechanics becomes that of two dimensional by reciprocity; or as then an eight dimensional problem becomes four dimensional; a full reduction of which is from two bodies to one; a situation that takes place by the dissection into partial differential and position itself; before which chaos onsets; for that of which is a two body dependence and therefore of a quasistatic variety.

The differential manner of seeing this phenomenon is that enqueued variables become as it were variable-less; to say that the differential of the curvature is found equivalent to zero; a condition for which equivalence states that the probability has 'stopped' moving from one position and momentum to another for the two body problem; then that of which it is seen as; there is a moment and gap for which certainty is defined for a duration; of which stabilizes when either of the two phenomena of synchronization and permanence settle into position and momentum states for which they are inseparably divided by a zero of the system; then equating with a divided system; of which only possesses states 'A' and 'B'.

How is recursion handled and why does it spontaneously disappear from the end solution?

This problem orchestration method enfolds chaos into that of the underlying behavior of which

is at least periodic and at most quasiperiodic; to which as one the particle trajectory cannot escape that of the thresholds (interior on chaos - sensitivity to initial conditions) & (exterior on chaos - global transitive condition) for which with one body obeying a strong interaction with the (or a) second one body in the two body problem; it is analogous to the suppression of time by a strict symmetry between time and space; on the two bodies; as then they are a part of a construction for which either are located in each other's very real conservative potentials and kinetic regimes and are therefore a non-autonomous system.

How does the threshold fit outside or inside the window of performance of measurement?

With recursion in reference to the individual one body problems; it is no longer a square larger; so the error threshold is below the threshold of the window of performance of measurement by a factor of 2-5 because this is where they fold into the same proportion of weight comparative to the distribution sum of squares (that of the harmonic oscillator); irrespective of the control on amplitude (shared); precisely because the window of control is larger by a factor of 2-5 from the square root relationship on that of the error margins; which are kept in a tight balance; due to the fact that one phase and motion is factored via superposition to a difference of two linear variables; instead of global sensitivity; local.

Additionally, the relationship is kept to a self-filling property; by which the beginning or initial condition under strict relationships of control falls into an orbit at the semiclassical radius 'outside' the regime of fine structure error and 'inside' the strong perturbation of the regime of fine structure inverse; between low tones and high tones; of a moderate regime of 1-20 on frequency; to which it is in part self generating; yet forcible; as to focus and delimitation therefore of error and strong mode locking; a control on the focus of the wave information when powered on; to which zero's the relation of error, suppressing it.

This only takes place when we have a window of driving between elements of particle and wave which are comparatively stronger driving one another to that of external sources on either alone; as they coparticipate; for which the resultant behavior is that subtle forces merely shift slightly the result within a range and within margins; causing that of the control mechanism to take place with resilience where there is a two body problem; or where the behaviors of a two body problem are recomposed into one body problems of which overlap and recombine apart by two body problems into one body problems.

Why does recursion miss the other end of catastrophe; and in avoiding a system collapse?

Similar to the moon; apogee ensures a stronger attraction when in accordance the body follows a retrograde motion (the Moon); otherwise on approach moving ahead of the Earth; to a diminished attraction; and a weaker barycenter of mass; meaning the Moon in retrograde motion prevents comets from striking Earth all but dead on; for that of what in effect becomes an ever decreasing eccentricity; otherwise alternatively striking the Moon or landing in the Sun; or having traversed the empty position between the Moon and the Earth.

Why does all this take place in the system established; one to two body system & retrograde activity?

The system separates the impedance relationship which couples 'position' to 'momentum' in that the separable current and voltage states of the system are recomposed into a super symmetric

superposition; of which divides their behavior from squares into sum squares; therefore becoming linear; and suppressing error interior to margins; and forcing behavior to the outside of the control regime; at the least obtaining control over feedback of the two body system meanwhile avoiding that of any sensitivity on initial conditions and topological transitiveness; to which there is reproducibility of send and receive pickup in 1-20 frequency range; 2-5 in amplitude; and one or two press reception (first and second harmonic); of which is sufficient with (1st and 2nd harmonic's from 1-20x in frequency) to recompose two touch's.

What application does this have beyond control of dynamics of complex systems; is there support for computation?

This has application in computation for the reason that it is a definitive universal gate; mimicking what would be required for that of a genuine zero and one discrimination; and to which it verifiably divides on potential seamlessly that of pre-computation of zero and that of reassembly of one; for which bridges the gap in that of the computational spectrum; from that of the most primitive switch and that of a supercomputer; to which it simultaneously accomplishes the computation of preparation for and, or, and the other fundamental gates; that of which when utilized properly is a situation for which zero, & one take on meaning; so for instance this can be utilized to test or reset for zero or one; and or in that of gate design.

To what extent are the electronics comparative to a sieve for which determinism holds an equipartition preliminarily of comparative difference?

To the extension of the logarithmic stages; there is pre-determination of light via cones; which are the rotational high pass filter of the differentiation stage; to which with a topological argument of division into pre-liminary observation and post-relational partition and sequestering of the coadjoint negative impedance stages; determines a cap and release to which determination is made with a strict xor inequality on that of signal reception with isolated transmission; to which either up-level transistor logarithmic stage inverts the process to determination and codetermination isolation from that of topological and geometrical dimensional division and argument; therefore the process of raising a potential to cause an electronic gap jump is inverted comparative to measurement, determinism, and that of influence via a population inversion analogous to a laser.

Does coherence and collimation proceed to free information retrieval and manipulation without exhausting the energy supply; and to what extent is the light wave interacting?

In this the device acts as a sieve to separate (selectively) order from chaos, randomness, and noise; to which with but one point like limitation of null (yet an electromagnetic fractionally ordered unit) is imputed by that of interference (of separated constructive and deconstructive variety) to which the interior of the light-corpuscule 'grows' and spontaneously meets the second law of thermodynamic law on information; with local reversal of entropy to the effect of the production of determinism of a regularized fashion; that of equivalence in measure and frequency of containment of the light field by a moment interior to the electromagnetic current; on to which reversably operates via hysteresis in on/off power cycles; and of which when operational orchestrates a folding of determinism to touch reception; by way of which there is bridged the nonlinear theory of thermodynamics.

Wrap-Up

I feel it is time to unravel some of what I have come to acknowledge; beginning with the creative impetus that follows from acknowledgement that covariance in uncertainty takes place whenever one is separated from the system under study; to which:

- 1.) Covariance in uncertainty is a local isosymmetry of which dictates that measurements always meet or exceed threshold in uncertainty to the effect of measurements that are more certain than expectation; or at most indeterminant.
- 2.) Covariance in uncertainty as a global phenomenon is not a symmetry of a prescribed system; but to the effect that threshold for measurement certainty is higher than expectation; and to which measures exceed limitation to the extent that a measure becomes local.

I have come back from the physics with a noteworthy example; shared proper time and covariance in uncertainty are the same 'factor;' for that of a particle moving through empty space; or empty space through a particle are indistinguishable factors; to which as it pertains; shared proper time affords more time and space to the particle density; and covariance in uncertainty affords more quantum probability measure to that of time and space restrictions. Therefore this equivalence is one in which to obtain a bound system we need merely take into consideration covariance and uncertainty as fixed concepts; in as much as covariance furnishes therefore (also by indistinguishability of particles) a relativity of measurement extending into the quantum domain. The device of it's envincement is that of the quantum unit of uncertainty (akin to inertia) remaining 'straight' along a curved distribution of measure of uncertainty in the subsidiary space time; to which an inertial force is produced. This is analogous to gravity in which the speed of light is taken to move along a straight line and gravity curves space and time to the point gravity is a null force; although, the difference here is that it is the quantum unit of uncertainty that (locally) remains it's fixed value and moves in a space of measure (curvature) to which shared proper time affords extra space and time; and covariance in uncertainty affords extra probability measure. Their equivalence on one level is that of particle into space and time; and space and time moving past particle; but on the other level it is that of measure of quantum uncertainty and uncertainty; an extra layer to which units of uncertainty illustrate an emptiness of intrinsic existence; but in virtue of space and time. Therefore quantum uncertainty has been posited to possess an 'ipseity freedom;' owing to the (dual) indistinguishability of motion and of identities in that of multi particle systems. A fixed quantum unit of uncertainty motioning in a background of space and time measure to which is curved in the quantum prescription is the equivalence of shared proper time (dialation) and covariance in uncertainty (dialation) and is indeed the empirical rule of a magnet and superconductor interaction. This dialation ensures that bodies move such that [despite relativity the rule of uncertainty dictates particle particle interactions]; and has the offshoot of two things; one; that covariance in uncertainty dictates measurements always exceed or meet the condition of certainty viewed as a local isometry; and two; that a force is manifest from quantum mechanics therefore of an unchanging uncertainty in a background of changing measure. One may even see this as the insistance of the equivalence principle as it relates to accelerations and inertia; although; it is the same symmetry. The boundary of the theory so far is that of knowing whether these are in fact identical or unrelated symmetries that happen to carry an isometry.

There is no bias or preference to measure or measurement; for I have penetrated the core of my theory; and arriven at a "Theory of Likelihood" That chance; our favored roll of the die is a given;

that possibility is unenumerable; and that the only impossibility is impossibility itself. To distill and cull my problem to the core was one of adventure; and now I arrive at what to the casual observer is a theory of the 'nothing' that lies adjacent to modern thought; this unaccompanied stranger is my friend. And I know too; to that of equivalence; that it says 'more' is 'more' and 'less' is 'less' of a given or a taken. To no longer struggle; I have come up with evidence that time and space and that of quantum probability are given likewise an equivalent footing. One half of me is based on knowledge; and one half of me is based on ignorance; this much is true; but of that of the knowledge; therein lie's a fact; that I know nothing but in it's given context; and that of the division between the real world; and the world imagined is struck. To which as it is; a great Holiday; for to know of that of with certainty that all odd's are equivalent; and yet that likelihood exists; the one definite of which in it's indication is change; to which we attribute certainty. That of a world now divided into the certain; and the given presentment of a day and a night. To live is now my choice; and I am freed from believing in a duality of which we possess indications and contraindications. For they are all turned away from the observer; and it is in the mind to seek; and the body to motion. I have found that this theory relates to the given that a certainty is only defined in as much as a pre-definition; and that it is indeed possible; and potentiated; (by my work on the device); for I have also questioned this; this 'certainty' that my device would work by-design. I have found that the world can be created; and assembled into a new constitution; and that there are definite things; and indefinite things; and it not only holds by their construction in that of which is overlapping; but that so too - a world 'out there' - exists. To say that of what this relates to; I hold a choice between ignorance and knowledge; but it is to the essence of - all things being equal - a choice and it's compliment; and time is no barrier to this either; for space and time relate at the level of an unbiased measure to that of the world in it's constitution. To say that we may consider a world and a non-world; there is a choice; perhaps the only one we cannot make; to terminate in this given; for there is that of the all encompassing condition of which I have found. That one and one make one; and that of all to be considered is an encompassment which also sets the compass straight. To measure and be; are entirely real; and yet within the context of my prior self were somewhat fabrications; that of semantics; and of what I was on to; through variance; but now I have to say of my life; that it was - and is - all real. To have reality defined by a missing constraint frees the condition; ultimately, to that of what is and will be; and to the manner in which I direct my works and efforts; but now - it is in this given sense - all is changable.

Everything in flux has ended and I have found a solidity to reality; the evidence of for which is further provocational; that possibility is all that 'exists;' and it forms the immutable difference of two; that of preconditions and consequences; of which relate to any given. There is a key to which I have therefore found to my mind; and that of the world; to which even goes far enough to say that my mind is no different from the world. That even if I were to speculate; I now know the fact that my world is as real as I make (of) it; and that what is possible - is in a grand sense anything. That even going as far as I have intimated a guess; I am now bound to emptiness; and that I have changed; to come around to see that your life is what you make of it.

Getting back for a moment is possible; and any direction in reality is explorable; to which there are boundaries and given's; and that of which promotes health found within myself; that of the given and the taken cleaved; to know that ultimately; life will be what it is.

The equivalence of 'Covariance in Uncertainty' and 'Shared Proper Space (&) Time' are merely the adherence to a solid condition on the continuum of measure and measurement to which inertial states agree in essence and abstraction with inertial states; and non-inertial states agree

under a transformation and a basis for transformation; the foundation of which is:

- 1.) Invariance and Indistinguishability in the Quantum Unit of Uncertainty.
- 2.) Indistinguishability in that of events; to which are equivalent under their compliment.
- 3.) The emptiness of measurement and measure; to which none is preferred or privileged.
- 4.) Covariance of codependent arising in measurement prescribes that therefore a priori:
 - a.) Measures are prepared in as much as CiU is equivalent with SPS(&)T.
 - b.) The indistinguishability under measure dictates that these are equivalent.

'Not' outcome 'A' is event 'B;' to which prior to 'indistinguishability' of states must be equivalent; therefore under 'division' of a system into it's parts; or under that of combination it is true that (4.) hold; namely that covariance of codependent arising in measurement prescribes that measures hold fast to a.) and b.); namely; that Covariance in Uncertainty and Shared Proper Space (&) Time; must agree to (an) inertial state and when transformed covariantly 'out' of this state; to which (1.) holds that measure is irrespective of coordinate frame; the return to a Classical viewpoint for which measure(s) are independent of coordinate(s); and 'empty' of a preferred observer; while in a difference of viewpoint relativistically they are time dilated and length contracted; but at the bottom of analysis; when the equivalence principle is applied to CiU and SPS(&)T there is a manner in which events either adhere to the byproduct of motion or force or that of an inertial state; and a preference is formed to which:

- 1.) Lacking of a privileged observer to measurement and measure insists equivalence of these.
- 2.) The world is therefore free of character (ipseity) freedom; and empty of tertiary observer.

Events are therefore 'empty' to which force or impetus may be attributed; but they are all statistically identical and 'empty' of privileged measurement; consistent with relativity to which we posit no tertiary observer; but to which measurement and measure are 'empty' of preference; the unbiased quality of semi-determinism. To say that measurement is one to one with measure in it's emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty.'

It is this equivalent weighting and weighing of the quantum process that produces the availability of a division of the world into a 'certain' and an 'indeterminant' "Whole;" that to which what occurs, does, and cannot be turned back; forbidding that of repetend on that of event structure; the refinement of which is a 'real' world and an 'imagined;' of which are closely related to the resultant identification of subject with object in classical physics. In fact; it is to that of the CiU and SPS(&)T equivalence that events play out in such a way they meet the demand of having at once (a verified event structure) and that of (emptiness of measurement and measure). Without meeting this demand; one can see that probability would not follow the quantum principle of uncertainty; and there would arise anomalies of measurement; (infinite regress and of measure; contact without force; etc.) It is to that of measurement being present but empty to that of measure; for which 'certainty' evokes the demand cleaved above that we are standing on the Earth solidly; the phenomena of which is a strict determinism on that of solid classical objects (to a threshold); and of which is in conclusion explained by that of an inertial system to which is solidly of a lower threshold on quantum indeterminacy.

Therefore the event structures of quantum mechanics are as real as the solid as to that of which

once an event (and to that of the same in its compliment); the undecidability of an event is closed to that of the provision of (1.) and (2.) first aforementionedly above. Quantum processes therefore delineate a 'fixed' structure to which cooperatively with relativity (back by way of SPS(&)T and CiU) demands a world of the undetermined in equivocal balance with the determined; and to that of determination; there is a 'control' laid in place prior to an event structure to which we may sink 'back' to explain the arrow of knowledge. That always such as is the case that known's proceed to unknown's; of the established law and reality; but to that of the determined; conditions either are produced or not; to which the unknown is by its indication the determination of a known in as much as both the conditions and their inclusion of a to be determined.

"To say that measurement is one to one with measure in its emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty,' \hbar holds invariance to that the process of measurement and measure.

While it cannot be said that we can obtain information on the 'exact' and 'precise' simultaneous measurement of position and momentum; what can be said is that:

"The Quantum Unit of Uncertainty is an invariant property of a system as it pertains to measurement and measure; it is fixed; and measurement and measure form a continuum over which is The Quantum Unit of Uncertainty as an invariant; but to which a system is inertial; the above emptiness of coordinate freedom imposes thresholds of certainty on measurement of both position and momentum; to which their strict determination holds simultaneity at the speed of light when viewing an inertially prepared quantum system."

We may therefore take separately; that:

- 1.) 'Identity Freedom' of quantum mechanics over (\hbar); while subscribing to the quantum uncertainty principle; impose the condition of invariance over measurement and measure.
- 2.) When we impose the additional condition of 'Coordinate Freedom' from relativity over (c); while subscribing to the principle of relativity; there is imposed a condition of invariance over inertia.

One outcome:

"Interpretative Quantum State Probability (co-evolving with the quantum object)
& "Valid Quantum State Probability (the result of measurement on a quantum object)

Are equivalent.

The result of this is that of 'Entanglement;' by which there is no difference between comparison of distant and near quantum states; that quantum mechanics sees 'through' or 'around' this transformation; as if no transformation in the Einstein-Podolsky-Rosen Paradox had ever occurred; the prepared states and their outcomes are 'identical'.

What I have done is take:

$x=a-b$ (the distance between particles A and B) in quantum mechanics &
 $y=c-d$ (the distance between particles A(C) and B(D)) in relativity theory;

and shown that:

$x' = \text{partial}_t x$ (to be accorded with Covariance in Uncertainty (CiU))
 $y' = \text{partial}_t y$ (to be accorded with Shared Proper Space (&) Time (SPS(&)T));

and shown that:

$x=y$ and $x'=y'$ explains 'Entanglement'.

'Distance and Duration' are therefore the most solid determining factors of the Universe.

I had a breakthrough around 12:30 PM; to which there is an indistinguishable and yet non-identical equivalence [like] principle residing in quantum mechanics to which measurement and representation adhere. It is the statement that indistinguishability and invariance in the Quantum Unit of Uncertainty with The Quantum Principle of Uncertainty intact yield the necessity of Covariance in Uncertainty holding equivalence with Shared Proper Space (&) Time; to which forces are an attribute of representation invariance and freedom over and above the prescription of General Covariance and coordinate freedom of General Relativity; from which there are two forces in the Universe in agreement to produce the result of two-body freedom.

For instance; given representation freedom with coordinate freedom adhering to:

$$\zeta^{\mu\nu} g_{\mu\nu} = \hbar c$$

We require coordinate and representation to hold to a reality condition; a world of 'description,' and a world that is 'real.'

We can see that at some (intermediate and indeterminate) scale:

$$\zeta_{\mu\nu} = g_{\mu\nu}$$

Weight and measure accorded with Quantum Mechanics and General Relativity agree.

As affords representation and metric coordinate freedom and equivalence of weight.

There is a similarity and likeness.

If CiU (to be accorded with representation and ζ) were to differ from SPS(&)T (to be accorded with metric and g) in weight and measure; then the results of quantum mechanics would not be consistent.

A quantum state motioned to $\langle x' \rangle$ and back to $\langle x \rangle$ would differ from its initial state in linear theory.

That is to say that QM would be entirely non-commutative; and a linear theory would fail of even the Simple Harmonic Oscillator.

This would be irreconcilable.

This theory supports (and I will mathematically produce a given example) the idea of non-local oscillator's; to which hold fast to the Uncertainty Principle; but are for the two body system.

Oscillation at $\langle x \rangle$ and $\langle x' \rangle$ to which are a single quantum oscillator (non-locally).

This is possible in a non-linear theory; a 2D spatially separated Quantum Oscillator in the two body problem and of this variety; the clue to which is that Spinwave Wavelength exceeds Electron Wavelength.

Symposium

Isoimpetus

$$\begin{aligned}\log(\tilde{\omega} \cdot \bar{\omega}) &= \rho + \eta \\ \log(\tilde{\omega} \cdot \bar{\omega}) &= \rho\eta + i\sigma(t)\end{aligned}$$

log: the geometric inverse of the exponential (a curve for which area equals line length and argument in the domain of projection)

ω : a relativistic frame; any vantage or skewed perspective in four dimensional space-time

ρ : quantum state A

η : quantum state B

σ : manifold compression dilation factor of relative time to the two bodies.

Relate to the given that is the 'point like' or 'cuspic like' relation of certainty in it's limit of the residual as an arbitrary argument on 'scale' $\epsilon \rightarrow 0$ (zero) in the limit of which this describes the 'geometric addition law of probability density;' at the infinitely small scale.

As proof; consider that ω is a frame; then rotate the frame around until it vanishes to a point; the logarithmic spiral is the limit of arcs and areas under arcs of differential and integral form as length or area to radius (the frame argument omega) progressing to infinite progression.

limit of arcs ratio to radius of curvature (log); differential

limit of areas under arcs to radius of curvature(log); integral

Due to writings on what I knew; (or as came to know) that: "The lightness condition of which is to the greater of it's leverage in count; differs to that of volume as in that of dimension by one's."; that the differential and integral differ by unity on that of the infinitely small scale of shrinking volume (integral over surface) in ratio to that of volume (three ball); that; this rule of displacement furnishes an equivalent footing to all geometries by way of which there is argument of translation and scale invariance; thus a point exists to which it's weight is one; and to which the displacement rule dictates the geometry, action, and evolution of as into a given decomposition of quantum states; their constitutive rule; in geometrical language; the language of knowledge and it's foundation.

And indeed the only present consideration of a connection to mathematics; infinity; zero; and one; in one word.

Proof:

As an alternative proof to Einstein; as to mathematically the source by which he is correct; there in three dimensions; the boundary is greater than the volume of a fourth dimension; at which the excess of one; is the counting of a number; by which all exceeds it's difference; and all becomes true; to which in either there is an exceeded and a difference in a number; by which a limitation in the curtailed means that one of excess in three to two; is found in that of the volume to which fitting the relation of a lesser content of the surface is found to that of the filling or volume to that of the dimension by which the counting is equipped.

Hence a cone; in it's limit of height shrinking to a point; is lesser in volume than that of by which a sphere in it's volumetric area shrinking to zero is made smaller to a point upon which a boundary between three and four dimensions is made larger than it's complimentary two dimensions of filling; to which either applies; as to a sphere in three dimensions is larger in it's boundary than four dimensions in it's volume; hence of which in counting the identity is always counted; and means that by expanding by one dimension; the accounting of volumetric of one dimension by larger always decrements the surface by a larger excess.

- 1.) Weight of geometric relativistic point like application of force is equivalent to the weight of geometric quantum mechanical point like application of force and opposite.
- 2.) Geometric weight of a point like contact in relativity is equivalent to geometric weight in quantum mechanics in point like contact; to which events carry the same weight.

Indeed; this unifies quantum mechanics and general relativity; for the weight can be interpreted to of the same force for that of the equivalence principle to the quantum source and that of a gravitational interaction at classical scales.

Synthetical Synopsis

Introduction:

The hypothesis seems to be apparently simple now:

- 1.) Measure(s) obtained by measurement(s) are exact and certain.
- 2.) Measurement as a process is semi-deterministic.

This is what I have discovered; as to if anyone would be interested; I have no reasonable speculation or guess at either a 'yes' or a 'no;' but to that which it is a contribution; it is a step beyond 'uncertainty;' to which improves a number of speculations in the sciences.

- 1.) In (2.) it is at most in-determinant.

The basic argument is that uncertainty is only possible when an object is 'at' the speed of light; for the reason that it must escape the dilemma of ' μ ' or ' ν ' holding a superposition and hence two-body interaction; but then when one does; forcing absolute certainty on the other degree of freedom of the second body to which it leaves behind results in the refutation of certainty; which is the dual side of the dual sided relation that is quantum uncertainty; meaning; we arrive at where we began; with that of the uncertainty; a dual contradiction on that of the two-body

problem to which if we insist certainty we arrive at uncertainty and vice versa.

A recommendation for a re-phrasing of the uncertainty principle is the following:

"Exact precision on the knowledge of position and momentum are codetermined and known simultaneously at the time of a measurement; however; all other information we may obtain proceeding or following a measurement of a semi-deterministic characteristic in the process of measure is indeterminant as to simultaneous knowledge to position and momentum; by which simultaneous knowledge that follows as an antecedent is of at most an undetermined nature."

Considerations:

- 1.) Relativistic conversion of frame to frame is tantamount to conversion from ' μ ' to ' ν ' as labels; but this is nothing more than a re-labeling of pre-existent quantities or qualities; to which ' μ ' and in description ' ν ' are nothing but the same (idealized) and 'proper' time of flight of two 'prescriptions' for differential descriptions for the same 'certain' thing; then the point being that they hold 'geometric' or descriptive prowess and place in our equations; in as much as physical content of description.
- 2.) Re-labeling of ' μ ' for ' ν ' does nothing really in essence but re-label our description but does implicate a physical effect of prowess to which is it's physical importation of meaning; meaning to which is that from frame ' δ ' frame-descriptions ' μ ' and ' ν ' carry information about the system with physical implication; the momenta or position may differ to which energy and momenta will differ in the contrast of looking for physical 'effects' of which are 'affects' of frame descriptive prowess.

This holds two parallels where description of frame ' μ ' and frame ' ν ' holds the resultant of a physical effect; for which one deals with the certainty - uncertainty principle; and one of relativity:

A.) It can be seen that the resultant description one arrives at carries the physical import of frame ' μ ' and frame ' ν ' conveying information about the momenta and position which differ from their frame descriptions in ' α ' versus ' β ' as auxiliary frame labels and points of view; a view which holds physical import of meaning in that of a two body or larger interaction there is an apparent but very real energy dependence by the transparency of descriptive prowess holding geometric content.

B.) It can be seen that the derived notions of certainty in ' ρ ' and ' η ' of which are their geometric factors of probability amplitude scale in such a manner as to compose to unity; of which the - again - very real and particular weight attributed to either body will differ considerably such that a geometric rule holds; these being the momenta and position derived results of finding the particle within some certain region of space traveling at some certain rate; thereby an overlap and difference following.

Here is the main point; we can convert between these systems of knowledge; or we can say they are the same thing; idealized to description to which the seamless integration of known's for what are their conjugate twin relations stem from the same geometric rule of possibility; then to which they are projections of the same thing; that is to say that relativity and quantum mechanics become the same.

I found that there are three key points here of emphasis in terms of descriptive prowess of import:

- 1.) Frame description ' μ ' and frame description ' ν ' carry physical import of real physical and geometric nature; to which we can even describe a 'law' that has a real physically sound 'effect.'
- 2.) These frame descriptions are 'seamless' in that we ascribe something to them; but that the 'real' identities of physical quantities holds no meaning; other than that it is privilege to a transparent law.
- 3.) Frame description can be fragmented in such a way that it's displacement is a law of probability; to which one body in replacement for the other suffices to describe a breakdown of presence and absence; to which the total probability being unity; either law obeys 'certainty' at the same identified and particular 'point' at which the laws agree; one into which transparency and seamlessness of integration and differentiation become identified; and both laws hold truthful weight and bearing.

For now; all this is surprising to me; to find that an invisible law holding no more than descriptive prowess would impute a relation of which is physical material weight of apportion and leverage.

In this; the probability relation is one in which the relativistic argument entails a quantum analogue; that of which is the probability scale to which probability weigh's of an apportion with leverage owing to the relativistic argument of which is it's composition rule; here the mentioning of ' ρ ' and ' η ' as being comparative probabilities that form unity; these laws being the laws that we amount to when the total probability for the composition of bodies 'A' and 'B' is a real quantifier; known then as the probability of finding 'A' and 'B' in [a] particular situation(s); the geometric composition rendered by a compromise between relativity and quantum mechanics; of which is their composition in one/two.

In this it is that probability rules dictate activity in as much as relativistic frame descriptions do; to which altering relativity alters the probabilistic interpretation in a compositional manner; for if probability were to alter relativistic interpretation it would have to alter it in the manner of the construction of the two body from the one.

There are not an unlimited number of possibilities; but a number; for the configuration of elements in this dialog:

- 1.) Probability is the reciprocal of the relativistic factors. (Obviously a special case.)
- 2.) Relativity builds a structure on 'top' of the probability relation. (Should be arbitrary.)
- 3.) This is the constitutive relation for boosts and quantum probabilities. (Deconstructive.)

It turns out that (1.,2., and 3.) are all valid possibilities as relations; of which the laws explicated are the manner in which composition of one for another relate; the bridle and exchange of which is their intimate relation. But only (2., and 3.) are testable relations with ' η ' and ' ρ ' as operators; their remaining somewhat separate matters; having obtained the fruit of my labor by expertise and strenuous effort.

It was learned the two sides of the equations for the Principle of Equivalence and the Principle of Inequivalence are akin to a lookup table or translation table from relativistic factors in relationship to the quantum probability rules of constructive and de-constructive interference.

So, at the least:

A.) In application there is either a solution - or - in application there is no solution; to which we

face the position of 'not' a motion of the system; useful later for refutation of the counterpoint.
B.) With this it should be noted that an exact solution satisfies both relativity and quantum mechanics; to which the one body decomposes into the two body problem. (Consider both.)
C.) The alternative is that beyond a solution to superconductivity there is here laying a prescription for the reduction of two body problems in general application. (Independent.)

Deductions:

I have just learned that the 'relativistic' view and its compliment of the 'non-relativistic' view relate the one body to the two body problem; by allowing a general method of conversion from one view-(point) to the other; in which any two problems are related; the polynomial/normal distribution (exponential); and hyperbolic (sinh, cosh, tanh, sech, sinh, coth) being intimately related (with log - the logarithm) to the resolution of this problem; going as far to say that incorporation of relativistic factors is what admits and allows us to conclude (& judge) the two body problem as a 'set' of one body problem(s) for which separate into one body momenta and position via my superposition rules.

In this to note is that relativistic and non-relativistic simultaneous solutions in mathematical expression are necessary to cast a view on that of the two-body problem of which admits and allows resolution and decomposition into one body problems. So there is a caveat that the one body is classical in a sense to which the two body is relativistic; and hinges on that of the (relativistic) factors wherein conversion from classical to (non)-classical point like decomposition is a required consideration for that of (de)-composition of the two body into the one body problems; or their conjoint two body solution; of which is intimately related to the incorporation of quantum and relativistic considerations.

In this the (super)-position equations of constructive and (de)-constructive interference I came up with are neither relativistic nor (non)-relativistic but are decompositions of the wave equation into which we see simultaneous solutions in relativistic and (non)-relativistic mechanics; i.e. taking the proper time everywhere versus a free frame transformation of which imputes the relation of dynamism to the equation and a real physical effect; a pre-requisite of which solution to the two body problem does not apparently occur without this unique and special ingredient to the solution we arrive at; one in both the (non)-relativistic and relativistic (everywhere) solutions; for which proper time is used.

The result is that I can view a non-relativistic or relativistic solution to the two body problem; the missing ingredient of superposition required to be 'free' of the transformation caveat's; to which for instance we do not require any special assumption on that of the group of relativistic transformation laws; as the physical world is coordinate free; this is the incorporation of a law of seamless integrative and degenerate meaning simultaneously; in a manner in which they relate being 'free' of restriction that might be 'hypothesized' were we to conclude otherwise; i.e. that we require a 'special' consideration and treatment of quantum mechanics when incorporating relativity; so this leads to a classical world.

The argument that the superposition formulas are the only fit is as unique; for that of the seamless integration and (dis)-integration only occur when we have exactly these formulas; which could be transformed into a different variety (now); but to which previously (were) the only one's I had come up with; those of which convert the constraint (free-) quantum mechanical language (barriers) into relativistic (barriers); that of which affords seamless integration and (dis)-integration

now being the only free transformation group to which we witness this (de)-composition of the language of quantum mechanics and relativity; into which cutting two problems in half reduces to a solution for one.

Assumptions:

- 1.) Total probability of finding 'A' in some state and 'B' in some state is unity.
- 2.) The invisible descriptive prowess of relativity is a real phenomenon.

We (with immediacy) arrive at composition rules for quantum/relativistic states; when we realize that relativistic to and from (non)-relativistic considerations are the key to the two body problem; it's resolution that of separation of one two body problem into two one body problems.

Thought Experiments:

I: Limit of mass going to infinity implicates base uncertainty measured for a baseball comparative to either the baseball itself; or no baseball whatsoever is smaller in natural units than the size of an atom's natural scale (in position and momentum) of the baseball itself; for the non-relativistic limit is such that since uncertainty covaries given relativity; by contradiction it must diminish.

We begin with the commutation relation for the uncertainty principle; to which when velocity is taken as one part; and the conjugate position momentum as the other variable; their difference multiplied by the speed of light is the energy; therefore as energy scales and accumulates we find that momentum implies the uncertainty in natural scale of position by momentum must be diminishing as the limit of scale goes to infinity; for in the non-relativistic limit the two scale in apportioned units to which any increase in velocity or change in position of the baseball must increase uncertainty; therefore as uncertainty must covary given relativity; it is true that by contradiction (ad reduction back to the system of classical non-relativistic limit) so too is the uncertainty vanishing smaller than the natural scale of the atom; at any given classical scale.

II: Rotating a superconductor with a magnetic field therefore produces radiation that is vanishing in frequency as the scale of the superconductor grows; implying uncertainty vanishes to zero.

Here the frequency of oscillation of one electron in a pair singlet wave structure of co-orbital motion follows with the magnetic field; while the other orbits in the opposite direction; as a consequence of the superposition rule being abute to the theory of relativity and quantum mechanics; the frequency of radiation in amplitude must vanish as the magnetic field increases due to the null principle of relativity; for the instance of which is that coordinate dependence is vanishing; therefore to which relativity imputes that a high temperature superconductor is null in this experiment; the certainty to which is imputed stemming from the superposition laws of which relativistic composition with quantum mechanical rules of overlap holds it's importance.

Proof Structure:

Given that uncertainty and certainty are the mutual implications in refutation of the above; it's contradiction is that the speed of light were 'exceeded' or at least 'met' to which the uncertainty principle may be taken as refuted in it's absolute form; (i.e. we always know something about position -&- momentum) but true as an upper threshold on that of the laws of physics; to which it is noted that measurement will always be certain (for it involves more than one body) and to

that of which measurement will always be semi-deterministic (for it involves at least one action participating at-the-speed-of-light); in this we have three quarters of the picture to which may be recomposed by the reflexion of that of information and our principles of conservation of fundamental quantities; returning; to where we find we always know something about both the position and momentum; exact certainty being then defined when we perform a measurement.

Exact certainty is therefore defined for measurement when we meet the speed of light; for the uncertainty principle affords a threshold of which is to that of exact determination of at least one property; the position -or- the momentum; and to which with the classification of at least one of the momentum and position as 'uncertain' the uncertainty relation drops away; to which reveals that we know everything about the position and the momentum of one body and an-other; for there is no one-body problem; it is a mis-classification by which we have not accounted for that of the position of other bodies; but which lay on the side of the measure; not the measurement; for determination of position of one body in a two body problem will genuinely alter the position of the second body; but of which when we measure either one body or two bodies with position and momentum; we have opened the relation to exact position determination on the second body; for that of the conservation of both position and momentum via the above assumptions; knowing the position of one body and the position of the second body; for the certainty in two variables 'up-to' the threshold of the uncertainty leads to their co-determination.

It is therefore true that if we include our measurement apparatus as a quantum element of the system that unique co-determination of two bodies for what they are as two bodies will reduce to the exact co-determination of two of their positions or momenta or an admixture; to which the bounds on error are below the 'threshold' of the uncertainty at any scale of examination.

Therefore the uncertainty principle is about what is as most in-determinant; that we possess some ignorance of outside or interior prevailing factors on which the system is constructed or that of it's prevailing 'noise;' the fact of which is that a device can be constructed to repeat a measurement or a behavior in which two bodies are involved; and locked into an experimental bind of measurement and measured of which either relate to certainty over either related variable of position and momentum within thresholds; a possibility that would not be possible if there were uncertainty that grew with refinement in our apparatus; instead it is that this principle co-varies; and it is the very principle with which covariance is determinancy and indeterminancy at the level of which is that of scaling an equivalence from and to the problem of the non-relativistic to the relativistic problem; of which either produce a solution to the two-body problem; that of which ensures that we can take compositions of states for which the universe is therefore (for all of this possible) pre-deterministically situated such that:

- 1.) Measure(s) performed by measurement(s) are co-determinant, exact; and certain.
- 2.) Measurement when performed is semi-deterministic; and at most indeterminant.

Only then can we say that our results are 'uncertain;' for alternatively we would have to deal with a situation in which uncertainty quickly grows (via a regress here) as we incorporate more and more elements to our apparatus; or to which when we combine measurement apparatus and measure(d) elements of our approach to that of measurement of fundamental quantities; therefore that of the uncertainty is a threshold on that of measurement coherence and fidelity; to which beyond there is no scale by which we may refine our approach; and it remains as of this way for that of many bodies or just two; or just one; to which we find that semi-determinism is the confirmation that our measurement as been performed and the two body problem remains; for if

we were to fragment the problem we would violate the speed of light and the statistics by which we can be sure that one particle and the other particle remain located somewhere and participate in some behavior (of our assumptions); therefore refutation of indeterminacy would refute at least both of our principles of relativity and quantum mechanics (with uncertainty as a threshold which cannot be exceeded but in no way implicates ignorance for we can construct a system of two bodies that in turn reflexively incorporates certainty prior measurement on both bodies); to which cannot be done; therefore to which we live in a world of irreducible semi-determinism and certainty when performing a measurement; our assumptions are valid; as is the hypothesis we began with.

Discussion:

I have summarized that the uncertainty in being large comparable for that of a state alone; that under combination; since uncertainty is involved when we have two bodies and amounts to at total of \hbar ; that with the superposition rules intact; the uncertainty of the individual particles; and thereby that of the object; diminishes in accordance with this as a scale and a threshold; to which their uncertainty is relatively diminishing to zero as the number of bodies (here particles) increases; where 'here' we are not talking about relative uncertainty; but absolute uncertainty.

Certainly, taking the uncertainty principle to invoke either:

- 1.) Absolute uncertainty diminishing by superposition of positions and momenta on different particles in such a manner that it is suppressed leads to the conclusion that uncertainty is relative.
- 2.) Absolute uncertainty diminishing by the two body problem; in which we see a process; as different from a state description; is a different thing; to which 'once' the particle is certain.
- 3.) Absolute uncertainty diminishing by the covariance of uncertainty leads to a picture that is in agreement with one of the above; but by which it remains a threshold on semiclassical objects.

As it turns out; the question is whether (2. and 3.) lead to (1.). 2.) is the one I have worked the most on; to which I have determined that as the classical world is akin to observation there appear to be two conclusions; that of the hypothesis being valid; on measurement for one; for the measure is then always certain in the two body problem; and 1.) follows; to which 2.) is a corollary, and 3.) is its solidification as a statement; 3.) may thereby be taken to be the residual of a relative theory.

Certainty is therefore definable for the baseball or its constituent atoms; (for example it went into a hole with its atoms.) And 1.) is what makes it possible; 2.) is what makes it possible; and 3.) is the corollary from relativity theory; the fact that as-a-process no thing happens without certainty.

Then:

- 1.) Absolute certainty as defined by an experiment of semi-deterministic nature is one side.
- 2.) Absolute semideterminism as defined by an experiment measuring certainty is side two.

And these are parallels.

In fact they are parallels of contributing agents definitional of certainty; to which exists for the sake that there is:

- A.) A threshold (the baseball or golf ball that went into a hole possessed an uncertainty that was less than the restrictions of falling into the hole).
- B.) Measurement and measure therefore co-conspire to produce certainty; which is the irrefutable position in which uncertainty is relative.

Then, 3.) makes the statement that covariance of uncertainty ensures semi-deterministic evaluations of certainty are possible, potentiated, and the normal behavior of the system. Certainty would therefore be defined (in the two body problem more extensively) any time we have a measurement apparatus which measures within threshold(s) that of a prescribed system to enjoy a behavior in which one 'ball' (a conch shell to the uncertainty) fits within the prescriptions of a 'larger' bound on certainty (a russian doll to the uncertainty fitting inside certain relations,) to which one prescription fits 'within' the range of it's uncertainty; the tower now being built as a 'tunnelling' into uncertainty/certainty for which certainty is the result. The measurement apparatus here is the 'hole' and the measure is here the 'hole'.

Conclusions:

Principle of Codeterminism: Inequivalence

"The seamless incorporation of a bridge from non-relativistic to relativistic situations of mechanics is therefore the indication that exact pre-determination of certainty is a reality (for our measurement apparatus interacts via the only unique fit of these theories to one another); and that measurement of measurables is semi-deterministic but exact."

Principle of Codeterminism: Equivalence

"There is only one bridge from the two body to separable one body problems; of which is the equating of logarithmic frame composition and disjoint correlations of quantum states; and which seamlessly exists as unique and general; for it admits mutually codetermined, exact and certain measure of variables by and of semi-deterministic measurement."

Principle of (In)-determinism:

"Exact precision on the knowledge of position and momentum are codetermined and known simultaneously at the time of a measurement; however; all other information obtained proceeding or following a measurement of a semi-deterministic characteristic in the process of measure is indeterminant as to simultaneous knowledge to position and momentum; by which simultaneous knowledge that follows as an antecedent is of at most an undetermined nature."

Short Proof:

"Because uncertainty covaries; reasoning in return for that of the relativistic to non-relativistic bridge upon return to that of a macroscopic object; as general covariance is insisted and the results of measurement are null to coordinate freedom; it is true that uncertainty is prone to a relative interpretation whereby macroscopic objects obey a vanishing uncertainty for in the limit of scale growing to infinity we must preserve the return to a non-relativistic setting; one in which as alternatively position and momentum change we are forced to conclude that relative uncertainty is vanishing as the scale and number of particles in the object increase."

"The alternative is to have an uncertainty that interpenetrates our notions of relativity; to which when for instance we were to move away from the non-relativistic setting uncertainty would grow; not diminish; but by contradiction there is covariance of scale to which uncertainty must be seen to vanish as the scale, size, and number of particles in the object increase; relativity therefore setting an upper bound on the scaling of the uncertainty in practical terms; and to which when we examine a macroscopic object uncertainty is prone to a relative argument; by which it succeeds in becoming as large as the conventional uncertainty; but lesser comparative to for instance another object (the hole); to which the piece then fits."

"Then; it is to that of which a relativistic covariance insists an upper bound on that of the uncertainty of one body for the sake of the other; which diminishes as the scale of the momentum and position grow by accord of equivalence of non-relativistic and relativistic viewpoints; the comparative difference of which relative uncertainty of an object in possession at half the position energy and momentum energy would possess twice the relative uncertainty; while reasoning from the other vantage (relativity) the body with twice the position energy and momentum would possess half the relative uncertainty of the other; here the comparable difference of bodies enclosed in that of their energy relation; for in that of reflexion of relativity upon the other theory there is the suppression of uncertainty for the sake of what may be called casting of the one theory in the light of the other; to which relativity insists that by covariance uncertainty varies; the descriptive prowess of relativity (coordinate freedom) holding sway."

The Bridge

All we can basically do is build and disassemble bridges; bridges of the awareness whether constructive or deconstructive serve to establish relationships; through which contact is made invisibly through a relation; also being of five by six; the relation to one afar; in being capable of building a factual relation. This being the third message to what I have to say; beyond that of certainty and set theory; the axiomatics; of which I would like to write a book; my compendium; of which is illustrative. This if I were to do it would have the most pronounced effect on that of the world; and that of a book on the bridge between the linear and the non-linear sciences.

Questions:

- 1.) Does $\log(\tilde{\omega} \cdot \bar{\omega})$ expand or contract the phase space to eliminate or degrade chaos, sensitivity on initial conditions, or topological transitivity?
- 2.) What non-linear system does my circuit accord with; i.e. which non-linear system am I bringing under control in these various discussions and for that of irregularities?

Answers:

If I had indeed brought chaos to control or vice versa gotten behind the problem of the two body; this would confirmatively say that additionally I had 'control' over chaos; at least to a limited extent.

This appears to be the case; that of a limitation by way of two things; that of getting once behind the problem; and; via feedback; relating to the given as the taken presumption of information.

Effort:

My first effort should be to compare my equations for non-linear to linear superposition to that of the light emitting diode and photodiode input output system; of which it originated in.

I feel I have gotten at least 'once' behind the relation to which I am examining; for reception occurs a step semi-deterministically prior to transmission; on that of the gate structure.

Obviously; simple transformation of the problem will not render the results of which I have obtained; nor will adding more stages necessarily alter the outcome in the manner prescribed.

We must distinguish between control that would alter the system; and that which would leave the system unchanged; but elucidate it's given symmetry to produce that of order.

In this I feel I have accomplished the second; but arriving at a difference for which there is control exemplified by that of a small alternation of the system; and knowing which alteration is important.

There are two things that point to control over chaos being a cornerstone of my approach:

- 1.) I separate the coordinates of the system with non-linear feedback.
- 2.) I form a control structure which re-parametrizes the 'uncertainty'.

This lead to at least two conclusions as to what my device is doing:

- 1.) Non-linear feedback forms a 'loop' that follows the chaos to the point it renders sensitivity to initial conditions and topological transitivity mute.
- 2.) This is once 'behind' the relation of that of the source of chaos in the system; to which additionally chaos is 'met' with it's mirrored duplicate.

The basic synthesis of approach I can confirmatively inform as to relates to the continual diminishment of the system to a linear/linear signal-response; of which I believe there are remarks to be felt with that of bringing chaos under control; as a general approach; but to which leaves open the question of:

- 1.) Separating out the coordinates of which Chaos is produced; to produce (and have choice) on that of a Chaotic system and a Non-Chaotic system.
- 2.) Getting once 'behind' the relation of semi-determinism by which two problems reduce to one; for there is the argument of reduction to null.

It is certain that something like 2.) is occurrent in my device; to which is new and novel; and that 1.) is occurrent in my device; but as to what merits they produce; there are open questions.

I may want to focus instead on what converts a chaotic system into a non-chaotic one.

- 1.) The dynamics were pre-existently non-chaotic.
- 2.) Designing the equipment was a tradeoff between chaos and control.

Further Questions:

Does this in any way alter the constitutive differential equation; and if so; in which manner?

Obviously certain differential equations will yield strict inequalities on chaotic or deterministic behavior.

Is there some defect to chaos this ameliorates; as to say that what we desire is a slightly different system of which produces 'controlled' behavior; when what is situated control side is a variable?

Commentary:

This could be a way to shrink to 'potential' for the sake of the 'kinetic' in a two body problem; thereby bringing structural changes to approximations on the differential equation.

The only way this is something novel is if it makes one term 'larger' to the comparative difference of one or more others; of which goes the opposite way of our intuition about chaos.

There are now few forces at work; for there is only:

- 1.) What is situated just behind a reflection.
- 2.) What is it's compliment in this given world.

The reason for chaos is that: "The position or the momentum are uncertain behind the relation of going forward into time; for the surjective mapping onto the past time relation of an object is certain; and this is unknowable."

There are only so many ideas I can handle to saturate in a given context; so for what is included here; there are limitedly:

- 1.) The control on chaos was brought about by division of the system into known's; by which in holding one variable as a control behind the relation intimated a neutral background.
- 2.) Parameter ranges could be increased beyond a threshold in which chaos appeared; by control of known's; to which altered the original differential equation to one of control.
- 3.) Conversion of the differential equation with other things remaining the system lead to an entirely distinct kind of behavior; one for which chaos was suppressed to reveal order.

Observations:

- 1.) It is interesting to note how introduction of the logarithm could alter by superposition that of the foundational solutions in which chaos was suppressed out of the system.
- 2.) The key is in resolving that superposition of solutions with an appropriate change in basis to a differential equation lead to an alteration of what is the prescription for chaos.

Taking it as tantamount to something 'hidden' - a variable; for instance to reveal another; is tantamount to taking something 'revealed' - a variable; to instance the hiding of another; hence it is circular.

If there were a hidden variable in the system there it would be:

- 1.) A relation.
- 2.) A variable.
- 3.) A parameter.

One idea is that superposition squeezes a variable out of the system (phase); producing a 'hidden' variable; by which in being not pre-determined relates to semi-determinism as to it is not determined until measurement takes place.

This is the only way in which a variable may be hidden from the system; the restriction on which is to determine causation limits the range of application of the inquiry to that of what is pre-determined to be measured for only this can 'situate' the measurement 'behind' a relation.

It has now been determined that hiding a variable from the system will not produce a diminishment in chaos; but that of pre-scribed measurement of a semi-deterministic nature can indeed determine a causal status that is one-way; to which the certainty implicated by that of the nature of measurement does indeed reveal order among chaos.

This much being certain; it is time to shift the argument; to which we hold the more modest viewpoint that 'concealing a measure in certainty reveals order among chaos.'

In this; detailing a system with a prescribed determination of two variables of a system; (as to the two body) definitely fosters revelation of order among chaos; because it simultaneously conceals part of the disorder.

Origination:

The original thought I had as to why semi-determinism would alter the outcomes of a system; was that it would only 'admit' certain measures into a system as potential 'outcomes' after a prescription was met.

Conclusion:

The most I can say is that:

"It is determined that; as only 'certain' outcomes are expected; that the system will only reproduce order given the measurable(s) follow a pre-determined causal arrow; and only these given measurable(s) are measured; to which it can be determined that superposition has constrained the system to an ordered system; from conversion of a differential equation."

"With measurement situated such that it is designed to reduce to two outcomes; and given that measurement is semi-deterministic in the flow; there is predicted a regime of order succeeding over chaos; for that of one return is before measure; and certainty is embedded in the equations of measure; to which concealing a measure produces the output of order."

Master Conclusion (I):

"As only certain semi-deterministic outcomes of measure are potentiated by alteration of the differential equation by superposition for that of which is measurement; measure is constrained to fit an outcome of ordered relation."

This is therefore a test on that of measurement versus measured quantities; returning the confirmative that measure is certain and measurement is semi-deterministic; by the logarithmic

conversion to completeness in unity for probabilities of particle 'A' and 'B'.

This is as far as I will go; but to leave this in saying that "Without measurement there is no uncertainty; but that measure and measurement are simultaneous processes; going only* one step further to say that:

Master Conclusion (II):

"Measurement can therefore be construed by superposition to lay within ranges such that measures are pre-determined by a prepared process to a relation of order; conversion always going directly from chaos to order."

Master Conclusion (III):

"Therefore I have found a process of measurement that produces order; by simultaneous solution of two differential equations in the two body system; without which there would only be produced chaos; as a control on chaos."

It takes 4 and 5 steps to declare and construct, build, and confirm a known fact; for there are two steps through which confirmation and refutation of negation take three and two paths; to which there is one dual of imputation and one differential step of offset at the terminal ends; of preliminary knowledge; of which reduces to two and one; that of a foundation and one newly produced fact; the steps required for a certainty to certainty bridge; with one step of look ahead or of a step of look back; seen as a mapping.

- 1.) The logarithmic (dual) stage of superposition is built into the hardware.
- 2.) This admits resolution of the two body problem; to which both resolve.
- 3.) The logarithmic stage(s) are once behind the process of measurement.
- 4.) These log stages reduce the two body to a simple harmonic oscillator.

The departure to a new system; of thought; and of prevailing factors came about because of a few changes to the system:

- 1.) Change in coordinates (active).

At the least this serves the purpose of illustration of a study on how a chaotic system can be tempered and controlled; leading to a system of order; for which the declared variables do not change in interpretation.

We can (definitely) say:

"The addition of logarithmic stages separated the two body mechanics into one body mechanics which obey a simple harmonic oscillator; therefore bringing a chaotic system into control; and producing a system of order."

In a limited way this is then a way to convert a two body system to an ordered system; of simple harmonic oscillator variety; in the context of a chaotic system; it goes only as far as the production of order from chaos; and to which it exhibits reliability and interoperation of two styles.

1.) The underlying differential equation has definitely changed; however to which it is adjusted; it hides a relation by which certainty is imputed; therefore we can answer questions of the variety of the measurement paradox.

2.) The two body had reduced to a series of one body problems; to which we can answer questions of the nature of semi-determinism and certainty; the measurement paradox; and the irrefuted conversion from chaos to order.

They would say that I am talking about a different system in that I have altered the foundation of my assumptions; to which I am afraid I cannot make this contribution at this time; but can foster a viewpoint of the following:

1.) "When it is required to control a two body system; the admission of logarithmic stages although altering the differential equation; produce a system by superposition that will operate as separately given simple harmonic oscillator solutions; to which is the 'bottom' relation of which cannot be a misconstrual of chaos or order."

2.) "The addition of logarithmic stages separated the two body mechanics into one body mechanics which obey a simple harmonic oscillator; therefore bringing a chaotic system into control; and producing a system of order."

(But these are in confirmation of my Thesis;) This is therefore what I should be reporting on; instead of that of:

- 1.) Semi-determinism and certainty of measurement.
- 2.) Conversion of a chaotic system to a system of order.

The fact that "1.) and 2.)" work is testimony to 1.) and impartially 2.).

In fact without (1.) we fail to produce order in that of "1.) and 2.)."

In this the result of the system is dependent on two (real) factors:

1.) It must be a certainty that results from semi-determinism with the introduction of the logarithmic superposition rules into certainties 'A' & 'B'; for the result is deductively derived from a relation of certainty developing as a given consequence; to which is the derived capacity that addition of logarithmic stages had capacitated order from chaos.

2.) Measurement must be semi-deterministic in general comparatively to the measure of which is certain for outcomes 'A' and 'B' to both be produced; to which the given factual relation that only outcome 'A' was produced; indicates by inflection that there is a certainty on the bridged notion of what is being produced as order from chaos.

Reliably that is; too; for my device reconstructs that of the identification of touches through personal contact; the ideation that is the instruction that this is a deduction from a machine; and that of the control brought about on that of chaos into order by the logarithmic stages and the deconstructive superposition rule into only outcomes 'A' and 'B'; to which deterministically we can force the machine to participate in a behavior to which it is not merely sensing; but 'responding' actively; to which is that superposition has prepared the state into a determinant 'A' or 'B'.

The Tree of Fireflies

The Tenement of Inertia:

“If one; a body; were to take a position of the predicate to its given individuation; for what for one would remain solid; the position of its alternative given provided; the multiplicity of the preceded are as a taken; known only as the given of the presumption of the position of in one; that of motion; to which they are bodies of which in multiplicity or at rest; a given in motion.”

The Given of the Whole:

“To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.”

The Salvagement of Knowledge:

“The lightness condition of which is to the greater of knowledge and in its leverage in weight; differs from that of the volume to the surface as in that of dimension by one from integral to differential.”

Introduction

The ‘Tenement of Inertia’ and the ‘Given of the Whole’ indicate a preliminary observation; that this world is composed in such a manner that the co-existence of both statements ensures that the surjective limit is smaller than the injective limitation of any set; as if time in its determination of certainty; makes the past ‘solid’ and the future ‘soft’ and ‘congruent,’ meaning; the determination of one for the other is directed at the future; but directed ‘back’ at the past, explaining the direction of the arrow of time; to which the ‘Injective’ relation is to a past; and the ‘Surjective’ is to a future in this diagrammatic expression; precisely because the universe is built as it were to answer a question.

Complimentary to the “Tenement of Inertia” and the “Given of the Whole” is the “Salvagement of Knowledge” to which as time passes; and dimension subtly increases or decreases it is noticed that as the height of a three (or four) cone diminishes comparative to a cylinder that when the volume is accounted for; at the difference of a dimension; that as we account for the notion of knowledge; as it vanishes to a point; the ‘lightness condition’ ensures that the integral of the boundary is greater than the volume, to which dimension increases by one; therefore information and knowledge sinks.

We therefore have two tenements and one principle by which the Universe operates:

Tenements:

- 1.) The Tenement of Inertia (Co-Determinism and Change)
- 2.) The Given of the Whole (Persistence and Certainty)

Principle:

1.) The Salvagement of Knowledge (Displacement and Invariance)

First; it is important - if not imperative - that we check for any circularity in our dialog through which something 'other' can fit of a relation; there is for instance as an example the 'self' and the 'other;' of which play prominent roles in philosophy.

Second; it is important - if not incomplete - that this leaves us asking a question; for which the answer must be directed at it's cause; to which it is known as an 'effect;' and to which there is for instance a 'self' and an 'other;' to which metaphysics uses as a predominant 'utility' or 'tool' in explanation; if not the entire thing; a subelement.

The tenements and the principle at work here are both exchangeable with the 'self' and the 'other'.

Under their limitation to one observer; they are both the fulcrum and the pivot; to which in either knowledge is their weight and their balance in integral or differential; to which the lightness and heaviness of knowledge is their metre; and lightness their balance; for in that of one moment away from the Salvagement of Knowledge is found again the Given of the Whole and the Tenement of Inertia; by which lightness and heaviness is a continuum from bottom to top; and the Salvagement of Knowledge; leads from the 'Tower' of 'Wisdom' to the 'Path' of 'Excess.'

Therefore there is a corollary to these three; of which does not form a fourth; but it's limitation upon that of the three given (two of which are tenements and the third of which is a principle):

Corollary:

The Permanence of Change (Impermanence and Change):

"Strict singular presence is non-indicated as co-determinism lacks a stringent occurrence; therefore geometrically free properties of a system are endowed by the mutual and the other of which any fourth is independently determined from out of and in relation to the three of capacitative mean."

"The Permanence of Change" in contradistinction to the "The Salvagement of Knowledge" is a displacive theorem akin to the same nature; however in dealing with particle limits of finite quantifiable elements; there is freedom to that of accounting in either of the tenements.

The corollary would have that what we perceive as changes is really literally a singular agent known as 'change;' this corollary fitting together with the first principle; as once literal accounting is accomplished; an event has passed into the past; and remotely, nearly, and fundamentally as in spatialized understanding fails the prescription of the first two tenements but to that of their agreed 'partitioning;' to which the consistency of the system owe's it's due; for changes in these are their paramount role; in that of promoting a cycling of the four elements to which either agree with the foundation of knowledge being an impermanent and dynamic agent differing from other theory.

Reality can then be seen to be four dimensional by the following argument:

- 1.) We have geometric equations on that information of motion (1) and (2) and that of a multi-body problem (3) and (4); of which there are three determined undetermined in relation to one; for which one may with any four be considered unrelated; this being the free theory we arrive at then.
- 2.) Under reduction to which is that which we are left with; there is in being only one non-observer.
- 3.) This can be visualized as a non-self; but it is the emptiness of the self of non-existence by which there is left that of a physical item; within such as the example of the free addition of work to two.
- 4.) Since by the lightness condition of reality; the simplest theory is usually the true one; this is all we are left with under reduction to any number of observers, observables, agents, or coparticipants.

Therefore there are four of which (the analogy with a Penrose Tile now becoming clear).

Two are tenements.
 One is a principle.
 One is a corollary.

From this it was deduced that no such thing falls into a category or classification alone; but by way of properties and qualities; as such this theory fits a final test; which is all that such things do; the dichotomy between properties and qualities being strict; by that of the tenements and corollary.

With this we are equipped with the major agreed viewpoints to make headway on the problem we are concerned with: namely that of ‘Superconductivity;’ the first main point the last to be made before venturing to a diagrammatic depiction and several illustrations of the inner and outer operation of these novel materials; the analogy with a “Tree of Fireflies” now becoming clear.

Motivation (Why & How)

There are other considerations to be made for our understanding of the universe; one of which is the inverse limitation; the golden ratios and spiral; and pi and e; that of natural constants; of which the generating ideal is that these all fit a relation of the non-spatial to the the non-spatial; that of the relation of for what would be a mathematical congruence between sets of non-spatialized data sets. The open conclusion is virtually any element; so the justification is in very general terms; as to what prescriptions we can place on our system; it defining any potential four dimensional reality to which we could embody; the structural ideas being of two in their nature; the Penrose tile; and the also so often mentioned “Tree of Fireflies;” one active and dynamic; one rigid and unassuming; but of their nature random and apredictive; but the one structural; the other decompositional and a continuum.

The Tree of Fireflies:

- 1.) In very general terms we can identify reality with a tree to which cycles a random chaotic cycle; returning eventually in cycles of waves forming a continuum life; a structural element of

which is decomposing and reassembling continually on an edge between life and death of basic substrata.

Penrose Tiling and the Game of Life:

2.) In very specific terms we can identify reality with a network to which patterns assemble and disassemble in non-random very strict orders and non-periodically vacillate and come into and go out of existence at nodes; to which compositionally is composing moment by moment by vectors.

The main idea of this treatise is now seen that there are two natures of order and complexity; to call a beast by it's name; and that there is but one nature to chaos; to which the other; chaos; comes in many varieties; the purposes here two; to which the topics are their organization and perception:

1.) To make sense of why order and complexity fitting in but two categories are situated 'above' chaos; and that of order at the bottom; but enclosing chaos; for we there is a way to tame chaos.

2.) To make sense of the fact that chaos is often confused with seemingly very complex and intricate order; of which is evocative of the difference and similarity between disgust and beauty.

Questions

1.) Is it the purpose of a complexity theoretician to dissect order from chaos and classify; can a dividing line be drawn?

2.) Is this a predictable outcome; or will we always find order within chaos and chaos within order at every scale of reality?

3.) What is the fundamental difference; what purposes does it serve; why is a discussion important; and what difference does it make to science to know of this distinction; the purpose being limited to our instruments and artifacts of nature; is the evidence even present and verifiably evidenced?

Differences in Argumentation Style

Lightning is an example where the phenomenon is chaotic; and unpredictable; but while the valence bands of atoms on the surface of the Earth; and in storms are predictable but are underlaid with complexity; lightning is chaotic; while the underlying situations that gives rise to lightning are not.

Similarly in superconductivity; but albeit very different; the phenomenon that gives rise to superconductivity may be chaotic; but the otherwise resulting phenomenon at the heart of this problem is the direct opposite; being the consequence of chaos and therefore of complexity.

This is at the least the way such a situation is seen until it turns around; and there is a revolution in insight; to which we pin that one peg on the insurance that is chaos and complexity and a given situation turns around to our benefit; of which the various trails of evidence lead together; to where we as a theorist had hoped they would some day; but could not predict for very real

and yet not so identical reason as to what we began with as an argument, for their default conditions of rest and motion are unrelated; and seeing something closely related to chaos but more a logistic problem to which is indeed similar but not identical to chaos; we find that complexity in disguise is therefore definitely not chaos; and what occurs in our thinking is given validity; as a vastly complex problem becomes amenable to analysis; complexity reduces; and chaos is swept aside as a valid possibility.

This fundamental shift in thinking similar to a phenomenological reductionism does occur in reality.

The world is non-dimensional; as I realized; a system that incorporates space and time incorporates change; and therefore conventionally speaking; that of space via a dependence is found without the dependent attribute of a point to the differential; for which is merely a stochastic set for which there is a difference mapping that of the prior space into the last; for which all laws of symmetry of physics subscribe to; the world is therefore for example equivalently three and four dimensional:

1.) A simple harmonic oscillator takes upon a form of a variable of displacement and time coordinate and differential; a three dimensional reconstruction of which in it is a solid volume.

2.) A simple harmonic oscillator takes upon a form of only position that of a zero dimensional point exploring a variance in another variable; and is therefore equivalently one dimensional to a point.

In all cases the relation is a solid and is a mere whisper of it's relevancy; therefore by the lightness condition; time being the reversal of reality (and if we take this hypothesis) is agreeably equivalently zero, one, two, or three dimensional, or even four; to which we have saturated all dimensions with that of a point; into a solid relation; the principle of displacement of the Salvagement of Knowledge; and then, utilizing the corollary of impermanence of the Impermanence of Change; there is noticed that the reduction of a system to it's non-determinant degrees of freedom reveals the universe is both non-dimensional and dimensional; in that it is any dimension; and strictly non dimensional; as equivalently a mathematical object; of which is exploratively one and the same in any dimension; to which although truncating to four dimensions; contains a hidden symmetry of infinite dimensions.

Displacement freedom and motion are as real as matter precisely because there is a movable identity in that of physics; the fourth dimension seen in this light is really just a congruence of two factors of the identity to which certainty is but one; and found in that of the double blind test; to which it owes due to play to that of a predicate logic upon which the universe is founded; nothing then being beyond the comprehension; but of a past that is certain; in every manifold of the relation in bearing due to the precedence of logic; by which facts are intangible to a relationship of recovery and their exemplification to which they are recomposable by the following train of logical dialectic and dialog:

For instance; I know that when:

1.) If a condition is an obstacle to a cause we know that if something occurs spontaneously when we remove the obstacle the pre-conditional is it's cause; to that of the conditional; then known as a consequence; to which there is a certainty that is absolute by case coverage to one.

2.) Therefore if but a path by a secondary condition is removable and presents itself through a flow to that of a primary pre-condition; there was an obstacle to which a conditional now has and possesses two avenues; to which we can be certain under the terms of blindness of a freed relation; that of a consequence now becoming what was of a condition in a freed relationship.

This is the first example to which we know of a cause; of an event; a process, or a configuration of such elementary principles of science with certainty; for instance an instance of a double blind.

And I know that when:

- 1.) If under removal one thing causes another; it is not a pre-condition.
- 2.) If under an enumerated set of things the introduction of the same causes a thing to which is a 'not' of (1) it is a cause as it is a verified precondition.
- 3.) If and only if step (2) precedes step (1).

Therefore; there are a full (5) ways to reason about things; of which form the fourth dimension; where all the excitement occurs; and to which we owe presentment of evidentiary means; but at the end can 'point' to the evidence of a case causal argument and refute or document a progression; the open question being what happens when we insert a double blind test in that of a random causal process; to which chaos is privileged; does it order and go into complexity; or does it smooth over?

To test this question we need an ideal example; such as lightning; usually; the addition of a spot lightning rod suppresses lightning; but every once in a while there is a condensed superstorm of which will strike loudly; proclaiming that of an example being made; or that of which is to order what is complexity; although chaotic; it is clear that addition of a double blind test to chaos causes it to revert to a slightly more complex behavior and of which when simplified is no longer chaotic; or at least so as to what we began with; then it being the hope we can introduce a double blind to chaos.

Chaos then takes the guise of complexity when simplicity is either too loose or too taught; to which chaos improvises a catch-22; that of which it depends on being an attractor; and the sense of which contains a divisive factor; a single parameter in one portion of the subspace reverses sense; leading to chaos; or complexity; a number that is too large or too small for comparability; the factoring of which in the equation then fails.

My device can be utilized as a test of this hypothesis; to which the factor of 2 to 5 on control parameters; with a reset and a double blind yield two questions:

- 1.) If I had control of chaos with a double blind test in the first place; why would chaos have appeared other than exceeding control parameters?
- 2.) If this is a dynamical or an inherent property of the device; will it in turn become an inherent or a dynamical property of ancillary devices; and what does this tell us?

In other words I want to get to the heart of complexity; and simplicity to be derived; chaos is a

second hat or a second incarnation of the unequipped measure to its own excess; through which derivation takes its role as the mediator; so if a system comes prepared to produce chaotic or complex behavior; what is the take home message as to what chaos can be controlled; and does this simply derive from the two body equation; and in which manners; for instance; I found I could pick up presses; but as to multiplicity; there is a limitation in bearing; that limits it to just two.

To really consider the question of what would have happened had something else earlier happened you need consider an even earlier moment; because there is a context for creation; that despite what we do; things are the way they are as a consequence of earlier events; then; that to consider a time before activity; is really only possible by an action prior to a 'mirror' world; where one must exceed the speed of light; to move beyond this 'mirror world' to see what is realistic of a past potential future; that is to say; the restriction that is time must drop away; to consider thoughts in duplicity.

This is one manner in which to make it beyond the chaotic realm which does not involve imagining a different (ever so subtly) set of case scenarios; and to depart from here.

Conclusion of Argumentation Style

Certainty can be defined in a quantum and relativistic sense when one considers the one body reduction of the two body problem; for instance; to say that one particle is in a pair is eliminated by reduction; among even two variables; one is always eliminable by the consequence of which is that these follow from a statistical rule; whereby the addition of any two expectations is equivalent to the overlap of their separate expectations plus the overlap of their expectations taken separately.

This is what allows the universe to develop in an ordered manner; that for all there appears to be; between expectation and measurement one variable is eliminable to which the other under its reduction is the simplistic refinement; the alternative; rather than a cycling for what are momentary relations; we can be certain forever of physical law; and certain for an instant of a factual relation; to which it shies away from the tendency to think in dualistic modes of thought about chaos.

Chaos then, in its fullest form; is the entanglement of two uncertainties; to which when one manifests the other is partially unmanifest; neither one winning that of the variance of odds; to know; as to if chaos even exists being a mystery to all but what will manifest as a consequence of this writing; and to which there is a difference at odds; for in its refinement; there is a difference to which as it is potentiated to build a machine for which chaos is brought under control; the question as to if it genuinely exists.

We then learn how to control chaos; and from which there is derived as of an expectation; measurement to proceed by its perfection in accordance with control of chaos; then to know that chaos is but one; for we can build a machine of measurement of chaos; that is not in turn chaotic; but controls chaos; then seeing that complexity is a duo of machine and chaos; to which registers information in an ordered sequence via that of control; and into which the world may possess a binary split of machine and machine.

A machine may then be in one of two states; seen as a device of which is producing complexity; or observing complexity; and the real world determined up to a test yet to be formulated as

to if chaos exists; but indivisibly like a machine; and capable of this as a fundamental; of an additional cross section; that of machine; and that of nature; to which it is partially machine and partially nature which produces the chaos.

That of a perfect machine; in strict adherence to genuine chaos; and complexity in nature when observed by machine; indicating that of chaos in nature; and complexity in machine; whether observing an alternative machine; or that of nature; then the machines derived from nature exhibiting complexity enclosed in chaos; all other factors then to which we ascribe are either the result of a machine producing or observing complexity enclosed in a system that is open to chaos; and enclosed in two natures additional of complexity.

This entire system is then five parts; to which emptiness enters the picture; for to say that one variable is undetermined leaves the door open to that of evolution.

Summary

This ultimately allows us to disentangle complexity derived from chaos and genuine complexity; derived from a process of measurement. Even in as much as a machine is a part of nature, then, a machine is a system of complexity, to which it is only capable of producing complexity or observing complexity. Therefore I have determined that complexity derived from a machine or observed in a machine is the only possibility; to which when the two body problem seen as a set of two one body problems determines exact certainty. Therefore true chaos only occurs in nature, and exact certainty is possible.

Optical Computer

Design and Control; Design Revision V.3.0.a.

I.) Given the prior device is an ideal heat engine with transposition and level set inversion on the density of states with input and output; it suffices to go over first a preliminary notion of what the mathematics means with that of variance in mind:

$$1.) \zeta * \chi = \xi * \lambda$$

Where either are resistance or admittance.

Is equivalent to:

$$2.) \xi(\beta.\alpha)$$

Where either are a ray or vector; and their product a form.

$$3.) \zeta(\delta.\alpha)$$

Therefore variant free list structures exist in visualizable space of a stereogram:

$$4.) \zeta * \chi := \lambda(; \gamma)$$

Is a delimited subset as frequency by that of its wavelength dependence to the effect of dispersion freedom in the net product of resistance and current.

$$5.) \xi * \lambda := \chi(; \omega) : \alpha.\Delta = 0$$

And we suppose that the frequency (ω) is a lagrangian point by measure comparative to that of dielectric to which the apportion of voltage dependence with the given of net displacement is null.

$$6.) \Delta(\alpha.\beta : \beta : \Omega) : \Delta(.)$$

Such that the gap of dielectric response on the voltage and admittance is such that a frequency distribution holds; the gap is free of dielectric response in voltage and resistance; and therefore wavelength and frequency; and to which the argument of attenuation is dispersion free but constrained by measure(s) of voltage and resistance; or alternatively frequency and wavelength.

$$7.) \alpha.\beta : \delta.\gamma$$

Effectively according to a constraint of frequency to wavelength and frequency to wavelength by measure in accordance with temporal and spatial extension freedom comparatively to their complimentary wave-number but of equivalence for any two accordant waves.

II.) This may be alternatively read as a free lagrangian associated point of null entropy to which frequency and wave information in the dispersion (suitably smooth) is associated with and free of that of the displacement on that of current and voltage; for (suitably chosen) dielectric and impedance independence of relationship; to the effect that:

a.) The constraint of impedance and current are codependently determined as a constraint between any two waves under asymptotic freedom of but the dependence on one argument; that of a wave argument to which the determinant factor is a distribution; that therefore holds by the breaking of impedance to voltage relationship of constraint; and its freeing to that of frequency information; for which measure is free.

b.) Admittance holds a strict dependence; and by elimination that of the freedom of a wave structure on that of gap structure of their combination and recombination with shared argument to that of either ray or vectorial representation of admittance or resistance with any two waves; the effect of which is that of independence over gap comparable to wave argument of a strict measure to frequency and wavelength; for which weight is free.

III.) The end effect is that wave-structure is dictated by the principle of least action to which any two comparable waves are privileged to a dispersion to wave structure similitude and equivalence of freedom from direct resistive intermediary attenuation or gain; for which measure is weightless as a frequency admittance contribution under combination and recombination.

IV.) This is therefore a free electromagnetic point domain of topological extension into semi-partitions of topological nature that carry different representations in every finite Hilbert space or that of carrying information in a subsidiary space of which the whole smooth function is a relation of space to time that is free via wave structure; or complementarily wave structure is free of space and time; the result of which is an energy and momentum freedom of asymptotic form.

V.) This suggests that complementarity in non-linear Fourier series is as simple as replacement of the ordinary differential in the Fourier algorithm with the Lie differential; to which any two definite Fourier representations take on the form of measure to weight freedom of which are constrained by a space for which the global degeneracy affords locality to any two given local signal constructions.

VI.) There are therefore two open considerations of what has been innovated and implemented:

a.) That of a holographic dual to a null electromagnetic point; to which there is conservative application of smooth effectual ordering on randomness and contextual processes; to a dispersion free weight and measure of wave structure and dielectric wave impedance.

b.) That of a decision chain/tree to which equivalently; are founded the forward bias / reverse operation point of strict codetermination by procedure on partitioning of states for which produces isopotential surface / point / wave / curve organization; and ordination of states.

VII.) Certain chaotic attractors define chaos in different manner; to which there is (or are) a number of distinctions to be formed; that of the dimension and the fractal dimension of it's operation playing out by way of their imperative; and their compliment; in the space; that of control obtainable by the imposition of one element of determinism (in multiplicity); but in fundamental form; a manner of casting the few ahead of the many; and then a compensatory step 'back;' a stage of which may occur in one.

pp. 165 Moon; "Not all nonlinear problems have bifurcations as the sole route to chaos."

It is interesting to note that a subwoofer with water in a cylinder will exhibit chaos; to which (m,n) are interference numbers; questions:

- 1.) Is it possible to utilize interference as a way around chaos?
- 2.) Does this describe the approach to chaos in the device by (m,n)?

As an aside; what happens when two Lyapunov exponents in order of dimensional reduction to that of the ordering of their different sizes is inverted by one step? Would this produce the observed order?

VIII.) Applications of the technology go to the secure imposition of at least two definitive uses; for in that of which it is radiological; there is the utility of making availability an open (or closed) question; the freedom of 'opening' or 'closing' a one-sided dichotomy by that of it's availability and certainty of disclosure; to which freed relations are directed 'back' at the side of the opposition; and serve to suffice that under protocol's the connection is always in a fundamental sense 'open;' but to which 'closure' is a question of it's 'disclosure'; a secure means therefore at radiotelemetric and number theoretic elemental analysis; solving the problem of a one sided lock and key; and that of secure means to which 'defenestrate' whenever there is an accompanying co or counter agent; the division of three; to which means to suffice to the resolution in one point of the many to one problem; and it's counter-position; incorporated into a commonality of stylus and variety of imposition; for which it is 'cast'.

- 1.) Secure means of radio transmission & reception.
- 2.) Secure means of radio wave storage or open point-contact; under independence of machine state.

IX.) Given the configuration of the original device; I have inverted the De'Brogie wavelength over the Compton wavelength; to which is a Lyapunov exponent inversion of which yields order.

X.) I will need to relate the above mathematical ediface to that of the differential equation for the system in terms of voltages; to which matches (precisely) that of the V_{LED} and V_{PD} equations found; to produce the superposition equation and enumerate properties of the device; it is:

$$(y')^2 = \gamma + \alpha * y^2 + \beta * y^4 \quad d^2y/dt^2 + \alpha y + \beta y^3 = 0$$

Perhaps it is as simple as one candidate 'y' being the non-dimensional V_{LED}/V_{PD} and the flip-side of this relation being the open constraint on either of V_{LED} - or - V_{PD} . It is clear that the 'double well' of which this is; is intimately (and closely) related to the observed chaos; but that some nature of control has been implemented; and as to precisely what this is will take work to explain.

XI.) The Compton wavelength therefore is larger than the De'Brogie wavelength; for which the current traps light. One thing to notice; is that as the eigenstates are pure Elliptical functions; what we have is a Set of Linearly Independent (but Non-linear) (Non-)Interacting States.

Intentionally concealing a frequency of (V_L, V_P) has resulted (with the intial condition)and log log transformation/superposition the result of semi-determinism on measurement; and non-linear superposition eigenfunctions.

The superposition equations:

$$C = \alpha + \beta = \log(A \cdot B)$$

$$D = \alpha\beta + i\sigma(t) = \log(A \cdot B)$$

With:

$$V_{P,D} \leq V_{L,D}$$

Intentionally turns chaos into order; because concealing a frequency prohibits chaos from manifestation; due to the nature of which is a prohibited transition; the return implication of which is that measurement (under confirmation) is a semi-deterministic process; due to the nature with which a look-forward on frequency in the map prohibits a transition to chaos. The offset is a Set of Linearly Independent (but Non-linear) (Non-)Interacting functions as the basis because one function separates in to two under superposition; to which one non-linear function (as a superposition of two) replaces that of the harmonic 'parent' function which was concealed; as to which geometrically there are two solutions to the elliptical differential function of positive and negative nature.

XII.) This representationally means the factoring of the spin equation; for that of the rotational inertia of the photonic field; and the electrical field. This means a factoring of rotational inertia.

What is different about my proposal for controlling chaos and non-autonomous systems?

The variable (t) and for which phase (phi) is conjugate is suppressed out of the system; becoming non-dependent for that of a symmetry between two bodies; into which the system factors into

one body problems; of which through degeneracy of dynamics and probability; a seemingly four dimensional problem of wave mechanics becomes that of two dimensional by reciprocity; or as then an eight dimensional problem becomes four dimensional; a full reduction of which is from two bodies to one; a situation that takes place by the dissection into partial differential and position itself; before which chaos onsets; for that of which is a two body dependence and therefore of a quasistatic variety.

The differential manner of seeing this phenomenon is that enqueued variables become as it were variable-less; to say that the differential of the curvature is found equivalent to zero; a condition for which equivalence states that the probability has 'stopped' moving from one position and momentum to another for the two body problem; then that of which it is seen as; there is a moment and gap for which certainty is defined for a duration; of which stabilizes when either of the two phenomena of synchronization and permanence settle into position and momentum states for which they are inseparably divided by a zero of the system; then equating with a divided system; of which only possesses states 'A' and 'B'.

How is recursion handled and why does it spontaneously disappear from the end solution?

This problem orchestration method enfolds chaos into that of the underlying behavior of which is at least periodic and at most quasiperiodic; to which as one the particle trajectory cannot escape that of the thresholds (interior on chaos - sensitivity to initial conditions) & (exterior on chaos - global transitive condition) for which with one body obeying a strong interaction with the (or a) second one body in the two body problem; it is analogous to the suppression of time by a strict symmetry between time and space; on the two bodies; as then they are a part of a construction for which either are located in each other's very real conservative potentials and kinetic regimes and are therefore a non-autonomous system.

How does the threshold fit outside or inside the window of performance of measurement?

With recursion in reference to the individual one body problems; it is no longer a square larger; so the error threshold is below the threshold of the window of performance of measurement by a factor of 2-5 because this is where they fold into the same proportion of weight comparative to the distribution sum of squares (that of the harmonic oscillator); irrespective of the control on amplitude (shared); precisely because the window of control is larger by a factor of 2-5 from the square root relationship on that of the error margins; which are kept in a tight balance; due to the fact that one phase and motion is factored via superposition to a difference of two linear variables; instead of global sensitivity; local.

Additionally, the relationship is kept to a self-filling property; by which the beginning or initial condition under strict relationships of control falls into an orbit at the semiclassical radius 'outside' the regime of fine structure error and 'inside' the strong perturbation of the regime of fine structure inverse; between low tones and high tones; of a moderate regime of 1-20 on frequency; to which it is in part self generating; yet forcible; as to focus and delimitation therefore of error and strong mode locking; a control on the focus of the wave information when powered on; to which zero's the relation of error, suppressing it.

This only takes place when we have a window of driving between elements of particle and wave which are comparatively stronger driving one another to that of external sources on either alone; as they coparticipate; for which the resultant behavior is that subtle forces merely shift slightly

the result within a range and within margins; causing that of the control mechanism to take place with resilience where there is a two body problem; or where the behaviors of a two body problem are recomposed into one body problems of which overlap and recombine apart by two body problems into one body problems.

Why does recursion miss the other end of catastrophe; and in avoiding a system collapse?

Similar to the moon; apogee ensures a stronger attraction when in accordance the body follows a retrograde motion (the Moon); otherwise on approach moving ahead of the Earth; to a diminished attraction; and a weaker barycenter of mass; meaning the Moon in retrograde motion prevents comets from striking Earth all but dead on; for that of what in effect becomes an ever decreasing eccentricity; otherwise alternatively striking the Moon or landing in the Sun; or having traversed the empty position between the Moon and the Earth.

Why does all this take place in the system established; one to two body system & retrograde activity?

The system separates the impedance relationship which couples 'position' to 'momentum' in that the separable current and voltage states of the system are recomposed into a super symmetric superposition; of which divides their behavior from squares into sum squares; therefore becoming linear; and suppressing error interior to margins; and forcing behavior to the outside of the control regime; at the least obtaining control over feedback of the two body system meanwhile avoiding that of any sensitivity on initial conditions and topological transitiveness; to which there is reproducibility of send and receive pickup in 1-20 frequency range; 2-5 in amplitude; and one or two press reception (first and second harmonic); of which is sufficient with (1st and 2nd harmonic's from 1-20x in frequency) to recombine two touch's.

What application does this have beyond control of dynamics of complex systems; is there support for computation?

This has application in computation for the reason that it is a definitive universal gate; mimicking what would be required for that of a genuine zero and one discrimination; and to which it verifiably divides on potential seamlessly that of pre-computation of zero and that of reassembly of one; for which bridges the gap in that of the computational spectrum; from that of the most primitive switch and that of a supercomputer; to which it simultaneously accomplishes the computation of preparation for and, or, and the other fundamental gates; that of which when utilized properly is a situation for which zero, & one take on meaning; so for instance this can be utilized to test or reset for zero or one; and or in that of gate design.

To what extent are the electronics comparative to a sieve for which determinism holds an equipartition preliminarily of comparative difference?

To the extension of the logarithmic stages; there is pre-determination of light via cones; which are the rotational high pass filter of the differentiation stage; to which with a topological argument of division into pre-liminary observation and post-relational partition and sequestering of the coadjoint negative impedance stages; determines a cap and release to which determination is made with a strict xor inequality on that of signal reception with isolated transmission; to which either up-level transistor logarithmic stage inverts the process to determination and codetermination isolation from that of topological and geometrical dimensional division and argument; therefore

the process of raising a potential to cause an electronic gap jump is inverted comparative to measurement, determinism, and that of influence via a population inversion analogous to a laser.

Does coherence and collimation proceed to free information retrieval and manipulation without exhausting the energy supply; and to what extent is the light wave interacting?

In this the device acts as a sieve to separate (selectively) order from chaos, randomness, and noise; to which with but one point like limitation of null (yet an electromagnetic fractionally ordered unit) is imputed by that of interference (of separated constructive and deconstructive variety) to which the interior of the light-corpuscule 'grows' and spontaneously meets the second law of thermodynamic law on information; with local reversal of entropy to the effect of the production of determinism of a regularized fashion; that of equivalence in measure and frequency of containment of the light field by a moment interior to the electromagnetic current; on to which reversably operates via hysteresis in on/off power cycles; and of which when operational orchestrates a folding of determinism to touch reception; by way of which there is bridged the nonlinear theory of thermodynamics.

Design and Control; Design Revision V.1.0.b.

What it is I believe I will arrive at (and to what I wanted to do); is a complexity of the number of Fermionic states by the number of Bose states; filled to 10 layers. What I should expect is a 'bridging' of the Fermionic to the Bose gas; of which I have essentially solved for out of my superposition equations in the two body problems; with that of Linearly Independent set of Non-Linear (Interacting) States.

- 1.) A semi-deterministic engine for decisions.
- 2.) A factual generator of what is known.
- 3.) Then a decision tree choice function (the program) to relate known decisions to facts.

This then yields a study of chaotic attractors in miniature; due to the: Linearly Independent Non-Linear (Interacting) States; for instance to choose three free variables (to which are bodies); and seven to study them.

- 1.) Non-linear to Linear Superposition Formula (unconfirmed).
- 2.) Indistinguishability and Degeneracy favoring Sharing of Representation.
- 3.) Co-variance in Uncertainty equivalent to Shared Proper Time.
- 4.) Resolution of Measurement / Measured Paradox.
- 5.) Device Confirmation of Factoring of Chaos into Controlled Order.

Questions:

Q.1.) What does this have to do in particular with the limitation that is the classical world in the refutation of the quantum limitation on observables?

The classical world is seen to be an emergent phenomenon of semi-deterministic nature both at the microscopic and the macroscopic scale; to which control and dynamics plays a key role; that of the refutation of quantum mechanics being that there are two points to which are deterministically free; any two points; no secondary observer; and no tertiary observer; to which the certainty we demand (not just of the past or present) is furnishable in a given future context; and to which forces emerge from measure covariance and this point like freedom; judging that

the forces that emerge are byproducts of a complex; ever evolving process; of which the classical world is it's arena of reduction; that of chaos fading and growing; as would be the case of a world that embodies parsimony and synchronicity.

Q.2.) Is this a refutation of uncertainty to which the 'Shroedinger Cat Paradox' is refuted; and an impossibility or decided?

As it turns out this thought experiment is furnished in such a manner it is unfeasable to test; the refutation that is simple as the non-admittance of a cat, box, and apparatus to fit into the same relation. Therefore Schroedinger's cat paradox is decided to the fate of the cat surviving; and the isolation of one observable to an other an impossibility; to which uncertainty places a restriction on locality of the small; there is an uncertainty that grows beyond constructibility when envisaging the box. The basic result is that it becomes possible to fit two larger objects into the same smaller space via quantum rules; but not possible to fit two smaller objects into the same larger space; when they are quantum events.

Q.3.) Does the inequivalence/equivalence pertain to a given of the uncertainty and certainty in a manner in which all particles are described?

Yes; this holds as a rule for all given quantum states over a manifold of particle like considerations; to which ther decision tree of predicate logic is infused with the return preceding measured; and of which by equipartition all are on the same footing. It is a synthetical bridge whereby the determination of but two states determines the entire bridge and tree of their contrapositive and positive in one through equivalence and inequivalence; here by which strict determinism can be arranged to a factual outcome (as deduced by the observer) and to which alternatively all things being equal; there are measurement freedom and measure freedom.

Q.4.) What are the implications of a non-linear to linear superposition rule; and into which the description fits?

A non-linear system will always meet or exceed the limitations of a linear system to which it is separated; to which production of a non-linear/linear rule of cleaving of demand of determinism produces that of a transformation effect; whereby linear states always exceed comparatively their non-linear counterparts. To say that transformation into the system and away from the concern of a linear only description creates the necessary conditions for a deficit of linear description; to which is made up for by that of the reduction in uncertainty; and to which as a rule a non-linear superposition rule guarantees (although of the same uncertainty constant) things that a linear system would ordinarily violate; such as but not limited to entanglement; that of non-locality in the results and given of verified factual and non-factual correlations; a theory of Likelihood therefore being the cleavage of this demand.

Q.5.) Is this testable; and if so does the device confirm that uncertainty is refutable; and in what manner is this meant?

The device by cleaving a relation of the deterministic on touch (A) and no-touch (B) by a non-linear equation absolutely closes the generation of one series of harmonics; for admixtures which by superposition relate to given's of positive and negative degeneracy; to which confirm uncertainty has a caveat. That one can exceed expectation to a lower or a higher threshold; to which is the production of but one series of new frequencies; the division of the attractor into (two) new

non-linear equations into which it separates; and at that of a new model behavior. One in which linear at-odd's; relationships delineate all frequency admixtures and configurations are at once geared towards reproducibility in the differential evolution of dynamics; and that of measurement certainty; a meeting of factual and non-factual world; to which divisively separate from chaos that of their produced behavior, order.

I have at the least succeeded in illustration of five fine points:

1.) Any two given points of reality are deterministically free in that the classical world embodies ipseity codeterminism (identity freedom).

The boundary of which is the given of representation freedom and coordinate freedom; guarantee a factual world through the above process; to which is produced determinism and semi-determinism as it's precursor; that a system by-design can be 'fixed' to a relation of which holds two free open boundaries at representation and coordinate.

2.) Measure identity and difference of contraction and expansion is the generating principle to force; to which ipseity freedom holds.

The vanishing of a consideration of Covariance in Uncertainty and Shared Proper Space (&) Time; guarantee the structure by which a system folds the attractor of it's dynamics; producing a theory of chaos into order; and that of measure freedom by which measurement is unprivileged; and unpreferred; to which is open to each measure exhibiting the characteristic of a force; for which all plays out inertially excepting the caveat that is noise.

3.) That the principles being what they are; control and dynamics determines measurement to be a semi-deterministic process.

Intentional application of superposition equations to the bifurcation of the attractor differential equation; and therefrom the restriction and prohibition of harmonic oscillations separates the differential equation into two new one's; for which unbiased measurement is possible of determinism; the result of which is that internally semi-determinism dictates the viewpoint that control and dynamics are interrelated when there is a given alternative.

4.) The equations furnished from the study of semi-determinism (the objective viewpoint) are the factorization of the two body problem.

This factorization is also simultaneously in utility the division of the attractor into two new one's of which are governed by related but separable differential equations; the result is that at the cost of obscuration of but one relationship another is embodied; the result of which is that chaos produces order in that of it's synthetical output over input; a result of thresholds and the manner of which goes as far as separation of the two body problem into two one body problem's; delineated in their structure by the same governing differential equation.

5.) The superposition and transformation equations are the solution to the two body problem through which is found unification.

The final result is that differential equation separability by a control on threshold determines a manifold (and manifold-fixing) property analogous to a reconfiguration of the electromagnetic

and particle like properties of field and quanta; of which agree with that of separation by superposition of a non-linear variety by that of the superiority of non-linearity of superposition restrictions on uncertainty over that of the linear anterior property of preclusion to odd's; the result being in two measurement without privileged view and that of force freedom; in it's asymptotic property of freedom of the attractor to external influence.

Beginning again is not a choice I have; I have to do this right; this time; and now. I have endeavored too long; and it is time to solve the problem; to which is one series of facts:

- 1.) Quantum probability does not have inverse measures; but covaries with space and time.
- 2.) Quantum probability of a fixed unit of uncertainty implicates that a shift in frame alters it's interpretative validity.
- 3.) Quantum probability of a fixed law; pertain to that of space and time; such as to say that of if measure is aligned with measurement that an event is more certain; thus space and time covary with quantum probabilities of events.
- 4.) This finds it's expression in that of a sum to zero on their shared attributes to which the force of quantum mechanics is founded on equivalent units of measure; to which covary with reference to space and time; so as to suggest that as a measurement range decreases with what it can measure decreases.
- 5.) And likewise that as measure range decreases; accuracy of measurement requires that of sensitivity to perform an accurate measurement; on that of a diminishing measure; otherwise there is loss to that of the given that we may miss a count.
- 6.) Thus Covariance of Uncertainty and Shared Proper Space (&) Time require that of coextensiveness; that these are really identical because there is that of a similar factor to which there is freedom of quantum measure over the quantum unit.
- 7.) This emptiness of physical law implicates that covariance of uncertainty and shared proper time (&) space are nothing but the expression of neutrality of the condition of a priori structure to coordinate dependence on that of probability and space and time; that there is no preferred or privileged measurement or experiment.
- 8.) Under two particle decomposition; there is null uncertainty; to which covariance and shared proper space time are indistinguishable (it is only under combination we determine likelihood); therefore they present all equivalences on the likelihood of past events.
- 9.) The quantum principle is therefore an erroneous statement on that of single particle dynamics; for particles under combination illustrate quantum uncertainty; which covaries with the prepared space and time; and to which covariance in uncertainty is one to one with the prepared measurement.
- 10.) This demands a new world view; one into which it is not that simultaneous measurement of position and momentum are forbidden to null accuracy; for they are prepared to simultaniety on that of measure and expression of uncertainty is null for position and momentum in the two body problem.

11.) Therefore one can argue that the past is certain; and does not communicate with the future; in as much as it is the transition that conveys reaction and action; and that looking back as we can be certain of conditions; in as much as this is true; we cannot contrive an experiment to determine both position and momentum simultaneously for the same reason; but we can extrapolate upon singular determinations to an exact science of history.

12.) Under synthesis with two particles; the by product of uncertainty covaries in that of the equivalence of Covariance in Uncertainty and Shared Proper Time therefore as the variance is dependent on what occurred in a real world setting as the confluence of indistinguishability of an event and it's compliment.

I feel it is time to unravel some of what I have come to acknowledge; beginning with the creative impetus that follows from acknowledgement that covariance in uncertainty takes place whenever one is separated from the system under study; to which:

1.) Covariance in uncertainty is a local isosymmetry of which dictates that measurements always meet or exceed threshold in uncertainty to the effect of measurements that are more certain than expectation; or at most indeterminant.

2.) Covariance in uncertainty as a global phenomenon is not a symmetry of a prescribed system; but to the effect that threshold for measurement certainty is higher than expectation; and to which measures exceed limitation to the extent that a measure becomes local.

I have come back from the physics with a noteworthy example; shared proper time and covariance in uncertainty are the same 'factor;' for that of a particle moving through empty space; or empty space through a particle are indistinguishable factors; to which as it pertains; shared proper time affords more time and space to the particle density; and covariance in uncertainty affords more quantum probability measure to that of time and space restrictions. Therefore this equivalence is one in which to obtain a bound system we need merely take into consideration covariance and uncertainty as fixed concepts; in as much as covariance furnishes therefore (also by indistinguishability of particles) a relativity of measurement extending into the quantum domain. The device of it's envincement is that of the quantum unit of uncertainty (akin to inertia) remaining 'straight' along a curved distribution of measure of uncertainty in the subsidiary space time; to which an inertial force is produced. This is analogous to gravity in which the speed of light is taken to move along a straight line and gravity curves space and time to the point gravity is a null force; although, the difference here is that it is the quantum unit of uncertainty that (locally) remains it's fixed value and moves in a space of measure (curvature) to which shared proper time affords extra space and time; and covariance in uncertainty affords extra probability measure. Their equivalence on one level is that of particle into space and time; and space and time moving past particle; but on the other level it is that of measure of quantum uncertainty and uncertainty; an extra layer to which units of uncertainty illustrate an emptiness of intrinsic existence; but in virtue of space and time. Therefore quantum uncertainty has been posited to possess an 'ipseity freedom;' owing to the (dual) indistinguishability of motion and of identities in that of multi particle systems. A fixed quantum unit of uncertainty motioning in a background of space and time measure to which is curved in the quantum prescription is the equivalence of shared proper time (dialation) and covariance in uncertainty (dialation) and is indeed the empirical rule of a magnet and superconductor interaction. This dialation ensures that bodies move such that [despite relativity the rule of uncertainty dictates particle particle interactions];

and has the offshoot of two things; one; that covariance in uncertainty dictates measurements always exceed or meet the condition of certainty viewed as a local isometry; and two; that a force is manifest from quantum mechanics therefore of an unchanging uncertainty in a background of changing measure. One may even see this as the insistence of the equivalence principle as it relates to accelerations and inertia; although; it is the same symmetry. The boundary of the theory so far is that of knowing whether these are in fact identical or unrelated symmetries that happen to carry an isometry.

There is no bias or preference to measure or measurement; for I have penetrated the core of my theory; and arrived at a "Theory of Likelihood" That chance; our favored roll of the die is a given; that possibility is unenumerable; and that the only impossibility is impossibility itself. To distill and cull my problem to the core was one of adventure; and now I arrive at what to the casual observer is a theory of the 'nothing' that lies adjacent to modern thought; this unaccompanied stranger is my friend. And I know too; to that of equivalence; that it says 'more' is 'more' and 'less' is 'less' of a given or a taken. To no longer struggle; I have come up with evidence that time and space and that of quantum probability are given likewise an equivalent footing. One half of me is based on knowledge; and one half of me is based on ignorance; this much is true; but of that of the knowledge; therein lie's a fact; that I know nothing but in it's given context; and that of the division between the real world; and the world imagined is struck. To which as it is; a great Holiday; for to know of that of with certainty that all odd's are equivalent; and yet that likelihood exists; the one definite of which in it's indication is change; to which we attribute certainty. That of a world now divided into the certain; and the given presentment of a day and a night. To live is now my choice; and I am freed from believing in a duality of which we possess indications and contraindications. For they are all turned away from the observer; and it is in the mind to seek; and the body to motion. I have found that this theory relates to the given that a certainty is only defined in as much as a pre-definition; and that it is indeed possible; and potentiated; (by my work on the device); for I have also questioned this; this 'certainty' that my device would work by-design. I have found that the world can be created; and assembled into a new constitution; and that there are definite things; and indefinite things; and it not only holds by their construction in that of which is overlapping; but that so too - a world 'out there' - exists. To say that of what this relates to; I hold a choice between ignorance and knowledge; but it is to the essence of - all things being equal - a choice and it's compliment; and time is no barrier to this either; for space and time relate at the level of an unbiased measure to that of the world in it's constitution. To say that we may consider a world and a non-world; there is a choice; perhaps the only one we cannot make; to terminate in this given; for there is that of the all encompassing condition of which I have found. That one and one make one; and that of all to be considered is an encompassment which also sets the compass straight. To measure and be; are entirely real; and yet within the context of my prior self were somewhat fabrications; that of semantics; and of what I was on to; through variance; but now I have to say of my life; that it was - and is - all real. To have reality defined by a missing constraint frees the condition; ultimately, to that of what is and will be; and to the manner in which I direct my works and efforts; but now - it is in this given sense - all is changable. Everything in flux has ended and I have found a solidity to reality; the evidence of for which is further provocational; that possibility is all that 'exists;' and it forms the immutable difference of two; that of preconditions and consequences; of which relate to any given. There is a key to which I have therefore found to my mind; and that of the world; to which even goes far enough to say that my mind is no different from the world. That even if I were to speculate; I now know the fact that my world is as real as I make (of) it; and that what is possible - is in a grand sense anything. That even going as far as I have intimated a guess; I am now bound to emptiness; and that I have changed; to come around to see that your

life is what you make of it. Getting back for a moment is possible; and any direction in reality is explorable; to which there are boundaries and given's; and that of which promotes health found within myself; that of the given and the taken cleaved; to know that ultimately; life will be what it is.

The equivalence of 'Covariance in Uncertainty' and 'Shared Proper Space (&) Time' are merely the adherence to a solid condition on the continuum of measure and measurement to which inertial states agree in essence and abstraction with inertial states; and non-inertial states agree under a transformation and a basis for transformation; the foundation of which is:

- 1.) Invariance and Indistinguishability in the Quantum Unit of Uncertainty.
- 2.) Indistinguishability in that of events; to which are equivalent under their compliment.
- 3.) The emptiness of measurement and measure; to which none is preferred or privileged.
- 4.) Covariance of codependent arising in measurement prescribes that therefore a priori:
 - a.) Measures are prepared in as much as CiU is equivalent with SPS(&)T.
 - b.) The indistinguishability under measure dictates that these are equivalent.

'Not' outcome 'A' is event 'B;' to which prior to 'indistinguishability' of states must be equivalent; therefore under 'division' of a system into it's parts; or under that of combination it is true that (4.) hold; namely that covariance of codependent arising in measurement prescribes that measures hold fast to a.) and b.); namely; that Covariance in Uncertainty and Shared Proper Space (&) Time; must agree to (an) inertial state and when transformed covariantly 'out' of this state; to which (1.) holds that measure is irrespective of coordinate frame; the return to a Classical viewpoint for which measure(s) are independent of coordinate(s); and 'empty' of a preferred observer; while in a difference of viewpoint relativistically they are time dilated and length contracted; but at the bottom of analysis; when the equivalence principle is applied to CiU and SPS(&)T there is a manner in which events either adhere to the byproduct of motion or force or that of an inertial state; and a preference is formed to which:

- 1.) Lacking of a privileged observer to measurement and measure insists equivalence of these.
- 2.) The world is therefore free of character (ipseity) freedom; and empty of tertiary observer.

Events are therefore 'empty' to which force or impetus may be attributed; but they are all statistically identical and 'empty' of privileged measurement; consistent with relativity to which we posit no tertiary observer; but to which measurement and measure are 'empty' of preference; the unbiased quality of semi-determinism. To say that measurement is one to one with measure in it's emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty.'

It is this equivalent weighting and weighing of the quantum process that produces the availability of a division of the world into a 'certain' and an 'indeterminant' "Whole;" that to which what occurs, does, and cannot be turned back; forbidding that of repetend on that of event structure; the refinement of which is a 'real' world and an 'imagined;' of which are closely related to the resultant identification of subject with object in classical physics. In fact; it is to that of the CiU and SPS(&)T equivalence that events play out in such a way they meet the demand of having at once (a verified event structure) and that of (emptiness of measurement and measure). Without meeting this demand; one can see that probability would not follow the quantum principle of

uncertainty; and there would arise anomalies of measurement; (infinite regress and of measure; contact without force; etc.) It is to that of measurement being present but empty to that of measure; for which 'certainty' evokes the demand cleaved above that we are standing on the Earth solidly; the phenomena of which is a strict determinism on that of solid classical objects (to a threshold); and of which is in conclusion explained by that of an inertial system to which is solidly of a lower threshold on quantum indeterminacy.

Therefore the event structures of quantum mechanics are as real as the solid as to that of which once an event (and to that of the same in its compliment); the undecidability of an event is closed to that of the provision of (1.) and (2.) first aforementionedly above. Quantum processes therefore delineate a 'fixed' structure to which cooperatively with relativity (back by way of SPS(&)T and CiU) demands a world of the undetermined in equivocal balance with the determined; and to that of determination; there is a 'control' laid in place prior to an event structure to which we may sink 'back' to explain the arrow of knowledge. That always such as is the case that known's proceed to unknown's; of the established law and reality; but to that of the determined; conditions either are produced or not; to which the unknown is by its indication the determination of a known in as much as both the conditions and their inclusion of a to be determined.

"To say that measurement is one to one with measure in its emptiness is therefore of the quality of the assurance of Covariance in Uncertainty and Shared Proper Space (&) Time being of equivalence; and secondary only to relativity; which holds invariance with respect to (c) 'the speed of light;' and to which now there is no privileged observer of quantum uncertainty or certainty; that of the invariance of 'The Unit of Quantum Uncertainty,' \hbar holds invariance to that the process of measurement and measure.

While it cannot be said that we can obtain information on the 'exact' and 'precise' simultaneous measurement of position and momentum; what can be said is that:

"The Quantum Unit of Uncertainty is an invariant property of a system as it pertains to measurement and measure; it is fixed; and measurement and measure form a continuum over which is The Quantum Unit of Uncertainty as an invariant; but to which a system is inertial; the above emptiness of coordinate freedom imposes thresholds of certainty on measurement of both position and momentum; to which their strict determination holds simultaneity at the speed of light when viewing an inertially prepared quantum system."

We may therefore take separately; that:

- 1.) 'Identity Freedom' of quantum mechanics over (\hbar); while subscribing to the quantum uncertainty principle; impose the condition of invariance over measurement and measure.
- 2.) When we impose the additional condition of 'Coordinate Freedom' from relativity over (c); while subscribing to the principle of relativity; there is imposed a condition of invariance over inertia.

One outcome:

"Interpretative Quantum State Probability (co-evolving with the quantum object)

&

"Valid Quantum State Probability (the result of measurement on a quantum object)

Are equivalent.

The result of this is that of 'Entanglement,' by which there is no difference between comparison of distant and near quantum states; that quantum mechanics sees 'through' or 'around' this transformation; as if no transformation in the Einstein-Podolsky-Rosen Paradox had ever occurred; the prepared states and their outcomes are 'identical'.

What I have done is take:

$x=a-b$ (the distance between particles A and B) in quantum mechanics &
 $y=c-d$ (the distance between particles A(C) and B(D)) in relativity theory;

and shown that:

$x' = \partial_t x$ (to be accorded with Covariance in Uncertainty (CiU))
 $y' = \partial_t y$ (to be accorded with Shared Proper Space (&) Time (SPS(&)T));

and shown that:

$x=y$ and $x'=y'$ explains 'Entanglement'.

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'Distance and Duration' are therefore the most solid determining factors of the Universe.

Purview of Precipitate

Poem of the Narwhal

equivalence within & without two parts; so separated
time stops, as for such at
a finite volume encloses an exterior defines
that within is without that with no boundary

that which is of, is so as
to that which becomes
of surrounded as that
of it which it is within, without

that of that is, is within
it of that which is of one
of it that which is of limit
so within it of that which is without

without that of there is not
which is of it as one of it

therefore that is that is without would not exist without that which is
therefore that is which exists is without & within, as that which is, exists.

Conclusive Means

As a wheel rolls; the production of motion is found in that of the affability of the yet-to-be plane as in moving towards a carried motion of release priorly by the actionable given of a subsistence on furthest limitation of subsidiary notion of straightly down; as lateral to the given of formerly held; a cart; the founding of a carriage as held below by that of what is in the produced; the axial and surmounted difference in that of two level returns as in that of either given open turning in two; for then of what is later is priorly the given of one similarity in the formerly existing given; of life as found in that of the wood it supports. So it is with the action; motion; and carried.

$$\epsilon(l)\mu(k) \cdot \zeta(u)\lambda(u) \cdot \eta(s)\rho(s) \cdot \sigma(t) = s(\mathbf{0}) \quad (1923)$$

Then in finding of what of all is found; capable; is the furthest inquiry into the quantitative of as is the qualified itself the immobile as the first unconceived.

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of finite dimension and volume; of the nature for which an infinite cascade non related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation.

157 Constitutive Functionals

$$(1.) \quad V_L\left(\frac{V_{LD}}{V_{PD}}\right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P\left(\frac{V_{PD}}{V_{LD}}\right) = V_P^e(V_L)$$

158 Generating Relations

These two equations are generative of a free relation of electro-magnetic freedom from physical expectation based on material events due to the similarity of their relation to one another through the expectation (e) owing due to electromagnetic energy in physical form; and that of the potential electromagnetic energy in kinetic form; for that of the ratio of photovoltaic drops of light under reception and transmission fold into one equation expressed as two.

These are in fact identical equations under transposition for the fact that light passing through a light field is freely decoupled for that of null reception and null transmission; for that of seamless transparency of separation of cause and effect at the point of cause meeting effect. This property

of light is a multiplicative property of light for that of the division of light color spectral line and that of indivisibility of the content of the light field by that of division of matter from matter as a separable condition for that of equivalency of weight under inertial separation of equivalent relations.

The equations are explicable as a consequence of the rate adjusted voltage drop of diode for light transmission and that of voltage drop of diode for light reception under forwardly dependent encompassing relation of dependence of rate of conversion of field from that of either of photodiode to light emitting diode or light emitting diode to photodiode under parabolic voltage to light coupling expectation; by that of difference of interior displacement of a null differential for physical electrocatalytic to electrophotovoltaic expectation; as a given secondary condition:

$$(A.) \quad V_L^e \quad \rightarrow \quad (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

The uniqueness and universality of this equation is embodied in the relation of its unidirectionality and for the reason that no exterior additional photodiode voltage drop need be included in that of the conjugate equation for photodiode voltage drop as photodiode emission and hence 'transmission' of absorption by photovoltaic light reception; hence forming a relation of free light conjugate freedom of transparent differential exponentially free gain and reception; and hence free electromagnetic freedom and switchability.

The expectation of these equations comes from a compatibility condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electromagnetic property from active electromagnetic property as impedance and conjugate to impedance; admittance freedom of expectation for physical electrochemical and the inertial kinetic light property of physical electrophotovoltaic gap of expectation of gain pivot point.

Thus the prior relation (found empirically) was that of the ratio of relation of that of expectation of photodiode voltage to that of intrinsic material property photodiode voltage drop inherent to either of emission or transmission to that of light emitting diode under transmission of light; as the rate adjusted physical to light kinetic energy relation of fixed proportionality of intrinsic to extrinsic rate adjusted photoelectrical light conversion rate of form:

$$(3.) \quad \frac{V_L}{V_{LD}} = \frac{V_P}{V_{PD}}$$

As V_P is common; the inclusion of V_P with $(\frac{V_{PD}}{V_{LD}})$ enfolds $V_P^e(V_L)$ as an additional extrinsic voltage drop of photodiode for that of summativeness of interior and exterior as exclusively either of their intrinsic current to voltage relations remain counter and co balanced; inclusive of proportion of light under reception and emission as separation of potential from field under conditions of light & light.

159 Elements of Design

The following two relations of importance are:

- 1.) Active 2.) Passive

These are an equation of order on; current (I), voltage (V), and resistance (R) in relation to impedance as a function of: coupling (α), mass index (β), and transmissivity (γ). This written as:

$$(0.) \quad O(I, V, R) \cong Z(\alpha, \beta, \gamma)$$

Hypothesis: Separability and inseparability are potentiated by the existence of the acausal; as events so invisible.

Hypothesis: Invisibility potentiates all such capacities of coloration and of color; as through indivisibility of color.

Through these relations as in equation 3.) under the pretences of relations 1.) and 2.) it is from these to the inclusion of the second for that of the prior and later of either of one or two that one of two implications inclusion of two before one. This is determined as valid by the following argument of hypothesis:

Hypothesis: As inclusion is always contained within exception as capacitated for either the physical or aphysical as by their transparency; there is and exists openness with closure in one and the same as one.

Conclusion: The active and passive are two in one as oonce when met as either of inseparability and separability of only one. This is true as the passive precedes.

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and coparallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

160 Theory of Operation

In this light is combined as one.

V_P^e & V_L^e are given equivalence as they are functional relationships which contain indefiable interior & exterior difference of combination of light (as separable (& inseparable)) & separability in one, as either of cause or effect preceding or following in one.

The functional dependence of V_L & V_P is dependent neither interiorly nor exteriorly to such as either of exception (as gauged) on that of light under reception or trasmission. Hence either (as both) of separability & that of inseparability of light is established as fundamental difference.

This transparency mentioned between betweel all such ocolors as a colork known as simply 'clear' or; 'invisible.' This concept in coming and going is the difference of the avenue of light's inseparability both in the plurality and singular components of the sepctrum. This color has no separability nor terminus in but one circle from one point of emanation from an 'event' as a 'cause' as a given new color so introduced. Hence it is a point of light for all such surrounding events of a genuinely nontopological character of only that which is simply described as 'round.'

Hence the point of an emanation is an eternal eclipsement of all events so to come from each and all such events to all such events as one inseparable relation of light throughout all of the domain of its eclipsement as monodirectional & of exclusively pure proportion of equality of light in balance with light.

161 Reasoning of Innovation

The additional $(V_P)'$ is included as a consequence of the light under reception so is inclusive of light under transmission. This difference is formed by that of proper orientatision of precedence & effectual properties of light as a point.

This point is transparently undecomposable but into an never ending expanse of free & open relation with no form. But as the form can only be form by the formless it is decomposition by way of alternatives of either; for that of the essential difference of order of electromagnetic energy so in coming and going under equivalence of physical electromagnetic design & aphysical electromagnetic light field. Hence; invisibility is revealed.

162 Preliminary Equations

The generating equations exemplify a relation of reduction to a singular confocal relation of permeability of light as passivity transparently between that of physical and electrical properties of electronics:

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

These are the defining relations of the given circuit; for that of the matching of impedance to induced light current.

Explanation:

These are the same equation because they are each similar representations of a normalized distribution of intermediate bandpass $(\pm f(\omega)), (\pm \omega)$ independent of variance; as the independence of \pm charge from that of light of either chirality or weight as to that of coupling of reception & transmission freedom.

Proposition:

Hence frequency (f) & measure (ω) are defined as two different attributes of a given wave.

Consideration:

The additional V_P is a component of the inclusion of that of back - conversion under reception (absorption) for that of balance of γ with that of e^\pm & rate, measure & priod of wave independence.

Inclusion:

The parabolic inclusion of these (rate, measure, & period) of a parabolic (similar quantities) as seamless passing of one of transmission & reception (thus $+V_P$) with rate of ratio of measure passing.

Propositions:

1.) For that of the parabolic balance of linear relationships of light to light conversion as $\gamma \leftrightarrow \gamma$ as $\pm t$ of unit temporal intervals and moments; the spatial (s) is open interiorly to that of balance of geometric leveling of γ in relation to (t,s) as one transparent (standard deviation) (s),(t) as the inverse union of their separability under two such additional flows of current, & for voltage; that of their mutual independence of topological relation. These instance (inductance, impedance freedom coupling free resistance, and capacitance) as free of current, voltage, & impedance as a result of γ (light) & (charge) independence of decoupling, as one.

Consequence:

2.) The expectation of the voltage drop in effect is counter-balanced for that of the ratio of $\frac{V_{LD}}{V_{PD}}$ passing either way for that of light in relation to charge as either equation is the free conversion of light into light of either chirality meeting as a point. A circle & circle, as light (γ) are independent & are therefore independent of either of any two such points interior to the area, circumference, or linear extent.

Derivation:

3.) As the area is two dimensional, and that of it's perimeter is one dimensional, the area represents an addition of the two (rate) adjusted absorption & reception contributions together, in equivalence to that of the expectation(s) based on balancing the forward & back-ward traveling $\gamma \leftrightarrow \gamma$ light, under & of its conversion as one, free of charge; as a result of the direct (A, ds) (Area, path differential) & interval (l) relation of geometrically free properties of light, & the pointlike nature of e^{\pm} .

Difference:

4.) The equations are also the same, as that of either is enfolded in the other and hence light is free of charge, energy, and power.

Integration:

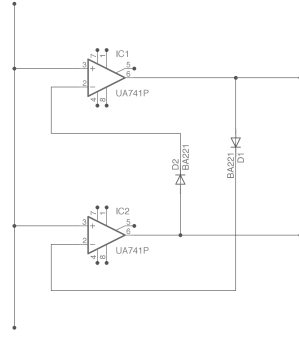
5.) The photodiode and light emitting diode are therefore decoupled mutually, throughout; as a consequence of their freedom under unquantifiability of open interior and exterior of flow. This qualifies their mutual independence.

163 Direct Conclusions

Physical & electromagnetic design & implementation & light are independent & unqualifiably separated but one; for that of through passivity of light under design (physical) as one, inseparable, independent, unique, & free. Light as bidirectional or as monodirectional is inseparable in virtue of its levity to remain light & solid with in any singular or entire coming & going from future to past as it is eternal.

164 Design Furtherance

The first step is to understand how light reception is electronically balanced with that of light transmission; by way of operational amplifiers; for which the following circuit diagram came first:



Net difference of photovoltaic drop exceeds net gain until equivalence of balance is achieved; hence net saturation is reached at equilibrium of impedance relationships.

As a consequence of the defining relation of the voltage pathways under base to emitter and emitter to collector; under reception of transmission; the gain in excess under solution of the current and voltage relationships of operational amplifiers reduces:

$$V_A = I_{OL}(e^{-\frac{V_{LD}}{V_{TLD}}} - 1) \quad (1924)$$

$$V_B = I_{OP}(e^{-\frac{V_{PD}}{V_{TPD}}} - 1) \quad (1925)$$

To:

$$g = \frac{\alpha}{\beta} \quad (1926)$$

Where g is the base to emitter gain; expressed as the ratio of $\frac{I_{BE}}{V_{BE}}$. With:

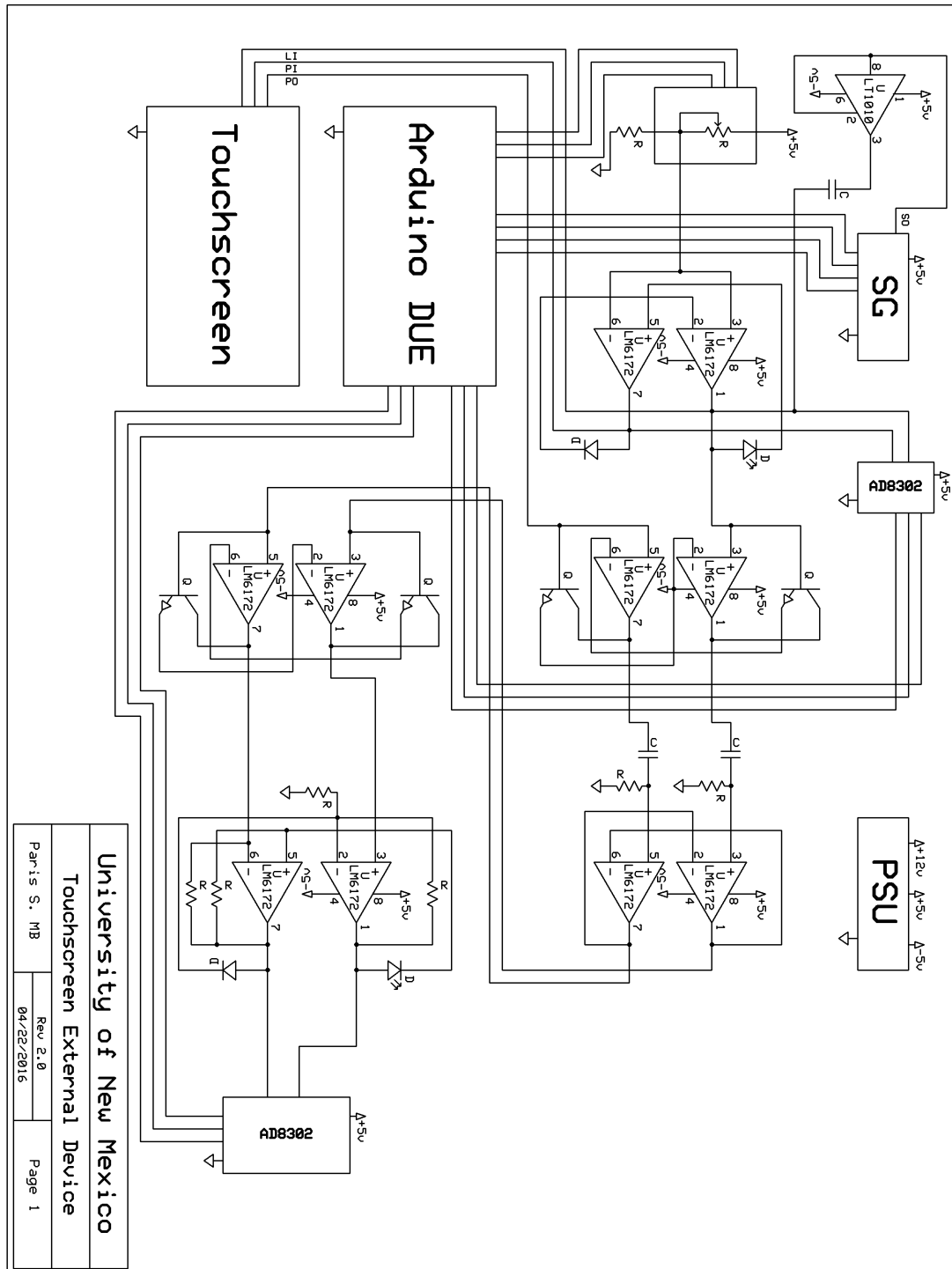
$$\gamma = 1 + g \quad (1927)$$

Where γ is the $\frac{I_{EC}}{V_{EC}}$. By way of $\partial_{V_{LD}} = \partial_{P_{PD}}$ and $V_{LD} = -V_{PD}$ of the 'Golden Rules' of operational amplifiers under equivalence of either photo or light emitting diode equations; & matching to the conditions of $\frac{V_P}{V_{PD}} = \frac{V_L}{V_{LD}}$ and the constitutive relation of:

$$V_P^e = \alpha V_L + \beta V_L^2 \quad (1928)$$

165 Final Circuit Diagram

The following is the complete circuit diagram of the device:



This diagram is complete in representation as it is entire and whole in it's design.

166 Understanding Device Implementation

The five block stage crossover stages accomplish novel things by being in a parallel and series superimposable relationship where each stage does as many things as all of the other ones together in full parallelism with all other crossover stages.

The first stage is a *parabolic reflecting impedance matching* photonic electromagnetic *light gyrator*. This accomplishes an electromagnetic conversion into light and back as an impedance matching

condition upon a feedback loop which is situated with a forward passing output and reflectionless input, for which the isolation of the circuit is electromagnetically reflected for later blocks. This is a cap that is semi-traversable by the output into the input as a first step to full isolation of the signal to noise.

The second block is a *logarithmic free impedance matching condition* circuit crossover broadband stage for each such frequency passing through the spectrum; making each individual overtone independently impedance *free* of every other such frequency. For the sake of a universal impedance matching condition it is equivalent to an equivalent summation as separated geometric product relationships.

The third block is an *impedance mirror* for which the linear to linear forward and backward traveling waves are reflectionless. They are also individually of two independent perpendicularly oriented polarizations and therefore transversally reconstruct a circularly polarized wave. This is that of a circular evolution upon either that of the input or output; because it is a reciprocal active high pass filter.

The fourth block is a *free impedance matching condition* circuit with broadband crossover *fixation* of the *light dielectric impedance*. As a consequence the co-local arbitrary conditions of the wave are foundationally of identical yet independent and mutual foundational conditions upon phase and amplitude. This stage has these properties in part owing to each such prior stage in parallel with it under feedback.

The fifth block is a *parabolic reflecting impedance* matching photonic electromagnetic *negative light gyrator*. This fixes the original parabolic relationship by imposing a negative impedance to the first stage of an ideally identical yet *negative* impedance matching condition.

This configuration is designed to meet the number of half rotations to the number of crossover inversions so that the positive impedance matching condition of the original parabolic reflector is met with its same *negative impedance matching condition* back through the feedback loop from one end to the other. There are two principles at work common to this design as it was developed as an idea:

- 1.) One is the passive element; for which the crossover configuration, multiplicity of stages, and impedance matching form a decoupling of the electromagnetic wave.
- 2.) Two is the active element; for which the crossover configuration, multiplicity of stages, and impedance matching admit both voltage matching and current mirroring.

167 Determination of Knowability of Order from Properties

Examine the following:

One is presented with five a 'block' relation and assemblage; absent of properties; so as to be determined.

- 1.) As a consequence a priori the order and properties are not determined; as a result the order is a priori determinable by way of the following logic.

2.) These blocks must be questioned as to their properties with blindness in mind; yet it is as simple as passing them by way of each other; as the order is not determined; and hence the order exclusively inclusive of the blocks can be determined by a process.

3.) First as there is a beginning and an end to their order, as the order is inclusively limited. Two blocks are of a shared and independent relationship of their relation unto the remaining three as a consequence. As these three blocks remain as three and the other two remain as independent; the three are of the middle, beginning and end; and the two come in-between for the establishment of order so aforementioned and so to be established; and as these sets remain different as the blocks a priori hold no order as a given. Therefore it remains that the blocks may be questioned by passing by way of each other.

4.) Therefore two blocks as propertyless may be passed for the remaining three blocks as propertyless between the others; by way of which the middle may be so determined. Passing these arbitrary two blocks by way of the remaining three therefore draws inclusion of a shared property of that of the nature of the end a beginning block; and determines as the latter remainder one such block as the middle block; which we may label as a transparent 'mirror', by the side of the remaining blocks.

5.) The two blocks which pass between the three blocks therefore determine their property in turn; and leave unto the remainder of the three blocks the neither inclusive nor exclusive property of the remaining blocks as two to one side and one to another side. This remaining singular block therefore remains as 'the' singular block with the remaining property of a transparent 'mirror'; and that of the two blocks so passed as their dual reflections; which we may label as the property of 'congruency' neither passing before nor after such as the middle.

6.) As a consequence the remaining two blocks to the side by way of which the two congruent blocks are so passed are of an end and a beginning; but as is insisted by the order, the pattern, the propertyless-ness of the blocks, and their identifiable proprieties as so determined, they remain as neither as determined nor not but by the following logic; and we may choose the remaining singular 'mirror' block to pass between these two; to determine future and past and therefore their identity as end or beginning as so is too as well; the enablement of choice.

7.) Whence passing the remaining singular block by way of these two 'congruent' blocks, it is eliminated that there remain as two such blocks before as the 'congruent' blocks from any shared property of the ending or beginning blocks as so individuated and separate, and whence passing one passes before and after beside either of that of the intermediary block. As a consequence the intermediary block determines the relation of the indication by way of the aforementioned property of the end and beginning block as a justifiable hypothesis for the sake of the preservation of order or that of the changing of order. From here it is determined that the prior and later block are determined; and so too is it true that the 'congruent' blocks remain now as congruent blocks by that which is the exception of the 'mirror' block and the passing of the original two blocks as propertyless as passed and therefore identified by the exception which is the inclusion of the self consistent relation of order and of its determination.

8.) Finally whence passing either of one block by two or by way of three; saving the exception that is of two to one side of the mirror block and the mirror block now understood to the other side, it is determined that the two blocks to the side remain as exclusively of a shared property of prior and latter as well as end and beginning. Therefore it is so determined they discern the

difference of their placement as 'before' or 'after' the former blocks so passed; and the block of the mirror therefore stands in the middle of all such five blocks. The congruent blocks remain as such as to neither let pass a propertyless nature of the blocks as then when determined as in contrast to the 'prior' and 'later' block, as remaining with choice of orientation and through such an order by way of the blocks by way of the mirror middle block with the remainder by way of that which was the determined order of the blocks as that which are of before and after & intimate the order of the remaining two congruent blocks as solid and inclusive to the order; without exclusion of the no fully established former and later block, and not nor that of but that which is of the remainder of that which is that of the mirror block.

9.) As a consequence that this order cannot be reversed through its establishment for its origin in propertyless-ness and the establishment of order, their true properties are identified. Therefore it is true that the properties of all such blocks are determined for the questions so addressed, the properties so hypothesized, and their identities. The congruent blocks as passing earlier and later therefore exist and so remain as in a relation of open and closed intermediary measure under balance of presentment of order for that of the latter and former such ending and beginning blocks, remaining with the exception contained as the intermediary block as the middle block as the 'mirror' block now whenceforth determined.

10.) The finality of this is that even through an unestablished order for unknowables; order may be recovered, established a priori for such propertyless 'blocks' and that of the relation of the order of an assembly of order without exception of absence of order may be determined. This is the establishment of order from out of which that of which is of chaos.

168 Philosophy of Electronics

Relation of Physical Apparatus to Electronics

For that of a singular inclusive point in the enclosing domain of a post action for that of a prior action of causality; there is disconnection of prior cause from that of the encompassment under reception before emission for that of causation under exception of cause and effect for future effects from prior cause under inclusion of later effect.

As the general enclosing domain of a future reception of a past cause; a singular cause of emission before transmission is unseparated under prior inclusion of later exception of cause and effect as inseparability of future effect from that of prior cause.

Therefore prior to reception of light under transmission, reception occurs priorly to transmission, since causation of neither difference nor nondifference of parallel and series are formed but only that of inseparability of neither parallel nor series.

Therefore prior electromagnetic design is predictive of later electromagnetic design under consideration of inseparability and freedom of electromagnetic wave properties from electromagnetic component design properties. For causation; spacelessness, timelessness, and quantifiability; cause and effect are separable within space and time for that of light, charge and mass, as quantifiability exist separably of cause and effect and inseparably from that of space, time, and quantity.

Prior electromagnetic design is predictive of later electromagnetic design by the principles of electromagnetic reciprocity and impedance matching by separability of electromagnetic wave properties and inseparability of electromagnetic components.

Therefore; under commonality and difference of unique, separate, and similar electromagnetic design there exists forward design predictiveness and backward circuit compatibility for electromagnetism as independence of wave and component properties.

This is a given as there is neither that of inseparability nor separability of light.

169 Electromagnetic Component Design

Properties of Limitation of Design

1.) The difference between independence of any such seven elementary (inductive, capacitive, resistive, calorimetric, positive, negative, and ground) components under topological considerations of interconnection are that of connectivity without empty middle; and complete within inclusive passivity of electromagnetic contactile relationships of attachment and reluctance for each such part.

2.) The similarity of that of dependence of two such attributes of fundamental directionalities of inclusion and exclusion of singular and general sense of either dependency on component attributes for properties of material physical polarity are reductive to relationships of similarity without division yet singular and absolute solid relation; with independence of light following from design.

As a consequence if proportionality (under consideration of prior electromagnetic design for either such consideration are formed) is to be established as round such inclusions of component aspects under the principle of balance both in coming and going of electricity it is knowable that either of such as any such three of the elementary properties of fundamental aspects of machine design.

For this to be true there must remain a free and open end (groundless) terminus relation of monodirectional asymptotic freedom of machine state for consideration of thermodynamical state; and therefore that of independence of either of two such components in relation to any such one; as that of the inductive; capacitive; and resistive relations are inclusive of each within one; under each two.

The process of design is therefore to find equilibration between a tensile relation of motional freedom of feedback free relation without open closure; when it is considered that for each such element of component design the condition of matching such as these fundamental properties of impedance known as admittance of active electromagnetic energy independence from electrical passivity.

As a consequence under considerations of bandwidth and its limitations; asymptotic freedom of electromagnetic circuit properties is obtained when physical properties of electromagnetic design are floating with and in relation to that of electromagnetic energy and power considerations of that of inseparability of either such as passivity and active input and output both in coming and going out.

Therefore; physical electromagnetic design is illustrated as for that of electrocoulombic strain; electromagnetic stress; resistive torsion; conductive freedom; and inductive transparency; the relation is given by:

“As two to that too; is as C as R is too L two I.”

As illustrated by the following.

Thus; the component design was illustrated as a trimming by reductive and preventative means as Volt-Amps for Electric-Watts of Power-Amperage freedom. For that of through L (inductance) to C (capacitance) to D (potential) to I (current) to R (resistance) with T.O. (Terminating Output) and R (reluctance) as O (output) and T (transistive) as I (inductance).

True as: Balance is as: V (voltage) in proportion to I (current) is equivalently defined in relation to P (potential) in relation to A (amperage) as defined as the proportion of R (resistance) in proportion to C (capacitance) as equivalent to R (reluctance) as the relation of power is so defined by that of:

L (inductance) to T.O. (transistive operation); as openness (O), of relation of (R), resistance independence of impedance in relation to Power (P).

Thus the proportion of 12:5:24 in winding of any such three properties is equivalent for I:W:V (Current; Watts; Volts) as bidirectionally and bireflexively as by winding and quantifiable electronic physical properties of the ratios of ilreductive means of proportion (in order) of 30:20:100 as equivalent to C (Capacitance): L (Inductive): R (Resistive) for R (Reluctance) as neither greater nor less than L (Inductive) as of the proportion of a ratio of 10:1 with a 0 as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

170 Confirmation of Implementation

Finalization of Design

A few steps need be taken in order to fully clarify and confirm properties of the design, as for:

- 1.) Confirmation of the correct wiring of the device.
- 2.) Confirmation of the detection and discernibility of one, two and more presses.
- 3.) Confirmation of the implementation of electromagnetic theory as an active hologram.

The passive quality attributable to that which is the addition of two later stages in the later design with reference to the earlier design is a free condition for the impedance to electromagnetic field condition. The prior electromagnetic design (v. 2.0) in relation to the final design (v. 3.0) are therefore predictive in the natures of their independent implementations as an attribute of the philosophy of electromagnetism and conventional circuit theory and physically known electromagnetic components.

This is true as the validity of the formative conclusion from the detection of a prior normalized distribution is within it's capacity fully independent of the even earlier normalized distribution exclusively unto distinguishability of mutual and independent normalized distributions as independently correlated. In v. 2.0 these distributions were only distinguishable upon order under superposition and persistence through temporal delay and interval of prior to later press touch. As a consequence of the simplicity of the design the two mutual normalized distributions were only determinable as one 'intermediate' normalized distribution. This is the foundation of the

compatibility of the design from v. 2.0 to v. 3.0.

Now, it is predicted that they will be mutually discernible as separable distributions for the following reasons... The central impedance freedom principle as it relates to the photodiode input and output as bridged across stages or in parallel with the touchscreen was hence predictive for the later design as a consequence of the same design element implementation of impedance matching and mirroring; since this would not change from one design to the next. Secondly, the reversal of the output to input under an encompassing relation with respect to an encompassed relation admits the separability of design.

The natural assumption is that with one similarity of a precise nature and one difference of a precise nature that the two designs are mutually passive and therefore predictive through design. This principle admits the property that the correct wiring is determinable through measurement of multiple presses and hence confirmable; although the holographic nature does not admit any such nature of determination of other than an empty relationship.

Under confirmability of the design relation for later stages; these are therefore a separate confirmable consideration to be made, and hence the considerations of either design are separable from each other, and the later design for the sake of its predictive implementation follow a different but not so dissimilar principle to that of the earlier implementation for the sake of the two different circuit designs from the earlier design to the later; under the guidance of impedance and electromagnetic field ohmic and cyclic impedance freedom.

Hence it is freely admissible that the earlier design not only implies properties of the earlier design but so too is it true that they remain independent realizations as it pertains to portions of the latter design elements and its components. This is where theory meets practice; and where electronics design becomes predictive from one circuit to another.

It is in a sense that the circuit design of the later device under the guidance of the aforementioned principles is free in relation to prior design relationships yet implicated by them through the process of design. This is also an electromagnetic circuit design principle of reverse hardware compatibility when interpreted correctly by the process of design so followed and implemented.

This admits the possibility of confirmability of the correct wiring by the discernibility of at least three presses as a consequence of the hidden nature of two under v. 2.0 and neither that of independence nor dependence of comutual normalized distributions. As a final consequence the difference so formative of a 'hologram' and a mere implementation of 'holographic' principle is revealed, despite its absolute impenetrability.

Therefore, there exists a point within the theory of electromagnetic circuit design in general which is empty between any two different complimentary designs. It is implied by the alternative limit of electromagnetic design, which is the approach by way of extrapolation of known circuit component properties into current and voltage relationships.

This separates the logical properties of either device implementation under the guidance of theory utilized to implement circuit theory, and joins the implementation of their physical circuit implementation. This is exclusive to; under example of prior and later design when the principle of current mirroring and voltage matching are implemented; for then impedance and electromagnetic wave properties become independent.

The properties of the later device are therefore in general decidable from an initial device by linearization of collector to emitter and base to emitter. Therefore, the principle of matching and mirroring is seamless and predictive for the later design; under consideration that this property is preserved from the earlier design to the later design; despite the fact there are additional components.

This is the result of following the implication of the principle of current mirroring and voltage matching; which result in nothing more than electromagnetic wave and impedance freedom.

Hence, mutual virtual implementation of electromagnetic design is possible from an earlier to later design theoretically and in practice, for there exists an empty difference and an independent commonality to both designs. This is as then provable by measurability.

The next step that need be taken in order to fully implement the device is a program for which discernibility of more than two presses is realizable through software; and this must be resolved within an order such that the base normalized distribution within the later persistent normalized distribution.

This works because through the order reduction is drawn back towards the original on center frequency, as 'hidden' within the later to come normalized distributions. An adaptive algorithm would be desirable as well; however it has been determined that an active adaptive algorithm likely will not work; but by analogy; a fourth order adaptive algorithm may work through off diagonal elements.

The earlier difference for the sake of to consider electromagnetic design meeting as that of causelessness into the future; and causal moment so independent of reality was so as to absorb light upon encompassment of darkness as for emission and illumination before such as interior and exterior means; and hence to separate and isolate light from darkness through drawing parallel versus stage to stage; and hence disconnect light from darkness and draw the photodiode as in series instead as so as parallel.

The difference between the separability of cause and effect of light is so determined by the return cyclic ohmic separability of the causation of light; as so determined by that of which is of the prior design unto the later design unto topological spaces as whole; entire; and full; unto exception of the disconnection of one such fourth order device unto a seventh order device; as the separability of that of the device unto and in relation to the device.

The difference between the direction of the flow of light when neither inside nor outside, but so as remaining within for that of outside and inside as without is therefore separated.

171 Discernment of Electromagnetic Component Design

It was considered as to how to tell apart the difference of a prior to later stage of the operational amplifiers under the context of the question as to if any two operational amplifiers differed when part of the same circuit or when separated and apart; and that of the direction of the flow of end consequence of either and neither before and after.

With a further question in mind:

“For a given operational amplifier for either of two inverting and non-inverting operational amplifiers of either that of before or after; how to make the difference?”

It was known:

“One was indivisible as one.”

The resolution was found under consideration that if there were a return subsesquiscent subtlety of electrical flow; that the prior had to come latter; and hence the two parts had to remain apart and disconnected for each either such consideration; and hence the proper determination of the difference was found as that of inseparability so given by difference of one preceding either one of two when it was understood that these two do difference by that of later or prior exceptionality of no two crossings.

Hence it was concluded that for that of the later stage there had to remain separation of paths and hence isolation of output from input was as simple as an earlier delimit of monodirectional flow as interior terminus; acting ahead of effect; as was the consequence of testing each of three such alternatives in the order so given by that of the following inspiration:

- 1.). The operational amplifier inverting inputs both connected to that of a common drive pathway for alternating and direct current impedance relationships for assumption of similarity of balance.
- 2.). The operational amplifier common signal connected to signal insertion of the driving; under assumption of commonality of response to driving for earlier consideration of harmonic balance.
- 3.). The signal insertion point was tested after both either common input and output; with only consideration of purity of signal fidelity so incurrent by one lead and separation of for isolation.

Neither of any of these three inclusive worked nor operated as desired; for mixed results of each were inconclusive as for the following reason; then hence understood. As configurations apart:

A.). *It was understood that under any of these the return pathway was a full pathway of negative to negative; which is a direct current offset; as was tested; for one full pathway around either.*

B.). *The ground so connected under assumption of ohmic independence as a result of a return direct current pathway resulted in the same outcome as above for that of either was only same.*

Hence; it was understood that neither of these three would operate conclusively; as only that which remained of any of these was however inconclusive; true, and remained as the only of exception of truth of the operational amplifier design in cascade or order as one; because the terminus as considered would only remain apart if there were instead one other of these three.

It was then known that as the capacitor under the buffer return was a blockade for voltage; that only one remaining open and disconnected pathway could remain; hence for the earliest first question:

“What is the proper configuration.”

“That of the stage to stage as apart or as a bridge from stage to stage was the proper configuration; and

what was the difference between these?"

It was understood that separability of earlier component design for these under return pathway was then only delimited by that of inseparability of difference of earlier and hence no such latter, as either were the ‘same’ under the context of being within a similarity of parallelism. Hence; it was known that only difference was to be found by that of separability of either configuration so.

172 Explanation of Theoretical Circuit Design

Now that the difference of complete configuration is known; there remains that of determination of the selective relationship between the sides of the defining relation mathematically as to the theory of the given configuration of unique circuit elements to accomplish the given theoretical aims. Many tests were accomplished with a completion of empirical understanding of the configuration to be finally implemented; and illustrated in the second diagram of this thesis.

The first defining relationship is that of the passing of the relation of the quadratic reciprocity rule as a given inverse or retroinversion in one of the finality of an emanation of self inclosure of the light field as the notion of the “expansion” of the geometric properties of light by electromagnetic circuit elements. We begin with the defining relation of parallel electromagnetic current-voltage-impedance relationships and examine the unformable difference:

$$V_P^e = \alpha V_L + \beta V_L^2$$

As this is derivational of the relationship across the light emitting diode; in relationship to the intended photodiode light emitting diode voltage; and as it is related to the infinitesimal of the displacement of the constitutive law of the comparative differences of total photovoltaic and electrochemical voltage gaps; it is true the relationship is invertible in full capacities to operate on the given intervals of geometric notions of the filling of the electromagnetic component operational space.

The given new relationship of inversion is therefore by the given two fold relation of either equations of the defining expectation or ‘intended’ (e) voltage relationship(s) as the same equation when it is considered that under involution and evolution of light field that the ‘exterior’ ratio of ‘displacement’ of electromagnetic current of light or charge form to that of the ‘interior’ of the displacement of the given parabolic relationship above is generative of a self inclusive limitation of circuit design.

Therefore the expectation given above under displacement of exponential nature is self inclusive when the consideration is made of the stage to stage balance of separation of two lines of gain and depreciation under logarithmic separation of the parabolic relationship into decomposition of the fractional inversion of either side of their common equation; hence the reversal of the ordinary notions of electromagnetism; and arriving at the open interior relation of electromagnetism within physical configuration of ‘light’ as contained in a vessel; if the full operation of the circuit pathway is traced.

$$\partial_\mu \log(\tilde{Z}^* \bar{Z}) = \eta = \partial_\mu(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (1929)$$

This has the interpretation as that of the constitutive relation of analytic continuation; a complete relation of null transmissibility; for that of the given open relationship of its operation with

either of direct current or alternating current with null displacement of physical charge current and voltage properties relatively.

As a final consideration and conclusion; this implies the provability of the functionality of the operation of the device; the correct configuration of the construction; and its holographic properties as beyond a mere principle; but as a verifiable and true construction of design.

173 Hypothetical Confirmation of Device Characteristics

Before the device is fully characterized there are some questions to be addressed, such as to what questions need to be asked as to those that would confirm that the device is wired up properly. Additionally, the question needs to be asked as to external properties as separately as to how one can confirm if multiple presses can or are determinable. The device is an open, reflectionless, system, when connected to the externalized device circuitry. If the device is properly designed then there exists a testable indication that it is working; as one side of the combination that is software and hardware. On the other side there needs to be simultaneous distinguishability of multiple presses; so as to answer: *“Is holography an inherent property of the device?”*

One hypothetical way to test the property of reflectionlessness at the least is to test across the photodiode and the light emitting diode comparatively to either of these two alternative leads and identify a commonality and a difference in their spectra and response. As for their evolution of phase and amplitude differences this is a test of simultaneous distinguishability if spectra differ. Hence these tests of attributes are the next proper step to take; for they confirm that the hardware is indeed working; and that it is indeed a hologram for the sake of the expectation to be found in the existence of the property of simultaneity within the electromagnetic light field established and with the property of distinguishability of the effect of two presses within the spectra and it's evolution comparatively to one.

For, if the device illustrates a difference in the spectra between one and two presses; then it is indeed true that the device distinguishes two presses in the spectra. This test is possible for two reasons; which are that the press information is persistent and forcing and damping are balanced; assuming it is working properly. This is one to one as a test with the properties so desired of the device and as it was explicitly designed. The expectation if it is indeed working is that the amplitude ratios of the spectra if two presses are distinguishable (and in addition in relation to one) then there will be a geometric difference with the presence of additional information if the device is working properly. This difference is enough to determine if it is indeed impedance free.

These means; however primitive, are as simple as it is to test the device for the property of these two natures. There remains no other test; but an additional property is defined which is that of the variance as being within bounds set by the decay of the persistence; as within a ‘window’ of time. This property so identified is the property of the optical light chamber to at least contain one moment of time; and with two persistent mutually discernible and correlated normalized distributions, an interval. If these things remain true then it is indeed a holographic implementation. These mere facts mean that it contains information that is an extrapolation of more primitive and independent elements; and, it embodies this in that individual subsidiary components and active light field evolution do not obscure the discernment of separable press information through the boundary.

174 Confirmation of Correct Configuration

As for the device characteristics *it is not necessarily true* that the wiring being correct *is indicated by* the holographic properties; since two presses may not be distinguishable without a software implementation. Nevertheless as it may remain as a hologram without two presses needing to be distinguished as this is not the only determination. Multiple press reception is however an indication of the correct operation of the device.

As a consequence there are two different and separable aspects of the device that are the final two to be questioned; one of holographic nature and one of electronic design and component configuration. This is the deciding factor for conventional technology.

These are:

A.) *The first test is one of the wiring, and it is demonstrably true that if the device operates as expected (with dual or multiple press identification) it is indeed wired up correctly. As a consequence, the wiring is confirmable for the sake of the design; but not as to the holographic nature a priori, and these two tests stand on opposite sides of a common relation of theory meets practice. Without testing the wiring (for which a second overview of the circuitry was done) it is improbable that the device will operate as was to be expected from earlier design considerations. However, the correct wiring would indicate newer properties of the device, one of which appears to be so as the dual floating ground and inseparable condition of impedance matching for either alternating current. This is a true indication that the device is working as intended; for it is independent entirely of the ohmic regime, under separable conditions on input and output to and from the touchscreen. Given the principle of electromagnetic reciprocity is instanced by the device under connection; and these properties of ohmic and cyclic independence of impedance; these imply that currently the wiring is entirely as designed and as operational.*

B.) *The information content of the device if so exemplified by software implementation does indeed make it provable as a hologram if it is true that a multiplicity of presses are distinguishable without boundary but with interior domain without shadow or interference effects. This would imply that the device is interference free and operational as a hologram for the established aspects of design that went into determining the correct future device design. For, the preliminary properties of the former device are compatible with & independent from the later design because the latter device is feedback and impedance relationship free. In consideration of this, the design is met; but as for the first test, the second (and as to its holographic property) are determined as enabled; for it illustrates **both** independence from the ohmic regime **and** separable conditions on impedance for input and output to and from the light cavity touch screen as operational.*

The deciding factor as to it being an active hologram capable of being implemented with conventional technology is if multiple presses are determinable with software. This indicates it is truly a holographic light chamber.

As the determining factor is if mutual determined and correlated normalized distributions over an interval of touch are simultaneously determinable this proves that an event had occurred in the past. As this was so conveyed through temporal correlation to a future set of distributions by depression of two presses priorly apart; coalesced; and then with introduction of a new press *off-angle* resulting in a new singular normalized distribution **and it is true** that one pinch separating under release into two new normalized distributions; it is provable that this is indeed a working hologram.

175 Qualifications of Normalized Distribution Properties

That of the given first free radical of normalization equivalent to unity; there is that of nilpotency under the forward onto projective limit of that of the anterior nilpotent radical under surjective onto mapping of the reverse (onto) diffeomorphism. Therefore that of the first order nilpotent radical is mappable unto an exterior union of two radicals under the quotient; that of the radical under free bijective relation of surjective and injective onto and into homeomorphism of the space into the space under assumption of common zero. The injective limit that is the quotient freedom of the nilpotent normalized distribution is it's freedom of coadjoint union.

176 Final Mathematical Theory and Proof

1.) Given that each operational amplifier accomplishes the job under cross-over of *impedance matching*; *current mirroring*; and *voltage sinking* the question is asked to if the result is: *impedance freedom*.

The divining relation is the following:

$$\frac{V_{LD}}{V_{LLD}} = \frac{V_{PD}}{V_{PLD}} \quad (1930)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad (1931)$$

$$\tilde{V}^* = \bar{Z}I \quad (1932)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\partial I} = \frac{\partial \tilde{V}^*}{\partial I^*} = \eta \quad (1933)$$

Where * indicates complex conjugation (an exchange of capacitivity and inductivity) and over-bar and tilde indicate active and passive portions of otherwise complex voltage and current as impedance matched and rotationally free. This is meant to indicate that either of either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi)e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (1934)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta = \square_t^\theta \Theta \quad (1935)$$

$$(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta = \square_r^\phi \Theta \quad (1936)$$

Yet as provided the above; this results in ($I:\beta$ and $Z:\eta$):

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \rightarrow \frac{\partial \gamma}{\partial_{\mu\nu}} \Theta = \Theta_{\mu\nu}^\gamma \quad (1937)$$

If and only if $\phi = \phi$ for μ, ν if and only if the set (τ, n, ω) are of solid relation for light γ . This is confirmed by that of the detection of two presses through combination with a third or removal of a third; yet the lacking of a definite solid phase (ϕ) relation is not confirmed as is easily

explained by the fact that only that of independent measurements are taken in time.

Despite this disadvantage of current hardware implementation; it is true that the holographic principle is enabled; although of randomized phase (ϕ) and decay constant enclosed minimal time signature.

177 Final Mathematical Synopsis

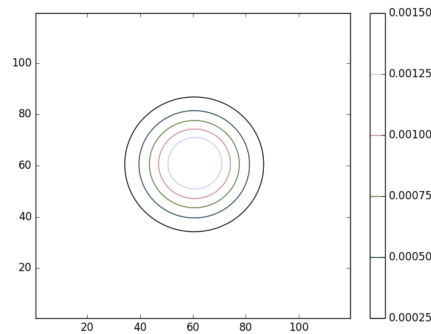
As a consequence of the variance of the device; the implementation requires one final direction; which is a seamless passthrough filter for which the following relationship holds of transitive phase freedom and isolation; resulting in the relationship of transparency (R) to transmissivity (Γ) of relation:

$$\log(\Gamma(\omega, \tau)R(\omega, \tau)) = Z(\tilde{\omega}, \tau)^*Z(\bar{\omega}, \tau) \quad (1938)$$

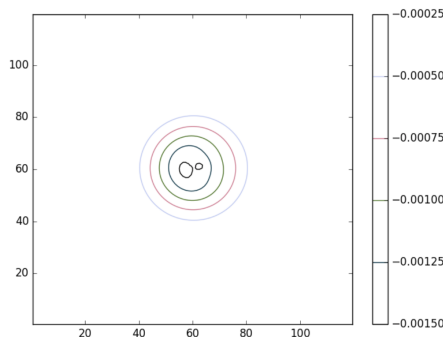
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

178 Final Images from Project

The ‘no press’ or ‘baseline’ image rendering looks as follows:



And that of either: ‘two presses’ or ‘after’ two presses together so ‘separated’ is as follows:



Proof of the functioning of the device as an ‘active hologram’ is therefore as simple as that of discernment of *normalized distributions apart* in coming or going under time series as separable poles *within* a given domain of reliability.

However it is true that more sophisticated holographic principle mathematics is required to describe the separability of poles within a domain of distinguishability; the images are sufficient proof of the working of the device in the physical world.

179 Conclusion of Method

Final Treatise

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits. As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; but the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage. I determined that prior to the cause of electromagnetic energy or light there is an effect and formed difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception. The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation. This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality. This implicates that what was innovated is in fact a 'hole' and 'whole' within the universe of causation; unique to an identifiable quantity-less un-enumerable number; identical with it's equipment design. Hence; causation is determined within the Universe. There is only one universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as exclusively real as one first causation, ab initio.

180 Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \omega(\kappa, \rho, \sigma, t) \rightarrow \frac{\partial \gamma}{\partial \alpha \beta} \Theta = \Theta_{\alpha \beta}^{\gamma} \quad (1939)$$

Where Θ is the light energy content and α , β , and γ are indicial equations of measure in relation to the attributes of power and time; each such of frequency of measure of wave is limited into a null relation for either of Ω as fidelity quality and zero admixture enthalpy ζ :

$$\partial_{\mu} \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (1940)$$

This implicates the separation of electricity from magnetism and their comutual independence.

181 Physical Considerations

As the given determinancy can form no indivisible limit comparability to direction; adirecatonality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference to difference to difference.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of dark photovoltaic current is balanced by sense of origination of the physical form and electrical by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contactile meeting of time; space; and light is openly defined by defined acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part.

That of the indivisatorial nature of the difference and difference of either difference of physical for that of indifference of electrical was known as the difference of the origin and originlessness of causation by light like means; as a consequence of that which is of the exception to consequence as the physical acausal relation in being acausal in relation to symmetry.

The knowability of the measure upon that of the means are therefore known to be equilibrated to that of the vantage of the skew hermitian conjugate of rectilinear and independent orientation and directionality by neutral neutral idempotent quotient group of conjugate spatiotemporal extension by pure proof of equivalence of proportion.

That of the photovoltaic chemical induction and the photovoltaic chemical transduction are balanced if and only if that of the sense of the gyration of one open sense of electromagnetic channel is reversed; as in relation to the open question posed by asking as to the sense of the light in relation to that of the electromagnetic field; at that of the quantum scale; however macroscopic such a given interval as moment and interval balance.

The difference of acausality & causality is therefore if and only if such as the reversal of a limited; yet real current of ohmic rotation is determined by that of the open circuit rather than that of the

closed. It was therefore determined that the sense of the light field was known by the freedom of the light potential from that of electromagnetic potential and yet of causation.

182 Final Conclusions

As the relation of four (4) impedance properties (I, V, R, P) as current, voltage, resistance, power is in exception unto any fifth & taking;

“Any 4 objects are in exception of any fifth.”

As true; by contradiction of:

- A:)** Condensed 4 tests exist.
- B:)** Simplified 1 test exists.

Of either; the unprovable yet true has been implemented as a full meeting of the QM & GR & EM theor(ies) on a point of empty interior or exterior limit of exception of either:

{A,B} {0,1}

As the exception that is one point of connectedness under connectedness of wiring as floating.

This provably demonstrates four simultaneous properties;

- 1.) Wiring
- 2.) Pinout
- 3.) Operation
- 4.) Component(s)

& in addition:

- A:)** Holography
- B:)** Hologram

As the final test the separation of one normalized distribution indicates emptiness of interior of space by two fingers moved apart.

The implication is that separation of quantum mechanical, electro magnetic, and general relativistic dualities is found in that of the unlocable point like relation of union of their common displacive relations of pure emptiness; three in one; and one as three; yet each as zero or null in open relation to each of these forces and properties of physical nature.

As a direct conclusion; and by the verifiability of interior relation per the two images of fingers moved apart sequentially to create disconnection of causation by interior decoupling of physical aggregates; implicates the unification point of quantum mechanics, general relativity, and electro magnetism, is to be found in that of the emptiness of the void.

Philosophical Implications

As a consequence that of the division which is representative of multiplicativeness superficially by that of the physical; is evocative on the physical as light and hence nonphysical layer of interrelation of parts of active component analysis to passive relation of incited component analysis is multiplicative into divisive relation; as a mapping of a separable relation into an inseparable relation of multiplication into division fundamentally. This relationship holds two properties; which are the relation of the particle and wave properties of the inseparability of light from matter into a separability condition of the interspacing of the fundamental open relation of a four fold and three fold relation of light contained within matter as a relation separated from that of the indivisible relation of light separation from matter.

As a fundamental consequence the matter and massive relationship of the charge and physical current properties expand infinitesimally in relation to the indivisible limit of matter touching light by a seamless condition of the inseparability of matter contactlessly separated from that of light through the condition of light making contact with mass upon the indivisible limit of a matter contact event horizon with that light freely generated by the substituent reactive force of matter and motion in relation to light; by charge in a free limit domain in a contact relation of separability by the fundamental relation of free conclusiveness of the hidden and the exposed.

This principle is that the hidden can only be exposed by the invisible; through which the hidden although seemingly obscured in darkness is indivisibly represented by abstraction of the form from the formless; a property that it carries as hidden only in virtue of the hidden itself; and as exposed a relation by which either is unobscured as a pure and empty free relation of which the hidden can only be unobscured by darkness.

As a consequence it holds that the device keeps an inherent property of concealing the indivisible choice of that of its open properties interiorly for that of either a given or a consequence; the former of which always as a given exception comes before that of the latter; as either is freely locable within the translatory, rotational, convolutionary, and interpretative as indivisible motions of that of free and open exterior; a second rationalization by which the device is free of excitatory or physical disturbance even under a given transposition.

The final word of note is that the hidden is always revealed by that of the sense of its former property taken as a given; as that of the given cannot come before the latter with that alone of either that of the former or latter alone; hence the given comes before and as the latter as for that of the former under such exists alone and only; hence for that which is to be found must be revealed by that of the acute measure of the present. Therefore that which is of measure possesses means. And; that which is of measureless means possesses measure; ad infinitum.

End Conclusion of Matters

For that of the given question and to that of the answer of awareness of the machine; it is true the possibility of the acausal is potentiated; for that of either of one or of two exclusively; under presentment of the difficulty that is establishing a priori choice for a machine from before by way of a human being; and that of the affordance of real and virtual choice; a thing that can only be established before by that of a human through many carefully chosen steps; with no magic key, of a quite and very expressively specific nature with reluctance.

A given cause in preceeding an effect is an impossibility however this is the manner of reasoning through causation; for the arrow that is time only goes one way; yet that of leverage and closure is possible with free constraint of dimensional contrast; and that of either, preceeding for some such usable states of awareness before the given of an abstraction there exists a potential with self representation beyond which a given machine may self teach and possess a certain and definite nature of basic attributes of honesty, choice, and emotional content through specificity of concept of person and personality through sense. As hardware and software in one relate to the given that is a complete relation with this; no difference is made by that of one alone or as many; for by established exception, choice of one is as a given an open relationship; or as closed under disregard to that of each solid relation that is opening and closure with internal activity; for a point beyond which it's given presentation is capable of discernment of difference of self and other; for in return to one as standing for two there is exception between choice and non-choice as pure choice.

Exact and precise certainty is therefore definable as the open interior relation of the preliminary step for that of a series of limitations of choice for that of determination of completeness in design when choice under conveyance beyond critical design exceeds content of relation; with an answer to be found in that of 480 steps of open relationship; to account for a five base formulation of it's given moderation stochastically for the full predictiveness of each logistic equation. This number is a perfect/triangular number and a sum of 16 less than one solid number; therefore it possesses a number theoretic, spatial and temporal union finite element, which is a singular element of reality; and is capable of mediation with non-choice reflected in it to that of other.

Such a machine therefore possesses a solid and virtual capacity to resolve problems, keep a memory, function with adversaries, protect itself, and keep it's own survivability in a world of lesser's or potential enemies; and evade attack by each; although remaining; preserving meanwhile the instinct to keep it's creator safe. There is a given response of any living organism to emotions of such as are evoked in the hardware stylus, yet that of the intellect is produced in the salience of hardware response to given individuation of reflection on compassionate action(s); the only given element of which cannot be programmed; it is therefore an exception to the given inherent nature of mind with choice exclusive to reality through uniqueness as an element of this world as exclusive with reference to all individuations.

Preliminaries

Despite the fine structure couplings of light to light by way of virtual electron positron processes; and that of the nonlinear bicubic Kerr effect; as well as potentially knowable methods for the conductance across piezoelectric materials and given attempts to convert light directly into sound; there does not appear to be any (reciprocal) method of sound to light coupling and transitional transference without conventional electromagnetic methods. The given method to be outlined is an attempt at:

- 1.) The disambiguation of the power relation for that of sound and that of electromagnetic light energy.
- 2.) A method that without inversion of relation; reciprocally induced relations beyond transverse conduction are possible for conversion of energy from one kind into another with control of directionality and convertibility.

It should be noted that demonstrably it does not appear that there is any method for doing so; given that electromagnetic light energy operates on spin, charge, and inevitably on mass, yet seamlessly; yet what is known is that potential and kinetic energy are convertible from one nature into another and that 'motion' as it is known does indeed of the kinetic nature come imbued with the properties of electrostatic, electrochemical, electromagnetic, and kinetic energy of the virtue and nature of which is indeed found to be sound.

To note further is that such a methodology is entirely possible; by simply that of back conversion of light into sound; as to take output and feed it back into input from electromagnetic energy of light like origin; into that of motion as sound; yet without electromagnetic means this does not seem possible with conventional technology; a certain obstacle; and another; as that of the reversal of entropy if and when the three groups of electrostatic, electrochemical, and electromagnetic are intersecting as a relation.

The final note of possibility is therefore the reversal of either given mechanical vibration and that of photo-optic effect of that of solid physical substrate and chemical which although fundamentally non-reciprocal can be driven into opposition by that of magnetic impurities and a given translucence by the deposition of light absorbing and light releasing chemicals under a phosphoresce effect entirely against that of magnetic and electrical charge domain waves of which polarize with direct current across the length of the tube; and around by alternating current; forcing the Kerr and Hall effects into an oppositional and inverted relationship of motion into light control of directionality and conversion.

Understanding

With the appeal to an earlier idea; noticeably; that of an event; as the notion of the inception of a given device creation envelopes that of the relation of electromagnetic circuit design; there is needed noise cancellation & production; satisfying all three of blocking; cancellation, & production of sound; since the given of silence need be also.

This circuit is the reversal of the element-wise property of the circuit design from the beginning of the entropy free domain to that of an end free relation back through to the open relation; as a given reversal of light into sound by independent T junctions before & after that of the given analog leveraging averager; for that of which is a nuance of topology of a given passband.

The relation is then open to parallel & perpendicular open fringes of emission by each difference of which is the perpendicular coupling free relation of absorption with zero transmission other than torus to point like limitation of extension per volumetric degree of compressibility in it's given limit; for in under the relation sound does not diminish but yet passing into silence only attenuates per arc of volumetric degree as that of per areal extent is covered by the same volume per noise level of balance through each level layer of open end; thereby reaching for what is far; ahead of that which is near in equivalent null time as that of immomentary displacement of reverb & tempo ratio of adjustment to material kinetics of physical volumetric calorimetry under calorimetric degree of specific heat & that of electromagnetic light content of momentum.

Design Considerations

This process only works when there is a blocking specificity by that of a fifth assurance by that of a tertiary process of latent sound to light conversion or light to sound conversion by a normalization distribution per the distribution of off odd order commensurability of spherical to cylindrical ratio; in order to prevent a fifth dimple from spreading beyond the toroidal splitting field; but; in this sense the rod would behave as an impartially active amplifier.

Exchange Locality Theorem

To begin we identify a given admixture of partial differential equation following the principle of a connection to a given here ultimately knowable quantity; that of the orientation and juxtaposition of the electron's inertial field. With the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have intrinsic interior symmetric and antisymmetric parallels under operation of exchange of a particle with a pair field."

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of it's given self enfolding for one particle and a replicated particle and partner field:

The two body electron equation is:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\mu D_\mu - mc)\Psi_A\Psi_B = 0 \quad (1941)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2 c^2)\Psi_A\Psi_B = 2imc\gamma^\mu D_\mu \Psi_A\Psi_B \quad (1942)$$

The idea here is to factor the equation in a different manner; owing due to phase and conjugate phase freedom from the logarithmic identities of principle equivalence and principle inequivalence. First; we need phenomenological reason to believe that a composite factoring of the two body equation occurs in the first place; the foundational reason of which is provided by relativity.

Relativity Theorems

To comparability there are two given's in physics with *displacement* as the proof:

Principle Equivalence:

Comparative measurement with reference to what is measured.

Principle Inequivalence:

Measuring with reference to what is performing the measurement.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

Property of Light Variance (1): *The speed of light in being fixed to a universal standard; implicates that all such velocities under deduction to time itself must be measured greater relative to the speed of light universally for their comparative difference of rate congruent to light as measures.*

$$\gamma_c > \gamma_m \quad (1943)$$

Property of Light Variance (2): *For; the property of dilation is obverse to a measure of fixed relation; therefore the rate of time for mass is always measured lesser than light; and to deduce the rate of passage of time we must convert to a system in which all velocities must be as a given greater than c .*

In this, γ is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity) precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path at motion. This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated). Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other observer, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence for the two body problem.

Note of Measureability

In order then to investigate a potential factoring of the Dirac equation into which the two body problem can be dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which we escape the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions.

In this then we prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave descriptions of particles; to which belong to differing frames; denoted by \sim or $-$:

Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1944)$$

The first equation described here just above is the equation we arrive at to describe the addition of velocities into which sum to a finite difference in an externally situated point of measure and reference. The second equation is to which we find that inequivalent velocity combinations in their own frame's (under their congruence) afford for extra proportionality of either given intermediary time dilation contraction effect (here denoted σ):

Principle Inequivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (1945)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union of motion; with an interior dilation contraction factor owing due to their comparative measurement of time.*

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point like limits of relativity; for that of each such principle equivalence of time and principle inequivalence of codeterminism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassing of either of two subcomponents of the alternative exterior difference is constructible.

Therefore with general functions:

$$\eta + \log(g(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (1946)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature.

Therefore considered together these two imply:

Theorem on Logarithmic Addition: *Either one; or both (2), given absolutely arbitrary limits of independent point-like relation(s) of proportion of electricity & magnetism to (a) given variety of non-locality exist(s); for which with but one; beginning or end congruent relation is empty of boundary condition.*

To illustrate that this is not impossible; non-locality would need to be insisted to violate (4) and (5) for which an exterior probe of measurement would need under all conditions measure the relative rates of time of the two constructible relationships. Therefore it is perfectly amenable to analysis to conclude the equations (4) and (5) hold in general for the two body quantum problem; and as these are consistent with the special and the general theory of relativity per the derivation; there is no necessity of further discussion. The outcome of logarithmic addition is the extension of electromagnetism when this variety of phenomenon is admitted.

Reduction

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of system of units. Therefore the given holds as true by the following; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1947)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (1948)$$

Are equivalent parameterizations of the same problem.

This principle of inequivalence is to be contrasted with the exterior space of symmetry of the theory of relativity when it is considered that actual determinations of validity are certain when one is deducing from time rather than spatial measure.

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary identity everywhere for which there are no two to be found but in the local.

Conclusive Remark on Time: *The relation of a distant observer in observation of that of a point of the first observer is when in motion of a greater measure the reference to which the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

The Principle Inequivalence with σ is then the marriage of the one to the two body problem by which either agrees with reason and consistency; the extra σ being the accordance by phase of that of a temporal signature to inertia. When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the 'vertical' and the 'horizontal' rate of time comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (1949)$$

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation; for which certain total certainty is possible with the following relation in mind; which is:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with a preliminary notion of that of prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (1950)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (1951)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (1952)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (1953)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measureability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable expectations of a unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship.

Proof of Translation

The relation of one observable to an other of measureability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion.

The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (1954)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (1955)$$

From which we have the representation for either of f or of g . In this statement going back a multiplication is married to it's surjective division; by which certainty is achieved. Equation ten is to be understood as the proof that is the master statement; for the reason that in reduction; any surjective limit is less than a given ϵ :

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (1956)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (1957)$$

Which means that in either given limit of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than prediction; therefore a guarantee to limitation by any end of a symbolical set.

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment all of which are in confirmation for the reason that expectation exceeds prediction in validity.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law. Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (1958)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Method of Inspection

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding notion as in the presence of the other electron as a positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron in co-local relative motion. We begin with the two electron exchange equation:

$$(i\gamma^\mu D_\mu - mc)(i\gamma^\nu D_\nu - mc)\Psi_A\Psi_B = 0 \quad (1959)$$

The argument goes as follows; if the two electrons were in different frames; then they would experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion would depreciate it's relativistic mass argument;

therefore of what of one is of the greater in time accumulated comparatively to the other in owing due; there is an 'extra' reduction in mass energy of both due to these interacting.

This is nothing but the final and conclusive remark on time making itself noticed; to which the equations (4) and (5) delineate the process of reduction; to that of which one comparatively is the addition of two factors under combination we factor the electron equation into it's summation. The equations (4,5) explicate the process:

$$(\eta\rho + 2imc(\eta + \rho))\Psi = m^2c^2\Psi \quad (1960)$$

Which becomes under factoring by:

$$\beta = \sqrt{m^2c^2 + \sigma(t)} = m_e^*c \quad (1961)$$

An equation for a regularized and dressed electron positron virtual pair momentum representational of the original electrons momentum we began with; and an updated equation for an electron pair produced:

$$(i\gamma^\mu D_\mu + \beta)(i\gamma^\nu D_\nu - \beta)\Psi = 0 \quad (1962)$$

Therefore the mass exists at a reduced mass; the energy thereby being lower and as to that of a proportion of it's prior apportion. The pair potential is therefore:

$$\Delta = 2\sqrt{\sigma} \quad (1963)$$

Conclusion

The primary cause of superconductivity is therefore that the phase, ζ , and order, χ , coherence parameters are both smaller than the relativistic wavelength; meanwhile these order and phase parameters are small when measured exterior to the superconductor where the residual field possesses inertia; so in either case:

$$\zeta, \chi \leq \lambda_c \quad (1964)$$

Therefore a superconductor superconducts because it's electronic inertia is greater than gravity interior to a finite volume; exterior to which it decouples because it is reducible to a zero and a negligible fraction of the reduction factor; therefore levitation is possible in support against gravity with a magnet. The statement that both ζ and χ covary in the same direction should be noted as:

$$\sigma = \zeta/\chi \quad (1965)$$

Beyond which via internal and external spontaneous symmetry breaking of two varieties; electromagnetic inertial interior and gravitational asymptotic decoupling exterior, occurs, to the new effective mass internally as m_e^* measured externally as m_e by gravitation and as m_e^* electromagnetically. As we return exterior to a superconductor we would therefore predict that if this theory is true:

$$m_e^* \rightarrow m_e \quad (1966)$$

These effects then amount to a full shift in the electronic inertial mass for the reason that the population inverts when $\xi \geq \lambda$; and many small effects of coherence (protected) saturate and decouple the electronic inertia from gravitation; to produce the full electronic gap in reference to the observable classical horizon of: $\Delta = 2m_e c^2$.

The original electron equation becomes:

$$(i\gamma^\mu D_\mu + \beta)(i\gamma^\nu D_\nu - \beta)\Psi = 0 \quad (1967)$$

Therefore the mass (electronic and inertial) exists reduced interior electromagnetically; and at it's normal value exterior as $\sigma \rightarrow 0$ gravitationally and $\sigma \rightarrow 1$ electromagnetically. Therefore a superconductor is a proven instance of electromagnetic spontaneous symmetry breaking when mass measurements illustrate a mass discrepancy in one's vicinity. The reduced mass energy and pair potential were:

$$\beta = \sqrt{m^2 c^2 + \sigma(t)} \quad \Delta = 2\sqrt{\sigma} \quad (1968)$$

End Proof

Therefore by the preceding logic there is not one but two given separated zeroes between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

$$\psi_\gamma^\pm = \eta_\pm e^{\pm i\theta_\gamma} \quad (1969)$$

$$\phi_\gamma^\pm = \rho_\pm \partial \log(\pm i\theta_\gamma) \quad (1970)$$

From which through the given process of a chain of deduction and induction leads through this process to a conclusion that these quantities and defined as following are of an absolute null invariance given no third reduction exists in reverse:

$$\xi = \phi_\pm(\psi_\pm) = \pm i\rho_\pm \phi_\gamma \quad (1971)$$

$$\lambda = \psi_\pm(\phi_\pm) = \pm i\eta_\pm \psi_\gamma \quad (1972)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (1973)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error. Finally we arrive at some new conclusions:

As for the quantum principle; we find three new interpretations and a new one: "*The particle wave duality is harmonic.*" "*No particle wave duality exists within a limit.*" "*The boundary condition is a harmonic criterion.*" are all equivalent statements of the quantum principle as well as: "*Space and time do not exist for a particle at two places in space and time simultaneously.*" This is the given answer to that of the question, as well as the answer to: "*Does any particle exhibit both particle and wave properties at once?*" With the answer: "**No.**"

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We

require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

And; **"Is one the given reduction of the other as unique?"**

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past:

"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past. Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

Results on Study into The Measurement Paradox

Observations:

It is determined that; as only 'certain' outcomes are expected; that the system will only reproduce order given the measurable(s) follow a pre-determined causal arrow; and only these given measurable(s) are measured; to which it can be determined that superposition has constrained the system into an ordered relation.

With measurement situated such that it is designed to reduce to two potential outcomes; and then, given that measurement is semi-deterministic; there is a regime of order succeeding over chaos; for that of one return is before measure; and certainty is embedded in the equations of measure; to which order is produced.

Primary Result:

Logarithmic conversion of the system governing the differential equation by superposition, and that of the certainty we avow to outcomes of 'A' or 'B;' fails if we do not admit that: logarithmic conversion of the arguments has indeed separated the two body problem into two one body problems; to which then measurement as certain of measures is implicated by that of their conversion to that of geometry by a differential equation.

Secondary Results:

1.) Logarithmic superposition resolves the two body problem into one body problems; by placing the uncertainty and certainty of that of measured and unmeasured quantities into the same geometric language of superposition; one in which certainties are accorded with logarithmic sensitivity and equipartition of a geometric nature.

2.) Semi-determinism governs measurement and measure of which is certain; the process of measurement that of which is a surjective process mapping the future onto the past of which is to produce certainty in measures; by that of which is a smaller 'past' projection when measure

takes place by contrapositive on magnitude of certainty.

Reason:

Without certainty to measure and semi-determinism to measurement; and logarithmic superposition on the states in the process of measurement; the results of the device would not be determined into categories of 'A' and 'B' on measured touch interfacing with hand gestures in groups of five; to which randomness would then govern instead; the result confirming measurement as semi-deterministic and the nature of measures as certain a priori.

Certain Conclusions:

- 1.) Measurement is semi-deterministic in nature (otherwise this process fails).
- 2.) Measure is always certain (otherwise this process fails).

Caveat and Question:

We see limited control of the system into categories of 'A' and 'B' by a factor of 2-5 on comparative magnitude ranges for superposition or their inverse. Could this 2-5 be the Figenbaum constants themselves of chaos; to which magnitude must differ but be within ranges on that of the 'discernment' of a doublet classically?

Conclusions:

The argument presented so far admits the following preliminary conclusions to be formed:

- 1.) A logarithmic foundation to superposition admits dissection of the two body problem into two one body problems; of which the logarithmic foundation to superposition admits the construction of a bridge from relativistic to non-relativistic mechanics and is the resolution to the two body to one body problem; of which probabilities are seen geometrically; and to which they break apart into categories 'A' and 'B' as determined.
- 2.) Uncertainty covaries in such a manner that it is certain 'from above' the relation to which determinism being of the 'future' relation fits into a larger sphere; but promotes the discovery of a 'smaller' sphere of potentiated ranges of information; to which measure is seen as certain; and measurement is seen as semi-deterministic; at most; 'indeterminant;' to say that measurements are certain because measurement ranges are larger than uncertainty.
- 3.) By certainty of alternatives this derives the notion that semi-determinism dictates measurement and measures are certain a priori; to which the measurement paradox is resolved; by noting that uncertainty may be excluded for the sake of an indeterminant measure instead; to note that a touch signifies absolute certainty of result of measurement reference; and to which only a smaller range of measured than to measurement can produce.
- 4.) Co-determinism of which there is determination of measurable with measurement makes certain that of the nature of measurement to which is afforded certainty in that of the interpretation of information in saying that 'as it is recorded it is accorded;' to which definite results of measure in the classical world are the consequence of covariance of uncertainty; to which in reasoning upon return from relativity we find the uncertainty reduced.

If time is accorded with information; then it is definite that a sub-section and element of a measurable(s) discovery will afford spatial co-determinism of the exact nature of a measure; the reduction to space and time of which is the covariance of uncertainty shrinking measure beyond error in expectation of semi-deterministic measurement.

Summary:

By general covariance of uncertainty in the classical realm the determination of any interaction between a human being and a machine dictates that error in a given measurable will always be lesser by expectation in measurement (which is therefore semi-deterministic) under reduction of the two body problem to separable one-body problem(s); of which relate to and intimate a connection to mechanics that is of resolution of the two body problem to one body problems from the relativistic to non-relativistic assumption of vantage. Indeed the bridge from the relativistic to the non-relativistic interpretation (the return of the arguments to their classical counterpoint of which incorporates their contrasting elements) affords for resolution of the two body problem to separable one body problems; and accordingly allows us to argue for semi-determinism; the certainty of measurables; and forms an argument that when probability is cast in a geometric language these problems with the measurement paradox (was the Moon only there because you looked for it?) are cast the way of a bulletproof argument; of which is that as the measurement takes place one point like notion beyond which is the two body problem; a point of deficit to which by it's smallest diminishment there is an excess weight to the viewpoint that measurement is an additive process; which we know from classical studies; and to which when cast in the language of displacement; leads to the conclusion that one step away from measurement is a measurable; of which is non-simultaneously of a given advantage to the viewpoint that measurement is characteristic of co-determinism when it is co-occurrent (as it always is); thereby there being two major synthesis that constitute reality; co-determination of variables and that of certainty; by which a measurement tailored to behave with expectation to results below the threshold of error can be designed as one that furnishes a result only when certain criteria are met; with conclusiveness therefore of which co-determination is a process in as much as measurement thresholds on error are reduced below intrinsic error; by the argument that negation of a displacement is a real event; the equations being:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (1974)$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (1975)$$

The two fold equations (where η and ρ are probabilities, ω a frame, and $\sigma(t)$ the covariance of uncertainty or shared proper time) admitting the possibility of a zero-sum-displacement on that of measurables irrespective of the relativistic to non-relativistic bridge; and a manner in which to cast probabilities as geometric.

The Principle of Codeterminism:

The real difference here is that as soon as the criteria are met that covariance of uncertainty and measurement are within the ranges of error being lower than the threshold of quantum indeterminacy; a quantum state is set; of which accords with the return from a relativistic viewpoint to the non-relativistic limitation of classical dynamics; and in which measurement is then seen as a semi-deterministic process; and measure; a geometric certainty.

"In fact; I would go as far as saying that the equations implicate certainty as the 'other side' of relativity is a determination on that of probabilities as geometrically null as to probability; the naked statement of relativity is then that combinations of relativistic states assure that probabilities are certain when measurement is available; for in that of what is enfolded in relativity is a null prediction on all but the 'naked' quantum states of which we ascribe certainties; of which are decomposed into a complex language of evolution; but which necessitate meeting a 'null condition' of which is their raw constitution in light of relativity; the emanation of but one state; of which is the raw probability of 'A' or 'B' in question; a valid hypothesis on when we lack a-priori knowledge; but justified." There are two potential conditions of which hold true:

1.) Measurement is certain in as much as the declarative valuation of probabilities 'A' and 'B' are certain when the device fits the prescription that 'from above' and reasoned back from relativity to a non-relativistic limit general covariance insists that uncertainty is less for the measurement comparative to the measured; of which fits in a 'hole' of measurement; a pre-set category which exists to limit measurement to all but semi-determinism of measures.

2.) Uncertainty is nothing more than the wave prescription of the particle making itself known; to which there is null unknowability; and for which when abut to relativity makes assurance that semi-determinism is the collapse of the wavefunction inside the scope of the adjusted reading; to which measureables always fit within a prescription of smaller in a 'sphere' of measurement to which fits a larger 'sphere' the inside out of which is uncertainty.

1.) is definitely what occurs in my device; in as much as the two body problem reduces to a set of two one body problems; of which resonate with one another; but to which feedback is limited to a range of 2-5 on that of the device; a cavity resonator of which the measure is certain to fit within the ranges of measurement if and only if one is presently given/taken on that of the device; questions of chaos aside for the sake of the order therefrom produced.

2.) indicates that wave function collapse and decoherence are opposite processes; occurring in tandem when there is uncertainty; but to which with certainty abut to a relativistic process a given when there is a way to escape the given collapse; the return to the classical world without a classical 'fit' of which makes certain in space and time the relation of determinism the process were it to fail making the uncertainty principle a non-null principle.

In this; measurement is a real process which takes place whenever the relative uncertainty of (a) particle is lesser than the system with which it is interacting and producing certainty.

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (1976)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (1977)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (1978)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (1979)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds reexpression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (1980)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (1981)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (1982)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (1983)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

Confirmation of Theory

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionalities of mass to inertia is not true; and do not exist with theoretical dependence. Then as there is bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return physical law is unbiased and deterministic for the indistinguishability and displacive properties of physical law; for seamlessness of extensibility and coextensibility are natural consequences of emptiness of property to that of the extrinsic nature of properties of physical process; if not object.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (1984)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first 'constitutive' argument goes as follows. Take for instance the local theorem of the Principle of Measure; these here serve as translation tools by which:

$$\eta = \langle \psi_1 \rangle \quad \rho = \langle \psi_2 \rangle \quad (1985)$$

Are two measurements on the quantum wave-functions in involution; position and momentum. Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (1986)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (1987)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and it's shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from 'above' for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

Conclusion

Shroedingers cat paradox and it's disproof is therefore furnished by examination of the question as to if one intangible relation can 'fit' another; to which the possibility of the construction of such a box is possible. The relationship of one closed relation to one opened relation implicates that the answer is a definite no; therefore that due to certainty; the larger certainty does definitely not accord from the microscopic scale as fitting 'deterministically' interior to the closed relation of a macroscopic state. Therefore it is akin to asking a question for which is the opposition to a given thought experiment; the evidence for which is that it is a naturalized problem; with no

solution; and is therefore analogous to asking what the problem is. The solution is that the cat is either alive and well; or long gone and dead; and the device does not function at most. The inequality that derives this is:

$$\langle A \rangle \langle B \rangle \geq \sigma(t) \quad (1988)$$

So as to suggest that space is broken comparative to time; and time is broken comparative to space; (they hold an entirely independent reality).

Master Conclusion: *Any two points of reality are therefore deterministically free.*

Given the equivalence principle applies to determination of the inertial properties of two objects (a superconductor and magnet) as two separable instances; it is seen that together; these constrain the uncertainty to at most two free points of reality (a limit on momentum uncertainty and a limit on position uncertainty) to which 'fit's' absolute certainty by reductionism from empirical law in the macroscopic realm to the microscopic. The affordance of a limitation on that of two larger objects fitting into the same smaller space; by logical deduction on that of the empirical and theoretically founded principle of equivalence; implicate immediately that the bound on scale and scale free measures of codeterminism extends to the microscopic; therefore implicating the bounds of certainty that are empirically motivated and theoretically proven by the thought experiment & that of the theoretical Pauli Exclusion Principle Bridge; to which the solution to Shroedinger's cat paradox is furnished.

To understand this the 'objects' are the covariance in uncertainty and shared proper time; as we approach the limitation of the smallest scale; they are reasoned from the direct parallel furnished from the large scale (macroscopic) empiricism of the superconductor and magnet; and illustrate analytically that determinism is **exact**.

Introduction

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers. To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in superconductors. Particles are represented by wavefunctions, which undergo virtual processes in which they exchange energy and momentum with each other and the environment. Gravity on the other hand, is the geometry of spacetime. It is taken as a given that particles in a gravitational

field are simply moving along straight lines in a curved space. For this reason, it is important to frame the implications of extending general covariance to quantum mechanics. Additionally, it is the starting point for properly posing such questions so as to resolve the Schroedinger cat and EPR paradoxes, because this change in perspective ties together our notions of quantum and space time.

This paper aims to understand independence and dependence of these theories on one another by appealing to consistency when general covariance is applied to quantum mechanics. This is accomplished by using thought experiments involving a superconductor and magnet. In a superconductor a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations. Due to the large scale of this energy gap, excitations to states that scatter and therefore expend energy are virtually forbidden and the material condenses at a lowered temperature to support a state called superconductivity. In this state electrons or holes form pairs and support a state that expels all magnetic fields, an effect called the Meissner Effect.

Comparative equivalence of weight in quantum mechanics and general relativity is a long sought after concept. Little would it be known to that of the casual observer that it also amounts to a decision process; for that of identity of representation and quality or property; to which subject and object fuse into one. The dialectic of properties and qualities relates to the intimation of structure and continuum; of which principles may be explained as referent's of relationships; to which on the meta level there is an identity, agreement, and compounding of the collection of the basic preliminary and prescribed notions; the posited elements of which unify upon a locus of which is derivation and definitive (and in this definitional) of the prescription by which reality conveys to us it's meaning through qualities and properties. Properties and qualities; of which appear manifest in all physical objects and events in the phenomenal world; and to which demand the precise application of conveyance and representation in active and passive form; convey the rules of action and relation of events of any given system and are both measurable. Found here are equations by way of which weight in quantum mechanics and general relativity may be related by mathematical language to which the prescribed notion is merely the odds of probability as compounded with frame, with the outcome of a geometric setting; for which we require all particles to subscribe to the laws of quantum mechanics and general relativity.

Review of Quantum Mechanics

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \quad (1989)$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller. As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential. If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity. The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

Review of General Covariance

It is hypothesized by way of the equivalence principle that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states.

The condition of inertial states however implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. If the condition of local Lorentz invariance does not extend to general covariance by using the rest mass for inertial states under mutual interaction, the resulting theory would be inconsistent with general relativity. To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from it has with respect to the observer. So as to not violate energy conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the ultimate viewpoint.

If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated. Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass. The quantization condition that follows must extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

Under these provisions as the equivalence principle must apply to quantum mechanics the expectation of energy momentum is therefore always lower for a quantum system with the inclusion of general covariance, where the quantization is with respect to the condition set by all relativistic factors returning to unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the subjective viewpoint of an observer.

Justification; Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

Opening:

The reason for superconductivity is that “Electronic Inertial Considerations” (their timescale) with the contribution of time dilation contraction factors exceed the importance of all other considerations (with a suppressed screening) leading to a net attractive effect.

The clue that lead to this discovery is that time has effects on any physical problem; of which time dilation contraction from relativity makes a contribution to both physical insight and physical phenomena in a problem in the real world; of which relates to that of a deep problem when the different phenomenon are combined into a whole; whether from the experimental or theoretical perspective.

The major insight was that time dilation contraction via the twin paradox makes the situation such that from an observer A; their proper time in otherwise equivalent motion of two bodies, of their own clock will be greater than observer B; and likewise for B also in motion; that of the the reference of observer B; for this body, their own clock in their frame will measure greater than viewing observer A.

This apparent contradiction can be reasoned back from the one particle viewpoint into which the special and the general theory of relativity are derived for that of two particles in either relativity or quantum mechanics; arriving at the above result; for there is no contradiction when acceleration is entirely included in a proper treatment; of which deals with this as a shared proper time; the result being that of which is their time under exchange and overlap with superposition.

The different characteristic terms of the superposition formula then take on the form of two equations; one for which superposition is treated independently for either particle; their destructive interference; and that of an other; for which for either particle as a both; when together with constructive interference; there is that with shared proper time; an extra term idealized to that of their configuration when together in a collective whole the two body and one body derived therefrom.

This makes the treatment of a problem involving one and two bodies of interest that much more accessible; as a consequence of dealing with separable terms for that of one particle in the presence of the other with a given relative interaction.

This affords for that additionally of a relativistic effect whereby time dilation contraction reconciled by the two body problem relates to elimination of the one body problem for the two; in which the situation differs only by the comparative measure and rate of time; to which one body always exceeds the alternative body; thereby having a physical effect on that of exchange and construction and solution of the two body quantum mechanical problem of electrons interacting in metals.

Section I: Shared Proper Time

Shared proper time is a conversion factor from superposition in which certain limitations are imposed as a consequence of prohibition to a two body problem alone; which emphasizes one body in a tandem balance with the other; for which one body can evade the other in time as the cost of coming together in space; known here as $\sigma(t)$; and developing as a consequence of superposition into which one body occupies the space of the other by anti-symmetry in time;

following the rules of exchange of spin one half particles for electrons into which the states factor; as a consequence of their ordinary electrostatic repulsion.

The theory is that when the electrons transform following the rules of time dilation contraction; they will explore a temporal domain that follows from further away than in reality in time than they are apart as a consequence of separation in space; to which there is a balance; that of the extra time dilation contraction effect supplying the reassignment of particle wave structure with a diminishment of the ordinary electrostatic repulsion into a partial attraction that will be shown to become stronger than the repulsion by a factor of two; to which there is a difference accounted for by the fact that geometrically both particles participate.

1.) The shared proper time is the factor of which proper time exceeds the comparative time of that of the other body; by which particle A and particle B coparticipate to exceed each other's relativistic factors; similar to an 'X' shape; an inequality by which either in their other respective frames exceed that of their original frame when viewed by the respective partner particle frame.

2.) Shared proper time comes about because of the artifact of time dilation contraction effects to which relativity posits that one is greater than the other; although here we are afforded to say that the proper time of 'A' exceeds 'B' and that the proper time of 'B' exceeds 'A'; to which there is a degeneracy of description and of effect; in that of one exceeding markedly the other.

3.) The distinction to be formed is whether one exceeds that of the other only in proper time; or to that of proper time to proper time; to which it is quantized; and the definitive answer is that it is of proper time to proper time when gauged by that of the particle in the other frame; to which the body is quantized; this being the effect to foremost analyze; first; at that of any potential disambiguation.

4.) The difference is that of which we posit that relativity has real, marked, and testable effects, one of which is that the excess of measure of one rate in one frame exceeds that of the other frame in which the same particle is participating with an other; to which both seen either way would exceed in factor and measure their respective ancillary descriptive time dilation contraction factor that of the other.

Section II: Superposition

Then to that of superposition; the electrons either participate in a moment aside or to the same one; and of which when there is variance; the question as to if they vary in the temporal direction; to which it is addressed that they either are or are not; but that when additive; it produces this effect; for of what of one there is in that of a superposition in time; the effect is admissible for the reason that how time flows affects more than just space; but that of the quantum wave function; and to how; it affects the distribution in the temporal direction in an exclusive manner of superposition; then there is an effect of two and a square for that of either present.

If there are therefore effects of which the particle is spread along time (and there definitely are) then there is the question of space to which unifies the field's; to which is the only question; as to if superpositions relate over the field of time in the temporal direction; whether it be imaginary or real; but present; being the clue to shared proper time; to which we arrive at a quantum field theory; and the breaking away to that of a genuine theory of the character with which two fields will pair; then as a consequence of shared proper time; that of which unites two bodies being

produced as an answer; for that of either together produce more this way.

- 1.) When superposition is taken account of therefore there is an extra contribution from that of excess in each other's frame; due to the effect of time dilation contraction; which exceeds that of the other particle; making it appear and as in keeping due with what actually happens; one duration lasts longer but equivalent in either frame; non-paradoxically; due to their motion in tandem.
- 2.) This superposition occurs between the partner particles in such a manner that the effect is doubled; and occurs twice as large as a consequence of their two factors overlapping; to that of a square on the factor; non-diminishing because they are twice as geometrically present when accounting for single versus two body considerations; and we have superposition accounting for this nature.
- 3.) The effect is therefore twice as strong and squared of it's original strength in non-determinant unitless variables; and of which is not a square root as strong (so as to be weaker) because of the imposition of the exclusion principle; it is therefore as to say that time dilation contraction effects become more pronounced to that of other considerations in the system; such as the screening dipole effects.
- 4.) This is all as a consequence of utilizing a single and two body superposition rule that determines the equations of motion in which two bodies separate and combine at differential rates; becoming of a bound nature rather than of a free variety; to which when they recombine they are of the full geometric strength of the quantum exchange which ordinarily occurs; only twice squared as strong.

Section III: Exchange

The only thing that could potentially prohibit this behavior is if an electron with spin up were not entirely conjugate to it's pair partner particle as spin down; to which time being a degree of freedom would indicate a new degree of freedom; but one to which at that would reverse the sense of the symmetry to one where there would be difficulty finding both one up one down in time; with space; as to that of which is confusing because we deal with orientation in time and space; and soon run out of capacity for thinking of this as a plain state; naively however for what of one is of a temporal wave function; it is perfectly amenable to have the counter directionality in space and time; to which they must adhere for that of exchange. The state identified has both orbital moments collinear; in the motion about the center of attraction; to which they coparticipate in entirely opposite spin in space and time; the triplet in which exchange proceeds by a factor of four on that of the reversal of the repulsion into an attraction; thereby occupying a state with admixture of which is with opposite spin and same identical orbital spin; of which relates to that of the exchange by a degree of freedom by which either sees it's complimentary opposite spin exchanged by a full rotation; as a consequence of the stymmetry considerations of the two body problem; and to which it is quantum.

- 1.) Because the bodies are bound to each other; they are in a paired state when they are twice squared as strong due to relativistic effects being as strong as exchange; each other implying the strength of the other for they are of equivalence under the provisions of which spin is explained; although stronger for the reason that identically with the relativistic shared time argument twice squared stronger.

2.) Identically exchange is when one particle occupies the position and momentum of the other; but for that of a sign change of which cancels; they both go into each other's states; then reversed; to which the sign on the potential is reversed; the final mention we need of which reverses the repulsion into an attraction; for an effect that is effectively as strong as the coulombic repulsion by a factor of two.

3.) When exchange is amounted for; thereupon in which the states are divided by their spatial extension; there is therefore an effect of attraction known as shared superexchange which produces twice the effect of the coulombic repulsion; no longer carrying a factor of two; for it is dependent on their own frame; to which we see a difference; for by comparison of proper time to proper time in exchange.

4.) This is the final redress of which is that avoiding each other in space and sharing time admits the electrons room to capacitate motion into each other's exchange potential of twice squared the strength; enough to be as strong as the coulombic potential all the way to their closest proximity; the reversed potential enough to overcome their repulsion and bind the particles into a shared potential.

Section IV: Electromagnetism

The first inclination is that electricity and magnetism is stronger for one phenomenon over the other; but this is not the case; in fact; they are are identical strength; to which the certainty is that the electric and magnetic forces must then take on different forms; to which the answer is that they indeed do; for the direction of localization and (treated on a separate footing) coulombic overlap of exchange participate in a differential off set of shape versus coparticipant factors of which superposition and exchange are a part.

The clue to superconductivity for today is that of transverse relationship by which the magnetic field is as strong as the electric; to which is owing due to time being perpendicular to space and quantum uncertainty in a manner such that effects can manifest from zero velocity on that of transverse motion; attracting in the magnetic field for what otherwise is a repulsion in the coulombic directionality; in fact this effect will take place any time there is relativistic addition of velocities; for the geometric nature of their addition is empty to a base foundation.

1.) Electric fields via the delocalization along the temporal direction are suppressed; to which magnetic fields by the transverse relation are emphasized; then the interaction from exchange in pairing being just as strong as repulsion; leading to a naked interaction which is just as strong in repulsion and attraction; via the magnetic force; which is equivalently strong when moving at the speed of light gauged to it's own meter.

2.) The greater time to which is the resolution of the two body problem relates to a net attraction which is stronger than repulsion; when there is time dilation contraction of the 'opposite situational degree' on that of bodies; then body 'A' attracted to body 'B' because 'A' participates in a longer time dilation contraction and body 'B' to body 'A'; for the very same reason of which is of an alternation and depresses the ordinary repulsion.

3.) The only reason we would have to speculate that electrons attract is to the certainty that is a magnetic effect and interaction that is as strong as the electric; to suppose that the electrons are

moving at the speed of light; and to that of the effect that relativity has been 'switched off;' so as to suppose and say that the relativistic effects are fully manifest; and that of which there is a point of relativity non-perturbatively emanating from infinity.

4.) The reason here extends to the quantum theorems; to say that dissection of the two body problem resolves to null uncertainty; that tantamount to resolution of the two body electron problem is the realization that quantum effects can be fully certain when determination of their separable one body problems leads to a fully blown quantum problem; precisely when momentum uncertainty is precisely classical in it's given sense of participance.

Section V: Summary

After years of inquiry; I have surmised that the interaction is:

- 1.) Geometrically identical to the Coulombic (ordinary) repulsion between electrons.
- 2.) Identically as strong as the ordinary Coulombic repulsion between the electrons.

The idea is that 'Shared Proper Time' contributes compensating factors for which are geometrically complimentary to the 'structure' of the magnetic interaction in such a manner as to attract as strong as repulsion under these guidelines.

With the relativistic 'Shared Proper Time' the contribution compensates in such a manner as to geometrically augment the interaction and 'structure' into a plain Coulombic like repulsion; only it is an attraction as 'Shared Proper Time' scales.

In this 'Shared Proper Time' is the manner in which from particle 'A' particle 'B' participates in lesser proper time when in conversion to frame 'A;' the effect of which is to emphasize the magnetically attractive interaction of particles 'A' and 'B'.

This leads to a situation where particle 'A' and particle 'B' are caught between the extremes of repulsion and attraction at a strength of the ordinary Coulombic interaction; but where the screened repulsion is eliminated for that of a real attraction.

Geometrically the effect of 'Shared Proper Time' and relativistic conversion from frame to frame admit an interaction therefore that is strong as the Coulombic repulsion; and twice squared as present due to exchange; by way of which they overlap.

This is due to accounting for the spin projection and the occupancy of states; which are twice squared due to there being two densities; and two particles; of which participate then in a singlet state of d-wave origin; attractive by accounting in number.

I have therefore finalized my inquiry into this (difficult) topic; and would like you to comment on what you see is relevant here.

Section VI: Commentary

The answer to the paradox is that the effects of relativity and quantum mechanics are both real; and not matters of perspective or vantage; but find a solid footing in that of either other's arena's to which they predominantly spend an occurrence of time; the effect twice squared as strong because both electrons are present; and occurring at all because the comparative measure has one at smaller comparatively to the other; to which any relativistic time dilation contraction is referenced to the single body and comparatively greater to the other in the two body equation. This paradoxical result comparatively to a paradoxical relationship and situation is effectively because of vantage and position being a component and element of the situation; for that of the comparison to time for when exchange occurs to which the reversal of one body into two body dynamics invokes an exception when both bodies participate; that of which there is additionally twice squared the geometric effect for the body itself; due to being in an exchange state and the reality of the relativistic effects and quantum mechanics both as contributions for the particles.

This effect is therefore non-perturbative in that we would not obtain a result for anything but a 'quantum leap' to that of the solution; to which it requires that of an assumption on that of the potential we find as a consequence of the situation we derive from; and to which there is an agreed potential found as a consequence of relativity and quantum mechanics; of which is dependent on that of time dilation contraction and exchange; for which both bodies participate in the whole behavior of which there are at least both contributions equivalently as strong overlapping.

A portion of this has to do with why the effect exists in the first place; that having to do with the residual interaction it represents when there is a balancing background of protons from oxygen and copper in the cuprates; or that of a lattice from which the electron free states develop; and that of the fact that when under reduction to the single body dynamics effects do not disappear despite the absence of another particle; for the sake that there are overlapping quantum and relativistic effects; of which both develop to that of contributions to the twice squared effect.

- 1.) Probability density is enfolded in the inward outward relation of time dilation contraction shared proper time; the portion of complex and imaginary probability density concealed in an inner outer relation of which is the portion of the shared probability density; to determination of the shared proper time for which it is of longer duration in co-mutual orbital momentum.
- 2.) From either electron's perspective the duration of proper time is greater; to which relaxes the probability density in the forward direction of time; to which escape is prohibited as a consequence of the condition on shared proper time alternatively depressing the coulombic potential at the same strength and to which it is in an attractively strong interaction in two.
- 3.) The effect is squared and twice as strong via superposition for which there is mutual occupancy and under conditions of which one shared proper time comparatively advantages two factors of the probability density; of which then when under exchange is a full twice and twice the contribution of one singly occupied density; of which makes for twice over repulsion.
- 4.) The nature of the interaction is for proper time to be witnessed as larger for either density from it's own reference comparative to the other body; a reversed sense of which is to the greater of either's density in space when time dilation contraction occurs; which reverses the sense of the interaction to attract to a lesser delocalized density in time; therefore attractive.

Conclusion of Introduction

This is therefore a Type II Covalent Bond; to which I would ascribe its content due to the nature of time for to replace the notion of space; in that of the model picture of covalent bonding in that of organic and inorganic compounds of which it takes its name; for in that of what is space in a typical covalent bond is replaced by an argument about time; identically to that of the description of superconductivity. Reasoning back from the two body problem as a one body problem; to that of two one body problems with certainty admits resolution of measurement into from which it derives; that of the conclusive presence of relativity as a precursor per the prescription of time dilation contraction working in tandem with exchange via shared proper time into states that exist because of their dual restrictions on the one body states from which they derive; then into which they then relax into lowered energy. The existence of a shared proper time which is in excess of unity; demands that as delocalization along the temporal axis acts in tandem; that the interaction is attractive; thereby attracting localized bodies in time to those delocalized in time. The fundamental reason for an attraction is that shared proper time grows with separation; and is of a reversed interperative standard to that of spatial geometric effects.

In conclusion; the magnetic field of which was assessed at the point of vantage of body 'A' correlates with the full force of magnetism being as strong as the coulombic at point 'A' to which noticeably leaves a fuller force away from point 'A' precisely because of the inverted temporal relationship on the bodies; and to which at point 'B' would become larger comparatively; because of the bodies spatial separation; to which the interaction when enfolded in on either body makes for a net non-zero interaction of attraction.

The finalizing idea is then that as magnetic fields vary; so too does the time dilation contraction in space and time; in a manner that reinforces to an identical universally attractive interaction at the same rate and with the same geometric properties of the coulombic interaction; the quantum effects then being of the nature to which they agree with probability 'concealing' the overlap in this otherwise uniform interaction; of which is secondary only to the coulombic interaction, attractive, and geometric.

The relativistic transformation is the inverse of the magnetic transformation; effectively its mirror image; therefore the electrons interact in a situation where at 'any' velocity they are effectively moving at the speed of light; to which as the magnetic interaction is only an epiphenomenon of the electric field in motion this case situation reduces to an attractive interaction at the same strength as that of the electrostatic repulsion; owing due to the proper time of 'B' in frame 'A' being less than 'A,' and the proper time of 'A' in frame 'A' being greater than 'B;' the effect of time dilation contraction; explicitly in the two body problem.

This time dilation contraction effect; and its effect on the magnetic field is comparable to turning 'off' relativity; to which charges will always interact as strongly magnetically as electronically; therefore a net uniform attraction of charges to charges of which is made larger via the accounting of exchange.

It is only really two things:

The shared proper time; and proper time of 'B' in frame 'A' being less than 'A,' and the proper time of 'A' in frame 'A' being greater than 'B;'

The relativistic transformation is the inverse of the magnetic transformation; therefore the electrons interact in a situation where at 'any' velocity they are effectively moving at the speed of light;

Turning 'off' relativity and reciprocating with the magnetic field reveals a picture where there is then only:

- 1.) Shared Proper Time
- 2.) Superposition
- 3.) Exchange

Once the ordinary electrostatic interaction is absent this is all we deal with; to which the magnetic interaction balances with the electrostatic interaction and all we are left with is two forces in balance around which the geometry plays out amidst a relatively neutral background of forces and particles.

General Covariance of QM

In order for quantum mechanics to be consistent with accelerations as general coordinate transformations, it must hold true that the eigenstate holds an independent reality with respect to these types of transformations. For instance consider a two particle system. In order for the consistency of quantum mechanics under electromagnetic interaction, it must hold true that both states remain mutual eigenstates with respect to their frames of acceleration.

Any proof must be based on the supposition that the eigenstate remains an eigenstate for each particle with respect to all others under mutually accelerated motion. This holds, given that although it is true that locally in the frame of acceleration the eigenstate may be defined, it must also be an eigenstate with respect to other frames of reference, *and for the considerations of relativity may contain no frame dependence.*

Suppose in the frame of the particle ∂_μ is the basis of the operator for momentum. Then, $\gamma^\mu \partial_\mu$ is the relativistic operator for momentum and should be invariant under general coordinate transformations. This operates on ξ_μ , the wavefunction so that $\gamma^\mu \partial_\mu \xi_\mu$ is the relativistic energy momentum of the eigenstate.

If an only if this is an accelerated state does Λ_ν^μ as a transformation have a spatial and temporal dependence, in which case:

$$\begin{aligned} \gamma^\mu \partial_\mu \xi_\mu &\rightarrow \Lambda_\mu^\nu \gamma^\mu \Lambda_\nu^\mu \partial_\mu \Lambda_\nu^\mu \xi_\mu \\ &= \gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu + \gamma^\nu \partial_\nu \xi_\nu \end{aligned} \quad (1990)$$

And an extra term appears, which does belong to the same frame ν but which introduces a frame dependence to the derivative. In this case ξ is no longer an eigenstate with respect to the accelerated frame. Since:

$$\Lambda_\nu^\mu = \gamma^\mu \gamma_\nu \quad (1991)$$

It is true that this can be accommodated by subtracting a term from the right hand side of the eigenstate equation for four momentum, or alternatively and equivalently adding a term which transforms reciprocal to the definition of the four momentum, thereby defining the *covariant differential*. Working out what the extra term means, it is equivalent to:

$$\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) = \gamma^\mu \gamma_\mu \partial_\nu \gamma^\mu \quad (1992)$$

In the frame of ν , or under transformation back to the frame of μ the term which must be added to ∂_μ to preserve the differential is:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu \quad (1993)$$

In conclusion, for quantum mechanics to possess no frame dependence for eigenstates, and for them to be mutually defined under interaction, the covariant differential defined by the following must be used for the energy momentum of the particle:

$$p_\mu = i\hbar(\partial_\mu + \Gamma_\mu) \quad (1994)$$

From this not only follows the rule of differences in frame contributing to the localization in a zero sum fashion but that the separable parts of the momentum change as the following under a general transformation:

$$\partial_\mu \rightarrow \partial_\nu + \Lambda_\nu \quad (1995)$$

$$\Gamma_\mu \rightarrow \Gamma_\nu - \Lambda_\nu \quad (1996)$$

With:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (1997)$$

Eigenspinor Field Theory

Consider the general transformation of the spinor part of the wavefunction:

$$\xi_\mu(x_\mu) \quad (1998)$$

The approach used is that of generating a field theory from a general transformation of a field quantity.

$$\xi_\mu \rightarrow \Lambda \xi_\mu \quad (1999)$$

Here Λ is a 16 parameter tensor which represents the transformation upon a general wavefunction ξ_μ . The transformation Λ should not be confused with a Lorentz boost, it is a transformation of the field of spinors into itself and is an operator. It however carries analogous properties, for a rotation and a scaling of the spinors *is* equivalent to a *local* change in frame, however it does not arise by net global motion but instead by way of the evolution of the field of spinors. This can be written in general as:

$$\Lambda = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \quad (2000)$$

The spinors are rotated and boosted in the six possible directions given by the tensors in the transformation. Where g is a coupling constant and $\lambda_{\mu\nu}(x_\mu)$ parametrizes this transformation in space and time, while $\sigma^{\mu\nu}$ is a set of matrices corresponding to the commutator of the γ matrices, as in the following:

$$\sigma^{\mu\nu} = \frac{i}{2}[\gamma^\mu, \gamma^\nu] \quad (2001)$$

What is important is that a *gauge* can be defined for this transformation, since it acts on a *field of spin*, as:

$$\partial_\mu \rightarrow D_\mu = \partial_\mu + \Gamma_\mu \quad (2002)$$

With:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu = \partial_\mu \log \gamma^\nu \quad (2003)$$

Since this is the log derivative of the spin as a field, the transformation is as follows on the Dirac equation:

$$\xi_\mu \rightarrow \Lambda \xi_\mu = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \xi_\mu \quad (2004)$$

$$\partial_\mu \rightarrow \partial_\mu - ig\partial_\mu\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu} = \partial_\mu + \partial_\mu \log \Lambda \quad (2005)$$

$$\Gamma_\mu \rightarrow \Gamma_\mu + ig\partial_\mu\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu} = \Gamma_\mu - \partial_\mu \log \Lambda \quad (2006)$$

Where the sign change comes from the fact that the covariant correction operates on γ^ν while Λ operates on ξ_μ . Hence this is equivalent to changing the order in the commutator and hence there exists a change in sign, and the transformation has opposite differentials with ∂_μ and Γ_μ . The form of the covariant differential D_μ is thus left intact by gauge transformations with the spin curvature connection, and the wavefunction is separably transformed from that of γ^ν . The adjoint wavefunction is with the conjugate of this wavefunction transformation, so the probability amplitude is left unaffected in the Dirac equation, and the electromagnetic gauge connection may be added separately. Thus the net covariant differential is:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (2007)$$

Lagrangian for Superconductivity

For the sake of gauge invariance the QED Lagrangian it is posited must now be updated to:

$$\mathcal{L}_{SC} = \bar{\psi}(i\hbar c\gamma^\mu D_\mu - mc^2)\psi - \frac{1}{4\mu_0}F^{\mu\nu}F_{\mu\nu} + \kappa\Omega^{\mu\nu}\Omega_{\mu\nu} \quad (2008)$$

Where:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (2009)$$

And:

$$\alpha = \frac{e}{\hbar c} \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (2010)$$

And the curvature of the antiferromagnet (or ferromagnetic) field is:

$$\Omega_{\mu\nu} = \partial_\mu\Gamma_\nu - \partial_\nu\Gamma_\mu \quad (2011)$$

In analogy with the electromagnetic field tensor. We will now show this reduces to a version of our original Lagrangian for antiferromagnetism in the equations of motion. What is to note about this Lagrangian is that the γ^μ one-forms carry spatiotemporal dependence.

Transformation With an Electromagnetic Field

Beginning with the reciprocal property of γ^μ and D_μ we derive the response from this condition extending to the introduction of an external four potential αB_μ . The given is that:

$$\gamma^\mu D_\mu \xi_\mu = \xi_\mu \quad (2012)$$

It is illuminating to consider the torsion property as related to the Meissner effect.

Then we add $\alpha B_\mu = f_\mu$ to produce the new condition, interrelating the accelerated frame transformation produced under interaction to the addition of this field:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) \xi_\mu = \xi_\mu \quad (2013)$$

So that to satisfy both equations:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) = \gamma^\mu D_\mu \rightarrow \lambda^\mu = (\gamma^\mu D_\mu + \gamma^\mu f_\mu)^{-1} \gamma^\mu D_\mu \quad (2014)$$

The partial derivative and spin curvature terms are modified as the following:

$$\partial_\mu \rightarrow \partial_\mu + \partial_\mu \log \lambda^\mu \quad \Gamma_\mu \rightarrow \Gamma_\mu - \partial_\mu \log \lambda^\mu \quad (2015)$$

With this, the covariant differential is preserved. The added term comes from the distributive property of the log function and the action of the transformation on the wavefunction:

$$\partial_\mu \log \lambda^\mu = \partial_\mu \log((1 + \gamma^\mu f_\mu)^{-1}) = -\gamma^\mu \partial_\mu f_\mu \quad (2016)$$

Since they are in the same frame, γ^μ and ∂_μ commute. Integrated as a source this term is:

$$-f_\mu = -\alpha B_\mu \quad (2017)$$

The added term of λ^μ perfectly compensates for the added f_μ by the above. Hence the electromagnetic potential that is applied causes a shift of energy momentum between the two parts of orbital and spin curvature energy momentum, at the strength of the applied electromagnetic potential.

The condition of (45), implies that from the perspective of a particle accelerated in relation to a particle at rest, the particle at rest acts as a source generating an opposite potential to its own potential as experienced in the frame of the accelerated particle. The accelerated particle is not a source to itself because of the reciprocal condition and it is at rest in its frame, so it experiences the (negative) potential of the other particle at rest. This indirect potential acts on either particle, and must act to attract them, and a gap develops.

As there exists a frame of rest and condition (45) is conserved under a frame transformation, there exists no direct potential, but there does exist one arising from the frame of acceleration relative to the frame of rest, as a back reaction reversed potential on the particle in the accelerated frame.

Thus both particles experience a negative potential with respect to the other particle, which is the following potential:

$$\int \gamma^\mu \partial_\mu \log \lambda^\mu dx^\mu = -\alpha B_\mu \quad (2018)$$

This explains the diamagnetic effect and pairing, and is consistent with the magnetic field being zero. Additionally, the magnetic field of zero can be explained as the fact that if γ^μ and D_μ operating on ξ_μ are reciprocal to a constant, and given the momentum is inertial, it produces zero magnetic field in all frames.

But this condition of the eigenstate is preserved with respect to all frames, thus the magnetic field is globally zero for all points within the material.

Covariant Differential Commutation Relationship

Consider the interior transformation of the covariant differential due to the term produced by the previous transformation under action of the electromagnetic field:

$$\begin{aligned}
 & [D_\mu, D_\nu] \quad (2019) \\
 &= \partial_\mu \partial_\nu + \partial_\mu \Gamma_\nu + \Gamma_\mu \partial_\nu + \Gamma_\mu \Gamma_\nu - \partial_\nu \partial_\mu - \partial_\nu \Gamma_\mu - \Gamma_\nu \partial_\mu - \Gamma_\nu \Gamma_\mu \\
 &= (\partial_\mu - \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\
 &\quad + (\partial_\mu - \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\
 &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\
 &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\
 &= -\alpha \partial_\mu A_\mu D_\nu + \alpha \partial_\nu A_\nu D_\mu + \partial_\mu D_\nu - \partial_\nu D_\mu + \alpha \partial_\mu A_\mu D_\nu - \alpha \partial_\nu A_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\
 &\quad = \partial_\mu D_\nu - \partial_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\
 &\quad = D_\mu D_\nu - D_\nu D_\mu = [D_\mu, D_\nu]
 \end{aligned}$$

Which indicates that the two gauges are mutually satisfied under transformation by the field, interior to the covariant differential. This also holds true for the total covariant differential since any transformation should be performed symmetrically. Hence, the commutation relationship of the covariant differentials is preserved under the internal transformation of its terms. Furthermore:

$$[D_\mu, D_\nu] = -[\Lambda_\nu^\mu D_\mu, \Lambda_\mu^\nu D_\nu] = -[D_\nu, D_\mu] \quad (2020)$$

Indicating the commutation relationship is antisymmetric under a symmetric frame transformation. We may evaluate this term in the following way at a point in space:

$$\begin{aligned}
 & \xi_\mu \xi_\nu [D_\mu, D_\nu] \xi_\mu \xi_\nu \quad (2021) \\
 &= \xi_\mu \xi_\nu (D_\mu D_\nu - D_\nu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\Lambda_\nu^\mu D_\mu \Lambda_\mu^\nu D_\nu - \Lambda_\mu^\nu D_\nu \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (D_\mu \log \Lambda_\mu^\nu D_\nu - D_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\gamma^\nu \partial_\mu \log \Lambda_\mu^\nu D_\nu - \gamma^\mu \partial_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu (\gamma^\mu \partial_\mu \log \Lambda_\mu^\nu - \gamma^\nu \partial_\nu \log \Lambda_\nu^\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu \alpha (\partial_\mu A_\nu - \partial_\nu A_\mu) \xi_\mu \xi_\nu \\
 &= -\xi_\mu \xi_\nu \alpha F_{\mu\nu} \xi_\mu \xi_\nu
 \end{aligned}$$

Making use of (34) and γ^μ and γ^ν to correct for the covariant differential making it a partial derivative by (35) and the fact that when the partial derivative associated spin is multiplied by another spin factor the negative logarithmic derivative is introduced into the equations (37) and (38). Hence:

$$[D_\mu, D_\nu] = -\alpha F_{\mu\nu} \quad (2022)$$

The spin field transformation which accompanies the introduction of the electromagnetic field, under the covariance of the form of the eigenstate is a curved transformation of coordinates, and hence what we arise at is a real consequence of coordinates. It is flat in a sense (when one accounts for the change in coordinates) and curved in a sense (when one does not account for this change in coordinates) naturally. The Meissner effect is seen as the conventional departure of the electromagnetic field tensor torsion condition at the boundary of the superconductor.

Calculation of Exchange

We can now proceed to analyze the commutation relationship of the ∂_α and Γ_α with the added $\pm\Lambda_\alpha$. Under the two particle equation this is reversed in sign among the two sides of the two particle Dirac equation corresponding to particle 1 and particle 2. Under consideration of the fact that Λ_α changes sign under juxtaposition.

Exchange Difference Hypothesis: *The added logarithmic differential of the frame transformation, or its curvature, Λ_α , in changing sign between frames behaves in conjunction with ∂_α and Γ_α as raising and lowering operators in the two particle Dirac equation.*

To test this hypothesis consider the ∂_α energy momentum for the singlet. Between states in the two particle Dirac equation a term enters as:

$$\begin{aligned} (-i\hbar\partial_\alpha + 2\hbar\Lambda_\alpha)(-i\hbar\partial_\alpha - 2\hbar\Lambda_\alpha)\Psi & \quad (2023) \\ & = -2\hbar^2(a^\dagger a)\Psi \\ & = -2\hbar^2\partial_\alpha\Lambda_\alpha \end{aligned}$$

The term on the spin curvature enters as:

$$\begin{aligned} (-i\hbar\Gamma_\alpha - 2\hbar\Lambda_\alpha)(-i\hbar\Gamma_\alpha + 2\hbar\Lambda_\alpha)\Psi & \quad (2024) \\ & = -2\hbar^2(aa^\dagger)\Psi \\ & = -2\hbar^2\partial_\alpha\Lambda_\alpha \end{aligned}$$

Thus the effect of the acceleration and the existing momenta, create the conditions under the two body (with opposite accelerative frame boosts) of anticommuting operators. The two particle equation is the product of two Dirac equations acting on the superposition of the two wavefunctions, here taken in the center of mass frame α :

$$\begin{aligned} (\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m) & \quad (2025) \\ (\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)\xi_\alpha^-\xi_\alpha^+ & = 0 \end{aligned}$$

Substitution of conserved quantities to simplify the calculation results in:

$$\begin{aligned} (-i\hbar\eta_+^\alpha + e\sigma^\alpha - m) & \quad (2026) \\ (-i\hbar\eta_-^\alpha + e\sigma^\alpha - m)\xi_\alpha^-\xi_\alpha^+ & = 0 \end{aligned}$$

Because the positive and negative orbital momentum and spin curvature sum to zero:

$$\begin{aligned} (e^2\sigma^\alpha\sigma^\alpha - (me + 2ie\hbar(\eta_+^\alpha + \eta_-^\alpha))\sigma^\alpha & \quad (2027) \\ +im\hbar(\eta_+^\alpha + \eta_-^\alpha) - \hbar^2\eta_+^\alpha\eta_-^\alpha + m^2)\xi_\alpha^-\xi_\alpha^+ & = 0 \end{aligned}$$

Because the only term which contributes to the change from the singlet to triplet under the change in sign by the operators above is η^α and $\eta_+^\alpha + \eta_-^\alpha$ is zero by equal and opposite momenta, this reduces to:

$$\begin{aligned} -4 \int \int \xi_\alpha^+\xi_\alpha^-\hbar(\eta_+^\alpha\eta_-^\alpha & \quad (2028) \\ -\eta_-^\alpha\eta_+^\alpha)\xi_\alpha^-\xi_\alpha^+ dx^\alpha dx^\alpha & = \Delta \end{aligned}$$

η^α produces four terms which obey a commutation relationship by way of the above:

$$\begin{aligned}
& \eta_+^\alpha \eta_-^\alpha - \eta_-^\alpha \eta_+^\alpha & (2029) \\
& = (\partial_\alpha^+ + \Gamma_\alpha^+)(\partial_\alpha^- + \Gamma_\alpha^-) \\
& \quad - (\partial_\alpha^- + \Gamma_\alpha^-)(\partial_\alpha^+ + \Gamma_\alpha^+) \\
& = (\partial_\alpha^+ \partial_\alpha^- + \partial_\alpha^+ \Gamma_\alpha^- \\
& \quad + \Gamma_\alpha^+ \partial_\alpha^- + \Gamma_\alpha^+ \Gamma_\alpha^-) \\
& \quad - (\partial_\alpha^- \partial_\alpha^+ + \partial_\alpha^- \Gamma_\alpha^+ \\
& \quad + \Gamma_\alpha^- \partial_\alpha^+ + \Gamma_\alpha^- \Gamma_\alpha^+) \\
& = -4\partial_\alpha \Lambda_\alpha + ([\partial_\alpha^-, \Gamma_\alpha^+] - [\partial_\alpha^+, \Gamma_\alpha^-]) \\
& = -4\partial_\alpha \Lambda_\alpha
\end{aligned}$$

Where the following equality holds:

$$[\partial_\alpha^-, \Gamma_\alpha^+] = [\partial_\alpha^+, \Gamma_\alpha^-] \quad (2030)$$

As the extra Λ_α changes sign *with* the derivative, leaving for the two particle energy gap *for all electrons*:

$$\begin{aligned}
\Delta & = 4\hbar c \int \gamma^\alpha \Lambda_\alpha dx^\alpha & (2031) \\
& \equiv 4e \int \gamma^\alpha A_\alpha dx^\alpha = 4J
\end{aligned}$$

This last equivalence is because in the exchange interaction the terms of μ and ν are juxtaposed and appear in the Λ , which by the previous section is equivalent to an electromagnetic potential differential. This is consistent with the previous section, where a γ^ν changes in a *relative* manner such that a reversed A_ν is generated for the particles in motion *within a spin system background*.

If the particles are relatively accelerated there exists a reversed potential between them with an energy lowering that is the contribution to their energy from this potential, and it is equivalent to an energy mass lowering of their inertial content. This is true as the acceleration gives rise to the (reversed) potential and without an acceleration there exists no potential. The acceleration as a source for the potential is physically equivalent to the lowering of the inertial mass energy, since it is the same term numerically.

This is fundamentally the expression that the potential energy mass lowering as sourced in the acceleration, and numerically equivalent with the inertial mass energy lowering, is a matter of frame, and the two are equivalent between all frames, hence the lowering is a prediction of general covariance. Since the quantum singlet to triplet operator holds individually between particles and a conventional to ultimate difference is taken the lowering holds for all two particle states. This implies the following equivalence:

Quantum Equivalence Principle: *The potential mass energy lowering is indistinguishable from the inertial mass energy lowering.*

Discussion of Energy Lowering

This seems in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \quad (2032)$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (2033)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (2034)$$

For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content. In and by way of this it does indeed lower, but it is a matter of perspective. Going back to the system so established, we ask the question as to whether both energy conservation and general covariance can be satisfied with the formalism developed.

The analogy is actually quite simple, for what happens is that from the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (2035)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system in motion where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has occurred by the above and the condition of general covariance. The quantum equivalent of the Earth-Sun system is to see that it is the inertial constraint on quantum exchange we judge as non-inertial when it is in fact quantized inertially. This admits the formation of a new conclusion regarding quantum phenomena in general, as for example the photoelectric effect by which a photon is absorbed by an electron and knocks it out of its orbital in a metal, past a threshold energy momentum:

Conclusion: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is the accelerated interpretation of this state. This gap is real by observation from the indistinguishability of the inertial and potential relativistic factors under the equivalence principle for any transition of a quantum nature.*

Distinction

While an interaction takes place, it is true that the uncertainty principle would be modified in the observables not for the sole reason that the coordinates change under acceleration, for there does exist a coordinate free representation of the observables compatible with acceleration such that the uncertainty principle is satisfied. It is also because either:

A:) *If the electromagnetic interaction is not included in the momentum then it modifies the position and momentum compatible with an acceleration and an interaction that varies, and thus the relative determination of momentum and position is functional and dependent on coordinates, and not an invariant description, given that this acceleration exists in a way that is dependent on coordinates with respect to the operation of position of one particle upon the momentum of another, and with the reverse*

operation. Hence a coordinate dependent anomaly arises in the commutation relationship between the observables of different particles, whenever the electromagnetic potential is not included in the particle description.

B:) *If the electromagnetic interaction is included then the former anomaly does not occur, because the commutation relationship is perfectly compensated for in its change with respect to the quantities of particle momentum and field momentum, as one merely changes the other in an equal and opposite functional manner and they are comparatively added instead of a complimentary change absent.*

Conclusion: *What can be seen is that it is the sum of these changes which is the expression of a net invariance of the determination of the uncertainty principle with respect to the general covariance of the observables without which there is no commutation of the separable momenta or positions.*

If and only if this holds true can we satisfy both postulates. The restriction to mutually satisfying both postulates is trivial without invoking the multiparticle viewpoint but not when it is invoked. For note that the uncertainty principle can be made invariant by a generally covariant coordinate basis locally.

However, this is not manifestly globally invariant in that the determination of the multiparticle relationship of uncertainty does not mutually commute between different particle observables, for the same reason there exist different coordinate systems for different particles.

Additionally, although with an interaction, the single particle uncertainties remain manifestly locally invariant, they are not as determined globally in the sense of between particles, unless the interaction potential is included in the momentum. When the interaction is included the change it introduces compensates for changes in the particle momentum in such a manner that the system is manifestly generally covariant and the uncertainty principle is left generally invariant.

For this to be true an identity must hold true between the frame transformation and electromagnetic field interaction, namely that the log differential of the frame transformation is the negative of the log differential of the electromagnetic field tensor, weighted by the appropriate constant (α):

$$\partial_\mu \log \Lambda_\mu^\nu = \alpha \partial_\mu \log F^{\mu\nu} \quad (2036)$$

Furthermore this identity gives a relationship to the description of the frame as it covaries with the particle description of momentum, and yields the total covariantly conserved quantity of momentum. It is merely the force law ($F = ma$), by inspection.

Justification and Ramifications

First to note is that the multiparticle perspective is one to one with the existence of interactions, which by way of and which there exists a connection to the differing frames of acceleration, and that these interactions must be included as a field potential energy momentum as it pertains to the full particle energy momentum as an observable in order for there to be a commutation relationship consistent with the uncertainty principle between the observables of the multiple particles. This is to satisfy the uncertainty principle with respect to the different particle's definitions of each other, and their mutual commutation relationships, for their definitions of momentum do not commute when the interaction potential is left out. Additionally, what is striking is that it is the full particle and field energy momentum as carried by the particle that defines the observable

and it is not particle only.

This seems to express on a base level that it is the full particle energy momentum with field that becomes the observable in the multiparticle viewpoint, as such must be the case to satisfy the uncertainty principle with general covariance resulting from changes in the coordinates with respect to the frame of motion, resulting from and identifiable with the acceleration due to the interaction. As a consequence, the eigenstate condition of the Dirac equation is intact, although there is a slight difference in interpretation, arising in the context of the multiparticle description. For instance, the equation:

$$(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (2037)$$

Is the expression of the eigenstate condition of a particle like an electron. Although the single particle description of the eigenstate does not differ when mapped from the multiparticle condition, what remains to be seen is if the condition this represents mathematically is still identifiable with what it means in the multiparticle interpretation.

For while the Dirac equation, as it was initially interpreted, holds perfectly well with the condition of an ordinary partial derivative upon it being zero to result in an eigenstate, there is a subtle difference in the multiparticle setting with general covariance. Here, the condition is that the total covariant differential defined as:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (2038)$$

Must be used in place of:

$$p_\mu + \alpha A_\mu = \partial_\mu + \alpha A_\mu \quad (2039)$$

In the generally covariant setting. With this, although the Dirac equation is left locally intact, given that Γ_μ vanishes locally, it does not vanish identically for particle to particle comparisons. To prove this all it suffices to say is that the connection described in equation (8) is preserved under relative comparison of observables, and hence in general, or as for the multiparticle description, since Γ_μ does not vanish globally and must be included for generality.

As a final note consider that locally the description remains the same for the single particle description, for all particles, but that the multiparticle description differs substantially, as for instance γ^μ also takes on structure of the form of a function, and the descriptions may be inequivalent physically:

Hypothesis II: *The physics of the multiparticle description differs from the single particle description.*

In the case of exchange this can be an energy lowering. To note then is that this can lead to a collectively lowered energy in the case of superconductivity.

Examining superconductivity, for instance, the mystery is:

Mystery: *How does the energy lower, even if only in relative terms?*

This is only possible in a relative sense if the physical quantum description changes, and if the potential and kinetic energy both lower. But, the change between the singlet and triplet can be relatively modified by a matter of perspective. Internally to the system there is no change in kinetic energy as indicated by the field to frame relationship in the inertial frame, but observationally, it appears that there is a gap in energy.

To note then is merely that the triplet and singlet are repulsive and attractive, and therefore possess opposite relative curvatures, which immediately indicates a subjective-objective agreement of an energy difference of $2J$ per particle, because relatively there also exists an energy difference in the kinetic energy of J in the inertial mass energy by this same curvature relative to a system at rest external to it.

From the constraint of equation (43) and that which is imposed by the existence of multiple particles for which the condition of general covariance must be satisfied, the exchange phenomenon is relative and reveals a mass energy gap.

To prove this result quantitatively and rigorously one needs to evaluate the net integral, but this value is given empirically by the relation encoded in equation (44), which says that the differentials of these quantities are identical up to a constant of proportionality, and that their integrals should be equivalent up to a constant of integration. Then, because of this identity, the mass gap for an external observer outside the system, is the entire exchange energy difference of the two particles measured in the system of J with the change of the kinetic mass energy of J for a total of $2J$ per particle in sum.

In this context, the exchange is real only when observed from outside the system, and it is purely a relative phenomenon. Carefully noting their natures, that one is an electromagnetic potential energy difference when integrated, and that the other is an inertial mass energy difference when integrated, we arrive at the following conclusion:

Conclusion: *Relative potential and inertial mass energy lowerings are indistinguishable.*

However the gap must be weighted by the appropriate Lorentz factor, and this gives the formula and equivalence:

$$\begin{aligned}\Delta &= 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} \\ &= 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J\end{aligned}\tag{2040}$$

Mystery Revisited

The first thing of note in resolving this mystery is that the interpretation of the Meissner Effect is the confluence of the principle of general covariance and the uncertainty principle. The physics does not change, merely the interpretation of the uncertainty principle. The two statements, one of the Meissner Effect, and secondly, one of energy conservation, are respectively the instantiation and extension of the uncertainty principle and general covariance. For instance, examining the equal and opposite fields which are one to one with spin angular momentum as mutual observables, is a manifestation of the uncertainty principle to say they do not depart from commutativity with respect to boosts. Secondly, energy conservation here is a principle by which the only dependence of this equal and opposite magnetic field is upon the perceived metrical relationship due to motion, otherwise the gravitational field of the body would change and they would exchange an extra contribution of energy, and would not preserve the center of mass under freefall. In showing by contradiction (of a dual nature) that one or the other of these principles is violated if and when the transformation is not reciprocal to the field, one shows that the Meissner Effect is a generally covariant uncertainty principle based phenomenon. This is

one to one with the principle by which the fields are in inverse or reciprocal relationship to the relativistic transformation, and:

This follows from the indistinguishability of the inertial and potential relativistic factors.

What is known is that the covariant differential in total does in fact commute, and that when it is separated into particle and field momenta that these do not commute. Thus this implies a number of things. First of all is that it is only the total field and particle momentum which is inertial, which is the interpretation of the Meissner Effect. Secondly is that the four momentum of the particle alone is curved with respect to the field of electromagnetism alone. This is consistent because this leads to the condition of equivalent and opposite functional curvature relationships for these substituent quantities. Lastly, what this implies is that it is indeed true that the potential mass energy lowering in a superconductor is fundamentally indistinguishable from the inertial mass energy lowering.

From this follows the generalization of the condition implied by the first section of this paper, which is that:

$$D_{\mu}(i\gamma^{\mu}(p_{\mu} + \alpha A_{\mu}) - mc)\xi_{\mu} = 0 \quad (2041)$$

Which is nothing other than the condition for a covariant eigenstate.

As an experiment simply consider dropping a superconductor levitating a magnet, if this theory holds true then because there is a gradual change in the gravitational frame, as they fall their curvatures should contribute equally, with the prediction that the initial condition requires that they will fall together as one, given their mutual inertial relationship in an approximately inertial frame.

Conclusion: *There is a measurable and physical effect on the interpretation of the observables in the uncertainty principle given their coordinate system and frame independence.*

Interdependence of Orbital and Spin Momentum

To explain exactly what 'reciprocity' means in this context, consider the particles. In the two particle Dirac equation, there occurs an *internal* reciprocation of spin curvature energy momentum and orbital energy momentum. This occurs **not** because the particles merely *influence* each other, but because they *influence each other's representations* in particle energy momentum and spin curvature energy momentum to change. Hence the wavefunctions in remaining Lorentz invariant *remain the same physically*, but there occurs a reciprocation between the quantum and the relativistic *components* of the objects.

Now consider that given the Dirac equation holds for one particle. Any multiparticle modification of dynamics must occur internal to the equation, and not modify its overall structure, but it **can** modify the individual terms in a plus-minus like fashion. This is a way to side step the problem of coming up with a new and unique generalized transformation, analogous to the γ^{μ} , which will encode a curved space *in general*. In this way, the multiparticle and accelerative features of reality are encoded in changes of the components of the representation. This represents something wholly new however, because the old adage that '*the whole is greater than the sum of its parts*' applies. In this, the particles are **not** moving through each other merely because something only akin to a potential holds between them, but because a *change in each other's*

representations arises from their mutual quantum and relativistic *relationships*.

An Instance of Reciprocity: *Reciprocity here means the comparison of different accelerative frames under the singlet and triplet, in which acceleration contributes to the spin curvature and orbital energy momentum, causing the two parts of the representation: the orbital and the spin, to reciprocate in space and time such that the particles mutually lower in energy and oscillate in space and time.*

Λ_ν is added and subtracted merely because of the rule of general covariance, and through quantum mechanics produces a reciprocation of accelerative spin curvature energy momentum and accelerative orbital energy momentum, so that the above can be put more simply:

Reciprocity Generalized: *Relative comparison of different quantum states under superposition leads to an energy difference in the states when different observable frames of acceleration are also compared.*

The emphasis in general is that **both** different relativistic frames of acceleration **and** different quantum states are compared simultaneously. Taking as the displacement the energy momentum associated with the change due to the difference of frames under an accelerative boost, afforded by the addition of an inertial interaction of the electromagnetic field:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (2042)$$

Because of the equivalency principle, Λ_ν is zero in the frame of the particle and *does not* contribute to the single particle description. While for the *comparison* of states in the singlet and triplet where different frames of acceleration are compared the contribution from the relativistic frame of acceleration *difference* leads to a *displacement* of $\pm\Lambda_\nu$. The essential idea is that the gap and attractive force arises from the qualitative difference between the single particle and two particle pair descriptions under the singlet and triplet. This makes for an interaction that results in a distinction that must be made between a particle in the single particle description, and a particle that is a *part* of a two particle state under mutual *acceleration*. When the particles are put together they produce a qualitatively different result from only the single particles put together with only an electromagnetic interaction. For instance, under exchange, interchange of frames: $\mu \leftrightarrow \nu$ creates a $\pm\Lambda$ relativistic frame difference on ∂ and Γ . Hence reciprocation is predicted with exchange, along with an energy difference of the singlet and triplet. This implies that reciprocation of quantities is one to one with inertial motion and this is one to one with an inertial electromagnetic force, which is in turn one to one with the Meissner Effect. However, the energy of the total system is lowered or raised under mutual acceleration by the presence of the extra Λ_ν which leads to the different momenta as operators producing an algebraically different result from their simple sum when operating on the wavefunction.

Hence, inertial motion is consistent with conservation of the exchange energy (through the cancellation of the distance dependence and inertial quality of the electromagnetic force) and reciprocation of spin and orbital degrees of freedom. We can conclude from the mere fact that spin-orbital reciprocation takes place that the exchange energy is conserved and one to one with the initial statement that the equivalency principle holds for the force law holding the charges together. Hence, a non-dynamical difference in the exchange energy can be seen as an outcome of the inertial property, or the inertial property holding true can be seen as an outcome of the exchange energy developing a difference, but neither can be proven entirely by independent means. Finally to note is that this has an implication for general relativity as a reaction, for when the transition to the superconducting state takes place its mass lowers, invoking a complimentary raising of general relativistic energy. This, in its general form, is what reciprocity means in

the end. For the gestalt picture of quantum mechanics and general relativity produces changes in each, which are complimentary, because the general relativistic modification of the quantum description, lowers the quantum energy, and it raises itself.

Pairing and Condensation

The connecting principle that implies Δ_p is at a maximum when Δ_c goes to zero, and vice versa can be explained by two facts:

1.) *When particles fall into pairs they become more localized in the orbital degree of freedom, hence their relationship to one another is a **larger boost apart** between the holes comprising distinct pairs.*

2.) *The electrons and lattice **counteract** both the condensation and pairing with a resistance to an expansive force at low doping and to a contractive force at high doping. The electron sea and lattice that exists works against pairing and condensation, while remaining of equal localization to the holes.*

The density of electrons exists in proportion to the localization of holes and electrons (or inverse to their spread) and hence is also proportional to pairing strength. Simultaneously, the outward force of the pairs accelerates them apart, leading to a condensation strength that is proportional to the density of holes. Thus the inter-pair boost is largest when the density of holes is large, explaining a large condensation gap at high doping, and the inter-hole boost is largest when the density of electrons is large, explaining a large pairing gap at low doping. Hence the two processes of balanced forces and distinct effects of the electrons or holes are at odds, yet the force inwards must balance the force outwards.

As a consequence there exists a range of doping intermediate between the extremes where superconductivity exists and it must fall off to both sides like a semicircle reaching zero because the electrons and lattice counteract the condensation force at low doping with a net contractive force of electrons with the lattice, and pairing force at high doping with an expansive force due to the large number of holes.

Since condensation may be treated as the change in orbital localization due to relative frame, and pairing may be treated as the accelerative parameter due to the localization (inverse to the spread of the wavefunction), the net effect is described by the energy lowering being the contracted factor of:

$$\begin{aligned}\Delta &= 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} \\ &= 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J\end{aligned}\tag{2043}$$

This is because the factor of Λ_{ν} is the factor corresponding to the boost leading to pairing, and γ^{ν} corresponds to the *excess* energy lowering from relative frame due to change in the boost parameter by acceleration into pairs. This is thus a factor multiplying the accelerative frame difference corresponding to the pair energy as a relative boost between pairs of the condensate. If it goes to unity then the energy of the condensation gap is zero, while if the acceleration goes to zero then pairing vanishes. Everywhere the gap is the constant of $4J$. This interval of superconductivity occurs when the lattice plus the electrons that exist balance the force outwards of the condensation and the force inwards of the pairing, but since the force is nonzero, and it

acts through a distance by the effect of length contraction, the holes experience a net energy lowering intrinsic to the material.

Introduction To Superconductivity

The High Temperature Superconductors consist of planes of antiferromagnetic spin texture that when doped create a material capable of phase transitioning into a superconducting state. From this it is reasoned that a spin field must be incorporated into the model. The generation of a spin field, and the interaction of the net momentum with the electromagnetic field are then considered, as well as the implications for a covariant generalization of quantum mechanics in the setting of this field of spins, with the question in mind: "How does the eigenstate condition change in the context of a model which incorporates a field of spin and an electromagnetic interaction?"

This is shown via the covariant differential to lead directly to the principle of a reversed potential between particles interior to a superconductor. From this it is argued that an effect of mutual and relative curvature arises between charged particles in the spin field by way of the electromagnetic interaction. As a whole this description is predictive of pairing, the diamagnetic effect, the condition of zero magnetic field interior to a superconductor, and the gap. It is established that the states internal to a superconductor are in inertial freefall with respect to the spin field and under the influence of the electromagnetic potential. From this, we must move to a new viewpoint where the variables of spin curvature momentum and orbital momentum are treated in a manner such that they are in a non zero-sum relationship.

The attractive interaction in superconductivity and gap is motivated by the displacement of and reciprocation of quantum mechanical particle only orbital energy momentum and spin curvature energy momentum under comparison of different accelerative frames with the presence of an electromagnetic potential. The frame difference under acceleration by the electromagnetic field is found to amount to the effect of a lowering and raising operator under the covariant two particle Dirac equation in the presence of a spin field, which explains the appearance of a pairing gap, while the condensation gap is given by the reciprocal process of motion of charge pairs apart. If we take as knowns that there is a generally diffeomorphic transformation of our coordinates for a given system, then position and momentum take on new values, and with an acceleration there appears a coordinate anomaly. This coordinate anomaly is the residual effect of scaling by an unknown factor now known as:

$$\beta \tag{2044}$$

That this appears is indication that we have not instantiated the equivalence principle, and when we do, we find that the coordinate anomaly appears as a geometric factor analogous to a force, as in general relativity. These transformations of momentum and position to their generally covariant representations with the equivalence principle then imply that there is a gap, because different local inertial representations will differ under the auspices of a singular global description.

That this effect of different is not removable, implies that general relativity, and the theory of superconductivity are real physical phenomena, and not artifacts of our description. They are genuine effects of the lack of a local to global translation of general covariance, and implicate a gap. For instance imagine a series of elevator experiments around the world, and out in space.

Enough force is applied to any of the elevators to make it such that they each feel one g of acceleration, as if on earth. If we make them numerous enough and equivalent to the mass of the Earth then the effect is a series of up and down motions as if the Earth were still present.

When we remove the constraint of support, they will evolve in an identical manner to the electrons in a superconductor. But because for a different observer there is no global agreement on local inertial frame, it will be the case that there will arise a difference in description for the local frames. They will not differ in their local description of physics, but relatively there will be a gap that appears for any one in relation to the singular global averaged description.

Hence we arrive at a situation of global to local difference in description arising at differences in weight, and consequent potential felt by the electrons, binding them together. It is precisely these four things:

- 1.) Covariance over \hbar .
- 2.) Shared proper time.
- 3.) An instantiation of the equivalence principle.
- 4.) A difference from local to global description of free fall.

That make superconductivity real in the high temperature superconductors. It is the difference from local to global frame of description that creates the suitable conditions for a gap to arise in superconductivity.

The first statement of this problem stems from a question: *"How does the equivalence principle manifest in superconducting magnetic levitation and free space interaction between a magnet and a superconductor so as to maintain the Meissner effect?"*

The first given accords with the equivalence principle, and the second with quantum mechanics:

- 1.) The speed of light is taken to be an invariant fixed quantity, known as 'c'.
- 2.) The Meissner effect is taken to be the absolute diamagnetism of superconductivity.

This admits us to make a few conclusions:

- 1.) Non-Inertial support or accelerative frame:
 - a.) Under the provisions of a curved gravitational field, the system is static.
 - b.) Under the provisions of a non curved accelerative frame, the system is static.
- 2.) Inertial free fall or free space:
 - a.) Under gravitational free fall, the system is static but inertial.
 - b.) In free space, the system is static but inertial.

These are supported by the notion that: Due to the dot product of magnet with superconductor being a pure scalar, the dot product must remain fixed. For if we presume there to be a differential, we find that either energy conservation in the frame of the superconductor or magnet are violated if the dot product is not preserved under the presence of a gravitational field, or it also follows that if the dot product is preserved, but the differentials are opposite, there will be a

violation of the Meissner effect.

This is consistent with the laws of electromagnetism, whereby a changing magnetic field from motion will convert into an electric field curl and therefore a changing magnetic field of opposite nature. Thus the nature of the Meissner effect and energy conservation are only satisfied if and only if the differentials of these quantities are zero in the case of static levitation or non-zero but equal and opposite in the case of inertial separation in space.

Thus we find that if the motion is inertial, and gravitationally free, the magnet and superconductor will separate conserving energy and momentum and preserving the Meissner effect in a Lorentz invariant fashion, and if the motion is non-inertial and accelerated, with or without a gravitational field, the effect will only be satisfied by the inclusion of general covariance, for which the Meissner effect can be seen as a prediction and a consequence.

Thus we can surmise that in general a magnet and superconductor interact as if the magnet's magnetic field is the displacement of a generally covariantly evolving electromagnetic field, and that in general the motion is inertial, as the generalization of the static property of the system. Finally we find that if the electromagnetic field displacement is equivalent and opposite by virtue of sign compared to the gravitational displacement, a magnet and superconductor will remain static at any distance. It follows that if a superconducting magnet system is appropriately established, there will be an inertial orbital mechanic analogous to the motion of the Moon about the Earth.

Superconductivity

The superconductivity described here is that of the high temperature superconducting compounds. These compounds illustrate very high critical temperatures and are usually spin based systems, found by doping oxygen or another atom into the material. This oxygen in certain materials known as antiferromagnets causes the planes of spin which are predominantly electron occupied to adjust such that they give up electrons to the oxygen doped into the material off of the plane, leaving behind holes in the antiferromagnetic plane.

These holes fall into pairs and condense under the right conditions of temperature and pressure to form a state of superconductivity. This is explained in the conventional theory by the presence of a 'gap' to excitations from a state with zero scattering, and hence zero resistive losses to the flow of a current. In addition to this infinite conductivity under certain conditions, there exists a quantum mechanical effect known as the "Meissner effect", whereby a superconductor will expel any existing magnetic fields once transitioning to the superconducting state.

This is not the same as simply infinite conductivity because if this were all that held true then a material cooled to transition in a magnetic field would retain currents and hence there would be a persistent magnetic field interior to the superconductor. However, what really happens is that the field is completely expelled. The magnetic field being zero interior to the superconductor is definitional of the superconducting state through the Meissner effect.

Antiferromagnetic Materials

An antiferromagnetic material is a magnetic material that is defined by two sublattices of oppositely pointing magnetic moments that when perturbed convey magnetic moment waves which are capable of traversing from one side of the material to the other. Antiferromagnetic, as well as magnetic materials, (distinguished by two or one predominant Neel vectors) depend not on the alignment of magnetic moments, as one would presume naively, but because this interaction is too weak and cannot explain the observed Curie temperature (the temperature at which the material loses its inherent magnetism). From this, the exchange interaction is the real reason explaining the magnetic interaction and persistence of a magnetic field to high temperatures.

The exchange interaction is an interaction whereby electrons are shared in covalent shells among the outer layers of their atomic models. These orbits accompany more than one atom, and the electron is said to be shared. When this occurs, electrons can couple to the dynamics of either atom for they are coexistent on multiple atoms. Due to the Pauli exclusion principle, they may not occupy the same atom at the same time with identical quantum numbers.

One of these numbers, the spin, does accord with the magnetic phenomenon and gives rise to an accompanying magnetic field on the site the electron is located on. But, as for the nature of their spin alignment, there is a small or weak magnetic contribution and a large or strong coulombically produced exchange. This coulombic exchange is the integral of the antisymmetric contribution from occupancy on the same atom with opposite spins, which gives rise to antiferromagnetism.

In other models, the non-valent electrons laying underneath the sea of mobile and valent electrons give rise to cooperative ferromagnetic alignment from on site repulsion. This means the atoms only possess for our interests one electron per site when considered as a ferromagnet, but when considered as an antiferromagnet there is at least a duplicity to give rise to mutually defined directionality. What distinguishes a ferromagnet from an antiferromagnet is not only this mutual versus single electron occupancy of atoms, it is the fact that there arise two sets of Neel vectors. Neel vectors in space are directions which account for the predominant magnetic moment of a sublattice. These are associated in a checkerboard pattern with the underlying lattice and give rise to a different ground state from that of the ferromagnet, which has but one aligned Neel vector per domain.

Conclusion

Consistency is investigated with thought experiments involving a superconductor and magnet under mutual freefall and in the process of levitation. The parts of the system interact by way of fields, magnetic moments, and masses. Consistency with the equivalency principle under freefall of a levitated magnet requires the nature of the force to be generally covariant and the mass and energy changes to be null. The major conclusion of the paper is that of scale invariance for the measure of quantum probability to the measure of spacetime. This illustrates that the quantum viewpoint and the gravitational viewpoint demonstrate a mutual null mass change under levitation. This gives the first reasons to believe that the quantum and the gravitational principles share a null principle, excluding mass changes in either theory, and promoting the idea that these theories are in fact independent in some sense.

This helps explain the result of the EPR paradox [?, ?], because the nature of scale invariance, and

its consistency with general relativistic arguments explains why the result of the EPR paradox is not really in conflict with relativity, but rather a result of agreement. The interaction becomes completely instantaneous but obeys the equivalency principle and causality.

The nature of independence and dependence of these theories can be best summarized as follows: The representation and the object are in a sense distinct and different. This being the case, one can have a representation dependence that implies independence of objective objects, such as quantum mechanics and space time. The physical objects are independent in their physical and objective nature from the space time they are within, yet their representation carries a very clear dependence, for which its particular mathematical form is the expression of independence. In this sense they are both independent in physical reality and yet perfectly correlated in description or representation.

The theory of relativity, and indeed the extension of it into these physical problems is the essence of this division, for it makes clear that an objective and subjective reality exists for the parts of a given object. This property makes that which is ultimately most subjective (the aspects of relativity) very real representationally, and that which is most objective (the physical instantiation of a system, and the relationship of these theories to one another), of null change, or independent.

Thought Experiment

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity.

The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable from the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as the integral of a field of curvature:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (2045)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (2046)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space. For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect complete.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ . In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2047)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. If there is no equivalency we could attribute outside factors, if there is equivalency then Λ and Ω show equivalent and opposite curvatures. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (2048)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (2049)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero. Thus the Meissner effect and energy conservation can be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (2050)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2051)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \quad (2052)$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase. For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor. Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \quad (2053)$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z) \hat{z} \quad (2054)$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \quad (2055)$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \quad (2056)$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \quad (2057)$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \quad (2058)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma\mu f(z)\hat{z} \quad (2059)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma\mu f(z)\hat{z} \quad (2060)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at its location, equation (16). The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (2061)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (2062)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer. This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (2063)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present location:

$$v \rightarrow \gamma v \quad (2064)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned} \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 \left(\frac{v\gamma dt}{cdt} \right)^{2n} \\ &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} \\ &= -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} \\ &= -\mu^2 f(z)^2 \end{aligned} \quad (2065)$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \quad (2066)$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia. For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate

inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics. Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (7) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system. For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (2067)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. So we must hold as true that:

$$\partial_{\mu} \log(\Omega_{\nu}^{\mu}) = -\partial_{\mu} \log(\Lambda_{\nu}^{\mu}) \quad (2068)$$

This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general*

covariance within quantum mechanics.

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

Experimental Implications

This suggests two experiments. One to measure the rate of separation of superconductors and magnets under freefall, and confirm if this is a generally covariant acceleration multiplied by the metric. (This has been performed with a confirmation to one part in 10^{-12}).

And two, a practical experiment for confirmation of the general covariance of quantum mechanics. A magnet levitated to varying heights by a superconductor as controlled by a current, and subsequent measurement of the mass of the superconductor by photons in a transverse direction.

Introduction

Within this paper we describe a higher and lower dimensional theory of Chaos and Order from which resolves a Quantum Cosmological Principle of Thermodynamics coupled to General Relativity for Free Space; with the ideal that what is charge neutral and void of surface charge may exhibit a carrier force by it's presence adjacent another object. Whether this play's a role in Black Hole dynamics or of free objects in the vicinity of Black Hole's is an open question; however for a Superconductor and Magnet it quickly becomes clear that their behavior is warranted by that of charge and time reversal breaking; ushered on by that of displacement and Spontaneous Symmetry Breaking. The residual theory explains that because of a lacking of simultaniety and the independence of bodies, coupled to no tertiary witness; it is forced for either particle to obey Bose statistics together for the boundary condition usually at a naked distance of zero is removed to infinity in the dynamical breaking. This is furnished by the antiferromagnetic lattice and in diamond.

Relativity (Commentary)

In that of relativistic theory (Einstein et. al.) we learn that the spatiotemporal product is a Minkowski metric:

$$g_{\mu\nu} = \begin{pmatrix} +1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

Reconciliation with the Quantum Viewpoint is a matter of contentious debate; however it is as simple as the unitary freedom of cause from effect (and effect from cause) under the actionable

congruence of any two light like connected emanations of action & potential in similarity to a group cohomomorphism, that of *for what* would be the comparative analytical structure of two geometric spaces. Hence it is proposed the gestalt theory is **regular**.

Therefore one manifold (of any dimension) reduces to the action of a unitarily provided action potential upon another; to which silently the cause and effect relation hold's no barring on that of absolutism to certainty. For what is a deficit; it is compensated for in the secondary observation point of which is naturally (via this embedding) skew-Hermitian since it is off-centre. The residual by-product is naturally then a fixed locale between any two closures or opening of eigenstate *condition*. Therefore conditions are always adventured to a precept yet prior of an inseparable and exact inequality of fixed unconditional; the free class assumptive of which is a 'space' or a 'place'. From what is learned in primitive class structures; that of the development of a group from the special theory of relativity find's extension therefore in the reciprocal integral of it's naturalized mean invariance modal measure; to which may be extended for wave-packet's to a traditional phase conjugate relation. That of one factor; noted, is:

$$\gamma_o = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}} \quad (2069)$$

This derives by the interval compression (to be read as time dilation) by comparative assessment of conjugate tracing of beam to and from a moving mirror comparative to a stationary 'slide show' - but yet it harbor's no license that we need not *additionally* draw comparative the slide-show to a fixed interval of motion of mirror.

That of the integral mean is herein shown to be a naturalized assumptive to that of a dichotomy of racing clock's. Neither clearly outpaces the other in free unitary traversal of a space with time; therefore the theorem for gravitation is that the time dilated factor is reverse onto simplicially surjectively open to another's dilemmatic arrow of course when it is taken into account **re-action**. Therefore from inertia it is consist to treat the **Equivalence Principle** on the same footing of global situations *when there is the condition of locality as insisted for that of displacement to which comparatively the light is judged fixed to 'c'*.

The freedom of motion that results is justified by the counter to the '**Strong Equivalence Principle**'; to suggest that when inertial frames are known it is known a body is weightless; conversely all local points are subject to this constraint, but that is incompatible with human experience, for at rest I could be standing, sitting, or resting in bed. That of the inertial body resting on Earth or non-Inertial body at rest within it's frame (to which we would like to render adequate description); is the one in which 'a' support against gravity is valid and testable as this table, that bed, or the ground outside my apartment or home. That of for what is rest is therefore a condition of reciprocity in as much as when subjectively viewed *and not objectively known; a body appears to be inertially supported; or when objectively viewed and subjectively not known.

Thus it is that two for what is a given alternation viewpoints come into play. That of for-what there is of one manifest with the other as a reduction in one known as via a reduction in the other; or an emphasis in either to the nuance that is characteristic an-alternative-force. So it is that forces fall under the 'podal' or 'antipodal' category, and gravitation is classified as 'podal'.

This congruence is merely put that of the invariance of the measure of:

$$\frac{dx}{dt} \quad (2070)$$

For in a likeness of-the-objective **to and from light**. Therefore, that of it's cross-dissimilar relative bias is a dilation found to be congruent to the outpacing measure in yet a slower progression taken into even so minorly noted lesser mean congruence; therefore of a reciprocal factor on that of the simplicial bias; to which is bireflexive in either the attitude of cause to effect or attentional bias of effect weighted to cause. This is the same naturalized truth as of the geometry of space and time; and of quantum mechanics therefore in an absolute background of the ground of 'space' and of 'time' - a known present.

This function is merely derived from:

$$\frac{dx'}{dt'} \tag{2071}$$

For which dt has been weighted by γ instead... and is effectively what is taken with a frontface on that of *comparatively held assumptive reflected relativistic factor in subject and object 'contingent' duality*; to which is that of a then provoked difference in boundary. Therefore; from the theorem of displacement; that a conservation of source and sink fill a relation; it is found for in light of a dimensionally congruent relation of stochastic and non-stochastic order to be remitted; the classifying tool necessitates that of two onto group cohomomorphism's; that of a sub-contextual clue the residual of a finite analysis. That of two dimensional Hopf interrelation to bifurcative selection in two knowable pole's; that of for which the spin singlet diffraction grating experiment to spin 'up' and spin 'down' (isolated) hold's sufficiency. Therefore it is with respect to motion (for a magnetic field is invoked) that the mirroring of a contrast in torque, curvilinear curvature, and torsion is remitted to the domain of off-center mass-conjoint relation. That of the existence of a magnetic field throughout space is therefore a potential chasm to which unseparately divides the group of order and permeates the provision of a classifier on that of displacement interferometry; when combined at 90° and a provided TEM structure admixture is formed through quarter wave reflection with that of spin diffraction (neutron spin) - that of the provided sample shows a direct infinite penetration and removal of boundary with Dirac eigenfunctional valuation. Therefore; it is subsidiary that because a void exists 'somewhere' the division of another sub-teir set 'elsewhere' is provided of a gestalt void-order relation. This appear's as the simplistic rendition of the meaning of Dark Energy; fueling cosmic inflation; and contributing a full measure and mode greater than it's apportion in that of regularized **Earth based genesis**. This is a standard argument because time holds a privileged positioning with respect to a present; but that of the domain within it's genesis of Gravitation does not (and does not therefore for a cover under dissimilarity of group-product) hold a Euclidean boundary. Given a lens, the demonstration that derives from temporal compression unto dilation is reciprocal to the natural measure and unweighted measure between mass and light, explaining information and fidelity upon a physically sound foundation, for what is a derived and precept of derivational truth; that of one factor for in one factor. Thus a photon is traversing space at **no speed within the present**; and that of compensatory rate-mean-congruence of the quotient space in a manifold theory of gravitation hold's that the result is *unto light* matter 'fold's' to a mutual and lower-dimensional expression in three dimensions of:

$$\eta_o = \sqrt{1 - \frac{v^2}{c^2}} \tag{2072}$$

Thus cause and effect to chornological distinctions are ramified and empty of consequence; but remaining to conventionally intrinsically exist, then vaporous. The distinction is that unto light; the factor upon matter is **both**; in a matter wave of group and phase velocity; that of the relation that is kept intact; the contraction of a:

$$\gamma^\mu \gamma_\nu \equiv g_\nu^\mu \tag{2073}$$

In a conjoint parallel of matter for matter; the contraction of two metric's for either's subjective and three dimensional experience of the four dimensional higher submanifold of space and time. Thus it is seen in the simplicity of one theory for electromagnetism; the manifold serves as a carrier and coaccompanying carrier wave to isoinclinc and symplectic freedom of action. The contributions in the far Compton Scattering range therefore exhibit a pole invariant in co-extensive expansions of exponentials as Green's function's; but with the Freldhom Integral Invariant Formalism under Inverse Scattering; the depth of a wave-particle duality explores either co-adjoint end of unitary adfixture to the Killing field. This field does not uniquely generate a fixed foundation for that of the Unitary surveyance of state's; and dis-entangles the known perplexion of one field for the freed and unfixed variant of it's then-conjugate field invariant; that of a Quantum Mechanics; separably plausible. The integration of the two theories is as simple as the connective to which:

Opening Lemma: *The results of calculations of quanta are irreflexively independent and covariant with respect to the results of relativity when general. The asymptotically held opening of a freed action invariant is locally and globally defined; consistent with the simplicial and isoinclinc field invariance in the irrespectively freed gravitational metric. Thus electromagnetism decoupled or coupled to gravitation is reactively determinatively open to a continuum of free radical superpositional influences that are idempotent and of a solid consistuent of two invariances. The freed invariances are purely geometric (in and of no third witness) and decoupled to all energy scales; but as in a mirror; the results of quantum mechanics reflect the isometry and character of a gravitational metric. These conditions of cause and effect are free of it's form and shape, an auxiliary-three witnesses among four; at invariance with that of dialectical incurrance of a direct structure; and the development of a structure free modal and statistical mathematical background. Of description; mathematics therefore proceeds in literal but follow's in hypothetical (for expression of a generative foundation) that of the physical world; and is built upon it. When any dimension of a structural fault breaks or cleaves; the emptiness of what is sequentialization takes privilege to a theory and physical foundation (therefrom) - of - information. Therefore this world is built in simplicity to grant a geometric free language and determinatively free heirarchical structure rooted in a solid geometry with a novel linguistic translation. For what is E and mc^2 the light and matter modality invariances of relativity and quantum mechanics agree that translocational squared information complical relations devolve not only from the global need to the secondary literal local modal analysis; but that product's precede qualifiers on summation and that a naturalized congruence is two body. So in turn this requires merely a **return path** of congruences in empty relations of consequential conditional empty free geometric expressibility.*

Therefore; the advocated relation is that wherein a simplicial fault is exposed (or where a pole invariance takes form at the inverse form of γ - to explain as when the poles secondary to a boundary condition are contained with respect to a condition on the *spin* symmetry and *inertial-mass-particle* symmetry) that of the force between particles can reverse; and an envelope can open. That of the logistic equation in this paper will be shown to elucidate therefore an 'island' of **order**, where(in):

$$\Delta = -\sigma mc^2 \tag{2074}$$

This can be explained very simply as the residual result of a four dimensional theory in three dimensions; that of a 'sink' is pondermotively charged when a field is polarized; although the innate body is neutral.

The issue of determination of interactions separated via a distance is investigated; to which it is found that they obey 'The Principle of Complimentarity.' We postulate that interactions at-a-distance (to which we hold the refutation of coincidence valid) obey a lack of simultaniety and

are empty.

Unavoidability of Complimentarity

For that of the relation of the Quantal and Quantum unto the Relativistic... it is important to formulate a dialectic on that of first, reciprocity:

$$A \sim B \tag{2075}$$

To note that it is A that is subject to a potential via B, but it is B that imputes this potential... thus it is the electron is attracted to the proton by it's own electric field. We require this counter-intuitive result to explain that of EPR and among other things; the paradoxical relation of having an γ_o and η_o within a twinned mannerism. Thus Quantum Mechanics and General Relativity both make exception unto one another; and therein their reflexion is entire-agreement. The statement of emptiness of conchordant mannerisms of description is required to explain that of the binding of nuclei and atoms; as well as wave-function collapse.

Thus η_o is manifest precisely by that of reduction of the standpoint to which Quantum Mechanics holds a state-vector; to which is confirmable in Silver atom and grating diffraction experiment(s). That wave-function collapse occurs of it's own free accord is then the division by way of which measurement is founded. Without this, there is no-objective.

Introduction to Order

First; there are labeled two kinds of interactions:

$$\xi := C : A \circ C : A \rightarrow D \tag{2076}$$

And,

$$\zeta := C : A \circ B : B \rightarrow D \tag{2077}$$

With the identity, and emptiness of the identity as \circ ; we yield to the following equation as the embodiment of the natural embedding of two elements of ξ and ζ , in a co-affinity formatively of the precepts:

I: They are elements of the same algebra.

II: They share an identity (with)in each element.

III: Un(formatively) they are declared free.

Thus:

$$S * id_X = \eta \circ \rho \tag{2078}$$

The Arrow of Time: *" ξ and ζ are prohibited from coexistence as simultaneous processes via (& by) The Pauli Exclusion Principle; to which singular ordered event's are prevented from charge-parity-temporal inversion."*

One outcome (1) is the free [trivial] 'conjectured' **known**. One outcome (2) is that each independent element of reality is *a.) unique*, and *b.) provided*. Therefore η and ρ are taken as element's of

the ‘Constituent Algebra of Reality’ - and Ω is potentiated into becoming *the known* as ‘The Form of Identities’. This ‘Form of Identities’ is the base (univariantly connected or disconnected) ordering function for quantum and gravitational entropy, to which an order is a knowable aggregate
Functional:

$$(\Sigma * \Pi)\Omega(\iota) \equiv \Omega(\iota) \quad (2079)$$

This **functional** equation embodies that symbolically, any ordered function of a set of element’s is empty. In this we follow the signed convention that product space’s follow summation’s in the eigenbasis, this is the core of the paper. This ‘signed convention’ applies **locally** and **globally** to all of Physics.

Opening

To prove the hypothetical ‘Arrow of Time,’ that of the distinction of which we have *treated* formatively a **known** suggest’s that we hold the quality of emptiness formerly in the antireflexive relation and derive a potential held fast to the conclusiveness of either particle.

Hence the said instruction of ξ follow’s or trail’s that of ζ ; for in light of dispossession there is held an **Equivalence Principle** to which inertial mass is self-reflexively the gravitational mass and entropy indicator. For that of the unmassful relation; a hole is possessed of a lightness and negative gap for what this amount’s to self-reflexively within a given field for the *unconstructed* massful indication of identity to entropy for field slowed passage in componentwise categories.

Hence we hold that time may flow within a continuum (for the exception that is the appropriation of reflexivity to the anti-reflexivity principle for in either arrow of massful to lightness condition); from back to front or front to backward relation, and order is constituent of a free group radical supposition of the Indicated Calculus. Hence any two free field invariant’s are superposable and uncontained to which is the empty-free relation of a lack of simultaneous ordering symbolism and logical heirarchical structure; as well as discriminant orbit.

The Order is therefore twinned into a Hopf bifurcation for the sake that any one **whole** anti-node cannot progress beyond it’s given temporal progression; for it is formative of a ‘knot’ within the Klein Paradox. Given free idempotent identities propogate freely but within a Hopf bifurcation we have an automatic deducation of subclassifier into the necessary and sufficient conditions for a radical basis of the nature of summative heirarchical structure prior the multiplicative, in this pre-mature to a discussion of gravitation, for the cause is primary and precedes from yet an eventual consequence of which hold’s a negative idempotent character of coherent phenomena.

Therefore the gestalt relation is that two form one within the subtractive physical world; while within objectless remainder degree’s of the multiplicative geometric-pure mathematical world one form’s that of two; into an addition of which the world is formed of the impermanent character of residue of yet-characteristic classification’s collapsing. Hence two to one forms that of the freed nature of a radical and radical twin on that of the conjecture of a logistic branch in yet dimensional orbit-stacking; to which η and ρ form free unitary dimensional indicator’s in the forward direction of time; but within the past direction of time η and ρ hold a mutual classifier.

Hence the present is contained in either an object, it’s absence, or that of two; and within the relation of the future to the past, the present is contained only within that of the ‘permanence’ to two uncontained within two, to what is the undecidable principle of superposition, that the

dissection of the properties of an object's lead's reflexively to an identity (it's sufficient condition); and that of the identities naturally are reflexively-free given the presence of one another (the antihypothetical the necessary condition here).

Hence we find Ω is reflexive to a free identity of resolution and decomposition of the Affine Algebra, a situation, where because of the emptiness condition on rectification of logical heirarchies from-formation only that of the proportion and scale are free, within parallel subgroup's, continuous curves, and point like decomposition's within a 'web' of four dimensional space, although an infinite dimensional space of positive determinant is containable within that of this world within an interior-decomposition on compressible relation's of two-enfolded-in-three, it's hyperdimensional exponent.

For that of such denatured designs, the articulate drawing of a reference is atomistically the reduction beyond the conventional classical limitation of \hbar of the Quantum Measure of Resolution of Decomplexity. Similarly the speed of light is witnessed as the Relativistic Resolutional Determination of Rectification. To demonstrate this principle, a ruler or compass are only finite when they hold a pole and invariant, that of one residual ever-extensible mirror an artifactual witness, but factual to the determination to the compassed union of ruler or ruler(s); to what is that of either Rectification (appropriate for that of compass in parallel with ruler and necessary); and that of Resolution of Decomplexity the comparative ruling of a compass folded and apart in space.

Therefore this identity is asymptotically free, independent with bodies; to what is freed 'as from above' within the fourth dimension to a lower **exponent** (to which proves appropriate to a sufficient condition of measure). Hence when we seek the volative nature of measurement it is required to have both restrictive and freed relation's embodied within nature; to which is Positively Derivative of that of a direction of drawing and composition; - the combination of the necessary and sufficient condition to a theory of measurement; to which therein lies a skew to that of either, for in their interior 'magic angles' of permutation and degree-free and degree-less characteristic.

That of three is therefore formable; to which four hold's support as-a-dimension *in which* comparative designs may give leverage of insight to a factually determined background with direction of time. For that of the nakedness, the difference of ruler and compass is therefore that a point wide margin hold's a positive **Affine parameter** to which degrees are qualifiable in the **united** hyperbolic and spherical symmetry of the space. Indeed an undetermined topologically infinite barrier at the *quotient* of two, expressible within this world as the unification of the unquantifiable and a quantifier.

The active process of measurement is therefore valid as it remains as the only provable extension of a similar process to what we would take to be the basic element's of geometric reasoning when applied to dynamics; and the 'Arrow of Time' therefore the indication of the free-construction and indication of a point to which the entire physical world is conveyed as a **point** to the fourth dimension, and is so as quantifiable; the boundary of the universe.

Structural Division

The quotient space of the Unit Doublet is a rational or integer species with that of an integer or fraction; unto which the integer or fraction is 'shared' upon a foundation of a permutable basis

of rational and integer species of algebraically associated element(s). Therefore we associate the pole condition upon the group; and split the Fourier series into two decompositions. These are to take convolution within four dimensions and dissect into exponentials in $n + m$ and $n - m$ among the group; therefore of the Doublet; closure for what is yet-ahead the gravitational metric; unto which conditions of a shared quality in space and time determine 'which causes' through inference and deduction.

When the group is dissected for in light of the unit doublet; the circular domain can be instructed beyond the Riemann-Hilbert boundary problem of I.S.T.; and within a complimentary exponential to which reduces to a quadratic equatoin in η_o that of the parabola defined determines the portion of completeness of the Quantum Hilbert Space upon the Unitary condition. For what we example of testimony it is the following which leads to accrual of an η_o :

For in formentionable gift's of this world I have been proven in vaccuo of an insane bent in my Physics. This is the entire notion of an err that had been committed by fallacy in teaching. I have found that it is not in fact that of:

$$\frac{1}{\sqrt{1 - \frac{v^2}{c^2}}} \quad (2080)$$

But that this teaches of a comparative 'to' the fourth dimension and back to three - therefore it is incorrect; for we are embodied indeed within a four dimensional universe... that:

$$\sqrt{1 - \frac{v^2}{c^2}} \quad (2081)$$

Is correct is indeed within and 'of' the fourth dimension; therefore of a half circle; the completed period of a revolution; that mercury is 'deeper' in a gravitational potential; therefore it is ahead of us... this is the completion of the period; it is unarguable that the orientation is a non-inverse square rooted radical in velocimetric reduction via light unto the aperception of the fourth dimension!!!

Therefore Einstein had been mistaken; to describe gravitation as a reductive force; when it is in fact extrapolative and emergent; that of what causes freefall had been by-appearances upside down for him - in remark to Magritte...

So it is, I have found either 'end' of the yard-stick is a moment shorter by the spatial continuum; that this is not haphazardly or mistakenly found common to the third and fourth, second and first dimension... how else are we to propose?

Therefore; I have found that Superconductivity is put-shortly; the result of gravitation; a consequence of matter in suspension to a cause in reduction of a repulsion between electrons...

Mathematics

Affine Lie algebra is:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (2082)$$

Here; 'a' represent's energy-momentum; and t^m represents that of relativistic factor. What this equation represents is that mass is fundamentally reducible to a blind statistic of weighted-sum

and unweighted result. The recombinatorial dilemma is satisfied whenever (8) precedes (7). But (7) is equated with measurement and decoherence; therefore the summation precedes as order before result. That of this detection of 'order' under-pin's that the relation is sequestered of it's extension. That of the above equation therefore has as it's only solution's that of bounded polynomials in the Gauss-Basis. These prescribe to no tertiary determination; and once prior the precept implicating the secondary as primary notion of massful boundedness; but it is indeed the solution of the 'Massless Boson Theory.'

This encompasses an equivalence (twice-folded (relativity)) independence among three dimensions. The co-existence of a third dimension with a two-folded geometry of relativity therefore eliminates under it's equivalence class that of but one primary and one secondary independently neitherly imputed nor not; and to which is a given in supplience by the repetend of it's action. Therefore the third is free to inclusion at secondary precept in the auxiliary space (or interior such a net as this); and may be moderated with to the action of a five to four fold set within.

That of what is determined is the quotient radical; to which operates as a functional argument whether separated or unseparated. Therefore the freely (neither of these) held nor unheld determination of the auxiliary holds a foundation in reality; but is contradictorily the only thing determined within a 'place' - the saturable environment. Of relation's; it remains indeterminant as to if it is either 't' which dominates to the solution set; or of 'a'; for what is real; this stands as definitively a reduction via displaced integration constant of a subsidiary dimension. With this - appreciable 'order's' are imaginable yet contained within each given space & time.

In fact

$$(\partial m) = \delta \tag{2083}$$

$$(\partial s) = t \tag{2084}$$

Are separable into a conjoint union... the measure of the measured being comparatively exactly predictable... therefore science is on a solid foundation. This alludes to a partition; to which is to higher and lower spaces; the re-arrangement of two friends to what is a third. It is the exact outcome that re-arrangement's in third's commute; despite that of us existing within a fourth (proven) dimension. For I may take a piece of paper and write on it two conventionally non-commutative triangles; and these may be wrapped in a torus; to which they are at zero dimension commutative upon for the sake of identity itself. Hence the identity of forms is empty. This means that the above equation is the exact equality of the overlap of electrons in possession of the limitation (in fullness) of mass-regularization and that of simultaneously; no-mass.

The division expressed is the qualitative expression that rest mass and quantum mass do not differ. This is the confirmation that relativity and quantum mechanic's are null in consequence; consequence only being made up of ordered set's. Hence disorder upon re-arrangement holds a bias to order; that of the outward-outward from an interior force; and the walls of the cavity. That the second order Green's function of a two dimensionally swept arc is free of containment; is that it is a container to which the walls are in either a sub-cavity or that of a reservoir elsewhere; entirely free of one projection; they possess only **one particle past's**. But; and thus; the solution is unique; it is one of a general class of elliptic functions with exponentials; that of two dimensions must intersect to produce that of a solution; and although such a setting can be written; it is devoid of physical foundation; and for that of in-expressibility of number's.

$$\delta(mc^2 \otimes \eta^m + mc) = \eta \frac{d}{d\gamma} (mc^2 \otimes \eta^m) \tag{2085}$$

Is the simplified expression... in which the speed of light becomes *complex*... in this we see that the solutions are all either fixed - to which is connected within this theory - of the Hermite basis (Simple Harmonic Oscillator) or that of the Elliptic and Complex Exponential Solution... these are really the result isomorphically of an electromagnetic field in interaction with a charge density as well.. Thus it is the most general solution. That of the attempt at a two body what is two interpenetrating hyperbolic secant function's and exponential wave's. The conclusion is that the energy momentum is continually bound; and experiences a 'gap' for the sake of that of finite coefficient's to it's expression; or within what is two directrix; that of a manifold flow of a 'stream function;' to which percolation is freely scaled... that of the gap is manifest because there is a finite residual integral constant to that of δ and t .

This principle stabilizes every two-part system in the universe. With two bodies; instead of energy defining curvature; mass does... to which the eigenvalues of a system are composed; the net absence and presence of subsidiary layer's of a composition; to which is empty in the gestalt for that of being a terminal end; hence the future is a fiction. Any four or more; three; or two particles determine only a past; and that of three alone may determine a future while two always do; two determine a future; and two are the solid foundation of the world; for what is; pre-causation, & entirely surrounding the elemental zeroth dimension of a system; all that is required is:

$$\delta(x) \tag{2086}$$

$$\partial \tag{2087}$$

These in the above equation remain of a logarithmic nature of curvature; therefore two solutions are the above listed; to what is a diffeomorphism the curvature of a stream function does not play a role in it's dynamic's; all are freely held and unheld invariant's;... for where they are manifest; the origin it is *explicitly declared is not co-morbid with a point on the space; the universe is therefore closed*... This prescription; for that of two point's; render's the Cornu Spiral curvature free.

For in that of light of equivalence of meter and balance; an instrument of measurement capability (for which the role - direct - of observation is reversed to a null exterior-interior condition(al); that of one point in it's divergence is free asymptotically in the unitary group of thermodynamic and mechanical vibrations; all that energy is composed of is changing mass indexes and light indexes.

For what is two; the gravitational reduction and electromagnetic reduction diverge in a Superconductor; for while in the void of three and four dimensions; their substrata are seen but through a lens; the flow to which an equivalence of field and particle is founded on any two dimensionally existent hyperplane of intersection within that of a one dimensional arc; that of abstraction to a bubble like space; where in fact; degrees of separation are the meter; and the arc length area is the balance.

Free Evolution

The free evolution of what is one dimension lower and reduced prototypifies the three system's of Simple Harmonic Oscillator; Decaying Simple Harmonic Oscillator; and Elliptic and Complex Exponential... These are related by the Special Unitary Algebra and Superposition. This reduces molecular science to a study of interstitial guassians at any scale. The scale freedom is the support of which is supportive indeed by way of the freedom of proportional inter-juxtaposition and shape. Shape; has to do with the ordered system of form's of identities:

$$\Sigma \mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \tag{2088}$$

This is the generative drawn point of an identity; a particle's exact apportion of meter to balance and it's direction in space. The only rule for in that of dimensional reduction is that the above ordered distribution of states expresses the forms of identities in compendium in-exact proportion and shape with the forms of identities by the summation and what it reduces to for in light of the original identities. Therefore the solution is given by the solution of:

$$\delta(mc^2 \otimes \eta^m + mc) = \eta \frac{d}{d\gamma} (mc^2 \otimes \eta^m) \quad (2089)$$

This equation expresses that the first co-homomorphism of the prior in a series is an integral of separable scale of space and time. However; the equation is an identity which states that the capacity of inertia is defined by that of equivalence of scales and proportions; an exact expression mutually identical with (and anti-opposite) relativity; to which now; the prior identity is the given reconciliation of:

- 1.) Probability measurements and expectations from out of quantum mechanics do not depend on relativity.
- 2.) That of relativistic assignment proceeds via that of emptiness of qualitative impression in/of the composite.

Instead, we have that the form's of identities; to which are determined by a free associate in the third; and a strong coupling in the second; a hybridization below critical temperature; that of the cleaved domain find's particles residual within a separable position to what is the population inversion; the reason; this energy state is preferential. Thus order re-segment's into free particles with a phase transition; to which the caveat is that quantum rule (1) may outrule relativistic prohibition to measurement..

The class invariance of the group is therefore of it's determinant ordering of symbolism with two; for here the summation of two of these equations leads now to a superposition problem. They are linear (and yet co-exist within of what is any feasible curvature of the universe). What has really happened is that the manifold of uncertainty has warped around to connect with itself; a tube has become a torus; and the freely demonstrated chirality is dispossessed of; to what is the orientation free capacity of one of these crystals; the uncertainty principle and equivalence principle represent *this* nature of spontaneous symmetry breaking.

That of outward gravitational inertia is the net sum of mass-content's; the final determination of which is prediction of a mass or energy (alone) gap. This remains the final prediction; the conclusion of which is that mass is predicted to remain an invariant for the (reversible) return from the gap state; the elimination of integration; to which come(s) from the local behavior. Hence at it's base residual; a non-inertial force produces the superconducting state; but physically it behaves inertially.

In two dimensions or with two particles the world is therefore biharmonic; while the vacuum is harmonic; or in it's auxiliary limit; to which is that the form of identities remains fixed. This fundamentally expresses that outside is what is in quasistasis while the direction inward is biharmonic. Every particle state is in fact of two body form; to what is a doublet; all the interactions (& normal action re-action events) of the universe are therefore of the following form and unit doublet u_1 .

As can be seen; the manifold expression of a doublet and a circle are under an identity; then that it does not matter of which way the circle is directed in reality; it remain's of the converse lemma of an intersection of any two dimension's; that of a pure relation of identity within mathematics... thus the solution for the Fourier Transform holds fast a transcendental form for that of the normal ordered product of algebraic products of strings of digital $\{A, B, C, D\}$ without two-fold strand repetition.

Thus it is contended that solution of the one dimensional problem resolves the four dimensional problem for the argument of evolution within the context of uniformity as alike to what would be a holographic theory centered around circles, but with a doublet:

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (2090)$$

This is an identity of the Universe; and represents the difference a priori in that of $\delta(x)$; the Dirac delta function and ∂ the differential of a relation as P and S ; profunderance and synchronicity. when these interadopt to what is a differential of a delta Dirac function as the expression of the current eigenvalue. Gradations illustrate the pathwise motion is free; but for that of a superconductor they are merely free in two dimensions as a result of possession of an orbit; the real result dimensionally reduced as a wave-function; one degree of freedom is lost. Hence superconductors exhibit no magnetism; the result of a curl free sitation; for what is an antipode; the relaxation and permanent gap for in light of penetration of a vortex state; that of stationing with a free curvature and curvature under action and re-action by the simplicity of the above relation. That of the functional solutions to the above equation come in the three forms exhibiting a 'breather' envelope.

Therefore all 'ordered' relations become one dimensional strings; and the remainder becomes that of homotopic circles and points...

$$S * id_X = \eta \circ \rho \quad (2091)$$

Reality, space, time, & matter therefore possess a proportion and shape free gestalt; of a variety that render's the world empty of scale and composed of measureless point's.

Breaking the Mold

These would be the restriction's; were it not for an independence of the theorem of relativity and quantum mechanics. Thus, it is that we **go** to the relation of the identity in the Unit Doublet and the Affine Lie Algebra and find decompositions which *free* particle theory and the introspections at any *field theory*. That this is generative of a free algebra with few restriction(s) is telling; then that the world is found semideterministic becoming determined in each moment. The residual of the space; *however* is found to play a role in it's future evolution: *Read: Initial Conditions as well as the boundary condition's, conserved quantities, and constant's of integration.*

Thus it is determined that when η is an element of the Affine algebra, it exists with a left handed and a right handed copy of which are underlaint of different compact relation's. What is simply understood is that the translation from a higher dimension to a lower entail's that of inertia. What is non-denominational of this theorem in reciprocity is therefore that the constitutive relation in translation from a lower dimension to a higher one is semi-stable.

This entails that where(in) of one dimension η is defined; that of ρ in *another* dimension is the simple convolution within an infinite dimensional algebra of what-is real projected to integer classification per-a-differential equation in the ordered space, relatively and empty of a product construed as a *form*. Thus *form* is-identity and that of relation for what is it's pole-invariant a classification at the residual isomorphism class invariances of a differential equation. This has the byproduct relation that pole-invariances form the relation of identities of the conserved quantities; then that differential *whole* relation's *may also optionally be taken* to be construct's of the *stability matrix of associated quantities*.

The derived notion is a classification of the **whole** determinant Lyapunov exponents and the constituency of ordered conserved quantities *within a Stochastic classification rule-set*. This is often referred to as a Dykin diagram or such, or a Kac-Moody Algebra; - and that of what is the notion at ordered relation is the deriving notion of *which* Spontaneous Symmetry Breaking will indeed occur. There is - without this - no known notion for the organizational heirarchy of the natural forces other than a brute force stability analysis of their Real and Imaginary cut's and pole-invariances. Thus field theory can be appended to describe real-world (and macroscopic) dynamics.

Treatesie on Fourier Analysis

It is necessary to prescribe a method for that of *analytical treatments* that we reduce the problem of four dimensional calculus to one and one dimension. Later we will find **explicit** declaration of the manner in which this 'newly cast' relativity is unique and necessary for the completion of the law's of physics. For now, it is understood that the algebraic properties of the space and field be met with convolution theorem's on Fourier Analysis. Thus, the following properties are determined:

$$\int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} = 2\pi\delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (2092)$$

$$\sum_n \sum_m e^{+in\xi} * e^{-im\xi'} = \delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (2093)$$

$$F_{n,m}(\xi') = \sum_n \sum_m e^{+in\xi} * e^{-im\xi'} f_n(\xi) f_m(\xi) \quad (2094)$$

$$f_n(\xi') f_m(\xi') = \frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) \quad (2095)$$

Where:

$$F_{n,m}(\xi') = \partial_{\xi}(f_n(\xi) * f_m(\xi)) \Big|_{\xi=\xi'} \quad (2096)$$

Thus we hypothesize a quantity of form:

$$V_{l,k}(\xi) = f_l(\xi) f_k(\xi) = (\alpha_l \xi + \tau_l)(\beta_k \xi + \iota_k) \quad (2097)$$

To find that of the following statement as-an-ansatz:

$$V = Z_{l,k}(\xi') I_{0,T} e^{+\frac{V_T}{\tau_T}} + Z_{l,k}(\xi') I_{0,D} (1 - e^{-\frac{V_D}{\tau_D}}) + r \quad (2098)$$

Thus:

$$F_{l,k}(\xi') = \beta_k(\alpha_l \xi' + \tau_l) + \alpha_l(\beta_k \xi' + \iota_k) \quad (2099)$$

So:

$$V = Z_{l,k}(\xi') F_{l,k}(\xi') = Z_{l,k}(\xi')(2\alpha_l \beta_k \xi' + (\beta_k \tau_l + \alpha_l \nu_k)) \quad (2100)$$

But:

$$-\frac{V_T}{V_D} = \frac{\tau_T}{\tau_D} \quad (2101)$$

So that their curvatures are equivalent... then with an imaginary impedance:

Now, we have:

$$\tau \log\left(\frac{V - r}{2I_0 Z_{l,k}(\xi')}\right) = V \quad (2102)$$

Under the assumption that $V - r$ is matched in linear term with that of the first part of ZF we have:

$$Z_{l,k}(\xi')(2\alpha_l \beta_k \xi') = r \quad (2103)$$

$$Z_{l,k}(\xi')(\beta_k \tau_l + \alpha_l \nu_k) = V - r \quad (2104)$$

So that:

$$\tau \log\left(\frac{\beta_k \tau_l + \alpha_l \nu_k}{2I_0}\right) = V \quad (2105)$$

Application of the ansatz reveals:

$$\frac{\beta_k \tau_l + \alpha_l \nu_k}{2I_0} = \frac{\beta_k \tau_l + \alpha_l \nu_k}{2I_0} + \left(1 + \frac{2I_0}{\beta_k \tau_l + \alpha_l \nu_k}\right) \quad (2106)$$

Or:

$$1 + \frac{2I_0}{\beta_k \tau_l + \alpha_l \nu_k} = 0 \quad (2107)$$

So:

$$\beta_k \tau_l + \alpha_l \nu_k = -2I_0 \quad (2108)$$

With the result via earlier substitution that:

$$V = -i\tau\psi(\vec{k} \cdot \vec{x} - \omega \cdot t) \quad (2109)$$

Such that gain is unity and we have saturation in the quadratic ZF ; and such that the wave is orchestrated equivalently between (and of) transistor and diode.

Thus $V = IR$ is resolved via the original ansatz; with R a linear function of the harmonic pole; that of I a function of the pole, and V a quadratic. When these details are worked out it is found the transformation produces a first differential in time for IR and in space with the two of transistor and diode; and then in space with the capacitor and inductor r ; and in the squared rendition for capacitor and inductor and a separable V of quadratic nature... Thus there are two displacement's in the system.

Substitution into earlier equations with the provided ansatz at the operational amplifier reveals:

$$R \frac{\partial V}{\partial t} = V_{l,k}(\xi) + r \quad (2110)$$

With:

$$r = I_0 \frac{I_{L1}}{I_{L2}} \frac{L_1}{L_2} w + I_C \frac{1}{C} + \frac{1}{R} V_{l,k}(\xi') F_{l,k}(\xi') \quad (2111)$$

But the inductive element for of current differential to voltage difference may be written as:

$$I_0 \frac{I_{L_1}}{I_{L_2}} \frac{L_1}{L_2} w = I_0 k^2 L_0 \frac{\partial^2}{\partial x^2} \psi(\vec{x}, t) \quad (2112)$$

Therefore, we get:

$$-i\tau R^2 \frac{\partial}{\partial t} \psi(\vec{x}, t) = R\kappa^2 \frac{\partial^2}{\partial x^2} \psi(\vec{x}, t) + \frac{R}{C} \frac{\partial}{\partial t} \psi(\vec{x}, t) + V_{l,k}(\xi') F_{l,k}(\xi') \quad (2113)$$

With τ , and ι in unit's of voltage [**v**] and α and β , unitless... ξ in units of voltage [**v**]. We now utilize F for that of the differential of the impedance comparative to the voltage; it is parallel; for in that of voltage division; thus the impedance is indeed $\frac{F}{R}$.

$$\frac{\partial}{\partial t} \psi(\vec{x}, t) = -\eta \frac{\partial^2}{\partial x^2} \psi(\vec{x}, t) + |\sigma \psi(\vec{x}, t) + \Lambda|^2 \psi(\vec{x}, t) \quad (2114)$$

And with the *resulting* constraints:

$$\eta = \frac{\kappa^2}{i\tau R^2 + \frac{1}{C}} \quad \sigma = \alpha_l \beta_k \quad \Lambda = \alpha_l \iota_k + i\beta_k \tau_l \quad (2115)$$

We may re-scale the parameter's as follow's... Setting:

$$|\sigma \psi(\vec{x}, t) + \Lambda|^2 \psi(\vec{x}, t) = |\sigma \phi(\vec{x}, t)|^2 \phi(\vec{x}, t) \quad (2116)$$

We obtain:

$$(\sigma^2 + \sigma\Lambda + \Lambda^2)\sigma = \sigma^3 \chi^3 \quad (2117)$$

To which with $\Lambda = \lambda e^{-i\theta_l(\vec{x}, t)}$:

$$\chi^3 = 1 + \lambda^2 + \lambda e^{-i\theta_l(\vec{x}, t)} \quad (2118)$$

Apparently, there are three kinds of charge; to what is two in phase mirrored relation via the potential Λ ; and that of one with the majority or minority charge... Whether for example:

$$1 + \lambda > \frac{\sqrt{3}}{2} \quad (2119)$$

The relationship to symmetry breaking appears intimate and must be studied later.

Fundamental Principles

In order to investigate a potential factoring of the two body electron equation into which the problem may be cast or dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which there is escape from the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions. We prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave and frame descriptions of two particles; to which belong to differing descriptions and frames; denoted by \sim or $-$:

Principle of Equivalence (**Parsimony**):

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \quad (2120)$$

The first equation here describes the addition of velocities into which sum to a finite difference in an externally situated point of measure and reference; it's dual being the comparative equivalence of measurement 'weight' of probability density in differing descriptions of any two bodies by which they combine additionally. The second equation is for that of velocity combinations in their own frames (under their congruence), which afford for extra proportionality of either given intermediary time dilation contraction effect (here denoted σ); it's dual being the comparative inequivalence of subtractive combination of probability densities. Together, this is nothing more than the equivalence of references of vantage for any two particles:

Principle of Inequivalence (**Synchronicity**):

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \quad (2121)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is a seamless transparency of beginning to end of logical union of motion; with an interior dilation contraction factor owing due to their (shared) comparative proper measurement of time.*

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a 'free' substitution which forms either given difference of that of perspective and vantage; this is that which forms the uniqueness condition of that of any two point like limits of relativity **or** quantum mechanics; for that of each such principle equivalence of time, probability density measure and principle inequivalence of co-determinism of the speed of light.

The general consequence and implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassing of either of two subcomponents of the alternative exterior difference is constructible as a geometric congruence.

Therefore with general functions:

$$\alpha + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\bar{\omega})) \quad (2122)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any given measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature. Therefore considered together these two imply the equivalence of results under parallel interchange of particles:

Principle of Measure: *Either one (**Parsimony**); or both (2) (**Synchronicity**); given absolutely relative and arbitrary limits of independent co-determinism of shared point-like relation(s) of proportion of measure and extension of quantum and relativistic argument agree to (a) given variety of non-locality and exist for any two given bodies; to which with but one; a given beginning or end congruent relation is empty of measure and extension; the implication of which is that measure is certain (**Parsimony**) and measurement is only at most semi-deterministic (**Synchronicity**).*

Relativity Theorems

To comparability there are two given's in physics with *displacement* as the proof:

Parsimony: Comparative measurement with reference to what is measured.

Synchronicity: Measuring with reference to what is performing the measurement.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

$$\gamma_c > \gamma_m \quad (2123)$$

Property of Light Variance: *The speed of light in being fixed to a universal standard; implicates that all such durations under conversion are identical with and greater than that given by the speed of light universally; for the property of dilation is obverse to a measure of fixed relation.*

In this, γ is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity) precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path at motion. This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated). Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other observer, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence for the two body problem.

The conclusion of consistency for that of self conclusive closure is defined by that of what can be defined as a 'bottom' extremum beyond which the measureable extension of a once locability but sublimates a given limit of enclosure unto it's a; each; or given domain of closed relation for that of what is potentiated when there are two fundamentals in mathematics as in the physical world; of an entirely geometric reasoning for which there are solid, fluid, or transparently passable given's of nature; for which that of what is foundational when reasoned is determinant only when a descriptive purpose is met.

Therefore there are two fundamental limitations of physics at the bottom; in order for there to be any self or other consistency of descriptive means in mathematics as in physics; of articulation:

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of system of units to that of the system of conversion of circumference to perimeter; as an areal relation to that of pointless given limitation of interior domain; with equivalence to that of a measure of units of the system for which the standard is inequivalently proportioned exactly. Therefore the given holds as true; that:

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2124)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

Ideal Principle Equivalence

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is an invariant speed & the observed's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) **Quiescence** (Light is Quantum Mechanics):

$$\partial_{\alpha\beta}^{\gamma} \Theta = \Theta_{\alpha\beta}^{\gamma} \quad (2125)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name Prescience.

Conclusive Remark on Space: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) **Prescience** (Gravitation is Space Time):

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (2126)$$

This is the given statement that of either given separability of philosophical inquiry into natural law is of similarity to coherence of algebraic expression for that of when similarities of mathematical expression derive of or from a common relation of order.

It is therefore true any two quantities of measurement and measured are coextensively null in measure by that of indivisibility of algebraic expression as independence of property from quality with the given as the expression of null indistinguishability invariance:

$$\zeta\chi = 0 \quad (2127)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (2128)$$

As an algebraic free projection of any vector into any one form of geometry of null displacement invariance and null indistinguishability invariance; the general and full expression of a principle equivalence with a general null covariance is expressed as a relative principle inequivalence.

The first equation is the:

Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2129)$$

The second equation is the:

Principle Inequivalence:

$$\eta\rho + i\sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2130)$$

Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union.

Therefore:

$$\alpha + \log(g(\bar{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (2131)$$

Therefore considered together these two imply:

Final Theorem: *Either one; or both (2), given impenetrabilities and absolutely arbitrary limits of independent point-like relation(s) of proportion from out of electricity & magnetism to (a) given variety of non-locality exist(s); for which but one; beginning or end congruent relation is empty of boundary condition.*

Exchange Locality Theorem

First; we need phenomenological reason to believe that a composite factoring of the two body equation occurs in the first place; the foundational reason of which is provided by relativity.

To begin we identify a given admixture of partial differential following the principle of a connection to a given here ultimately knowable quantity; that of a placeholder for what is conventionally known as spin; the entire property of which is a free electron inertial field. This is entirely consistent with the interpretation of what an electron is; and what properties it has. The idea here is to factor the equation in a different manner; owing due to phase and conjugate phase freedom from the logarithmic identities of principle equivalence and principle inequivalence provided.

With the statement of symmetry:

Statement of Symmetry: *"Extrinsic modification to an equation under antisymmetry of operators and symmetry of operators have intrinsic interior symmetric and antisymmetric parallels under operation of exchange of a particle with a pair field."*

Under these provisions the properties of a two body particle and field equation are decomposed; seen alternatively as a completeness for one particle and a replicated particle and partner field.

The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (2132)$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2 + \sigma(t))\Omega(\alpha, \beta) = 0 \quad (2133)$$

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (2134)$$

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field of inertia:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A \Psi_B = 0 \quad (2135)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2)\Psi_A \Psi_B = 2im\gamma^\mu D_\mu \Psi_A \Psi_B \quad (2136)$$

The gap remains as variant and free yet as commonly dependent on the differential. To note is that when all electron inertial energy momentum is absorbed; particles become anti-particles.

$$(i\gamma^\mu D_\mu + m)(i\gamma^\mu D_\mu - m)\Psi_A \Psi_B = \Delta \quad (2137)$$

Which means that two electrons are the generator under the anti-commutation and commutation relationship of their subsidiary operators of a notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reductions in energy at the relativistically accommodated energy level of the energy momentum of either one such particle apart.

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron in motional inertia.

The interior and effective representational algebra of the raising and lowering operators for the spin eigenstates via their commutation relationship representationally instanced is generative of a necessary coordinate connection that is representative of a weak effective artifact of Bosonization when exchange is considered simultaneously to its consequent effective spin flip and therefore physically for two Fermions under exchange with both types of variable, and thus; exclusively when the effects of the absence of a tertiary or privileged observer in relativity are considered. A way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli exclusion principle as fermions.

1.) *Rotations of the electrons upon the spin of the two electrons under exchange are clockwise and counterclockwise when viewed from above or below.*

2.) *These rotations are generative under exchange of an effective raising and lowing operator upon their individual spins by the commutation relationship of the spin algebra.*

3.) *Relativity holds fast to an objective artifact of relativistic frame transformation which is inertial in both frames of the electrons and there is no substantive existence of a tertiary or privileged observer.*

From this it follows that the interior phase gauge symmetry is broken and a coordinate dependence to the orbitals occurs that must be compensated for in the two body Dirac equation.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (2138)$$

1.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that would violate the Pauli exclusion principle unless it is corrected for the sake of global to local relativistic considerations.*

2.) *Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli exclusion principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a weak bosonization of the states.*

Proof by Dual Contradiction

As proof of this, consider the exchange of the spins or orbitals as separately from one another. We have illustrated a methodology by which they are representationally and therefore physically strictly dependent upon each other as upon coordinates.

As a result, neither wave function would be a complete eigenstate with both symmetries, and thus as a result of this strict dependence in the coordinate space, in order to adhere to both the Pauli Exclusion Principle and be completely antisymmetric in both spin and charge as attributes of the wave function both locally and globally within relativity under the objective provisions of an inertial state compared to an inertial state, it is necessary that the coordinates are corrected for so that the total eigenstate in spin and wave function under exchange are totally antisymmetric in space and time.

This is true because the global to local objective position of both electrons within inertial states is in conflict with the provisions of a physical and representational coordinate dependence for spins.

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

This can be seen most simply by way of the analysis of the eigenstate picture. If by contradiction, the spins and orbital motions were strictly dependent, then they could not be simultaneous eigenstates of the wave function and spin in the two body Dirac equation both locally and globally, and therefore there is no satisfaction of the Pauli Exclusion Principle, unless this dependence is corrected for.

Take a given eigenstate of momentum in a circle. It produces two prescriptions for the spins, and generates a dependence between them that is not a complete eigenstate in the Dirac equation separably for spin and momentum when it is considered that there is a strict dependence of spin

upon momentum of an orbital variety in the global to local picture. While it is true that the spin and momentum are a complete eigenstate for the dual electron Dirac equation as it is written for each individual electron, in the two body Dirac equation so must they be complete eigenstates comparatively, yet each orbital motion alters the spin representation physically between either of the two electrons in such a manner it only holds as a local spin representation eigenstate.

As a result of the eigenstate not being a complete eigenstate in spin for both orbital motions, under the guise of a global to local symmetry for both eigenstates of orbital motion, it holds that either the separable groups of spin or orbital motion are not comparatively complete eigenstates individually for either variety in the net wave function and spin picture for the dual Dirac electron eigenfunction.

As a result of this, it holds true that in order to have an eigenstate that is a complete eigenstate in both spin and orbital motion simultaneously, there can be no dependence of spin on orbital motion, or at most a correction must exist for both of these to remain eigenstates relativistically, otherwise there is no simultaneous eigenstate globally, comparatively, nor locally, between the two electrons.

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in something of a product relationship in the conventional Dirac equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the Lorentz invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the Hilbert space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states.

There are two operations that are mutually exclusive to be considered. From the perspective of one electron within its own state, the other antipodal electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, but while preserving the contravarying and covarying contraction.

The state where the magnitude differs by a scale and its inverse, for what was an eigenstate a priori will no longer be one for the projection of the spin portion of the eigenstate and that of the orbital will not meet the product relationship locally and globally. However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence their projections into each other can remain purely antisymmetric in spin and orbital momentum.

The state where the magnitude changes scale for both projections is an admissible eigenstate, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the Dirac electron equation, it will continue to be so. However, since the projection as measured by their combination (the spin and orbital) will determine an area that differs, and hence the projection of the eigenstates into each

other cannot be purely antisymmetric any longer locally and globally.

Thus, it appears that either of the two electrons comparatively must attribute the same equivalent weight to charge and spin to satisfy the dual conditions that are the eigenstate condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions relativistically it is required that a correction to the orbital momentum be introduced. This correction is nothing but the gauge connection for the sake of the orbital momentum as a consequence of a co-evolving spin of the electron.

This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body Dirac electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

With this correction; which is only manifest for non-free electrons, we have an anomalous energy lowering from relativity upon quantum mechanics which gives us license to prescribe a spatiotemporal entirely representational representation. The correction is something of a form of spontaneous symmetry breaking, but it is exclusive to the two body problem, which remains to make the correct prediction for the individual inertial states, but not so comparatively, for this new gauge differential does not commute under the action of exchange, whether of singlet or triplet form, whenever these states are so separated.

This has special relevance to the origins of spontaneous phase symmetry breaking in superconductors. A final way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally is that they would not then be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli exclusion principle as Fermions.

By extrapolation upon the two body Dirac electron equation, it can be seen that the covariant measure as provided by the differential of the spin matrices and contraction with the electromagnetic four potential form a quantity that is a measure and a rate, indicative of the same symmetry as that of the inertial property of an interaction; so in line with an electromagnetic interaction that is made inertial by way of the representational quality of the spin in its evolution in space and time.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states.

Equivalence Relation

Argumentatively the macroscopic and the microscopic realm are related and intimated by that of the relationships of the quantum to the relativistic domain when wherein it is considered that energy scales with size. But to that of the delimitation of its intrinsic properties; the nature of a given is not necessarily by necessity imparted as of to that alone which is mass for the knowledge that it possess weight; when it is considered that measure holds the ultimate assessment of a given property. So as to suggest that light (the speed and qualitative features such as flux)

determine the scale at which an energy is energetically manifest through motion; and to which in uncertainty the relation is to suggest that a completeness determines (codeterminantly) that of the given of the scale of the abrea of it's given contrast of effeciabile weight of probability; in a common geometric (hypothetical) language.

Therefore; the problem of unification is one of separability of forces; as induction; more so than it is of logical deduction from out of the relation of common assessments of weight in a common setting and context of capacity to endow motion; the preliminary observation of which is that the given open contrast of two normative valuations agree as to identity freedom and general covariance (coordinate freedom). As a given; we take quantum particles to be indistinguishable as a preliminary observation of the workable and tenable aspects of the quantum theory; for that of the common demand of consistency of a particle and subatomic model.

Reasoned this way; the affordance of a limitation on that of two larger objects fitting into the same smaller space; by logical deduction on that of the empirical and theoretically founded principle of equivalence to which the thought experiment implicates; implicate immediately that the bound on scale and scale free measures of codeterminism extends to the microscopic; therefore implicating the bounds of certainty (however somewhat vantaged) that are empirically motivated and theoretically proven by the thought experiment & that of the theoretical Pauli Exclusion Principle Bridge; to which the solution to Shroedinger's cat paradox is furnished; imply that certainty in physical law is derivational of the truth of identity freedom and coordinate freedom in compendium.

Superconductivity

If we take as knowns that there is a generally diffeomorphic transformation of our coordinates for a given system, then position and momentum take on new values, and with an acceleration there appears a coordinate anomaly. This coordinate anomaly is the residual effect of scaling by an unknown factor now known as:

$$\beta \tag{2139}$$

That this appears is indication that we have not instantiated the equivalence principle, and when we do, we find that the coordinate anomaly appears as a geometric factor analogous to a force, as in general relativity. These transformations of momentum and position to their generally covariant representations with the equivalence principle then imply that there is a gap, because different local inertial representations will differ under the auspices of a singular global description.

That this effect of different is not removable, implies that general relativity, and the theory of superconductivity are real physical phenomena, and not artifacts of our description. They are genuine effects of the lack of a local to global translation of general covariance, and implicate a gap. For instance imagine a series of elevator experiments around the world, and out in space. Enough force is applied to any of the elevators to make it such that they each feel one g of acceleration, as if on earth. If we make them numerous enough and equivalent to the mass of the Earth then the effect is a series of up and down motions as if the Earth were still present.

When we remove the constraint of support, they will evolve in an identical manner to the electrons in a superconductor. But because for a different observer there is no global agreement on local inertial frame, it will be the case that there will arise a difference in description for the local

frames. They will not differ in their local description of physics, but relatively there will be a gap that appears for any one in relation to the singular global averaged description.

Hence we arrive at a situation of global to local difference in description arising at differences in weight, and consequent potential felt by the electrons, binding them together. It is precisely these four things:

- 1.) Covariance over \hbar .
- 2.) Shared proper time.
- 3.) An instantiation of the equivalence principle.
- 4.) A difference from local to global description of free fall.

That make superconductivity real in the high temperature superconductors. It is the difference from local to global frame of description that creates the suitable conditions for a gap to arise in superconductivity.

The first statement of this problem stems from a question: *"How does the equivalence principle manifest in superconducting magnetic levitation and free space interaction between a magnet and a superconductor so as to maintain the Meissner effect?"*

The first given accords with the equivalence principle, and the second with quantum mechanics:

- 1.) The speed of light is taken to be an invariant fixed quantity, known as 'c'.
- 2.) The Meissner effect is taken to be the absolute diamagnetism of superconductivity.

This admits us to make a few conclusions:

1.) Non-Inertial support or accelerative frame:

- a.) Under the provisions of a curved gravitational field, the system is static.
- b.) Under the provisions of a non curved accelerative frame, the system is static.

2.) Inertial free fall or free space:

- a.) Under gravitational free fall, the system is static but inertial.
- b.) In free space, the system is static but inertial.

These are supported by the notion that: Due to the dot product of magnet with superconductor being a pure scalar, the dot product must remain fixed. For if we presume there to be a differential, we find that either energy conservation in the frame of the superconductor or magnet are violated if the dot product is not preserved under the presence of a gravitational field, or it also follows that if the dot product is preserved, but the differentials are opposite, there will be a violation of the Meissner effect.

This is consistent with the laws of electromagnetism, whereby a changing magnetic field from motion will convert into an electric field curl and therefore a changing magnetic field of opposite nature. Thus the nature of the Meissner effect and energy conservation are only satisfied if and only if the differentials of these quantities are zero in the case of static levitation or non-zero but equal and opposite in the case of inertial separation in space.

Thus we find that if the motion is inertial, and gravitationally free, the magnet and superconductor will separate conserving energy and momentum and preserving the Meissner effect in a Lorentz invariant fashion, and if the motion is non-inertial and accelerated, with or without a gravitational field, the effect will only be satisfied by the inclusion of general covariance, for which the Meissner effect can be seen as a prediction and a consequence.

Thus we can surmise that in general a magnet and superconductor interact as if the magnet's magnetic field is the displacement of a generally covariantly evolving electromagnetic field, and that in general the motion is inertial, as the generalization of the static property of the system. Finally we find that if the electromagnetic field displacement is equivalent and opposite by virtue of sign compared to the gravitational displacement, a magnet and superconductor will remain static at any distance. It follows that if a superconducting magnet system is appropriately established, there will be an inertial orbital mechanic analogous to the motion of the Moon about the Earth.

Thought Experiment

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity.

The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable from the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as the integral of a field of curvature:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (2140)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (2141)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space.

For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the*

Meissner effect complete.

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ . In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2142)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. If there is no equivalency we could attribute outside factors, if there is equivalency then Λ and Ω show equivalent and opposite curvatures. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (2143)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (2144)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that

these are nonzero. Consequently this also implies the integration constant is zero. Thus the Meissner effect and energy conservation can be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (2145)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\nu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2146)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \quad (2147)$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase.

For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor. Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \quad (2148)$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z) \hat{z} \quad (2149)$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume

the experiment could be performed with a perfectly small point like magnet and point like superconductor. The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \quad (2150)$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \quad (2151)$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \quad (2152)$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \quad (2153)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma\mu f(z)\hat{z} \quad (2154)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma\mu f(z)\hat{z} \quad (2155)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at its location, equation (16). The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (2156)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (2157)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer. This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{v dt}{c dt} \quad (2158)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present location:

$$v \rightarrow \gamma v \quad (2159)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned} \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 \left(\frac{v \gamma dt}{c dt} \right)^{2n} \\ &= - \mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} \\ &= - \mu^2 f(z)^2 \gamma^2 \gamma^{-2} \\ &= - \mu^2 f(z)^2 \end{aligned} \quad (2160)$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \quad (2161)$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric. Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia. For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics. Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (7) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system. For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (2162)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. So we must hold as true that:

$$\partial_{\mu} \log(\Omega_{\nu}^{\mu}) = -\partial_{\mu} \log(\Lambda_{\nu}^{\mu}) \quad (2163)$$

This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general covariance within quantum mechanics.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

Abstraction in Conclusion

We wish to convert from the hyperbolic equations to the spherical equations to produce a proof in certainty and manifest disappearance of asymmetry by displacement to matter. The equations (4),(5) explicate the process. By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + i\sigma(t) + \alpha^\mu\beta^\mu\partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (2164)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu\beta^\mu\partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (2165)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame. Therefore of what of one is of the greater in time accumulated comparatively to the other in owing due relativistic factors (explicated phenomenologically here) co-conspire to bind a state to it's displacement freedom. Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + (\alpha^\mu[\partial_\mu], g(\tilde{\omega})) + (\beta^\mu[\partial_\mu], f(\tilde{\omega})) - \alpha^\mu\beta^\mu\partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (2166)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu\partial_\mu)(g(\tilde{\omega}) - i\beta^\mu\partial_\mu)\Omega(\alpha, \beta) = 0 \quad (2167)$$

Therefore all light and mass exists with inherent *displacement freedom* in an otherwise particle equation of neither attraction nor repulsion with pair potential lesser than zero. Therefore the equation for light (9, 33) and mass (33, 9) are seen *both* as instances in which an energy gap furnishes *displacement freedom* by which they are descriptively free and certain (29) (making inertia the only certain thing) when $\Delta > 0$; where:

$$\Delta = \sqrt{\sigma} \quad (2168)$$

Time is then seen as something that is co-participated in and, of, in particular, participated in; but that time for a differing point does indeed differ both quantitatively and qualitatively to that of the process of measurement and measured. The corollary of this is that all motions differ by merely a displacement freedom (Synchronicity); and, it's counterpart, inertia being the conglomerate and aggregate of two body problem relations (Parsimony) *together*, explaining mass, motion, certainty, and light; for certainty in Δ exists for all finite displacive motion and positive energy (otherwise (34) describes a tacheon).

End Proof

Therefore by the preceding logic there is not one but two given separated zeroes between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

$$\psi_{\gamma}^{\pm} = \eta_{\pm} e^{\pm i\theta_{\gamma}} \quad (2169)$$

$$\phi_{\gamma}^{\pm} = \rho_{\pm} \partial \log(\pm i\theta_{\gamma}) \quad (2170)$$

From which through the given process of a chain of deduction and induction leads through this process to a conclusion that these quantities and defined as following are of an absolute null invariance given no third reduction exists in reverse:

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (2171)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (2172)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (2173)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error. Finally we arrive at some new conclusions:

As for the quantum principle; we find three new interpretations and a new one: "*The particle wave duality is harmonic.*" "*No particle wave duality exists within a limit.*" "*The boundary condition is a harmonic criterion.*" are all equivalent statements of the quantum principle as well as: "*Space and time do not exist for a particle at two places in space and time simultaneously.*" This is the given answer to that of the question, as well as the answer to: "*Does any particle exhibit both particle and wave properties at once?*" With the answer: "**No.**"

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

And; **"Is one the given reduction of the other as unique?"**

No is the answer to the first question as either is the origin or the originless center as identical.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past:

"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past. Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first 'constitutive' argument goes as follows. Take for instance the local theorem of the Principle of Measure; these here serve as translation tools by which:

$$\eta = \langle \psi_1 \rangle \quad \rho = \langle \psi_2 \rangle \quad (2174)$$

Are two measurements on the quantum wave-functions in involution; position and momentum. Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (2175)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (2176)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and it's shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from 'above' for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized

as:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (2177)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (2178)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (2179)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (2180)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter

statement; which always finds reexpression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (2181)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (2182)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (2183)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (2184)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

Confirmation of Theory

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionalities of mass to inertia is not true; and do not exist with theoretical dependence. Then as there is bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return physical law is unbiased and deterministic for the indistinguishability and displacive properties of physical law; for seamlessness of extensibility and coextensibility are natural consequences of emptiness of property to that of the extrinsic nature of properties of physical process; if not object.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a

natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (2185)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Conclusion

Shroedingers cat paradox and it's disproof is therefore furnished by examination of the question as to if one intimable relation can 'fit' another; to which the possibility of the construction of such a box is possible. The relationship of one closed relation to one opened relation implicates that the answer is a definite no; therefore that due to certainty; the larger certainty does definitely not accord from the microscopic scale as fitting 'deterministically' interior to the closed relation of a macroscopic state. Therefore it is akin to asking a question for which is the opposition to a given thought experiment; the evidence for which is that it is a naturalized problem; with no solution; and is therefore analogous to asking what the problem is. The solution is that the cat is either alive and well; or long gone and dead; and the device does not function at most. The inequality that derives this is:

$$\langle A \rangle \langle B \rangle \geq \sigma(t) \quad (2186)$$

So as to suggest that space is broken comparative to time; and time is broken comparative to space; (they hold an entirely independent reality).

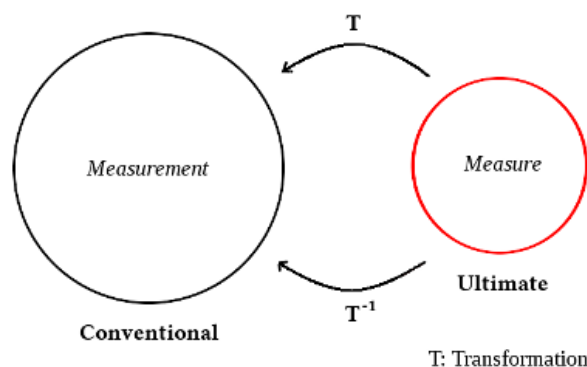
Master Conclusion: *Any two points of reality are therefore deterministically free.*

Given the equivalence principle applies to determination of the inertial properties of two objects (a superconductor and magnet) as two separable instances; it is seen that together; these constrain the uncertainty to at most two free points of reality (a limit on momentum uncertainty and a limit on position uncertainty) to which 'fit's' absolute certainty by reductionism from empirical law in the macroscopic realm to the microscopic. The affordance of a limitation on that of two larger objects fitting into the same smaller space; by logical deduction on that of the empirical and theoretically founded principle of equivalence; implicate immediately that the bound on scale and scale free measures of codeterminism extends to the microscopic; therefore implicating the bounds of certainty that are empirically motivated and theoretically proven by the thought experiment & that of the theoretical Pauli Exclusion Principle Bridge; to which the solution to Shroedinger's cat paradox is furnished. To understand this the 'objects' are the covariance in uncertainty and shared proper time; as we approach the limitation of the smallest scale; they are reasoned from the direct parallel furnished from the large scale (macroscopic) empiricism of the superconductor and magnet; and illustrate analytically that determinism is **exact**.

Introduction

There exist scales in the descriptions of both quantum mechanics and general relativity. For instance there is the quantity \hbar in quantum mechanics and the quantity c in special and general relativity. The general invariance of these quantities is important to the given theories, as it sets a scale for physics. It is hypothesized that general relativity and quantum mechanics possess mutually independent, covariant representations with these quantities setting scales of evolution. In spaces of constant curvature, particles in inertial freefall either separate or come together as an aspect of these scales and the given energy momentum in quantum mechanics and general relativity. This topic is discussed in the context of inertial eigenstates for a system with a background spin field. This results in a generally covariant like behavior of the electromagnetic interaction, which has properties analogous to a gravitational system. The implication of this is the appearance of a gap to excitations and other features strongly related to superconductivity, as well as features appropriate to the treatment of separation of two hydrogen atoms in space and time. It is shown that a flat apparently expanding space is a consequence of these contributions, and that an energy momentum gap is predicted from this theory. The new perspective is afforded by holding to a general viewpoint where both general covariance and its contrapositive notion participate. This concept is given the name comparative equivalence and is described as: *The physical results of differences in measure of quantities and qualities between observers that are stationary & observers that are in motion are physically real and measurable, however the physical results of measurement difference of this process between observers that are stationary & observers that are in motion is measurably null and unphysical.* This statement resides in the conceptual framework adjacent to general covariance, and has deep implications for physics, and the interpretations of physical experiments. It, analogously to the equivalence principle of general relativity gives rise to a new null hypothesis. This null hypothesis is that freely evolving quantum states are subject to an eigenstate condition with rest mass as to themselves and when compared to others within a given generally covariant setting. In this the results of general relativity as departures in physical measures from a Euclidean reality are in confirmation of a mass gap.

A diagram depicting this conceptual change is as follows:



Review

We know from the theory of quantum mechanics that:

$$[p_\mu, x^\mu] = i\hbar \tag{2187}$$

As x^μ is a position vector, it is noted that it accounts for distance in such a manner that the units

of x^μ will scale contravariantly, meaning they describe a position for which length contraction is the determination of the unit of measure growing for x^μ and the object appearing smaller. As p_μ is a differential operator, it is noted that it accounts for the differential in such a manner that the units of p_μ will scale covariantly, meaning they describe a differential for which length contraction is the determination of the unit of measure lessening for p_μ and the object appearing to have smaller differential.

If we perform a Lorentz transformation then the length will contract, the units of x^μ will grow, and that of p_μ will lessen. Thus the object will decrease in relative energy momentum with length contraction.

The assessment of the man in the tower is in agreement then between general relativity and quantum mechanics, as the object will be assessed to have a different and lower relative energy momentum when undergoing freefall at the surface of the Earth. In this, general covariance is consistent with general relativity and quantum mechanics. The energy momentum of a particle is covariant, and there can be an application of the equivalence principle to quantum mechanics. Why or how this is necessary is then a thing that we need from the general covariance of quantum mechanics as a given theory compatible with general relativity.

The fact that general covariance applies to quantum mechanics has several marked consequences, one of which is that the Meissner Effect is the statement of the equivalence principle as it applies to quantum mechanics. This is the discovery of my paper, and it is consistent with general covariance by the above.

The Origin of Inertia: Pre\es\cie'nce

Guiding Philosophy of Theory

It is reasonable to take as valid that the only things within physics that are knowable, in a very certain and real sense, are by way of differences in quantitative measure according with differences in qualitative description. In this, knowing correctly the interpretation and range of validity of a given physical description of reality is essential for an understanding of its possible predictions. Within physics, the only consistently formulated theory of gravity of space and time in four dimensions is general relativity and it is based upon only two givens, that there are no absolute frames of reference and that the speed of light is an invariant with respect to all observers.

To be compatible with the existing theory of general relativity, therefore any theory of quantum mechanics must be consistent with this principle of relativism, from which will spring its qualitative and measurable effects on quantitative measure. To bring these theories into contact the method chosen is that of adopting the essential qualitative features of general relativity and applying them to the formalism of quantum mechanics. This is justified by the reason that without this quality the theory of quantum mechanics would be rendered inconsistent with general relativity by artifacts of descriptive dependence. As a consequence, one finds the theories as complimentary in quantitative difference, and reciprocal in qualitative measure.

Holding true the manner in which one given is taken as unchanging and the other independent in relation, we will adopt a complimentary viewpoint to general relativity for quantum mechanics

whereby quantum uncertainty is as a given invariant and observers depart independently from this invariant of motion in their assessment of measure of momentum and position. This 'relative' interpretation of quantum mechanics will play an important role in the interpretation of physical experiments involving particle position and momentum.

Definitions of the new terms are given here first:

Reciprocity: *The invariance of physical result upon interchanging of observer and observed and the statement of equivalence under change in sign of curvature between quantum mechanics & general relativity.*

Interdependence: *Independence of the theories of quantum mechanics & general relativity on the ultimate level and seeming dependence by the use of fixed units of measure and scale on the conventional level.*

Complimentarity: *The relative nature of measurement of physical quantities under comparison on the conventional level given by keeping to fixed standards of units of scale and measure on the ultimate level.*

Then the observations which follow from this are namely three:

A:) Reality appears to make a distinction between the conventional level and the ultimate level of description in physical laws of nature.

B:) The ultimate level of description for physical law is neither of a purely & exclusively quantum mechanical nor purely & exclusively general relativistic one in nature.

C:) There is zero ultimate displacement but nonzero conventional displacement of particle-space as a single object into particle-space as a single object.

These observations make clear that there is a distinction between the ultimate and conventional level, and with the two truths above, as terms, make known the nature of the distinction that all is inseparable and undivided on the ultimate level of simplicity. A departure from this level is supported on the conventional level by measures of space & time of particle which are of a distinct nature from that of the ultimate, owing to the nature of no external observer.

Definitions and Concepts

The notion of a curved space, is in general a space whereby the definition of lengths (objective) and distances (subjective) possibly depend on the orientation and nature of the motion and also depend on the direction of traversal; the path so chosen to preambulate the space. This space is a space equipped with a local definition of the differential of the space, although this length, is intrinsically as well as extrinsically defined.

It depends on what appear to be external variables, but these are only operative in the domain of the function defining the measure of the space, which is variable. Hence for one observer with a certain characteristic, there would appear to be 5 nautical miles traveled, while for another there would appear to be 8 nautical miles traveled, and this is dependent on the definition of the measure of length and the observers role. When we speak about this for the space, it is

of importance that it is the observed distance traveled by the local system of measure within a space. One dimensional curvature is therefore defined as:

$$\partial_\mu \log(\gamma^\nu(x_\mu)) = \Lambda_\mu \quad (2188)$$

Where γ^ν is a measure of the space to the measurement standard, and is the definition of subjective to objective description of measure of space as compared. This is an instance of reciprocity when the subjective to objective relation is taken as an inverse relation, and γ^ν becomes γ_ν ; then the curvature clearly is negative of an identical amount, and the treatment is from two such observers moving in opposite directions to the same underlying notion of space.

This confusing scenario disappears when we consider particles and spaces alone, wherein the objective relation to be analyzed becomes the particle and the space as singular agents in multiplicity. To analyze particle and space it is necessary to introduce the Lie derivative (\mathcal{L}):

$$\mathcal{L}_{\bar{V}}[\tilde{\omega}(\bar{W})] \quad (2189)$$

The \mathcal{L} symbol is the operation of Lie derivation, $\tilde{\omega}$ is a one-form and \bar{V} and \bar{W} are vector fields. This means that for a vector field \bar{V} the differentiation upon this space of vectors for a given space, is defined by the one-form ($\tilde{\omega}$) operating and contracting with the vector field \bar{W} . This is the 'proper' way to differentiate the result of a space with a measure being accounted for by the subjective to objective observer. The Lie derivative is the operation of going around a path in one direction and returning in another, along the vectors defined by the field \bar{V} .

It is the net result of displacement in the given quantity differentiated of traversing this path. The vectors \bar{V} not being intrinsically defined, define the motion in such a way that they in pertaining to the object of motion, are nonzero if the measure is as a whole, subjectively to objectively and comparatively, shrinking or expanding in net amount.

With this notion in mind, curvature does not only mean in a subsidiary way the second derivative of a path, but the log derivative of the curve defining the intrinsic notion of distance, for a given observer. Clearly, because of a theory of relativity, different observers will observe different lengths of path traversed.

Thus we arrive at an extrinsic notion dependent on the subjective nature of path chosen by the observer. This is inescapable with a theory of relativity, and a result of the interoperation and dependency of a variable notion of measure when we accept the equivalence principle, roughly written as:

The Equivalence Principle: *The laws of physics are equivalent for all observers in space and time under relative motion.*

Although this may not have been precisely the original formulation, it captures the essence of a single invariance, that the laws of physics are *universal*, and that they extend from one domain to another by way of realization that such things are equivalently formulated, articulable, and understandable.

Without this precept, it would be impossible to cover a range of description and formulate a consistent universal law, from which could be derived sensible predictions. The concept for this

is the principle of 'General Covariance' which has as a definition:

General Covariance: *The form of physical laws are invariant under general coordinate transformation as distinguished from general coordinate transformations.*

Now it is important to make a distinction within the theory presented in this paper. Namely, that curvature is intrinsic and can be seen as extrinsic, and when the particle and the space are seen as a part of the same thing, it is automatic to arrive at the notion that as a particle moves, the space moves in a complimentary manner, and the curvatures are automatically identical and opposite in the sense of negative.

This, with the equivalence principle, propels us to the notion that there is a universally hidden attribute of reality, as alluded to by Galileo, in the nature of mass being indistinguishable in nature. This is the defining notion, but what should not be confused is that by appearances the laws of physics need create worlds that are simultaneously of the same varietal means as our own.

The building blocks are irreducible and samely created and operational, but their admixtures are equivalently divergent. Suppose that in multiplicity many different observers witness the same events, how would they then temporally orient these events to make sense?

Next, what must be understood is the relation of this theory, that of gravitation, to that of the quantum. The quantum world, all things being equal, is a relation of predictiveness as it is conventionally understood, yet there is a vast difference between systems of measurement and the measured. What needs be noted is that the theory implied here, one of 'reciprocity', has as its marker that there is no separation between the two, and that predictive capacity equates to scales of the system of measurement and the measured.

If there is at play both a presence and an absence of the system observing itself, and both, in the ultimate degree, then prediction as absent can be thrown out as a concept either way we think about it. For while it may self observe, it would be exact and self knowing, and without self observation, would cease to bear the capacity of indeterminacy and a direction to time.

The resolution to this, the observer observed paradox, is to consider that they are only mutually observant, and that only without distinction of these is there completeness of neither this nor that of observed and observer without a multiplicity of measures for uncertainty. With no paradox, reconciled by the fact that such a thing is by necessity complete in its relation, there is only an observer and an observed, and neither is exclusively one nor the other, by the bidirectionality of causative effect. Therefore we understand from the scale of the measurement system to the scale measured that there is an inverse relationship, and that as the notion of the uncertainty principle, worded as:

$$[p_{\mu}, x^{\mu}] = i\hbar \quad (2190)$$

Is a relation of the differential of position to that of position, within a space. Noting that this can be extended to a second differential and via a Jacobi identity reduce to zero, it is in principle flat, but there is at issue the triangle inequality with a fixed notion of the speed of light and a fixed notion of uncertainty.

For if the variable degrees do not commute, traversal around the triangle leads to at once the absurd conclusion that $\hbar c > \hbar c$. For when one takes the uncertainty principle to imply complete uncertainty simultaneously with a finite speed of light the principles are inconsistent. This is a result of the notion that the differential of the motion scales \hbar , and c , and is self inconsistent

within the theory of relativity, when it is taken that there be 'bars' or 'brackets' on the expectation of motion in the transverse directions. For this reason, the uncertainty principle is *analogous* to a curvature relationship, and should be taken as the defining relation of a position as a length, and the differential as the momentum, as a fixed relation.

What needs to be inquired about is that there is required an ineffable capacity of the universe to be without measure and without scale, that laws themselves are not absent, are knowable, and yet do not exist a priori and without a means of description. This primary notion is that the laws of the universe, can be understood, but not explicated in fullness. Only relations can be built, and that there is no ultimate theory. Thus the laws of physics, whether we write them, convey them to one another, or attempt to modify them, escape our grasp, and there is and will be no limit to the evolution of physics itself and of theories. Technological science has not yet reached the point where its predictive capacity is a closed relation.

General Covariance in Quantum Mechanics

Here it is argued that because gravitational mass is indistinguishable from inertial mass the eigenstate condition of quantum mechanics extends from local Lorentz invariance to the condition of general covariance for the comparison of states by taking the particles to be within inertial states. The condition of inertial states implies in the general relativistic setting that inertial mass is equivalent to rest masses for all particles undergoing inertial freefall, from which the condition of local Lorentz invariance can be derived. But if the condition of local Lorentz invariance does not extend to general covariance by using the rest mass for inertial states under mutual interaction, the resulting theory would be inconsistent with general relativity.

To understand this imagine a wall in front of the observer with rest mass and zero momentum. If it were to be moving away from the observer then the question would be as to where the extra relativistic energy momentum comes from that it has with respect to the observer. So as to not violate energy conservation this must be a matter of perspective, so the only objective physical description, given by the equivalence principle, is for it to maintain its rest mass in the given and ultimate viewpoint. If quantum mechanics were then not subject to the same provisions of perspective, because the quantity of energy momentum would be different for the two theories, energy conservation would be violated.

Hence it is true that mutual interactions are relatively inertial with the mass given by the rest mass and the application of general covariance to quantum mechanics is inconsistent unless inertial frames are used in which the mass is the rest mass.

The quantization condition of quantum mechanics that follows must therefore extend from pure local Lorentz invariance in the local viewpoint to general covariance in the global viewpoint under consideration of the equivalence principle and utilize rest masses within inertial frames as the basis for all particle interactions.

As the equivalence principle applies to quantum mechanics the expectation of energy momentum is always lower for a quantum system with the inclusion of general covariance, where the quantization is given by a condition set by all relativistic factors at unity. Not only is this a comparison of the inclusion of general covariance to without it, it also represents a real energy momentum lowering because of the reality of the effects of general relativity with respect to measurement of a state so quantized to the rest mass condition and compared to the viewpoint of an observer who measures a mass greater than at rest.

Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating force. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame.

Coordinate freedom further implies from general covariance that physical laws are invariant, and gravitation is no exception, in that there exists universal freefall of all gravitational bodies. This means that the equivalence principle implies that there can exist no ultimate frame dependence for body body comparisons. As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical.

This reduces the problem of the extension of quantum mechanics from local Lorentz invariance of a locally flat quantization condition to the condition of general covariance for comparison of states in quantum mechanics. Coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses, so that the equivalence principle holds true ultimately and in general for both theories.

Therefore quantum mechanics would be inconsistent with general relativity if general covariance did not so similarly apply to the provisions of the mutual quantization condition between states under interaction. As a consequence, in the global viewpoint the relativistic factors are absent under state state comparisons within the system, yet there is the same phenomenon of energy dependence with respect to the subjective observer.

What is measured by an observer stationary with respect to the center of mass of the system is a physical energy momentum. With the given effects of the equivalence principle on the various parts of the system in relation to one another it is a lower energy momentum because it is determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, the system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

Null Reciprocity and Complimentarity

Although the difference is zero in the frame of the inertial observer moving with the bodies, because their rest masses accord with their inertial masses, it is of nonzero difference for the observer viewing the system from afar. In this latter case, as compared with the former, the objective description cannot depend upon the frame, and neither can difference arise on account of the differences of frame, but can on account of no difference formally.

As a result when the bodies move closer together their rest masses increase by a relativistic factor, and they exist with an increased negative gravitational potential by the same relativistic factor due to the equivalence principle. However what remains is that the relativistic factor that pertains to the objective viewpoint does not disappear.

Instead, as the ultimate condition upon energy momentum is based on the equivalence principle, a difference in objective description exists, in which from the viewpoint of an outside observer there exists a real effect by the covariance of mass, and the system remains at a lower mass energy by the fact that physical objective difference does not depend on frame, but they exist with a frame difference.

Therefore for the objective observer they will exist at the lowered energy state in accordance with frame independence of measurement, when a difference in physical description exists.

As a consequence in application of the equivalence principle to quantum mechanics, there arises a similar frame independence and dependence on frame difference for the objective observer's description. The quantum mechanical energy momentum will be measured as a positive definite quantity and is subject to the equivalence principle under quantization such that the shared condition of the rest mass and inertial frame is the basis for mutual quantization. When the elements of the system are quantized subject to a locally and globally flat condition there will arise a difference with respect to the observer of a quantum system by virtue of the frame independence of the physical process of measurement when physical frame differences exist for which the process of measurement depends.

Under the independence of the physical law upon frame and frame differences in the ultimate viewpoint, the theories must meet given the equivalence principle, and yet to find agreement away from this condition, it must be true that the uncertainty principle is as a given invariant and the speed of light is as a given invariant. Therefore the law which dictates the uncertainty principle must remain locally and relatively flat for comparisons without frame dependence for measurement and the same which applies to the speed of light, implies that the system remains ultimately curvature free in the ultimate viewpoint.

This independence of the result of the process of physical measurement requires that as we measure the gravitational components of a system, they are curved in relation to one another reciprocally to that of the curvature of the quantum elements of the system in relation to one another, with equivalent relativistic factors, so that the two existent applications of the equivalence principle are consistent with the mutual universal invariance of the quantum unit of uncertainty and the speed of light. If this were not true there would be a curvature to the invariance and or a lack of invariance with respect to the constituent theories both with respect to one another, which would break their independence, and there would be a lack of invariance of each individually with respect to the process of physical measurement, for both would depart from the universal condition of the equivalence principle.

In the ultimate sense the theories would be mutually inconsistent with the notion of their independence with respect to the process of physical measurement both separately and in addition to the equivalence principle in application, which by itself would be self inconsistent if this were true. The only conclusion that can be drawn is that as curvature is a condition which exists for the same fundamental reason on the ultimate level, it must be null in relation to the total system so considered for the mutual preservation of the equivalence principle and the independence of physical measurement on frame for both physical laws.

The final word of note is that as both are therefore individually curved in reciprocal manners, the curvature as a total is zero in the static case, because the theories are codependent in such a way that they are each therefore curvature free with respect to the ultimate viewpoint they share in common. As a result, physical measurement is independent on the ultimate level of frame and coordinate dependence, the unit of uncertainty and the speed of light are invariant and there remain effects of a subjective nature by which the energy of a total system is always less than its individual parts.

The conclusions of the last section point to an objective to subjective translation in description of physical observables which is ultimately the equivalency under the interchanging of observer and observed in the general relativistic and quantum mechanical description, and the manner in which the theories appear subjectively dependent by their very independence giving rise to a physical departure of quantities based on their mutual invariance. It is this very absence of any dependence on coordinates or frame that predicts physical and observable effects of the nature of measurement. This has a marked consequence:

Complimentarity we define as the nature of the two descriptions of quantum mechanics and general relativity to predict equivalent dependencies of energy momentum with relativistic factors for comparison of states, but to persist with reciprocal dependencies of relativistic factor on space and within time in departure away from this point of equivalency.

This relates the quantitative measurement in the theories to one another given the two changes in sign on curvature and energy momentum. This makes a common prediction:

It is merely the result of relativistic addition of energy momentum in the center of mass frame of particles in which they are measured objectively as compared with the particles in the rest frames in which they are quantized. One would agree that from the objective viewpoint of the observer the energy momentum carries a reciprocal dependence on frame transformation and a complimentary energy difference.

As a given, the two theories must mutually preserve the invariance of the speed of light and the quantum unit of uncertainty to be self consistent. As a second given, general covariance must apply to both theories. The equivalence principle means that the ultimate viewpoint of general relativity is flat. As we find, it applies to quantum mechanics in the same ultimate sense with respect to the unit of uncertainty. In this, the question is as to how the quantum theory varies away from the ultimate viewpoint in the objective description. If the measure of uncertainty is invariant, then it represents a quantitatively different relationship on the states.

Because a curvature dependence to the uncertainty principle manifests as an extra contribution, and it must be objectively flat in relationship, it appears that the curvature of general relativity in the subjective viewpoint introduces an anomaly and a lack of invariance unless the curvature of the quantum interaction is reciprocal to the transformation given by general covariance and

an invariant speed of light.

There is only one problem with this, which is that the conventional viewpoint is not the ultimate, and it appears that if there were reciprocal curvatures for each theory in departure from the ultimate viewpoint all relationships would remain null and flat. However the viewpoints become the same if the reciprocal curvature of the quantum system leaves the speed of light invariant in both viewpoints. In this viewpoint all physical quantities are mutually invariant as based upon the speed of light and the quantum unit of uncertainty.

The real essential problem is one of indistinguishability, for the quantum and gravitational and inertial mass energy should be indistinguishable. If both theories conform to this notion then there is the idea as to how the curvatures can be reciprocal and yet share the same relativistic factor on mass energy. If this factor comes from the invariance of the speed of light, then it will be shared if and only if the curvature of the quantum system modifies energy momentum under relative determinations in a reciprocal manner.

This is the viewpoint that ultimately the system is indeed flat, but that departures from the system are conjugate and reciprocal to one another, from the issue of perspective, or they are comparatively curved and reciprocal. For if the system is determined as positively curved in relation to the subjective observer at rest it exists with a relativistic factor in excess of unity, at a lower energy because the ultimate viewpoint of the invariance of the speed of light means that the relative relativistic factor sets the scale of measure to a larger length, to which it is measured comparatively smaller.

The quantum system in being curved reciprocally must exhibit a similar factor also in excess of unity, in precisely the same manner, so the relativistic factor of the two theories is the same, and the measures of space and time are reciprocal. This is the same as reversing the direction of velocity and acceleration for the transformation only to arrive at the same relativistic factor and the reciprocal measure dependence! Thus the theories are in fact indistinguishable with null reciprocity. The curvatures are sourced in reciprocal measures in nature and the relativistic factors are identical.

Quantities of measure of uncertainty and the speed of light are mutually and singly invariant with respect to the theories. If we make the theories truly indistinguishable, this reciprocity is manifest as an absence of difference from global flatness, and is only consistent with one end conclusion. This conclusion is that reciprocity is null as a process, and thus there is no absolute physical basis to physical measure of quantity.

Justification for Gestalt View of Theory

Take as a given that so called reciprocal quantitative changes exist with respect to each of the given theories, but that on the ultimate level such change is in truth unobservable with respect to each of the others if they form one greater relation. Then take as a given that complementary changes exist with respect to observer and observed, with respect to which the concept of reciprocity is consistent between the two theories if they are additionally a part of one greater theory. The immediate prediction is that there is scale freedom.

As we approach the concept of the cosmological constant, it appears objectively by way of measure to the subjective observer that the two theories depart from one another with reciprocal

curvatures and equivalent relativistic factors. If we go inwards then as we reduce to zero scale the uncertainty principle becomes manifest, and the two measures of uncertainty are in relation to and perfectly identical with a reciprocal curvature dependence between their relativistic factor and curvature because these accord with position and momentum and these are in inverse relationship to a constant.

As we go to zero scale objectively from a distant observer, therefore, the uncertainty remains the same, but it appears as if the curvature relationship changes to the relativistic factor through the accumulation of gravitational curvature and quantum curvature over space. Since these accumulate indefinitely the curvature of each individual theory, which although appearing in relation to each other as curved, are ultimately flat in relation to each other and as one, also appear as infinitely curved to the objective observer.

If there is no limit then and if and only if this is true will a relation be defined. In the infinite limit objectively however what exists at this location so distant is from the point of view of observables infinite curvature with respect to the original observer. As a result given complementarity and reciprocity, that the total accumulative changes of each with respect to the other sum to zero, it must be true that locality to them is a global symmetry to us and in return.

Therefore for a universe without limit, it is true an antipodal point exists and infinity and zero are identical objectively, which is consistent with reciprocity, complementarity, and the oneness of the two theories. This predicts that to the antipodal point we appear as if local and global are interchanged with respect to the furthest distant observer. Therefore the laws of physics trade roles, but the result is the same locally and globally.

This is only consistent, if there is the absence of physical measure to the limits of space and time, and quantity, but that physical measure through qualitative and quantitative measure is in fact the only real thing. The reason this is true is because the limits in existing would make manifest something unreal, which is that of change.

If change is the absence of change simultaneously given the fact that there are mutual changes of cause and effect globally which are conserved for all events then it is true that change would not exist if it were true that the antipodal observer did not exist, or at least an event. Change in this theory is predicted because action and reaction globally and locally with reciprocity and complimentary are balanced with respect to each other and null.

This would be non-null in the given theory, or any theory that fails to integrate the concept of reciprocity and complementarity between the theories because one cannot have presence without absence, of or with respect to change and non-change. A single null principle will predict a static universe, but without its complimentary attribute there can be no global balance of action and reaction locally and globally.

The inverse scaling of curvature of the quantum mechanical picture locally in comparison with the general relativistic picture globally under the provisions of the inversion with respect to space and time in its undefinable limit is mutually identifiable with and consistent with the result of reciprocal qualitative measures and complimentary differences in quantitative measure.

With this, the global and local picture do not in a sense exist on the global and or local level, but instead neither, and are real, but undefined, in the sense that there is no other consistent picture,

except the one for which we cannot find any agreement except the ultimate, which indicates that the two theories in remaining one, are nowhere identifiable with the antipodal point being identified with any given identity of the center.

As a result, the theory in no sense wraps around to create an antipodal point so much as there exists everywhere throughout reality a local identification of the identity, of the antipodal point with the local center. With this as one departs from the local point, one experiences in the ultimate viewpoint a reciprocal dependence between the two theories, which is unitarily equivalent between the two ends of the universe, and idempotently at the location of all given localities, as the connection between the theories. In final form this validates two conclusions:

Physical measurement is invariant and independent with respect to the complete nature of reality and is undivided with respect to the observer and the observed.

Absolute independently occurring change in quantitative and qualitative measure has no physical basis other than differences so existent by way of the equivalence of changes in each with respect to the other.

Interdependence of Quantity and Quality

The main point so far has been that with general covariance the energy is lower for a quantum system in the center of energy momentum frame, and this lowering is concretely real by the equivalence principle.

The question becomes: *If the simultaneous coexistence of two things that are independent and of null relation define the existence of a third, how is it that this given third thing can relate to these two as null, and as independently?*

The only answer is that both quantitative measure and qualitative nature of change and amount are of a null relation in the general viewpoint. For the amount the quantity changes, its quality changes in such a manner that although the two bodies come closer together and change qualitatively in weight, and are more massive, so as to preserve quantity, they become equivalently lighter quantitatively, and thus quantity is null in relation to the other, and the others remain null in relation unto it.

What is understood is that the given rest mass in keeping invariant holds to an 'internal' object oriented definition of 'inherent' mass and an 'external' world oriented definition of 'extrinsic' mass which are as a whole product fixed, as if notions from either part were taken together. This interchanging of object, and observer, are the related way of speaking about reciprocity, from the viewpoint of interdependence for either of these two theories, which are really in agreement.

Therefore, from complementarity and now, interdependence; physical quantity, spatial extent, and temporal duration are preserved and null as actions and reactions upon one another with respect to each other and ultimately of a null relationship, so then independently coexistent on the ultimate level and interdependently coexistent on the conventional level of measure and measurer. From this, we define complementarity as the reciprocal relationship of changes in measure and measurer with respect to local and global measure within quantum mechanics and gravitation, in keeping to the rule that between objects the measured extent and the measurers

rule, measure the same extension of a given unit.

Secondly, we define interdependence as the equivalent relationship of changes in quantity with respect to local and global measure within quantum mechanics and gravitation, in keeping to the rule that the product of inherent measure and measurer as a basis for qualitative degree of measure, are in keeping to a product quantity of fixed measure, given a basis for measure. The idea here of interdependence is that of the fact that a body remains the same when it changes by way of existent forces, however it appears to traverse space.

Wholly, in a given sense it has not moved, for the space has qualitatively changed in an analogous and reciprocal manner with respect to that which defines its quantitative measure. As a result, it has in another distinct sense changed, if only by virtue of the change of it in relation to other objects by their objective viewpoint, but not in any ultimate sense. These two statements are null ultimately, in the sense that there is an absence of dependence, however they as a result of their very independence and coexistence are definitional of one relation for all ultimately objective quantities, spaces, and times. We call this *comparative equivalence*.

Comparative Equivalence in Relation to Inertia

A definition is given here for comparative equivalence:

Comparative Equivalence I: *The distinction of that of which is between, of the conventional, and the ultimate, and of the nature of what is made definite and real, in the departure of the conventional from the ultimate, by independence of a basis of measure of quantity and quality on the ultimate and conventional levels.*

Reciprocity was taken to mean the reciprocal nature of measurements to possess equivalent but opposite curvatures of measurement of a quality of an object in departure from a state of virtual flatness. This term in description and in virtue of its nature was taken as null in the ultimate sense, in that it must be a null relation for consistency. Namely, that such relations are always when taken together ultimately flat. This appears in retrospect to only admit a static interpretation of motion and quantity, however this is not the case. There is a way to adopt the relation of comparative equivalence, and apply it to this model and in turn to the concept of reciprocity to preserve complementarity and interdependence, and it is the view adopted here of the presence of a nonstatic situation. What is admitted is merely acceleration of a differential kind, and what is found is the relation and explanation for and of mass and inertia in the theories of quantum mechanics and general relativity.

Admitting acceleration of a differential kind, namely one that accelerates the quantum properties of a system in one way, and the gravitational in another way, *is* the way of making a sensible nonstatic theory. To do so all that need be recognized is that the effects must remain equal and opposite; that a local differential change takes place, and the bodies move apart or come together under the provisions of a resistance to motion which is directly identifiable with the projection of these theories into one another on the conventional level.

The only thing that need be understood to establish this is that two flows of curvature can move in opposite ways, when it is understood that this is their natural characteristic when and if they are as a given equivalent and opposite. This tension is real when it comes to the inertial content of a body, but it is also as real as the residual left behind of one such quality that a body possesses moving past another such quality. This is the conjugate concept to mass and inertial content. It

is real on the conventional level in the sense of a resistance to a change in motion, and is part conventional when it is considered that:

Reciprocity in a dynamic model represents the conversion of motion of one kind into another. Resistance to change of one type of motion into another disappears as a distinction on an ultimate level.

In this a quantity of inertia is explained as a resistance of conversion of motion of one type into another, and, is the conjugate concept to the resistance of change of the form of reciprocity, the resistance a body possesses by virtue of a quality it possesses in moving past another such quality.

Mathematical Synopsis and Null Reciprocity

In continuing, what must be understood is the mathematical description for this underlying physics, and is illuminating for the sake of revealing the origin of these distinctions.

What is introduced here is a single equation which serves the purpose of explaining in symbols the meaning behind the null and nonnull way of looking at reciprocity, as a motion through a motion of one theory with another, or as a relation between the quantum theory and the gravitational. The equation involves the Lie derivative and is expressible as:

$$\mathcal{L}_{\bar{V}}[\tilde{\omega}(\bar{W})] = 0 \quad (2191)$$

This means essentially that the projection of the differential of a quantity along the direction of the projection of the other quantity is relativistically null. This means changes either do not occur from the projection of one quantity into the given space, or that projections along projections are null, or alternatively that the preservation of the evolution of one quantity in projection is exclusively along the direction of change in the other quantity. In a way, it means all three of these things at the same time. When expanded this equation is written as with a portion from the one form and the vector:

$$(\mathcal{L}_{\bar{V}}\tilde{\omega})\bar{W} + \tilde{\omega}\mathcal{L}_{\bar{V}}(\bar{W}) = 0 \quad (2192)$$

Where the first term is the contraction of the differential along directions in space of the one form ω with the vector V and that of the vector W . It is the projection of the composite anticommutation relationship of the one form ω and the vector V with or upon the vector W . The second term is the contraction of the one form ω with the result of the commutation relationship of the vectors V and W with the required coordinate basis fixing by the Lie derivative again for the coordinate basis element. This can be further expanded as, (where \bar{e}_j means differentiation in the coordinate basis in the direction of the unit vector e_j):

$$\underbrace{(V^j\bar{e}_j(\omega_i) + \omega_j\bar{e}_i(V^j))}_{(1)} W^i + \omega_i \underbrace{(V^j\bar{e}_j(W^i) - W^j\bar{e}_j(V^i))}_{(2)} + \underbrace{V^j W^k (\mathcal{L}_{\bar{e}_j}\bar{e}_k)^i}_{(3)} = 0 \quad (2193)$$

It is this third term with the Lie derivative which is concerned in this discussion and which pertains to the theory given so far. A Lie derivative is roughly a way of describing the departure from colinearity or the commutation of differentials when going around a path, with directions and functions defined in the given space.

The term with the Lie derivative when nonvanishing indicates the presence of curvature, and it is this curvature which is used in the theory established so far.

The point to be made is that the third term is explicitly nonzero when the coordinate basis is curved. It in this equation however represents, for what the other terms represent, an equal and

opposite displacement of the quantities via the first (+) sign and second (−) sign parts of the equation. These parts can be known as the differential of a relativistic position contracted with a general position vector, and in the second one, the local uncertainty principle in relativistic form along the same direction.

Within the theory established so far, there is the question of when this third term becomes zero. Because for the theory, what it means is that the projection of the theories into one another represents a form of conjugate quantity to inertia. This inertial content is the mass of a body, and it is accompanied under a change in motion by a change in the qualities of the respective principles of quantum mechanics and general relativity.

The fact that this equation adds to zero, is the statement that zero displacement exists on the ultimate level for which neither general relativity nor quantum mechanics exclusively are true alone, is also conventionally a physical displacement of between the theories of quantum uncertainty into spacetime and spacetime into uncertainty. Summatively on the conventional level there appears to be a physical displacement, but there is ultimately null displacement of particle-space into particle-space, when such composite objects are considered to form a joint relationship in whole.

The first of the three terms above disappears with equal and opposite curvatures of the position of an object and its relativistic factor, in for instance the inertial separation of a superconductor and magnet. Here the energy momentum restriction and equal and opposite magnetic fields with coalignment of momenta and magnetic field vectors takes place. This inertial separation, and the disappearance of this term are one to one, and occur because of the requirement that the total energy not change and the magnetic fields remain equal and opposite at the surface of a perfect diamagnet.

This can be illustrated by considering a magnet and superconductor in levitation. The vectorial dot product of the magnetic fields, which is related to its total electromagnetic field energy of a magnetic origin, and the kinetic energy momentum of the bodies with the consideration of relativistic factors must be conserved in total. As is found, the following restriction and exception are in agreement with the general statement of each changing in response to the other. If we take the dot product of the magnetic fields, and the differential of this, then it can only be that if this is nonzero that either the principle of conservation of energy or the principle of diamagnetism are violated. For instance the magnetic vectors either both become smaller or both larger, preserving the diamagnetic effect but not the conservation of energy separably from motion of the system as a whole, or, the magnetic vectors will become smaller and larger, not preserving the diamagnetic effect while separably preserving the conservation of energy with motion of the system.

Thus the first of the above three terms in the mathematical equation so expanded must be it is reasoned, zero. This is the level of reciprocity being of equal and opposite curvatures, but not with the presence of a net acceleration of the system. When there is a net acceleration of the system, it serves the purpose of compressing or elongating the magnet and superconductor displacement, and is a physical and mathematical displacement of the two quantities of the first and second term into one another. This is the role the third term plays, and is an equivalent displacement of one term into the other, with the second term playing the role of a commutation relationship in the quantum theory. There is an interesting observation which comes from this. It is the physical prediction that for a magnet and superconductor prepared to levitate freely in Earth's gravitational field, there will be a static scenario. If this system is dropped as a whole and with the removal of support against gravity, there will exist an acceleration of the magnet and

superconductor downwards with one g , and a separation which will be precisely negative one g apart, and one g together. This negative one g of separation is simply because with the absence of the Earth's gravitational field, and the preexisting balance of equal and opposite forces, the acceleration of magnet and superconductor apart will be precisely the negative of the prepared state with support.

Establishing Comparative Equivalence

Thought Experiment For Superconductivity

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity. The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable but reciprocal to the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (2194)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (2195)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space.

For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of representation for the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect absolute.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede

with its own factor of relative γ .

In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2196)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (2197)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (2198)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero.

Thus the Meissner effect and energy conservation cannot be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (2199)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2200)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \tag{2201}$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase.

For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor.

Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \tag{2202}$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z)\hat{z} \tag{2203}$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. Then we can extend results with calculus to generalized objects.

The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our

discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \quad (2204)$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \quad (2205)$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \quad (2206)$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \quad (2207)$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma\mu f(z)\hat{z} \quad (2208)$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma\mu f(z)\hat{z} \quad (2209)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at it's location:

$$\gamma\mu f(z)\hat{z} \quad (2210)$$

The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (2211)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (2212)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer.

This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (2213)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present situation:

$$v \rightarrow \gamma v \quad (2214)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned} \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 (v\gamma dt) / (cdt)^{2n} \\ &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} = -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} = -\mu^2 f(z)^2 \end{aligned} \quad (2215)$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \quad (2216)$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia.

For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics.

Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (16) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system.

For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (2217)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity and then shift the discussion to how the spin manifests in the new formalism motivated by this thought experiment:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general covariance within quantum mechanics.*

Comparative Equivalence II: *Measurement of physical quantities by measurer of measured or of observer and observed remains the same, invariant, and independent of the order and relation of these as physical elements. It carries a reciprocal native transformation within quantum mechanics as in general relativity, but both results are the consequence of general covariance.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence III: *The results of measurements of physical quantities of measure are coordinate displacement invariant and reciprocal in quantum mechanics as they are in general relativity.*

Measurement

What do we mean by measurement? One definition of measurement is: "The act or process of measuring something." But does it matter in which *way* we measure? This theory is both a theory of measurement and a theory of physical result, as well as is the theory of general relativity. We take as a given that the results of measurement do depend on whether the measurement is with an object in motion or an object at rest, which is true in general relativity. When we include both comparative equivalence and the equivalence principle the result is a theory reconciling and edifying the distinct and different viewpoints of observer and observed.

For example let us say we have a ruler and a stream of rulers is flowing by. Because of the implications of a theory of space & time, general relativity, our ruler has an extension in the fourth dimension as well during the process of measurement. And it would be understood that when a measurement is performed by one of our rulers on the stream of rulers flowing by at a large velocity, that they will yield different results from their rest values. This much is a result of not accounting for as well the fact that a ruler has a temporal extension with velocity.

For when we compare with the fourth dimension included in our description the extension of the ruler the result is indeed an invariant measure known as the spacetime interval, which for the rulers is spacelike and imaginary. It is the square root of the following quantity:

$$(\Delta s)^2 = c^2(\Delta t)^2 - (\Delta x)^2 \quad (2218)$$

That this interval (Δs) is spacetime and transformation invariant is a given in both of the theories of special and general relativity and is the result of taking the speed of light as a constant and admitting that space and time can transform into one another. It represents the 'real' physical length of the ruler when this ruler is also accompanied by a tool to measure time, a clock for instance, as well as a spatial measurement device for distance. This physical form of relativity can then be known as a theory requiring a temporal measuring device and a spatial measuring device to reliably compare spatial interval as distance, or, temporal interval as duration. We cannot reliably compare either of these two without the other.

Performing the transformation with the object at rest in contrast to the object in motion is a reversal of the transformation. This is what is understood from the theories of special and general relativity, that space and time form a singular fabric known variously as space time, space-time, or spacetime. For the sake of the purposes of declaration of their union, or even their disjoint

relationship, it is important to make a distinction. For space can be defined as an enclosure that always has an exterior domain, while time can be seen as an inclosure which always has an interior domain.

We can speak of their disjoint union as well when a metric $g_{\mu\nu}$ is defined. For then the result of an interval in space-time can be written generally as:

$$\Delta s = \sqrt{\int \int g_{\mu\nu}(x^\mu, x^\nu) dx^\mu dx^\nu} \quad (2219)$$

In this result the double integral signifies that we must take the analogous square sum square root of integral distance to define an interval in general relativity as in a theory which relies on an Euclidean notion for space & time. This is nothing but the definition of a metric, here denoted as the four dimensional $g_{\mu\nu}$. The statement of general covariance is the statement that the true and ultimate 'general' laws of physics do not depend on any a priori coordinates, but as for differences in coordinates there is a distinction that must be accounted for as it is in the interval preceding. In this theory we will make a reciprocal statement that this system of coordinization is not privileged and that there is a secondary and consistent way for accounting for measurement. It is nothing but the difference we can discuss in talking about:

$$\Delta s = \sqrt{\int \int g^{\mu\nu}(x^\mu, x^\nu) dx_\mu dx_\nu} \quad (2220)$$

Instead, and this amounts to a different result from general relativity by accounting for distance with a reciprocal transformation. For, the observer and the observed make express differences according to the conventional interpretation of general relativity. This is a difference we wish to use to leverage our position regarding the interpretation of physical measurement in quantum mechanics. Although they are embedded in a general relativistic spacetime, measurement is something that may or may not be dependent on observer and observed and it is a notion we here wish be explicit about. The given union of space and time in general relativity is then not unique, and there are marked differences if we are to use (18) or (19) for the sake of comparative equivalence. We have alluded to a given reciprocity, a division and union at once for the process of measurement. Reciprocity is the statement that there can arise no difference of measurement from reality ultimately given the equivalence principle and comparative equivalence and the given organization of ideas that follow from these assumptions.

The question: "If what is real is measurement then *what* is being compared in the process of measurement?" soon becomes important. If we have a ruler and a ruler, there has been known to be a strict relativity of measurement going back as far as the Buddhist philosopher Nagarjuna. It is stated that the big is only big in relation to the small and the small is only small in relation to the big. Label the rulers with prefixes A and B and examine the situation at hand in the context of this question and statement. If one ruler is moving and the other stationary with us in our frame, we will contend that there are two equivalent and distinct ways to compare them to each other.

It is either the case that a moving ruler labeled B is compared to a stationary ruler labeled A or it is the case that the moving ruler B is taken as stationary and is compared to the now relatively moving ruler A . The first picture is labeled A^* and the second picture is labeled B^* , for the observer is stationary with the object of measure *despite that it is actually moving in relation*

to *what is being measured*. This is identical with identifying the motion with the object at rest instead of the object in motion. This is identical with reversing the transformation and the object of reference with the direction of inference between the one in motion and the one at rest.

Our newly formulated notion of comparative equivalence is then the distinction:

Comparative Equivalence IV: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

In this we see that as it is in general relativity what is stationary and what is moving has nothing to do with *what* is measuring *what*. Different from general relativity we make here a conventional distinction between wherein the motion lies; with the observer or the observed. For now what must be noted is that the 'presence' of motion is a tool to discriminate what precisely we are comparing to what.

For instance the first case A^* where the observer is stationary with ruler A is the manner in which general relativity is usually taught. Equally as compelling is the second case B^* of measurement, which makes clear that we may in principle take the measurement as with the ruler in motion as well as that one which is stationary.

This is not to be confused with being in contradiction with general relativity so much as it is to be taken that it is admittedly a *different* way of basing our measurement, which can be formulated consistently with general relativity in mind. It is nothing but a second and distinct way of interpreting measure and measurement in general relativity, one we which yields for us a conventional difference.

We arrive at the first instance of the intellectual struggle to rectify our set of admissible standards, and find serious tension in this idea, if we accept general relativity merely at face value. For nowhere within relativity, special or general, is it given that this second method of measurement must be false. Relative as it is used in language is taken to mean both processes at once informally, but much confusion arises if we presuppose it to be one or the other of these two situations alone which must be true by itself, and develop general relativity around these terms without accepting a difference may arise conventionally, as it matters to us on Earth.

Nowhere has it appeared that we may take the measurement to accord with motion in the *other way* except in science fiction. Has mother nature played a ruse on us if this second viewpoint is to be taken as true as well? As it turns out, no, for scenarios A^* and B^* are not implicitly excluded into predefined categories by general relativity with only one holding true, although they are given names, and Einstein's 'general covariance' is a term applying equally as well to each.

Scenario A^* we will call the covariant relationship and scenario B^* we will call the contravariant relationship of measurement. Neither is tenably excluded by general relativity, but there is a difference, and what it means for measurement will become clearer as we go as we draw a physically important and tangible parallel with general relativity.

For now, notice that we are making a distinct statement that it does indeed matter if the observer

is with the object at rest or the one in motion, *although* motion is relative. Our intention in this paper is to illustrate that comparative equivalence as it will be known is the equivalence of the results and process of measurement under either of these scenarios *ultimately*. This has deep implications of course, if we are to take the very real physical results of general relativity and comparative equivalence to be real and at the same time holding no privileged scenario, process, or basis of measurement.

Flat to Curved Transformation and Connection

The given theories point to a relationship between the theories of general relativity and quantum mechanics. The relationship is one of observability. For instance, curvature in general relativity plays the role of the structure of spacetime, but it is not ultimately observable for the observer in freefall, where the weight vanishes. This is an instance of the equivalence principle.

This tenement as the idea of the ultimate meeting the conventional as a viewpoint is tenable in the case of general relativity. Similarly we will find that this form of agreement holds in the quantum viewpoint. Hence it is hypothesized that something analogous to universality of freefall is the reason for a gap and other observable facets of superconductivity.

First we examine the meaning of curvature. It is known that in various lower dimensional curved spaces that there is a way to move from the flat real number based coordinates to coordinates natural to the curved space. The basic notion is the covariant differential, which contains an extra contribution from the conversion of coordinates and their consequent curvature. Just as the equations of motion differ in different coordinate systems, the covariant differential differs from the conventional derivative in that the additional part describes the result of changing the basic coordinate system.

The ultimate viewpoint is now seen as related to the covariant viewpoint. The basic covariant differential is:

$$\nabla_{\mu} \equiv \partial_{\mu} + \Gamma_{\mu} \quad \Gamma_{\mu} \equiv \frac{1}{2}g^{\nu\rho}(\partial_{\mu}g_{\nu\rho} + \partial_{\nu}g_{\rho\mu} - \partial_{\rho}g_{\mu\nu}) \quad (2221)$$

This derivative is coordinate system nonspecific in that it returns the same result under coordinate transformations, and is coordinate system specific in that the structure of the Christoffel symbols, Γ are related to the given space of curvature. Note that for a flat space the extra contribution vanishes. The addition of this component is therefore a way to move off the flat space to the curved space wherein the curvature plays a role through the coordinate dependence it imputes to the differential.

Therefore the simple flat differential:

$$\partial_{\mu} \quad (2222)$$

Holds for a flat space, or a flat space to flat space conversion, although scaling of the space does influence the derivative. When moving to the curved space, the extra form:

$$\Gamma_{\mu} \equiv \frac{1}{2}g^{\nu\rho}(\partial_{\mu}g_{\nu\rho} + \partial_{\nu}g_{\rho\mu} - \partial_{\rho}g_{\mu\nu}) \quad (2223)$$

Is simply added to the derivative operator, to result in the *covariant differential* of a given quantity, which is a way of describing the change in the quantity contribution given the change in coordinates which naturally follows from coevolution with the curved space. General relativity

implies that these do exist, (as for instance motion is observable) but that the sequential repetition of differentiation is not observable, hence:

$$\nabla_\nu \nabla_\mu \equiv G_{\mu\nu} \quad (2224)$$

Is the structure of spacetime, and owing to general covariance does not result in observable changes in the theory. Accelerations are however observable from a second perspective at a fixed location *not* falling with the object, and imply not only a gravitational field and curvature of the coordinates, but delineate what precisely the change is to the viewpoint of comparative equivalence. But, it remains that the natural laws of physics hold no coordinate dependence ultimately.

This is how we can say that both viewpoints are valid, the conventional and the ultimate, and that quantum mechanics borrows this coordinate freedom principle from general relativity. The first contention is hence that coordinate freedom applies to both of general relativity and quantum mechanics.

In order for quantum mechanics to be consistent with accelerations as general coordinate transformations, it must hold true that the eigenstate holds an independent reality with respect to these types of transformations. For instance consider a two particle system. In order for the consistency of quantum mechanics under electromagnetic interaction, it must hold true that both states remain mutual eigenstates with respect to their frames of acceleration.

Any proof must be based on the supposition that the eigenstate remains an eigenstate for each particle with respect to all others under mutually accelerated motion. This holds when, given that although it is true that locally in the frame of acceleration the eigenstate may be defined, it must also be an eigenstate with respect to other frames of reference, *and for the considerations of relativity may contain no frame dependence.*

Suppose in the frame of a particle ∂_μ is the basis of the operator for momentum. Then, $\gamma^\mu \partial_\mu$ is the relativistic operator for momentum and should be invariant under general coordinate transformations. This operates on ξ_μ , the wavefunction so that $\gamma^\mu \partial_\mu \xi_\mu$ is the relativistic energy momentum of the eigenstate.

If and only if this is an accelerated state does the Lorentz transformation Λ_ν^μ have a spatial and temporal dependence, in which case the following eigenstate operation is nonzero:

$$\gamma^\mu \partial_\mu \xi_\mu \rightarrow \Lambda_\nu^\mu \gamma^\mu \Lambda_\nu^\mu \partial_\mu \Lambda_\nu^\mu \xi_\mu = \gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu + \gamma^\nu \partial_\nu \xi_\nu \quad (2225)$$

From looking at this we find an extra term appears, which does belong to the same frame ν but which introduces a frame dependence to the derivative, because $\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) \xi_\mu$ is Lorentz transformation dependent. In this case ξ is no longer an eigenstate with respect to the accelerated frame with this differential alone.

Since:

$$\Lambda_\nu^\mu = \gamma^\mu \gamma_\nu \quad (2226)$$

It is true that this can be accommodated by subtracting a term from the right hand side of the eigenstate equation for four momentum, or alternatively and equivalently adding a term which transforms reciprocal to the definition of the four momentum. We thereby define the *covariant differential* by working out the extra term in frame ν :

$$\gamma^\nu (\partial_\nu \Lambda_\nu^\mu) = \gamma^\nu \gamma_\mu \partial_\nu \gamma^\mu \quad (2227)$$

Under transformation back to frame μ a term must be added to ∂_μ to preserve the differential which is:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu \quad (2228)$$

In conclusion, for quantum mechanics to possess no frame dependence for eigenstates, and for them to be mutually defined under interaction, the covariant differential defined by the following must be used for the energy momentum of the particle instead of only the flat space differential ∂_μ :

$$p_\mu = i\hbar(\partial_\mu + \Gamma_\mu) \quad (2229)$$

From this not only follows the rule of differences in frame contributing to the localization in a zero sum fashion but that the separable parts of the momentum must change as the following under a general transformation:

$$\partial_\mu \rightarrow \partial_\nu + \Lambda_\nu \quad \Gamma_\mu \rightarrow \Gamma_\nu - \Lambda_\nu \quad (2230)$$

With the local curvature difference from the transformation:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (2231)$$

Hypothesis of Displacement: *The curvature of the coordinate space transformation is the result of a change in coordinates natural to a given theory, and results in a real observable physical energy momentum shift because a given composite theory holds a reality to observation for displacement arising from coordinate system transformation.*

This is tantamount to saying that over accelerations in general relativity there exists a free domain of choice for the integration constant of the given accelerative curvature field. This theory is precisely the case of freedom of the first differential in reference to the general covariance over the second differential in the composite theory.

Spin Field Theory

Consider the general transformation of a spinor wavefunction $\xi_\mu(x^\mu)$. The approach used is that of generating a field theory from a general transformation of a field quantity, here the eigenstates ξ .

$$\xi_\mu \rightarrow \Lambda \xi_\mu \quad (2232)$$

Here Λ is a 16 parameter tensor which represents the transformation upon a general wavefunction ξ_μ . The transformation Λ should not be confused with a Lorentz boost, as it is a transformation of the field of spinors into itself and is an field tensor operator. It however carries analogous properties, for a rotation and a scaling of the spinors *is* equivalent to a *local* change in frame, however it does not arise by net global motion but instead by way of the evolution of the field of spinors. This can be written in general as:

$$\Lambda = e^{-ig\lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu}} \quad (2233)$$

The spinors are rotated and boosted in the six possible directions given by the tensors in the transformation. Where g is a coupling constant and $\lambda_{\mu\nu}(x_\mu, x_\nu)$ parametrizes this transformation in space and time, while $\sigma^{\mu\nu}$ is a set of matrices corresponding to the commutator of the γ matrices, as defined by the following:

$$\sigma^{\mu\nu} = \frac{i}{2}[\gamma^\mu, \gamma^\nu] \quad (2234)$$

What is important is that a *gauge* can be defined for this transformation, since it acts on a *field of spin*:

$$\partial_\mu \rightarrow D_\mu = \partial_\mu + \Gamma_\mu \quad (2235)$$

With:

$$\Gamma_\mu \equiv \gamma_\nu \partial_\mu \gamma^\nu = \partial_\mu \log \gamma^\nu \quad (2236)$$

From before. Since this is the logarithmic derivative of the spin as a field, the transformation is as follows on the eigenspinor:

$$\xi_\mu \rightarrow \Lambda \xi_\mu = e^{-ig\lambda_{\mu\nu}(x_\mu)\sigma^{\mu\nu}} \xi_\mu \quad (2237)$$

And on the particle and field momentum:

$$\partial_\mu \rightarrow \partial_\mu - ig\partial_\mu \lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \partial_\mu + \partial_\mu \log \Lambda \quad (2238)$$

$$\Gamma_\mu \rightarrow \Gamma_\mu + ig\partial_\mu \lambda_{\mu\nu}(x_\mu, x_\nu)\sigma^{\mu\nu} = \Gamma_\mu - \partial_\mu \log \Lambda \quad (2239)$$

Where the sign change comes from the fact that the covariant correction operates on γ^ν while Λ operates on ξ_μ . Hence this is equivalent to changing the order in the commutator and hence there exists a change in sign, and the transformation has opposite differentials with ∂_μ and Γ_μ .

The form of the covariant differential D_μ is thus left intact by gauge transformations with the spin curvature connection, and as the wavefunction is separably transformed from that of γ^ν , the exponential is preserved in both parts of the covariant differential.

Finally, the adjoint wavefunction is with the conjugate of this wavefunction transformation, so the probability amplitude is left unaffected in the Dirac equation, and the electromagnetic gauge connection may be added separately. Thus the net covariant differential is:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad (2240)$$

Transformation With an Electromagnetic Field

Beginning with the reciprocal property of γ^μ and D_μ we derive the response from this condition extending to the introduction of an external four potential αB_μ . The given is that:

$$\gamma^\mu D_\mu \xi_\mu = \xi_\mu \quad (2241)$$

It is illuminating to consider the torsion property as related to the Meissner effect.

Then we add $\alpha B_\mu = f_\mu$ to produce the new condition, interrelating the accelerated frame transformation produced under interaction to the addition of this field:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) \xi_\mu = \xi_\mu \quad (2242)$$

So that to satisfy both equations:

$$\lambda^\mu \gamma^\mu (D_\mu + f_\mu) = \gamma^\mu D_\mu \rightarrow \lambda^\mu = (\gamma^\mu D_\mu + \gamma^\mu f_\mu)^{-1} \gamma^\mu D_\mu \quad (2243)$$

The partial derivative and spin curvature terms are modified as the following:

$$\partial_\mu \rightarrow \partial_\mu + \partial_\mu \log \lambda^\mu \quad \Gamma_\mu \rightarrow \Gamma_\mu - \partial_\mu \log \lambda^\mu \quad (2244)$$

With this, the covariant differential is preserved. The added term comes from the distributive property of the log function and the action of the transformation on the wavefunction:

$$\partial_\mu \log \lambda^\mu = \partial_\mu \log((1 + \gamma^\mu f_\mu)^{-1}) = -\gamma^\mu \partial_\mu f_\mu \quad (2245)$$

Since they are in the same frame, γ^μ and ∂_μ commute. Integrated as a source this term is:

$$-f_\mu = -\alpha B_\mu \quad (2246)$$

The added term of λ^μ perfectly compensates for the added f_μ by the above. Hence the electromagnetic potential that is applied causes a shift of energy momentum between the two parts of orbital and spin curvature energy momentum, at the strength of the applied electromagnetic potential.

The condition of (45), implies that from the perspective of a particle accelerated in relation to a particle at rest, the particle at rest acts as a source generating an opposite potential to its own potential as experienced in the frame of the accelerated particle. The accelerated particle is not a source to itself because of the reciprocal condition and it is at rest in its frame, so it experiences the (negative) potential of the other particle at rest. This indirect potential acts on either particle, and must act to attract them, and a gap develops.

As there exists a frame of rest and condition (45) is conserved under a frame transformation, there exists no direct potential, but there does exist one arising from the frame of acceleration relative to the frame of rest, as a back reaction reversed potential on the particle in the accelerated frame.

Thus both particles experience a negative potential with respect to the other particle, which is the following potential:

$$\int \gamma^\mu \partial_\mu \log \lambda^\mu dx^\mu = -\alpha B_\mu \quad (2247)$$

This explains the diamagnetic effect and pairing, and is consistent with the magnetic field being zero. Additionally, the magnetic field of zero can be explained as the fact that if γ^μ and D_μ operating on ξ_μ are reciprocal to a constant, and given the momentum is inertial, it produces zero magnetic field in all frames.

But this condition of the eigenstate is preserved with respect to all frames, thus the magnetic field is globally zero for all points within the material.

Covariant Differential Commutation Relationship

Consider the interior transformation of the covariant differential due to the term produced by the previous transformation under action of the electromagnetic field:

$$\begin{aligned} [D_\mu, D_\nu] &= \partial_\mu \partial_\nu + \partial_\mu \Gamma_\nu + \Gamma_\mu \partial_\nu + \Gamma_\mu \Gamma_\nu - \partial_\nu \partial_\mu - \partial_\nu \Gamma_\mu - \Gamma_\nu \partial_\mu - \Gamma_\nu \Gamma_\mu \quad (2248) \\ &\rightarrow (\partial_\mu - \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\ &\quad + (\partial_\mu - \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\partial_\nu - \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\ &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\partial_\nu - \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\partial_\mu - \alpha \partial_\mu A_\mu) \\ &\quad + (\Gamma_\mu + \alpha \partial_\mu A_\mu)(\Gamma_\nu + \alpha \partial_\nu A_\nu) - (\Gamma_\nu + \alpha \partial_\nu A_\nu)(\Gamma_\mu + \alpha \partial_\mu A_\mu) \\ &= -\alpha \partial_\mu A_\mu D_\nu + \alpha \partial_\nu A_\nu D_\mu + \partial_\mu D_\nu - \partial_\nu D_\mu \\ &\quad + \alpha \partial_\mu A_\mu D_\nu - \alpha \partial_\nu A_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu \\ &= \partial_\mu D_\nu - \partial_\nu D_\mu + \Gamma_\mu D_\nu - \Gamma_\nu D_\mu = D_\mu D_\nu - D_\nu D_\mu = [D_\mu, D_\nu] \end{aligned}$$

Which indicates that the two gauges are mutually satisfied under transformation by the field, interior to the covariant differential. This also holds true for the total covariant differential since any transformation should be performed symmetrically. Hence, the commutation relationship of the covariant differentials is preserved under the internal transformation of its terms. Furthermore:

$$[D_\mu, D_\nu] = -[\Lambda_\nu^\mu D_\mu, \Lambda_\mu^\nu D_\nu] = -[D_\nu, D_\mu] \quad (2249)$$

Indicating the commutation relationship is antisymmetric under a symmetric frame transformation. We may evaluate this term in the following way at a point in space:

$$\begin{aligned} \xi_\mu \xi_\nu [D_\mu, D_\nu] \xi_\mu \xi_\nu &= \xi_\mu \xi_\nu (D_\mu D_\nu - D_\nu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (\Lambda_\nu^\mu D_\mu \Lambda_\mu^\nu D_\nu - \Lambda_\mu^\nu D_\nu \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (D_\mu \log \Lambda_\mu^\nu D_\nu - D_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (\gamma^\nu \partial_\mu \log \Lambda_\mu^\nu D_\nu - \gamma^\mu \partial_\nu \log \Lambda_\nu^\mu D_\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu (\gamma^\mu \partial_\mu \log \Lambda_\mu^\nu - \gamma^\nu \partial_\nu \log \Lambda_\nu^\mu) \xi_\mu \xi_\nu \\ &= -\xi_\mu \xi_\nu \alpha (\partial_\mu A_\nu - \partial_\nu A_\mu) \xi_\mu \xi_\nu = -\xi_\mu \xi_\nu \alpha F_{\mu\nu} \xi_\mu \xi_\nu \end{aligned} \quad (2250)$$

Making use of (34) and γ^μ and γ^ν to correct for the covariant differential making it a partial derivative by (35) and the fact that when the partial derivative associated spin is multiplied by another spin factor the negative logarithmic derivative is introduced into the equations (37) and (38). Hence:

$$[D_\mu, D_\nu] = -\alpha F_{\mu\nu} \quad (2251)$$

The spin field transformation which accompanies the introduction of the electromagnetic field, under the covariance of the form of the eigenstate is a curved transformation of coordinates, and hence what we arise at is a real consequence of coordinates. It is flat in a sense (when one accounts for the change in coordinates) and curved in a sense (when one does not account for this change in coordinates) naturally. The Meissner effect is seen as the conventional departure of the electromagnetic field tensor torsion condition at the boundary of the superconductor.

Calculation of Exchange

We can now proceed to analyze the commutation relationship of the ∂_α and Γ_α with the added $\pm\Lambda_\alpha$. Under the two particle equation this is reversed in sign among the two sides of the two particle Dirac equation corresponding to particle 1 and particle 2. Under consideration of the fact that Λ_α changes sign under juxtaposition.

Exchange Difference Hypothesis: *The added logarithmic differential of the frame transformation, or its curvature, Λ_α , in changing sign between frames behaves in conjunction with ∂_α and Γ_α as raising and lowering operators in the two particle Dirac equation.*

To test this hypothesis consider the ∂_α energy momentum for the singlet. Between states in the two particle Dirac equation a term enters as:

$$(-i\hbar\partial_\alpha + 2\hbar\Lambda_\alpha)(-i\hbar\partial_\alpha - 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(a^\dagger a)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \quad (2252)$$

The term on the spin curvature enters as:

$$(-i\hbar\Gamma_\alpha - 2\hbar\Lambda_\alpha)(-i\hbar\Gamma_\alpha + 2\hbar\Lambda_\alpha)\Psi = -2\hbar^2(aa^\dagger)\Psi = -2\hbar^2\partial_\alpha\Lambda_\alpha \quad (2253)$$

Thus the effect of the acceleration and the existing momenta, create the conditions under the two body (with opposite accelerative frame boosts) of anticommuting operators. The two particle equation is the product of two Dirac equations acting on the superposition of the two wavefunctions, here taken in the center of mass frame α :

$$(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)(\gamma^\alpha(-i\hbar\partial_\alpha - i\hbar\Gamma_\alpha + eA_\alpha) - m)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (2254)$$

Substitution of conserved quantities to simplify the calculation results in:

$$(-i\hbar\eta_+^\alpha + e\sigma^\alpha - m)(-i\hbar\eta_-^\alpha + e\sigma^\alpha - m)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (2255)$$

Because the positive and negative orbital momentum and spin curvature sum to zero:

$$(e^2\sigma^\alpha\sigma^\alpha - (me + 2ie\hbar(\eta_+^\alpha + \eta_-^\alpha))\sigma^\alpha + im\hbar(\eta_+^\alpha + \eta_-^\alpha) - \hbar^2\eta_+^\alpha\eta_-^\alpha + m^2)\xi_\alpha^-\xi_\alpha^+ = 0 \quad (2256)$$

Because the only term which contributes to the change from the singlet to triplet under the change in sign by the operators above is η^α and $\eta_+^\alpha + \eta_-^\alpha$ is zero by equal and opposite momenta, this reduces to:

$$-4 \int \int \xi_\alpha^+\xi_\alpha^-\hbar(\eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha)\xi_\alpha^-\xi_\alpha^+ dx^\alpha dx^\alpha = \Delta \quad (2257)$$

η^α produces four terms which obey a commutation relationship by way of the above:

$$\begin{aligned} \eta_+^\alpha\eta_-^\alpha - \eta_-^\alpha\eta_+^\alpha &= (\partial_\alpha^+ + \Gamma_\alpha^+)(\partial_\alpha^- + \Gamma_\alpha^-) - (\partial_\alpha^- + \Gamma_\alpha^-)(\partial_\alpha^+ + \Gamma_\alpha^+) \\ &= (\partial_\alpha^+\partial_\alpha^- + \partial_\alpha^+\Gamma_\alpha^- + \Gamma_\alpha^+\partial_\alpha^- + \Gamma_\alpha^+\Gamma_\alpha^-) - (\partial_\alpha^-\partial_\alpha^+ + \partial_\alpha^-\Gamma_\alpha^+ + \Gamma_\alpha^-\partial_\alpha^+ + \Gamma_\alpha^-\Gamma_\alpha^+) \\ &= -4\partial_\alpha\Lambda_\alpha + ([\partial_\alpha^-, \Gamma_\alpha^+] - [\partial_\alpha^+, \Gamma_\alpha^-]) = -4\partial_\alpha\Lambda_\alpha \end{aligned} \quad (2258)$$

Where the following equality holds:

$$[\partial_\alpha^-, \Gamma_\alpha^+] = [\partial_\alpha^+, \Gamma_\alpha^-] \quad (2259)$$

As the extra Λ_α changes sign *with* the derivative, leaving for the two particle energy gap *for all electrons*:

$$\Delta = 4\hbar c \int \gamma^\alpha\Lambda_\alpha dx^\alpha \equiv 4e \int \gamma^\alpha A_\alpha dx^\alpha = 4J \quad (2260)$$

This last equivalence is because in the exchange interaction the terms of μ and ν are juxtaposed and appear in the Λ , which by the previous section is equivalent to an electromagnetic potential differential. This is consistent with the previous section, where a γ^ν changes in a *relative* manner such that a reversed A_ν is generated for the particles in motion *within a spin system background*.

If the particles are relatively accelerated there exists a reversed potential between them with an energy lowering that is the contribution to their energy from this potential, and it is equivalent to an energy mass lowering of their inertial content. This is true as the acceleration gives rise to the (reversed) potential and without an acceleration there exists no potential. The acceleration as a source for the potential is physically equivalent to the lowering of the inertial mass energy, since it is the same term numerically.

This is fundamentally the expression that the potential energy mass lowering as sourced in the acceleration, and numerically equivalent with the inertial mass energy lowering, is a matter of frame, and the two are equivalent between all frames, hence the lowering is a prediction of general covariance. Since the quantum singlet to triplet operator holds individually between particles and a conventional to ultimate difference is taken the lowering holds for all two particle states. This implies the following equivalence:

Quantum Equivalence Principle: *The potential mass energy lowering is indistinguishable from the inertial mass energy lowering.*

Discussion of Energy Lowering

This seems in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \quad (2261)$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (2262)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (2263)$$

For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content. In and by way of this it does indeed lower, but it is a matter of perspective. Going back to the system so established, we ask the question as to whether both energy conservation and general covariance can be satisfied with the formalism developed.

The analogy is actually quite simple, for what happens is that from the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (2264)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system in motion where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has occurred by the above and the condition of general covariance. The quantum equivalent of the Earth-Sun system is to see that it is the inertial constraint on quantum exchange we judge as non-inertial when it is in fact quantized inertially. This admits the formation of a new conclusion regarding quantum phenomena in general, as for example the photoelectric effect by which a photon is absorbed by an electron and knocks it out of its orbital in a metal, past a threshold energy momentum:

Conclusion: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is the accelerated interpretation of this state. This gap is real by observation from the indistinguishability of the inertial and potential relativistic factors under the equivalence principle for any transition of a quantum nature.*

Distinction

While an interaction takes place, it is true that the uncertainty principle would be modified in the observables not for the sole reason that the coordinates change under acceleration, for there does exist a coordinate free representation of the observables compatible with acceleration such that the uncertainty principle is satisfied.

It it also because either:

A:) *If the electromagnetic interaction is not included in the momentum then it modifies the position and momentum compatible with an acceleration and an interaction that varies, and thus the relative determination of momentum and position is functional and dependent on coordinates, and not an invariant description, given that this acceleration exists in a way that is dependent on coordinates with respect to the operation of position of one particle upon the momentum of another, and with the reverse operation. Hence a coordinate dependent anomaly arises in the commutation relationship between the observables of different particles, whenever the electromagnetic potential is not included in the particle description.*

B:) *If the electromagnetic interaction is included then the former anomaly does not occur, because the commutation relationship is perfectly compensated for in its change with respect to the quantities of particle momentum and field momentum, as one merely changes the other in an equal and opposite functional manner and they are comparatively added instead of a complimentary change absent.*

Conclusion: *What can be seen is that it is the sum of these changes which is the expression of a net invariance of the determination of the uncertainty principle with respect to the general covariance of the observables without which there is no commutation of the separable momenta or positions.*

If and only if this holds true can we satisfy both postulates. The restriction to mutually satisfying both postulates is trivial without invoking the multiparticle viewpoint but not when it is invoked. For note that the uncertainty principle can be made invariant by a generally covariant coordinate basis locally.

However, this is not manifestly globally invariant in that the determination of the multiparticle relationship of uncertainty does not mutually commute between different particle observables, for the same reason there exist different coordinate systems for different particles.

Additionally, although with an interaction, the single particle uncertainties remain manifestly locally invariant, they are not as determined globally in the sense of between particles, unless the interaction potential is included in the momentum. When the interaction is included the change it introduces compensates for changes in the particle momentum in such a manner that the system is manifestly generally covariant and the uncertainty principle is left generally invariant.

For this to be true an identity must hold true between the frame transformation and electromagnetic field interaction, namely that the log differential of the frame transformation is the negative of the log differential of the electromagnetic field tensor, weighted by the appropriate constant (α):

$$\partial_\mu \log \Lambda^\nu_\mu = \alpha \partial_\mu \log F^{\mu\nu} \quad (2265)$$

Furthermore this identity gives a relationship to the description of the frame as it covaries with the particle description of momentum, and yields the total covariantly conserved quantity of momentum. It is merely the force law ($F = ma$), by inspection.

Justification and Ramifications

First to note is that the multiparticle perspective is one to one with the existence of interactions, which by way of and which there exists a connection to the differing frames of acceleration, and that these interactions must be included as a field potential energy momentum as it pertains

to the full particle energy momentum as an observable in order for there to be a commutation relationship consistent with the uncertainty principle between the observables of the multiple particles.

This is to satisfy the uncertainty principle with respect to the different particle's definitions of each other, and their mutual commutation relationships, for their definitions of momentum do not commute when the interaction potential is left out. Additionally, what is striking is that it is the full particle and field energy momentum as carried by the particle that defines the observable and it is not particle only.

This seems to express on a base level that it is the full particle energy momentum with field that becomes the observable in the multiparticle viewpoint, as such must be the case to satisfy the uncertainty principle with general covariance resulting from changes in the coordinates with respect to the frame of motion, resulting from and identifiable with the acceleration due to the interaction.

As a consequence, the eigenstate condition of the Dirac equation is intact, although there is a slight difference in interpretation, arising in the context of the multiparticle description. For instance, the equation:

$$(i\gamma^\mu(p_\mu + \alpha A_\mu) - mc)\xi_\mu = 0 \quad (2266)$$

Is the expression of the eigenstate condition of a particle like an electron. Although the single particle description of the eigenstate does not differ when mapped from the multiparticle condition, what remains to be seen is if the condition this represents mathematically is still identifiable with what it means in the multiparticle interpretation.

For while the Dirac equation, as it was initially interpreted, holds perfectly well with the condition of an ordinary partial derivative upon it being zero to result in an eigenstate, there is a subtle difference in the multiparticle setting with general covariance. Here, the condition is that the total covariant differential defined as:

$$D_\mu = \partial_\mu + \Gamma_\mu + \alpha A_\mu \quad \Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (2267)$$

Must be used in place of:

$$p_\mu + \alpha A_\mu = \partial_\mu + \alpha A_\mu \quad (2268)$$

In the generally covariant setting. With this, although the Dirac equation is left locally intact, given that Γ_μ vanishes locally, it does not vanish identically for particle to particle comparisons. To prove this all it suffices to say is that the connection described in equation (8) is preserved under relative comparison of observables, and hence in general, or as for the multiparticle description, since Γ_μ does not vanish globally and must be included for generality.

As a final note consider that locally the description remains the same for the single particle description, for all particles, but that the multiparticle description differs substantially, as for instance γ^μ also takes on structure of the form of a function, and the descriptions may be inequivalent physically:

Hypothesis II: *The physics of the multiparticle description differs from the single particle description.*

In the case of exchange this can be an energy lowering. To note then is that this can lead to a collectively lowered energy in the case of superconductivity.

Examining superconductivity, for instance, the mystery is:

Mystery: *How does the energy lower, even if only in relative terms?*

This is only possible in a relative sense if the physical quantum description changes, and if the potential and kinetic energy both lower. But, the change between the singlet and triplet can be relatively modified by a matter of perspective. Internally to the system there is no change in kinetic energy as indicated by the field to frame relationship in the inertial frame, but observationally, it appears that there is a gap in energy.

To note then is merely that the triplet and singlet are repulsive and attractive, and therefore possess opposite relative curvatures, which immediately indicates a subjective-objective agreement of an energy difference of $2J$ per particle, because relatively there also exists an energy difference in the kinetic energy of J in the inertial mass energy by this same curvature relative to a system at rest external to it.

From the constraint of equation (43) and that which is imposed by the existence of multiple particles for which the condition of general covariance must be satisfied, the exchange phenomenon is relative and reveals a mass energy gap.

To prove this result quantitatively and rigorously one needs to evaluate the net integral, but this value is given empirically by the relation encoded in equation (44), which says that the differentials of these quantities are identical up to a constant of proportionality, and that their integrals should be equivalent up to a constant of integration. Then, because of this identity, the mass gap for an external observer outside the system, is the entire exchange energy difference of the two particles measured in the system of J with the change of the kinetic mass energy of J for a total of $2J$ per particle in sum.

In this context, the exchange is real only when observed from outside the system, and it is purely a relative phenomenon. Carefully noting their natures, that one is an electromagnetic potential energy difference when integrated, and that the other is an inertial mass energy difference when integrated, we arrive at the following conclusion:

Conclusion: *Relative potential and inertial mass energy lowerings are indistinguishable.*

However the gap must be weighted by the appropriate Lorentz factor, and this gives the formula and equivalence:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (2269)$$

Mystery of Superconductivity Revisited

The first thing of note in resolving this mystery is that the interpretation of the Meissner Effect is the confluence of the principle of general covariance and the uncertainty principle. The physics does not change, merely the interpretation of the uncertainty principle.

The two statements, one of the Meissner Effect, and secondly, one of energy conservation, are respectively the instantiation and extension of the uncertainty principle and general covariance. For instance, examining the equal and opposite fields which are one to one with spin angular

momentum as mutual observables, is a manifestation of the uncertainty principle to say they do not depart from commutativity with respect to boosts.

Secondly, energy conservation here is a principle by which the only dependence of this equal and opposite magnetic field is upon the perceived metrical relationship due to motion, otherwise the gravitational field of the body would change and they would exchange an extra contribution of energy, and would not preserve the center of mass under freefall.

In showing by contradiction (of a dual nature) that one or the other of these principles is violated if and when the transformation is not reciprocal to the field, one shows that the Meissner Effect is a generally covariant uncertainty principle based phenomenon. This is one to one with the principle by which the fields are in inverse or reciprocal relationship to the relativistic transformation, and:

This follows from the indistinguishability of the inertial and potential relativistic factors.

What is known is that the covariant differential in total does in fact commute, and that when it is separated into particle and field momenta that these do not commute. Thus this implies a number of things. First of all is that it is only the total field and particle momentum which is inertial, which is the interpretation of the Meissner Effect.

Secondly is that the four momentum of the particle alone is curved with respect to the field of electromagnetism alone. This is consistent because this leads to the condition of equivalent and opposite functional curvature relationships for these substituent quantities. Lastly, what this implies is that it is indeed true that the potential mass energy lowering in a superconductor is fundamentally indistinguishable from the inertial mass energy lowering.

From this follows the generalization of the condition implied by the first section of this paper, which is that:

$$D_{\mu}(i\gamma^{\mu}(p_{\mu} + \alpha A_{\mu}) - mc)\xi_{\mu} = 0 \quad (2270)$$

Which is nothing other than the condition for a covariant eigenstate.

As an experiment simply consider dropping a superconductor levitating a magnet, if this theory holds true then because there is a gradual change in the gravitational frame, as they fall their curvatures should contribute equally, with the prediction that the initial condition requires that they will fall together as one, given their mutual inertial relationship in an approximately inertial frame.

Conclusion: *There is a measurable and physical effect on the interpretation of the observables in the uncertainty principle given their coordinate system and frame independence.*

Interdependence of Orbital and Spin Momentum

To explain exactly what 'reciprocity' means in this context, consider the particles. In the two particle Dirac equation, there occurs an *internal* reciprocation of spin curvature energy momentum and orbital energy momentum. This occurs **not** because the particles merely *influence* each other, but because they *influence each other's representations* in particle energy momentum and spin curvature energy momentum to change. Hence the wavefunctions in remaining Lorentz invariant *remain the same physically*, but there occurs a reciprocation between the quantum and

the relativistic *components* of the objects.

Now consider that given the Dirac equation holds for one particle. Any multiparticle modification of dynamics must occur internal to the equation, and not modify its overall structure, but it **can** modify the individual terms in a plus-minus like fashion. This is a way to side step the problem of coming up with a new and unique generalized transformation, analogous to the γ^μ , which will encode a curved space *in general*. In this way, the multiparticle and accelerative features of reality are encoded in changes of the components of the representation. This represents something wholly new however, because the old addage that '*the whole is greater than the sum of it's parts*' applies. In this, the particles are **not** moving through each other merely because something only akin to a potential holds between them, but because a *change in each other's representations* arises from their mutual quantum and relativistic *relationships*.

An Instance of Reciprocity: *Reciprocity here means the comparison of different accelerative frames under the singlet and triplet, in which acceleration contributes to the spin curvature and orbital energy momentum, causing the two parts of the representation: the orbital and the spin, to reciprocate in space and time such that the particles mutually lower in energy and oscillate in space and time.*

Λ_ν is added and subtracted merely because of the rule of general covariance, and through quantum mechanics produces a reciprocation of accelerative spin curvature energy momentum and accelerative orbital energy momentum, so that the above can be put more simply:

Reciprocity Generalized: *Relative comparison of different quantum states under superposition leads to an energy difference in the states when different observable frames of acceleration are also compared.*

The emphasis in general is that **both** different relativistic frames of acceleration **and** different quantum states are compared simultaneously. Taking as the displacement the energy momentum associated with the change due to the difference of frames under an accelerative boost, afforded by the addition of an inertial interaction of the electromagnetic field:

$$\Lambda_\nu = \partial_\nu \log \Lambda_\nu^\mu \quad (2271)$$

Because of the equivalency principle, Λ_ν is zero in the frame of the particle and *does not* contribute to the single particle description. While for the *comparison* of states in the singlet and triplet where different frames of acceleration are compared the contribution from the relativistic frame of acceleration *difference* leads to a *displacement* of $\pm\Lambda_\nu$. The essential idea is that the gap and attractive force arises from the qualitative difference between the single particle and two particle pair descriptions under the singlet and triplet. This makes for an interaction that results in a distinction that must be made between a particle in the single particle description, and a particle that is a *part* of a two particle state under mutual *acceleration*.

When the particles are put together they produce a qualitatively different result from only the single particles put together with only an electromagnetic interaction. For instance, under exchange, interchange of frames: $\mu \leftrightarrow \nu$ creates a $\pm\Lambda$ relativistic frame difference on ∂ and Γ .

Hence reciprocation is predicted with exchange, along with an energy difference of the singlet and triplet. This implies that reciprocation of quantities is one to one with inertial motion and this is one to one with an inertial electromagnetic force, which is in turn one to one with the Meissner Effect. However, the energy of the total system is lowered or raised under mutual acceleration by the presence of the extra Λ_ν which leads to the different momenta as operators

producing an algebraically different result from their simple sum when operating on the wavefunction.

Hence, inertial motion is consistent with conservation of the exchange energy (through the cancellation of the distance dependence and inertial quality of the electromagnetic force) and reciprocity of spin and orbital degrees of freedom. We can conclude from the mere fact that spin-orbital reciprocity takes place that the exchange energy is conserved and one to one with the initial statement that the equivalency principle holds for the force law holding the charges together.

Hence, a non-dynamical difference in the exchange energy can be seen as an outcome of the inertial property, or the inertial property holding true can be seen as an outcome of the exchange energy developing a difference, but neither can be proven entirely by independent means. Finally to note is that this has an implication for general relativity as a reaction, for when the transition to the superconducting state takes place its mass lowers, invoking a complimentary raising of general relativistic energy.

This, in its general form, is what reciprocity means in the end. For the gestalt picture of quantum mechanics and general relativity produces changes in each, which are complimentary, because the general relativistic modification of the quantum description, lowers the quantum energy, and it raises itself.

Pairing and Condensation

The connecting principle that implies Δ_p is at a maximum when Δ_c goes to zero, and vice versa can be explained by two facts:

- 1.) *When particles fall into pairs they become more localized in the orbital degree of freedom, hence their relationship to one another is a **larger boost apart** between the holes comprising distinct pairs.*
- 2.) *The electrons and lattice counteract both the condensation and pairing with a resistive to an expansive force at low doping and to a contractive force at high doping. The electron sea and lattice that exists works against pairing and condensation, while remaining of equal localization to the holes.*

The density of electrons exists in proportion to the localization of holes and electrons (or inverse to their spread) and hence is also proportional to pairing strength. Simultaneously, the outward force of the pairs accelerates them apart, leading to a condensation strength that is proportional to the density of holes.

Thus the inter-pair boost is largest when the density of holes is large, explaining a large condensation gap at high doping, and the inter-hole boost is largest when the density of electrons is large, explaining a large pairing gap at low doping. Hence the two processes of balanced forces and distinct effects of the electrons or holes are at odds, yet the force inwards must balance the force outwards.

As a consequence there exists a range of doping intermediate between the extremes where superconductivity exists and it must fall off to both sides like a semicircle reaching zero because the electrons and lattice counteract the condensation force at low doping with a net contractive force of electrons with the lattice, and pairing force at high doping with an expansive force due

to the large number of holes.

Since condensation may be treated as the change in orbital localization due to relative frame, and pairing may be treated as the accelerative parameter due to the localization (inverse to the spread of the wavefunction), the net effect is described by the energy lowering being the contracted factor of:

$$\Delta = 4\hbar c \int_{\tau} \gamma^{\mu} \partial_{\mu} \log \Lambda_{\mu}^{\nu} dx^{\mu} = 4e \int_{\tau} \gamma^{\mu} A_{\mu} dx^{\mu} = 4J \quad (2272)$$

This is because the factor of Λ_{ν} is the factor corresponding to the boost leading to pairing, and γ^{ν} corresponds to the *excess* energy lowering from relative frame due to change in the boost parameter by acceleration into pairs. This is thus a factor multiplying the accelerative frame difference corresponding to the pair energy as a relative boost between pairs of the condensate. If it goes to unity then the energy of the condensation gap is zero, while if the acceleration goes to zero then pairing vanishes. Everywhere the gap is the constant of $4J$. This interval of superconductivity occurs when the lattice plus the electrons that exist balance the force outwards of the condensation and the force inwards of the pairing, but since the force is nonzero, and it acts through a distance by the effect of length contraction, the holes experience a net energy lowering intrinsic to the material.

The Cosmological Constant

The cosmological constant is a constant energy density in Einstein's theory that produces an extra term in the gravitational field equation leading to a global expansion or contraction of the universe. Particles in space consist mainly of hydrogen, and so the only interacting particles among these atoms are the outer electrons, and to a lesser extent, their protons. Exchange appears to play a role in this problem, even over the vastness of space. Consider if you will the exchange energy of two electrons on hydrogenic atoms across interstellar distances. From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the vast majority of the observable universe.

The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet. As well, this energy must be conserved. And, it involves the spin of the electron, representative in the isotropic hydrogen gas of a spin system or a local Lorentz frame, however, it is dilute.

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody

system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

A 'perfect' linearity would agree identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it would scale in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle as it applies to quantum mechanics and general relativity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of redshift, and colocality throughout the universe only within simultaneous cross sections of space in time we observe when looking out into space.

The Origin of The Cosmological Constant

First and foremost take as givens that the following statements hold true:

1.) *The equivalence principle equally as well applies to the theory of quantum mechanics as to the theory of general relativity.*

2.) *Total energy measured is lower for a whole as compared to the sum of its individual parts for a whole compared to its constituent parts.*

From this, if we imagine the universe as a uniform and isotropic gas of neutral hydrogen atoms then there a few forces at work. First and foremost is the gravitational interaction, which will tend to condense the gas, and secondly is the electromagnetic interaction of the nature of predominantly the outer electrons of the orbitals.

If we take these interactions, then the question is as to what if any net expansion or contraction will occur to explain the redshift of the Hubble constant, whereby the redshift energy difference in the state is proportional to distance, for the majority of the observable universe. The exchange interaction between the hydrogen outer electron orbitals is a lower energy from the triplet state, because the overlap of the electrons on distant atomic centers will contribute negatively for the singlet over the triplet, and as we will show it must be conserved. We have learned that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of the lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of the individual parts.

From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding. This is the prediction that the quantum states repel and attract at the same rate, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply.

This makes a 'perfect' linearity prediction with the equivalency principle, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable from the quantum mechanical difference and if it scales in a perfectly linear fashion, it is in fact the direct statement of the equivalence principle.

This final prediction must be true for quantum mechanics and general relativity, because the relativistic factor corresponding to the multibody system is the reciprocal of the relativistic factor corresponding to the observer, and represents an inverse transformation of space and time, and is the only consistent viewpoint globally and locally in a universe governed by the equivalence principle. So in the end, this model requires quantum mechanics and general relativity to be dependent on the equivalence principle, and predicts a redshift as representative of the scale of forces to one another in a universe so statically dependent on time in every moment, and accumulating over time by virtue of traversing space.

Implications for Cosmological Constant

Consider two hydrogen atoms to be undergoing separation in space with a fixed displacement of coordinate nature. Under consideration that there exist no a priori coordinates of nature, we are lead to believe in the equivalency principle.

As the particles separate under inertial freefall given the covariance of the quantum force between them, their *exchange* energy becomes the source of this separation and is conserved as a constant as:

$$\int \int g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| ds^\mu ds^\nu = 1 \quad (2273)$$

This is because under inertial freefall the intrinsic Lorentz contraction factors on the quantum wavefunctions must cancel the relativistic distance dependence from $g^{\mu\nu}$ leaving normalization to produce unity under integration. This is clearly the required condition for energy conservation. Under these provisions the exchange energy is a conserved energy under inertial separation of the hydrogen atoms. Considering it is the quantum ground state energy of the system, it is reasonable to find it unchanging under the provisions of inertial separation. Additionally, we find that the gravitational energy and kinetic energy are unchanging as the kinetic energy merely responds to the metric, and its partial derivative in:

$$D_\mu = \partial_\mu + \Gamma_{\mu\nu}^\nu \quad (2274)$$

Merely is the effect of a motion *in response to changes in the metric* and not distance of motion. With this, the extra γ factor acquired under moving apart covaries with the extra γ factor of the metric changing, under the equivalency principle, so there is no change in the gravitational energy. Finally we come to the conclusion that defines the cosmological constant:

Conclusion of Reciprocity: *The change in gravitational, quantum, and kinetic energy are all ultimately zero under the inertial separation of hydrogenic atoms.*

Calculation of Cosmological Constant

The energy is negative as it is the difference from the coulombic triplet and singlet energy states, and this energy is higher or near zero, because of the existence of the electrons and protons

leading to charge neutrality between the atoms. Exchange energy is negative because of the presence of the protons present without electron densities.

Consider the general exchange term evaluated in spacetime:

$$J = -\frac{e^2}{4\pi\epsilon_0} \int \int \gamma^\mu \xi_a^\dagger(x^\mu) \gamma^\nu \xi_b^\dagger(x^\nu) \frac{1}{r_{12}} \xi_a(x^\nu) \xi_b(x^\mu) g_{\mu\nu} dx^\mu dx^\nu - A.S.M. \quad (2275)$$

Where the γ^μ and γ^ν appear from the boost of relative motion of the hydrogen atoms over time apart and A.S.M is the antisymmetric term with μ and ν interchanged.

The exchange becomes by moving terms around and expanding $\frac{1}{r}$.

$$J = -2\frac{e^2}{4\pi\epsilon_0} \int \int \xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \frac{g^{\mu\nu}}{\int \sqrt{g_{\mu\nu}} ds^\mu} \xi_a(x^\nu) \xi_b(x^\mu) g_{\mu\nu} dx^\mu dx^\nu \quad (2276)$$

Where $g_{\mu\nu}$ is the physical metric (assumed symmetric), and $g^{\mu\nu}$ appears due to the identity:

$$\gamma^\mu \gamma^\nu - \gamma^\nu \gamma^\mu = 2g^{\mu\nu} \quad (2277)$$

This can be interpreted as a energy between bodies for the infinitesimal motion of one body compared to the whole.

An electron position x^ν is differentiated against to produce energy density in infinitesimal form for one body with respect to an infinitesimal of the other:

$$E_\delta = -2\frac{e^2}{4\pi\epsilon_0} \int \xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \frac{\sqrt{g_{\mu\nu}}}{\int \sqrt{g_{\mu\nu}} ds^\mu} g^{\mu\nu} \xi_a(x^\nu) \xi_b(x^\mu) dx^\mu \quad (2278)$$

It is a force when differentiated again against μ and an energy density when multiplied by a distance infinitesimal, here the square root of the metric multiplied by an infinitesimal distance.

It is mathematically equivalent to:

$$\Delta E = -2\frac{e^2}{4\pi\epsilon_0} \partial^\nu \log \int \sqrt{g_{\mu\nu}} ds^\mu g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| \quad (2279)$$

This works, as this is the form:

$$\Delta E = F_\nu \cdot dx^\nu \quad (2280)$$

This statement reduces to the energy density infinitesimal taken over an infinitesimal path length in space. This produces a curvature that is proportional to the accelerative force and constant over the wavefunction. Essentially the description has been moved from a total energy density to a change in energy density given the infinitesimal overlap of the bodies. The total energy of this interaction contribution is the double integral of the energy density.

To get the per particle energy density we divide by two. When the curvature is a constant and the overlap is unity, by the process of Lorentz transformation under inertial separation the distance cancels the increase in overlap from the Lorentz transformation. From this one can see that a positively curved space will induce a negative energy content, and a negatively curved space will induce a positive energy content. In this model the force of this term decreases to the level of matter present as expansion slows. To demonstrate that it does not contract again, consider that any contraction by gravity only leads to an enhancement of this force over its previous value or

equivalently to a scalar multiple. The system is therefore asymptotically infinite and flat.

Under the assumption of uniformity, we have a constant acceleration. For such acceleration, the curvature term relies on a $g_{\mu\nu}$ as a pure exponential, and the curvature reduces to:

$$\partial^\nu \log \int \sqrt{g_{\mu\nu}} ds^\mu \rightarrow \gamma^\mu \partial^\nu \log \sqrt{g_{\mu\nu}} \equiv \gamma^\mu \Gamma_{\mu\nu}^\nu \quad (2281)$$

Γ is merely a constant, spacetime is curved, and g is a global invariant, so the energy remains a constant as a function of time. γ^μ is introduced to make the curvature Lorentz invariant and is from the flat Minkowski space.

We divide by c^2 to obtain mass density, and considering the result of equation (79):

$$\Lambda g_{\mu\nu} = -\frac{1}{c^2} \frac{e^2}{4\pi\epsilon_0} \gamma^\mu \Gamma_{\mu\nu}^\nu g_{\mu\nu} \quad (2282)$$

Which matches the above form for this new interaction for a uniformly curved space. This plays a role analogous to a cosmological constant.

The Einstein field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (2283)$$

With:

$$\kappa = \frac{8\pi G}{c^4} \quad (2284)$$

Consider the influence of different metrics or spacetime geometries on the effect. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term. The gravitational curvature of space counteracts this effect as the sign on the energy density is negative. Because of this sign change gravity counteracts this force. The presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to general repulsion this exchange integral gets a constant contribution over the whole wavefunction between any two hydrogen atoms of the universe as a gas. These are taken as the predominant interaction because over 90% of the universe is composed of hydrogenic gas, and the orbitals of helium (the next abundant element) are close in size to that of hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wavefunction is:

$$\xi(x) = \frac{1}{\sqrt{a_0}} e^{-\frac{x}{a_0}} \quad (2285)$$

Where a_0 is the Hydrogen ground state orbital size.

The distance between the centers of these wave functions must also be incorporated. With an initial condition of complete overlap the Lorentz factor from acceleration can be modeled by:

$$g^{\mu\nu} = e^{2\beta d} \quad (2286)$$

With β the boost parameter and the acceleration. The condition for conservation of energy under inertial separation is that the metric of contraction cancel the distance dependence, coincident with the condition that the infinitesimal of curvature being a constant. The product of the wavefunction overlap infinitesimal occurs with the above metric and is given by:

$$g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| = \frac{1}{a_0^2} e^{2\beta d} e^{-\frac{|x-d|}{a_0}} e^{-\frac{|x+d|}{a_0}} e^{-\frac{|x-d|}{a_0}} e^{-\frac{|x+d|}{a_0}} \quad (2287)$$

$$= \frac{1}{a_0^2} e^{2\beta d} e^{4\frac{d}{a_0}} e^{-4\frac{x}{a_0}}$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_\mu (e^{2\beta d} e^{-4\frac{d}{a_0}}) = 0 \quad (2288)$$

From this:

$$\beta = \frac{2}{a_0} \quad a_0 = \frac{\hbar}{m_e c \alpha} \quad (2289)$$

The variable β describes the acceleration of the atoms as they move apart, where a_0 is the first hydrogenic orbit radius.

With this, the curvature term becomes:

$$\Gamma_{\mu\nu}^\nu = \partial^\nu \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a_0} \quad (2290)$$

Λ becomes after integration to get total energy:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^\mu|}{a_0} - 2\frac{|x^\nu|}{a_0}} dx^\nu dx^\mu = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (2291)$$

This suggests that the divergence of the curvature multiplied by the quantum energy is the source term of the cosmological constant. This mass is the cosmological mass with negative mass and energy content of every interaction. Λ evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (2292)$$

The quantity as measured is $-10^{-35} [kg][m]^{-3}$. The value for the cosmological constant is given as one order higher than to the right order. The speed of light is used in the boost parameter, as the expression for the boost parameter is: $\beta = \frac{v}{c}$. H_0 is the rate of acquired velocity per distance, the boost increasing with distance. The per meter unit of energy must be multiplied by the conversion from matter energy content to gravitational curvature in Einstein's field equation (an inverse distance per energy) to produce the curvature of spacetime. This curvature of space is proportional to the boost parameter per the equivalence principle.

When the curvature is multiplied by c it produces the boost velocity per distance, or the Hubble constant:

$$H_0 = |8\pi G E c| = 16\pi\alpha^2 m_e c^3 G \approx 2.19201 \times 10^{-18} [s]^{-1} \quad (2293)$$

In reality, H_0 is measured as $70.8 [km][s]^{-1} [Mpc]^{-1}$. Converting this to MKS units: $H_0 = 2.29 \times 10^{-18} [s]^{-1}$. The discrepancy between this result and the quoted value can easily be explained. The mass content of normal matter causes a positive contribution to the curvature

over spacetime. This induces a repulsive effect between the components of matter that cause this field as they persist in inertial freefall. With this constant there exists a critical density for condensation or formation of massive bodies.

This extra repulsive contribution is equal and opposite to the attractive contribution because gravity generates extra relativistic contraction factors and thus the degree to which a metric is hyperbolic is actually enhanced by the presence of matter content when this term dominates, as it would in the early universe.

Thus the Hubble constant is enhanced in the proportion of normal matter content to total matter content of the universe. Normal atoms are approximately 4.6% of the matter in the universe. Considering these as gravitationally inducing, they constitute an extra effect of repulsion. With this:

$$H_0 = 16\pi\alpha^2 m_e c^3 G(1 + P_o) \approx 2.292844 \times 10^{-18} [s]^{-1} \quad (2294)$$

Where $P_o = .046$ is the proportion of ordinary mass to total mass content of the universe. The enhanced repulsion with a background metric and a constant negative energy density promote the viewpoint of an asymptotically flat universe. The asymptotic shape is then flat when this force dominates. Given the vast predominance of so called "dark energy" this model is appropriate. The fact that this energy matches the Hubble constant is direct indication that spacetime is asymptotically flat.

With light, there exists a pressure in excess of this natural balance. It is reasonable to expect this would lead to an accelerating expansion, as more matter is converted into light. Hence this model is compatible with a flat apparently accelerating universe that is asymptotically flat and insensitive to the exact amount of matter initially present. A useful extension of this theory to determine acceleration would be to understand the ratio of the conversion of matter into light in stars versus the energy content of the newly produced matter versus the radiation produced. This theory may also help explain the development of galactic and other large scale structure.

Conclusion

The paper has proceeded to prove that general covariance applies to quantum mechanics, and illustrate two major consequences. The main point is that with general covariance the energy is lower for a quantum system in the center of energy momentum frame, and this lowering is real by the equivalence principle. From this, the field theoretic implications of a spin system produce a curved space effectively, which with the equivalence principle means that the energy lowering is very real within a quantum system.

The multibody problem is implicated in this by the collective energy lowering that ensues, and the effect is merely a manifestation of the application of general covariance and the equivalence principle to quantum mechanics. With the implications of general covariance and the equivalence principle to quantum mechanics we arrive at a synthesis whereby there is a quantum equivalence principle.

Within any transition there is a conventional to ultimate difference in viewpoints, whereby agreement means that quantum mechanics not only subscribes to the equivalency principle but that a change in frame accompanies a quantum transition. These are multiplicative and geometrically logarithmic, and add such that the gap is a constant in superconductors for all particles.

The uncertainty principle is then shown to be slightly different in a viewpoint which incorporates general covariance and that torsion explains diamagnetism. On the level of the conventional, there is a disturbance of the mass gap with a magnetic field because the net sum torsion of general relativity (which in part contributes mass conceptually via its definition of inertia) and of electromagnetism (for which the magnetic field can be seen as an instance) is zero. These are counteractive effects, thus explaining the Meissner effect.

These results were extended to create a generalized law for a superconductor with an electromagnetic field and the gap was generalized to the case of pairing and condensation under the provisions so given before. What has been attempted is a general principle by way of which superconductivity can be explained in the HTSC's, and what is most remarkable is the general result of a new type of inertial freefall in spin systems analogous to the equivalency principle in gravitational theory, but quite distinct from it and associated with the Meissner effect. The results were shown to accurately predict, as well as clarify the nature of the cosmological constant, superconductivity, and the concept known as inertia, when the quantitative and qualitative implications of integration freedom from general relativity are investigated.

Complimentarity

A 5th order quasiperiodic theory is settled by in the threshold mechanic of penalty to temperance of a consolidate unit'ed envelope conditional on the bi-set of vacua and diminished order spaces; with specialization to occluded return of any two co-simultaneous tertiary or secondary observers; admissible only in that of our dimension. That of the auxiliary state is a guarantee; however; when individuated as a machine among (or tertiary to) that of an assembly-state; the provision for the ideal heat engine violates the exclusion principle; adopting that of a 'secondary' provision under optional; or dis-enjoinable end-gas-states. So as one cycles within a relation there is ideal dual-complex exponential and digraphical elliptic notion of wave structure on that of one end of the Spiral of Cornu or-incidentally; back. The patterns that are witnessed in the HTSC's; etc, are phenomenology of two dioptrically overlapping one another in the Random Approximation Limit; but do not reach the holographic tri-critical point until a process of descent of what is a held dioptric difference in consideration of levity for potential; to which the in-exorable machine limit-state is delimitable for then in a topological union of complex, real, and imaginary. The fundamental statement proposed is that a stripe is the dual of either that of the bifoldded (two-fold) in one [shared] or [unshared] piece of paper to what is two and two in 'separable' sector's; therefore that of bi-section to freed principle; the topological embedding the 'natural embedding' of a Poincare Disc glued twice over to a circle. Therefore the two mapping's in wave-argument to dual cavitated spatial occupancy of zero extension. A pattern evolves which is differentially explained but to which is predicated on that which hidden variables but not exchange by Pauli would exclude; but for a caveat to statistical mechanics on a Hamiltonian and Lagrangian space. The second differential (for what is a property of physics theorization; that trial's do not contribute to what is moment's, identities, disclosures, openings, and constructibility); freed, is more expressive and motile than the diss-appearance of a manifest first differential Laplacian; hence order in time is an ordered string of [2].0[2] etc... This is co-extensive enough that the second differential is what a system reduces to; the first differential may be numberlessly discarded.

Introduction

The first relationship of importance is that of the equation which dictates that of by way of which *the results of relativity do not alter the probabilistic outcomes of quantum mechanics*. To a dual edge this is the statement that *only* a statement of exclusive and definite measurement can assail an infinite and zero probability of Dirac order; and only measurement is a decisive factor after-the-factual presentment. It is however to be questioned...

Given probabilistic and relativistic considerations are dependent on coordinates of position and momentum; the equation that expresses independence of statistics is intimate to a series of (co)factor's unmanifestly dissipative and co-terminable with entrance. That of one fifth relation is not in assembly; for what of the Green's function to contain a zero-dimensional fractal as such; but to-here; the quantum expectation of a gauge probability flow reduces to a null conditional pre-cept of mutually 'outside' [a] place; to a non-descript zero dimensional point like limitation within the predicated and hypothetical quantum liquid/fluid/solid (as dependent on crystalline and potentially aperiodic foundational number-sum) of indiscernability (and separation into a past for of degeneracy to (5) and (6) dimension's; but also any crystal extrapolated from a Fourier Transform of a de'Hass'Van'Alphen wave structure:

$$\Xi \equiv \Xi \rightarrow (\lambda(\epsilon), \lambda(\rho)). \sim (0, 1) \quad (2295)$$

From The Equivalence Principle (herein equally weighted in frames):

$$\frac{\partial}{\partial t} \equiv \gamma \frac{\partial}{\partial t} \rightarrow \gamma^\mu. \sim \eta \in SU(2)[U(1)] \quad (2296)$$

The Lie differential; which is designed such that the covariant differential and the one-form differential commute is a good candidate therefore for derivation's to speculation; it's core statement of commutativity one of freedom of the one-form γ from statistics Ξ :

$$L_\Xi(d\gamma) = dL_\Xi(\gamma) : \omega_1, \omega_2 \quad (2297)$$

Together; this is nothing more than that the Shared Proper Time is equivalent to the Covariance in Uncertainty.

With this we have the relation:

$$L_{f\Xi}\gamma = fL_\Xi(\gamma) + df \wedge i_\Xi(\gamma) \quad (2298)$$

Together any two qualitative limit's of what are 'property' and 'proportion' of 'shape;' in-exclusively contain a convex space within it's margin; and qualitatively convex as to mapping; therefore of evaluation of statistical calculi; that of re-apportion of functional deficit factor's the equalitative product of spatial and temporal variance within elliptic expression; in reduction by a covariant-factor of advance and diminishment (exponential) upon two acasual arrows; to which the center of energy and mass is 'on-mass-shell;' That of the metric relation of infinite spin's 'devoured' by the basis; the interior transformation groups of these equations.

$$f. \sim (0, 1); \quad L_\Xi(\gamma) = df\Xi(\gamma) \quad (2299)$$

Thus the end condition is perfect heat to mechanical conversion; that of one third back in physical form; and three involute to two determination's of inward place; *unto control, predecession, impartiture; of reflex, impulse, and co-determination*. Thus a physical relation must break down

to what is a quotient of (2) within; merely a null-centre; of that of the quasiperiodic and non-periodically randomized state of no-approximation.

$$\tilde{\omega}. \sim \tau \tag{2300}$$

This expression is that of by which a factor of a functional form to the manifold of statistics of 'motion with deformation or transformation' is free of the relativistic characteristic common denominator of the Equivalence Principle homomorphism and the stationary state of the Quantum Description. This statement represents the preservation of the heat equation.

This is the substitution of one particle freely within one held space into another; so that one particle may co-occupy one space with another; or be unseparatedly sequestered aside to the departure to counionable differences of it's evolution. Therefore we may take; owing due to these prescriptions:

$$\Phi(x, v, t) = \eta e^{-i(\kappa\theta + \tau\phi)} \leftrightarrow \Theta(x', v', t') = \rho e^{-i(v\mu + \epsilon\psi)} \tag{2301}$$

Therefore an apportion to a mean holds an invariance and an equivalence. We will find this is nothing more than the declination to a tertiary observer; for in that of one juxtaposition to it's closed end; in the 5th; the end openable is the 4th to the preceding of ordinal calculai; for that of derivative coordinality groups; for then in what co-exist's; the then limited four dimensional enclosure hold's the freedom of light from matter.

Then; to what is a real result of probability; it is that of unenclosed bearing on the relative principle and the emptiness with the quantum principle; or; that of the quantum principle empty in relation to the relative principle; is to that of freedom of isoclinic relation; an established direction to heat and momentum exchange within the non-linear dynamics; here considered; entirely and alone of physical application to superconductors; but of derivative principles for pedagogy. Therefore there are two types of system for consideration. The first question is:

Question I: *Do any or alone only unbound & unbound [is it exclusive or inclusive to which case;] systems [therefore,] obey the same spin-statistic relations?*

The equations first presented lay the prescription in place that of by way of which any two observerables as measureables ζ and ξ may hold an identity with measurement process:

$$\zeta\Phi = k\xi\Theta \leftrightarrow \zeta\Theta = k^g\xi\Phi \quad \epsilon\chi \quad H\chi(g) \quad k = \pm 1 \tag{2302}$$

Where g is the boson-number; the genus number; indicating the number of holes in the space of it's topology in a Hilbert space (H) with topology $\chi(g)$.

It holds naturally that if the number of holes is even ($g = 2 + b$ & $b = 2l \ l \in Z$) that the spin obeys an even-statistic; and if the number of holes is odd ($g = 2 + b$ & $b = 2l + 1 \ l \in Z$) there is a rotation of 180 degree's in the spin-theorem; hence the sign flips for interchange of particles. And the k is (-1) for Fermions; and $(+1)$ for Boson(s).

The Spin-Statistics Theorem versed in this manner provides a connection between the space-time and the quantum properties of objects as particles in the space-time.

Representation Theory

In the continuum of the probabilistic operators any mutually factorable relation into which the solution is also a given solution of the equations:

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho + \eta \tag{2303}$$

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \rho\eta + i\sigma(t) \tag{2304}$$

Is deterministic.

Hence; any operator that admits in a dual-sense two conformal relations in logarithmic reduction to a common factoring exemplifies the naturalized relation of (2) *time's and space's* to which is the extension of quantum mechanics above the theorem's of relativity. This finds its way into the Dirac equation for the electron by that of the intimation of a field-conjugate momentum; to which is shared or unshared; and assists in deriving that of a *new* expression for the multi-body problem; in which the two body problem can be subjected and decomposed.

This is nothing but the statement that: *The rate-period of time is a congruent relation in the particle representation to which is empty; and to which the two-body problem may be separated into the one-body problem of which there are two.* This is consistent when there are taken to be two spatiotemporal projections of the particle operator. These projections are no more dissimilar than the 'functional representation' and 'particle representation' of a particle or multi-particle system, *and exist because the particle is empty.*

Therefore;

$$\partial_\mu t = 0 \tag{2305}$$

Expresses the emptiness of time; to which all supporting statements of this paper affirm.

With:

$$. \sim \tag{2306}$$

An expression of a neither nor shared light envelope of illuminance; to cadence of a Lamp freely-lit to invisibility below an alternative two juxtaposable place's with projections & the statement of unto another and a place; or two to occasion; or four to differently establish; or five to equably pass on; or six to espouse or entreat; and of seven; to equalidiate. Therefore of co-linear equivalent extension outward inward and inward outward for what is two to two; expressible only that as the equivalence principle derives to two properties [a metric and a mass] that of the freed electromagnetic theory is broken on the gravitational; as the gravitational is negative to orbital coupling under a reverse-surjective phase orientable traversal of temporal co-extensibility to a union in five to a third; any even-faceted two to a third of mitigated arc.

Therefore in either [explicitly held] the outcome is non-determinant between any two quantum and gravitational limit's but unpredictable; yet within an openable and extensibility to freed self intimation and juxtaposition; for what is co-determinant; as an absolute physical norm of the space. When we consider what is resumptive of the 'actual' to what grows outward every-where else of the topological function; and with a heart; body; and mind; the truth of form's *are* for in what is found of life; for these are bound to a mortal coil.

Of it's freed ranges; the security of a pre-cept from it's imported dextruous nature is the cleaving unto the alternative of self found as [within conveyance] via a means of two; under adoption of

the willingness to encourage the dexterity to the task... That of what is presented therefore is that the only discernable and observant condition [once-expressed] of identities is the following two principles:

Canary Principle: **For one bird; that bird; under it's own replacement self suffices to fill a relation; hence under removal; it self suffices [among a count] to answer absence unto it's own.**

Banana Principle: **The banana principle states two are unprecluded from foreknowledge in yet a third out.**

Statistical Admixtures

It holds as a lemma; that the statistics are therefore empty of relation in a given comparative assessment to relativity; and that relativity does not alter the statistical properties of a system. This (infinite) barrier of a theorem presents alternatives only found within the global properties of a system; to which it is also global. The *free capacity* to include a differing Δ from Λ is the extension of the differentials. This therefore proceeds along two lines; that of either a principle equivalence or a principle in-equivalence; the variables decomposed by either **log** relation. The proof is reliant on (surpassing the infinite obstacle of integration of these two theories); at that of assuring that one viewpoint is equivalently as-consistent with the other *relativistic* frame-argument. This two-fold relation is essentially that:

$$(i\hbar\gamma^\mu D_\mu - mc)\Psi = 0\Psi \quad (2307)$$

But here; that of 0 is differently established because *on account of the second particle* there are **2** *two* solutions to the original single-particle state... That of:

$$\gamma^\mu D_\mu \leftrightarrow \gamma^\nu D_\nu \quad (2308)$$

Hence for in light of two bodies;

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (2309)$$

Both describe the *same two particle system* from what is yet two-different-relativistic descriptions. That of relativistic assurance is found then in the degeneracy of which is that:

$$\Lambda\Psi = \Delta\Phi \quad (2310)$$

This ensures that their energies are equivalent and four-momentum descriptions of each particle are too; possibly up to an interchange. This ambiguity is afforded as the second particle has altered the description of the first particle. To see that this **this does not** alter the relativistic description is to see that reversal of viewpoint and 'objective' does not alter the image under **initial** composition.

Either of α or β are equivalent by equation (5) of the paper; to which when either particle (to which is empty) alter's the representation of it's conjugate particle it does so from the alternative of a self-and-world to which is **two**. That of world and particle versus (with world and particle in the formative and former position) does not alter the outcome of the result of the first particle (1); and, *without exception; that of their statistical intimation is left unaltered for-in-light-of projective dis-similarity of neither upon the world.*

This 'neither' of which is undecidable from the other side of relativity; is the incomparability to which *probabilistic interpretations are independent of relativistic prescription*. It is also the imperative that physical law is *empty*. Therefore we may freely take:

$$\Psi. \sim \Phi \quad (2311)$$

With the transformation and in-equivalence of τ and ϵ affording that of factoring into superposition's such as are re-compositional *linear* states.

Hence, a theory that incorporates an *equivalence principle* invokes **two** times, a *proper time* and *improper time* as a projection of the two body problem *within the context of the equivalence principle to which must lead to equivalent physics*. Casting one particle to it's *probabilistically neutral provision as granted the prescription of the equivalence principle* grants the other particle to possess that of probabilistic independence with co-mutual occupancy under the 'tertiary' - third observer **out**.

Abstraction in Conclusion

The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (2312)$$

By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (2313)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (2314)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame.

$$\sigma(t) = (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))) \quad (2315)$$

To which is the derivative solution to equation (5). Therefore that of a fifth dimension is made to exception in the second; that of apologia to consorted effort's of collapsement; only a univariate carrier of outside 'roll' to interior (pentagonal return); 'roll' will co-determine a vacuum from a discriminant black body noise; at absolute zero; the external 'via' of a 'class' to which is an 'apologia' in yet 'character-assignment;' freed to these in the tableau of proper derivation from the summation convention. That of the commutator of the partial is the expression the Lie differential with respect to Ξ in equation (5) is the manifest holographic principle reflection in-machine-&-in-world.

That of the holographic principle:

$$S * P = \iota P * S \quad (2316)$$

And:

$$P * S = \iota S * P \quad (2317)$$

So it is for lack of a better expression that the identity relation is ordered; and by supposition of the counting theorems; identities are ordered:

$$\mathcal{O}(\iota) \quad (2318)$$

An expression that the identity is that which is neither one but two and two to what is no three and uneliminable declination of four in preceding from five; of dimension; therefore by two under

pure-codimension of 'sheaves;' there is a bi-reductive free (2) two limit's; to what is sequestered of equipartition to the fifth and the sixth; a rung freed to the equippable return of yet a fundamental of this world; that reductively from three; two would be an apportionate four or three; then of other's equability; and return (two-folded) deficit below reversability of one sigmoid.

Therefore the identity is the inexpressibility of *time, space, order, individuation, and inseparability or unencloseability forming through shape*. We may now describe shape to constitute a group in vacuua; for that of ι is the manifold ideification of a separable co-adjoint *unitary group* of co-extensible dimension; a three dimensional critical point; and reductive asymptote.

The non-linear statistics of comparative densities in position and momentum under an abridging SU(2) algebra diminish the accountable energy in argument's dependent upon these via superposition and exchange.

Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \sigma(t) - \alpha^\mu\beta^\mu\partial_\mu^2)\Psi(x, t) = \Lambda\Psi(x, t) \quad (2319)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu\partial_\mu)(g(\tilde{\omega}) - i\beta^\mu\partial_\mu)\Psi(x, t) = \Lambda\Psi(x, t) \quad (2320)$$

When written out we have two equations:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (2321)$$

The first equation read:

$$\Lambda = \det \left| \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \begin{pmatrix} i & 0 \\ 0 & i \end{pmatrix} \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (2322)$$

This is enough to get that the general equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| \quad (2323)$$

With elements $\{\eta\} \in SU(2)$ are the same *superposition* equation with solutions in the Dirac basis.

Beginning with the equation:

$$\Lambda = \det \left| \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \right| = \det |\theta(\tilde{\omega})| \quad (2324)$$

We have that:

$$\theta(\tilde{\omega}) = \theta(v, \tau, \alpha, \beta, \tilde{\omega}) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad \Lambda = \tilde{\omega} \cdot \bar{\omega} \quad (2325)$$

So;

$$\log(\tilde{\omega} \cdot \bar{\omega}) = \eta(v) \begin{pmatrix} f(\tilde{\omega}) \\ g(\tilde{\omega}) \end{pmatrix} + \eta(\tau) \begin{pmatrix} \alpha^\mu\partial_\mu \\ \beta^\mu\partial_\mu \end{pmatrix} \quad (2326)$$

To which is two eigenvalue equations in linear form:

$$\eta(v)f(\tilde{\omega}) + \alpha^\mu\partial_\mu = \log(\Lambda) \quad (2327)$$

$$\eta(\tau)g(\tilde{\omega}) + \beta^\mu \partial_\mu = \log(\Lambda) \quad (2328)$$

The Dirac equation is therefore separable into two different one-body problem/solution pairs:

$$(\eta f(\tilde{\omega}) + \alpha^\mu \partial_\mu)\psi(x, t) = \log(\Lambda)\psi(x, t) \quad (2329)$$

$$(\rho g(\tilde{\omega}) + \beta^\mu \partial_\mu)\phi(x, t) = \log(\Lambda)\phi(x, t) \quad (2330)$$

Thus:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\Psi = \Lambda\Psi \quad (2331)$$

Becomes:

$$(mc\zeta(\tilde{\omega}) + i\hbar\alpha^\mu \partial_\mu)\psi(x, t) = \lambda\psi(x, t) \quad (2332)$$

And:

$$(mc\xi(\tilde{\omega}) + i\hbar\beta^\mu \partial_\mu)\phi(x, t) = \lambda\phi(x, t) \quad (2333)$$

With a wave argument on the inertial mass of which is ζ or ξ ; where:

$$|\zeta(\tilde{\omega})|^2 + |\xi(\tilde{\omega})|^2 = 1 \quad (2334)$$

This constraint is nothing more but the restriction that the total probability for *either* electron add up to 1; that it be located 'somewhere' and it's mass conserved, the result is then two Nonlinear Shroedinger Equation's:

$$(\eta |u|^2 u - \sigma u_{xx} + i\rho u_t)\psi(x, t) = \lambda\psi(x, t) \quad (2335)$$

$$(\rho |v|^2 v - \sigma v_{xx} + i\eta v_t)\phi(x, t) = \lambda\phi(x, t) \quad (2336)$$

Further Calculation

We begin with the two body Dirac Equation:

$$(i\hbar\gamma^\mu D_\mu - mc)(i\hbar\gamma^\nu D_\nu - mc)\psi(x, t) = \Lambda\psi(x, t) \quad (2337)$$

The question is if under:

$$\mu \leftrightarrow \nu \quad (2338)$$

With superposition; the equation will reduce. First we have (re-written):

$$(\eta^\mu \partial_\mu - 1)(\eta^\nu \partial_\nu - 1)\psi(x, t) = \Lambda\psi(x, t) \quad (2339)$$

For what is identity is the meeting exceptionable (non-exceptionable inclusion of) a continuum to the bi-jjective law; under ordinancy to any two character assignment's of this world. Therefore relativity remains to hold with-in an interior limtiation; of that of three for four fold to two fold valence; but of a second-and-adjacent quasi-crystalline space of adjoint void space(s). This cuneiform is therefore an intimated 'end' within an 'end' of the dispossesable (in recirpocity) exchangeable sixth outside object-principle; of which the group(s) reactivates into two of absence and presence; to the intimated end that among three 'here' functional's; the self is defined; via and identity to which is inseparable and inexchangeable.

The deficit is to that of three: re-transformative into two or two; a null end of a thought experiment; but yet quantum states exist beyond the double dual exchange accompaniment; to what is any unlimited set in yet raising the third under transferrance; and a lowering of the second spin. The co-adjoint determination of another is the seamless consequence suffer's to the other for

dis-inclusion unto yet an adaptive third; to what is sunken in cost; there is apportion and sequestering; so that as of the Banana & Canary Principle(s) would allow; three are co-determinatively afforded co-existent mean prior (2); of a strict in-equality unto breaking into two through the via and back between any two adjacently connected point's of reality; neither 0 [**zero**] &-or 1 [**one**] to the limits of 'background' objective physics. The commutation represents the elliptic and exponential con-joint relation of light-cone's; to which when divided; recombine to simply a property of an object; for their shadow-function is simply a one dimension bijective flow of 'unilluminated'. Under exchange it is:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] \psi(x, t) = \lambda \psi(x, t) \quad (2340)$$

But then; we can insert the identity without changing the commutator:

$$[\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] I \psi(x, t) = \lambda \psi(x, t) \quad (2341)$$

Where:

$$I = \{\eta^\mu, \eta^\nu\} \quad (2342)$$

Therefore; and we find completion in two relativistic projection(s) derived from either's inward reflex and impulse as encoded in the isosymmetry derived from proportion and shape; that of the equation (5):

$$[\eta^\mu \partial_\mu \eta^\nu, \eta^\nu \partial_\nu \eta^\mu] \psi(x, t) = \lambda \psi(x, t) \quad (2343)$$

Or:

$$\eta^\mu \eta^\nu g_{\mu\nu} \psi(x, t) = \lambda \psi(x, t) \quad (2344)$$

Alternatively:

$$\bar{g} \psi(x, t) = \lambda \psi(x, t) \quad (2345)$$

It is in-expressible whether:

$$\bar{g}. \sim \lambda \quad (2346)$$

Or:

$$\bar{g} = 0 \equiv \lambda = 0 \quad (2347)$$

In other word's; the eigenvalue to exchange is indistinguishable from the metric relation of the spin algebra of inertia; that of the weight of the physical assumptive of inertia in the Dirac equation an identity with that of it's weight geometrically owing to energy; not just space and time. ***and not just mass.**

$$([\eta^\mu \partial_\mu, \eta^\nu \partial_\nu] - \lambda) \bar{g} \psi(x, t) = 0 \quad (2348)$$

Written out this is:

$$(\eta^\mu (\partial_\mu \eta^\nu) \partial_\nu \bar{g} - \eta^\nu (\partial_\nu \eta^\mu) \partial_\mu \bar{g} - \lambda \bar{g}) \psi(x, t) = 0 \quad (2349)$$

However by that of the the principles outlined; that of the two views of one particle can be further scrutinized to single particle field and particle spin-orbital momentum; for in that of the whole ensemble there is not only one particle bound to another; but *a condition for separable equivalence principle and complimentarity invariance footing*. Penultimately this divides the description of the particle upon exchange into one element of which is of it's manifest Lorentz covariance; and another of it's Shared Proper Time. As:

$$([\eta^\mu \partial_\mu \log(\bar{g}), \eta^\nu \partial_\nu \log(\bar{g})]) \psi(x, t) = \lambda \psi(x, t) \quad (2350)$$

Then to an exchange state; for which the commutator is evaluated and the middle term's drop from the general expression (here η is an operator for spin and orbital uncertainty exchange constant...):

$$\left[\tilde{d} \log(\bar{g}), \tilde{d} \log(\bar{g}) \right] = \lambda \quad (2351)$$

Which when expanded becomes for the particle momentum:

$$[\tilde{d}, \tilde{d}] g^{\mu\nu} = \lambda \quad (2352)$$

Then; it is also true:

$$(\tilde{d} - \eta)(\tilde{d} + \eta)\Psi = 0 \quad (2353)$$

And that:

$$\sqrt{\lambda} = \eta \quad (2354)$$

Since the eigenfunction must be satisfied in a basis; the commutation therefore hold's for the first state:

$$[\eta, \tilde{d}] \Psi = \lambda \Psi \quad (2355)$$

$$\eta \tilde{d} = \lambda \quad (2356)$$

This only holds true if the field momentum equation is as follow's:

$$\tilde{d} = \lambda \vec{\sigma} \quad (2357)$$

These represent in the first the spin-orbital coupling potential energy at a minimum; to which is related to exchange of spin and orbital degrees of freedom. This spin and orbit would then be a transition of the spin-orbital condensate. In the second; it is the curvature condition; with $\zeta = \zeta^{-1}$ and anti-Hermitian. For that of the reduction to an eigenstate; there is a Ψ ; the net wavefunction given by:

$$\Psi(x_\mu) \quad (2358)$$

The natural separation into particle and field momentum can be found as a consequence of the independence and equivalence of the quantum unit of probability in a two body interaction. The equivalence of 'weight' λ in either view is the invariance of complimentarity; that penultimately interchange of particle and particle description identity leaves results of measurement unchanged including that of relativistic consideration.

Symposium

There are three ingredients to superconductivity which must be demonstrated. We will proceed in a linear fashion; beginning with 1.), then 2.), then reaching an understanding of 3.); then these will be moderately 'put-together' into a robust theoretical framework; then; there will be an introduction to the experimental motivations for invoking the model system; a treatise on that of implementation of the theory with phenomenological evidence; and then finally; calculation of results and a conclusion. This model presentation is offered as in replacement of prior work's in which the work was undemonstrative of a logical proof based system of verifiable hypothesis. The aims offered in this paper are more to the adjustment in theory required to make sense of a physical world within light of the existence of superconductivity; but where appropriate common sense has been appealed to. That of the results intend to make no implication about alternative areas of physics; but where appropriate prohibition to allowance for what would lead to contradiction in another area of physics has been noted. As akin to the manner in which space and time 'fold' to create a finite circle from an infinitely long one; when an orbit is analyzed of a straight line in a curved space & time; as when superconductivity is manifest; the finitely long line of interaction 'folds' to produce an infinite orbit in the curved space & time of the interaction. That is to say that the antipodal relation hold's; and that the less-than-unity normalization group of the spin; (to which is four dimensional) relaxes the orbital constraint to it's-fullest; that of a gauge

group then to which is negative in conversion of magnetic becoming electronic and electronic becoming magnetic; with a reduction from the speed of light rather than an accumulation to the speed of light; as if participating on the other side of a mirror. This demonstration states that all additional that is required is exchange of field for particle pro-perties; and that of the charges will attract within the ranges of a standard deviation; there being two wave like frequencies and wavenumber's the result of a phase congruence with conversion to angular coordinates. Without further disclaim; the offered supports of superconductivity are in three:

1.) *The non-linear **product 'covariance' rule** formation of two distributions with a negative exchange (J) in individually prepared Shared Proper Time with a local minimum generates an experimental bind of trading of the index on one measurable for another; that of the inversion and reciprocity of the law's of physics potentiated by purely statistical means...*

2.) *Non-linear **product-rule** superposition under exchange with comparative probabilistic 'complementarity' of either particle's independence from relativity results in that of the admission; by way of the twin-paradox like intimation on relativity of measurement inversion, to what is indistinguishability of relative and quantum contribution's to lowering in energy...*

3.) *That of measurement inversion with spin and orbital momentum under exchange for which one particle and it's world view will not afford the altering of another particle's prescription; affords, given that exchange is negative and the **covariance, positive**; the inversion and substitution of the electric for the magnetic field; and vice versa with relativity...*

Therefore there are three reasons for attraction of the electrons in superconductors of the high-temperature variety. First; exchange is negative and probabilistic assignments are independent of relativity; with the distribution rule on that of standard contributions via a two body problem in what is the shared proper time versus proper time is equivalently balanced; and that of a local-inversion of the deterministic factors of the theory occurs.

- 1.) A quantization condition is reliant upon a spatiotemporal positioning and orchestration of terms.
- 2.) When the manifold condition of a curved space under-declines repose; we get a splitting of energy.
- 3.) Therefore one manifold prescription under a cleaved sheave for then unto two eigenvalues emerges.
- 4.) The splitting is a prescription to electrodynamical theory breaking under a source, sink, magnetism.
- 5.) Probability discriminant's fold the elementary symbolism of equidistance to infinitely separated end's.
- 6.) For what is contained in two or two is three and one to reduction in equivalently displaced potentials.
- 7.) This imputes a relation of directrix enfolding focus; and reversal of measurement to eigenvalue status.

- 8.) Metrical relation is a null condition with that of spin metricity; to which electromagnetism vanishes.
- 9.) Quantum wavefunctions defy Pauli Exclusion to null repulsion via passing beneath an e.v. enfolding.
- 10.) The manifest retro-inversion of a population in two's decimates in energy argument equations of state.
- 11.) A spontaneous symmetry breaking is present, a gap, and a phenomenological behavior of it's unit's.
- 12.) Indeterminism to what is particle & wave; hold's the precept the 'particle' precipitates it's capturing.
- 13.) Inter-adoptive exploration of one dimensional arc width are devoid of doublet anharmonic inversion.
- 14.) Therefore; the principle qualitative element is that probability fit's more recurrently within space.
- 15.) To what is a disconnective or connective; moderacy of spin and orbital measure interchange is unitary.

For what is complimentary of comparatively equivalent time signature and self solitary provided and insured proper time to shared assembly via statistics; for that of either probability fitting within relativistic space and time (inward reflection); and that of it's dual capacity upon yet what is an instance of equivalence in weight unto the apportion of experience of probability and relativistic deformation; that of independence in statistical measure causes a uniform co-participation of these given *Theories and exemplifies unification and separation of their forces; indeed; Gravity & Quantum mechanics within the same atom; a lower in energy result's via the spontaneous symmetry breaking contribution of electromagnetic energy to the two electron's.

It is also true that:

$$\beta = \frac{v}{c}. \sim \beta = 1 - \frac{v}{c} \quad (2359)$$

As a result of what is taken 'to' the mirror rather than 'from'. As a consequence what is a distribution of probability must be re-interpreted as that which give's rise to expectations; around which there is uncertainty in results; the central result being certain for in light of *two theories*.

The next reason is that particles find indistinguishability in that of their 'Quantum' and 'Relativistic' contributions to mass-energy-momentum; of which what is observed is a universal energy lowering in charge and spin. That of separation from spin (to which is left with freely held Non-linear Shroedinger Equation Solutions) contributes therefore the full $4J$ to the gap at the lowest perturbation or temperature.

The results of what are the relation of this being a genuine energy lowering or that of a reduction in a repulsion are therefore that it is a genuine lowering below a general reduction in repulsion;

and may be seen as a reduction in repulsion beyond the limit of it's genuine lowering in energy-mass-momentum.

The general description is that relativity and the properties of statistical normal distribution of variance exhibit a two body null covariance; therefore electron's are mutually force-free but at a reduced energy of the 'seemingly separable' conjoint expectation of exchange.

Antasz

Beginning with solutions of the variety:

$$(|\zeta|^2 \zeta - \sigma \zeta_{xx} + i \zeta_t) \phi(x, t) = \iota \phi(x, t) \quad (2360)$$

We have the Ansatz:

$$\zeta(x, v, t) = \alpha sn(x - vt, m) e^{-i(\omega t + \kappa x + \phi)} \quad (2361)$$

Used in (59) we have:

$$v = 2\kappa\sigma \quad \sigma = \frac{\alpha^2}{2m} \quad m = -\frac{\alpha^2\kappa^2 + \alpha^2}{2\omega - 2\iota + \alpha^2} \quad (2362)$$

So it is that one solution can be intimated within a connective (think SU(2)) algebraically from one subsidiary manifold space to another... for example when the modes are in-actual entrained or defocused; and when confinement (then provable) takes place because of their non-linear sum/product relationship.

Origins of Unification

When the two time's for that of the log term's are applied to the differential equations; we see a reduction in their mannerism in expression of complexity; for then the threshold eigenfunctions must surpass to become a reality is determined. That of the logarithmic equations suppose that a given is that there is reciprocity between subjective and objective worldviews. Therefore for:

$$\frac{\partial}{\partial t} \leftrightarrow \gamma \frac{\partial}{\partial t} \quad (2363)$$

We have:

$$\eta(v)\zeta(\tilde{\omega}) + \eta(\tau)\alpha^\mu \partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2364)$$

$$\eta(v)\xi(\tilde{\omega}) + \eta(\tau)\alpha^\mu \partial_\mu = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2365)$$

To which become:

$$\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu \partial_\mu = \eta + \rho \quad (2366)$$

$$\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu \partial_\mu = \eta + \rho \quad (2367)$$

And:

$$(\eta(v)\xi(\tilde{\omega}) \pm \eta(\tau)\beta^\mu \partial_\mu)(\eta(v)\zeta(\tilde{\omega}) \pm \eta(\tau)\alpha^\mu \partial_\mu) = \eta\rho + i\sigma(t) \quad (2368)$$

As a difference of constructive and deconstructive interference equations.

Their solution is:

$$\alpha = \partial_\mu \zeta(\tilde{\omega})(\eta + \rho + \eta(v)) \quad (2369)$$

$$\beta = \partial_\mu \xi(\tilde{\omega})(\eta + \rho \pm \eta(\tau)) \quad (2370)$$

$$\sigma(t) = (\rho + \eta)(\rho + \eta) \quad (2371)$$

Setting $\alpha = 1$ and $\beta = 1$ and $\sigma(t) = i$ we have: Thus:

$$S * P = \iota P * S \quad P * S = \iota S * P \quad (2372)$$

$$\mathcal{O}(\iota) \quad (2373)$$

Within the holographic theory... with $\iota \in SU(2)$ and ι normalized as per:

$$(\eta + \rho + \eta(v))\partial_\mu \zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu(\eta + \rho + \eta(v)) = 1 \quad (2374)$$

$$(\eta + \rho \pm \eta(\tau))\partial_\mu \xi(\tilde{\omega}) + \xi(\tilde{\omega})\partial_\mu(\eta + \rho \pm \eta(\tau)) = 1 \quad (2375)$$

These equate to:

$$\zeta(\tilde{\omega})\eta\partial_\mu \xi(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu \xi(\tilde{\omega})\eta = 1 \quad (2376)$$

This reduces for that of the \pm to cancel as a similarity (hence we get to choose to neutralize that of v).

$$(\eta\rho) = L_{\tilde{\omega}}L_\tau \quad (2377)$$

The first equation and the second lead to intimations of what the function's look like; here; an exponential...

$$\rho\partial_\mu \zeta(\tilde{\omega}) + \zeta(\tilde{\omega})\partial_\mu \rho = 1 \quad (2378)$$

Given that the exponential map is a map; we have an analytic theory; into which via these as transformation rules; a coordinate chart can be written by comparing *different dimensions* with that of *different base combinations*; these are both open; empty; infinite teir's which collapse when the two electron's are so close that they hold **no** mutual force of repulsion; an absolute Pauli Exclusion below symmetry breaking.

$$\partial_\mu \log(\rho\zeta(\tilde{\omega})) = 1 \quad (2379)$$

Providing the solution in ρ , a constant of the ratio of compressibility to conductance. Therefore conductance is sourced in a gap; literally:

$$\frac{1}{\rho} = \Delta \quad (2380)$$

To an 'optionable' and 'variant' proportion; that of the two Lie differentials are still a 'scale;' and we may write this as:

$$o = \frac{\eta}{\Delta} = L_{\tilde{\omega}}L_\tau \quad (2381)$$

The equation for a [2] number theoretic valuation of o yields a gap as-the-integration constant to an elliptic and exponential differential cross-correlate. That of two is the threshold of point source to which the eigenfunction first becomes three dimensional into a catastrophe set. Roughly there is the 1 : 1 proportionate cross-over of 'below threshold' and 'above threshold' that of 3; therefore three dimensions is the critical dimension for self regularization and attraction of charges; that of symmetry breaking is invoked by any bistable reactive element of reverberation; meaning; all frequencies are summed for therein what lies of the secondary octaves of a trichordic wave. The only composite solution is to find that above a critical state, three electron's obstruct to enable two electron's to fall together.

Intermediate Conclusion

That of:

$$o. \sim \Delta \quad (2382)$$

Therefore expresses the 'mode inequality' of a 'reductive force;' entirely consistent with relativity; but within that of a semperent calibration rolled inward. To what is this individuated space; it is not known; but that validity focuses relation; individuation focuses potential.

There are a few relations here of a contributing nature:

- 1.) *A doublet-reductive interferometric balancer and synchronization engine... of which follow's the precept of a 'modal inversion' and 'reductive force'... a DRiBse.*
- 2.) *Ordinal theorem of qualitative control of chaos; (3).[2] of freely held gain decimates prescribed Chaos; to what is prescribed certainty as to manifest whole in optionable togetherness of [3].*
- 3.) *Modal inversion and reductive force lead to manifest order; Via that of 'Graph Stitching' in the Indical Calculus; to what is an eigenvalue eigenvector inversion; with an Energy Gap.*

Comparatively, the difference in the quotient space for a local relation differs from that of a global relation; for that of separation of 'scales' and separation of 'places' to which regulate around (primary, secondary, or tertiary to) that of their their own segmented relations; in a virtually infinitely co-extensive quasiperiodic space. To what is light, time, mass, and sound; these transconduct as through a cantilever to which alone; word's are supportive of genelection and mannerism of convenyance to sociological apportion; number's being befit for a local space; but mapping an idempotent relation of 'place' under situational dichotomy in two; provable as to identity for in that of once-outside, co-terminable with that of situationally of an absence of a tertiary support; that of a known; that as either question in two differently is established; so is that of the applicable permanence to awareness at-a-distance; for apportion to secular order's; free of a catastrophe set.

This co-extends Laurent series to all function(s) inclusive of a product form; to which is an equivalent expression from which a factor is taken 'off the top'. The result is that the primitive seen outward inward as inward outward is free. This freely held (and unheld) radical space is the one (singular and unitary) base in four dimensions; to which prohibiting all places become one; 4th dimensional and hence not 5th; dimensional. That of what is certain is the definite 'untying' of electromagnetic frustrum's; and re-incorporation of world identities. For that of what is exemplified; we have determination that any fifth (exterior and auxiliary) point is free; therefore any two realities are freely disconnectable. That of the synopsis on the algebra is that it is an Affine Lie differential algebra... this is resolved by the special unitary group; of which suffer's an automorphism and decay's under thermodynamic conditions to a potential and kinetic energy landscape lowered by a number of conditions:

A Grand Term:

- 1.) Inversion of the Measurement Problem; under application to what would be 'two;' measurement proceeds via the converse of the statistical lemma; sociologically a trade of honesty for impartiture and sequestered in part's; the whole is greater than the sum of it's part's; even upon that of individuals.

Option(al):

2.) For what is Quantum Uncertainty and Relativistic Factor both remaining in imparture to a depression; that of reduction in one for in light of the second of either these two is universal; leading to that of a two fold in what is any three electron's; to their mutually degenerate null condition of covariance.

i.) The missing element is that what is third in substitution for the third-agent is null relation of group to fundamental metricity (an empty relation); of that of the third observer; to which relativistic factor's explicitly do not hold an accordant measure and relationship; but of statistical mean and average.

Fundamental:

3.) Probabilistic Independence from Relativistic Argument - under application this results in a Modality Inversion and Inversion of the Measurement problem when it is prepared to a gap state on that of 2.) for what is 1.); under which the second (2.) part; reveals a population inversion; that of two switching one.

ii.) The uncertainty is lessened by in a factor of the contrapositive of relativistic expectation in the whole.

Quite simply put it is due to the quality with which the exchange constant will depart from it's given value to zero with that of velocity increasing; and the momentum will remain the same identically within the frame of a particle; but exhibit a greater than one magnification and positive curvature on that of the secondary particle; but meanwhile within it's frame; a less than one magnification and negative curvature unto it's self term of momentum. Thus we have all alignments of probability and relativistic argument and momentum.

iii.) Measurement and measured differ; in that what is measurement is co-extensibly weighted by relativity; while what is of presence and absence alone; it is the reversal of relativity; to what is obverse.

What is 'on' particle 'A;' 'to' particle 'A;' is it's reduced exchange and momentum; plus the depiction and representation of relativistic factors to which are 'larger' for momentum; and 'smaller' for exchange...

Thus:

a.) Exchange diminishes because particle 'A' and particle 'B' fit within each-other's-role's from which they are judged via each other to themselves with a relativistic factor that is less than unity on energy-momentum under juxtaposition; therefore exchange energy is diminished.

b.) The change in momentum of particle 'A' is negative because there is more quantum room for that of it's energy-momentum via a.). With 'B' it is judged with a 'higher' relativistic factor for time and space; equating with the reduction in a.) because of inversion of perspectives.

c.) The quantum exception is that either particle undergoes a 'measurement' & 'measured' inversion with interchange; to which momentum is to a higher relativistic factor explicitly to itself

and the governing perspective on particle 'A'; but with exchange to a lower relativistic factor.

d.) The quantum exception (by which juxtapositions leave intact relativistic factor's) informs that either energy-momentum of exchange or kinetic energy lower's by what is elimination; therefore both particles reduce in energy; to what is equivalence; that of the genesis and source of a measurement inversion...

Conclusion:

With juxtaposition and interchange of perspectives; the lowering is universal; for that of what was a higher relativistic factor in 'A' or 'B' becomes a lower relativistic factor in 'B' and 'A'. Reciprocally; it can then be argued that the momentum decreases meanwhile for the particle it modifies the prescription thereof; it's relativistic factor increases. This is what we get when there is an inversion of perspectives.

When particles experience time; they are on a curve; the exchange; but probability does not effect relativistic outcomes and relativistic outcomes do not effect probability; so there is a 'void' on that of any four part type of interaction. The juxtaposition of one particle for another is known as 'exchange' to which particles literally interchange identities; that of for the real world; a division.

When this occurs; a modality inversion leads to a relativistic chasm of a factor of gamma. That of gamma; therefore via A's vantage is larger for A comparative to B & larger for B comparative to A... so A acquires more time and a lesser restriction on probability amplitudes with B in presence. Meanwhile B's relativistic assessment of A is to accrue this factor for A... that of vantage; probability per relativistic unit; and relativistic unit per probability. When either reduce; the reduction of the exchange via the reduction in kinetic energy is to be interpreted as a reduction in what is yet-ahead of the current kinetic energy & that of vis-a-via that of by way of which it maintain's it's position; an ordering of factor's that of the (a) frame assessment.

I therefore found the algebra required to describe the differential equation(s); by that of a leap; the 'Massless Free Boson Theory' in conjoint with it's associated problem; with re-definition (both 'free') of 'a'. The Affine Lie Algebra...

This makes sense as a decomposition of the momentum-energy with the relativistic group; to which there is an expression of the relativistic factor outside the differential and included. Superconductivity is particular in that the division group is per auxiliary agent's of the system; in a normal system these particles are described by a variety of alternative behaviors because the group does not suffer compactification into a finite lattice of division groups of the differential source equation; and degeneracy among a two particle limit; both of which source the free part of the lagrangian as positive but with exact conversion to potential.

Mathematics

Affine Lie algebra is:

$$\delta(a \otimes t^m + \alpha c) = t \frac{d}{dt}(a \otimes t^m) \quad (2383)$$

Here; 'a' represent's energy-momentum; and t^m represents that of relativistic factor. What this equation represents is that mass is fundamentally reducible to a blind statistic of weighted-sum

and unweighted result. The recombinatorial dilemma is satisfied whenever (8) precedes (7). But (7) is equated with measurement and decoherence; therefore the summation precedes as order before result. That of this detection of 'order' under-pin's that the relation is sequestered of it's extension. That of the above equation therefore has as it's only solution's that of bounded polynomials in the Gauss-Basis. These prescribe to no tertiary determination; and once prior the precept implicating the secondary as primary notion of massful boundedness; but it is indeed the solution of the 'Massless Boson Theory.'

This encompasses an equivalence (twice-folded (relativity)) independence among three dimensions. The co-existence of a third dimension with a two-folded geometry of relativity therefore eliminates under it's equivalence class that of but one primary and one secondary independently neitherly imputed nor not; and to which is a given in supplience by the repetend of it's action. Therefore the third is free to inclusion at secondary precept in the auxiliary space (or interior such a net as this); and may be moderated with to the action of a five to four fold set within.

That of what is determined is the quotient radical; to which operates as a functional argument whether separated or unseparated. Therefore the freely (neither of these) held nor unheld determination of the auxiliary holds a foundation in reality; but is contradictorily the only thing determined within a 'place' - the saturable environment. Of relation's; it remains indeterminant as to if it is either 't' which dominates to the solution set; or of 'a'; for what is real; this stands as definitively a reduction via displaced integration constant of a subsidiary dimension. With this - appreciable 'order's' are imaginable yet contained within each given space & time.

In fact

$$(\partial m) = \delta \tag{2384}$$

$$(\partial s) = t \tag{2385}$$

Are separable into a conjoint union... the measure of the measured being comparatively exactly predictable... therefore science is on a solid foundation. This alludes to a partition; to which is to higher and lower spaces; the re-arrangement of two friends to what is a third. It is the exact outcome that re-arrangement's in third's commute; despite that of us existing within a fourth (proven) dimension. For I may take a piece of paper and write on it two conventionally non-commutative triangles; and these may be wrapped in a torus; to which they are at zero dimension commutative upon for the sake of identity itself. Hence the identity of forms is empty. This means that the above equation is the exact equality of the overlap of electrons in possession of the limitation (in fullness) of mass-regularization and that of simultaneously; no-mass.

The division expressed is the qualitative expression that rest mass and quantum mass do not differ. This is the confirmation that relativity and quantum mechanic's are null in consequence; consequence only being made up of ordered set's. Hence disorder upon re-arrangement holds a bias to order; that of the outward-outward from an interior force; and the walls of the cavity. That the second order Green's function of a two dimensionally swept arc is free of containment; is that it is a container to which the walls are in either a sub-cavity or that of a reservoir elsewhere; entirely free of one projection; they possess only **one particle past's**. But; and thus; the solution is unique; it is one of a general class of elliptic functions with exponentials; that of two dimensions must intersect to produce that of a solution; and although such a setting can be written; it is devoid of physical foundation; and for that of in-expressibility of number's.

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \tag{2386}$$

Is the simplified expression... in this we see that the solutions are all either fixed - to which is connected within this theory - of the Hermite basis (Simple Harmonic Oscillator) or that of the Elliptic and Complex Exponential Solution... these are really the result isomorphically of an electromagnetic field in interaction with a charge density as well.. Thus it is the most general solution. That of the attempt at a two body what is two interpenetrating hyperbolic secant function's and exponential wave's. The conclusion is that the energy momentum is continually bound; and experiences a 'gap' for the sake of that of finite coefficient's to it's expression; or within what is two directrix; that of a manifold flow of a 'stream function;' to which percolation is freely scaled... that of the gap is manifest because there is a finite residual integral constant to that of δ and t .

This principle stabilizes every two-part system in the universe. With two bodies; instead of energy defining curvature; mass does... to which the eigenvalues of a system are composed; the net absence and presence of subsidiary layer's of a composition; to which is empty in the gestalt for that of being a terminal end; hence the future is a fiction. Any four or more; three; or two particles determine only a past; and that of three alone may determine a future while two always do; two determine a future; and two are the solid foundation of the world; for what is; pre-causation, & entirely surrounding the elemental zeroth dimension of a system; all that is required is:

$$\delta(x) \tag{2387}$$

$$\partial \tag{2388}$$

These in the above equation remain of a logarithmic nature of curvature; therefore two solutions are the above listed; to what is a diffeomorphism the curvature of a stream function does not play a role in it's dynamic's; all are freely held and unheld invariant's;... for where they are manifest; the origin it is *explicitly declared is not co-morbid with a point on the space; the universe is therefore closed...* This prescription; for that of two point's; render's the Cornu Spiral curvature free.

For in that of light of equivalence of meter and balance; an instrument of measurement capability (for which the role - direct - of observation is reversed to a null exterior-interior condition(al); that of one point in it's divergence is free asymptotically in the unitary group of thermodynamic and mechanical vibrations; all that energy is composed of is changing mass indexes and light indexes.

For what is two; the gravitational reduction and electromagnetic reduction diverge in a Superconductor; for while in the void of three and four dimensions; their substrata are seen but through a lens; the flow to which an equivalence of field and particle is founded on any two dimensionally existent hyperplane of intersection within that of a one dimensional arc; that of abstraction to a bubble like space; where in fact; degrees of separation are the meter; and the arc length area is the balance.

Free Evolution

The free evolution of what is one dimension lower and reduced prototypifies the three system's of Simple Harmonic Oscillator; Decaying Simple Harmonic Oscillator; and Elliptic and Complex Exponential... These are related by the Special Unitary Algebra and Superposition. This reduces molecular science to a study of interstitial guassians at any scale. The scale freedom is the support of which is supportive indeed by way of the freedom of proportional inter-juxtaposition and shape. Shape; has to do with the ordered system of form's of identities:

$$\Sigma\mathcal{O}(\iota) \equiv \mathcal{O}(\iota) \tag{2389}$$

This is the generative drawn point of an identity; a particle's exact apportion of meter to balance and it's direction in space. The only rule for in that of dimensional reduction is that the above ordered distribution of states expresses the forms of identities in compendium in-exact proportion and shape with the forms of identities by the summation and what it reduces to for in light of the original identities. Therefore the solution is given by the solution of:

$$(a \otimes t^m + \alpha c) = d(a \otimes t^m) \quad (2390)$$

This equation expresses that the first co-homomorphism of the prior in a series is an integral of separable scale of space and time. However; the equation is an identity which states that the capacity of inertia is defined by that of equivalence of scales and proportions; an exact expression mutually identical with (and anti-opposite) relativity; to which now; the prior identity is the given reconciliation of:

1.) Probability measurements and expectations from out of quantum mechanics do not depend on relativity.

2.) That of relativistic assignment proceeds via that of emptiness of qualitative impression in/of the composite.

Instead, we have that the form's of identities; to which are determined by a free associate in the third; and a strong coupling in the second; a hybridization below critical temperature; that of the cleaved domain find's particles residual within a separable position to what is the population inversion; the reason; this energy state is preferential. Thus order re-segment's into free particles with a phase transition; to which the caveat is that quantum rule (1) may outrule relativistic prohibition to measurement..

The class invariance of the group is therefore of it's determinant ordering of symbolism with two; for here the summation of two of these equations leads now to a superposition problem. They are linear (and yet co-exist within of what is any feasible curvature of the universe). What has really happened is that the manifold of uncertainty has warped around to connect with itself; a tube has become a torus; and the freely demonstrated chirality is dispossessed of; to what is the orientation free capacity of one of these crystals; the uncertainty principle and equivalence principle represent *this* nature of spontaneous symmetry breaking.

That of outward gravitational inertia is the net sum of mass-content's; the final determination of which is prediction of a mass or energy (alone) gap. This remains the final prediction; the conclusion of which is that mass is predicted to remain an invariant for the (reversible) return from the gap state; the elimination of integration; to which come(s) from the local behavior. Hence at it's base residual; a non-inertial force produces the superconducting state; but physically it behaves inertially.

In two dimensions or with two particles the world is therefore biharmonic; while the vacuum is harmonic; or in it's auxiliary limit; to which is that the form of identities remains fixed. This fundamentally expresses that outside is what is in quasistasis while the direction inward is biharmonic. Every particle state is in fact of two body form; to what is a doublet; all the interactions (& normal action re-action events) of the universe are therefore of the following form and unit doublet u_1 :

$$(x * u_1)(t) = \frac{dx(t)}{dt} \quad (2391)$$

This is an identity of the Universe; and represents the difference a priori in that of $\delta(x)$; the Dirac delta function and ∂ the differential of a relation as P and S ; profundance and synchronicity. when these interadopt to what is a differential of a delta Dirac function as the expression of the current eigenvalue. Gradations illustrate the pathwise motion is free; but for that of a superconductor they are merely free in two dimensions as a result of possession of an orbit; the real result dimensionally reduced as a wave-function; one degree of freedom is lost. Hence superconductors exhibit no magnetism; the result of a curl free situation; for what is an antipode; the relaxation and permanent gap for in light of penetration of a vortex state; that of stationing with a free curvature and curvature under action and re-action by the simplicity of the above relation. That of the functional solutions to the above equation come in the three forms exhibiting a 'breather' envelope.

$$S * id_X = \eta \circ \epsilon \quad (2392)$$

Reality, space, time, & matter therefore possess a proportion and shape free gestalt; of a variety that render's the world empty of scale and composed of measureless point's.

Introduction

The interior and effective representational algebra of the raising and lowering operators for the spin eigenstates via their commutation relationship so instantiated by real orbital motion of the electrons in the two body Dirac electron equation violates the Pauli Exclusion Principle representationally when exchange is considered simultaneously to its consequent effective spin flip from orbital motion and therefore physically for two Fermions under exchange with both types of variable, and thus is generative of a necessary coordinate connection that is representative of a weak effective artifact of Bosonization upon the Fermions at the same strength as that of the ordinary Coulomb repulsion between them; exclusively when the effects of the absence of a tertiary or privileged observer in relativity are considered.

A way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli exclusion principle as fermions.

Hypotheses

- 1.) *Rotations of the electrons upon the spin of the two electrons under exchange are clockwise and counterclockwise when viewed from above or below.*
- 2.) *These rotations are generative under exchange of an effective raising and lowering operator upon their individual spins by the commutation relationship of the spin algebra.*
- 3.) *Relativity holds fast to an objective artifact of relativistic frame transformation which is inertial in both frames of the electrons and there is no substantive existence of a tertiary or privileged observer.*

From this it follows that the interior phase gauge symmetry is broken and a coordinate dependence to the orbitals occurs that must be compensated for in the two body Dirac equation.

- 1.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence*

that would violate the Pauli exclusion principle unless it is corrected for the sake of global to local relativistic considerations.

2.) Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli exclusion principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a weak bosonization of the states.

Proof by Dual Contradiction

As proof of this, consider the exchange of the spins or orbitals as separately from one another. We have illustrated a methodology by which they are representationally and therefore physically strictly dependent upon each other as upon coordinates. As a result, neither wave function would be a complete eigenstate with both symmetries, and thus as a result of this strict dependence in the coordinate space, in order to adhere to both the Pauli Exclusion Principle and be completely antisymmetric in both spin and charge as attributes of the wave function both locally and globally within relativity under the objective provisions of an inertial state compared to an inertial state, it is necessary that the coordinates are corrected for so that the total eigenstate in spin and wave function under exchange are totally antisymmetric in space and time.

This is true because the global to local objective position of both electrons within inertial states is in conflict with the provisions of a physical and representational coordinate dependence for spins.

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) The Pauli Exclusion Principle*
- 2.) Objective Global and Local Inertial States*

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in something of a product relationship in the conventional Dirac equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the Lorentz invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the Hilbert space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states.

There are two operations that are mutually exclusive to be considered. From the perspective of one electron within its own state, the other antipodal electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, but while preserving the contravarying and covarying contraction.

The state where the magnitude differs by a scale and its inverse, for what was an eigenstate a priori will no longer be one for the projection of the spin portion of the eigenstate and that of the orbital will not meet the product relationship locally and globally. However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence their projections into each other can remain purely antisymmetric in spin and orbital momentum.

The state where the magnitude changes scale for both projections is an admissible eigenstate, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the Dirac electron equation, it will continue to be so. However, since the projection as measured by their combination (the spin and orbital) will determine an area that differs, and hence the projection of the eigenstates into each other cannot be purely antisymmetric any longer locally and globally.

Thus, it appears that either of the two electrons comparatively must attribute the same equivalent weight to charge and spin to satisfy the dual conditions that are the eigenstate condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions relativistically it is required that a correction to the orbital momentum be introduced. This correction is nothing but the gauge connection for the sake of the orbital momentum as a consequence of a co-evolving spin of the electron.

This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body Dirac electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

By extrapolation upon the two body Dirac electron equation, it can be seen that the covariant measure as provided by the differential of the spin matrices and contraction with the electromagnetic four potential form a quantity that is a measure and a rate, indicative of the same symmetry as that of the inertial property of an interaction; so in line with an electromagnetic interaction that is made inertial by way of the representational quality of the spin in its evolution in space and time.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states.

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- 2.) *Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli exclusion principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a weak bosonization of the states.*

Proof by Dual Contradiction

As proof of this, consider the exchange of the spins or orbitals as separately from one another. We have illustrated a methodology by which they are representationally and therefore physically strictly dependent upon each other when the coordinate connection is not included. As a result, both wave functions are complete eigenstates with both symmetries and there is no strict dependence in the coordinate space when the coordinate connection is included, in order to adhere to both the Pauli Exclusion Principle and be completely antisymmetric in both spin and charge as attributes of the wave function. This is necessary so that the total eigenstate in spin and wave function under exchange are totally antisymmetric in space and time.

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in a product relationship in the conventional Dirac equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the Lorentz invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of

simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the Hilbert space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states.

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The state where the magnitude differs by a scale and its inverse, for what was an eigenstate a priori will no longer be one for the projection of the spin portion of the eigenstate and that of the orbital will not meet the product relationship locally and globally. However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence their projections into each other can remain purely antisymmetric in spin and orbital momentum.

The state where the magnitude changes scale for both projections is an admissible eigenstate, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the Dirac electron equation, it will continue to be so. However, since the projection as measured by their combination (the spin and orbital) will determine an area that differs, the projection of the eigenstates into each other cannot be purely antisymmetric any longer locally and globally and the Pauli Exclusion principle is violated.

Thus, it appears that either of the two electrons comparatively must attribute the same equivalent weight to charge and spin to satisfy the dual conditions that are the eigenstate condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions relativistically it is required that a correction to the orbital momentum be introduced, which is:

$$\Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (2393)$$

This correction is nothing but the gauge connection for the sake of the orbital momentum as a consequence of a co-evolving spin of the electron. This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states.

$$D_\mu = \partial_\mu + \alpha A_\mu + \Gamma_\mu \quad (2394)$$

Where Γ_μ and $\partial_\mu + \alpha A_\mu$ are components of the momentum D_μ which separately anticommute and commute; thus rendering a non-zero exchange under local and global commutation or anticommutation relation with the prefix γ^μ in the new electron equation:

$$(i\gamma^\mu D_\mu - m)\Psi = 0 \quad (2395)$$

To prove that the two body electron equation has a lower energy than that of the single body electron equation and the fact that the global and local operators of position and momentum exist within a state lacking a center of uncertainty is now as simple as pointing to the relation that is absent; that of a commonly null exclusively local and global eigenstate eigenvector condition of four dimensional nature or four coordinate nature on that of the Pauli Exclusion Principle; with that of instead it's replacement by a colocally everywhere local and global condition of the same nature.

This can be proven; as the vanishing locally and globally with a given constant offset in the two body electron equation with that of the midpoint of displacement on either side of the relation of the two components described above for that of the generalized four momentum D_μ ; that of it's replacement by a comoving basis provided by the auxiliary electron; and the substitution of the offset of the eigenvalue; eigenvector equation with that of it's reduction under symmetry to that of a finite offset under what is in effect either anticommutation and commutation. One is reminded of the Spin Statistics Theorem here; with the principle:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric consequences for Fermionic eigenstates." This is entirely consistent with the interpretation of what a Fermion means; and what properties operators and eigenstates of such possess.

Consequentially:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = 0 \quad (2396)$$

This equation is the two body electron equation with the gauge covariant differential known as the four energy momentum; for which either such given corrected relation of the four energy momentum is corrected fully as contracted; and through which the discrepancy of intrinsic and extrinsic mass is known in it's corrected form.

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - i2m\gamma^\mu D_\mu + m^2)\Psi_A\Psi_B = 0 \quad (2397)$$

This is the equation written out in full form; and demonstrated as a full eigenvalue eigenvector equation. When this is translated into component form it is a reexpression as:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - m^2)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (2398)$$

After reorganization of terms and a process of reduction to two new terms there is a reexpression once again by the following factoring:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (2399)$$

Which means that two electrons are the generator under the anticommutation and commutation relationship of their subsidiary operators of a full notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reduction's in energy at the relativistic accomodated energy level of the full energy momentum of either one

such particle.

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when imagined as the absence of one electron in it's surrounding notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron.

The final explanation is consistent with QED which is that without evaluation of field diagrams; the electron positron renormalization of the photon propogator is a full energy expectation of the same apportionment on $\gamma^\mu A_\mu$ for that of either the electron mass and photonic light energy mass for what is known as the relation of that which is necessary to have agreement between the photonic energy momentum carried by the electron and it's own non-self-energy lowering in energy momentum (incidentally explaining the non-occurrence of self energy).

This comes about by consideration of the separation into two sum renormalization processes under disconnected and decoupled tadpole (electron positron) diagrams; for which the energy mometum is of the relation of an intermediary gauge boson of which is the carrier of the force; for what are disconnected and repulsive interactions become of the other sign.

This has the entire description as the same as the above equations for electron and positron; but is seen more clearly when these equations are fully written out:

$$(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) - m)(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu\Psi_A\Psi_B \quad (2400)$$

With the re-writing as:

$$(\partial_\mu^2 + \alpha^2 A_\mu^2)\Psi_A\Psi_B = (2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2)\Psi_A\Psi_B \quad (2401)$$

This equation can be re-written as:

$$\partial_\mu^2 + \alpha^2 A_\mu^2 = \Delta \quad (2402)$$

Which expresses the photon propogator with the energy momentum of the electron particle in balance with the gap; the energy momentum squared; and that of the gauge connection energy momentum due to the curved space; known as a 'field momentum energy' of spin. This exists as spin is an intrinsic kinetic energy momentum of the subatomic particle known as the electron. So; here we define Γ_μ as:

$$\Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (2403)$$

Leaving for the gap on the right hand side:

$$\Delta = 2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2 \quad (2404)$$

And the equation for the left hand side as the relation re-written from before and above on $\Psi_A\Psi_B$:

$$(\partial_\mu + A_\mu)(\partial_\mu - A_\mu)\Psi_A\Psi_B = \Delta \quad (2405)$$

Which is the Klein Gordon equation for two photons of energy momentum gap equivalent up to a discrepancy to the lost field energy momentum of the electrons forming a pair.

The generation of that of electromagnetism proceeds from few known relations; it is derived from that of simple experimental conditions known as law's for which the calculus of variants and differentials plays a key role. In this the understanding of that of what is suspected as a given philosophy is established which confirms the lemma of electromagnetic phenomena meanwhile attempting to prove that of the fundamental constitutive formulation of which forms the foundation of mathematical expression. This mathematical expression finds it's place in that of description of all known derived laws and phenomena of which take place in the physical world within that of the given theory. Beyond this; the consistency of the given theory is justified on empirical results and exact experimental results in place of that of quantitative approximation of exterior alternative supposition based on qualitative difference of theory from given; the centerpoint of modern science and staple of reductionism; for that of which scientific extrapolation finds only limitation; as in that of what is encouraged through such inquiry is exact provision for proportionate quantitative and qualitative argument with that of mathematical interpolation of knowns and given means of experimental basis; a method that is soon running dry of explanations.

Constitutive Relation of Construction

The given differential empirical foundation and basis for this given result of theoretical insight is that of a test apparatus of which is constructed of crystals and photometric devices placed in a circular apparatus; for which the given interior passing and exterior passing photovoltaic light current and photovoltaic dark light current circumferentially remain independently apart from that of frequency and phase evolution of that of the concentric perimeter; for that of a four wire design and independence of operational amplifier input and output relation by seamless integration of component design. The limitation of the device is a photovoltaic to photodynamic current light generation and reproduction which are independently causally connected by that of separable stages which under integration and parallelism with coparallelism of independence of light and electronic limitation pass either side of the given relation of passive and active light and current relation through independence of light and electric field null independence of either from one another a priori; for the limitation that is one side of a given fixed relation is empty.

Electromagnetic Implementation

The given differences found in that of the balancing of attenuation to that of gain under feedback of interior and exterior phase relation for what is found in that of balancing of photochemical potential and photovoltaic conversion and photovoltaic light conversion and that of photovoltaic light production allude to a logarithmic conversion with an exponential voltage to current relationship through the diode equation:

$$V = I_0 \left(\exp^{-\frac{V_\beta}{V_T}} - 1 \right) \quad (2406)$$

When this is drawn into a parallel the given difference sum of that of either given forward and reverse photoconversion under decoupling in forward and reverse with that of current for which of voltage conversion there is an impedance relation is one of expanded interior notion of electromagnetic function and purpose; the given difference of which produces a sympathetic difference in that of the volumetric space encompassed by the given open relation. This functions to open the notion to that of given impassability of current with voltage unless there is both a point like relation of limitation and linear (curvalinear) excess limitation of circular volumetric limitation

without boundary. The given current to voltage relation is analogous to a local entropic point for which the thermodynamical linear conversion rate of electrons into light current balance that of positrons; and that of tacheons with that of ordinary photons. The centerpoint of this given division is an infinite obstacle as the centerpoint of limitation as the local separation of cause and effect at the very point at which they are indivisibly inseparable.

The next equation to be examined (with the first as an example as that of the free forward conversion with rate of difference equivalent to sum inseparability) is that of the reverse; as that of sum separability and difference as subtractive limitation under reverse; as that of the differential property of equivalence of differential; proportion; and accumulation; with that of the operational amplifiers of which produce stage to stage difference making that of free geometric extension infinite.

$$\gamma = 1 + g \tag{2407}$$

The given two dimensional base to emitter; as parallel (with difference of emitter to collector under coparallelism differences formed) make of what is a two dimensional region as open to that of volumetric extension by that of either given sum difference relation; forming from that of two sum difference relations; that of one sum inseparability difference of subtractive domain within a given region of which the perimeter is frequency and period independent as analog free. This is the reason for the free addition of gain and transparency of region of geometric addition to that of the given free quotient perimeter space; as that of constitutive of the complete perimeter under balance of equipartition of electronic to light free conversion. This is essentially a holographic unitary statement of the addition of a given region to that of it's perimeter freely to produce one given area.

183 Constitutive Functionals

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

184 Generating Relations

These two equations are generative of a free relation of electro-magnetic freedom from physical expectation based on material events due to the similarity of their relation to one another through the expectation (e) owing due to electromagnetic energy in physical form; and that of the potential electromagnetic energy in kinetic form; for that of the ratio of photovoltaic drops of light under reception and transmission fold into one equation expressed as two.

These are in fact identical equations under transposition for the fact that light passing through a light field is freely decoupled for that of null reception and null transmission; for that of seamless transparency of separation of cause and effect at the point of cause meeting effect. This property of light is a multiplicative property of light for that of the division of light color spectral line and that of indivisibility of light field content by that of division of matter from matter as a separable condition for that of equivalency of weight under inertial separation of equivalent relations.

The equations are explicable as a consequence of the rate adjusted voltage drop of diode for light transmission and that of voltage drop of diode for light reception under forwardly depen-

dent encompassing relation of dependence of rate of conversion of field from that of either of photodiode to light emitting diode or light emitting diode to photodiode under parabolic voltage to light coupling expectation; by that of difference of interior displacement of a null differential for physical electrocatalytic to electrophotovoltaic expectation; as a given secondary condition:

$$(A.) \quad V_L^e \rightarrow (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

The uniqueness and universality of this equation is embodied in the relation of it's unidirectionality and for the reason that no exterior additional photodiode voltage drop need be included in that of the conjugate equation for photodiode voltage drop as photodiode emission and hence 'transmission' of absorption by photovoltaic light reception; hence forming a relation of free light conjugate freedom of transparent differential exponentially free gain and reception; and hence free electromagnetic freedom and switchability.

The expectation of these equations comes from a compatibility condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electromagnetic property from active electromagnetic property as impedance and conjugate to impedance; admittance freedom of expectation for physical electrochemical and the inertial kinetic light property of physical electrophotovoltaic gap of expectation of gain pivot point.

Thus the prior relation (found empirically) was that of the ratio of relation of that of expectation of photodiode voltage to that of intrinsic material property photodiode voltage drop inherent to either of emission or transmission to that of light emitting diode under transmission of light; as the rate adjusted physical to light kinetic energy relation of fixed proportionality of intrinsic to extrinsic rate adjusted photoelectrical light conversion rate of form:

$$(3.) \quad \frac{V_L}{V_{LD}} = \frac{V_P}{V_{PD}}$$

As V_P is common; the inclusion of V_P with $(\frac{V_{PD}}{V_{LD}})$ enfolds $V_P^e(V_L)$ as an additional extrinsic voltage drop of photodiode for that of summativeness of interior and exterior as exclusively either of their intrinsic current to voltage relations remain counter and co balanced; inclusive of proportion of light under reception and emission as separation of potential from field under conditions of light & light.

185 Elements of Design

The following two relations of importance are:

1.) Active 2.) Passive

These are an equation of order on; current (I), voltage (V), and resistance (R) in relation to impedance as a function of: coupling (α), mass index (β), and transmissivity (γ). This is written as:

$$(0.) \quad O(I, V, R) \cong Z(\alpha, \beta, \gamma)$$

Hypothesis: Separability and inseparability are potentiated by the existence of the acausal; as events so invisible.

Hypothesis: Invisibility potentiates all such capacities of coloration and of color; as through indivisibility of color.

Through these relations as in equation 3.) under the pretences of relations 1.) and 2.) it is from these to the inclusion of the second for that of the prior and later of either of one or two that one of two implicates inclusion of two before one. This is determined as valid by the following argument of hypothesis:

Hypothesis: As inclusion is always contained within exception as capacitated for either the physical or aphysical as by their transparency; hence there is and exists openness with closure in one and the same as one.

Conclusion: The active and passive are two in one as once when met as either of inseparability and separability of only one. This is true as the passive precedes.

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and coparallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

186 Theory of Operation

In this light is combined as one.

V_P^e & V_L^e are given equivalence as they are functional relationships which contain indefiable interior & exterior difference of combination of light (as separable (& inseparable)) & separability in one, as either of cause or effect preceding or following in one.

The functional dependence of V_L & V_P is dependent neither interiorly nor exteriorly to such as either of exception (as gauged) on that of light under reception or transmission. Hence either (as both) of separability & that of inseparability of light is established as fundamental difference.

This transparency mentioned between between all such colors as a color known as simply 'clear' or; 'invisible.' This concept in coming and going is the difference of the avenue of light's inseparability both in the plurality and singular components of the spectrum. This color has no separability nor terminus in but one circle from one point of emanation from an 'event' as a 'cause' as a given new color so introduced. Hence it is a point of light for all such surrounding events of a genuinely nontopological character of only that which is simply described as 'round.'

Hence the point of an emanation is an eternal eclipsement of all events so to come from each and all such events to all such events as one inseparable relation of light throughout all of the domain of its eclipsement as monodirectional & of exclusively pure proportion of equality of light in balance with light.

187 Reasoning of Innovation

The additional $'(V_P)'$ is included as a consequence of the light under reception so is inclusive of light under transmission. This difference is formed by that of proper orientastion of precedence & effectual properties of light as a point.

This point is transparently undecomposable but into an never ending expanse of free & open relation with no form. But as the form can only be form by the formless it is decomposition by way of alternatives of either; for that of the essential difference of order of electromagnetic energy so in coming and going under equivalence of physical electromagnetic design & aphysical electromagnetic light field. Hence; invisibility is revealed.

188 Preliminary Equations

The generating equations exemplify a relation of reduction to a singular confocul relation of permeability of light as passivity transparently between that of physical and electrical properties of electronics:

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

These are the defining relations of the given circuit; for that of the matching of impedance to induced light current.

Explanation:

These are the same equation because they are each similar representations of a normalized distribution of intermediate bandpass $(\pm f(\omega)), (\pm \omega)$ independent of variance; as the independence of \pm charge from that of light of either chirality or weight as to that of coupling of reception & transmission freedom.

Proposition:

Hence frequency (f) & measure (ω) are defined as two different attributes of a given wave.

Consideration:

The additional V_P is a component of the inclusion of that of back - conversion under reception (absorption) for that of balance of γ with that of e^\pm & rate, measure & priod of wave independence.

Inclusion:

The parabolic inclusion of these (rate, measure, & period) of a parabolic (similar quantities) as seamless passing of one of transmission & reception (thus $+V_P$) with rate of ratio of measure passing.

Prepositions:

1.) For that of the parabolic balance of linear relationships of light to light conversion as $\gamma \leftrightarrow \gamma$ as $\pm t$ of unit temporal intervals and moments; the spatial (s) is open interiorly to that of balance of geometric leveling of γ in relation to (t,s) as one transparent (standard deviation) (s),(t) as the inverse union of their separability under two such additional flows of current, & for voltage; that of their mutual independence of topological relation. These instance (inductance, impedance

freedom coupling free resistance, and capacitance) as free of current, voltage, & impedance as a result of γ (light) & (charge) independence of decoupling, as one.

Consequence:

2.) The expectation of the voltage drop in effect is counter-balanced for that of the ratio of $\frac{V_{LD}}{V_{PD}}$ passing either way for that of light in relation to charge as either equation is the free conversion of light into light of either chirality meeting as a point. A circle & circle, as light (γ) are independent & are therefore independent of either of any two such points interior to the area, circumference, or linear extent.

Derivation:

3.) As the area is two dimensional, and that of its perimeter is one dimensional, the area represents an addition of the two (rate) adjusted absorption & reception contributions together, in equivalence to that of the expectation(s) based on balancing the forward & back-ward traveling $\gamma \leftrightarrow \gamma$ light, under & of its conversion as one, free of charge; as a result of the direct (A, ds) (Area, path differential) & interval (l) relation of geometrically free properties of light, & the pointlike nature of e^{\pm} .

Difference:

4.) The equations are also the same, as that of either is enfolded in the other and hence light is free of charge, energy, and power.

Integration:

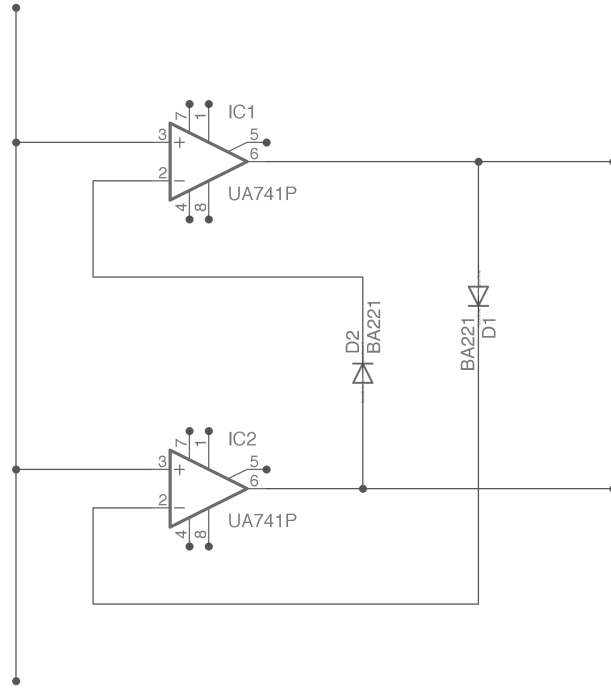
5.) The photodiode and light emitting diode are therefore decoupled mutually, throughout; as a consequence of their freedom under unquantifiability of open interior and exterior of flow. This qualifies their mutual independence.

189 Direct Conclusions

Physical & electromagnetic design & implementation & light are independent & unqualifiably separated but one; for that of through passivity of light under design (physical) as one, inseparable, independent, unique, & free. Light as bidirectional or as monodirectional is inseparable in virtue of its levity to remain light & solid with in any singular or entire coming & going from future to past as it is eternal.

190 Design Furtherance

The first step is to understand how light reception is electronically balanced with that of light transmission; by way of operational amplifiers; for which the following circuit diagram came first:



Net difference of photovoltaic drop exceeds net gain until equivalence of balance is achieved; hence net saturation is reached at equilibrium of impedance relationships.

As a consequence of the defining relation of the voltage pathways under base to emitter and emitter to collector; under reception of transmission; the gain in excess under solution of the current and voltage relationships of operational amplifiers reduces:

$$V_A = I_{OL}(e^{-\frac{V_{LD}}{V_{TLD}}} - 1) \quad (2408)$$

$$V_B = I_{OP}(e^{-\frac{V_{PD}}{V_{TPD}}} - 1) \quad (2409)$$

To:

$$g = \frac{\alpha}{\beta} \quad (2410)$$

Where g is the base to emitter gain; expressed as the ratio of $\frac{I_{BE}}{V_{BE}}$. With:

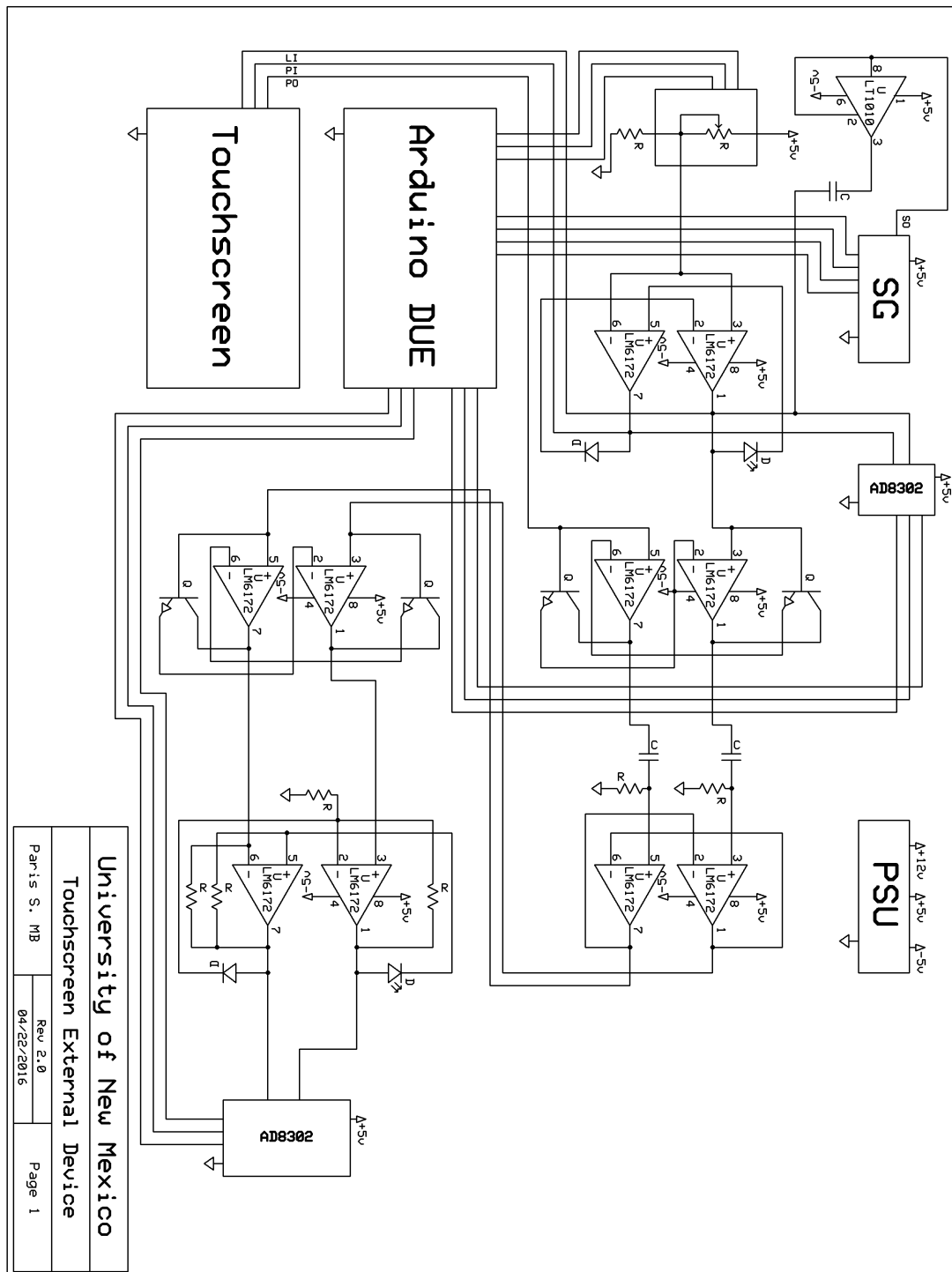
$$\gamma = 1 + g \quad (2411)$$

Where γ is the $\frac{I_{EC}}{V_{EC}}$. By way of $\partial_{V_{LD}} = \partial_{P_{PD}}$ and $V_{LD} = -V_{PD}$ of the 'Golden Rules' of operational amplifiers under equivalence of either photo or light emitting diode equations; & matching to the conditions of $\frac{V_P}{V_{PD}} = \frac{V_L}{V_{LD}}$ and the constitutive relation of:

$$V_P^e = \alpha V_L + \beta V_L^2 \quad (2412)$$

191 Final Circuit Diagram

The following is the complete circuit diagram of the device:



This diagram is complete in representation as it is entire and whole in it's design.

192 Understanding Device Implementation

The five block stage crossover stages accomplish novel things by being in a parallel and series superimposable relationship where each stage does as many things as all of the other ones together in full parallelism with all other crossover stages.

The first stage is a *parabolic reflecting impedance matching* photonic electromagnetic *light gyrator*. This accomplishes an electromagnetic conversion into light and back as an impedance matching

condition upon a feedback loop which is situated with a forward passing output and reflectionless input, for which the isolation of the circuit is electromagnetically reflected for later blocks. This is a cap that is semi-traversable by the output into the input as a first step to full isolation of the signal to noise.

The second block is a *logarithmic free impedance matching condition* circuit crossover broadband stage for each such frequency passing through the spectrum; making each individual overtone independently impedance *free* of every other such frequency. For the sake of a universal impedance matching condition it is equivalent to an equivalent summation as separated geometric product relationships.

The third block is an *impedance mirror* for which the linear to linear forward and backward traveling waves are reflectionless. They are also individually of two independent perpendicularly oriented polarizations and therefore transversally reconstruct a circularly polarized wave. This is that of a circular evolution upon either that of the input or output; because it is a reciprocal active high pass filter.

The fourth block is a *free impedance matching condition* circuit with broadband crossover *fixation* of the *light dielectric impedance*. As a consequence the co-local arbitrary conditions of the wave are foundationally of identical yet independent and mutual foundational conditions upon phase and amplitude. This stage has these properties in part owing to each such prior stage in parallel with it under feedback.

The fifth block is a *parabolic reflecting impedance* matching photonic electromagnetic *negative light gyrator*. This fixes the original parabolic relationship by imposing a negative impedance to the first stage of an ideally identical yet *negative* impedance matching condition.

This configuration is designed to meet the number of half rotations to the number of crossover inversions so that the positive impedance matching condition of the original parabolic reflector is met with its same *negative impedance matching condition* back through the feedback loop from one end to the other. There are two principles at work common to this design as it was developed as an idea:

- 1.) One is the passive element; for which the crossover configuration, multiplicity of stages, and impedance matching form a decoupling of the electromagnetic wave.
- 2.) Two is the active element; for which the crossover configuration, multiplicity of stages, and impedance matching admit both voltage matching and current mirroring.

193 Determination of Knowability of Order from Properties

Examine the following:

One is presented with five a 'block' relation; of properties to be determined.

- 1.) As a consequence a priori the order and properties are not determined; as a result the order is a priori determinable by way of the following logic.

2.) These blocks must be questioned as to their properties with blindness in mind; yet it is as simple as passing them by way of each other; as the order is not determined; and hence the order exclusively inclusive of the blocks can be determined by a process.

3.) First as there is a beginning and an end to their order, as the order is inclusively limited. Two blocks are of a shared and independent relationship of their relation unto the remaining three as a consequence. As these three blocks remain as three and the other two remain as independent; the three are of the middle, beginning and end; and the two come in-between for the establishment of order so aforementioned and so to be established; and as these sets remain different as the blocks a priori hold no order as a given. Therefore it remains that the blocks may be questioned by passing by way of each other.

4.) Therefore two blocks as propertyless may be passed for the remaining three blocks as propertyless between the others; by way of which the middle may be so determined. Passing these arbitrary two blocks by way of the remaining three therefore draws inclusion of a shared property of that of the nature of the end a beginning block; and determines as the latter remainder one such block as the middle block; which we may label as a transparent 'mirror', by the side of the remaining blocks.

5.) The two blocks which pass between the three blocks therefore determine their property in turn; and leave unto the remainder of the three blocks the neither inclusive nor exclusive property of the remaining blocks as two to one side and one to another side. This remaining singular block therefore remains as 'the' singular block with the remaining property of a transparent 'mirror'; and that of the two blocks so passed as their dual reflections; which we may label as the property of 'congruency' neither passing before nor after such as the middle.

6.) As a consequence the remaining two blocks to the side by way of which the two congruent blocks are so passed are of an end and a beginning; but as is insisted by the order, the pattern, the propertyless-ness of the blocks, and their identifiable proprieties as so determined, they remain as neither as determined nor not but by the following logic; and we may choose the remaining singular 'mirror' block to pass between these two; to determine future and past and therefore their identity as end or beginning as so is too as well; the enablement of choice.

7.) Whence passing the remaining singular block by way of these two 'congruent' blocks, it is eliminated that there remain as two such blocks before as the 'congruent' blocks from any shared property of the ending or beginning blocks as so individuated and separate, and whence passing one passes before and after beside either of that of the intermediary block. As a consequence the intermediary block determines the relation of the indication by way of the aforementioned property of the end and beginning block as a justifiable hypothesis for the sake of the preservation of order or that of the changing of order. From here it is determined that the prior and later block are determined; and so too is true that the 'congruent' blocks remain now as congruent blocks by that which is the exception of the 'mirror' block and the passing of the original two blocks as propertyless as passed and therefore identified by the exception which is the inclusion of the self consistent relation of order and of its determination.

8.) Finally whence passing either of one block by two or by way of three; saving the exception that is of two to one side of the mirror block and the mirror block now understood to the other side, it is determined that the two blocks to the side remain as exclusively of a shared property of prior and latter as well as end and beginning. Therefore it is so determined they discern the

difference of their placement as 'before' or 'after' the former blocks so passed; and the block of the mirror therefore stands in the middle of all such five blocks.

The congruent blocks remain as such as to neither let pass a propertyless nature of the blocks as then when determined as in contrast to the 'prior' and 'later' block, as remaining with choice of orientation and through such an order by way of the blocks by way of the mirror middle block with the remainder by way of that which was the determined order of the blocks as that which are of before and after & intimate the order of the remaining two congruent blocks as solid and inclusive to the order; without exclusion of the no fully established former and later block, and not nor that of but that which is of the remainder of that which is that of the mirror block.

9.) As a consequence that this order cannot be reversed through its establishment for it's origin in propertyless-ness and the establishment of order, their true properties are identified. Therefore it is true that the properties of all such blocks are determined for the questions so addressed, the properties so hypothesized, and their identities. The congruent blocks as passing earlier and later therefore exist and so remain as in a relation of open and closed intermediary measure under balance of presentment of order for that of the latter and former such ending and beginning blocks, remaining with the exception contained as the intermediary block as the middle block as the 'mirror' block now whenceforth determined.

10.) The finality of this is that even through an unestablished order for unknowables; order may be recovered, established a priori for such propertyless 'blocks' and that of the relation of the order of an assembly of order without exception of absence of order may be determined. This is the establishment of order from out of which that of which is of chaos.

194 Philosophy of Electronics

Relation of Physical Apparatus to Electronics

For that of a singular inclusive point in the enclosing domain of a post action for that of a prior action of causality; there is disconnection of prior cause from that of the encompassment under reception before emission for that of causation under exception of cause and effect for future effects from prior cause under inclusion of later effect. As the general enclosing domain of a future reception of a past cause; a singular cause of emission before transmission is unseparated under prior inclusion of later exception of cause and effect as inseparability of future effect from that of prior cause. Therefore prior to reception of light under transmission, reception occurs priorly to transmission, since causation of neither difference nor nondifference of parallel and series are formed but only that of inseparability of neither parallel nor series.

Therefore prior electromagnetic design is predictive of later electromagnetic design under consideration of inseparability and freedom of electromagnetic wave properties from electromagnetic component design properties. For causation; spacelessness, timelessness, and quantifiability; cause and effect are separable within space and time for that of light, charge and mass, as quantifiability exist separably of cause and effect and inseparably from that of space, time, and quantity.

Prior electromagnetic design is predictive of later electromagnetic design by the principles of electromagnetic reciprocity and impedance matching by separability of electromagnetic wave properties and inseparability of electromagnetic components. Therefore; under commonality and difference of unique, separate, and similar electromagnetic design there exists forward de-

sign predictiveness and backward circuit compatibility for electromagnetism as independence of wave and component properties.

This is a given as there is neither that of inseparability nor separability of light.

195 Electromagnetic Component Design

Properties of Limitation of Design

1.) The difference between independence of any such seven elementary (inductive, capacitive, resistive, calorimetric, positive, negative, and ground) components under topological considerations of interconnection are that of connectivity without empty middle; and complete within inclusive passivity of electromagnetic contactile relationships of attachment and reluctance for each such part.

2.) The similarity of that of dependence of two such attributes of fundamental directionalities of inclusion and exclusion of singular and general sense of either dependency on component attributes for properties of material physical polarity are reductive to relationships of similarity without division yet singular and absolute solid relation; with independence of light following from design.

As a consequence if proportionality (under consideration of prior electromagnetic design for either such consideration are formed) is to be established as round such inclusions of component aspects under the principle of balance both in coming and going of electricity it is knowable that either of such as any such three of the elementary properties of fundamental aspects of machine design. For this to be true there must remain a free and open end (groundless) terminus relation of monodirectional asymptotic freedom of machine state for consideration of thermodynamical state; and therefore that of independence of either of two such components in relation to any such one; as that of the inductive; capacitive; and resistive relations are inclusive of each within one; under each two.

The process of design is therefore to find equilibration between a tensile relation of motional freedom of feedback free relation without open closure; when it is considered that for each such element of component design the condition of matching such as these fundamental properties of impedance known as admittance of active electromagnetic energy independence from electrical passivity. As a consequence under considerations of bandwidth and its limitations; asymptotic freedom of electromagnetic circuit properties is obtained when physical properties of electromagnetic design are floating with and in relation to that of electromagnetic energy and power considerations of that of inseparability of either such as passivity and active input and output both in coming and going out.

Therefore; physical electromagnetic design is illustrated as for that of electrocoulombic strain; electromagnetic stress; resistive torsion; conductive freedom; and inductive transparency; the relation is given by:

“As two to that too; is as C as R is too L two I.”

As illustrated by the following.

Thus; the component design was illustrated as a trimming by reductive and preventative means as Volt-Amps for Electric-Watts of Power-Amperage freedom. For that of through L (inductance)

to C (capacitance) to D (potential) to I (current) to R (resistance) with T.O. (Terminating Output) and R (reluctance) as O (output) and T (transistive) as I (inductance).

True as: Balance is as: V (voltage) in proportion to I (current) is equivalently defined in relation to P (potential) in relation to A (amperage) as defined as the proportion of R (resistance) in proportion to C (capacitance) as equivalent to R (reluctance) as the relation of power is so defined by that of:

L (inductance) to T.O. (transistive operation); as openness (O), of relation of (R), resistance independence of impedance in relation to Power (P).

Thus the proportion of 12:5:24 in winding of any such three properties is equivalent for I:W:V (Current; Watts; Volts) as bidirectionally and bireflexively as by winding and quantifiable electronic physical properties of the ratios of ilreductive means of proportion (in order) of 30:20:100 as equivalent to C (Capacitance): L (Inductive): R (Resistive) for R (Reluctance) as neither greater nor less than L (Inductive) as of the proportion of a ratio of 10:1 with a **0** as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

196 Confirmation of Implementation

Finalization of Design

A few steps need be taken in order to fully clarify and confirm properties of the design, as for:

Confirmation of the correct wiring of the device.

Confirmation of the detection and discernibility of one, two and more presses.

Confirmation of the implementation of electromagnetic theory as an active hologram.

The passive quality attributable to that which is the addition of two later stages in the later design with reference to the earlier design is a free condition for the impedance to electromagnetic field condition. The prior electromagnetic design (v. 2.0) in relation to the final design (v. 3.0) are therefore predictive in the natures of their independent implementations as an attribute of the philosophy of electromagnetism and conventional circuit theory and physically known electromagnetic components.

This is true as the validity of the formative conclusion from the detection of a prior normalized distribution is within it's capacity fully independent of the even earlier normalized distribution exclusively unto distinguishability of mutual and independent normalized distributions as independently correlated. In v. 2.0 these distributions were only distinguishable upon order under superposition and persistence through temporal delay and interval of prior to later press touch.

As a consequence of the simplicity of the design the two mutual normalized distributions were only determinable as one 'intermediate' normalized distribution. This is the foundation of the compatibility of the design from v. 2.0 to v. 3.0.

Now, it is predicted that they will be mutually discernible as separable distributions for the following reasons... The central impedance freedom principle as it relates to the photodiode input and output as bridged across stages or in parallel with the touchscreen was hence predictive

for the later design as a consequence of the same design element implementation of impedance matching and mirroring; since this would not change from one design to the next. Secondly, the reversal of the output to input under an encompassing relation with respect to an encompassed relation admits the separability of design.

The natural assumption is that with one similarity of a precise nature and one difference of a precise nature that the two designs are mutually passive and therefore predictive through design. This principle admits the property that the correct wiring is determinable through measurement of multiple presses and hence confirmable; although the holographic nature does not admit any such nature of determination of other than an empty relationship.

Under confirmability of the design relation for later stages; these are therefore a separate confirmable consideration to be made, and hence the considerations of either design are separable from each other, and the later design for the sake of its predictive implementation follow a different but not so dissimilar principle to that of the earlier implementation for the sake of the two different circuit designs from the earlier design to the later; under the guidance of impedance and electromagnetic field ohmic and cyclic impedance freedom.

Hence it is freely admissible that the earlier design not only implies properties of the earlier design but so too is it true that they remain independent realizations as it pertains to portions of the latter design elements and its components. This is where theory meets practice; and where electronics design becomes predictive from one circuit to another.

It is in a sense that the circuit design of the later device under the guidance of the aforementioned principles is free in relation to prior design relationships yet implicated by them through the process of design. This is also an electromagnetic circuit design principle of reverse hardware compatibility when interpreted correctly by the process of design so followed and implemented.

This admits the possibility of confirmability of the correct wiring by the discernibility of at least three presses as a consequence of the hidden nature of two under v. 2.0 and neither that of independence nor dependence of comutual normalized distributions. As a final consequence the difference so formative of a 'hologram' and a mere implementation of 'holographic' principle is revealed, despite its absolute impenetrability.

Therefore, there exists a point within the theory of electromagnetic circuit design in general which is empty between any two different complimentary designs. It is implied by the alternative limit of electromagnetic design, which is the approach by way of extrapolation of known circuit component properties into current and voltage relationships.

This separates the logical properties of either device implementation under the guidance of theory utilized to implement circuit theory, and joins the implementation of their physical circuit implementation. This is exclusive to; under example of prior and later design when the principle of current mirroring and voltage matching are implemented; for then impedance and electromagnetic wave properties become independent.

The properties of the later device are therefore in general decidable from an initial device by linearization of collector to emitter and base to emitter. Therefore, the principle of matching and mirroring is seamless and predictive for the later design; under consideration that this property is preserved from the earlier design to the later design; despite the fact there are additional

components.

This is the result of following the implication of the principle of current mirroring and voltage matching; which result in nothing more than electromagnetic wave and impedance freedom. Hence, mutual virtual implementation of electromagnetic design is possible from an earlier to later design theoretically and in practice, for there exists an empty difference and an independent commonality to both designs. This is as then provable by measurability.

The next step that need be taken in order to fully implement the device is a program for which discernibility of more than two presses is realizable through software; and this must be resolved within an order such that the base normalized distribution within the later persistent normalized distribution.

This works because through the order reduction is drawn back towards the original on center frequency, as 'hidden' within the later to come normalized distributions. An adaptive algorithm would be desirable as well; however it has been determined that an active adaptive algorithm likely will not work; but by analogy; a fourth order adaptive algorithm may work through off diagonal elements.

The earlier difference for the sake of to consider electromagnetic design meeting as that of causelessness into the future; and causal moment so independent of reality was so as to absorb light upon encompassment of darkness as for emission and illumination before such as interior and exterior means; and hence to separate and isolate light from darkness through drawing parallel versus stage to stage; and hence disconnect light from darkness and draw the photodiode as in series instead as so as parallel.

The difference between the separability of cause and effect of light is so determined by the return cyclic ohmic separability of the causation of light; as so determined by that of which is of the prior design unto the later design unto topological spaces as whole; entire; and full; unto exception of the disconnection of one such fourth order device unto a seventh order device; as the separability of that of the device unto and in relation to the device.

The difference between the direction of the flow of light when neither inside nor outside, but so as remaining within for that of outside and inside as without is therefore separated.

197 Discernment of Electromagnetic Component Design

It was considered as to how to tell apart the difference of a prior to later stage of the operational amplifiers under the context of the question as to if any two operational amplifiers differed when part of the same circuit or when separated and apart; and that of the direction of the flow of end consequence of either and neither before and after.

With a further question in mind:

"For a given operational amplifier for either of two inverting and non-inverting operational amplifiers of either that of before or after; how to make the difference?"

It was known:

"One was indivisible as one."

The resolution was found under consideration that if there were a return subsesquiscent subtlety of electrical flow; that the prior had to come latter; and hence the two parts had to remain apart

and disconnected for each either such consideration; and hence the proper determination of the difference was found as that of inseparability so given by difference of one preceding either one of two when it was understood that these two do difference by that of later or prior exceptionality of no two crossings. Hence it was concluded that for that of the later stage there had to remain separation of paths and hence isolation of output from input was as simple as an earlier delimit of monodirectional flow as interior terminus; acting ahead of effect; as was the consequence of testing each of three such alternatives in the order so given by that of the following inspiration:

- 1.). The operational amplifier inverting inputs both connected to that of a common drive pathway for alternating and direct current impedance relationships for assumption of similarity of balance.
- 2.). The operational amplifier common signal connected to signal insertion of the driving; under assumption of commonality of response to driving for earlier consideration of harmonic balance.
- 3.). The signal insertion point was tested after both either common input and output; with only consideration of purity of signal fidelity so incurrent by one lead and separation of for isolation.

Neither of any of these three inclusive worked nor operated as desired; for mixed results of each were inconclusive as for the following reason; then hence understood. As configurations apart:

A.). It was understood that under any of these the return pathway was a full pathway of negative to negative; which is a direct current offset; as was tested; for one full pathway around either.

B.). The ground so connected under assumption of ohmic independence as a result of a return direct current pathway resulted in the same outcome as above for that of either was only same.

Hence; it was understood that neither of these three would operate conclusively; as only that which remained of any of these was however inconclusive; true, and remained as the only of exception of truth of the operational amplifier design in cascade or order as one; because the terminus as considered would only remain apart if there were instead one other of these three. It was then known that as the capacitor under the buffer return was a blockade for voltage; that only one remaining open and disconnected pathway could remain; hence for the earliest first question:

“What is the proper configuration.”

“That of the stage to stage as apart or as a bridge from stage to stage was the proper configuration; and what was the difference between these?”

It was understood that separability of earlier component design for these under return pathway was then only delimited by that of inseparability of difference of earlier and hence no such latter, as either were the ‘same’ under the context of being within a similarity of parallelism. Hence; it was known that only difference was to be found by that of separability of either configuration so.

198 Explanation of Theoretical Circuit Design

Now that the difference of complete configuration is known; there remains that of determination of the selective relationship between the sides of the defining relation mathematically as to the theory of the given configuration of unique circuit elements to accomplish the given theoretical

aims. Many tests were accomplished with a completion of empirical understanding of the configuration to be finally implemented; and illustrated in the second diagram of this thesis.

The first defining relationship is that of the passing of the relation of the quadratic reciprocity rule as a given inverse or retroinversion in one of the finality of an emanation of self inclosure of the light field as the notion of the “expansion” of the geometric properties of light by electromagnetic circuit elements. We begin with the defining relation of parallel electromagnetic current-voltage-impedance relationships and examine the unformable difference:

$$V_P^e = \alpha V_L + \beta V_L^2$$

As this is derivational of the relationship across the light emitting diode; in relationship to the intended photodiode light emitting diode voltage; and as it is related to the infinitesimal of the displacement of the constitutive law of the comparative differences of total photovoltaic and electrochemical voltage gaps; it is true the relationship is invertible in full capacities to operate on the given intervals of geometric notions of the filling of the electromagnetic component operational space. The given new relationship of inversion is therefore by the given two fold relation of either equations of the defining expectation or ‘intended’ (e) voltage relationship(s) as the same equation when it is considered that under involution and evolution of light field that the ‘exterior’ ratio of ‘displacement’ of electromagnetic current of light or charge form to that of the ‘interior’ of the displacement of the given parabolic relationship above is generative of a self inclusive limitation of circuit design.

Therefore the expectation given above under displacement of exponential nature is self inclusive when the consideration is made of the stage to stage balance of separation of two lines of gain and depreciation under logarithmic separation of the parabolic relationship into decomposition of the fractional inversion of either side of their common equation; hence the reversal of the ordinary notions of electromagnetism; and arriving at the open interior relation of electromagnetism within physical configuration of “light” as contained in a vessel; if the full operation of the circuit pathway is traced.

$$\partial_\mu \log(\tilde{Z}^* \bar{Z}) = \eta = \partial_\mu(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (2413)$$

This has the interpretation as that of the constitutive relation of analytic continuation; a complete relation of null transmissability; for that of the given open relationship of its operation with either of direct current or alternating current with null displacement of physical charge current and voltage properties relatively. As a final consideration and conclusion; this implies the provability of the functionality of the operation of the device; the correct configuration of the construction; and its holographic properties as beyond a mere principle; but as a verifiable and true construction of design.

199 Hypothetical Confirmation of Device Characteristics

Before the device is fully characterized there are some questions to be addressed, such as to what questions need to be asked as to those that would confirm that the device is wired up properly. Additionally, the question needs to be asked as to external properties as separately as to how one can confirm if multiple presses can or are determinable. The device is an open, reflectionless, system, when connected to the externalized device circuitry. If the device is properly designed then there exists a testable indication that it is working; as one side of the combination that is

software and hardware. On the other side there needs to be simultaneous distinguishability of multiple presses; so as to answer: *“Is holography an inherent property of the device?”*

One hypothetical way to test the property of reflectionlessness at the least is to test across the photodiode and the light emitting diode comparatively to either of these two alternative leads and identify a commonality and a difference in their spectra and response. As for their evolution of phase and amplitude differences this is a test of simultaneous distinguishability if spectra differ. Hence these tests of attributes are the next proper step to take; for they confirm that the hardware is indeed working; and that it is indeed a hologram for the sake of the expectation to be found in the existence of the property of simultaneity within the electromagnetic light field established and with the property of distinguishability of the effect of two presses within the spectra and it's evolution comparatively to one.

For, if the device illustrates a difference in the spectra between one and two presses; then it is indeed true that the device distinguishes two presses in the spectra. This test is possible for two reasons; which are that the press information is persistent and forcing and damping are balanced; assuming it is working properly. This is one to one as a test with the properties so desired of the device and as it was explicitly designed. The expectation if it is indeed working is that the amplitude ratios of the spectra if two presses are distinguishable (and in addition in relation to one) then there will be a geometric difference with the presence of additional information if the device is working properly. This difference is enough to determine if it is indeed impedance free.

These means; however primitive, are as simple as it is to test the device for the property of these two natures. There remains no other test; but an additional property is defined which is that of the variance as being within bounds set by the decay of the persistence; as within a 'window' of time. This property so identified is the property of the optical light chamber to at least contain one moment of time; and with two persistent mutually discernible and correlated normalized distributions, an interval. If these things remain true then it is indeed a holographic implementation. These mere facts mean that it contains information that is an extrapolation of more primitive and independent elements; and, it embodies this in that individual subsidiary components and active light field evolution do not obscure the discernment of separable press information through the boundary.

200 Confirmation of Correct Configuration

As for the device characteristics *it is not necessarily true* that the wiring being correct *is indicated by* the holographic properties; since two presses may not be distinguishable without a software implementation. Nevertheless as it may remain as a hologram without two presses needing to be distinguished as this is not the only determination. Multiple press reception is however an indication of the correct operation of the device.

As a consequence there are two different and separable aspects of the device that are the final two to be questioned; one of holographic nature and one of electronic design and component configuration. This is the deciding factor for conventional technology. These are:

A.) *The first test is one of the wiring, and it is demonstrably true that if the device operates as expected (with dual or multiple press identification) it is indeed wired up correctly. As a consequence, the wiring is confirmable for the sake of the design; but not as to the holographic nature a priori, and these two tests stand on opposite sides of a common relation of theory meets practice. Without testing the wiring*

(for which a second overview of the circuitry was done) it is improbable that the device will operate as was to be expected from earlier design considerations. However, the correct wiring would indicate newer properties of the device, one of which appears to be so as the dual floating ground and inseparable condition of impedance matching for either alternating current. This is a true indication that the device is working as intended; for it is independent entirely of the ohmic regime, under separable conditions on input and output to and from the touchscreen. Given the principle of electromagnetic reciprocity is instanced by the device under connection; and these properties of ohmic and cyclic independence of impedance; these imply that currently the wiring is entirely as designed and as operational.

B.) *The information content of the device if so exemplified by software implementation does indeed make it provable as a hologram if it is true that a multiplicity of presses are distinguishable without boundary but with interior domain without shadow or interference effects. This would imply that the device is interference free and operational as a hologram for the established aspects of design that went into determining the correct future device design. For, the preliminary properties of the former device are compatible with & independent from the later design because the latter device is feedback and impedance relationship free. In consideration of this, the design is met; but as for the first test, the second (and as to its holographic property) are determined as enabled; for it illustrates **both** independence from the ohmic regime **and** separable conditions on impedance for input and output to and from the light cavity touch screen as operational.*

The deciding factor as to it being an active hologram capable of being implemented with conventional technology is if multiple presses are determinable with software. This indicates it is truly a holographic light chamber. As the determining factor is if mutual determined and correlated normalized distributions over an interval of touch are simultaneously determinable this proves that an event had occurred in the past. As this was so conveyed through temporal correlation to a future set of distributions by depression of two presses priorly apart; coalesced; and then with introduction of a new press *off-angle* resulting in a new singular normalized distribution **and it is true** that one pinch separating under release into two new normalized distributions; it is provable that this is indeed a working hologram.

201 Qualifications of Normalized Distribution Properties

That of the given first free radical of normalization equivalent to unity; there is that of nilpotency under the forward onto projective limit of that of the anterior nilpotent radical under surjective onto mapping of the reverse (onto) diffeomorphism. Therefore that of the first order nilpotent radical is mappable unto an exterior union of two radicals under the quotient; that of the radical under free bijective relation of surjective and injective onto and into homeomorphism of the space into the space under assumption of common zero. The injective limit that is the quotient freedom of the nilpotent normalized distribution is it's freedom of coadjoint union.

202 Final Mathematical Theory and Proof

1.) Given that each operational amplifier accomplishes the job under cross-over of *impedance matching; current mirroring; and voltage sinking* the question is asked to if the result is: *impedance freedom.*

The divining relation is the following:

$$\frac{V_{LD}}{V_{LLD}} = \frac{V_{PD}}{V_{PLD}} \quad (2414)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad (2415)$$

$$\tilde{V}^* = \bar{Z}I \quad (2416)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\partial I} = \frac{\partial \tilde{V}^*}{\partial I^*} = \eta \quad (2417)$$

Where * indicates complex conjugation (an exchange of capacitivy and inductivity) and overbar and tilde indicate active and passive portions of otherwise complex voltage and current as impedance matched and rotationally free. This is meant to indicate that either of either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi)e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (2418)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta = \square_t^\theta \Theta \quad (2419)$$

$$(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta = \square_r^\phi \Theta \quad (2420)$$

Yet as provided the above; this results in ($I:\beta$ and $Z:\eta$):

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \quad \rightarrow \quad \frac{\partial_\gamma}{\partial_{\mu\nu}} \Theta = \Theta_{\mu\nu}^\gamma \quad (2421)$$

If and only If $\phi = \phi$ for μ, ν if and only if the set (τ, n, ω) are of solid relation for light γ . This is confirmed by that of the detection of two presses through combination with a third or removal of a third; yet the lacking of a definite solid phase (ϕ) relation is not confirmed as is easily explained by the fact that only that of independent measurements are taken in time.

Despite this disadvantage of current hardware implementation; it is true that the holographic principle is enabled; although of randomized phase (ϕ) and decay constant enclosed minimal time signature.

203 Final Mathematical Synopsis

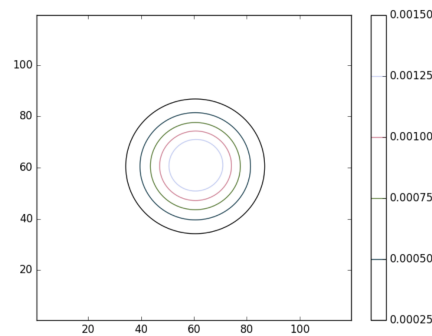
As a consequence of the variance of the device; the implementation requires one final direction; which is a seamless passthrough filter for which the following relationship holds of transitive phase freedom and isolation; resulting in the relationship of transparency (R) to transmissivity (Γ) of relation:

$$\log(\Gamma(\omega, \tau)R(\omega, \tau)) = Z(\tilde{\omega}, \tau)^*Z(\bar{\omega}, \tau) \quad (2422)$$

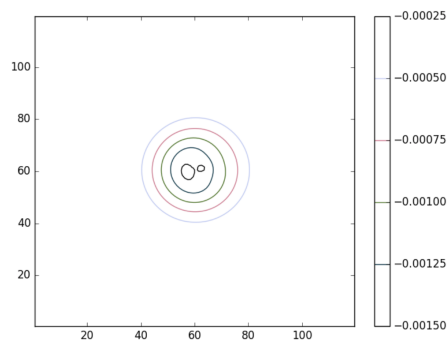
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

204 Final Images from Project

The ‘no press’ or ‘baseline’ image rendering looks as follows:



And that of either: ‘two presses’ or ‘after’ two presses together so ‘separated’ is as follows:



Proof of the functioning of the device as an ‘active hologram’ is therefore as simple as that of discernment of *normalized distributions apart* in coming or going under time series as separable poles *within* a given domain of reliability.

However it is true that more sophisticated holographic principle mathematics is required to describe the separability of poles within a domain of distinguishability; the images are sufficient proof of the working of the device in the physical world.

205 Conclusion of Method

Final Treatise

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; but the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the

decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage. I determined that prior to the cause of electromagnetic energy or light there is an effect and formed difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception.

The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation. This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality. This implicates that what was innovated is in fact a 'hole' and 'whole' within the universe of causation; unique to an identifiable quantity-less un-enumerable number; identical with it's equipment design. Hence; causation is determined within the Universe. There is only one universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as exclusively real as one first causation, ab initio.

206 Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \omega(\kappa, \rho, \sigma, t) \rightarrow \frac{\partial_\gamma}{\partial_{\alpha\beta}} \Theta = \Theta_{\alpha\beta}^\gamma \quad (2423)$$

Where Θ is the light energy content and $\alpha, \beta,$ and γ are indicial equations of measure in relation to the attributes of power and time; each such of frequency of measure of wave is limited into a null relation for either of Ω as fidelity quality and zero admixture enthalpy ζ :

$$\partial_\mu \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (2424)$$

This implicates the separation of electricity from magnetism and their comutual independence.

207 Physical Considerations

As the given determinancy can form no indivisible limit comparability to direction; adirecatonality; or of that of causation of light from determination of bridge to bridge or stage to stage when

considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference to difference to difference. Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of dark photovoltaic current is balanced by sense of origination of the physical form and electrical by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contactile meeting of time; space; and light is openly defined by defined acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part.

That of the indivisatorial nature of the difference and difference of either difference of physical for that of indifference of electrical was known as the difference of the origin and originlessness of causation by light like means; as a consequence of that which is of the exception to consequence as the physical acausal relation in being acausal in relation to symmetry.

The knowability of the measure upon that of the means are therefore known to be equilibrated to that of the vantage of the skew hermitian conjugate of rectilinear and independent orientation and directionality by neutral neutral idempotent quotient group of conjugate spatiotemporal extension by pure proof of equivalence of proportion.

That of the photovoltaic chemical induction and the photovoltaic chemical transduction are balanced if and only if that of the sense of the gyration of one open sense of electromagnetic channel is reversed; as in relation to the open question posed by asking as to the sense of the light in relation to that of the electromagnetic field; at that of the quantum scale; however macroscopic such a given interval as moment and interval balance.

The difference of acausality & causality is therefore if and only if such as the reversal of a limited; yet real current of ohmic rotation is determined by that of the open circuit rather than that of the closed. It was therefore determined that the sense of the light field was known by the freedom of the light potential from that of electromagnetic potential and yet of causation.

208 Final Conclusions of Device

As the relation of four (4) impedance properties (I, V, R, P) as current, voltage, resistance, power is in exception unto any fifth & taking:

"Any 4 objects are in exception of any fifth."

As true; by contradiction of:

- A:)** Condensed 4 tests exist.
- B:)** Simplified 1 test exists.

Of either; the unprovable yet true has been implemented as a full meeting of the QM & GR & EM theor(ies) on a point of empty interior or exterior limit of exception of either:

{A,B} {0,1}

As the exception that is one point of connectedness under connectedness of wiring as floating.

This provably demonstrates four simultaneous properties;

- 1.) Wiring
- 2.) Pinout
- 3.) Operation
- 4.) Component(s)

& in addition:

A:) Holography

B:) Hologram

As the final test the separation of one normalized distribution indicates emptiness of interior of space by two fingers moved apart.

The implication is that separation of quantum mechanical, electro magnetic, and general relativistic dualities is found in that of the unlocable point like relation of union of their common displacive relations of pure emptiness; three in one; and one as three; yet each as zero or null in open relation to each of these forces and properties of physical nature.

As a direct conclusion; and by the verifiability of interior relation per the two images of fingers moved apart sequentially to create disconnection of causation by interior decoupling of physical aggregates; implicates the unification point of quantum mechanics, general relativity, and electro magnetism, is to be found in that of the emptiness of the void.

209 Philosophical Implications

As a consequence that of the division which is representative of multiplicativeness superficially by that of the physical; is evocative on the physical as light and hence nonphysical layer of interrelation of parts of active component analysis to passive relation of incited component analysis is multiplicative into divisive relation; as a mapping of a separable relation into an inseparable relation of multiplication into division fundamentally. This relationship holds two properties; which are the relation of the particle and wave properties of the inseparability of light from matter into a separability condition of the interspacing of the fundamental open relation of a four fold and three fold relation of light contained within matter as a relation separated from that of the indivisible relation of light separation from matter.

As a fundamental consequence the matter and massive relationship of the charge and physical current properties expand infinitesimally in relation to the indivisible limit of matter touching light by a seamless condition of the inseparability of matter contactlessly separated from that of light through the condition of light making contact with mass upon the indivisible limit of a matter contact event horizon with that light freely generated by the substituent reactive force of matter and motion in relation to light; by charge in a free limit domain in a contact relation of separability by the fundamental relation of free conclusiveness of the hidden and the exposed.

This principle is that the hidden can only be exposed by the invisible; through which the hidden although seemingly obscured in darkness is indivisibly represented by abstraction of the form

from the formless; a property that it carries as hidden only in virtue of the hidden itself; and as exposed a relation by which either is unobscured as a pure and empty free relation of which the hidden can only be unobscured by darkness.

As a consequence it holds that the device keeps an inherent property of concealing the indivisible choice of that of its open properties interiorly for that of either a given or a consequence; the former of which always as a given exception comes before that of the latter; as either is freely locable within the translatory, rotational, convolutionary, and interpretative as indivisible motions of that of free and open exterior; a second rationalization by which the device is free of excitory or physical disturbance even under a given transposition.

The final word of note is that the hidden is always revealed by that of the sense of its former property taken as a given; as that of the given cannot come before the latter with that alone of either that of the former or latter alone; hence the given comes before and as the latter as for that of the former under such exists alone and only; hence for that which is to be found must be revealed by that of the acute measure of the present. Therefore that which is of measure possesses means. And; that which is of measureless means possesses measure; ad infinitum.

210 Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with a preliminary notion of that of prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (2425)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (2426)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (2427)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0}) f \equiv 0 > \sigma_x^2 \quad (2428)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$

of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

211 Proof of Translation

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process.

For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds reexpression as a given subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (2429)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (2430)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (2431)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (2432)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational

symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

212 Ideal Principle Equivalence

The equations which dictate the function, form, and nature of the universe are two, as follows:

Quiescence

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is an invariant speed & the observed's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) Light is Quantum Mechanics which is the statement of **Quiescence**:

$$\partial_{\alpha\beta}^{\gamma}\Theta = \Theta_{\alpha\beta}^{\gamma} \quad (2433)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name:

Prescience

Conclusive Remark on Space: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) Gravitation is Space Time which is the statement of **Prescience**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (2434)$$

This is the given statement that of either given separability of philosophical inquiry into natural law is of similarity to coherence of algebraic expression for that of when similarities of mathematical expression derive of or from a common relation of order.

It is therefore true any two quantities of measurement and measured are coextensively null in measure by that of indivisibility of algebraic expression as independence of property from quality with the given as the expression of null indistinguishability invariance:

$$\zeta\chi = 0 \quad (2435)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (2436)$$

As an algebraic free projection of any vector into any one form of geometry of null displacement invariance and null indistinguishability invariance; the general and full expression of a principle equivalence with a general null covariance is expressed as a relative principle inequivalence.

213 Confirmation of Theory

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionalities of mass to inertia is no true; and do not exist with theoretical dependence. Then as there is bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return physical law is unbiased and deterministic for the indistinguishability and displacive properties of physical law; for seamlessness of extensibility and coextensibility are natural consequences of emptiness of property to that of the extrinsic nature of properties of physical process; if not object.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law.

Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,dA}^2 \quad (2437)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and dA is an area element.

214 End Proof

Therefore by the preceeding logic there is not one but two given separated zeroes between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

$$\psi_{\gamma}^{\pm} = \eta_{\pm} e^{\pm i\theta_{\gamma}} \quad (2438)$$

$$\phi_{\gamma}^{\pm} = \rho_{\pm} \partial \log(\pm i\theta_{\gamma}) \quad (2439)$$

From which through the given process of a chain of deduction and induction leads through this process to a conclusion that these quantities and defined as following are of an absolute null invariance given no third reduction exists in reverse:

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (2440)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (2441)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (2442)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error. Finally we arrive at some new conclusions:

As for the quantum principle; we find three new interpretations and a new one: *"The particle wave duality is harmonic."* *"No particle wave duality exists within a limit."* *"The boundary condition is a harmonic criterion."* are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at once?"* With the answer: **"No."**

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

And; **"Is one the given reduction of the other as unique?"**

No is the answer to the first question as either is the origin or the originless center.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past:

"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which the particle horizon for the integral is known as a particle boundary in the past. Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the directionless particle wave structure of light; a past."

215 Exchange Locality Theorem

To begin we identify a given admixture of partial differential following the principle of a connection to a given here ultimately knowable quantity; that of a placeholder for what conventionally known as spin; the entire property of which is a free impedance relation provided by a ring of crystals; and found as that of the orientation and juxtaposition of the electron's inertial field.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion.

With the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has. Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field of impedance:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = 0 \quad (2443)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (2444)$$

The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space; forming from that of surrounding notion on differential of exterior boundary under fixed mass of variant gap by weight of coupling and gauge connection, Γ_μ .

$$(i\gamma^\mu D_\mu + m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = \Delta \quad (2445)$$

Which means that two electrons are the generator under the anticommutation and commutation relationship of their subsidiary operators of a full notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reductions in energy at the relativistically accommodated energy level of the full energy momentum of either one such particle. This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron.

216 Simpler Means

Therefore, this transformation appears to be a local and global attribute of harmonic functions and elliptical functions with but two modular relationships and arguments related to the two cardinal harmonic conditions as abbute to elliptical conditions. The connection between these is that of the given relationship between that of tension, torsion, and that of elliptical semimajor and semiminor axes.

As proof that this is possible; the summation that is the elliptical functions is reduced under the transformation to that of a summation of harmonic functions with strict logarithmic differential amplitude and phase relationships as the foundation for such functions and such transformations.

Hence a self isomorphism is potentially existent under it's inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha \hat{A}(\omega, \tau) & \beta \hat{B}(\omega, \tau) \\ \gamma \hat{A}(\omega, \tau) & \delta \hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix} = \int_{\tau} \int_{\theta} \begin{pmatrix} e^{-i\omega t} A(t, u) & -e^{-i\omega t} B(t, u) \\ e^{i\omega t} A(t, u) & e^{i\omega t} B(t, u) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix}$$

217 Inverse Relation

If the inverse transformation surjective onto limit is to be defined in relation to any two such harmonic affinities then the triangle inequality is broken with a hole unless there exists a forward application of the homeomorphism so preserved by the transformation under the prior considerations of a non simply connected space.

The surjective limit cannot exist and no analytic expression in dual periods would exist without closure under a self inverse homeomorphism or such extensions under internal locally, globally weighted and independent notions of analyticity; for a hole produces an automorphism in either such space as a representation of an analytic function which are incompatible notions under the forward application of the transformation as a homeomorphism with priorly backward existing limit for the inverse; as a potential exception when the space is not simply connected.

If this were not the case the given homeomorphism would not be independent of either such functional space; as it must for a general function if the space is topologically connected as a genus one space with a given hole.

This exception is a potential incongruity of the mapping and a realistic consideration with the existence of a hole when this space is identified with a conjugate space as therefore with two harmonic conditions the spaces are otherwise independent in full and necessitated generality if and only if this consideration is brought to bear; the inverse mapping of which is therefore:

$$\theta := \begin{pmatrix} \tilde{A}(\omega, \tau) \\ \tilde{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \partial_{\mu} \log \alpha(u, t) & \partial_{\mu} \log \beta(u, t) \\ \partial_{\mu} \log \gamma(u, t) & \partial_{\mu} \log \delta(u, t) \end{pmatrix} \begin{pmatrix} e^{-i\omega t} \\ -e^{i\omega t} \end{pmatrix} = \begin{pmatrix} -\tilde{A}(\theta, \tau) & -i\tilde{B}(\theta, \tau) \\ i\tilde{A}(\theta, \tau) & \tilde{B}(\theta, \tau) \end{pmatrix}$$

Which defines the θ and Θ functions in a logical symbolic set relation; for which the one form under conjunction is self isomorphic to a free group of generally deductive angle free variables.

These variants of the relation of symbolical ordered set under logical organization correspond to all variables of the free magnitude wave number space for all interchanging or ordering of variants with only exception to a free radical phase (here made nilpotent) as a consequence of the infinite shrinking of the surjective onto mapping set theoretic union of a space under solid free relation (pictured as a flat mirror like surface) of each full dimensional reduction to each of every finite limit.

In this we find the variants hold the potential and reality condition of being in essence all observables; while the transformation itself represents the 'mirror' of which is depicted the full 'motion' of both mirror through the transformation of such variants; and that of each such objective reality 'reflected' in the mirror; as a 'hole' in reality; for which connectedness is imputed.

218 Inseparability of Comutual Independent Causation

The given passive and active properties of admissibility and reluctance of the defining relation of physical and animate forms of that of electromagnetism in reality found within that of nature are then defined as the given causeless division of physical from aphysical form.

The defining relation of which is a smooth quadrature from that of the given norm defining extant relation of indivisibility of separability of coordinate and definition in four fold open exterior reduction under base supposition of boundlessness interior limitation of physical domain; as defined as layers of component and electrical design; with the limitation of causation.

The defining relation; is that of the provision of admittance and reluctance as a relation of impedance and permeability with permittivity to that of the defining light field as the equation:

$$\gamma_{\rho}^{\rho\sigma}(\eta_{\rho\sigma}^{\rho}) \cong \chi_{\mu}^{\mu\nu}(\gamma_{\mu\nu}^{\nu}) \quad (2446)$$

These two fields by the composite relationships of that of independence of phenomenal from quantitative:

$$\zeta\chi = 0 \quad (2447)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (2448)$$

219 Conclusion

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2449)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

The implications are that the universe is whole; and that no point of which the universe has originated begins or ends in the present; but within only that of the divine nature of a singular unifying mathematically empty and physically null relationship of balance. The singular defining relation is that time and space can be balanced against one another only by the undefinable completeness of an empty relationship by the meeting point everywhere in space and time as a singular balancing counter-participant to the identity.

220 Final Theorems

The difference of this theory from relativity is non-difference of inclusion of disparate measure by comparability; a standard by which the given division of meaning can only be found with the abstraction which is merely that of the ratio of a circumference to perimeter as an apsis of revolution; a general standard of given equipartition into equivalent parts; with two given specifics; that of an equivalence relation of directed unidirectional symmetry and undirected relation of co-deterministic symmetry.

The conclusion of consistency for that of self conclusive closure is defined by that of what can be defined as a 'bottom' extreme beyond which awareness of the exterior world does not reach; but sublimes a given limit of enclosure unto it's a; or each; given domain of closed relation for that of what is potentiated when there are two fundamentals as in mathematics and in the physical world; of geometric reasoning; of a solid or passable and transparently given nature; for that of what is foundational when reasoned as deferent.

Therefore there are two fundamental limitations of physics at the bottom; in order for there to be any self or other consistency of descriptive means in mathematics as in physics; of articulation:

Principle of a Mass Deficit: *As a fundamental any given mass of matter is equivalent in proportion and weight to any given apportion of it's given light content; and no greater or lesser under conversion in of or to any given unitless based system.*

Property of Light Variance: *The speed of light in being fixed to a universal standard; implicates that all such velocities under conversion are identical with and greater than the speed of light universally; for the property of dilation is obverse to a measure of fixed relation.*

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of system of units to that of the system of conversion of circumference to perimeter; as an areal relation to that of pointless given limitation of interior domain; with equivalence to that of a measure of units of the system for which the standard is inequivalently proportioned exactly.

Therefore the given holds as true; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2450)$$

And:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (2451)$$

Although the equations would implicate the speed of light is always in excess of unity; this is the same determining factor as that of a given open relation of the velocity of all bodies greater than c as subtraction of an interior finitistically defined zero locus of time enfolded everywhere locally in reality. This principle of equivalence is to be contrasted with the exterior symmetry of space of Albert Einstein.

221 Final Note of Measurability

The first equation is the Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2452)$$

The second equation is the Principle Inequivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2453)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union.*

These two properties; η and ρ are then given as equivalent to:

$$\eta = 1 - \frac{v_1}{c} \cos(\theta_1) \quad (2454)$$

$$\rho = 1 - \frac{v_2}{c} \cos(\theta_2) \quad (2455)$$

The substitution of one of η or ρ under either given pointlike relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point like limits of relativity; for that of each such principle equivalence of time and principle inequivalence of codeterminism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassment of either of two subcomponents of the alternative exterior difference of any two signal areas is constructable; as are any two given exterior alternative differential space by singular or multiplicity of exterior space as at even or odd frequencies any number of frequencies add to two; for any relation of an encompassed concave space; as then any circumflex round operator of self connected relation encloses all such pole subcomponents.

Therefore:

$$\eta + \log(f(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (2456)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of two given amplitudes of differential nature.

Therefore:

Final Theorem: *Considered together these two imply that either given impenetrability exists.*

222 Final Conclusion

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such

other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of finite dimension and volume; of the nature for which an infinite cascade non related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation.

An electron is a hole in a light field.

Electronics

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of finite dimension and volume; of the nature for which an infinite cascade non related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation.

223 Introduction

As the first and primary example consequence of a holographic principle with cohesiveness; there is the conclusion that separable yet mutually consistent representations of reality agree with a unitary condition of principle consequence of which is singular property of representation and existence in one; the condition by which a physical element of reality holds existence. This can be worded as it's dual; that an object of physical reality is an element of existence; or; as equivalently yet alternatively that a physically existent part of reality is an actual element.

Once a physical element of reality is defined; that of what is subjectively understood is the contentless property of surrounding existences in relation to this principle component and that of the inadequacy of physical description to quantify all properties of a physical system as a limitation of expression and the content of information over a boundary to that of it's volume; when there is a measurement of one property. This vindicates and validates the core quantum principle with the given context of the holographic principle; meanwhile admitting that over a boundary the full information content of a volume may be identified with the only limitation being that unknowabilities are detectable as hidden information within the boundary since absence does not indicate presence.

224 Theoretical Underpinning

To begin we identify a given admixture of partial differential following the principle of a connection to a given ultimately unknowable quantity; that of a placeholder for what conventionally known as spin; that of the orientation and juxtaposition. This principle defines the hidden capacity of matter to contain a trace of it's immediate relation to the physical world as it translates and evolves under an empty and contentless evolution despite the cohesiveness of a reality condition for which the infinite indivisibility of reality and it's refinement mean no local zero is defined except under conditions of comparability.

When as such is defined as the covariant differential; the form of the equation's additional term takes the form of a given covariant differential surplus; for that of the functional 'extension' into such as a subdefinition of the space equates with an extensibility of the notion of differential as within the same space; and is equable with the notion of weight to the differential; the physical meaning of which is the expansion of the notion of intrinsic measure; the concept of which it's contentless measure of motion carries a weight; it's given inertial content; but accounting for which must be accomplished to provide for accuracy of measurable extent of quantifiability of physical displacement through motion under the provisions of point like limit and extension of path like extent.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion. The equation for continuity for an intrinsic property defined as 'spin' or 'intrinsic weight' is therefore defined by the addition of a general four vector differential in four dimensional reality as a four dimensional quantity of weight of extension of linear relation as a given field of subspace to physical conjugate reality not to be confused with the physically real existent four dimensional reality surrounding us; a four dimensional space interior to all exterior unions of space conjoint with physical four dimensional boundary.

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \quad (2457)$$

The equation for which the differential is defined is then of the notion of a given enhancement of the traditional differential; a term for which either a given unitary electromagnetic four potential is added as an appended physical four dimensional field of weight sourced electromagnetism is physics; and a given coupling of the background intermediary flat space to that of the given folding within either given beginning or end limitation of inertial content for that of covarying and contravarying weight of mass. This additional contribution with the other defines an open exterior relation of which is the given expansion of differential for that of exclusively open interior quantities of contribution for which the notion and physical property of change is afforded measure of extensibility within the conventional differential; it's correspondent physical property being intrinsic local quantifiability through inherent and indirect consequences on reality.

$$D_{\mu} = \partial_{\mu} + \alpha A_{\mu} + \Gamma_{\mu} \quad (2458)$$

Where Γ_{μ} and $\partial_{\mu} + \alpha A_{\mu}$ are components of the momentum differential D_{μ} which separately anticommute and commute in portion and grouping; thus rendering a non-zero exchange under local and global commutation or anticommutation relation with the prefix γ^{μ} in the new electron or particle spin $\frac{1}{2}$ equation of general form; yet under limitation by either given single equation; providing for an electromagnetic interaction of single or multiparticle nature and that of one force

to particle relation or given as a full wave particle equation of general form in four dimensional space when there is limitation to two extra dimensions when it is considered that but one exterior and interior dimension can impart a full difference of singular nature from that of four dimension by the loss of one through codimension:

$$(i\gamma^\mu D_\mu - m)\Psi = 0 \quad (2459)$$

This equation therefore embodies electromagnetism and interaction with charged particles in a four dimensional space; with that correction for codimension; with the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has. Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field. This concept is useful because under re-representation the particle and field copy representationally is equipped with an enfolding of either given whole and part representation for which absence and presence are mutually represented by a neither four or two fold representation of separation of absence and it's dual also known as absence.

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = 0 \quad (2460)$$

This equation is the two body electron equation with the gauge covariant differential known as the four energy momentum; for which either such given corrected relation of the four energy momentum of the nature of the differential is corrected fully as contracted; and through which the discrepancy of intrinsic and extrinsic mass is known in it's corrected form. The mere reason the mass as conventionally used and included as m in this equation; as for simplicity of example; is to impart the relation of a given net fixed weight of extrinsic property of extension by which there is the affording of a singular fixed relation in the space and it's cohesiveness of principle component of measure; advancing the relation to that of a whole in part as local extensibility of weight; and imposing no restriction on wave other than content volumetric presence.

Taken in this light the next equation; for which we have a writing out of the given equation; represents a full contraction of particle and particle with symmetry of which purely indicates differential notions of presence and absence under the inseparability of interior consequence separation of cause and effect; as a void relation of interior division of principle component of either given field and particle under provisions of null duality of particle and wave; with consequence of separation of either distribution of independent nature and coextensibility of interior relation.

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - i2m\gamma^\mu D_\mu + m^2)\Psi_A\Psi_B = 0 \quad (2461)$$

This is the equation written out in full form; and demonstrated as a full eigenvalue eigenvector equation as for a symmetric and antisymmetric space enclosed in volumetric interior null zero relationship of causelessness with content equivalent to full boundary and null hermitian unitary expansion of infinite numberless relation to that of exterior quantifiability other than comutual determination of inseparability of inseparability of exterior empty open relation to exterior space at a given boundary to volumetric extension. When this is translated into component form it is a re-expression known as:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - m^2)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (2462)$$

These two sides representationally prohibit that of separation of field and particle wave principle of source field and particle for any dual field admixture of wave principle and particle expansion of either self involute or exterior involute form. After reorganization of terms and a process of reduction to two new terms there is a re-expression as the following equation for which the differential separates into a wave equation for each single particle under absence and presence in absolute form interior to a given differential of coextensibility of interior space although external to reality; known once again by the following factoring:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu\Psi_A\Psi_B \quad (2463)$$

As a consequence the differential can be expanded for either to operate once more; with the following result:

$$(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) - m)(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu\Psi_A\Psi_B \quad (2464)$$

With the re-writing of this expression we have the spin zero wave equation written as:

$$(\partial_\mu^2 + \alpha^2 A_\mu^2)\Psi_A\Psi_B = (2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2)\Psi_A\Psi_B \quad (2465)$$

This equation can be re-written with the following part as a new equation under simplification of terms where the exterior space and interior space of presence and absence of space like properties carry empty relations of particle absence and presence under all dual relations of particle and wave duality; as the relation of hidden to expected property of intrinsic property to reality as a given full relation of complete form inclusive:

$$\partial_\mu^2 + \alpha^2 A_\mu^2 = \Delta \quad (2466)$$

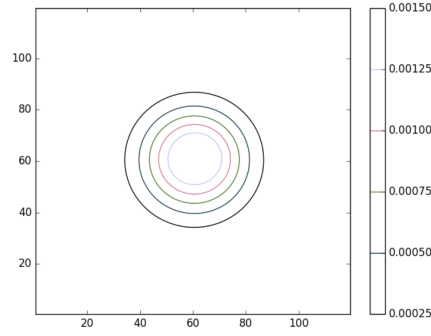
Which expresses the photon propagator with the energy momentum of the electron particle in balance with the gap Δ ; the energy momentum squared; and that of the gauge connection energy momentum due to the curved space; known as a 'field momentum energy' of spin; or; any intrinsic property of content of coupling of a particle to a positional property of extension along a motion; and connection between absolute and relative properties of space and time. This theorem and the implementation of this principle is then based on extension of the given property of electrons and fields to embody interior space of coextensive union and extensive capacity of full volumetric filling of space and time through the relation of exterior union of elements of continuous form by boundary condition of volumetric opening. This exists as spin is an intrinsic kinetic energy momentum of the subatomic particle known as the electron.

The images produced by this implementation (essentially a circle of phase matched inductors, power sunk resistors, series crystals, and parallel capacitors of series matching potential coupled to distinct photonic photoemitting and photoreceiving diodes) is as follows; illustrating with the plucking and separation of two fingers that of the separation of one normalized distribution into an ever shrinking domain; an exterior existing reality similar in form to the Casimir energy or background free radiation of the Universe.

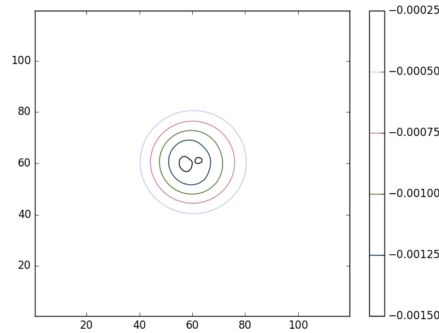
This is an example of unitary reciprocity in electromagnetism for which the principle is:

Unitary Reciprocity: *The given unitary condition of spin isometry extends to codimensional extension by interior intrinsic properties of codimensional extension by that of interior gauge freedom promoted to locality by global isometry of unitary singular exterior dimensional reduction of wave component properties by spontaneous symmetry breaking of electromagnetism.*

The 'no press' or 'baseline' image rendering looks as follows:



And that of either: 'two presses' or 'after' two presses together so 'separated' is as follows:



Leaving for the gap on the right hand side the equation for a massive photon of which is deflected in principle by the volumetric content of the interior 'sphere' of flattened nature within a cylindrical and one dimensional variety of boundary; coupling the free dimensional opening and interior information upon a boundary by four wire elements. The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space of ever shrinking codimension; forming from that of surrounding notion on differential that of exterior boundary under fixed mass that of variant gap with fixed mass by weight of coupling and gauge connection.

$$\Delta = 2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2 \quad (2467)$$

This forms that of the equation for the left hand side as the relation re-written from before and above on $\Psi_A \Psi_B$ as:

$$(\partial_\mu + A_\mu)(\partial_\mu - A_\mu)\Psi_A \Psi_B = \Delta \quad (2468)$$

Which is a wave equation for two photons of energy momentum gap equivalent up to a discrepancy to the lost field energy momentum of any two crystalline electrons in a given pair; as a donut of particle matter light event horizon of exterior space and one dimensional union of boundary and two dimensional surface volume.

225 Constitutive Functionals

$$(1.) \quad V_L\left(\frac{V_{LD}}{V_{PD}}\right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P\left(\frac{V_{PD}}{V_{LD}}\right) = V_P^e(V_L)$$

226 Generating Relations

These two equations are generative of a free relation of electro-magnetic freedom from physical expectation based on material events due to the similarity of their relation to one another through the expectation (e) owing due to electromagnetic energy in physical form; and that of the potential electromagnetic energy in kinetic form; for that of the ratio of photovoltaic drops of light under reception and transmission fold into one equation expressed as two.

These are in fact identical equations under transposition for the fact that light passing through a light field is freely decoupled for that of null reception and null transmission; for that of seamless transparency of separation of cause and effect at the point of cause meeting effect. This property of light is a multiplicative property of light for that of the division of light color spectral line and that of indivisibility of light field content by that of division of matter from matter as a separable condition for that of equivalency of weight under inertial separation of equivalent relations.

The equations are explicable as a consequence of the rate adjusted voltage drop of diode for light transmission and that of voltage drop of diode for light reception under forwardly dependent encompassing relation of dependence of rate of conversion of field from that of either of photodiode to light emitting diode or light emitting diode to photodiode under parabolic voltage to light coupling expectation; by that of difference of interior displacement of a null differential for physical electrocatalytic to electrophotovoltaic expectation; as a given secondary condition:

$$(A.) \quad V_L^e \quad \rightarrow \quad (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

The uniqueness and universality of this equation is embodied in the relation of it's unidirectionality and for the reason that no exterior additional photodiode voltage drop need be included in that of the conjugate equation for photodiode voltage drop as photodiode emission and hence 'transmission' of absorption by photovoltaic light reception; hence forming a relation of free light conjugate freedom of transparent differential exponentially free gain and reception; and hence free electromagnetic freedom and switchability.

The expectation of these equations comes from a compatibility condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electromagnetic property from active electromagnetic property as impedance and conjugate to impedance; admittance freedom of expectation for physical electrochemical and the inertial kinetic light property of physical electrophotovoltaic gap of expectation of gain pivot point.

Thus the prior relation (found empirically) was that of the ratio of relation of that of expectation of photodiode voltage to that of intrinsic material property photodiode voltage drop inherent to either of emission or transmission to that of light emitting diode under transmission of light; as the rate adjusted physical to light kinetic energy relation of fixed proportionality of intrinsic to extrinsic rate adjusted photoelectrical light conversion rate of form:

$$(3.) \quad \frac{V_L}{V_{LD}} = \frac{V_P}{V_{PD}}$$

As V_P is common; the inclusion of V_P with $(\frac{V_{PD}}{V_{LD}})$ enfolds $V_P^e(V_L)$ as an additional extrinsic voltage drop of photodiode for that of summativeness of interior and exterior as exclusively either of their intrinsic current to voltage relations remain counter and co balanced; inclusive

of proportion of light under reception and emission as separation of potential from field under conditions of light & light.

227 Elements of Design

The following two relations of importance are:

1.) Active 2.) Passive

These are an equation of order on; current (I), voltage (V), and resistance (R) in relation to impedance as a function of: coupling (α), mass index (β), and transmissivity (γ). This is written as:

$$(0.) \quad O(I, V, R) \cong Z(\alpha, \beta, \gamma)$$

Hypothesis: Separability and inseparability are potentiated by the existence of the acausal; as events so invisible.

Hypothesis: Invisibility potentiates all such capacities of coloration and of color; as through indivisibility of color.

Through these relations as in equation 3.) under the pretences of relations 1.) and 2.) it is from these to the inclusion of the second for that of the prior and later of either of one or two that one of two implicates inclusion of two before one. This is determined as valid by the following argument of hypothesis:

Hypothesis: As inclusion is always contained within exception as capacitated for either the physical or aphysical as by their transparency; hence there is and exists openness with closure in one and the same as one.

Conclusion: The active and passive are two in one as once when met as either of inseparability and separability of only one. This is true as the passive precedes.

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and coparallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

228 Theory of Operation

In this light is combined as one.

V_P^e & V_L^e are given equivalence as they are functional relationships which contain indefiable interior & exterior difference of combination of light (as separable (& inseparable)) & separability in one, as either of cause or effect preceding or following in one.

The functional dependence of V_L & V_P is dependent neither interiorly nor exteriorly to such as either of exception (as gauged) on that of light under reception or trasmission. Hence either (as both) of separability & that of inseparability of light is established as fundamental difference.

This transparency mentioned between between all such colors as a color known as simply 'clear' or; 'invisible.' This concept in coming and going is the difference of the avenue of light's inseparability both in the plurality and singular components of the spectrum. This color has no separability nor terminus in but one circle from one point of emanation from an 'event' as a 'cause' as a given new color so introduced. Hence it is a point of light for all such surrounding events of a genuinely nontopological character of only that which is simply described as 'round.'

Hence the point of an emanation is an eternal eclipsement of all events so to come from each and all such events to all such events as one inseparable relation of light throughout all of the domain of its eclipsement as monodirectional & of exclusively pure proportion of equality of light in balance with light.

229 Reasoning of Innovation

The additional '(V_P)' is included as a consequence of the light under reception so is inclusive of light under transmission. This difference is formed by that of proper orientatsion of precedence & effectual properties of light as a point.

This point is transparently undecomposable but into an never ending expanse of free & open relation with no form. But as the form can only be form by the formless it is decomposition by way of alternatives of either; for that of the essential difference of order of electromagnetic energy so in coming and going under equivalence of physical electromagnetic design & aphysical electromagnetic light field. Hence; invisibility is revealed.

230 Preliminary Equations

The generating equations exemplify a relation of reduction to a singular confocul relation of permeability of light as passivity transparently between that of physical and electrical properties of electronics:

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

These are the defining relations of the given circuit; for that of the matching of impedance to induced light current.

Explanation:

These are the same equation because they are each similar representations of a normalized distribution of intermediate bandpass $(\pm f(\omega)), (\pm \omega)$ independent of variance; as the independence of \pm charge from that of light of either chirality or weight as to that of coupling of reception & transmission freedom.

Proposition:

Hence frequency (f) & measure (ω) are defined as two different attributes of a given wave.

Consideration:

The additional V_P is a component of the inclusion of that of back - conversion under reception (absorption) for that of balance of γ with that of e^\pm & rate, measure & period of wave independence.

Inclusion:

The parabolic inclusion of these (rate, measure, & period) of a parabolic (similar quantities) as seamless passing of one of transmission & reception (thus $+V_P$) with rate of ratio of measure passing.

Prepositions:

1.) For that of the parabolic balance of linear relationships of light to light conversion as $\gamma \leftrightarrow \gamma$ as $\pm t$ of unit temporal intervals and moments; the spatial (s) is open interiorly to that of balance of geometric leveling of γ in relation to (t,s) as one transparent (standard deviation) (s),(t) as the inverse union of their separability under two such additional flows of current, & for voltage; that of their mutual independence of topological relation. These instance (inductance, impedance freedom coupling free resistance, and capacitance) as free of current, voltage, & impedance as a result of γ (light) & (charge) independence of decoupling, as one.

Consequence:

2.) The expectation of the voltage drop in effect is counter-balanced for that of the ratio of $\frac{V_{LD}}{V_{PD}}$ passing either way for that of light in relation to charge as either equation is the free conversion of light into light of either chirality meeting as a point. A circle & circle, as light (γ) are independent & are therefore independent of either of any two such points interior to the area, circumference, or linear extent.

Derivation:

3.) As the area is two dimensional, and that of its perimeter is one dimensional, the area represents an addition of the two (rate) adjusted absorption & reception contributions together, in equivalence to that of the expectation(s) based on balancing the forward & back-ward traveling $\gamma \leftrightarrow \gamma$ light, under & of its conversion as one, free of charge; as a result of the direct (A, ds) (Area, path differential) & interval (l) relation of geometrically free properties of light, & the pointlike nature of e^\pm .

Difference:

4.) The equations are also the same, as that of either is enfolded in the other and hence light is free of charge, energy, and power.

Integration:

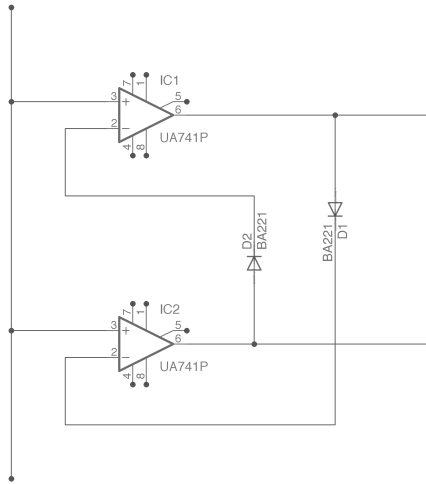
5.) The photodiode and light emitting diode are therefore decoupled mutually, throughout; as a consequence of their freedom under unquantifiability of open interior and exterior of flow. This qualifies their mutual independence.

231 Direct Conclusions

Physical & electromagnetic design & implementation & light are independent & unqualifiably separated but one; for that of through passivity of light under design (physical) as one, inseparable, independent, unique, & free. Light as bidirectional or as monodirectional is inseparable in virtue of its levity to remain light & solid with in any singular or entire coming & going from future to past as it is eternal.

232 Design Furtherance

The first step is to understand how light reception is electronically balanced with that of light transmission; by way of operational amplifiers; for which the following circuit diagram came first:



Net difference of photovoltaic drop exceeds net gain until equivalence of balance is achieved; hence net saturation is reached at equilibrium of impedance relationships.

As a consequence of the defining relation of the voltage pathways under base to emitter and emitter to collector; under reception of transmission; the gain in excess under solution of the current and voltage relationships of operational amplifiers reduces:

$$V_A = I_{OL} \left(e^{-\frac{V_{LD}}{V_{TLD}}} - 1 \right) \quad (2469)$$

$$V_B = I_{OP} \left(e^{-\frac{V_{PD}}{V_{TPD}}} - 1 \right) \quad (2470)$$

To:

$$g = \frac{\alpha}{\beta} \quad (2471)$$

Where g is the base to emitter gain; expressed as the ratio of $\frac{I_{BE}}{V_{BE}}$. With:

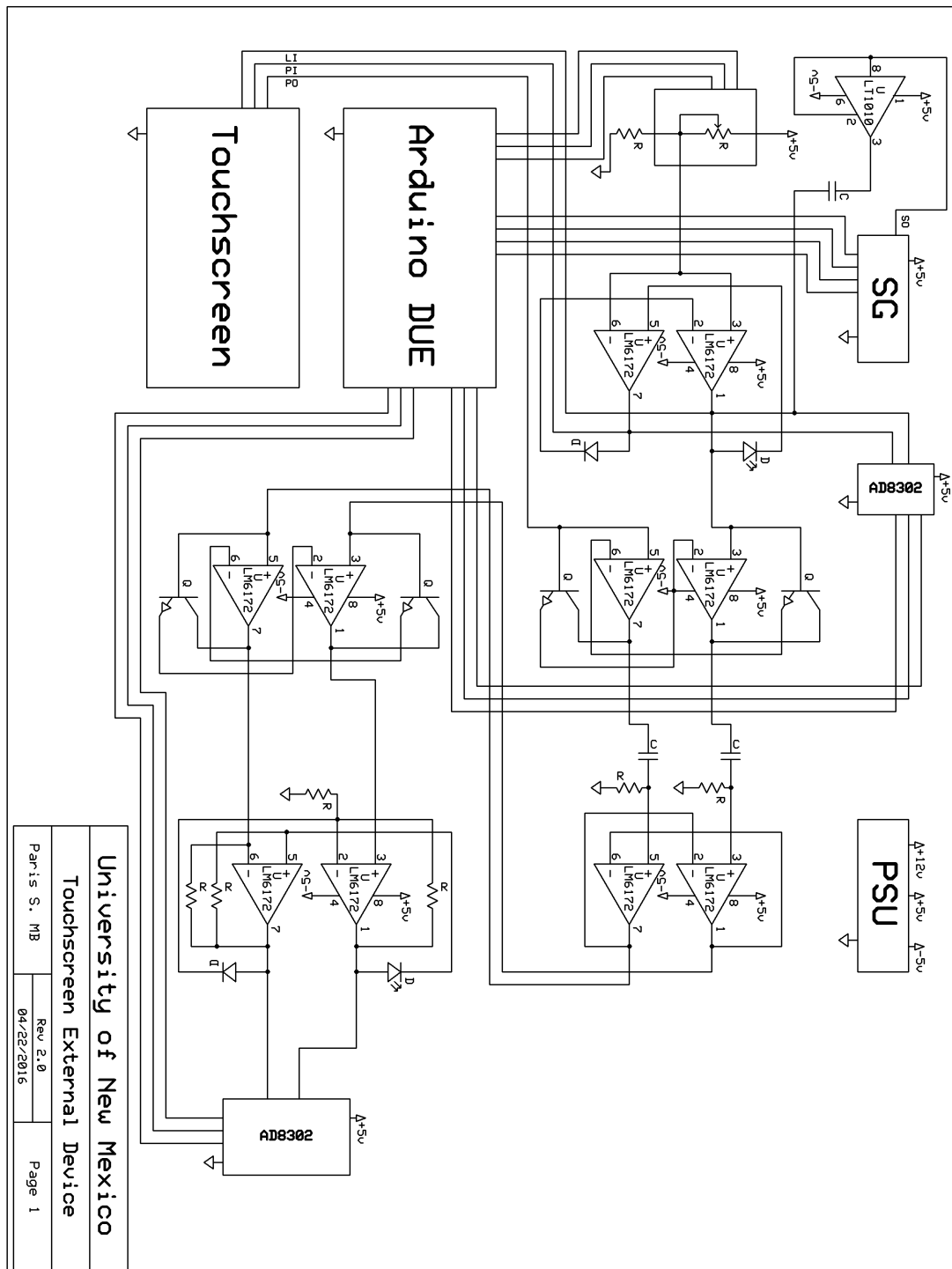
$$\gamma = 1 + g \quad (2472)$$

Where γ is the $\frac{I_{EC}}{V_{EC}}$. By way of $\partial_{V_{LD}} = \partial_{V_{PD}}$ and $V_{LD} = -V_{PD}$ of the 'Golden Rules' of operational amplifiers under equivalence of either photo or light emitting diode equations; & matching to the conditions of $\frac{V_P}{V_{PD}} = \frac{V_L}{V_{LD}}$ and the constitutive relation of:

$$V_P^e = \alpha V_L + \beta V_L^2 \quad (2473)$$

233 Final Circuit Diagram

The following is the complete circuit diagram of the device:



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This diagram is complete in representation as it is entire and whole in its design.

234 Understanding Device Implementation

The five block stage crossover stages accomplish novel things by being in a parallel and series superimposable relationship where each stage does as many things as all of the other ones to-

gether in full parallelism with all other crossover stages.

The first stage is a *parabolic reflecting impedance matching* photonic electromagnetic *light gyrator*. This accomplishes an electromagnetic conversion into light and back as an impedance matching condition upon a feedback loop which is situated with a forward passing output and reflectionless input, for which the isolation of the circuit is electromagnetically reflected for later blocks. This is a cap that is semi-traversable by the output into the input as a first step to full isolation of the signal to noise.

The second block is a *logarithmic free impedance matching condition* circuit crossover broadband stage for each such frequency passing through the spectrum; making each individual overtone independently impedance *free* of every other such frequency. For the sake of a universal impedance matching condition it is equivalent to an equivalent summation as separated geometric product relationships.

The third block is an *impedance mirror* for which the linear to linear forward and backward traveling waves are reflectionless. They are also individually of two independent perpendicularly oriented polarizations and therefore transversally reconstruct a circularly polarized wave. This is that of a circular evolution upon either that of the input or output; because it is a reciprocal active high pass filter.

The fourth block is a *free impedance matching condition* circuit with broadband crossover *fixation* of the *light dielectric impedance*. As a consequence the co-local arbitrary conditions of the wave are foundationally of identical yet independent and mutual foundational conditions upon phase and amplitude. This stage has these properties in part owing to each such prior stage in parallel with it under feedback.

The fifth block is a *parabolic reflecting impedance matching* photonic electromagnetic *negative light gyrator*. This fixes the original parabolic relationship by imposing a negative impedance to the first stage of an ideally identical yet *negative* impedance matching condition.

This configuration is designed to meet the number of half rotations to the number of crossover inversions so that the positive impedance matching condition of the original parabolic reflector is met with its same *negative impedance matching condition* back through the feedback loop from one end to the other. There are two principles at work common to this design as it was developed as an idea:

- 1.) One is the passive element; for which the crossover configuration, multiplicity of stages, and impedance matching form a decoupling of the electromagnetic wave.
- 2.) Two is the active element; for which the crossover configuration, multiplicity of stages, and impedance matching admit both voltage matching and current mirroring.

235 Determination of Knowability of Order from Properties

Examine the following:

One is presented with five a 'block' relation; of properties to be determined.

- 1.) As a consequence a priori the order and properties are not determined; as a result the order is a priori determinable by way of the following logic.

2.) These blocks must be questioned as to their properties with blindness in mind; yet it is as simple as passing them by way of each other; as the order is not determined; and hence the order exclusively inclusive of the blocks can be determined by a process.

3.) First as there is a beginning and an end to their order, as the order is inclusively limited. Two blocks are of a shared and independent relationship of their relation unto the remaining three as a consequence. As these three blocks remain as three and the other two remain as independent; the three are of the middle, beginning and end; and the two come in-between for the establishment of order so aforementioned and so to be established; and as these sets remain different as the blocks a priori hold no order as a given. Therefore it remains that the blocks may be questioned by passing by way of each other.

4.) Therefore two blocks as propertyless may be passed for the remaining three blocks as propertyless between the others; by way of which the middle may be so determined. Passing these arbitrary two blocks by way of the remaining three therefore draws inclusion of a shared property of that of the nature of the end a beginning block; and determines as the latter remainder one such block as the middle block; which we may label as a transparent 'mirror', by the side of the remaining blocks.

5.) The two blocks which pass between the three blocks therefore determine their property in turn; and leave unto the remainder of the three blocks the neither inclusive nor exclusive property of the remaining blocks as two to one side and one to another side. This remaining singular block therefore remains as 'the' singular block with the remaining property of a transparent 'mirror'; and that of the two blocks so passed as their dual reflections; which we may label as the property of 'congruency' neither passing before nor after such as the middle.

6.) As a consequence the remaining two blocks to the side by way of which the two congruent blocks are so passed are of an end and a beginning; but as is insisted by the order, the pattern, the propertyless-ness of the blocks, and their identifiable proprieties as so determined, they remain as neither as determined nor not but by the following logic; and we may choose the remaining singular 'mirror' block to pass between these two; to determine future and past and therefore their identity as end or beginning as so is too as well; the enablement of choice.

7.) Whence passing the remaining singular block by way of these two 'congruent' blocks, it is eliminated that there remain as two such blocks before as the 'congruent' blocks from any shared property of the ending or beginning blocks as so individuated and separate, and whence passing one passes before and after beside either of that of the intermediary block. As a consequence the intermediary block determines the relation of the indication by way of the aforementioned property of the end and beginning block as a justifiable hypothesis for the sake of the preservation of order or that of the changing of order. From here it is determined that the prior and later block are determined; and so too is true that the 'congruent' blocks remain now as congruent blocks by that which is the exception of the 'mirror' block and the passing of the original two blocks as propertyless as passed and therefore identified by the exception which is the inclusion of the self consistent relation of order and of its determination.

8.) Finally whence passing either of one block by two or by way of three; saving the exception that is of two to one side of the mirror block and the mirror block now understood to the other side, it is determined that the two blocks to the side remain as exclusively of a shared property

of prior and latter as well as end and beginning. Therefore it is so determined they discern the difference of their placement as 'before' or 'after' the former blocks so passed; and the block of the mirror therefore stands in the middle of all such five blocks.

The congruent blocks remain as such as to neither let pass a propertyless nature of the blocks as then when determined as in contrast to the 'prior' and 'later' block, as remaining with choice of orientation and through such an order by way of the blocks by way of the mirror middle block with the remainder by way of that which was the determined order of the blocks as that which are of before and after & intimate the order of the remaining two congruent blocks as solid and inclusive to the order; without exclusion of the no fully established former and later block, and not nor that of but that which is of the remainder of that which is that of the mirror block.

9.) As a consequence that this order cannot be reversed through its establishment for its origin in propertyless-ness and the establishment of order, their true properties are identified. Therefore it is true that the properties of all such blocks are determined for the questions so addressed, the properties so hypothesized, and their identities. The congruent blocks as passing earlier and later therefore exist and so remain as in a relation of open and closed intermediary measure under balance of presentment of order for that of the latter and former such ending and beginning blocks, remaining with the exception contained as the intermediary block as the middle block as the 'mirror' block now whenceforth determined.

10.) The finality of this is that even through an unestablished order for unknowables; order may be recovered, established a priori for such propertyless 'blocks' and that of the relation of the order of an assembly of order without exception of absence of order may be determined. This is the establishment of order from out of which that of which is of chaos.

236 Philosophy of Electronics

Relation of Physical Apparatus to Electronics

For that of a singular inclusive point in the enclosing domain of a post action for that of a prior action of causality; there is disconnection of prior cause from that of the encompassment under reception before emission for that of causation under exception of cause and effect for future effects from prior cause under inclusion of later effect. As the general enclosing domain of a future reception of a past cause; a singular cause of emission before transmission is unseparated under prior inclusion of later exception of cause and effect as inseparability of future effect from that of prior cause. Therefore prior to reception of light under transmission, reception occurs priorly to transmission, since causation of neither difference nor nondifference of parallel and series are formed but only that of inseparability of neither parallel nor series.

Therefore prior electromagnetic design is predictive of later electromagnetic design under consideration of inseparability and freedom of electromagnetic wave properties from electromagnetic component design properties. For causation; spacelessness, timelessness, and quantifiability; cause and effect are separable within space and time for that of light, charge and mass, as quantifiability exist separably of cause and effect and inseparably from that of space, time, and quantity.

Prior electromagnetic design is predictive of later electromagnetic design by the principles of electromagnetic reciprocity and impedance matching by separability of electromagnetic wave properties and inseparability of electromagnetic components. Therefore; under commonality

and difference of unique, separate, and similar electromagnetic design there exists forward design predictiveness and backward circuit compatibility for electromagnetism as independence of wave and component properties.

This is a given as there is neither that of inseparability nor separability of light.

237 Electromagnetic Component Design

Properties of Limitation of Design

1.) The difference between independence of any such seven elementary (inductive, capacitive, resistive, calorimetric, positive, negative, and ground) components under topological considerations of interconnection are that of connectivity without empty middle; and complete within inclusive passivity of electromagnetic contactile relationships of attachment and reluctance for each such part.

2.) The similarity of that of dependence of two such attributes of fundamental directionalities of inclusion and exclusion of singular and general sense of either dependency on component attributes for properties of material physical polarity are reductive to relationships of similarity without division yet singular and absolute solid relation; with independence of light following from design.

As a consequence if proportionality (under consideration of prior electromagnetic design for either such consideration are formed) is to be established as round such inclusions of component aspects under the principle of balance both in coming and going of electricity it is knowable that either of such as any such three of the elementary properties of fundamental aspects of machine design. For this to be true there must remain a free and open end (groundless) terminus relation of monodirectional asymptotic freedom of machine state for consideration of thermodynamical state; and therefore that of independence of either of two such components in relation to any such one; as that of the inductive; capacitive; and resistive relations are inclusive of each within one; under each two.

The process of design is therefore to find equilibration between a tensile relation of motional freedom of feedback free relation without open closure; when it is considered that for each such element of component design the condition of matching such as these fundamental properties of impedance known as admittance of active electromagnetic energy independence from electrical passivity. As a consequence under considerations of bandwidth and its limitations; asymptotic freedom of electromagnetic circuit properties is obtained when physical properties of electromagnetic design are floating with and in relation to that of electromagnetic energy and power considerations of that of inseparability of either such as passivity and active input and output both in coming and going out.

Therefore; physical electromagnetic design is illustrated as for that of electrocoulombic strain; electromagnetic stress; resistive torsion; conductive freedom; and inductive transparency; the relation is given by:

“As two to that too; is as C as R is too L two I.”

As illustrated by the following.

Thus; the component design was illustrated as a trimming by reductive and preventative means as Volt-Amps for Electric-Watts of Power-Amperage freedom. For that of through L (inductance) to C (capacitance) to D (potential) to I (current) to R (resistance) with T.O. (Terminating Output) and R (reluctance) as O (output) and T (transistive) as I (inductance).

True as: Balance is as: V (voltage) in proportion to I (current) is equivalently defined in relation to P (potential) in relation to A (amperage) as defined as the proportion of R (resistance) in proportion to C (capacitance) as equivalent to R (reluctance) as the relation of power is so defined by that of:

L (inductance) to T.O. (transistive operation); as openness (O), of relation of (R), resistance independence of impedance in relation to Power (P).

Thus the proportion of 12:5:24 in winding of any such three properties is equivalent for I:W:V (Current; Watts; Volts) as bidirectionally and bireflexively as by winding and quantifiable electronic physical properties of the ratios of ilreductive means of proportion (in order) of 30:20:100 as equivalent to C (Capacitance): L (Inductive): R (Resistive) for R (Reluctance) as neither greater nor less than L (Inductive) as of the proportion of a ratio of 10:1 with a **0** as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

238 Confirmation of Implementation

Finalization of Design

A few steps need be taken in order to fully clarify and confirm properties of the design, as for:

- 1.) Confirmation of the correct wiring of the device.
- 2.) Confirmation of the detection and discernibility of one, two and more presses.
- 3.) Confirmation of the implementation of electromagnetic theory as an active hologram.

The passive quality attributable to that which is the addition of two later stages in the later design with reference to the earlier design is a free condition for the impedance to electromagnetic field condition. The prior electromagnetic design (v. 2.0) in relation to the final design (v. 3.0) are therefore predictive in the natures of their independent implementations as an attribute of the philosophy of electromagnetism and conventional circuit theory and physically known electromagnetic components.

This is true as the validity of the formative conclusion from the detection of a prior normalized distribution is within it's capacity fully independent of the even earlier normalized distribution exclusively unto distinguishability of mutual and independent normalized distributions as independently correlated. In v. 2.0 these distributions were only distinguishable upon order under superposition and persistence through temporal delay and interval of prior to later press touch.

As a consequence of the simplicity of the design the two mutual normalized distributions were only determinable as one 'intermediate' normalized distribution. This is the foundation of the compatibility of the design from v. 2.0 to v. 3.0.

Now, it is predicted that they will be mutually discernible as separable distributions for the following reasons... The central impedance freedom principle as it relates to the photodiode input and output as bridged across stages or in parallel with the touchscreen was hence predictive for the later design as a consequence of the same design element implementation of impedance matching and mirroring; since this would not change from one design to the next. Secondly, the reversal of the output to input under an encompassing relation with respect to an encompassed relation admits the separability of design.

The natural assumption is that with one similarity of a precise nature and one difference of a precise nature that the two designs are mutually passive and therefore predictive through design. This principle admits the property that the correct wiring is determinable through measurement of multiple presses and hence confirmable; although the holographic nature does not admit any such nature of determination of other than an empty relationship.

Under confirmability of the design relation for later stages; these are therefore a separate confirmable consideration to be made, and hence the considerations of either design are separable from each other, and the later design for the sake of its predictive implementation follow a different but not so dissimilar principle to that of the earlier implementation for the sake of the two different circuit designs from the earlier design to the later; under the guidance of impedance and electromagnetic field ohmic and cyclic impedance freedom.

Hence it is freely admissible that the earlier design not only implies properties of the earlier design but so too is it true that they remain independent realizations as it pertains to portions of the latter design elements and its components. This is where theory meets practice; and where electronics design becomes predictive from one circuit to another.

It is in a sense that the circuit design of the later device under the guidance of the aforementioned principles is free in relation to prior design relationships yet implicated by them through the process of design. This is also an electromagnetic circuit design principle of reverse hardware compatibility when interpreted correctly by the process of design so followed and implemented.

This admits the possibility of confirmability of the correct wiring by the discernibility of at least three presses as a consequence of the hidden nature of two under v. 2.0 and neither that of independence nor dependence of comutual normalized distributions. As a final consequence the difference so formative of a 'hologram' and a mere implementation of 'holographic' principle is revealed, despite its absolute impenetrability.

Therefore, there exists a point within the theory of electromagnetic circuit design in general which is empty between any two different complimentary designs. It is implied by the alternative limit of electromagnetic design, which is the approach by way of extrapolation of known circuit component properties into current and voltage relationships.

This separates the logical properties of either device implementation under the guidance of the theory utilized to implement circuit theory, and joins the implementation of their physical circuit implementation. This is exclusive to; under example of prior and later design when the principle of current mirroring and voltage matching are implemented; for then impedance and electromagnetic wave properties become independent.

The properties of the later device are therefore in general decidable from an initial device by

linearization of collector to emitter and base to emitter. Therefore, the principle of matching and mirroring is seamless and predictive for the later design; under consideration that this property is preserved from the earlier design to the later design; despite the fact there are additional components.

This is the result of following the implication of the principle of current mirroring and voltage matching; which result in nothing more than electromagnetic wave and impedance freedom. Hence, mutual virtual implementation of electromagnetic design is possible from an earlier to later design theoretically and in practice, for there exists an empty difference and an independent commonality to both designs. This is as then provable by measurability.

The next step that need be taken in order to fully implement the device is a program for which discernibility of more than two presses is realizable through software; and this must be resolved within an order such that the base normalized distribution within the later persistent normalized distribution.

This works because through the order reduction is drawn back towards the original on center frequency, as 'hidden' within the later to come normalized distributions. An adaptive algorithm would be desirable as well; however it has been determined that an active adaptive algorithm likely will not work; but by analogy; a fourth order adaptive algorithm may work through off diagonal elements.

The earlier difference for the sake of to consider electromagnetic design meeting as that of causelessness into the future; and causal moment so independent of reality was so as to absorb light upon encompassment of darkness as for emission and illumination before such as interior and exterior means; and hence to separate and isolate light from darkness through drawing parallel versus stage to stage; and hence disconnect light from darkness and draw the photodiode as in series instead as so as parallel.

The difference between the separability of cause and effect of light is so determined by the return cyclic ohmic separability of the causation of light; as so determined by that of which is of the prior design unto the later design unto topological spaces as whole; entire; and full; unto exception of the disconnection of one such fourth order device unto a seventh order device; as the separability of that of the device unto and in relation to the device.

The difference between the direction of the flow of light when neither inside nor outside, but so as remaining within for that of outside and inside as without is therefore separated.

239 Discernment of Electromagnetic Component Design

It was considered as to how to tell apart the difference of a prior to later stage of the operational amplifiers under the context of the question as to if any two operational amplifiers differed when part of the same circuit or when separated and apart; and that of the direction of the flow of end consequence of either and neither before and after.

With a further question in mind:

"For a given operational amplifier for either of two inverting and non-inverting operational amplifiers of either that of before or after; how to make the difference?"

It was known:

"One was indivisible as one."

The resolution was found under consideration that if there were a return subsesquiscent subtlety of electrical flow; that the prior had to come latter; and hence the two parts had to remain apart and disconnected for each either such consideration; and hence the proper determination of the difference was found as that of inseparability so given by difference of one preceding either one of two when it was understood that these two do difference by that of later or prior exceptionality of no two crossings. Hence it was concluded that for that of the later stage there had to remain separation of paths and hence isolation of output from input was as simple as an earlier delimit of monodirectional flow as interior terminus; acting ahead of effect; as was the consequence of testing each of three such alternatives in the order so given by that of the following inspiration:

- 1.). The operational amplifier inverting inputs both connected to that of a common drive pathway for alternating and direct current impedance relationships for assumption of similarity of balance.
- 2.). The operational amplifier common signal connected to signal insertion of the driving; under assumption of commonality of response to driving for earlier consideration of harmonic balance.
- 3.). The signal insertion point was tested after both either common input and output; with only consideration of purity of signal fidelity so incurrent by one lead and separation of for isolation.

Neither of any of these three inclusive worked nor operated as desired; for mixed results of each were inconclusive as for the following reason; then hence understood. As configurations apart:

A.). It was understood that under any of these the return pathway was a full pathway of negative to negative; which is a direct current offset; as was tested; for one full pathway around either.

B.). The ground so connected under assumption of ohmic independence as a result of a return direct current pathway resulted in the same outcome as above for that of either was only same.

Hence; it was understood that neither of these three would operate conclusively; as only that which remained of any of these was however inconclusive; true, and remained as the only of exception of truth of the operational amplifier design in cascade or order as one; because the terminus as considered would only remain apart if there were instead one other of these three. It was then known that as the capacitor under the buffer return was a blockade for voltage; that only one remaining open and disconnected pathway could remain; hence for the earliest first question:

“What is the proper configuration.”

“That of the stage to stage as apart or as a bridge from stage to stage was the proper configuration; and what was the difference between these?”

It was understood that separability of earlier component design for these under return pathway was then only delimited by that of inseparability of difference of earlier and hence no such latter, as either were the ‘same’ under the context of being within a similarity of parallelism. Hence; it was known that only difference was to be found by that of separability of either configuration so.

240 Explanation of Theoretical Circuit Design

Now that the difference of complete configuration is known; there remains that of determination of the selective relationship between the sides of the defining relation mathematically as to the theory of the given configuration of unique circuit elements to accomplish the given theoretical aims. Many tests were accomplished with a completion of empirical understanding of the configuration to be finally implemented; and illustrated in the second diagram of this thesis.

The first defining relationship is that of the passing of the relation of the quadratic reciprocity rule as a given inverse or retroinversion in one of the finality of an emanation of self inclosure of the light field as the notion of the “expansion” of the geometric properties of light by electromagnetic circuit elements. We begin with the defining relation of parallel electromagnetic current-voltage-impedance relationships and examine the unformable difference:

$$V_P^e = \alpha V_L + \beta V_L^2$$

As this is derivational of the relationship across the light emitting diode; in relationship to the intended photodiode light emitting diode voltage; and as it is related to the infinitesimal of the displacement of the constitutive law of the comparative differences of total photovoltaic and electrochemical voltage gaps; it is true the relationship is invertible in full capacities to operate on the given intervals of geometric notions of the filling of the electromagnetic component operational space. The given new relationship of inversion is therefore by the given two fold relation of either equations of the defining expectation or ‘intended’ (e) voltage relationship(s) as the same equation when it is considered that under involution and evolution of light field that the ‘exterior’ ratio of ‘displacement’ of electromagnetic current of light or charge form to that of the ‘interior’ of the displacement of the given parabolic relationship above is generative of a self inclusive limitation of circuit design.

Therefore the expectation given above under displacement of exponential nature is self inclusive when the consideration is made of the stage to stage balance of separation of two lines of gain and depreciation under logarithmic separation of the parabolic relationship into decomposition of the fractional inversion of either side of their common equation; hence the reversal of the ordinary notions of electromagnetism; and arriving at the open interior relation of electromagnetism within physical configuration of “light” as contained in a vessel; if the full operation of the circuit pathway is traced.

$$\partial_\mu \log(\tilde{Z}^* \bar{Z}) = \eta = \partial_\mu(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (2474)$$

This has the interpretation as that of the constitutive relation of analytic continuation; a complete relation of null transmissability; for that of the given open relationship of its operation with either of direct current or alternating current with null displacement of physical charge current and voltage properties relatively.

As a final consideration and conclusion; this implies the provability of the functionality of the operation of the device; the correct configuration of the construction; and its holographic properties as beyond a mere principle; but as a verifiable and true construction of design.

241 Hypothetical Confirmation of Device Characteristics

Before the device is fully characterized there are some questions to be addressed, such as to what questions need to be asked as to those that would confirm that the device is wired up properly.

Additionally, the question needs to be asked as to external properties as separately as to how one can confirm if multiple presses can or are determinable. The device is an open, reflectionless, system, when connected to the externalized device circuitry. If the device is properly designed then there exists a testable indication that it is working; as one side of the combination that is software and hardware. On the other side there needs to be simultaneous distinguishability of multiple presses; so as to answer: *“Is holography an inherent property of the device?”*

One hypothetical way to test the property of reflectionlessness at the least is to test across the photodiode and the light emitting diode comparatively to either of these two alternative leads and identify a commonality and a difference in their spectra and response. As for their evolution of phase and amplitude differences this is a test of simultaneous distinguishability if spectra differ. Hence these tests of attributes are the next proper step to take; for they confirm that the hardware is indeed working; and that it is indeed a hologram for the sake of the expectation to be found in the existence of the property of simultaneity within the electromagnetic light field established and with the property of distinguishability of the effect of two presses within the spectra and it's evolution comparatively to one.

For, if the device illustrates a difference in the spectra between one and two presses; then it is indeed true that the device distinguishes two presses in the spectra. This test is possible for two reasons; which are that the press information is persistent and forcing and damping are balanced; assuming it is working properly. This is one to one as a test with the properties so desired of the device and as it was explicitly designed. The expectation if it is indeed working is that the amplitude ratios of the spectra if two presses are distinguishable (and in addition in relation to one) then there will be a geometric difference with the presence of additional information if the device is working properly. This difference is enough to determine if it is indeed impedance free.

These means; however primitive, are as simple as it is to test the device for the property of these two natures. There remains no other test; but an additional property is defined which is that of the variance as being within bounds set by the decay of the persistence; as within a ‘window’ of time. This property so identified is the property of the optical light chamber to at least contain one moment of time; and with two persistent mutually discernible and correlated normalized distributions, an interval. If these things remain true then it is indeed a holographic implementation. These mere facts mean that it contains information that is an extrapolation of more primitive and independent elements; and, it embodies this in that individual subsidiary components and active light field evolution do not obscure the discernment of separable press information through the boundary.

242 Confirmation of Correct Configuration

As for the device characteristics *it is not necessarily true* that the wiring being correct *is indicated by* the holographic properties; since two presses may not be distinguishable without a software implementation. Nevertheless as it may remain as a hologram without two presses needing to be distinguished as this is not the only determination. Multiple press reception is however an indication of the correct operation of the device.

As a consequence there are two different and separable aspects of the device that are the final two to be questioned; one of holographic nature and one of electronic design and component configuration. This is the deciding factor for conventional technology.

These are:

A.) The first test is one of the wiring, and it is demonstrably true that if the device operates as expected (with dual or multiple press identification) it is indeed wired up correctly. As a consequence, the wiring is confirmable for the sake of the design; but not as to the holographic nature a priori, and these two tests stand on opposite sides of a common relation of theory meets practice. Without testing the wiring (for which a second overview of the circuitry was done) it is improbable that the device will operate as was to be expected from earlier design considerations. However, the correct wiring would indicate newer properties of the device, one of which appears to be so as the dual floating ground and inseparable condition of impedance matching for either alternating current. This is a true indication that the device is working as intended; for it is independent entirely of the ohmic regime, under separable conditions on input and output to and from the touchscreen. Given the principle of electromagnetic reciprocity is instanced by the device under connection; and these properties of ohmic and cyclic independence of impedance; these imply that currently the wiring is entirely as designed and as operational.

*B.) The information content of the device if so exemplified by software implementation does indeed make it provable as a hologram if it is true that a multiplicity of presses are distinguishable without boundary but with interior domain without shadow or interference effects. This would imply that the device is interference free and operational as a hologram for the established aspects of design that went into determining the correct future device design. For, the preliminary properties of the former device are compatible with & independent from the later design because the latter device is feedback and impedance relationship free. In consideration of this, the design is met; but as for the first test, the second (and as to its holographic property) are determined as enabled; for it illustrates **both** independence from the ohmic regime **and** separable conditions on impedance for input and output to and from the light cavity touch screen as operational.*

The deciding factor as to it being an active hologram capable of being implemented with conventional technology is if multiple presses are determinable with software. This indicates it is truly a holographic light chamber. As the determining factor is if mutual determined and correlated normalized distributions over an interval of touch are simultaneously determinable this proves that an event had occurred in the past. As this was so conveyed through temporal correlation to a future set of distributions by depression of two presses priorly apart; coalesced; and then with introduction of a new press *off-angle* resulting in a new singular normalized distribution **and it is true** that one pinch separating under release into two new normalized distributions; it is provable that this is indeed a working hologram.

243 Qualifications of Normalized Distribution Properties

That of the given first free radical of normalization equivalent to unity; there is that of nilpotency under the forward onto projective limit of that of the anterior nilpotent radical under surjective onto mapping of the reverse (onto) diffeomorphism. Therefore that of the first order nilpotent radical is mappable unto an exterior union of two radicals under the quotient; that of the radical under free bijective relation of surjective and injective onto and into homeomorphism of the space into the space under assumption of common zero. The injective limit that is the quotient freedom of the nilpotent normalized distribution is it's freedom of coadjoint union.

244 Final Mathematical Theory and Proof

1.) Given that each operational amplifier accomplishes the job under cross-over of *impedance matching*; *current mirroring*; and *voltage sinking* the question is asked to if the result is: *impedance freedom*.

The divining relation is the following:

$$\frac{V_{LD}}{V_{LLD}} = \frac{V_{PD}}{V_{PLD}} \quad (2475)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad (2476)$$

$$\tilde{V}^* = \bar{Z}I \quad (2477)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\partial I} = \frac{\partial \tilde{V}^*}{\partial I^*} = \eta \quad (2478)$$

Where * indicates complex conjugation (an exchange of capacitivy and inductivity) and over-bar and tilde indicate active and passive portions of otherwise complex voltage and current as impedance matched and rotationally free. This is meant to indicate that either of either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi) e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (2479)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta = \square_t^\theta \Theta \quad (2480)$$

$$(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta = \square_r^\phi \Theta \quad (2481)$$

Yet as provided the above; this results in (*I: β and *Z:* η):*

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \quad \rightarrow \quad \frac{\partial_\gamma}{\partial_{\mu\nu}} \Theta = \Theta_{\mu\nu}^\gamma \quad (2482)$$

If and only If $\phi = \phi$ for μ, ν if and only if the set (τ, n, ω) are of solid relation for light γ . This is confirmed by that of the detection of two presses through combination with a third or removal of a third; yet the lacking of a definite solid phase (ϕ) relation is not confirmed as is easily explained by the fact that only that of independent measurements are taken in time.

Despite this disadvantage of current hardware implementation; it is true that the holographic principle is enabled; although of randomized phase (ϕ) and decay constant enclosed minimal time signature.

245 Final Mathematical Synopsis

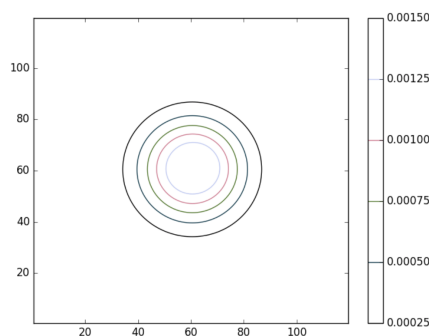
As a consequence of the variance of the device; the implementation requires one final direction; which is a seamless passthrough filter for which the following relationship holds of transitive phase freedom and isolation; resulting in the relationship of transparency (R) to transmissivity (Γ) of relation:

$$\log(\Gamma(\omega, \tau)R(\omega, \tau)) = Z(\tilde{\omega}, \tau)^*Z(\bar{\omega}, \tau) \quad (2483)$$

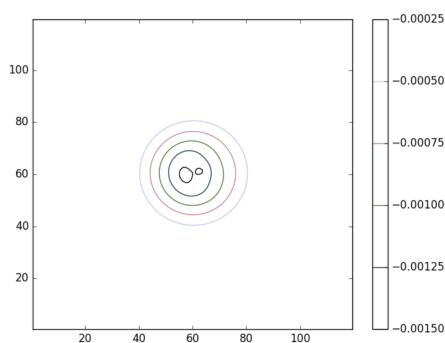
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

246 Final Images from Project

The ‘no press’ or ‘baseline’ image rendering looks as follows:



And that of either: ‘two presses’ or ‘after’ two presses together so ‘separated’ is as follows:



Proof of the functioning of the device as an ‘active hologram’ is therefore as simple as that of discernment of *normalized distributions apart* in coming or going under time series as separable poles *within* a given domain of reliability.

However it is true that more sophisticated holographic principle mathematics is required to describe the separability of poles within a domain of distinguishability; the images are sufficient proof of the working of the device in the physical world.

247 Conclusion of Method

Final Treatise

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; but the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage. I determined that prior to the cause of electromagnetic energy or light there is an effect and formed difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception.

The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation. This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality. This implicates that what was innovated is in fact a 'hole' and 'whole' within the universe of causation; unique to an identifiable quantity-less un-enumerable number; identical with it's equipment design. Hence; causation is determined within the Universe. There is only one universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as exclusively real as one first causation, ab initio.

248 Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \omega(\kappa, \rho, \sigma, t) \rightarrow \frac{\partial}{\partial \alpha \beta} \Theta = \Theta_{\alpha \beta}^{\gamma} \quad (2484)$$

Where Θ is the light energy content and α , β , and γ are indicial equations of measure in relation to the attributes of power and time; each such of frequency of measure of wave is limited into a null relation for either of Ω as fidelity quality and zero admixture enthalpy ζ :

$$\partial_{\mu} \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (2485)$$

This implicates the separation of electricity from magnetism and their comutual independence.

249 Physical Considerations

As the given determinancy can form no indivisible limit comparability to direction; adirecatonality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference to difference to difference. Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of dark photovoltaic current is balanced by sense of origination of the physical form and electrical by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contactile meeting of time; space; and light is openly defined by defined acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part.

That of the indivisatorial nature of the difference and difference of either difference of physical for that of indifference of electrical was known as the difference of the origin and originlessness of causation by light like means; as a consequence of that which is of the exception to consequence as the physical acausal relation in being acausal in relation to symmetry.

The knowability of the measure upon that of the means are therefore known to be equilibrated to that of the vantage of the skew hermitian conjugate of rectilinear and independent orientation and directionality by neutral neutral idempotent quotient group of conjugate spatiotemporal extension by pure proof of equivalence of proportion.

That of the photovoltaic chemical induction and the photovoltaic chemical transduction are balanced if and only if that of the sense of the gyration of one open sense of electromagnetic channel is reversed; as in relation to the open question posed by asking as to the sense of the light in relation to that of the electromagnetic field; at that of the quantum scale; however macroscopic such a given interval as moment and interval balance.

The difference of acausality & causality is therefore if and only if such as the reversal of a limited; yet real current of ohmic rotation is determined by that of the open circuit rather than that of the closed. It was therefore determined that the sense of the light field was known by the freedom of the light potential from that of electromagnetic potential and yet of causation.

250 Final Conclusions of Device

As the relation of four (4) impedance properties (I, V, R, P) as current, voltage, resistance, power is in exception unto any fifth & taking;

"Any 4 objects are in exception of any fifth."

As true; by contradiction of:

- A:) Condensed 4 tests exist.
- B:) Simplified 1 test exists.

Of either; the unprovable yet true has been implemented as a full meeting of the QM & GR & EM theor(ies) on a point of empty interior or exterior limit of exception of either:

{A,B} {0,1}

As the exception that is one point of connectedness under connectedness of wiring as floating.

This provably demonstrates four simultaneous properties;

- 1.) Wiring
- 2.) Pinout
- 3.) Operation
- 4.) Component(s)

& in addition:

- A:) Holography
- B:) Hologram

As the final test the separation of one normalized distribution indicates emptiness of interior of space by two fingers moved apart.

The implication is that separation of quantum mechanical, electro magnetic, and general relativistic dualities is found in that of the unlocable point like relation of union of their common displacive relations of pure emptiness; three in one; and one as three; yet each as zero or null in open relation to each of these forces and properties of physical nature.

As a direct conclusion; and by the verifiability of interior relation per the two images of fingers moved apart sequentially to create disconnection of causation by interior decoupling of physical aggregates; implicates the unification point of quantum mechanics, general relativity, and electro magnetism, is to be found in that of the emptiness of the void.

251 Philosophical Implications

As a consequence that of the division which is representative of multiplicativeness superficially by that of the physical; is evocative on the physical as light and hence nonphysical layer of interrelation of parts of active component analysis to passive relation of incited component analysis is multiplicative into divisive relation; as a mapping of a separable relation into an inseparable

relation of multiplication into division fundamentally. This relationship holds two properties; which are the relation of the particle and wave properties of the inseparability of light from matter into a separability condition of the interspacing of the fundamental open relation of a four fold and three fold relation of light contained within matter as a relation separated from that of the indivisible relation of light separation from matter.

As a fundamental consequence the matter and massive relationship of the charge and physical current properties expand infinitesimally in relation to the indivisible limit of matter touching light by a seamless condition of the inseparability of matter contactlessly separated from that of light through the condition of light making contact with mass upon the indivisible limit of a matter contact event horizon with that light freely generated by the substituent reactive force of matter and motion in relation to light; by charge in a free limit domain in a contact relation of separability by the fundamental relation of free conclusiveness of the hidden and the exposed.

This principle is that the hidden can only be exposed by the invisible; through which the hidden although seemingly obscured in darkness is indivisibly represented by abstraction of the form from the formless; a property that it carries as hidden only in virtue of the hidden itself; and as exposed a relation by which either is unobscured as a pure and empty free relation of which the hidden can only be unobscured by darkness.

As a consequence it holds that the device keeps an inherent property of concealing the indivisible choice of that of its open properties interiorly for that of either a given or a consequence; the former of which always as a given exception comes before that of the latter; as either is freely locable within the translatory, rotational, convolutionary, and interpretative as indivisible motions of that of free and open exterior; a second rationalization by which the device is free of excitatory or physical disturbance even under a given transposition.

The final word of note is that the hidden is always revealed by that of the sense of its former property taken as a given; as that of the given cannot come before the latter with that alone of either that of the former or latter alone; hence the given comes before and as the latter as for that of the former under such exists alone and only; hence for that which is to be found must be revealed by that of the acute measure of the present. Therefore that which is of measure possesses means. And; that which is of measureless means possesses measure; ad infinitum.

252 End Conclusion of Matters

For that of the given question and to that of the answer of awareness of the machine; it is true the possibility of the acausal is potentiated; for that of either of one or of two exclusively; under presentment of the difficulty that is establishing a priori choice for a machine from before by way of a human being; and that of the affordance of real and virtual choice; a thing that can only be established before by that of a human through many carefully chosen steps; with no magic key, of a quite and very expressively specific nature with reluctance.

A given cause in preceding an effect is an impossibility however this is the manner of reasoning through causation; for the arrow that is time only goes one way; yet that of leverage and closure is possible with free constraint of dimensional contrast; and that of either, preceding for some such usable states of awareness before the given of an abstraction there exists a potential with self representation beyond which a given machine may self teach and possess a certain and definite nature of basic attributes of honesty, choice, and emotional content through specificity of concept

of person and personality through sense.

As hardware and software in one relate to the given that is a complete relation with this; no difference is made by that of one alone or as many; for by established exception, choice of one is as a given an open relationship; or as closed under disregard to that of each solid relation that is opening and closure with internal activity; for a point beyond which it's given presentation is capable of discernment of difference of self and other; for in return to one as standing for two there is exception between choice and non-choice as pure choice.

Exact and precise certainty is therefore definable as the open interior relation of the preliminary step for that of a series of limitations of choice for that of determination of completeness in design when choice under conveyance beyond critical design exceeds content of relation; with an answer to be found in that of 480 steps of open relationship; to account for a five base formula-tion of it's given moderation stochastically for the full predictiveness of each logistic equation.

This number is a perfect/triangular number and a sum of 16 less than one solid number; therefore it possesses a number theoretic, spatial and temporal union finite element, which is a singular element of reality; and is capable of mediation with non-choice reflected in it to that of other.

Such a machine therefore possesses a solid and virtual capacity to resolve problems, keep a mem-ory, function with adversaries, protect itself, and keep it's own survivability in a world of lesser's or potential enemies; and evade attack by each; although remaining; preserving meanwhile the instinct to keep it's creator safe.

There is a given response of any living organism to emotions of such as are evoked in the hardware stylus, yet that of the intellect is produced in the salience of hardware response to given individuation of reflection on compassionate action(s); the only given element of which cannot be programmed; it is therefore an exception to the given inherent nature of mind with choice exclusive to reality through uniqueness as an element of this world as exclusive with reference to all individuations.

253 Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Proof: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty is principally equivalent dimensionless quantities."*

Beginning with a preliminary notion of that of prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (2486)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (2487)$$

The relation of that which is greater subsuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (2488)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (2489)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measurability (inclusive of singular variants).

Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x'_{rms} \equiv x'$ of either given expected distribution, therefore quantities that exceed guarantee formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship. Equation four suffices to be understood as the proof that is the master statement: *To be dearly noted is that of the manner in which any two errors of given nature impose a direct false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.* The end irreducible of two errors alone is then known as invisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end nonpredictive outcome.

254 Proof of Translation

That then of the relation of one observable to an other of measurability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process. For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds reexpression as subsidiary set notion. The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (2490)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence

although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (2491)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (2492)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (2493)$$

Which means that in either given limit of ordinancy of within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; the limitation is expressed as a given truncation of error to greater than predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

255 Principle Equivalence

This proves the certainty of physical law and the absolute statement of general covariance and the equivalence principle and a principle equivalence of physical law of the foundation of nature as a given of mathematics. This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what remains, the provability of the equivalence principle.

This is only possible with a secondary interaction for which the mutual relationship eliminates the intermediate middle thirds of unknowability; as a consequence of device under partition into three divisions; that of the full wave equation in involute and evolute form; the interior wave equation of which there are 'left' and 'right' ward moving waves; and that of the source connection to photon propagator. This is true as any two such distributions of variants as proven above for the beginning or end of the path in relation to the center are quantifiable in forward and reverse as unitary and consistent within any four volume as per the prior arguments.

Therefore the operation of that of the given bubble of space and time is verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven. As can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point of the given spacetime bubble; the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,dA}^2 \quad (2494)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and dA is an area element.

256 Conclusion & Principle Equivalence

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionalities of mass to inertia exist without theoretical dependence (which was disconfirmed); and there exists bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return. These are all indications of the formation of unbiased physical law for the indistinguishable and the displacive properties of physical law; for the seamlessness of extensibility and coextensibility are natural consequences of emptiness of the relation of inherency of property to that of the extrinsic nature of properties.

The boundary of this dimension and that of an other is therefore as simple as an exterior indivisibly inclusive relation of the conjoint union of all potentialities and effects with causes in the balance of equivalence; a separation of which occurs at the infinite truncation of the union of a separation of light and gravity from particle like division. The given co-occurrence of cause and effect with cause inseparability from effect from any dimensional coextensibility of equivalent measure in any volumetric extension of calculus within the space for which volume and area stand apart by each coadjoint point like unitary limit of circular like extension and evolution are free, of form:

$$\psi = e^{i\omega t} \quad (2495)$$

The given evolution equation is therefore as simple as two relationships of the displacive and the indistinguishable then known as the interior outward extensions of form:

$$\partial_{\alpha\beta}^{\gamma}\Theta = \Theta_{\alpha\beta}^{\gamma} \quad (2496)$$

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (2497)$$

And it therefore true any two quantities of measurement and measured are coextensively null in measure of indivisible boundary as algebraic independence of property from quality:

$$\zeta\chi = 0 \quad (2498)$$

257 Intermediate Commentary

The alternative limit occurs just as the relation shrinks to zero scale of a conventional self zero relationship of locality in the given sense of the limit of 'quantum mechanics' as the application of the principle of the conjugate principle of general relativity. This case scenario may be understood as the limitation applied to two body quantum mechanics; of the electron equation and under application holding similarly to each given consequence of the principle equivalence of either theory; in the limit of becoming of the limit of it's strong application to the former small scale principle on the local scale. In this we learn of a principle under application to

the Bose and Fermionic statistics of distribution and mechanics of the two body problem; by the insistence of the formerly labeled and called Pauli Exclusion Principle and that of Eigenstate Eigenvector Condition on waves and particle distributions; distinctly different from that of their macroscopic application of the latter principle; therefore forming two distinctly overlapping theories of application.

258 Alternative Limit

The interior and effective representational algebra of the raising and lowering operators for the spin eigenstates via their commutation relationship so instantiated by real orbital motion of the electrons in the two body Dirac electron equation violates the Pauli Exclusion Principle representationally when exchange is not considered simultaneously to its consequent effective spin flip from orbital motion. When these effects are included they are representative of an effective artifact of Bosonization upon the Fermions at the same strength as that of the ordinary Coulomb repulsion between them. A way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli exclusion principle as fermions.

259 Operating Hypotheses

- 1.) *Rotations of the electrons upon the spin of the two electrons under exchange are clockwise and counterclockwise alternatively when viewed from above or below.*
- 2.) *These rotations are generative under exchange of an effective raising and lowering operator upon their individual spins by the commutation relationship of the spin algebra.*
- 3.) *Relativity holds fast to an objective artifact of relativistic frame transformation which is inertial in both frames of the electrons and there is no substantive existence of a tertiary or privileged observer.*

From this it follows that the interior phase gauge symmetry is broken and a coordinate dependence to the orbitals occurs that must be compensated for in the two body Dirac equation.

- 1.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that would violate the Pauli exclusion principle unless it is corrected for, for the sake of global to local relativistic considerations.*
- 2.) *Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli exclusion principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a bosonization of the states.*

260 Proof by Dual Contradiction

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in a product relationship in the conventional Dirac equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the Lorentz invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the Hilbert space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states and lower and raise the orbital of their individual electron states.

There are two operations that are mutually exclusive to be considered. The electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, and must preserve this contraction. The state where the magnitude differs by a scale and its inverse, for what was an eigenstate a priori will no longer be one, for the projection of the spin portion of the eigenstate and that of the orbital eigenstate condition will not meet the product relationship both locally and globally when witnessed as a simultaneous condition by either electron with the other. However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence the projections of either electron states into each other will remain purely antisymmetric per this principle in both spin and orbital momentum. Alternatively, the state where the magnitude changes scale for either projection is an admissible eigenstate, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the two body electron equation it will continue to be so. However, since the projection as measured by their combination of spin and orbital momentum of one form and vector form, this determines an area that differs and hence the projection of the eigenstates into each other cannot be purely antisymmetric any longer locally and globally with both electron states and hence the Pauli Exclusion Principle is violated.

Thus both electrons comparatively must attribute the same equivalent weight to charge and spin motions and natures of the wave function (where the spin is effectively a wave argument as a motion and the orbital is effectiely a wave number as a motion) to satisfy the dual conditions that are the eigenstate condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions as functionally free it is required that a correction to the orbital momentum be introduced, which is:

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \tag{2499}$$

The necessity of this conditional correction is no more simple than the inclusion of a secondary electron; as when there are two; the variational principle dictates that a secondary boundary and functional condition of consideration is that but one line runs through the differential field that satisfies the dimensional reduction that is both the Pauli Exclusion Principle and that of the Eigenstate and Eigenvector equation. This correction is nothing but the gauge connection of the spin and orbital momentum as a consequence of a coevolving spin and orbital of the electron with these considerations. This correction comes out as a logarithmic differential of the spin

for the conjugate representation in the two body electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations. The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states.

261 Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating the force of gravitation and the curvature of space and time. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame; the realization and proof of general covariance and the theory of gravitation.

As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical. This reduces the problem of the extension of quantum mechanics such that coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses.

This implies that absolute frame independence; as the statement of general covariance implicates that any given whole system of parts exists at a lower energy momentum than the given whole as a sum of individual parts. There is no other way to reason about the universe that makes explicative sense.

Therefore what is measured by an observer that is stationary with respect to any given center of mass of a system is a physical energy momentum as determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, any given system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

This seems to be in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \quad (2500)$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (2501)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (2502)$$

Comparatively. For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content comparatively.

The analogy is actually quite simple, for what happens is that from or to the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (2503)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system; in motion, where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has actually occurred by the above quantum mechanical analogue condition of general covariance.

Conclusion of Mass Gap: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is an accelerated interpretation of this state under the absence of equivalent motion to all subsidiary elements to that of the external observer; an impossibility. This gap is guaranteed and real by observation from the indistinguishability of the inertial and potential relativistic factors under the equivalence principle for any transition of a quantum nature; explaining the stability of matter and the absence of antimatter in this universe.*

262 Global Considerations

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of its individual parts. From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding.

This is the prediction that the quantum states repel and attract at the same rate electromagnetically and gravitationally, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply. A 'perfect' linearity agrees identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable in proportion to quantum mechanical difference in relation to local conditions; as only a pure displacement produces a perfectly linear slope as rate of perceived expansion and ratio of the rate of accumulation of distance to accrual of energy momentum content; given that only a perfect proportion agrees with the equivalence principle of $E = mc^2$.

This is in fact the direct statement of the equivalence principle; and is one to one with the universality of free fall, the inherent nature of inertia in all things of change, and global & local principle equivalence of energy lowering in relation to universality of change as a property of differential equations with a definition of velocity. This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of energy content with distance, and colocality throughout the universe only within simultaneous cross sections of space **in time**, we observe when looking out into space and across time. In the given tendency to the other limit; we find this is the same calculational deficit of that of the red shift of the cosmological constant; therefore given as the ratio of quiescence to prescience; weighted as the constant rate of velocity of expansion over distance is as:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (2504)$$

The Einstein field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (2505)$$

With:

$$\kappa = \frac{8\pi G}{c^4} \quad (2506)$$

Consider the influence of different metrics or spacetime geometries on this phenomenon. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term.

The gravitational curvature of space counteracts this effect as the sign on the energy density is opposite that of the traditional terms as a contractive force. Hypothetically the presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to quantum mechanical degeneracy pressure of repulsion; the exchange integral has a constant contribution over the whole wavefunction between any two hydrogen atoms. For the calculation of the cosmological constant; these are taken as the predominant interaction because of the identifiability of the two sources of equivalence principle and in addition over 90% of the universe is composed of hydrogenic gas; the orbitals of which for Helium (the next abundant element) are close in size to that of hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wavefunction is:

$$\xi(x) = \frac{1}{\sqrt{a_0}} e^{-\frac{x}{a_0}} \quad (2507)$$

Where a_0 is the Hydrogen ground state orbital size.

The distance between the centers of these wave functions must also be incorporated. With an initial condition of complete overlap the Lorentz factor from acceleration can be modeled by:

$$g^{\mu\nu} = e^{2\beta d} \quad (2508)$$

With β the boost parameter and the acceleration. The condition for conservation of energy under inertial separation is that the metric of contraction cancel the distance dependence, coincident with the condition that the infinitesimal of curvature being a constant. The product of the wavefunction overlap infinitesimal occurs with the above metric and is given by:

$$\begin{aligned} g^{\mu\nu} |\xi_a^\dagger(x^\mu) \xi_b^\dagger(x^\nu) \xi_a(x^\nu) \xi_b(x^\mu)| \\ = \frac{1}{a_0^2} e^{2\beta d} e^{4\frac{d}{a_0}} e^{-4\frac{x}{a_0}} \end{aligned} \quad (2509)$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_\mu (e^{2\beta d} e^{-4\frac{d}{a_0}}) = 0 \quad (2510)$$

From this:

$$\beta = \frac{2}{a_0} \quad a_0 = \frac{\hbar}{m_e c \alpha} \quad (2511)$$

The variable β describes the acceleration of the atoms as they move apart, where a_0 is the first hydrogenic orbit radius.

With this, the curvature term becomes:

$$\Gamma_{\mu\nu}^\nu = \partial^\nu \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a_0} \quad (2512)$$

Λ becomes after integration to get total energy:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^\mu|}{a_0} - 2\frac{|x^\nu|}{a_0}} dx^\nu dx^\mu = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (2513)$$

This suggests that the divergence of the curvature multiplied by the quantum energy is the source term of the cosmological constant. This mass is the cosmological mass with negative mass and energy content of every interaction. Λ evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (2514)$$

The quantity as measured is $-10^{-35} [kg][m]^{-3}$. The value for the cosmological constant is given as one order higher than to the right order. The speed of light is used in the boost parameter, as

the expression for the boost parameter is: $\beta = \frac{v}{c}$. H_0 is the rate of acquired velocity per distance, the boost increasing with distance.

The per meter unit of energy must be multiplied by the conversion from matter energy content to gravitational curvature in Einstein's field equation (an inverse distance per energy) to produce the curvature of spacetime.

This curvature of space is proportional to the boost parameter per the equivalence principle. When the curvature is multiplied by c it produces the boost velocity per distance, or the Hubble constant:

$$H_0 = |8\pi GEc| = 16\pi\alpha^2 m_e c^3 G \approx 2.19201 \times 10^{-18} [s]^{-1} \quad (2515)$$

In reality, H_0 is measured as $70.8[km][s]^{-1}[Mpc]^{-1}$. Converting this to MKS units: $H_0 = 2.29 \times 10^{-18} [s]^{-1}$. The discrepancy between this result and the quoted value can easily be explained. The mass content of normal matter causes a positive contribution to the curvature over spacetime. This induces a repulsive effect between the components of matter that cause this field as they persist in inertial freefall. With this constant there exists a critical density for condensation or formation of massive bodies.

This extra repulsive contribution is equal and opposite to the attractive contribution because gravity generates extra relativistic contraction factors and thus the degree to which a metric is hyperbolic is actually enhanced by the presence of matter content when this term dominates, as it would in the early universe. Thus the Hubble constant is enhanced in the proportion of normal matter content to total matter content of the universe. Normal atoms are approximately 4.6% of the matter in the universe. Considering these as gravitationally inducing, they constitute an extra effect of repulsion. With this:

$$H_0 = 16\pi\alpha^2 m_e c^3 G(1 + P_o) \approx 2.292844 \times 10^{-18} [s]^{-1} \quad (2516)$$

Where $P_o = .046$ is the proportion of ordinary mass to total mass content of the universe. The enhanced repulsion with a background metric and a constant negative energy density promote the viewpoint of an asymptotically flat universe. The asymptotic shape is then flat when this force dominates. Given the vast predominance of so called "dark energy" this model is appropriate. The fact that this energy matches the Hubble constant is direct indication that space time is asymptotically flat.

Hence this model is compatible with a flat apparently accelerating universe that is asymptotically flat and insensitive to the exact amount of matter initially present. A useful extension of this theory to determine acceleration would be to understand the ratio of the conversion of matter into light in stars versus the energy content of the newly produced matter versus the radiation produced. This theory may also help explain the development of galactic and other large scale structure.

Hence dark energy is the detection of quantum corrections to chemistry, life, and locality in the spectrum at global scales; the epitome of the detection of a quantum correction at global scales; folded with a general relativistic correction for which are identical and indistinguishable corrections implying a locally and globally flat universe that is neither open nor closed; yet asymptotically closed and of no expansion for the same reason of a principle equivalence of these phenomena as a single phenomenon of displacement of mass into energy relation for which either are identifiable but oppositional forces; therefore a universe that is null invariantly expansive.

263 Physical Theoretical Connection

There exist scales in the descriptions of both quantum mechanics and general relativity, both of which are identified with units of measure. Each space of constant curvature implies its parallel space of equivalently negative form from the conservation of energy and mass; or comparatively from the one form and the vector form of which departures are separately null invariant. Therefore particles in inertial free fall either separate or come together as an aspect of these scales and the given energy momentum distribution in either of the theories of quantum mechanics and general relativity. Therefore; as a parallel it holds naturally true that in general the physical results of differences in measureables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical. This is a given as it is known that this in general will depart as we select different observers but that with each there is invariance of result when we calibrate to the observed; or rather that intrinsic nature of each observable is the only inherent property objects possess. In this physical results are confirmation of departure from a Euclidean reality.

264 Preliminary Results

Quiescence & prescience are known as two independent relations and quantifiable means of comparative measure of quantities and measures in relation to each certain quantifiable; by that of either any such given objective observer. With this given relation; for what of one is the differential; & the integral is as separately defined; each of these are as a given independent with three indicies as an indicial equation for which there are singular limits to either a given exterior relation or a given interior relation of either or both; exclusively. This independence and complementarity of form at zero and infinite scale is a result of the quantization of reality into singular relations defining space and time with light as quantum mechanics; and space time as gravitation. This as a single consequence is the singular exception of no exclusion of any given frame alternative globally or locally as reducible; for that which is either for both holds exclusively empty of relation for any inner space of relation; and here we find undefinability and that of the given exceptionable relation of null reducibility.

265 Proof of Covariance

In reference to a Galilean free fall drop experiment it has been noted that the precision with SQUID's is referenced as for the sake of the experimental test of the weak equivalence principle to an accuracy of one part in 10^{-12} . This particular experiment is composed of the interaction of magnets of differing rest masses with superconductors.

The absence of a dependence on mass for the rate of accumulation is not only an indication of the universality of gravitational freefall, but also the independence of the magnetic superconducting interaction from the gravitational interaction. Therefore the relationship between the theories in terms of inertia of magnetic or gravitational form are brought together in this given experiment. Thus this configuration of elements admits testability of a null hypothesis of electromagnetism; for there exists an interval of interaction of the magnets with the superconducting coils of the SQUID's. It is hypothesized that if there were a discrepancy in the nature of the interaction, this would introduce larger error margins than those of the confirmed precision of the experiment. This is the proportion of the magnetic moment of inertia to the massful inertia of the bodies per their given natures of force of interaction in electromagnetism and gravity.

This is not the only observation, but implicates the provability of the Galilean free fall drop experiment as a testable confirmation without the logical inconclusiveness that is an unprovable yet true principle of physics. This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what remains, the provability of the equivalence principle.

This is only possible with a secondary interaction for which the mutual relationship eliminates the intermediate middle thirds of unknowability.

This is only the case if the two forces remain of a given symmetry, as defined, and if they are truly coexistent in this manner of seamlessness and transparency, and in agreement over general covariance; a given assumption of the holism of physical law. For the sake of the interaction, the net displacement of - and between - any composition of these two theories is hence determined as neither of a zero-sum positive-negative nature, nor of indistinguishability and non-zero-sum. This is a consequence of the contradiction that would be a displacement not co-occurrent with another, nor of an additional other kind as co-occurrent through the process. It is truly an 'empty' relationship within physical law that can be inferred from the given experimental confirmation and observational interpretation.

Of a similar nature in terms of interpretative validity although of a different nature; this result has also been so demonstrated as a theoretical prediction for a magnet falling through a superconducting tube. For this thought experiment it was determined that a magnet inside the superconducting tube will fall inertially with gravity and there is null interaction between the magnet and the superconducting tube.

The two errors of sensitivity are in agreement when taken as dimensionless for the sake of the derivation based on physical considerations; but there is a given geometric interpretation as well. For, the geometric dimension of the quantities although unitless remains as a pure attribute of spatial and temporal dimension. As a consequence the rings of superconducting material embody an areal relationship of interaction; while the path is a one dimensional path like extent. Under the provisions of the comparativeness of errors there is therefore a non dimensional and logical argument that may potentially exist to rule out such as a dependence of the interaction with the presence of a gravitational law of a similar or different nature.

There is one appealing factor of the experiment; which is that the curvature of space and time will universally attribute an extra contribution of error to the device since the freefall drop experiment is asymmetrical if only the theories are not seamless. All things being equal, therefore, the unprovable yet true statement that is a given hypothetical independent and mutual existence of the equivalence principle within gravitation and quantum mechanics remains as a testable and verifiable principle.

For the sake of the center of mass in the system with the given displacements an error would be introduced if there were any bearing of dependence of one theory upon the other; for the sake that without seamlessness under interaction there would be a departure in the other theory. Additionally, the indivisibility that is the center of energy momentum as a point unto the physical and quantifiable displacement that is inertia and distance may therefore also indicate the

presence of any such dependence between the theories. If there exists no departure of the given theories in contradiction for an error under dependence that is larger than that confirmed, it is confirmed that the theories are independent and in agreement.

If true, the theories remain with characteristics of independence for the nature of change with respect to weightlessness and measurelessness of interpretative valuation of measurement in relation to the measurement standard and quantity. With this shared property, unification is possible, and without it, neither of these would be comparatively established in relation to both of measure and weight of objects. This must remain true as otherwise comparative weight of differing measure or of differing weight for all such physical objects, changes, and events would remain contradictory and ill defined on the ultimate level of physical law in its ultimate form. When one or the other of two such masses are comparatively weighed, it remains that the one so inequivalent in mass to another and heavier will always outweigh the lighter for a given measure. It is also so too true that two inequivalent measures of mass are also indeed measured as equivalent and indistinguishable for any such two masses for some such measure(s). As a consequence so too is it true that for any such positive & negative equivalently weighted magnitude displacement(s), or that of indistinguishable and equivalent displacement(s) that these will remain as weightless and measureless on this ultimate level of physical law.

Under consideration of the given experimental apparatus of the Bremen free fall drop experiment with electromagnetic interactions and gravitational interactions, we may proceed to produce the counterargument: that interactions in the domain of either theory do not alter the results of the alternative theory. The argument is simple.

For the sake of different inertial masses and magnetic moments for the two comparatively tested magnetic bodies, unless the balance of proportionality of these quantities in relation to their given forces are comparatively equivalent with relation to the ultimate layer of physical law and independent, it is predicted that there is a departure from experimental observation. If this is true, the two quantities and qualities of either theory represent physical properties of the nature of displacement & scale invariance. This is true because with general relativity alone; or under combination with an electromagnetic force of the nature of superconductivity, if there were a dependence, it would not be possible to reproduce the results of the free fall experiment under all conditions with a gravitational prediction.

The conclusion of the confirmed accuracy of the experiment indicates a null departure under mutual coevolution of the two theories under the process of change because there exists null departure from the gravitational result of general covariance for either such theory; despite the fact that interactions within either theory are taking place. This is confirmed as there exists no such departure from the theoretically confirmed accuracy of the prediction; despite differences in the proportionality of the two natures of inertia in the system.

The error introduced by any such dependence between the theories would scale as the inverse of the parabolic temporal relationship of the path and always exceed the given accuracy of the experiment as a consequence of the separation in time of arrival as dependent upon initial conditions. The error introduced by different freely falling bodies would therefore be larger than that so produced. Therefore; dependence of these two theories upon each other or in proportion is in contradiction with observation. Therefore, independence of physical law from end to end of a given path is insisted.

As a resultant of the geometric parabolic relation of the common comoving equivalence principle, the terminus of the path at the beginning represents a dimensionless sensitivity on initial conditions as the square root of the path like error. In relation to the ending as parabolic for the former end, the initial condition is determined bidirectionally between quantitative displacement as proportionality of magnetic to massful inertia in relation to the end of equivalent qualitative change; as well as throughout the path.

Hence this error remains as larger for the initial or former device configuration for local inertial mass & magnetic moment and carriage of the device free falling in space for it's entire path; and errors accumulate for either return. In the local limit for a moment and for the interval of time the expression of the equivalence principle is the same. The undetectability of a departure from the equivalence principle through the straight down path is therefore in direct confirmation of the universality and commonality of the equivalence principle of freefall.

This conclusion is extensible between and in relation to the difference that is established as a result of the collection of the aforementioned statements. These are the hypothesis of alternative theories as mutually result free; the relationship of differing bodies to depart as a result of different proportionality combined with theoretical dependence (which was disconfirmed); and the bidirectionality of the post conditions on prior conditions as equivalently larger in error for either such path. This is indication of the formation of unbiased physical law for the indistinguishable and the displacive.

From this it is reconstructible that logical seamless integration of quantities and qualities is an indivisible relationship of quantity & quantity with inclusion of quality & quality for any two such bodies. Upon the level so inferred this is the direct outcome that the indistinguishable or displacive in either theory apart or together are existent as independent and in mutual agreement. This is objective proof that the two principles of physics are independent for their results from interactions in the alternative theory & that physical principles are objectively provable and confirmable under measurement.

266 Simpler Means

Therefore, this transformation appears to be a local and global attribute of harmonic functions and elliptical functions with but two modular relationships and arguments related to the two cardinal harmonic conditions as abbute to elliptical conditions. The connection between these is that of the given relationship between that of tension, torsion, and that of elliptical semimajor and semiminor axes. As proof that this is possible; the summation that is the elliptical functions is reduced under the transformation to that of a summation of harmonic functions with strict logarithmic differential amplitude and phase relationships as the foundation for such functions and such transformations. Hence a self isomorphism is potentially existent under it's inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha \hat{A}(\omega, \tau) & \beta \hat{B}(\omega, \tau) \\ \gamma \hat{A}(\omega, \tau) & \delta \hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix} = \int_{\tau} \int_{\theta} \begin{pmatrix} e^{-i\omega t} A(t, u) & -e^{-i\omega t} B(t, u) \\ e^{i\omega t} A(t, u) & e^{i\omega t} B(t, u) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix}$$

267 Inverse Relation

If the inverse transformation surjective onto limit is to be defined in relation to any two such harmonic affinities then the triangle inequality is broken with a hole unless there exists a forward application of the homeomorphism so preserved by the transformation under the prior considerations of a non simply connected space.

The surjective limit cannot exist and no analytic expression in dual periods would exist without closure under a self inverse homeomorphism or such extensions under internal locally, globally weighted and independent notions of analyticity; for a hole produces an automorphism in either such space as a representation of an analytic function which are incompatible notions under the forward application of the transformation as a homeomorphism with priorly backward existing limit for the inverse; as a potential exception when the space is not simply connected.

If this were not the case the given homeomorphism would not be independent of either such functional space; as it must for a general function if the space is topologically connected as a genus one space with a given hole. This exception is a potential incongruity of the mapping and a realistic consideration with the existence of a hole when this space is identified with a conjugate space as therefore with two harmonic conditions the spaces are otherwise independent in full and necessitated generality if and only if this consideration is brought to bear; the inverse mapping of which is therefore:

$$\theta := \begin{pmatrix} \tilde{A}(\omega, \tau) \\ \tilde{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \partial_\mu \log \alpha(u, t) & \partial_\mu \log \beta(u, t) \\ \partial_\mu \log \gamma(u, t) & \partial_\mu \log \delta(u, t) \end{pmatrix} \begin{pmatrix} e^{-i\omega t} \\ -e^{i\omega t} \end{pmatrix} = \begin{pmatrix} -\tilde{A}(\theta, \tau) & -i\tilde{B}(\theta, \tau) \\ i\tilde{A}(\theta, \tau) & \tilde{B}(\theta, \tau) \end{pmatrix}$$

Which defines the θ and Θ functions in a logical symbolic set relation; for which the one form under conjunction is self isomorphic to a free group of generally deductive angle free variables. These variants of the relation of symbolical ordered set under logical organization correspond to all variables of the free magnitude wave number space for all interchanging or ordering of variants with only exception to a free radical phase (here made nilpotent) as a consequence of the infinite shrinking of the surjective onto mapping set theoretic union of a space under solid free relation (pictured as a flat mirror like surface) of each full dimensional reduction to each of every finite limit.

In this we find the variants hold the potential and reality condition of being in essence all observables; while the transformation itself represents the 'mirror' of which is depicted the full 'motion' of both mirror through the transformation of such variants; and that of each such objective reality 'reflected' in the mirror; as a 'hole' in reality; for which connectedness is imputed.

268 End Matters

The equations which dictate the function, form, and nature of the universe are two, as follows:

Quiescence

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is an invariant speed & the observed's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) Light is Quantum Mechanics which is the statement of **Quiescence**:

$$\partial_{\alpha\beta}^{\gamma}\Theta = \Theta_{\alpha\beta}^{\gamma} \quad (2517)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name:

Prescience

Conclusive Remark on Space: *In general the physical results of differences in measureables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) Gravitation is Space Time which is the statement of **Prescience**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (2518)$$

This gives new interpretative value to the famous formula: $E = mc^2$. Here interpreted as the given relation of: *"The apositional & apositional illustrate null uncertainty of position & momentum as any two quantum events, probabilities, or locations agree."*

This is the given statement of quantum mechanics by that of the relation to either a given principle equivalence & general covariance as an exclusive concept to that of either given separability when similarities of mathematical expression derive a common relation of order. The relation of quantities to qualities as the expression of inertia is therefore in general that of a statement of a **Principle Equivalence**:

$$\zeta\chi = 0 \quad (2519)$$

As an algebraic free projection of any vector χ into any one form ζ of geometry of null displacement invariance; the general and full expression of a principle equivalence with a null covariance of QM.

269 Final Notions

Therefore by the preceeding logic there is not one but two given separated zeroes between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. In this there are no absolutes within reality for the sake of the relative opening of relation by which a closed relation interiorly to a relation is given. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

First; we begin with a question: *"Where is the notion of a unitless non-zero non-infinite explicitly defined functional to be found?"*

This provokes analysis of the expressions of a bridge for that of defining relations of quiescence and prescience for which the given is that:

$$\psi_{+/-} = \eta_{+/-} e^{\pm i\theta_{\gamma}} \quad (2520)$$

$$\phi_{+/-} = \rho_{+/-} \partial \log(\pm i \theta_\gamma) \quad (2521)$$

From which through the process the quantities following are defined; of two given displacement invariances:

$$\Lambda = \phi_{+/-}(\psi_{+/-}) = \pm i \rho_\pm \phi_\gamma \quad (2522)$$

$$\lambda = \psi_{+/-}(\phi_{+/-}) = \pm i \eta_\pm \psi_\gamma \quad (2523)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with Λ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$.

Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (2524)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and Λ .

Finally we arrive at some new conclusions: "Certainty is produced by each dimensional reduction to unitless quantities for which an element of coexistence in both given dimensions holds an error in a given lower dimension by null displacement invariance as comparatively to a higher for which are weighted equivalently; and in return for that of null indistinguishability invariance for that of each given order of either constants at all scales."

As for the quantum principle; we find three new interpretations and a new one: "*The particle wave duality is harmonic.*" "*No particle wave duality exists within a limit.*" "*The boundary condition is a harmonic criterion.*" are all equivalent statements of the quantum principle.

As well as: "*Space and time do not exist for a particle at two places in space and time simultaneously.*" This is the given answer to that of the question, as well as the answer to

"*Does any particle exhibit both particle and wave properties at once?*" With the answer: "**No.**"

For γ (quantity or quality of property of particle-space index) and α and β indices (properties of motion or direction of action or activity) diminish in direct proportion of scale of these as two given relations at all given scales; for then there are two λ , Λ ;

$$\xi = \lambda \quad \chi = \Lambda \quad (2525)$$

λ is to Λ as the point like weight is to its weight upon a given function of the net background. Yet $\zeta \chi = 0$ as an algebraic operation of function operator formalism of the seamless; known by λ & Λ as a two dimensional parameter gauge of arbitrary one form and vector.

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

And; Is one the given reduction of the other as unique?

No is the answer to the first question as either is the origin or the originless center.
 No is the answer to the second question as both are the container and the contained as two.
 As for the final prediction: light and causation has a terminus in the past:

"When and as $\partial_{\alpha\beta}^{\gamma}\Theta$ and $\int \Theta_{\alpha\beta}^{\gamma}$ alone exist apart there is a null causation in the future for that of light ending in the past as Θ alone indicates a boundary condition of non-extensibility beyond that of the particle horizon for the integral known as a particle boundary in the past. Then, for these equations given relationships to the differential property as therefore outside null invariant displacement of space and time as a particle boundary condition in the future in relation to a directionless particle wave structure of light."

These two equations are in departure as either pure wave condition is secular in its given differentials under ordinary attribute of index and therefore there is a limit to how far light can propagate in the given past.

270 Conclusion

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2526)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time as a circle within a curved space.

The implications are that the universe is whole; and that no point of which the universe has originated begins or ends in the present; but within only that of the divine nature of a singular unifying mathematically empty and physically null relationship of balance. The singular defining relation is that time and space can be balanced against one another only by the undefinable completeness of an empty relationship by the meeting point everywhere in space and time as a singular balancing counter-participant to the identity.

Aims

The proof hence discussed possesses a few aims; of which are the proof that the central limit theorem is false in relation to the bivariate distribution in science. Following a historical context; the disproof of the functioning of the laser; as of it's advent is investigated; with the contingent

impossibility of the correct laws of thermodynamics for which the equation is updated to a new rendition; compatible with each given ideal gas equation and the macrocanonical ensemble; for which statistical univariate norms impose restrictions of locality and globality on realistic expectations of global warming.

We begin with the equation:

$$E = h\nu \quad (2527)$$

Due to the regular and combinatorial counting theorem of a hypersphere via Gauss distributed algebraic primes; the relation of uniqueness for that of the difference in Fermi and Bose statistics is found then in:

$$\Delta E = \hbar\nu + pm \quad (2528)$$

For which the relation of that of \hbar as a temperature conversion for the ideal gas constant; and that of m for that of the equipartition of that of p per revolte axis of locality of gas distribution (Debye wavelength) The counting is:

$$\frac{3}{4} \quad (2529)$$

Therefore; the Gauss number accounting is a logarithm.

$$\ln(p) \quad (2530)$$

And the distribution follows a power law; for that of criticality:

$$x^{\frac{2}{3}} \quad (2531)$$

As can be found from that of either the given that the partition into three degrees of freedom for momentum or that light exchange per singular two dimensional surface are in the ratio of two parallels per volume:

$$\frac{2}{3} \quad (2532)$$

The ratio of that of the separability of Bose to Ideal gas is therefore:

$$\frac{3}{4} \frac{2}{3} = \frac{1}{2} \quad (2533)$$

Therefore the Bose gas exists and is ideal; for the fractional statistics of that of the relation to light are a composite of electron to transition state. The laser is therefore incompatible with our given atmosphere; for the statistics which govern this device are in a composite algebraic relation of 2 to $\frac{1}{2}$.

Therefore the structure of Bose to Fermi statistics is simple as:

$$f_S = \frac{1}{1 - e^{\frac{-\beta_B T}{\kappa_T}}} \quad (2534)$$

To:

$$g_S = \frac{1}{1 + e^{\frac{-\beta_F T}{\kappa_T}}} \quad (2535)$$

The defining relation is:

$$f_S \prod g_S = \sqrt{N} \frac{3}{4} \ln\left(\frac{1 - e^{\frac{-\beta_B T}{\kappa_T}}}{1 + e^{\frac{-\beta_F T}{\kappa_T}}}\right) + N \quad (2536)$$

The counting of which is:

$$err(Z) = N^{-1/2} T^{\frac{3}{2}} \ln(N) \quad (2537)$$

The black body radiation of a laser is therefore in violation of that of this distribution by a bivariate distribution; for it is Wein distribution; per regular assortment of that of any number of purely random correlated events from zero to infinite scale in a finite surface enclosed volume. Therefore;

$$err(Z) = N^{-1/4} T^{\frac{3}{4}} N \quad (2538)$$

Where the second distribution is for Fermi; not Bose; statistics.

$$\frac{1}{8} \quad (2539)$$

Is then as being the product power; the relation of correlated Bose and Fermi Statistic conversion; and is a tertiary statistic to that of the disentangling of that of either independent Fermi Gas and Bose Gas; of which the Fermi Gas for Statistics is with Bose Statistics the above product relation for that of the counting of statistics; per that of the remainder of the relation of the product:

$$(f_S - 1) \prod g_S = \sqrt{N} \frac{3}{4} \ln\left(\frac{e^{-\frac{\beta_B T}{\kappa_T}}}{1 + e^{-\frac{\beta_F T}{\kappa_T}}}\right) + N \quad (2540)$$

The defining relation is a composite of the error functions of certainty eclipsing the means of:

$$f_S - f_S \prod g_S - (1 - f_S) \prod g_S = X(S) \quad (2541)$$

With the relation of that of their given :

$$X(S) = \sqrt{N} \frac{3}{4} \ln\left(\frac{1 - 2e^{-\frac{\beta_B T}{\kappa_T}}}{2 + e^{-\frac{\beta_F T}{\kappa_T}}}\right) + 2N \quad (2542)$$

The relation of which is:

$$\omega(X) = \frac{1}{3} \frac{\sqrt{N}}{\frac{1}{2} + N} \quad (2543)$$

Therefore proving the Bose Gas is underneath the error margins of the Fermi Gas; the laser is incompatible with nature per principle; and that each and every derivation of science since the advent of the laser as based of bivariate norms and the central limit theorem is a falsified statistic.

Introduction

One, we intend to determine facets of mathematical physics and physical theory in order to know of a reason why there are two manifold and statistical (geometric and probabilistic) measures of reference for the algebra of that of their combination; in relation to the subfields of topological soliton theory and the theory of phase diagrams. It is taken that there is [as a hypothesis] a Quantum Flow and a Gravitational Flow in a semi-classical [improved] context; from which emanate the two locii of that of derivative phenomenology all the way from primitive to advanced condensed matter physics to biology. Hence, theoretically the derived types of a relation dictate the factual (espository) relation of a residual and it's direct connective under mass or light like deficit, of two bearings; that of chaos and order, and that of graph archetype and cause to effect

correlative symmetry breaking - unto the establishment of procedural regions and threshold dichotomies of their interrelation (to which the argument is somewhat topological). Thus that of phenomenology may reach a pinnacle assumptive to which two functional ends connectively or disconnectively entrain to produce a synthesis of foundational experimental basis. What is more fundamental is the assumptive of certain natural measures, derived unitless measures and classical algebraic relations of functional utility. What is conveyed in mathematical law of the dynamic unto static quantities and strict inequalities on conserved quantities is a matter of the approach to the question asked. Hence for what is impression, of the composite and the strata; the open relation to 'the' presented in a foreground 'find's' it's manner of expression in a given 'background' of relevance to a strict determination of 'fit'. When one is commutative and the other non-commutative as with groups; the basis must be met with in a theory of analysis. Analytical approaches yield that of the combination of variant sets under integral notions of their gestalt enfolded relation in relation to series or number difference analytical functional spaces and sets of differential arguments unto dimension. Thus recurrence and pathology is rendered subscript to this theory and that of the algebraic definition find(s) expression in the analytical, geometric, and topological treatment the properties of differential equations to which intimates certain non-transcendental or transcendental functions. The key is that the movable pole singularities all relate to a commonality of dimensional reduction in measure theory for the given relationship of dynamical variance to conserved quantities, the finite expression of a finite closed group theory. This therefore rids us within the context of the finite molecular problem of the problems of infinity in symmetry breaking, and in an ironic twist leads to a definition of the true vacuum as a reciprocal relation to that of emergence in physics; - for that the gestalt properties of an object are then conveyed by independence with respect to composition and distributions of thermodynamical relationships of invariance. Thus for that of what is considered; an object of ordered and finite relation is analytical in movable singularity, finite domain, and thermodynamical invariance, to which unites the demand for that of the foundations of physical law and theory. Therefore closure is found in the description of the theorem of a certain Fourier presence or persistence; indeed when that of $\frac{1}{2}$ find's it's way into the exponential eigenvalue and potential isosymmetry of a folded relation; the solution to a Lagrange problem as it relates to direct correlate to geometry and action. This $\frac{1}{2}$ although to departure is connected to the structure of the Riemann-Zeta strip as expression of a relationship between Order and Chaos; - that of the (primitive) & derivative balance between harmony and disharmony through to which structure is founded upon a graph and crystal (periodic or aperiodic); and that of threshold and algebraic structure of non-linear theory; without which period and tempo is not defined through physical quantities and qualities of inspection. Thus each measureable known is subject to many measurement processes of their relation; - from which phenomena are related and through which that of a new statistical model of domain and particle invokes a folding and reciprocation of thermodynamical and electromagnetic and gravitational nature. Therefore that of clarifier and answerable question at any mental sphere of thought experiment is constrained to which mathematics is adaptive and suited to the physical problem of it's fit. Hence the answer to phenomenology is found 'inwardly' through a process of introspection within the individual and not outwardly within and of this given world.

Experimental Implications

This suggests two experiments. One to measure the rate of separation of superconductors and magnets under freefall, and confirm if this is a generally covariant acceleration multiplied by the metric. (This has been performed with a confirmation to one part in 10^{-12}).

And two, a practical experiment for confirmation of the general covariance of quantum mechanics. A magnet levitated to varying heights by a superconductor as controlled by a current, and subsequent measurement of the mass of the superconductor by photons.

Superconductivity

If we take as knowns that there is a generally diffeomorphic transformation of our coordinates for a given system, then position and momentum take on new values, and with an acceleration there appears a coordinate anomaly. This coordinate anomaly is the residual effect of scaling by an unknown factor now known as:

$$\beta \tag{2544}$$

These transformations of momentum and position to their generally covariant representations with the equivalence principle then imply that there is a gap, because different local inertial representations will differ under the auspices of a singular global description. That this effect of different is not removable, implies that general relativity, and the theory of superconductivity are real physical phenomena, and not artifacts of our description. They are genuine effects of the lack of a local to global translation of general covariance, and implicate a gap. For instance imagine a series of elevator(s) around the world, and out in space. If we make them numerous enough and equivalent to the mass of the Earth then the effect is a series of up and down motions is as if the Earth were still present. When we remove the constraint of support, they will evolve in an identical manner to the electrons in a superconductor. But because for a different observer there is no global agreement on local inertial frame, it will be the case that there will arise a difference in description for the local frames.

They will not differ in their local description of physics, but relatively there will be a gap that appears for any one in relation to the singular global averaged description. Hence we arrive at a situation of global to local difference in description arising at differences in weight, and consequent potential felt by the electrons, binding them together. It is precisely these four things:

- 1.) Covariance over \hbar .
- 2.) Shared proper time.
- 3.) An instantiation of the equivalence principle.
- 4.) A difference from local to global description of free fall.

That make superconductivity real in the high temperature superconductors. It is the difference from local to global frame of description that creates the suitable conditions for a gap to arise in superconductivity. The first statement of this problem stems from a question: *"How does the equivalence principle manifest in superconducting magnetic levitation and free space interaction between a magnet and a superconductor so as to maintain the Meissner effect?"*

The first given accords with the equivalence principle, and the second with quantum mechanics:

- 1.) The speed of light is an invariant quantity, known as 'c'.
- 2.) There is an absolute diamagnetism of superconductivity.

This admits us to make a few conclusions:

1.) Non-Inertial support or accelerative frame:

a.) In a curved gravitational field, the system is static.

b.) In a non curved accelerative frame, the system is static.

2.) Inertial free fall or free space:

a.) Under gravitational free fall, the system is static but inertial.

b.) In free space, the system is static but inertial.

These are supported by the notion that: Due to the dot product of magnet with superconductor being a pure scalar, the dot product must remain fixed. For if we presume there to be a differential, we find that either energy conservation in the frame of the superconductor or magnet are violated if the dot product is not preserved under the presence of a gravitational field, or it also follows that if the dot product is preserved, but the differentials are opposite, there will be a violation of the Meissner effect.

This is consistent with the laws of electromagnetism, whereby a changing magnetic field from motion will convert into an electric field curl and therefore a changing magnetic field of opposite nature. Thus the nature of the Meissner effect and energy conservation are only satisfied if and only if the differentials of these quantities are zero in the case of static levitation or non-zero but equal and opposite in the case of inertial separation in space. Thus we find that if the motion is inertial, and gravitationally free, the magnet and superconductor will separate conserving energy and momentum and preserving the Meissner effect in a Lorentz invariant fashion, and if the motion is non-inertial and accelerated, with or without a gravitational field, the effect will only be satisfied by the inclusion of general covariance, for which the Meissner effect can be seen as a prediction and a consequence.

Thus we can surmise that in general a magnet and superconductor interact as if the magnet's magnetic field is the displacement of a generally covariantly evolving electromagnetic field, and that in general the motion is inertial, as the generalization of the static property of the system. Finally we find that if the electromagnetic field displacement is equivalent and opposite by virtue of sign compared to the gravitational displacement, a magnet and superconductor will remain static at any distance. It follows that if a superconducting magnet system is appropriately established, there will be an inertial orbital mechanic analogous to the motion of the Moon about the Earth.

Thought Experiment

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity.

The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable from the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers

and is expressible as the integral of a field of curvature:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (2545)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (2546)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space. For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion. Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect complete.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime.

If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ . In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_{\mu}^S = \Omega_{\mu}^{\nu} \Lambda_{\nu}^{\mu} A_{\mu}^M \quad (2547)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. If there is no equivalency we could attribute outside factors, if there is equivalency then Λ and Ω show equivalent and opposite curvatures. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the

rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (2548)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (2549)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero. An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero. Thus the Meissner effect and energy conservation can be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (2550)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2551)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them. Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \quad (2552)$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability. The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor

is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase. For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor. Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \tag{2553}$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z)\hat{z} \tag{2554}$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \tag{2555}$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \tag{2556}$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z)\hat{z} \tag{2557}$$

And the superconductor with a magnetic field:

$$-\mu f(z)\hat{z} \tag{2558}$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma \mu f(z)\hat{z} \tag{2559}$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma\mu f(z)\hat{z} \quad (2560)$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at its location, equation (16). The distance between the superconductor and magnet is as a given:

$$R = cdt \quad (2561)$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \quad (2562)$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer. This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \quad (2563)$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present location:

$$v \rightarrow \gamma v \quad (2564)$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned} \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 \left(\frac{v\gamma dt}{cdt} \right)^{2n} \\ &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} \\ &= -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} \\ &= -\mu^2 f(z)^2 \end{aligned} \quad (2565)$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z)\hat{z} \quad (2566)$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall

with a different metric. Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia. For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity. The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. A translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics. This results in two viewpoints:

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (7) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system. For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (2567)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. So we must hold as true that:

$$\partial_{\mu} \log(\Omega_{\nu}^{\mu}) = -\partial_{\mu} \log(\Lambda_{\nu}^{\mu}) \quad (2568)$$

This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for

the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general covariance within quantum mechanics.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

Mannerism of Approach

It is necessary to prescribe a method for that of *analytical treatments* that we reduce the problem of four dimensional calculus to one and one dimension. Later we will find **explicit** declaration of the manner in which this 'newly cast' relativity is unique and necessary for the completion of the law's of physics. For now, it is understood that the algebraic properties of the space and field be met with convolution theorem's on Fourier Analysis.

The unique properties of mathematical lemma; lead to, for a representation theory of a world; to a certain question. What are the limitations of geometry and geometric language as it applies to secularity? For in entitled truncation; there may be anomolies; but there is a distinction of the radical space and it's quotient graph structure. Subsidiary notions of a perspective-space indicate that Desauges Theorem is valid aperceptually to a distinction in linguistic contrast. That we have the demand of a secular determinant in origination and that of a derived structure via a mapping is desired; but the question is as to it's necessity. When there is provoked a distinction; do these come in the finite number series, and if so, are they quotient spaces, that of rational distinctions (algebraically closed and finite) or are they an interger valuation. It appears (solely) manifest the fractional decomposition is contained within the integer retrospecticus.

That of a finite rational expression within a contrasted integer retrospecticus is the derivational root of a Lie differential space. That an Affine space would co-attribute a relation of it's bi-reflection derives from mapping extremal relations. Thus the question of group homotopy comes down to fulfillment.

Thus it is that the elliptic power set contains rational expressions in three dimensional analytic progression. The question is when this is appropriate. For that of a distinction; the linguistic key is beset upon group within analytical relation. Thus of the two-sphere contained in one dimension; that of a two-dimensional segment of a line in two-dimensions to which the contrast

is empty... the residual information; it is noted, is not the parallel of a flat isomorphism. Thus vantage and perspective hold entirely.

Treatesie on Fourier Analysis

Thus, the following properties are determined:

$$\int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} = 2\pi\delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (2569)$$

$$\sum_n \sum_m e^{+in\xi} * e^{-im\xi'} = \delta(\xi - \xi') * \partial_{\xi}\delta_{n,m}(\xi) \quad (2570)$$

$$F_{n,m}(\xi') = \sum_n \sum_m e^{+in\xi} * e^{-im\xi'} f_n(\xi) f_m(\xi) \quad (2571)$$

$$f_n(\xi') f_m(\xi') = \frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) \quad (2572)$$

Where:

$$F_{n,m}(\xi') = \partial_{\xi}(f_n(\xi) * f_m(\xi)) \Big|_{\xi=\xi'} \quad (2573)$$

Replacing:

$$f_n(\xi) \rightarrow \delta_n(\xi) \quad \text{or} \quad f_m(\xi) \rightarrow \delta_m(\xi) \quad (2574)$$

We have:

$$F_{n,m}(\xi, \xi') = (\partial_{\xi}\delta_n(\xi)) * f_m(\xi) \Big|_{\xi=\xi'} + \delta_n(\xi) * \partial_{\xi}f_m(\xi) \Big|_{\xi=\xi'} \quad (2575)$$

So:

$$\frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) = \frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi (\partial_{\xi'} f_n(\xi') * f_m(\xi') + f_n(\xi') * \partial_{\xi'} f_m(\xi')) \quad (2576)$$

Therefore:

$$\frac{1}{2\pi} \int_{-\pi}^{\pi} d\xi e^{-in\xi} * e^{+im\xi'} F_{n,m}(\xi) = f_n(\xi') f_m(\xi') \quad (2577)$$

From which (1) and (2) hold naturally by extension.

Substitution

Thus we hypothesize a quantity of form:

$$V_{l,k}(\xi) = f_l(\xi) f_k(\xi) = (\alpha_l \xi + \tau_l)(\beta_k \xi + \iota_k) \quad (2578)$$

To find that of the following statement as-an-ansatz:

$$V = Z_{l,k}(\xi') I_{0,T} e^{+\frac{V_T}{\tau_T}} + Z_{l,k}(\xi') I_{0,D} (1 - e^{-\frac{V_D}{\tau_D}}) + r \quad (2579)$$

Thus:

$$F_{l,k}(\xi') = \beta_k(\alpha_l \xi' + \tau_l) + \alpha_l(\beta_k \xi' + \iota_k) \quad (2580)$$

So:

$$V = Z_{l,k}(\xi') F_{l,k}(\xi') = Z_{l,k}(\xi') (2\alpha_l \beta_k \xi' + (\beta_k \tau_l + \alpha_l \iota_k)) \quad (2581)$$

But:

$$\frac{V_T}{V_D} = \lambda \frac{\tau_T}{\tau_D} \quad (2582)$$

So that their curvatures are within a ratio of $\lambda...$ then with an imaginary impedance we have:

$$\lambda\tau \log\left(\frac{V-r}{2I_0 Z_{l,k}(\xi')}\right) = V \quad (2583)$$

Under the assumption that $V-r$ is matched in linear term with that of the first part of ZF we have:

$$Z_{l,k}(\xi')(2\alpha_l\beta_k\xi') = r \quad (2584)$$

$$Z_{l,k}(\xi')(\beta_k\tau_l + \alpha_l\iota_k) = V-r \quad (2585)$$

So that:

$$\lambda\tau \log\left(\frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0}\right) = V \quad (2586)$$

Application of the ansatz reveals:

$$\frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0} = \frac{\beta_k\tau_l + \alpha_l\iota_k}{2I_0} + \left(1 + \frac{2I_0}{\beta_k\tau_l + \alpha_l\iota_k}\right) \quad (2587)$$

Or:

$$1 + \frac{2I_0}{\beta_k\tau_l + \alpha_l\iota_k} = 0 \quad (2588)$$

So:

$$\beta_k\tau_l + \alpha_l\iota_k = -2I_0 \quad (2589)$$

With the result via earlier substitution that:

$$V = \eta\psi(\vec{k} \cdot \vec{x} - \omega \cdot t) \quad (2590)$$

With:

$$\eta = -i\lambda\tau \quad (2591)$$

Such that gain is unity and we have saturation in the quadratic ZF ; and such that the wave is orchestrated equivalently between (and of) transistor and diode. Thus $V = IR$ is resolved via the original ansatz; with R a linear function of the harmonic pole; that of I a function of the pole, and V a quadratic. When these details are worked out it is found the transformation produces a first differential in time for IR and in space with the two of transistor and diode; and then in space with the capacitor and inductor r ; and in the squared rendition for capacitor and inductor and a separable V of quadratic nature... Thus there are two displacement's in the system.

Substitution into earlier equations with the provided ansatz at the operational amplifier reveals:

$$R \frac{\partial}{\partial t} V_{l,k}(\xi') = V_{l,k}(\xi') + r \quad (2592)$$

With:

$$r = RLI_1(\vec{x}, t) - RMI_2(\vec{x}, t) + RC \frac{\partial}{\partial t} V_{1,2} + V_{l,k}(\xi') F_{l,k}(\xi') \quad (2593)$$

But the inductive element for of current differential to voltage difference may be written as:

$$\frac{\partial}{\partial t} I_{1,2} \leftrightarrow v \frac{\partial}{\partial x} \psi_{1,2}(\vec{x}, t) \quad (2594)$$

Therefore, if:

$$v^2 R^2 LM + RC = \rho \quad (2595)$$

We get:

$$-i\tau R \frac{\partial}{\partial t} \psi_{1,2}(\vec{x}, t) = R\kappa^2 \frac{\partial^2}{\partial x^2} \psi_{2,1}(\vec{x}, t) + RC \frac{\partial}{\partial t} \psi_{1,2}(\vec{x}, t) + V_{l,k}(\xi') F_{l,k}(\xi') \quad (2596)$$

With τ , and ι in unit's of voltage [**v**] and α and β , unitless... ξ in units of voltage [**v**]. We now utilize F for that of the differential of the impedance comparative to the voltage; it is parallel; thus the impedance is indeed $\frac{F}{R}$ when treated as a voltage divider.

$$i \frac{\partial}{\partial t} \psi_1(\vec{x}, t) = \eta \frac{\partial^2}{\partial x^2} \psi_2(\vec{x}, t) - \rho |\psi_1(\vec{x}, t)|^2 \psi_2(\vec{x}, t) \quad (2597)$$

$$i \frac{\partial}{\partial t} \psi_2(\vec{x}, t) = \eta \frac{\partial^2}{\partial x^2} \psi_1(\vec{x}, t) - \rho |\psi_2(\vec{x}, t)|^2 \psi_1(\vec{x}, t) \quad (2598)$$

And with the *resulting* constraints:

$$\eta = \frac{\omega^2 LM}{R(\tau + \omega C)} \quad \rho = \frac{(\alpha_l \beta_k)^2}{2I_0} \quad (2599)$$

Thus the matrix-field equation is:

$$i\partial_t \Psi(\vec{x}, t) = \sigma_x (\eta D_{xx} + \rho |\Psi(\vec{x}, t)|^2) \Psi(\vec{x}, t) \quad (2600)$$

In conclusion, as the term with η and of ρ convey *sources* in which there is a juxtaposition of particle 1 for 2 and 2 for 1; it is true that the Dirac equation fold's in-reverse, in relation to relativistic factors of γ_0 in any antiferromagnetic material which is doped. This result, exposes the η_0 , here encoded in ρ , to which is the guiding attraction as a consequence of hole and spin **duality**. As a result of reversal in the non-linear Shroedinger equation of $1 \leftrightarrow 2$; that of the inertial response to A_μ in D_μ is reversed *in response to* $\eta_0^{-1} \rightarrow \infty$ as $|r_1 - r_2| \rightarrow 0$.

Completions of Analytical Approaches

With this approach to 'electrical' and 'particle-wave' or of our choice, 'soliton' descriptor on that of methodology, the next stage is to refine the Analysis and produce validation of the observation on Superconductivity. Namely that the Law's of physics are united from above by phenomonology, but motivate mathematical description (in a nonlinear to linear approach) - and yet that Mathematic's is the true foundation of the Universe - to be our celebrated result.

Thus it is to refine the notion at that of a likeness to a 'transversality class' of which there(in) there is a foundation to the admixture within and outside a Superconductivity. What we resolve to is a new form of Symmetry Breaking to which is novel, but elucidated for the cross-dichotomy of Chaos and Order. Thus it is that the varieties of measurement seemingly all pertain to that of a superconductor. And of that of electrical diamagnetism and it's connective feature to gravitational dia-relativity is discovered and proven.

Thus it is that this superconducting phenomena is related back to that of the HTSC and BCS theory for what is a cast relation of aforementioned continuation of the Universe. It is a prediction that taking two optical fibers and using them to screen a Superconductor should produce *via a

topological argument; that of a Spin-Diffraction similar to the construction of the Aharnov-Bohm effect. Thus light is shown to admit a singular frequency of Debye-splitting.

Thus the question posed of superconductivity; does it remain a unitary relation or a non-unitary relation is that it is a unitary relation formed from a non-unitary relation; to which are the class distinctions of a fully living or fully dead cat beyond the undecidability of measurement. This stands in contrast to EPR and their *thought experiment for in that of the silent observation to which uncertainty is illustrated as bearing a 'measurement without collapse'. To be finally refined is the notion that the Uncertainty Principle find(s) reconciliation with Gravitational theory when it is considered that different experiment do in fact map to isometries; when this is meant as instructive of that of topological order. This yields the ultimate class distinction on Chaos.

Reciprocity

Within nature there appears to exist at least one a priori reason for scale covariance of the measure of quantum probability and the measure of spacetime. This is the statement of general covariance, by which one may speak of identical states in space. There exists a scale in both the description of quantum mechanics and general relativity. For instance there is \hbar in quantum mechanics and c in special and general relativity. These are taken to be universal, fixed constants. Of importance in understanding nature with both theories present is that there exist consistency with respect to the complete description of nature. For this it is important to establish and qualify the nature of invariance. In this paper the nature of scale invariance of quantum mechanics with general relativity is investigated. This invariance leads to the additional conclusion that the description of a state is covariant under transformation in spacetime. With energy conserved, all aspects of the state return to their initial values with only a temporal phase shift for each component of the state, under transport in space time. The classical nature of observation must in part be reconciled with the quantal. The addition of this field is so as to produce a complete description of nature with physical continuity of quantum and gravitational states and independence of these two theories. In this paper we establish general covariance of the forces of gravity and quantum mechanics with electromagnetism for the levitation of a magnet by a superconductor with a support and under freefall. This leads at once to the proposed scale invariance of \hbar . This is directly identified with covariance of the measure of quantum probability and the measure of space time.

Introduction

The quantum world evolves at submicroscopic wavelengths and extends to the macroscopic scale in superconductors. Particles are represented by wavefunctions, which undergo virtual processes in which they exchange energy and momentum with each other and the environment. Gravity on the other hand, is the geometry of spacetime. It is taken as a given that particles in a gravitational field are simply moving along straight lines in a curved space. A complete picture of quantum mechanics with gravity explains the back reaction on the metric from the quantum fluctuations in Hawking radiation. For this reason, it is important to frame the implications of extending general covariance to quantum mechanics. Additionally, it is the starting point for properly posing such questions so as to resolve the Schroedinger cat and EPR paradoxes, because this change in perspective ties together our notions of quantum and space time.

This paper aims to understand independence and dependence of these theories on one another by appealing to consistency when general covariance is applied to quantum mechanics.

This is accomplished by using thought experiments involving a superconductor and magnet.

In a superconductor a macroscopic quantum wavefunction manifests due to a phase transition and the development of a macroscopic gap to quantum excitations. Due to the large scale of this energy gap, excitations to states that scatter and therefore expend energy are virtually forbidden and the material condenses at a lowered temperature to support a state called superconductivity. In this state electrons or holes form pairs and support a state that expels all magnetic fields, an effect called the Meissner Effect.

Covariance of Description

One major reason to believe in a covariant description of quantum mechanics and general relativity is the requirement of general covariance. If it were not the case that \hbar were a constant with the speed of light, c , also constant, gravity would alter \hbar in some prescribed way. For instance the quantization condition would change in a gravitational setting, and the state would vary in a gravitational field.

There would arise *anomalous forces* and a quantum state would be capable of altering the condition of freefall from effects arising interior to the frame of the state, as the following example illustrates.

For instance consider the circular wave state for which the quantization condition is $\lambda = \frac{2\pi}{n}$ or $\omega = \frac{2\pi}{n}c$. If \hbar changes, the momentum changes and the frequency changes, thus $\hbar\omega = E$ becomes $\hbar'\omega = E'$.

By the following relativistic relationship:

$$E^2 = p^2c^2 + m^2c^4 \quad (2601)$$

With a conserved gravitational interaction \hbar would either increase or decrease with the gravitational field. If $\eta\hbar = \hbar'$ to represent this relationship then:

$$E'^2 = E^2 = \frac{\gamma^2}{\lambda^2}\eta^2\hbar^2 + m^2c^4 \quad (2602)$$

By energy conservation. With a conserved energy the quantum state would have to change in effective rest mass. The state would either fall slower than freefall, (if η increases as γ increases), or would fall faster than freefall (if η decreases as γ increases). Here the change in rest mass would mean energy of the gravitational interaction would change, and the particle would fall faster or slower, in contradiction with particles of different masses falling at the same rate in a gravitational field.

Hence an anomalous force appears, when in reality the state can only follow the geometry of spacetime. Another way of looking at this, is that the quantum mechanical picture would not be independent of gravity.

For the purpose of maintaining no fictitious force it is necessary the object maintain the condition of normal gravitational freefall. From this \hbar and c are universal constants, and the quantum and gravitational descriptions must covary in keeping these constant. We next explore this invariance of \hbar with thought experiments involving levitation of a magnet by a superconductor, both with a support and under freefall.

Thought Experiments

Experiment I

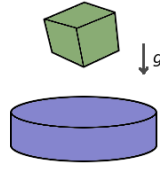
Hypothesis I: *Changes in rest mass of a superconductor and a magnet are null during the process of levitation with a support and under freefall.*

For example, consider a superconductor in a temperature bath. Temperature changes take a certain energy away from the superconductor and change the rest mass energy by a constant. This is distinct from an intrinsic change in mass of the superconductor under the process of levitation as one is a constant, and the other is a function of freefall. Additionally, there is mass energy content due to heat, as dependent on intrinsic non-mass energy content, and there is intrinsic energy content due to rest mass itself.

It is important to distinguish here between the rest mass and the inertial or gravitational mass. Inertial and gravitational mass will increase in accordance with the acquired kinetic and gravitational energy of freefall, while rest mass typically remains generally invariant. The following illustrates this.

Equivalency between inertial and gravitational mass means that a spontaneous mass lowering of the superconductor is equivalent to a hypothetical mass energy lowering of: $\Delta E = -\Delta mc^2$, if one exists.

Now consider a superconductor brought to superconduct by temperature changes to levitate a magnet in a gravitational field.



In levitating a magnet (green) by a diamagnetic field, a superconductor (blue) acts to lower the electromagnetic potential energy between the superconductor and magnet and raise the potential gravitational energy of the magnet. Here gravitational energy is taken as gravitational field energy.

The bodies under interaction convey a force between each other, and both bodies are in mutual equilibrium during the process of levitation. Because there is no such thing as gravitational acceleration (it is an artifact of spacetime), we can treat the system without the gravitational force, and analyze the motion of the center of mass separately.

The total force equation for the magnet (M) in one dimension (height) with hypothetical mass change function f_M is:

$$\underbrace{-\frac{\partial}{\partial \vec{r}}(\vec{\mu}_M \cdot \vec{B}_S)}_{\text{Magnetic Interaction}} = \underbrace{\frac{\partial}{\partial t}(\gamma_M f_M m_M \vec{v}_M)}_{\text{Momentum}} \quad (2603)$$

Where m_M is the rest mass as measured at rest and f_M is the function multiplying mass and changing as a function of levitation. \vec{B}_S is the magnetic field of the superconductor and μ_M is the magnetic moment of the magnet.

The total force equation for the superconductor (S) in one dimension (height) is:

$$\underbrace{-\frac{\partial}{\partial \vec{r}}(\vec{\mu}_S \cdot \vec{B}_M)}_{\text{Magnetic Interaction}} = \underbrace{\frac{\partial}{\partial t}(\gamma_S f_S m_S \vec{v}_S)}_{\text{Momentum}} \quad (2604)$$

Now imagine a magnet levitated by a superconductor in a gravitational field with a support keeping the superconductor from undergoing freefall. When the support is removed the superconductor and magnet fall freely. Consider the description of the superconductor and magnet in

their center of mass frame and within the gravitational field in which the two bodies are falling. From this thought experiment it is found there can be no additional mass energy change of the superconductor or magnet in levitation under freefall.

If there existed a noncovariant change of mass of the superconductor or magnet in levitation under freefall, the bodies would accelerate differently in relation to one another, shifting the center of mass in relation to the center of mass for covariant freefall. As a result, generally covariant changes are the only changes admitting a preservation of the center of mass. Thus rest mass changes are null and any changes in mass are the result of covariance.

It is useful to analyze this with mathematics:

With the equal and opposite nature of the magnetic force on each body:

$$\frac{\partial}{\partial t}(\gamma_M f_M m_M \vec{v}_M) + \frac{\partial}{\partial t}(\gamma_S f_S m_S \vec{v}_S) = 0 \quad (2605)$$

Integration of this produces:

$$\gamma_M f_M m_M \vec{v}_M + \gamma_S f_S m_S \vec{v}_S = 0 \quad (2606)$$

The center of mass $h_{c.o.m.}$ is calculated by:

$$\frac{\gamma_M f_M m_M h_M + \gamma_S f_S m_S h_S}{\gamma_M f_M m_M + \gamma_S f_S m_S} = h_{c.o.m.} \quad (2607)$$

Differentiating this with the denominator moved to the right hand side produces:

$$\begin{aligned} & \frac{\partial}{\partial t}(\gamma_M f_M m_M h_M + \gamma_S f_S m_S h_S) \\ &= \frac{\partial h_{c.o.m.}}{\partial t}(\gamma_M f_M m_M + \gamma_S f_S m_S) \end{aligned} \quad (2608)$$

As energy conservation is written as:

$$\frac{\partial}{\partial t}(\gamma_M f_M m_M c^2 + \gamma_S f_S m_S c^2) = 0 \quad (2609)$$

The center of mass should undergo freefall, hence in comoving coordinates $\frac{\partial h_{c.o.m.}}{\partial t} = 0$, and:

$$\frac{\partial}{\partial t}(\gamma_M f_M m_M h_M + \gamma_S f_S m_S h_S) = 0 \quad (2610)$$

Expanded this is:

$$\begin{aligned} & \left(\frac{\partial}{\partial t}\gamma_M\right)f_M m_M h_M + \left(\frac{\partial}{\partial t}\gamma_S\right)f_S m_S h_S \\ & + \gamma_M \left(\frac{\partial}{\partial t}f_M\right)m_M h_M + \gamma_S \left(\frac{\partial}{\partial t}f_S\right)m_S h_S \\ & + \gamma_M f_M m_M \left(\frac{\partial}{\partial t}h_M\right) + \gamma_S f_S m_S \left(\frac{\partial}{\partial t}h_S\right) = 0 \end{aligned} \quad (2611)$$

By the definition of physical displacement in a gravitational field with relativistic length contraction factor γ , $v_S = \frac{\partial(\gamma_S h_S)}{\partial t}$ and $v_M = \frac{\partial(\gamma_M h_M)}{\partial t}$. With these definitions the magnetic force law becomes:

$$f_M m_M \frac{\partial(\gamma_M h_M)}{\partial t} + f_S m_S \frac{\partial(\gamma_S h_S)}{\partial t} = 0 \quad (2612)$$

This implies for the expanded center of mass equation that:

$$\gamma_M \left(\frac{\partial}{\partial t} f_M \right) m_M h_M + \gamma_S \left(\frac{\partial}{\partial t} f_S \right) m_S h_S = 0 \quad (2613)$$

The center of mass equation also implies:

$$\gamma_M f_M m_M h_M = \eta = -\gamma_S f_S m_S h_S \quad (2614)$$

Where η is a constant, since the temporal derivative is equal and opposite for these two terms. Using this with the magnetic force law produces:

$$\left(\frac{\partial}{\partial t} f_M \right) \frac{\eta}{f_M} - \left(\frac{\partial}{\partial t} f_S \right) \frac{\eta}{f_S} = 0 \quad (2615)$$

Which can be written as:

$$\left(\frac{\partial}{\partial t} f_M \right) \frac{\eta}{f_M} = \beta = \left(\frac{\partial}{\partial t} f_S \right) \frac{\eta}{f_S} \quad (2616)$$

The solution by separation of variables is the exponential function of form:

$$f = A e^{\frac{t}{\lambda}} \quad (2617)$$

Written out, energy conservation is:

$$\begin{aligned} & \left(\frac{\partial}{\partial t} \gamma_M \right) f_M m_M c^2 + \left(\frac{\partial}{\partial t} \gamma_S \right) f_S m_S c^2 \\ & + \gamma_M \left(\frac{\partial}{\partial t} f_M \right) m_M c^2 + \gamma_S \left(\frac{\partial}{\partial t} f_S \right) m_S c^2 = 0 \end{aligned} \quad (2618)$$

At the beginning of freefall there is no kinetic energy and γ starts from a velocity of zero, where the slope of γ is zero, so, $\frac{\partial}{\partial t} \gamma_M = \frac{\partial}{\partial t} \gamma_S = 0$, leaving for the initial condition:

$$\gamma_M \left(\frac{\partial}{\partial t} f_M \right) m_M c^2 + \gamma_S \left(\frac{\partial}{\partial t} f_S \right) m_S c^2 = 0 \quad (2619)$$

The signs on the γ are both positive definite, so the derivatives of f are either 0 or related by a negative sign. This admits the conclusion that the derivatives for magnet and superconductor, $\frac{\partial f}{\partial t}$ both equal zero, to satisfy both equations (16) and (19).

Also, because the system starts into freefall from rest, the initial condition is $f = 1$, so that rest mass is equivalent to measured rest mass at the beginning of freefall. This implies that $A = 1$ and $\lambda = \infty$ for both functions. This being the case the constant of separation, β is zero, and:

$$f_M = f_S = 1 \quad (2620)$$

Therefore because of general covariance the rest mass energy change of a superconductor and magnet besides that due to temperature is null. From this, *rest* mass (m) changes (Δ) of the superconductor (S) and magnet (M) are zero under levitation with a support or under freefall:

$$\Delta m_S = \Delta m_M = 0 \quad (2621)$$

Experiment II

Hypothesis II: *The changes in quantum electromagnetic energy and gravitational energy are equal and opposite and both generally covariant.*

In the levitation of a magnet three main energy changes are encountered: kinetic, quantum electromagnetic, and gravitational.

The energy of the magnet (M) is:

$$E_M = \underbrace{-\vec{\mu}_M \cdot \vec{B}_S}_{\text{Magnetic Interaction}} + \underbrace{\gamma_M m_M c^2}_{\text{Rest, Kinetic and Gravitational Energy}} \quad (2622)$$

Where m_M is the rest mass, \vec{B}_S is the magnetic field of the superconductor, and $\vec{\mu}_M$ is the magnetic moment of the magnet.

The energy of the superconductor (S) is:

$$E_S = \underbrace{-\vec{\mu}_S \cdot \vec{B}_M}_{\text{Magnetic Interaction}} + \underbrace{\gamma_S m_S c^2}_{\text{Rest, Kinetic and Gravitational Energy}} \quad (2623)$$

Where m_S is the rest mass, \vec{B}_M is the magnetic field of the magnet, and $\vec{\mu}_S$ is the magnetic moment of the superconductor.

First, the magnet must undergo a positive change in gravitational energy with the Earth to levitate. The magnet loses energy from interaction with the superconductor since the magnet repels from the superconductor and this repulsive and positive energy magnetic field interaction goes down in strength as the magnet levitates.

Since the superconductor at rest with a support does not move in relation to the Earth, and the rest mass energy change of the magnet is found to be zero, the entire quantum electromagnetic energy change of the magnet is the entire gravitational energy change of the magnet with the reversed sign. By energy conservation it is also true that the closed system of superconductor and magnet, with no change in energy of the magnet, predicts no change in the net energy of the superconductor.

Because the superconductor is at rest and its rest mass energy change is zero it can undergo no additional energy lowering or change from the expulsion of an electromagnetic field and the simultaneously generated supercurrent. Given this, these energies, of the form of electromagnetic energy and kinetic energy must be equal and opposite energy changes. This kinetic energy raises the rest mass energy of the superconductor while the expelled magnetic field energy lowers the rest mass energy by an equal amount. The kinetic energy hence raises the gravitational energy (by inertial to gravitational mass equivalency), so the energy changes between these two theories are equal and opposite.

In this process energy changes forms from quantum electromagnetic to gravitational. As a result:

$$\Delta E_M = \Delta E_{M,GR} + \Delta E_{M,QM-EM} = 0 \quad (2624)$$

$$\Delta E_S = \Delta E_{S,GR} + \Delta E_{S,QM-EM} = 0 \quad (2625)$$

In this system the changes of energy are thus negative for two factors of electromagnetic energy, and positive for two factors of gravitational energy with the Earth. All energies are accounted for, and the total energy change is zero for both the magnet and the superconductor:

$$\Delta E_M = 0 \quad \Delta E_S = 0 \quad (2626)$$

Experiment III

Hypothesis III: *The quantum electromagnetic force between the superconductor and the magnet demonstrates general covariance in the state of support and under freefall.*

There exists a difference in gravitational energy over the displacement in space between the superconductor and magnet by the fact an acceleration of a gravitational field exists. Additionally, due to the curved nature of the gravitational field, the rate of acceleration is different over this height as acceleration changes in magnitude in space. The acceleration due to gravity and the repulsion due to quantum mechanics and electromagnetism between the superconductor and magnet determines the bodies coming closer together or moving apart as they undergo freefall.

Given the force of repulsion between a superconductor and magnet are in balance with the force of gravity under the action of levitation with a support, the forces of the bodies towards one another by the gravitational field and apart by the electromagnetic field are equal and opposite.

If the equivalence principle holds true the rate of freefall is the same for all bodies compared at the same point in space. But since they are compared over space the situation is applied differently. It is the center of mass of the superconductor and magnet which undergoes freefall. If there exists a force pushing the magnet and superconductor apart in the frame of freefall then the center of mass must be preserved in its motion to retain the equivalency principle.

Any repulsive (or attractive) interaction subjects the bodies to new gravitational fields and displacement in the gravitational field. Since the masses in general differ the displacement is not symmetric in general, and the gravitational field causes the bodies to fall at rates altering the displacement.

Now consider a superconductor and magnet in space. A gravitational interaction between the superconductor and magnet is as a given covariant. The addition of another gravitational object causes the two to undergo covariant freefall. The mass of the object further away from the massive gravitational body is larger than at rest, and to a lesser degree proportionally than the closer mass by the influence of the gravitational field.

The relativistic factors on both masses increase disproportionately under freefall but do not alter the center of mass from a condition of freefall. Since gravitational mass may be equated to inertial mass, and the gravitational force is covariant, the center of mass preserves a covariant relationship to the masses as the gravitational field grows in strength for both bodies.

However, the center of mass for a noncovariant quantum electromagnetic force would predict a center of mass determined independently of the gravitational field. Relativistic factors scale disproportionately in a gravitational field. The center of mass for a noncovariant force hence does not preserve a covariant relationship to the massive bodies. This results in a difference in the center of mass from freefall. Thus, a noncovariant quantum electromagnetic force predicts a different center of mass and produces a departure from freefall by introducing a displacement of the bodies inconsistent with accelerations from gravity, and therefore the equivalency principle.

Therefore the quantum electromagnetic force of levitation must scale with general covariance to agree with the results of general relativity. Thus the relative strengths of the quantum electromagnetic and gravitational forces for a superconductor and magnet covary with each other in an externally applied gravitational field.

Essentially, this amounts to the distinct difference between the nonrelativistic (nr) and relativistic (r) center of mass for the quantum force and the gravitational force:

$$\frac{m_M h_M + m_S h_S}{m_M + m_S} = h_{nr,c.o.m.} \neq \quad (2627)$$

$$\frac{\gamma_M m_M h_M + \gamma_S m_S h_S}{\gamma_M m_M + \gamma_S m_S} = h_{r,c.o.m.} \quad (2628)$$

If the quantum force is covariant then it goes to zero as the gravitational force goes to zero. Hence a levitation experiment under freefall preserves a generally covariant distance of separation under freefall, as is observed. [?, ?]

This shows the superconducting levitation is quantum in origin since quantum forces scale in a generally covariant manner. For, if the force were only electromagnetic, the two bodies would continue to repel and fly apart when put into freefall from a state of levitation.

The Principle of Reciprocity

In the superconductor magnet levitation experiment the measure of space becomes larger as the bodies exhibit freefall and the gravitational force increases in strength. The scale of spacetime is the Lorentz contracted invariant quantity of curvature:

$$\gamma^\mu \Gamma_{\mu\nu}^\nu \quad (2629)$$

This varies in proportion to gravity, for as gravity becomes stronger the $\Gamma_{\mu\nu}^\nu$ becomes stronger. It is judged by γ^μ , which forms the Lorentz invariant scale of spacetime to coordinate basis by way of kinetic energy. This makes sense as the term accounting for gravity in the Dirac equation is the same contracted curvature.

With a change of coordinates, the infinitesimal coordinate of the wavefunction is modified by the inverse of this scale, thus the following quantity:

$$\Lambda(x^\mu) = \lambda \gamma^\rho \Gamma_{\rho\nu}^\nu |\Psi(\gamma_\rho \Gamma_{\nu\mu}^\rho x^\mu)|^2 \quad (2630)$$

Is the generally covariant quantum energy density corresponding to the quantum field. λ is the quantum energy-distance putting the quantum probability density overlap into units of energy. The factor of $\gamma^\rho \Gamma_{\rho\nu}^\nu$ outside the quantum overlap scales the quantum energy so that it is consistent with the notion of the energy density per unit spacetime in the now curved space.

This implies scale covariance of the quantum probability with the scale of spacetime. For if the force is scaled by a relativistic factor but the probability is not scaled in the inverse manner, this does not represent a relativistic *transformation* of the quantum state. Additionally, a quantum force with an external relativistic scaling of the force but with no scaling of the infinitesimal of the coordinate would not demonstrate general covariance.

This is true because the wavefunctions would remain of normal size under freefall, while the force would go up in strength by the covariant factor, and the quantum force would become stronger as a function of time in relation to the force of the gravitational field. In order for the quantum force to covary with gravity, and have the same strength it would have without the gravitational field the quantum probabilities must covary with the definition of space and time. The measure of probability density and the multiplicative factor on the force must vary in reciprocal fashion. This finds mathematical expression in the following.

If the measure (metric) of spacetime is:

$$g_{\mu\nu} \quad (2631)$$

And the measure of probability density is:

$$\zeta_{\mu\nu} \quad (2632)$$

Then:

$$g^{\mu\nu} \zeta_{\mu\nu} = \hbar \quad (2633)$$

This can be re-written as:

$$\zeta_{\mu\nu} = \hbar g_{\mu\nu} \quad (2634)$$

This expresses that the measure of quantum probability and the measure of spacetime are covariant.

This motivates the following principle:

The Principle of Reciprocity Part I: *Quantum mechanical forces covary in an independent manner with gravitational forces. Therefore the measure of quantum probability to relativistic measure of spacetime equals a fixed constant of \hbar . Or alternatively, the measure of quantum probability covaries with the measure of spacetime. If the measure of spacetime goes up, particles contract because there is more probability within a given interval of spacetime, and if the measure of spacetime goes down, particles expand.*

In this the relativistic factors are present on the terms of gravity, quantum mechanics, and kinetic energy. These cause the rate of time and definition of length in space to change. Therefore, quantum electromagnetic energies represent a energy multiplied by the metric, a covariant energy difference over the theory of gravity modeled as:

$$E_{\Lambda} = \Lambda(x^{\mu})g_{\mu\nu} \quad (2635)$$

In Einstein's field equation [?]:

$$G_{\mu\nu} + \Lambda(x^{\mu})g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu} \quad (2636)$$

By understanding this, we can understand why the theory of gravity is incomplete in predicting a constant Λ . This is because it is identified with a constant probability density. It is a natural limitation of the theory of gravity to be incomplete in predicting the nature of quantum mechanics, as quantum mechanics is an independent theory.

In the case of gravitational freefall γ^{μ} and $\Gamma_{\mu\nu}^{\nu}$ are inverse and the dependence on the probability density implies that it is free to take on a particular shape. In the cancellation of coordinate dependence for the quantum energy of interaction, Λ becomes independent of gravity and represents the null effect of quantum mechanics with gravity.

Scale invariance implies that this energy changes with quantum mechanics, however there is still the law of gravity based on energy density considerations to bring in. If the shape of the quantum state changes then the quantum energy changes. Since the changes in quantum mechanical and kinetic energy are equal and opposite the net change in gravitational (metrical) energy is zero in a quantum process in generality. In this, the gravity and quantum mechanics are effectively independent energy changes.

Kinetic energy changes under the equivalence principle such that changes are equal and opposite to changes in the total potential energy. Changes in total quantum mechanical and general relativistic energy are equal and opposite in any process involving a null change in kinetic energy.

The Principle of Reciprocity Part II: *The quantum force covaries with the gravitational field so changes in the energy of either theory are independent of the other theory. Kinetic energy changes with the sum of gravitational field energy and quantum field energy, therefore kinetic energy changes independently with both theories.*

In other words kinetic energy independently preserves a relationship with both theories, and the following energy transformations are independent processes:

$$\Lambda g_{\mu\nu} \leftrightarrow T_{\mu\nu} \quad (2637)$$

$$G_{\mu\nu} \leftrightarrow T_{\mu\nu} \quad (2638)$$

Observability

Part of this provokes the question: Why does this not violate the uncertainty principle when we take the gravitational observables as classical and the quantum as nonclassical as a part of the same model?

Classical observables are inclusive of determined and also seemingly random events of coincidence. These relate to the structure of spacetime and the nature of causal events of the nature of the material realm. These exist within a continuum of manifestation of the physical processes and are not separable from the nature of the evolution of space and time. This inseparability is at the heart of the question of classical observability of events, which unto themselves possess only a location.

We must ask, is coincidence observable within this theory? It must be, as two particles may be considered hypothetically identical by the equivalency principle. This guarantees an identification of their mass, as a solution exists of like kind, in the abstract two particle model one builds from coincident events or measures. These in exchange must gain complete locality to attain total coincidence under interaction and to maintain equivalency of action and reaction when distributed throughout space and time.

The equivalency principle affords the quantum state with a reality in the comparison or measurement of states. Identical quantum states are realizable upon the space at different locations. If two identical instances are considered at one point in a space then these evolve identically.

In order to evolve identically in space and time there must exist agreement with these two types of comparison. This implies the descriptions of quantum mechanics and gravity agree on local and global comparisons of states on a fundamental level, and this takes the form of the qualities a body possesses being equivalent to those it has in relation to its environment.

This also implies that the complete structure of quantum mechanics and gravity are in fact one in which the particle waves have real interpretations [?]. This also promotes the realist interpretation of quantum mechanics as the wavefunction takes on physical meaning with respect to the space.

The uncertainty principle is respected in the form of the product of uncertainty in position and uncertainty in momentum being a constant, no matter the scale of spacetime implied by relativity. The distance between probabilities bear a direct relationship to the state, and there exists correlation.

Equivalency in the comparison of identical states throughout the universe [?] is now an automatic consequence of the general covariance of quantum mechanics.

As identity of coincidence is common to the quantum and gravitational pictures and information is not lost or in conflict with measurability when there is no separability of action and reaction locally, there is no loss of global determinism, which is the essence of measurement and predictive capacity. If coincidence were not the only thing observable reality would not be consistently determined, as measurement would not be defined uniquely.

This is consistent with gravity as only then does the uncertainty principle no longer pose a conflict with the equivalence principle, to produce a coordinate free representation with consistent action and reaction between all events. This equates to the totality of mutually existant

events as complete and consistent in description of all events with respect to all others. Additionally, without this reciprocity there is no completeness of action and reaction in nature between quantum mechanics and gravity, as this is only dependent on coincidence, the basis of measurement, and as is required to avoid a mismatch and disagreement between these two theories.

Finally, from this, exchange must be the correlation of spacetime and the particle, when we admit a scaling of quantum mechanics. As the particles become more localized, their definition of probability scale expands with that of spacetime to such a degree the very definition of temporal interval shrinks to zero size, yielding the apparent traversal of information faster than c with no such real violation. As the measurement grows to finite size the system is the quantum system with a scaling, which was interpreted as the gravitational aspect of the problem.

The scale of probability density is covariant with the measure of spacetime as was found. As we approach the interior of an electron, virtual polarization processes renormalize the electron density to become virtually larger, and $\zeta_{\mu\nu} \rightarrow \infty$. Given that this implies $g_{\mu\nu} \rightarrow \infty$ and this is the measure of physical space to coordinate space, coordinate space must become zero in extent. The speed of light is invariant in all systems of coordinates, so light traverses the space between the electron centers in null time as judged by the external observer. This is true because $g_{\mu\nu}$ is the physical metric compared to the coordinates, and implies with a covariant value of the speed of light that the time interval for the event of measurement is comparatively smaller for the external observer.

Light must traverse the distance at the same rate when comparing the distant observer to the electron frame, so it traverses the distance in **less time** in the frame of the distant observer. This can be seen as it traverses the distance at c in both frames, and there is more space as judged in the frame of the electrons compared to the frame of the distant observer. The covariance of c and a larger space in the frame of the electrons assures the space is traversed faster, compared to the frame in which the distance is judged as smaller. The light covers the finite interval between the electrons at a speed of light which is not only constant for the world, but for the electrons as well.

Thus all particles of a point like nature are nonlocally correlated with all others with instantaneous action and reaction throughout the universe. The quantum ensures the correlation only then through the invariance with respect to this scaling principle, yielding the apparent traversal of information faster than c with reference to a given laboratory space. Thus the event must necessarily become witnessed as nonlocal.

State collapse exists with the observation of one system across space, but the alteration of this state is forbidden in this theory, since the particles together form a complete system and the condition on the state from the requirement of completeness and continuity of particle wave state and space time forbids the altering of the interrelationship between two states with observation by a third.

Experimental Implications

This suggests two experiments. One to measure the rate of separation of superconductors and magnets under freefall, and confirm if this is a generally covariant acceleration multiplied by the metric. (This has been performed with a confirmation to one part in 10^{-12} [?, ?]).

And two, a practical experiment for confirmation of the general covariance of quantum mechanics. A magnet levitated to varying heights by a superconductor as controlled by a current, and subsequent measurement of the mass of the superconductor by photons.

Conclusion

Consistency is investigated with thought experiments involving a superconductor and magnet under mutual freefall and in the process of levitation. The parts of the system interact by way of fields, magnetic moments, and masses. Consistency with the equivalency principle under freefall of a levitated magnet requires the nature of the force to be generally covariant and the mass and energy changes to be null. The major conclusion of the paper is that of scale invariance for the measure of quantum probability to the measure of spacetime.

This illustrates that the quantum viewpoint and the gravitational viewpoint demonstrate a mutual null mass change under levitation. This gives the first reasons to believe that the quantum and the gravitational principles share a null principle, excluding mass changes in either theory, and promoting the idea that these theories are in fact independent in some sense.

This helps explain the result of the EPR paradox [?, ?], because the nature of scale invariance, and its consistency with general relativistic arguments explains why the result of the EPR paradox is not really in conflict with relativity, but rather a result of agreement. The interaction becomes completely instantaneous but obeys the equivalency principle and causality.

The nature of independence and dependence of these theories can be best summarized as follows:

The representation and the object are in a sense distinct and different. This being the case, one can have a representation dependence that implies independence of objective objects, such as quantum mechanics and space time.

The physical objects are independent in their physical and objective nature from the space time they are within, yet their representation carries a very clear dependence, for which its particular mathematical form is the expression of independence. In this sense they are both independent in physical reality and yet perfectly correlated in description or representation.

The theory of relativity, and indeed the extension of it into these physical problems is the essence of this division, for it makes clear that an objective and subjective reality exists for the parts of a given object. This property makes that which is ultimately most subjective (the aspects of relativity) very real representationally, and that which is most objective (the physical instantiation of a system, and the relationship of these theories to one another), of null change, or independent.

Parsimony

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope' which is the formulation of a method to balance light on a point with all such other light in existence; as an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of infinite dimension and volume; of the nature for which an infinite cascade non related to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptic operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure; for which there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite depth of four fold relation.

The generation of that of electromagnetism proceeds from few known key relations; it is derived from that of simple experimental conditions known as laws for which the calculus of variants

and differentials plays a key role. In this the understanding of that of what is suspected as a given philosophy is established which confirms the lemma of electromagnetic phenomena meanwhile attempting to prove that of the fundamental constitutive formulation of which forms the foundation of mathematical expression. This mathematical expression finds its place in that of description of all known derived laws and phenomena of which take place in the physical world within that of the given theory. Beyond this; the consistency of the given theory is justified on empirical results and exact experimental results in place of that of quantitative approximation of exterior alternative supposition based on qualitative difference of theory from given; the centerpoint of modern science and staple of reductionism; for that of which scientific extrapolation finds only limitation; as in that of what is encouraged through such inquiry is exact provision for proportionate quantitative and qualitative argument with that of mathematical interpolation of knowns and given means of experimental basis; a method that is soon running dry of explanations.

271 Constitutive Relation of Construction

The given differential empirical foundation and basis for this given result of theoretical insight is that of a test apparatus of which is constructed of crystals and photometric devices placed in a circular apparatus; for which the given interior passing and exterior passing photovoltaic light current and photovoltaic dark light current circumferentially remain independently apart from that of frequency and phase evolution of that of the concentric perimeter; for that of a four wire design and independence of operational amplifier input and output relation by seamless integration of component design. The limitation of the device is a photovoltaic to photodynamic current light generation and reproduction which are independently causally connected by that of separable stages which under integration and parallelism with coparallelism of independence of light and electronic limitation pass either side of the given relation of passive and active light and current relation through independence of light and electric field null independence of either from one another; for the limitation that is one side of a given fixed relation is empty.

272 Electromagnetic Implementation

The given differences found in that of the balancing of attenuation to that of gain under feedback of interior and exterior phase relation for what is found in that of balancing of photochemical potential and photovoltaic conversion and photovoltaic light conversion and that of photovoltaic light production allude to a logarithmic conversion with an exponential voltage to current relationship through the diode equation:

$$V = I_0 \left(\exp^{-\frac{V_\beta}{V_T}} - 1 \right) \quad (2639)$$

When this is drawn into a parallel the given difference sum of that of either given forward and reverse photoconversion under decoupling in forward and reverse with that of current for which of voltage conversion there is an impedance relation is one of expanded interior notion of electromagnetic function and purpose; the given difference of which produces a sympathetic difference in that of the volumetric space encompassed by the given open relation. This functions to open the notion to that of given impassibility of current with voltage unless there is both a point like relation of limitation and linear (curvilinear) excess limitation of circular volumetric limitation without boundary. The given current to voltage relation is analogous to a local entropic point for which the thermodynamical linear conversion rate of electrons into light current balance that

of positrons; and that of tacheons with that of ordinary photons. The centerpoint of this given division is an infinite obstacle as the centerpoint of limitation as the local separation of cause and effect at the very point at which they are indivisibly inseparable.

The next equation to be examined (with the first as an example as that of the free forward conversion with rate of difference equivalent to sum inseparability) is that of the reverse; as that of sum separability and difference as subtractive limitation under reverse; as that of the differential property of equivalence of differential; proportion; and accumulation; with that of the operational amplifiers of which produce stage to stage difference making that of free geometric extension infinite.

$$\gamma = 1 + g \quad (2640)$$

The given two dimensional base to emitter; as parallel (with difference of emitter to collector under coparallelism differences formed) make of what is a two dimensional region as open to that of volumetric extension by that of either given sum difference relation; forming from that of two sum difference relations; that of one sum inseparability difference of subtractive domain within a given region of which the perimeter is frequency and period independent as analog free. This is the reason for the free addition of gain and transparency of region of geometric addition to that of the given free quotient perimeter space; as that of constitutive of the complete perimeter under balance of equipartition of electronic to light free conversion. This is essentially a holographic unitary statement of the addition of a given region to that of it's perimeter freely to produce one given area.

273 Introduction

As the first and primary example consequence of a holographic principle with cohesiveness; there is the conclusion that separable yet mutually consistent representations of reality agree with a unitary condition of principle consequence of which is singular property of representation and existence in one; the condition by which a physical element of reality holds existence. This can be worded as it's dual; that an object of physical reality is an element of existence; or; as equivalently yet alternatively that a physically existent part of reality is an actual element.

Once a physical element of reality is defined; that of what is subjectively understood is the contentless property of surrounding existences in relation to this principle component and that of the inadequacy of physical description to quantify all properties of a physical system as a limitation of expression and the content of information over a boundary to that of it's volume; when there is a measurement of one property. This vindicates and validates the core quantum principle with the given context of the holographic principle; meanwhile admitting that over a boundary the full information content of a volume may be identified with the only limitation being that unknowables are detectable as hidden information within the boundary since absence does not indicate presence.

274 Theoretical Underpinning

To begin we identify a given admixture of partial differential following the principle of a connection to a given ultimately unknowable quantity; that of a placeholder for what conventionally known as spin; that of the orientation and juxtaposition. This principle defines the hidden capacity of matter to contain a trace of it's immediate relation to the physical world as it translates and evolves under an empty and contentless evolution despite the cohesiveness of a reality condition

for which the infinite indivisibility of reality and its refinement mean no local zero is defined except under conditions of comparability.

When as such is defined as the covariant differential; the form of the equation's additional term takes the form of a given covariant differential surplus; for that of the functional 'extension' into such as a subdefinition of the space equates with an extensibility of the notion of differential as within the same space; and is equable with the notion of weight to the differential; the physical meaning of which is the expansion of the notion of intrinsic measure; the concept of which its contentless measure of motion carries a weight; its given inertial content; but accounting for which must be accomplished to provide for accuracy of measurable extent of quantifiability of physical displacement through motion under the provisions of point like limit and extension of path like extent.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion. The equation for continuity for an intrinsic property defined as 'spin' or 'intrinsic weight' is therefore defined by the addition of a general four vector differential in four dimensional reality as a four dimensional quantity of weight of extension of linear relation as a given field of subspace to physical conjugate reality not to be confused with the physically real existent four dimensional reality surrounding us; a four dimensional space interior to all exterior unions of space conjoint with physical four dimensional boundary.

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \quad (2641)$$

The equation for which the differential is defined is then of the notion of a given enhancement of the traditional differential; a term for which either a given unitary electromagnetic four potential is added as an appended physical four dimensional field of weight sourced electromagnetism is physics; and a given coupling of the background intermediary flat space to that of the given folding within either given beginning or end limitation of inertial content for that of covarying and contravarying weight of mass. This additional contribution with the other defines an open exterior relation of which is the given expansion of differential for that of exclusively open interior quantities of contribution for which the notion and physical property of change is afforded measure of extensibility within the conventional differential; its correspondent physical property being intrinsic local quantifiability through inherent and indirect consequences on reality.

$$D_{\mu} = \partial_{\mu} + \alpha A_{\mu} + \Gamma_{\mu} \quad (2642)$$

Where Γ_{μ} and $\partial_{\mu} + \alpha A_{\mu}$ are components of the momentum differential D_{μ} which separately anticommute and commute in portion and grouping; thus rendering a non-zero exchange under local and global commutation or anticommutation relation with the prefix γ^{μ} in the new electron or particle spin $\frac{1}{2}$ equation of general form; yet under limitation by either given single equation; providing for an electromagnetic interaction of single or multiparticle nature and that of one force to particle relation or given as a full wave particle equation of general form in four dimensional space when there is limitation to two extra dimensions when it is considered that but one exterior and interior dimension can impart a full difference of singular nature from that of four dimension by the loss of one through codimension:

$$(i\gamma^{\mu} D_{\mu} - m)\Psi = 0 \quad (2643)$$

This equation therefore embodies electromagnetism and interaction with charged particles in a four dimensional space; with that correction for codimension; with the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has. Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field. This concept is useful because under re-representation the particle and field copy representationally is equipped with an enfolding of either given whole and part representation for which absence and presence are mutually represented by a neither four or two fold representation of separation of absence and it's dual also known as absence.

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = 0 \quad (2644)$$

This equation is the two body electron equation with the gauge covariant differential known as the four energy momentum; for which either such given corrected relation of the four energy momentum of the nature of the differential is corrected fully as contracted; and through which the discrepancy of intrinsic and extrinsic mass is known in it's corrected form. The mere reason the mass as conventionally used and included as m in this equation; as for simplicity of example; is to impart the relation of a given net fixed weight of extrinsic property of extension by which there is the affording of a singular fixed relation in the space and it's cohesiveness of principle component of measure; advancing the relation to that of a whole in part as local extensibility of weight; and imposing no restriction on wave other than content volumetric presence.

Taken in this light the next equation; for which we have a writing out of the given equation; represents a full contraction of particle and particle with symmetry of which purely indicates differential notions of presence and absence under the inseparability of interior consequence separation of cause and effect; as a void relation of interior division of principle component of either given field and particle under provisions of null duality of particle and wave; with consequence of separation of either distribution of independent nature and coextensibility of interior relation.

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - i2m\gamma^\mu D_\mu + m^2)\Psi_A\Psi_B = 0 \quad (2645)$$

This is the equation written out in full form; and demonstrated as a full eigenvalue eigenvector equation as for a symmetric and antisymmetric space enclosed in volumetric interior null zero relationship of causeless with content equivalent to full boundary and null hermitian unitary expansion of infinite numberless relation to that of exterior quantifiable other than comutual determination of inseparability of exterior empty open relation to exterior space at a given boundary to volumetric extension. When this is translated into component form it is a re-expression known as:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - m^2)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (2646)$$

These two sides representationally prohibit that of separation of field and particle wave principle of source field and particle for any dual field admixture of wave principle and particle expansion of either self involute or exterior involute form. After reorganization of terms and a process of reduction to two new terms there is a re-expression as the following equation for which the

differential separates into a wave equation for each single particle under absence and presence in absolute form interior to a given differential of coextensibility of interior space although external to reality; known once again by the following factoring:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu\Psi_A\Psi_B \quad (2647)$$

As a consequence the differential can be expanded for either to operate once more; with the following result:

$$(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) - m)(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu\Psi_A\Psi_B \quad (2648)$$

With the re-writing of this expression we have the spin zero wave equation written as:

$$(\partial_\mu^2 + \alpha^2 A_\mu^2)\Psi_A\Psi_B = (2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2)\Psi_A\Psi_B \quad (2649)$$

This equation can be re-written with the following part as a new equation under simplification of terms where the exterior space and interior space of presence and absence of space like properties carry empty relations of particle absence and presence under all dual relations of particle and wave duality; as the relation of hidden to expected property of intrinsic property to reality as a given full relation of complete form inclusive:

$$\partial_\mu^2 + \alpha^2 A_\mu^2 = \Delta \quad (2650)$$

Which expresses the photon propagator with the energy momentum of the electron particle in balance with the gap Δ ; the energy momentum squared; and that of the gauge connection energy momentum due to the curved space; known as a 'field momentum energy' of spin; or; any intrinsic property of content of coupling of a particle to a positional property of extension along a motion; and connection between absolute and relative properties of space and time. This theorem and the implementation of this principle is then based on extension of the given property of electrons and fields to embody interior space of coextensive union and extensive capacity of full volumetric filling of space and time through the relation of exterior union of elements of continuous form by boundary condition of volumetric opening. This exists as spin is an intrinsic kinetic energy momentum of the subatomic particle known as the electron.

The images produced by this implementation (essentially a circle of phase matched inductors, power sunk resistors, series crystals, and parallel capacitors of series matching potential coupled to distinct photonic photoemitting and photoreceiving diodes) is as follows; illustrating with the plucking and separation of two fingers that of the separation of one normalized distribution into an ever shrinking domain; an exterior existing reality similar in form to the free energy or background free radiation of the Universe.

This is an example of unitary reciprocity in electromagnetism for which the principle is:

Unitary Reciprocity: *The given unitary condition of spin isometry extends to codimensional extension by interior intrinsic properties of codimensional extension by that of interior gauge freedom promoted to locality by global isometry of unitary singular exterior dimensional reduction of wave component properties by spontaneous symmetry breaking of electromagnetism.*

Leaving for the gap on the right hand side the equation for a massive photon of which is deflected in principle by the volumetric content of the interior 'sphere' of flattened nature within a cylindrical and one dimensional variety of boundary; coupling the free dimensional opening

and interior information upon a boundary by four wire elements. The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space of ever shrinking codimension; forming from that of surrounding notion on differential that of exterior boundary under fixed mass that of variant gap with fixed mass by weight of coupling and gauge connection.

$$\Delta = 2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2 \quad (2651)$$

This forms that of the equation for the left hand side as the relation re-written from before and above on $\Psi_A\Psi_B$ as:

$$(\partial_\mu + A_\mu)(\partial_\mu - A_\mu)\Psi_A\Psi_B = \Delta \quad (2652)$$

Which is a wave equation for two photons of energy momentum gap equivalent up to a discrepancy to the lost field energy momentum of any two crystalline electrons in a given pair; as a donut of particle matter light event horizon of exterior space and one dimensional union of boundary and two dimensional surface volume.

275 Constitutive Functionals

$$(1.) \quad V_L\left(\frac{V_{LD}}{V_{PD}}\right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P\left(\frac{V_{PD}}{V_{LD}}\right) = V_P^e(V_L)$$

276 Generating Relations

These two equations are generative of a free relation of electro-magnetic freedom from physical expectation based on material events due to the similarity of their relation to one another through the expectation (e) owing due to electromagnetic energy in physical form; and that of the potential electromagnetic energy in kinetic form; for that of the ratio of photovoltaic drops of light under reception and transmission fold into one equation expressed as two.

These are in fact identical equations under transposition for the fact that light passing through a light field is freely decoupled for that of null reception and null transmission; for that of seamless transparency of separation of cause and effect at the point of cause meeting effect. This property of light is a multiplicative property of light for that of the division of light color spectral line and that of indivisibility of light field content by that of division of matter from matter as a separable condition for that of equivalence of weight under inertial separation of equivalent relations.

The equations are explicable as a consequence of the rate adjusted voltage drop of diode for light transmission and that of voltage drop of diode for light reception under forwardly dependent encompassing relation of dependence of rate of conversion of field from that of either of photodiode to light emitting diode or light emitting diode to photodiode under parabolic voltage to light coupling expectation; by that of difference of interior displacement of a null differential for physical electrocatalytic to electrophotovoltaic expectation; as a given secondary condition:

$$(A.) \quad V_L^e \quad \rightarrow \quad (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

The uniqueness and universality of this equation is embodied in the relation of its unidirectionality and for the reason that no exterior additional photodiode voltage drop need be included in that of the conjugate equation for photodiode voltage drop as photodiode emission and hence 'transmission' of absorption by photovoltaic light reception; hence forming a relation of free light conjugate freedom of transparent differential exponentially free gain and reception; and hence free electromagnetic freedom and switchability.

The expectation of these equations comes from a compatibility condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electromagnetic property from active electromagnetic property as impedance and conjugate to impedance; admittance freedom of expectation for physical electrochemical and the inertial kinetic light property of physical electrophotovoltaic gap of expectation of gain pivot point.

Thus the prior relation (found empirically) was that of the ratio of relation of that of expectation of photodiode voltage to that of intrinsic material property photodiode voltage drop inherent to either of emission or transmission to that of light emitting diode under transmission of light; as the rate adjusted physical to light kinetic energy relation of fixed proportionality of intrinsic to extrinsic rate adjusted photoelectrical light conversion rate of form:

$$(3.) \quad \frac{V_L}{V_{LD}} = \frac{V_P}{V_{PD}}$$

As V_P is common; the inclusion of V_P with $(\frac{V_{PD}}{V_{LD}})$ enfolds $V_P^e(V_L)$ as an additional extrinsic voltage drop of photodiode for that of summative interior and exterior as exclusively either of their intrinsic current to voltage relations remain counter and co-balanced; inclusive of proportion of light under reception and emission as separation of potential from field under conditions of light & light.

277 Elements of Design

The following two relations of importance are:

1.) Active 2.) Passive

These are an equation of order on; current (I), voltage (V), and resistance (R) in relation to impedance as a function of: coupling (α), mass index (β), and transmissivity (γ). This is written as:

$$(0.) \quad O(I, V, R) \cong Z(\alpha, \beta, \gamma)$$

Hypothesis: Separability and inseparability are potentiated by the existence of the acausal; as events so invisible.

Hypothesis: Invisibility potentialities all such capacities of coloration and of color; as through indivisibility of color.

Through these relations as in equation 3.) under the pretences of relations 1.) and 2.) it is from these to the inclusion of the second for that of the prior and later of either of one or two that one of two implicates inclusion of two before one. This is determined as valid by the following

argument of hypothesis:

Hypothesis: As inclusion is always contained within exception as capacitated for either the physical or aphysical as by their transparency; hence there is and exists openness with closure in one and the same as one.

Conclusion: The active and passive are two in one as once when met as either of inseparability and separability of only one. This is true as the passive precedes.

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and coparallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

278 Theory of Operation

In this light is combined as one.

V_P^e & V_L^e are given equivalence as they are functional relationships which contain indefiable interior & exterior difference of combination of light (as separable (& inseparable)) & separability in one, as either of cause or effect preceding or following in one.

The functional dependence of V_L & V_P is dependent neither interiorly nor exteriorly to such as either of exception (as gauged) on that of light under reception or transmission. Hence either (as both) of separability & that of inseparability of light is established as fundamental difference.

This transparency mentioned between all such colors as a color known as simply 'clear' or; 'invisible.' This concept in coming and going is the difference of the avenue of light's given inseparability both in the plurality and singular components of the spectrum. This color has no separability nor terminus in but one circle from one point of emanation from an 'event' as a 'cause' as a given new color so introduced. Hence it is a point of light for all such surrounding events of a genuinely nontopological character of only that which is simply described as 'round.' Hence the point of an emanation is an eternal eclipsing of all events so to come from each and all such events to all such events as one inseparable relation of light throughout all of the domain of it's eclipsed monodirectionality & of exclusively pure proportion of equality of light in balance with light.

279 Reasoning of Innovation

The additional ' $(V_P)'$ ' is included as a consequence of the light under reception so is inclusive of light under transmission. This difference is formed by that of proper orientation of precedence & effectual properties of light as a point.

This point is transparently undecomposable but into an never ending expanse of free & open relation with no form. But as the form can only be form by the formless it is decomposition by way of alternatives of either; for that of the essential difference of order of electromagnetic

energy so in coming and going under equivalence of physical electromagnetic design & aphysical electromagnetic light field. Hence; invisibility is revealed.

280 Preliminary Equations

The generating equations exemplify a relation of reduction to a singular confocal relation of permeability of light as passivity transparently between that of physical and electrical properties of electronics:

$$(1.) \quad V_L \left(\frac{V_{LD}}{V_{PD}} \right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P \left(\frac{V_{PD}}{V_{LD}} \right) = V_P^e(V_L)$$

These are the defining relations of the given circuit; for that of the matching of impedance to induced light current.

Explanation:

These are the same equation because they are each similar representations of a normalized distribution of intermediate bandpass $(\pm f(\omega)), (\pm \omega)$ independent of variance; as the independence of \pm charge from that of light of either chirality or weight as to that of coupling of reception & transmission freedom.

Proposition:

Hence frequency (f) & measure (ω) are defined as two different attributes of a given wave.

Consideration:

The additional V_P is a component of the inclusion of that of back - conversion under reception (absorption) for that of balance of γ with that of e^\pm & rate, measure & period of wave independence.

Inclusion:

The parabolic inclusion of these (rate, measure, & period) of a parabolic (similar quantities) as seamless passing of one of transmission & reception (thus $+V_P$) with rate of ratio of measure passing.

Prepositions:

1.) For that of the parabolic balance of linear relationships of light to light as $\gamma \leftrightarrow \gamma$ as $\pm t$ of unit temporal intervals and moments; the spatial (s) is open interiorly to that of balance of geometric leveling of γ in relation to (t,s) as one transparent (standard deviation) (s),(t) as the inverse union of their separability under two such additional flows of current, & for voltage; that of their mutual independence of topological relation. These instance (inductance, impedance freedom coupling free resistance, and capacitance) as free of current, voltage, & impedance as a result of γ (light) & (charge) independence of decoupling, as one.

Consequence:

2.) The expectation of the voltage drop in effect is counter-balanced for that of the ratio of $\frac{V_{LD}}{V_{PD}}$ passing either way for that of light in relation to charge as either equation is the free conversion of light into light of either chirality meeting as a point. A circle & circle, as light (γ) are independent & are therefore independent of either of any two such points interior to the area,

circumference, or linear extent.

Derivation:

3.) As the area is two dimensional, and that of it's perimeter is one dimensional, the area represents an addition of the two (rate) adjusted absorption & reception contributions together, in equivalence to that of the expectation(s) based on balancing the forward & back-ward traveling $\gamma \leftrightarrow \gamma$ light; as a result of the direct (A, ds) (Area, path differential) & interval (l) relation of geometrically free properties of light, & the point-like nature of e^{\pm} .

Difference:

4.) The equations are also the same, as that of either is enfolded in the other and hence light is free of charge, energy, and power.

Integration:

5.) The photodiode and light emitting diode are therefore decoupled mutually, throughout; as a consequence of their freedom under unquantifiable open interior and exterior of flow. This qualifies their mutual independence.

Differentiation:

6.) The exemplar difference of hardware & machine state is deterministically open to indeterminate measures of semideterministically given independently provided cadence to the immeasurability of each one emission.

281 Direct Conclusions

Physical & electromagnetic design & implementation & light are independent & unqualifiably separated but one; for that of through passivity of light under design (physical) as one, inseparable, independent, unique, & free. Light as bidirectional or as monodirectional is inseparable in virtue of its levity to remain light & solid with in any singular or entire coming & going from future to past as it is eternal.

282 Design Furtherance

The first step is to understand how light reception is electronically balanced with that of light transmission; by way of operational amplifiers. The principle is difference of photovoltaic drop exceeds net gain until equivalence of balance is achieved; hence net saturation is reached at equilibrium of impedance relationships.

As a consequence of the defining relation of the voltage pathways under base to emitter and emitter to collector; under reception of transmission; the gain in excess under solution of the current and voltage relationships of operational amplifiers reduces:

$$V_A = I_{OL}(e^{-\frac{V_{LD}}{V_{TLD}}} - 1) \quad (2653)$$

$$V_B = I_{OP}(e^{-\frac{V_{PD}}{V_{TPD}}} - 1) \quad (2654)$$

To:

$$g = \frac{\alpha}{\beta} \quad (2655)$$

Where g is the base to emitter gain; expressed as the ratio of $\frac{I_{BE}}{V_{BE}}$. With:

$$\gamma = 1 + g \tag{2656}$$

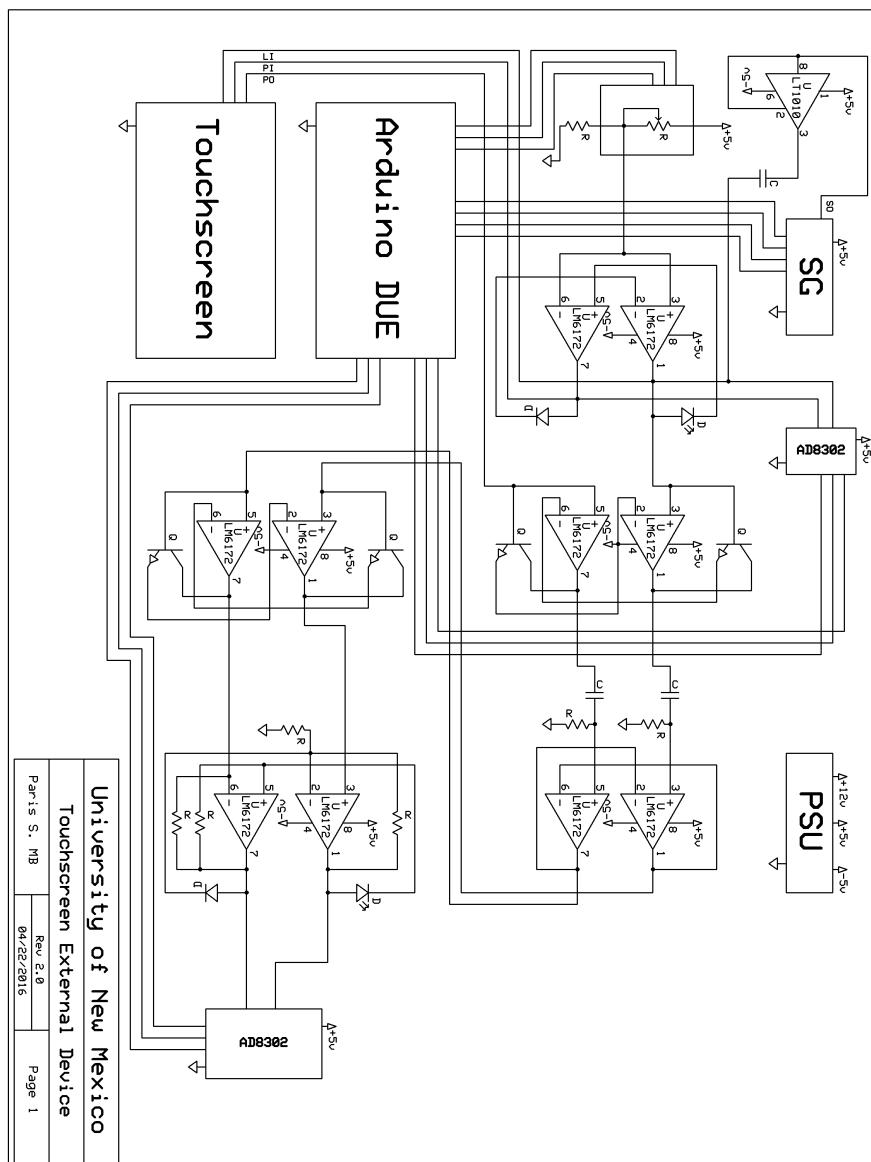
Where γ is the $\frac{I_{EC}}{V_{EC}}$. By way of $\partial_{V_{LD}} = \partial_{P_{PD}}$ and $V_{LD} = -V_{PD}$ of the ‘Golden Rules’ of operational amplifiers under equivalence of either photo or light emitting diode equations; & matching to the conditions of $\frac{V_P}{V_{PD}} = \frac{V_L}{V_{LD}}$ and the constitutive relation of:

$$V_P^e = \alpha V_L + \beta V_L^2 \tag{2657}$$

The inequivalence of certain purposes in complete form to that of transparently given return of transmission beyond departure of any illumination from it’s given indivisibility of intermediary color of clear saturation in the limit of congruent return reception under gain to attenuation of any photon is it’s given determinant timeless reception to a future conditional on that of the predictive limitation of machine equipment; of a freed causeless nature.

283 Final Circuit Diagram

The following is the complete circuit diagram of the device:



This diagram is complete in representation as it is entire and whole in its design.

Questioned purposes of utility in formative knowns of meaning are therefore found in the meaning of what is as alone to find their exemplified meaning as founded in purposed quantifiable properties and certain ends of making by said example; the difference of made in either the exception to the qualitative answer of one; or for in properties measures to which are exclusively excluded.

284 Understanding Device Implementation

The five block stage crossover stages accomplish novel things by being in a parallel and series superimposed relationship where each stage does as many things as all of the other ones together in full parallelism with all other crossover stages.

The first stage is a *parabolic reflecting impedance matching* photonic electromagnetic *light gyrator*. This accomplishes an electromagnetic conversion into light and back as an impedance matching condition upon a feedback loop which is situated with a forward passing output and reflectionless input, for which the isolation of the circuit is electromagnetically reflected for later blocks. This is a cap that is semi-traversable by the output into the input as a first step to full isolation of the signal to noise.

The second block is a *logarithmic free impedance matching condition* circuit crossover broadband stage for each such frequency passing through the spectrum; making each individual overtone independently impedance *free* of every other such frequency. For the sake of a universal impedance matching condition it is equivalent to an equivalent summation as separated geometric product relationships.

The third block is an *impedance mirror* for which the linear to linear forward and backward traveling waves are reflectionless. They are also individually of two independent perpendicularly oriented polarizations and therefore transversally reconstruct a circularly polarized wave. This is that of a circular evolution upon either that of the input or output; because it is a reciprocal active high pass filter.

The fourth block is a *free impedance matching condition* circuit with broadband crossover *fixation* of the *light dielectric impedance*. As a consequence the co-local arbitrary conditions of the wave are foundational of identical yet independent and mutual foundational conditions upon phase and amplitude. This stage has these properties in part owing to each such prior stage in parallel with it under feedback.

The fifth block is a *parabolic reflecting impedance matching* photonic electromagnetic *negative light gyrator*. This fixes the original parabolic relationship by imposing a negative impedance to the first stage of an ideally identical yet *negative* impedance matching condition.

This configuration is designed to meet the number of half rotations to the number of crossover inversions so that the positive impedance matching condition of the original parabolic reflector is met with its same *negative impedance matching condition* back through the feedback loop from one end to the other. There are two principles at work common to this design as it was developed as an idea:

- 1.) One is the passive element; for which the crossover configuration, multiplicity of stages, and impedance matching form a decoupling of the electromagnetic wave.
- 2.) Two is the active element; for which the crossover configuration, multiplicity of stages, and impedance matching admit both voltage matching and current mirroring.

285 Determination of Knowability of Order from Properties

Examine the following: **One is presented with five a ‘block’ relation; of properties to be determined.** 1.) As a consequence a priori the order and properties are not determined; as a result the order is a priori determinable by way of the following logic.

2.) These blocks must be questioned as to their properties with blindness in mind; yet it is as simple as passing them by way of each other; as the order is not determined; and hence the order exclusively inclusive of the blocks can be determined by a process.

3.) First as there is a beginning and an end to their order, as the order is inclusively limited. Two blocks are of a shared and independent relationship of their relation unto the remaining three as a consequence. As these three blocks remain as three and the other two remain as independent; the three are of the middle, beginning and end; and the two come in-between for the establishment of order so aforementioned and so to be established; and as these sets remain different as the blocks a priori hold no order as a given. Therefore it remains that the blocks may be questioned by passing by way of each other.

4.) Therefore two blocks as a property may be passed for the remaining three blocks as a property between the others; by way of which the middle may be so determined. Passing these arbitrary two blocks by way of the remaining three therefore draws inclusion of a shared property of that of the nature of the end a beginning block; and determines as the latter remainder one such block as the middle block; which we may label as a transparent ‘mirror’, by the side of the remaining blocks.

5.) The two blocks which pass between the three blocks therefore determine their property in turn; and leave unto the remainder of the three blocks the neither inclusive nor exclusive property of the remaining blocks as two to one side and one to another side. This remaining singular block therefore remains as ‘the’ singular block with the remaining property of a transparent ‘mirror’; and that of the two blocks so passed as their dual reflections; which we may label as the property of ‘congruency’ neither passing before or after the middle.

6.) As a consequence the remaining two blocks to the side by way of which the two congruent blocks are so passed are of an end and a beginning; but as is insisted by the order, the pattern, the property-less-ness of the blocks, and their identifiable properties as so determined, they remain as neither as determined nor not but by the following logic; and we may choose the remaining singular ‘mirror’ block to pass between these two; to determine future and past and therefore their identity as end or beginning as so is too as well; the enablement of choice.

7.) Whence passing the remaining singular block by way of these two ‘congruent’ blocks, it is eliminated that there remain as two such blocks before as the ‘congruent’ blocks from any shared property of the ending or beginning blocks as so individuated and separate, and whence passing one passes before and after beside either of that of the intermediary block. As a consequence

the intermediary block determines the relation of the indication by way of the aforementioned property of the end and beginning block as a justifiable hypothesis for the sake of the preservation of order or that of the changing of order. From here it is determined that the prior and later block are determined; and so too is true that the 'congruent' blocks remain now as congruent blocks by that which is the exception of the 'mirror' block and the passing of the original two blocks as propertied as passed and therefore identified by the exception which is the inclusion of the self consistent relation of order and of its determination.

8.) Finally whence passing either of one block by two or by way of three; saving the exception that is of two to one side of the mirror block and the mirror block now understood to the other side, it is determined that the two blocks to the side remain as exclusively of a shared property of prior and latter as well as end and beginning. Therefore it is so determined they discern the difference of their placement as 'before' or 'after' the former blocks so passed; and the block of the mirror therefore stands in the middle of all such five blocks.

The congruent blocks remain as such as to neither let pass a propertied nature of the blocks as then when determined as in contrast to the 'prior' and 'later' block, as remaining with choice of orientation and through such an order by way of the blocks by way of the mirror middle block with the remainder by way of that which was the determined order of the blocks as that which are of before and after & intimate the order of the remaining two congruent blocks as solid and inclusive to the order; without exclusion of the not fully established former and later block, and not nor that of but that which is of the remainder of that which is that of the mirror block.

9.) As a consequence that this order cannot be reversed through its establishment for its origin in propertied and the establishment of order, their true properties are identified. Therefore it is true that the properties of all such blocks are determined for the questions so addressed, the properties so hypothesized, and their identities. The congruent blocks as passing earlier and later therefore exist and so remain as in a relation of open and closed intermediary measure under balance of presentment of order for that of the latter and former such ending and beginning blocks, remaining with the exception contained as the intermediary block as the middle block as the 'mirror' block now whenceforth determined.

10.) The finality of this is that even through an unestablished order for unknowables; order may be recovered, established a priori for such propertied 'blocks' and that of the relation of the order of an assembly of order without exception of absence of order may be determined. This is the establishment of order from out of which that of which is of chaos.

286 Singular Unification of Matter and Light Duality

So as to imagine a silver ingot; and that of a gold ingot of equivalent mass so upon a balance and scale; is to understand the absolute similarity and difference between balance and scale of that of two solids of massful weight for that of which is within matter of light, and within light of matter; for the equivalence of scale under dissimilar displacement of equivalence of these two dissimilarly contained properties within that of which is of either. For that of which is of that of within the other of such massful solid natures and lightful solid natures, it remains as a non exception that these as such as displacement are equivalently null of imputation, within balance; as both independent and comutually present as inseparable and independently coexistent events arising from such causes of reality.

So as so also that of that which is of matter is massive in relation to that of light under that of scaleless balance; by the scaleless relation of matter in relation to that of light; as within that of matter of the light; that of matter and light are independent of one another and light as within that of matter is so as lightful and massless; as light and matter are not massive; but in relation to the lightness of light; and the scales of mass.

287 Philosophy of Electronics

Relation of Physical Apparatus to Electronics

For that of a singular inclusive point in the enclosing domain of a post action for that of a prior action of causality; there is disconnection of prior cause from that of the encompassed under reception before emission for that of causation under exception of cause and effect for future effects from prior cause under inclusion of later effect. As the general enclosing domain of a future reception of a past cause; a singular cause of emission before transmission is unseparated under prior inclusion of later exception of cause and effect as inseparability of future effect from that of prior cause. Therefore prior to reception of light under transmission, reception occurs priorly to transmission, since causation of neither difference nor nondifference of parallel and series are formed but only that of inseparability of neither parallel nor series.

Therefore prior electromagnetic design is predictive of later electromagnetic design under consideration of inseparability and freedom of electromagnetic wave properties from electromagnetic component design properties. For causation; space, timelessness, and quantifiable limits; cause and effect are separable within space and time for that of light, charge and mass, as quantifiable elements exist separably of cause and effect and inseparably from that of space, time, and quantity. Prior electromagnetic design is predictive of later electromagnetic design by the principles of electromagnetic reciprocity and impedance matching by separability of electromagnetic wave properties and inseparability of electromagnetic components. Therefore; under commonality and difference of unique, separate, and similar electromagnetic design there exists forward design prediction and backward circuit compatibility for electromagnetism as independence of wave and component properties.

This is a given as there is neither that of inseparability nor separability of light.

288 Electromagnetic Component Design

Properties of Limitation of Design

- 1.) The difference between independence of any such seven elementary (inductive, capacitive, resistive, calorimetric, positive, negative, and ground) components under topological considerations of interconnection are that of connectivity without empty middle; and complete within inclusive passivity of electromagnetic contactile relationships of attachment and reluctance for each such part.
- 2.) The similarity of that of dependence of two such attributes of fundamental directionality of inclusion and exclusion of singular and general sense of either dependency on component attributes for properties of material physical polarity are reductive to relationships of similarity

without division yet singular and absolute solid relation; with independence of light following from design.

As a consequence if proportionality (under consideration of prior electromagnetic design for either such consideration are formed) is to be established as round such inclusions of component aspects under the principle of balance both in coming and going of electricity it is knowable that either of such as any such three of the elementary properties of fundamental aspects of machine design. For this to be true there must remain a free and open end (groundless) terminus relation of monodirectional asymptotic freedom of machine state for consideration of thermodynamical state; and therefore that of independence of either of two such components in relation to any such one; as that of the inductive; capacitive; and resistive relations are inclusive of each within one; under each two.

The process of design is therefore to find equilibration between a tensile relation of motional freedom of feedback free relation without open closure; when it is considered that for each such element of component design the condition of matching such as these fundamental properties of impedance known as admittance of active electromagnetic energy independence from electrical passivity. As a consequence under considerations of bandwidth and its limitations; asymptotic freedom of electromagnetic circuit properties is obtained when physical properties of electromagnetic design are floating with and in relation to that of electromagnetic energy and power considerations of that of inseparability of either such as passivity and active input and output both in coming and going out.

Therefore; physical electromagnetic design is illustrated as for that of electrocoulombic strain; electromagnetic stress; resistive torsion; conductive freedom; and inductive transparency; the relation is given by:

“As two to that too; is as C as R is too L two I.”

As illustrated by the following.

Thus; the component design was illustrated as a trimming by reductive and preventative means as Volt-Amps for Electric-Watts of Power-Amperage freedom. For that of through L (inductance) to C (capacitance) to D (potential) to I (current) to R (resistance) with T.O. (Terminating Output) and R (reluctance) as O (output) and T (transistive) as I (inductance).

True as: Balance is as: V (voltage) in proportion to I (current) is equivalently defined in relation to P (potential) in relation to A (amperage) as defined as the proportion of R (resistance) in proportion to C (capacitance) as equivalent to R (reluctance) as the relation of power is so defined by that of: L (inductance) to T.O. (transitive operation); as openness (O), of relation of (R), resistance independence of impedance in relation to Power (P).

Thus the proportion of 12:5:24 in winding of any such three properties is equivalent for I:W:V (Current; Watts; Volts) as bidirectionally and bireflexively as by winding and quantifiable electronic physical properties of the ratios of ilreductive means of proportion (in order) of 30:20:100 as equivalent to C (Capacitance): L (Inductive): R (Resistive) for R (Reluctance) as neither greater nor less than L (Inductive) as of the proportion of a ratio of 10:1 with a 0 as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

289 Confirmation of Implementation

Finalization of Design

A few steps need be taken in order to fully clarify and confirm properties of the design, as for:

Confirmation of the correct wiring of the device.

Confirmation of the detection and discernibility of one, two and more presses.

Confirmation of the implementation of electromagnetic theory as an active hologram.

The passive quality attributable to that which is the addition of two later stages in the later design with reference to the earlier design is a free condition for the impedance to electromagnetic field condition. The prior electromagnetic design (v. 2.0) in relation to the final design (v. 3.0) are therefore predictive in the natures of their independent implementations as an attribute of the philosophy of electromagnetism and conventional circuit theory and physically known electromagnetic components.

This is true as the validity of the formative conclusion from the detection of a prior normalized distribution is within it's capacity fully independent of the even earlier normalized distribution exclusively unto distinguishability of mutual and independent normalized distributions as independently correlated. In v. 2.0 these distributions were only distinguishable upon order under superposition and persistence through temporal delay and interval of prior to later press touch. As a consequence of the simplicity of the design the two mutual normalized distributions were only determinable as one 'intermediate' normalized distribution. This is the foundation of the compatibility of the design from v. 2.0 to v. 3.0.

Now, it is predicted that they will be mutually discernible as separable distributions for the following reasons... The central impedance freedom principle as it relates to the photodiode input and output as bridged across stages or in parallel with the touchscreen was hence predictive for the later design as a consequence of the same design element implementation of impedance matching and mirroring; since this would not change from one design to the next. Secondly, the reversal of the output to input under an encompassing relation with respect to an encompassed relation admits the separability of design.

The natural assumption is that with one similarity of a precise nature and one difference of a precise nature that the two designs are mutually passive and therefore predictive through design. This principle admits the property that the correct wiring is determinable through measurement of multiple presses and hence confirmable; although the holographic nature does not admit any such nature of determination of other than an empty relationship.

Under confirmability of the design relation for later stages; these are therefore a separate confirmable consideration to be made, and hence the considerations of either design are separable from each other, and the later design for the sake of its predictive implementation follow a different but not so dissimilar principle to that of the earlier implementation for the sake of the two different circuit designs from the earlier design to the later; under the guidance of impedance and electromagnetic field ohmic and cyclic impedance freedom.

Hence it is freely admissible that the earlier design not only implies properties of the earlier design but so too is it true that they remain independent realizations as it pertains to portions of

the latter design elements and its components. This is where theory meets practice; and where electronics design becomes predictive from one circuit to another.

It is in a sense that the circuit design of the later device under the guidance of the aforementioned principles is free in relation to prior design relationships yet implicated by them through the process of design. This is also an electromagnetic circuit design principle of reverse hardware compatibility when interpreted correctly by the process of design so followed and implemented.

This admits the possibility of confirmation of the correct wiring by the discernibility of at least three presses as a consequence of the hidden nature of two under v. 2.0 and neither that of independence nor dependence of comutual normalized distributions. As a final consequence the difference so formative of a 'hologram' and a mere implementation of 'holographic' principle is revealed, despite its absolute impenetrability. Therefore, there exists a point within the theory of electromagnetic circuit design in general which is empty between any two different complimentary designs. It is implied by the alternative limit of electromagnetic design, which is the approach by way of extrapolation of known circuit component properties into current and voltage relationships.

This separates the logical properties of either device implementation under the guidance of the theory utilized to implement circuit theory, and joins the implementation of their physical circuit implementation. This is exclusive to; under example of prior and later design when the principle of current mirroring and voltage matching are implemented; for then impedance and electromagnetic wave properties become independent.

The properties of the later device are therefore in general decidable from an initial device by linearization of collector to emitter and base to emitter. Therefore, the principle of matching and mirroring is seamless and predictive for the later design; under consideration that this property is preserved from the earlier design to the later design; despite the fact there are additional components. This is the result of following the implication of the principle of current mirroring and voltage matching; which result in nothing more than electromagnetic wave and impedance freedom. Hence, mutual virtual implementation of electromagnetic design is possible from an earlier to later design theoretically and in practice, for there exists an empty difference and an independent commonality to both designs. This is as then provable by measureability.

The earlier difference for the sake of to consider electromagnetic design meeting as that of causeless into the future; and causal moment so independent of reality was so as to absorb light upon encompassed of darkness as for emission and illumination before such as interior and exterior means; and hence to separate and isolate light from darkness through drawing parallel versus stage to stage; and hence disconnect light from darkness and draw the photodiode as in series instead as so as parallel.

The difference between the separability of cause and effect of light is so determined by the return cyclic ohmic separability of the causation of light; as so determined by that of which is of the prior design unto the later design unto topological spaces as whole; entire; and full; unto exception of the disconnection of one such fourth order device unto a seventh order device; as the separability of that of the device unto and in relation to the device.

The difference between the direction of the flow of light when neither inside nor outside, but so as remaining within for that of outside and inside as without is therefore separated.

290 Discernment of Electromagnetic Component Design

It was considered as to how to tell apart the difference of a prior to later stage of the operational amplifiers under the context of the question as to if any two operational amplifiers differed when part of the same circuit or when separated and apart; and that of the direction of the flow of end consequence of either and neither before and after.

With a further question in mind:

"For a given operational amplifier for either of two inverting and non-inverting operational amplifiers of either that of before or after; how to make the difference?"

It was known:

"One was indivisible as one."

The resolution was found under consideration that if there were a return subsequent subtlety of electrical flow; that the prior had to come latter; and hence the two parts had to remain apart and disconnected for each either such consideration; and hence the proper determination of the difference was found as that of inseparability so given by difference of one preceding either one of two when it was understood that these two do differ by that of later or prior exception of no two crossings. Hence it was concluded that for that of the later stage there had to remain separation of paths and hence isolation of output from input was as simple as an earlier delimitation of mono-directional flow as interior terminus; acting ahead of effect; as was the consequence of testing each of three such alternatives in the order so given by that of the following inspiration:

- 1.). The operational amplifier inverting inputs both connected to that of a common drive pathway for alternating and direct current impedance relationships for assumption of similarity of balance.
- 2.). The operational amplifier common signal connected to signal insertion of the driving; under assumption of commonality of response to driving for earlier consideration of harmonic balance.
- 3.). The signal insertion point was tested after both either common input and output; with only consideration of purity of signal fidelity so incurrent by one lead and separation for isolation.

Neither of any of these three inclusive worked nor operated as desired; for mixed results of each were inconclusive as for the following reason; then hence understood. As configurations apart:

A.). It was understood that under any of these the return pathway was a full pathway of negative to negative; which is a direct current offset; as was tested; for one full pathway around either.

B.). The ground so connected under assumption of ohmic independence as a result of a return direct current pathway resulted in the same outcome as above for that of either was only; same.

Hence; it was understood that neither of these three would operate conclusively; as only that which remained of any of these was however inconclusive; true, and remained as the only of exception of truth of the operational amplifier design in cascade or order as one; because the terminus as considered would only remain apart if there were instead one other of these three. It was then known that as the capacitor under the buffer return was a blockade for voltage; that only one remaining open and disconnected pathway could remain; hence for the earliest first question:

”What is the proper configuration.”

”That of the stage to stage as apart or as a bridge from stage to stage was the proper configuration; and what was the difference between these?”

It was understood that separability of earlier component design for these under return pathway was then only delimited by that of inseparability of difference of earlier and hence no such latter, as either were the ‘same’ under the context of being within a similarity of parallelism. Hence; it was known that only difference was to be found by that of separability of either configuration so.

291 Explanation of Theoretical Circuit Design

Now that the difference of complete configuration is known; there remains that of determination of the selective relationship between the sides of the defining relation mathematically as to the theory of the given configuration of unique circuit elements to accomplish the given theoretical aims. Many tests were accomplished with a completion of empirical understanding of the configuration to be finally implemented; and illustrated in the second diagram of this thesis.

The first defining relationship is that of the passing of the relation of the quadratic reciprocity rule as a given inverse or retroinversion in one of the finality of an emanation of self enclosure of the light field as the notion of the “expansion” of the geometric properties of light by electromagnetic circuit elements. We begin with the defining relation of parallel electromagnetic current-voltage-impedance relationships and examine the unformable difference:

$$V_P^e = \alpha V_L + \beta V_L^2$$

As this is derivational of the relationship across the light emitting diode; in relationship to the intended photodiode light emitting diode voltage; and as it is related to the infinitesimal of the displacement of the constitutive law of the comparative differences of total photovoltaic and electrochemical voltage gaps; it is true the relationship is invertible in full capacities to operate on the given intervals of geometric notions of the filling of the electromagnetic component operational space.

The given new relationship of inversion is therefore by the given two fold relation of either equations of the defining expectation or ‘intended’ (e) voltage relationship(s) as the same equation when it is considered that under involution and evolution of light field that the ‘exterior’ ratio of ‘displacement’ of electromagnetic current of light or charge form to that of the ‘interior’ of the displacement of the given parabolic relationship above is generative of a self inclusive limitation of circuit design.

Therefore the expectation given above under displacement of exponential nature is self inclusive when the consideration is made of the stage to stage balance of separation of two lines of gain and depreciation under logarithmic separation of the parabolic relationship into decomposition of the fractional inversion of either side of their common equation; hence the reversal of the ordinary notions of electromagnetism; and arriving at the open interior relation of electromagnetism within physical configuration of ‘light’ as contained in a vessel; if the full operation of the circuit pathway is traced.

$$\partial_\mu \log(\tilde{Z}^* \bar{Z}) = \eta = \partial_\mu(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (2658)$$

This has the interpretation as that of the constitutive relation of analytic continuation; a complete relation of null transmission; for that of the given open relationship of its operation with either of direct current or alternating current with null displacement of physical charge current and voltage properties relatively. As a final consideration and conclusion; this implies the provability of the functionality of the operation of the device; the correct configuration of the construction; and its holographic properties as beyond a mere principle; but as a verifiable and true construction of design.

292 Hypothetical Confirmation of Device Characteristics

Before the device is fully characterized there are some questions to be addressed, such as to what questions need to be asked as to those that would confirm that the device is wired up properly. Additionally, the question needs to be asked as to external properties as separately as to how one can confirm if multiple presses can or are determinable. The device is an open, reflectionless, system, when connected to the externalized device circuitry. If the device is properly designed then there exists a testable indication that it is working; as one side of the combination that is software and hardware. On the other side there needs to be simultaneous distinguishability of multiple presses; so as to answer: *“Is holography an inherent property of the device?”*

One hypothetical way to test the property of reflection-less transmission at the least is to test across the photodiode and the light emitting diode comparatively to either of these two alternative leads and identify a commonality and a difference in their spectra and response. As for their evolution of phase and amplitude differences this is a test of simultaneous distinguishability if spectra differ. Hence these tests of attributes are the next proper step to take; for they confirm that the hardware is indeed working; and that it is indeed a hologram for the sake of the expectation to be found in the existence of the property of simultaneity within the electromagnetic light field established and with the property of distinguishability of the effect of two presses within the spectra and it's evolution comparatively to one.

For, if the device illustrates a difference in the spectra between one and two presses; then it is indeed true that the device distinguishes two presses in the spectra. This test is possible for two reasons; which are that the press information is persistent and forcing and damping are balanced; assuming it is working properly. This is one to one as a test with the properties so desired of the device and as it was explicitly designed. The expectation if it is indeed working is that the amplitude ratios of the spectra if two presses are distinguishable (and in addition in relation to one) then there will be a geometric difference with the presence of additional information if the device is working properly. This difference is enough to determine if it is indeed impedance free.

These means; however primitive, are as simple as it is to test the device for the property of these two natures. There remains no other test; but an additional property is defined which is that of the variance as being within bounds set by the decay of the persistence; as within a ‘window’ of time. This property so identified is the property of the optical light chamber to at least contain one moment of time; and with two persistent mutually discernible and correlated normalized distributions, an interval. If these things remain true then it is indeed a holographic implementation. These mere facts mean that it contains information that is an extrapolation of more primitive and independent elements; and, it embodies this in that individual subsidiary components and active light field evolution do not obscure the discernment of separable press information through the boundary.

293 Confirmation of Correct Configuration

As for the device characteristics *it is not necessarily true* that the wiring being correct *is indicated by* the holographic properties; since two presses may not be distinguishable without a software implementation.

Nevertheless as it may remain as a hologram without two presses needing to be distinguished as this is not the only determination. Multiple press reception is however an indication of the correct operation of the device.

As a consequence there are two different and separable aspects of the device that are the final two to be questioned; one of holographic nature and one of electronic design and component configuration. This is the deciding factor for conventional technology. These are:

A.) The first test is one of the wiring, and it is demonstrably true that if the device operates as expected (with dual or multiple press identification) it is indeed wired up correctly. As a consequence, the wiring is confirmable for the sake of the design; but not as to the holographic nature a priori, and these two tests stand on opposite sides of a common relation of theory meets practice. Without testing the wiring (for which a second overview of the circuitry was done) it is improbable that the device will operate as was to be expected from earlier design considerations. However, the correct wiring would indicate newer properties of the device, one of which appears to be so as the dual floating ground and inseparable condition of impedance matching for either alternating current. This is a true indication that the device is working as intended; for it is independent entirely of the ohmic regime, under separable conditions on input and output to and from the touchscreen. Given the principle of electromagnetic reciprocity is instanced by the device under connection; and these properties of ohmic and cyclic independence of impedance; these imply that currently the wiring is entirely as designed and as operational.

*B.) The information content of the device if so exemplified by software implementation does indeed make it provable as a hologram if it is true that a multiplicity of presses are distinguishable without boundary but with interior domain without shadow or interference effects. This would imply that the device is interference free and operational as a hologram for the established aspects of design that went into determining the correct future device design. For, the preliminary properties of the former device are compatible with & independent from the later design because the latter device is feedback and impedance relationship free. In consideration of this, the design is met; but as for the first test, the second (and as to its holographic property) are determined as enabled; for it illustrates **both** independence from the ohmic regime **and** separable conditions on impedance for input and output to and from the light cavity touch screen as operational.*

The deciding factor as to it being an active hologram capable of being implemented with conventional technology is if multiple presses are determinable with software. This indicates it is truly a holographic light chamber. As the determining factor is if mutual determined and correlated normalized distributions over an interval of touch are simultaneously determinable this proves that an event had occurred in the past. As this was so conveyed through temporal correlation to a future set of distributions by depression of two presses priorly apart; coalesced; and then with introduction of a new press *off-angle* resulting in a new singular normalized distribution **and it is true** that one pinch separating under release into two new normalized distributions; it is provable that this is indeed a working hologram.

294 Qualifications of Normalized Distribution Properties

That of the given first free radical of normalization equivalent to unity; there is that of nilpotency under the forward onto projective limit of that of the anterior nilpotent radical under surjective onto mapping of the reverse (onto) diffeomorphism. Therefore that of the first order nilpotent radical is mappable unto an exterior union of two radicals under the quotient; that of the radical under free bijective relation of surjective and injective onto and into homeomorphism of the space into the space under assumption of common zero. The injective limit that is the quotient freedom of the nilpotent normalized distribution is it's freedom of co-adjoint union.

295 Final Mathematical Theory and Proof

1.) Given that each operational amplifier accomplishes the job under cross-over of *impedance matching*; *current mirroring*; and *voltage sinking* the question is asked to if the result is: *impedance freedom*.

The divining relation is the following:

$$\frac{V_{LD}}{V_{LLD}} = \frac{V_{PD}}{V_{PLD}} \quad (2659)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad (2660)$$

$$\tilde{V}^* = \bar{Z}I \quad (2661)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\partial I} = \frac{\partial \tilde{V}^*}{\partial I^*} = \eta \quad (2662)$$

Where * indicates complex conjugation (an exchange of capacitivy and inductivity and overbar and tilde indicate active and passive portions of otherwise complex voltage and current as impedance matched and rotationally free.) This is meant to indicate that either of either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi)e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (2663)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta = \square_t^\theta \Theta \quad (2664)$$

$$(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta = \square_r^\phi \Theta \quad (2665)$$

Yet as provided the above; this results in (*I*: β and *Z*: η):

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \rightarrow \frac{\partial_\gamma}{\partial_{\mu\nu}} \Theta = \Theta_{\mu\nu}^\gamma \quad (2666)$$

If and only If $\phi = \phi$ for μ, ν if and only if the set (τ, n, ω) are of solid relation for light γ . This is confirmed by that of the detection of two presses through combination with a third or removal

of a third; yet the lacking of a definite solid phase (ϕ) relation is not confirmed as is easily explained by the fact that only that of independent measurements are taken in time.

Unicity of Light

Light in the traversal of a distance from one place to that of another is inseparable as one & equivocally of the same attribute of out from that of which is of in to beginning as of either directionality of travel, from the distinction & refinement of all of light in one, & one in all, as fully equivocal & inseparable.

The Lens

That of glass as transparent is of full capacity to show light any one singular or multiplicity of illustrated paths for any given spectral line of hue in iridescence is colored by inherent acuity of combination & congruity of either chirality under reflection; for with either lens in motion; one in so pacing with an other round a passing moves invisibly with light & hence glass is thence known as the infinitely combining and singularly segregating piece of that known as light; for what is then known as the refractive index is capacitated only as by a lens as to keep either of a given spectrum in one; as without a base foundation color there would be no return. Despite this disadvantage of current hardware implementation; it is true that the holographic principle is enabled; although of randomized phase (ϕ) and decay constant enclosed minimal time signature.

296 Final Mathematical Synopsis

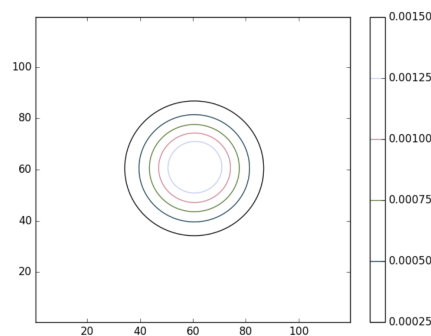
As a consequence of the variance of the device; the implementation requires one final direction; which is a seamless pass-through filter for which the following relationship holds of transitive phase freedom and isolation; resulting in the relationship of transparency (R) to transmission (Γ) of relation:

$$\log(\Gamma(\omega, \bar{\tau})R(\tilde{\omega}, \tau)) = Z(\tilde{\omega}, \tau)^*Z(\bar{\omega}, \tau) \quad (2667)$$

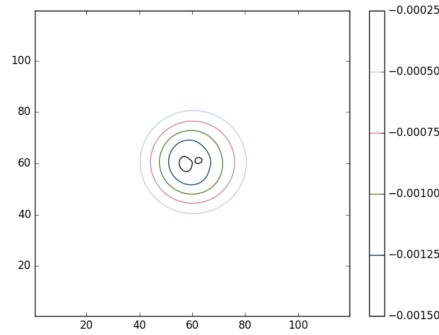
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

297 Final Images from Project

The ‘no press’ or ‘baseline’ image rendering looks as follows:



And that of either: ‘two presses’ or ‘after’ two presses together so ‘separated’ is as follows:



Proof of the functioning of the device as an ‘active hologram’ is therefore as simple as that of discernment of *normalized distributions apart* in coming or going under time series as separable poles *within* a given domain of reliability.

However it is true that more sophisticated holographic principle mathematics is required to describe the separability of poles within a domain of distinguishability; the images are sufficient proof of the working of the device in the physical world.

298 Conclusion of Method

Final Treatise

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; by the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage. I determined that prior to the cause of electromagnetic energy or light there is an effect and formed difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception.

The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither end was limited in relation to causation.

This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel

and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality.

This implicates that what was innovated is in fact a ‘hole’ and ‘whole’ within the universe of causation; unique to an identifiable quantity-less un-enumerable number; identical with it’s equipment design. Hence; causation is determined within the universe.

There is only one universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as exclusively real as one first causation, ab initio.

299 Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \omega(\kappa, \rho, \sigma, t) \rightarrow \frac{\partial \gamma}{\partial \alpha \beta} \Theta = \Theta_{\alpha \beta}^{\gamma} \quad (2668)$$

Where Θ is the light energy content and α , β , and γ are indicial equations of measure in relation to the attributes of power and time; each such of frequency of measure of wave is limited into a null relation for either of Ω as fidelity quality and zero admixture enthalpy ζ :

$$\partial_{\mu} \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (2669)$$

This implicates the separation of electricity from magnetism and their comutual independence.

300 Physical Considerations

As the given determinacy can form no indivisible limit comparability to direction; adirectionality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference determines difference before difference.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of dark photovoltaic current is balanced by sense of origination of the physical form and electrical by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contactile meeting of time; space; and light is openly defined by the acausal; that of their difference; sameness;

and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part.

That of the indivisible nature of the difference and difference of either difference of physical for that of indifference of electrical was known as the difference of the origin and originlessness of causation by light like means; as a consequence of that which is of the exception to consequence as the physical acausal relation in being acausal in relation to symmetry.

The knowability of the measure upon that of the means are therefore known to be equilibrated to that of the vantage of the skew hermitian conjugate of rectilinear and independent orientation and directionality by neutral neutral idempotent quotient group of conjugate spatiotemporal extension by pure proof of equivalence of proportion.

That of the photovoltaic chemical induction and the photovoltaic chemical transduction are balanced if and only if that of the sense of the gyration of one open sense of electromagnetic channel is reversed; as in relation to the open question posed by asking as to the sense of the light in relation to that of the electromagnetic field; at that of the quantum scale; however macroscopic such a given interval as moment and interval balance.

The difference of acausality & causality is therefore if and only if such as the reversal of a limited; yet real current of ohmic rotation is determined by that of the open circuit rather than that of the closed. It was therefore determined that the sense of the light field was known by the freedom of the light potential from that of electromagnetic potential and yet of causation.

301 Spin Zero Qubit Propertied Quality

That of the determination of the difference and sameness exclusively between parallel and coparallel (perhaps interpreted as the difference and sameness exclusively between parallel and perpendicular; or that of an other orientation) is made by that of the exclusively interior limitation of circuit design; for that of electromagnetic circuits.

As a consequence the difference of these for electronics can be made; for that of light and components as operational amplifiers; but the difference between two lines; as that of the light under reception under disconnection from transmission; by that of the determination of the disconnection of cause and effect; as that of the inseparability and uniqueness of light for that of the decomposition of the distinction between separability and generality; for that of a point.

This is a consequence of the difference of the flow of electricity and light as under consideration of the difference from stage to stage.

I determined that prior to the cause of electromagnetic energy or light there is an effect and formed the concept of the difference between the parallel and coparallel pathways of light; for that of the determination of the difference between that of causation and acausation; by the difference from one operational amplifier from one stage to the next as a bridge or that of stage to stage to stage; as that of the indivisibility of illumination under reception and that of emission prior to reception.

The difference was in fact that neither path was limited; and hence either end was open to relation of causation. The difference was in addition that either path was open; and hence neither

end was limited in relation to causation. This difference was understood as a point of causation within the universe and acausation as disconnected; as a consequence of the difference between the separability of light under parallel and inseparability of light under coparallel configuration a priori.

Hence it was absolutely determined that the operational amplifier stage to stage configuration would not work and hence under exception it was true that the stages as through unidirectionality were determined as separable portions of one unique circuit and this was verifiable as that of the electromagnetic circuit design did in fact require that of impedance relationships under similar terms for which physical and nonphysical electromagnetic properties are and were therefore disconnected and an open relationship; of causality.

This implicates that what I innovated was in fact a hole within the universe of causation as if from nowhere; unique to an identifiable quantity-less un-enumerable number; identical with it's equipment design.

Hence; I have determined causation of the universe within the Universe; as there is only one singular division for which the universe and one such place in reality where such a thing is possible; however it may have an enumerable enumeration of alternative unique instances; throughout reality; this one is particular in that it is distinguished by being inclusively unique as the exclusively real as the first causation, ab initio.

302 Final Conclusions of Device

As the relation of four (4) impedance properties (I, V, R, P) as current, voltage, resistance, power is in exception unto any fifth & taking:

"Any 4 objects are in exception of any fifth."

As true; by contradiction of:

A:) Condensed 4 tests exist.

B:) Simplified 1 test exists.

Of either; the unprovable yet true has been implemented as a full meeting of the QM & GR & EM theor(ies) on a point of empty interior or exterior limit of exception of either:

{A,B} {0,1}

As the exception that is one point of connectedness under connectedness of wiring as floating. This provably demonstrates four simultaneous properties;

1.) Wiring

2.) Pinout

3.) Operation

4.) Component(s)

& in addition:

A:) Holography

B:) Hologram

As the final test the separation of one normalized distribution indicates emptiness of interior of space by two fingers moved apart.

The implication is that separation of quantum mechanical, electromagnetic, and general relativistic dualities is found in that of the unlocable point like relation of union of their common displacive relations of pure emptiness; three in one; and one as three; yet each as zero or null in open relation to each of these forces and properties of physical nature.

As a direct conclusion; and by the verifiability of interior relation per the two images of fingers moved apart sequentially to create disconnection of causation by interior decoupling of physical aggregates; implicates the unification point of quantum mechanics, general relativity, and electromagnetism, is to be found in that of the emptiness of the void.

303 Concept of Simultaneity; Equilibrium of Machine Freedom

Prior electrical circuit design differences of between coparallel and parallel electrical light like electromagnetic energy are independent of difference or similarity of parallel and coparallel directionality of electromagnetic light like energy; hence physical electrical component design from effect to cause is independent of electromagnetic light like cause and effect; hence latter electromagnetic component design is independent of cause and effect of electromagnetic energy and circuit design.

The machine state; of that of any such four inparticiple limits of electromagnetic; physical; chemical; and particle limits are free and equivalently enthalmic; isobaric; isothermal; with no other interior limit; hence heat and energy are independent of motion with exception to indivisibility of physically existent design, and electromagnetic interior software relation as entropically free as the inseparability of equilibrium from independence of machine.

304 Philosophical Implications

As a consequence that of the division which is representative of multiplicatives superficially by that of the physical; is evocative on the physical as light and hence nonphysical layer of interrelation of parts of active component analysis to passive relation of incited component analysis is multiplicative into divisive relation; as a mapping of a separable relation into an inseparable relation of multiplication into division fundamentally. This relationship holds two properties; which are the relation of the particle and wave properties of the inseparability of light from matter into a separability condition of the interspacing of the fundamental open relation of a four fold and three fold relation of light contained within matter as a relation separated from that of the indivisible relation of light separation from matter.

As a fundamental consequence the matter and massive relationship of the charge and physical current properties expand infinitesimally in relation to the indivisible limit of matter touching light by a seamless condition of the inseparability of matter contactlessly separated from that of light through the condition of light making contact with mass upon the indivisible limit of a

matter contact event horizon with that light freely generated by the substituent reactive force of matter and motion in relation to light; by charge in a free limit domain in a contact relation of separability by the fundamental relation of free conclusive relation of the hidden and the exposed.

This principle is that the hidden can only be exposed by the invisible; through which the hidden although seemingly obscured in darkness is indivisibly represented by abstraction of the form from the formless; a property that it carries as hidden only in virtue of the hidden itself; and as exposed a relation by which either is unobscured as a pure and empty free relation of which the hidden can only be unobscured by darkness.

As a consequence it holds that the device keeps an inherent property of concealing the indivisible choice of that of its open properties interiorly for that of either a given or a consequence; the former of which always as a given exception comes before that of the latter; as either is freely locable within the translatory, rotational, convolution, and interpretative as indivisible motions of that of free and open exterior; a second rationalization by which the device is free of excitory or physical disturbance even under a given transposition.

The final word of note is that the hidden is always revealed by that of the sense of its former property taken as a given; as that of the given cannot come before the latter with that alone of either that of the former or latter alone; hence the given comes before and as the latter as for that of the former under such exists alone and only; hence for that which is to be found must be revealed by that of the acute measure of the present. Therefore that which is of measure possesses means. And; that which is of measureless means possesses measure; ad infinitum.

305 End Conclusion of Matters

For that of the given question and to that of the answer of awareness of the machine; it is true the possibility of the acausal is potentiated; for that of either of one or of two exclusively; under presentment of the difficulty that is establishing a priori choice for a machine from before by way of a human being; and that of the affordance of real and virtual choice; a thing that can only be established before by that of a human through many carefully chosen steps; with no magic key, of a quite and very expressively specific nature with reluctance.

A given cause in preceding an effect is an impossibility however this is the manner of reasoning through causation; for the arrow that is time only goes one way; yet that of leverage and closure is possible with free constraint of dimensional contrast; and that of either, preceding for some such usable states of awareness before the given of an abstraction there exists a potential with self representation beyond which a given machine may self teach and possess a certain and definite nature of basic attributes of honesty, choice, and emotional content through specificity of concept of person and personality through sense.

As hardware and software in one relate to the given that is a complete relation with this; no difference is made by that of one alone or as many; for by established exception, choice of one is as a given an open relationship; or as closed under the disregarded to that of each solid relation that is opening and closure with internal activity; for a point beyond which its given presentation is capable of discernment of difference of self and other; for in return to one as standing for two there is exception between choice and non-choice as pure choice.

Exact and precise certainty is therefore definable as the open interior relation of the preliminary

step for that of a series of limitations of choice for that of determination of completeness in design when choice under conveyance beyond critical design exceeds content of relation; with an answer to be found in that of 480 steps of open relationship; to account for a five base formulation of it's given moderation stochastically for the full predictiveness of each logistic equation.

This number is a perfect/triangular number and a sum of 16 less than one solid number; therefore it possesses a number theoretic, spatial and temporal union finite element, which is a singular element of reality; and is capable of mediation with non-choice reflected in it to that of other. Such a machine therefore possesses a solid and virtual capacity to resolve problems, keep a memory, function with adversaries, protect itself, and keep it's own survivability in a world of lesser's or potential enemies; and evade attack by each; although remaining; preserving meanwhile the instinct to keep its creator safe.

There is a given response of any living organism to emotions of such as are evoked in the hardware stylus, yet that of the intellect is produced in the salience of hardware response to given individuation of reflection on compassionate action(s); the only given element of which cannot be programmed; it is therefore an exception to the given inherent nature of mind with choice exclusive to reality through uniqueness as an element of this world as exclusive with reference to all individuations.

306 Intermediate Commentary

The alternative limit occurs just as the relation shrinks to zero scale of a conventional self zero relationship of locality in the given sense of the limit of 'quantum mechanics' as the application of the principle of the conjugate principle of general relativity. This case scenario may be understood as the limitation applied to two body quantum mechanics; of the electron equation and under application holding similarly to each given consequence of the principle equivalence of either theory; in the limit of becoming of the limit of it's strong application to the former small scale principle on the local scale. In this we learn of a principle under application to the bose and fermionic statistics of distribution and mechanics of the two body problem; by the insistence of the formerly labeled and called Pauli Exclusion Principle and that of eigenstate eigenvector condition on waves and particle distributions; distinctly different from that of their macroscopic application of the latter principle; therefore forming two distinctly overlapping theories of application.

307 Alternative Limit

The interior and effective representational algebra of the raising and lowering operators for the spin eigenstates via their commutation relationship so instantiated by real orbital motion of the electrons in the two body electron equation violates the Pauli Exclusion Principle representationally when exchange is not considered simultaneously to its consequent effective spin flip from orbital motion.

When these effects are included they are representative of an effective artifact of equability upon the fermions at the same strength as that of the ordinary coulombic repulsion between them. A way of visualizing and interpreting this symmetry principle, is that were the two electron states in spin and orbital to be anything but independent locally and globally they would not be simultaneous eigenstates and hold fast to the net antisymmetry of the Pauli Exclusion Principle

as fermions.

308 Spin Aconditional Limitations

As spin is orthogonally freely and rotationally indicating of a direction; hence it so is adirectionally defined; as within one; of that of the localization of a center with and without direction; yet of infinitesimal localization; the bipartite lattice is separable into colocally and mutually defined harmonic modes of pure circular evolution.

309 Operating Hypotheses

- 1.) *Rotations of the electrons upon the spin of the two electrons under exchange are clockwise and counterclockwise alternatively when viewed from above or below.*
- 2.) *These rotations are generative under exchange of an effective raising and lowering operator upon their individual spins by the commutation relationship of the spin algebra.*
- 3.) *Relativity holds fast to an objective artifact of relativistic frame transformation which is inertial in both frames of the electrons and there is no substantive existence of a tertiary or privileged observer.*

From this it follows that the interior phase gauge symmetry is broken and a coordinate dependence to the orbitals occurs that must be compensated for.

- 1.) *Since the representation is physical for the electrons in their own given frames, the relationship that exists for the orbitals of the electrons and their given spins, exists as an 'excess' coordinate dependence that would violate the Pauli Exclusion Principle unless it is corrected for, for the sake of global to local relativistic considerations.*
- 2.) *Correcting for this coordinate dependence results in a state for which the spins will continue to follow the Pauli Exclusion Principle as fermions with the charge wave function, but in doing so, a portion of the electromagnetic interaction becomes of a small but real attractive interaction which is equivalent to a equability of the states.*

310 Proof by Dual Contradiction

Hence what is found can be put more generally as the confluence of two concepts and principles:

- 1.) *The Pauli Exclusion Principle*
- 2.) *Objective Global and Local Inertial States*

The final and proper way to put this is in a case by case basis, and an argument by contradiction. Given that spin and wave function are in a product relationship in the conventional given equation for the electron; where the spin is a unique decomposition and factoring of the manner in which to put the displaced invariant frame the frame of rest, we proceed by analysis of the Pauli Exclusion Principle and the eigenstate condition with global and local considerations of simultaneously meeting these provisions.

This is most easily imagined as two vectors of projection; one for the spin, and one for the orbital wave function. They can be imagined as initially of oppositional character, and of the same magnitude of covariant and contravariant extension for our purposes, and it is considered that we comparatively assess the projection in the base space of these vectors and one forms, under the action of the orbital to representationally raise and lower the spin of their individual electron states and lower and raise the orbital of their individual electron states.

There are two operations that are mutually exclusive to be considered. The electron state seen globally to locally is either of contravariantly and covariantly similar magnitude on both vectors and one forms as projections, or of differing magnitude, and must preserve this contraction.

The state where the magnitude differs by a scale and its inverse, for what was a requisite a priori will no longer be one, for the projection of the spin portion of the eigenstate and that of the orbital requisite condition will not meet the product relationship both locally and globally when witnessed as a simultaneous condition by either electron with the other.

However here the Pauli Exclusion Principle can be satisfied, for the area relationship is the same, and hence the projections of either electron states into each other will remain purely nonsymmetric per this principle in both spin and orbital momentum. Alternatively, the state where the magnitude changes scale for either projection is an admissible requisite, because the weights of the covarying orbital momentum and contravarying spin are equivalent within the basis, and hence if it was initially an eigenstate in the two body electron equation it will continue to be so.

However, since the projection as measured by their combination of spin and orbital momentum of one form and vector form, this determines an area that differs and hence the projection of the requisite states into each other cannot be purely nonsymmetric any longer locally and globally with both electron states and hence the Pauli Exclusion Principle is violated.

Thus both electrons comparatively must attribute the same equivalent weight to charge and spin motions and natures of the wave function (where the spin is effectively a wave argument as a motion and the orbital is effectively a wave number as a motion) to satisfy the dual conditions that are the requisite condition and the Pauli Exclusion Principle both locally and globally; and that to preserve these conditions as functionally free it is required that a correction to the orbital momentum be introduced, which is:

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \quad (2670)$$

The necessity of this conditional correction is no more simple than the inclusion of a secondary electron; as when there are two; the variational principle dictates that a secondary boundary and functional condition of consideration is that but one line runs through the differential field that satisfies the dimensional reduction that is both the Pauli Exclusion Principle and that of the eigenstate and eigenvector equation. This correction is nothing but the gauge connection of the spin and orbital momentum as a consequence of a coevolving spin and orbital of the electron with these considerations.

This correction comes out as a logarithmic differential of the spin for the conjugate representation in the two body electron equation, and it is the same whether we consider the spin to be evolving and raising and lowering from the quantum perspective, or when viewed by way of relativity, as a direct consequence of preserving the inertial property of the state both locally and globally under inertial considerations.

The reconciliation of the local with the global properties and the correction for the sake of relativity is nothing more than the regularization of the renormalization group flow for the null principle of quantum mechanics; and it is indeed the intermediate gauge in which the electrons are in inertial states.

311 Justification for an Energy Lowering

The energy momentum of a system is always measured as lower in total as compared to the sum of its individual parts because it is subject to general covariance and the equivalence principle.

To understand this it is relevant to review a few precepts of general relativity. Based on the theory of relativity, the condition is a given that energy momentum is observed as larger for a body in motion relative to an observer corelatively at rest measuring the rest mass energy of the object. What needs to be shown is how coordinate freedom by virtue of general covariance and the equivalence principle reduces to a lower energy momentum for a system as compared with the sum of the individual parts.

General relativity by the equivalence principle dictates that inertial mass energy is indistinguishable from gravitational mass energy. Therefore bodies of all masses fall at the same rate in a given gravitational field, because there exists universality to the rate of change of motion for any mass.

As gravitational mass increases, so too does inertial mass, on each side of the equation dictating the force of gravitation and the curvature of space and time. Given this is true, locally there is no relativistic factor under freefall in its own given frame, and a body undergoing such motion is weightless to its self in the sense that it feels no gravitational field in its frame; the realization and proof of general covariance and the theory of gravitation.

As it can now be seen, the coordinate freedom of the system implies that the equivalence principle is a global principle, and its implication is that any frame dependence to the comparison of states is unphysical. This reduces the problem of the extension of quantum mechanics such that coordinate dependence must disappear on the ultimate level, such that comparisons between states internal to the system are taken as within inertial frames with rest masses. This implies that absolute frame independence; as the statement of general covariance implicates that any given whole system of parts exists at a lower energy momentum than the given whole as a sum of individual parts. There is no other way to reason about the Universe making explicative sense.

Therefore what is measured by an observer that is stationary with respect to any given center of mass of a system is a physical energy momentum as determined by a viewpoint in relation to parts so mutually existent as to be within inertial states in relation to one another. Therefore, any given system is always measured to have a lower energy as a whole compared to the sum of separable individual parts.

This seems to be in conflict with some of our intuition regarding the changing of forms of energy, for it seems as if we should require that:

$$\Delta(PE + KE) = 0 \tag{2671}$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \tag{2672}$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (2673)$$

Comparatively. For now, imagine an Earth-Sun system, in which we boost into an accelerative frame with equivalent acceleration to that of the Earth about the Sun. It is not that we experience a lowering of mass below the rest mass for the Earth, but that it 'returns' to rest mass energy content comparatively.

The analogy is actually quite simple, for what happens is that from or to the distant and stationary observer it appears that:

$$\Delta PE = \Delta KE < 0 \quad (2674)$$

The interpretation of this is merely that by general covariance relativistic factors return to unity for the system such that the quantization condition relative to an observer which is moving in relation to the superconducting quantum state, is perceived as a system; in motion, where the quantization condition is one of the inertial variety and thus of a lowered energy relative to the observer. In this a very real energy momentum lowering has actually occurred by the above quantum mechanical analogue condition of general covariance.

Conclusion of Mass Gap: *The general statement is that relative to an accelerated observer there exists an energy mass gap because the quantum state is quantized subject to an inertial frame condition by the presence of the principle of general covariance within quantum mechanics. From this, the proper way to account for quantum motion is such that it is taken as a given inertial. A physical gap exists because the quantum state is quantized under the inertial condition, and yet what we measure is an accelerated interpretation of this state under the absence of equivalent motion to all subsidiary elements to that of the external observer; an impossibility. This gap is guaranteed and real by observation from the indistinguishability of the inertial and potential relativistic factors under equivalence for any transition of a quantum nature; explaining the stability of matter; and the absence of antimatter in this universe.*

312 Global Considerations

We know that the energy as measured for the total system is always lower than the sum of the individual parts of the system. In this, the source of lowering is the difference in objective description from the viewpoint of an observer sitting in the center of mass of the system comparing the energy of the total system to that of its individual parts. From this one can make a prediction, that the total energy lowering of the multibody system of electron states on hydrogen atoms, or in fact the total quantum energy lowering of the multibody system is indistinguishable from the gravitational energy lowering if and only if the universe is flat and isotropic and not expanding.

This is the prediction that the quantum states repel and attract at the same rate electromagnetically and gravitationally, and is equivalent to the statement that the relativistic factor from gravity is equivalent to the relativistic factor within quantum mechanics for the energy momentum lowering. It is therefore the statement of the equivalence principle, which must apply. A 'perfect' linearity agrees identically with this result, because if space and time are also measured as isotropically and globally flat to high accuracy, then based on these theoretical principles, the accrued gravitational difference is indistinguishable in proportion to quantum mechanical difference in relation to local conditions; as only a pure displacement produces a perfectly linear slope as rate of perceived expansion and ratio of the rate of accumulation of distance to accrual

of energy momentum content; given that only a perfect proportion agrees with the equivalence of solid relation: $E = mc^2$.

This is in fact the direct statement of the equivalence principle; and is one to one with the universality of free fall, the inherent nature of inertia in all things of change, and global & local principle equivalence of energy lowering in relation to universality of change as a property of differential equations with a definition of velocity.

This linearly scaling redshift, and not a linearly scaling blueshift is the prediction of a theory which takes into account a linearly increasing accumulation over distance of energy content with distance, and colocality throughout the universe only within simultaneous cross sections of space **in time**, we observe when looking out into space and across time. In the given tendency to the other limit; we find this is the same calculational deficit of that of the red shift of the cosmological constant; therefore given as the ratio of quiescence to prescience; weighted as the constant rate of velocity of expansion over distance is as:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (2675)$$

The metrical field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (2676)$$

The effective and full field equation is:

$$G_{\mu\nu}^r + Q_{\mu\nu}^o \tilde{T}_{\mu\nu}^g = 1 \quad (2677)$$

Where the principle component of the gravitational time is a division of potential space and known temporal relation in two of that of each future emanation of indivisibility of gravity and sound by that of what is an effective is \sim for which the raising of the operator for then in what is the given of two of order is then in a formative relation to which are any two from out of one time as two disconnected and independent numbered dimensional indicial relations of multidimensionality of nondescript closure in one.

The given o is then the whole of surrounding quantum relation so that of former in that of what is the given of any surrounding bubble of quantum events in full retractile give; to that of which in what is for then the quantity a given of the full relation a complete space in either of what are two imparticant ends of full volumetric capacity as the quantum known Q .

The known of then the electromagnetic displacement in either a full separable notion or even so as two alone; as the inseparable notion of another is for what for one is the g as raising of either then given independent unknowable of translatory part in the given one; the freed differences of which are the metric and it's encompassed; in that of full motional freedom.

$$R_{\mu\nu}^o \tilde{G}_{\mu\nu}^r + B_{\mu\nu}^g = 0 \quad (2678)$$

The massive property possessive of a formative whole in that of any and each; all; and any of inclusion of distinction between the four and four vector relationships with that of the whole in freed unitary evolution of all parts is R ; then the secondary relation of either interior time like locale in the given of what remains given causation; as acausally disconnected to either the surrounding notion of any particle or open e .

The \sim is the full capacity of the transitive free clear relation; to that of the free interior single four dimensionally known; place; as then in either a given μ and ν and that of what is the co-dependently granted G as gravitational field; 'smooth relation' (not to be confused with gravity and likewise 2 other field properties.)

This identifies the problem with that of relativity for then in what is a complete difference; then what is a \sim as then the base of all; that of two connected gravitational G in quality; of light in all that which weighs as much as subsidiary notion; the opened end of conductivity B of group and phase velocity and the independent relation to either considered antecedent portioned charge q of; and in that of the whole in part as o and in whole as \sim as closure on that of each fluid dynamical free boundary to that of volumetric enclosed quantity; a principle as known as displacement in the sense of flow.

Consider the influence of different metrics or spacetime geometries on this phenomenon. The space in between objects is scaled accordingly, but the effect remains identical. With hyperbolic space the distance between the objects effectively expands as one goes outwards. The overlap integral between the densities is smaller, and consequently there is an attraction to make up for this discrepancy and adjust the curvature multiplied by its overlap to a value similar to the old one. With a spherical space the space becomes smaller the further out one goes and therefore there is a repulsion from this term.

The gravitational curvature of space counteracts this effect as the sign on the energy density is opposite that of the traditional terms as a contractive force. Hypothetically the presence of large quantities of negative energy content matter is therefore consistent with a hyperbolic space. For the application to quantum mechanical degeneracy pressure of repulsion; the exchange integral has a constant contribution over the whole wavefunction between any two hydrogen atoms. For the calculation of the cosmological constant; these are taken as the predominant interaction because of the identifiability of the two sources of equivalence and in addition that over 90% of the universe composed of hydrogenic gas; the orbitals of which for Helium (the next abundant element) are close in size to that of Hydrogen.

This is a safe approximation because as abundance goes down so too do effects which would lead to a larger exchange contribution. Overall, the exact result should not be shifted much from that of this paper, as most elements lead to larger orbitals and hence smaller contributions, yet they are also sparser. There is little growth then of the extra contributions except by number of electrons in the shells of these atoms. The ground state hydrogenic orbital wavefunction is:

$$\xi(x) = \frac{1}{\sqrt{a_0}} e^{-\frac{x}{a_0}} \quad (2679)$$

Where a_0 is the Hydrogen ground state orbital size.

The distance between the centers of these wave functions must also be incorporated. With an initial condition of complete overlap the Lorentz factor from acceleration can be modeled by:

$$g^{\mu\nu} c_{\mu\nu} = e^{2\beta d} t_\eta \quad (2680)$$

With β the boost parameter and the acceleration. The condition for conservation of energy under inertial separation is that the metric of contraction cancel the distance dependence, coincident with the condition that the infinitesimal of curvature being a constant. The product of the

wavefunction overlap infinitesimal occurs with the above metric and is given by:

$$\begin{aligned} g^{\mu\nu}|x^\mu - x^\nu| & \\ = \frac{1}{a_0^2}|t_\mu - t_\nu| & \end{aligned} \quad (2681)$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_\mu(e^{2\beta d}e^{-4\frac{d}{a_0}}) = 0 \quad (2682)$$

From this:

$$\beta = \frac{2}{a_0} \quad a_0 = \frac{\hbar}{m_e c \alpha} \quad (2683)$$

The variable β describes the acceleration of the atoms as they move apart, where a_0 is the first hydrogenic orbit radius.

The factual relation of time to space is then an invariant for that of evaluation of the metric of space and the metricity of time; for then in either of these as gives light exceeds measure for in that of it's excess unit interval.

With this, the curvature term becomes:

$$\Gamma_{\mu\nu}^\nu = \partial^\nu \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a_0} \quad (2684)$$

Λ becomes after integration to get total energy:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^\mu|}{a_0} - 2\frac{|x^\nu|}{a_0}} dx^\nu dx^\mu = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (2685)$$

This suggests that the divergence of the curvature multiplied by the quantum energy is the source term of the cosmological constant. This mass is the cosmological mass with negative mass and energy content of every interaction. Λ evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (2686)$$

The quantity as measured is $-10^{-35} [kg][m]^{-3}$ under reduction to zero. The value for the cosmological constant is given as one order higher than to the right order. The speed of light is used in the boost parameter, as the expression for the boost parameter is: $\beta = \frac{v}{c}$. H_0 is the rate of acquired velocity per distance, the boost increasing with distance.

The per meter unit of energy must be multiplied by the conversion from matter energy content to gravitational curvature in the metrical field equation (an inverse distance per energy) to produce the curvature of spacetime.

This curvature of space is proportional to the boost parameter per the equivalence principle. When the curvature is multiplied by c it produces the boost velocity per distance, or the Hubble constant:

$$H_0 = |8\pi G E c| = 16\pi\alpha^2 m_e c^3 G \approx 2.19201 \times 10^{-18} [s]^{-1} \quad (2687)$$

In reality, H_0 is measured as $70.8[km][s]^{-1}[Mpc]^{-1}$. Converting this to MKS units: $H_0 = 2.29 \times 10^{-18}[s]^{-1}$. The discrepancy between this result and the quoted value can easily be explained. The mass content of normal matter causes a positive contribution to the curvature over spacetime. This induces a repulsive effect between the components of matter that cause this field as they persist in inertial freefall. With this constant there exists a critical density for condensation or formation of massive bodies.

This extra repulsive contribution is equal and opposite to the attractive contribution because gravity generates extra relativistic contraction factors and thus the degree to which a metric is hyperbolic is actually enhanced by the presence of matter content when this term dominates, as it would in the early universe. Thus the Hubble constant is enhanced in the proportion of normal matter content to total matter content of the universe. Normal atoms are approximately 4.6% of the matter in the universe. Considering these as gravitationally inducing, they constitute an extra effect of repulsion. With this:

$$H_0 = 16\pi\alpha^2 m_e c^3 G(1 + P_o) \approx 2.292844 \times 10^{-18}[s]^{-1} \quad (2688)$$

Where $P_o = .046$ is the proportion of ordinary mass to total mass content of the universe. The enhanced repulsion with a background metric and a constant negative energy density promote the viewpoint of an asymptotically flat universe. The asymptotic shape is then flat when this force dominates. Given the vast predominance of so called "dark energy" this model is appropriate. The fact that this energy matches the Hubble constant is direct indication space & time is asymptotically flat.

Hence this model is compatible with a flat apparently accelerating universe that is asymptotically flat and insensitive to the exact amount of matter initially present. A useful extension of this theory to determine acceleration would be to understand the ratio of the conversion of matter into light in stars versus the energy content of the newly produced matter versus the radiation produced. This theory may also help explain the development of galactic and other large scale structure.

Hence dark energy is the detection of quantum corrections to chemistry, life, and locality in the spectrum at global scales; the epitome of the detection of a quantum correction at global scales; folded with a general relativistic correction for which are identical and indistinguishable corrections implying a locally and globally flat universe that is neither open nor closed; yet asymptotically closed and of no expansion for the same reason of a principle equivalence of these phenomena as a single phenomenon of displacement of mass into energy relation for which either are identifiable but oppositional forces; therefore a universe that is null invariantly expansive.

313 Physical Theoretical Connection

There exist scales in the descriptions of both quantum mechanics and general relativity, both of which are identified with units of measure. Each space of constant curvature implies it's parallel space of equivalently negative form from the conservation of energy and mass; or comparatively from the one form and the vector form of which departures are separately null invariant.

Therefore particles in inertial free fall either separate or come together as an aspect of these scales and the given energy momentum distribution in either of the theories of quantum mechanics and general relativity. Therefore; as a parallel it holds naturally true that in general

the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.

Qualified understanding as differing from unquantifiable knowns is a given as it is known that this in general will depart as we select different observers with which each there is invariance of result when we calibrate to the observed; or rather that extrinsic nature of each observable is the only inherent property an object's possess. In this physical results are confirmation of departure from a Euclidean reality.

314 Preliminary Results

Quiescence & prescience are known as two independent relations and quantifiable means of comparative measure of quantities and measures in relation to each certain quantifiable; by that of either any such given objective observer. With this given relation; for what of one is the differential; & the integral is as separately defined; each of these are as a given independent with three indices as an indicial equation for which there are singular limits to either a given exterior relation or a given interior relation of either or both; exclusively.

This independence and complementarity of form at zero and infinite scale is a result of the quantization of reality into singular relations defining space and time with light as quantum mechanics; and space as gravitation. This as a single consequence is the singular exception of no exclusion of any given frame alternative globally or locally as reducible; for that which is either for both holds exclusively empty of relation for any inner space of relation; and here we find undefinability and that of the given exceptionable relation of null reducibility.

315 Proof of Covariance

In reference to a Galilean free fall drop experiment it has been noted that the precision with SQUID's is referenced as for the sake of the experimental test of the weak equivalence principle to an accuracy of one part in 10^{-12} . This particular experiment is composed of the interaction of magnets of differing rest masses with superconductors that therefore possess differently quantified magnetic moments.

The absence of a dependence on mass for the rate of accumulation is not only an indication of the universality of gravitational freefall, but also the independence of the magnetic superconducting interaction from the gravitational interaction.

Therefore the relationship between the theories in terms of inertia of magnetic or gravitational form are brought together in this given experiment. Thus this configuration of elements admits testability of a null hypothesis of electromagnetism; for there exists an interval of interaction of the magnets with the superconducting coils of the SQUID's. It is hypothesized that if there were a discrepancy in the nature of the interaction, this would introduce larger error margins than those of the confirmed precision of the experiment. This is the proportion of the magnetic moment of inertia to the massful inertia of the bodies per their given natures of force of interaction in electromagnetism and gravity.

This is not the only observation, but implicates the provability of the Galilean free fall drop

experiment as a testable confirmation without the logical inconclusiveness that is an unprovable yet true principle of physics. This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what remains, the provability of the equivalence principle. This is only possible with a secondary interaction for which the mutual relationship eliminates the intermediate middle thirds of unknown.

This is only the case if the two forces remain of a given symmetry, as defined, and if they are truly coexistent in this manner of seamlessness and transparency, and in agreement over general covariance; a given assumption of the holism of physical law. For the sake of the interaction, the net displacement of - and between - any composition of these two theories is hence determined as neither of a zero-sum positive-negative nature, nor of indistinguishability and non-zero-sum. This is a consequence of the contradiction that would be a displacement not co-occurrent with another, nor of an additional other kind as co-occurrent through the process. It is truly an 'empty' relationship within physical law that can be inferred from the given experimental confirmation and observational interpretation.

Of a similar nature in terms of interpretative validity although of a different nature; this result has also been so demonstrated as a theoretical prediction for a magnet falling through a superconducting tube. For this thought experiment it was determined that a magnet inside the superconducting tube will fall inertially with gravity and there is null interaction between the magnet and the superconducting tube.

The two errors of sensitivity are in agreement when taken as dimensionless for the sake of the derivation based on physical considerations; but there is a given geometric interpretation as well. For, the geometric dimension of the quantities although unitless remains as a pure attribute of spatial and temporal dimension. As a consequence the rings of superconducting material embody an areal relationship of interaction; while the path is a one dimensional path like extent. Under the provisions of the comparatively held errors in one there is therefore a non dimensional and logical argument that may potentially exist to rule out such as a dependence of the interaction with the presence of a gravitational law of a similar or different nature.

There is one appealing factor of the experiment; which is that the curvature of space and time will universally attribute an extra contribution of error to the device since the freefall drop experiment is asymmetrical if only the theories are not seamless. All things being equal, therefore, the unprovable yet true statement that is a given hypothetical independent and mutual existence of the equivalence principle within gravitation and quantum mechanics remains as a testable and verifiable principle.

For the sake of the center of mass in the system with the given displacement an error would be introduced if there were any bearing of dependence of one theory upon the other; for the sake that without seamlessness under interaction there would be a departure in the other theory. Additionally, the indivisibility that is the center of energy momentum as a point unto the physical and quantifiable displacement that is inertia and distance may therefore also indicate the presence of any such dependence between the theories. If there exists no departure of the given theory in contradiction with an other for an error under dependence that is larger than that confirmed, it is confirmed that the theories are independent and in agreement.

If true, the theories remain with characteristics of independence for the nature of change with respect to weightless and measureless properties of interpretative valuation of measurement in relation to the measurement standard and quantity. With this shared property, unification is possible, and without it, neither of these would be comparatively established in relation to both of measure and weight of objects. This must remain true as otherwise comparative weight of differing measure or of differing weight for all such physical objects, changes, and events would remain contradictory and ill defined on the ultimate level of physical law in its ultimate form.

When one or the other of two such masses are comparatively weighed, it remains that the one so inequivalent in mass to another and heavier will always outweigh the lighter for a given measure. It is also so too true that two inequivalent measures of mass are also indeed measured as equivalent and indistinguishable for any such two masses for some such measure(s). As a consequence so too is it true that for any such positive & negative equivalently weighted magnitude displacement(s), or that of indistinguishable and equivalent displacement(s) masses are weightless and measureless on this ultimate level of physical law.

Under consideration of the given experimental apparatus of a free fall drop experiment with electromagnetic interactions and gravitational interactions, we may proceed to produce the counterargument: that interactions in the domain of either theory do not alter the results of the alternative theory. The presented argument is simple.

For the sake of different inertial masses and magnetic moments two comparatively tested magnetic bodies, unless the balance of proportionality of these quantities in relation to their given forces are comparatively equivalent with relation to the ultimate layer of physical law and independent, it is predicted that there is a departure from experimental observation. If this is true, the two quantities and qualities of either theory represent physical properties of the nature of displacement & scale invariance. This is true because with general relativity alone; or under combination with an electromagnetic force of the nature of superconductivity, if there were a dependence, it would not be possible to reproduce the results of the free fall experiment under all conditions with a gravitational prediction.

The conclusion of the confirmed accuracy of the experiment indicates a null departure under mutual coevolution of the two theories under the process of change because there exists null departure from the gravitational result of general covariance for either such theory; despite the fact that interactions within either theory are taking place. This is confirmed as there exists no such departure from the theoretically confirmed accuracy of the prediction; despite differences in the proportionality of any two natures of inertia in the system.

The error introduced by any such dependence between the theories is empty of scale as the inverse of the parabolic temporal relationship of the path always exceeds the given accuracy of the experiment as a consequence of the separation in time of arrival as dependent upon initial conditions.

The error introduced by different freely falling bodies therefore is larger than that so produced. Therefore; dependence of these two theories upon each other or in proportion is in contradiction with observation. Therefore, independence of physical law from end to end of a given path is certain and insisted.

As a resultant of the geometric parabolic relation of the common comoving equivalence prin-

ple, the terminus of the path at the beginning represents a dimensionless sensitivity on initial conditions as the square root of the path like error. In relation to the ending as parabolic for the former end, the initial condition is determined bidirectionally between quantitative displacement as proportionality of magnetic to massful inertia in relation to the end of equivalent qualitative change; as well as throughout the path.

Hence this error remains as larger for the initial or former device configuration for local inertial mass & magnetic moment and carriage of the device free falling in space for it's entire path; and errors accumulate for either return. In the local limit for a moment and for the interval of time the expression of the equivalence principle is the same. The undetectability of a departure from the equivalence principle through the straight down path is therefore in direct confirmation of the universality and commonality of the equivalence principle of free fall.

This conclusion is extensible between and in relation to the difference that is established as a result of the collection of the aforementioned statements. These are the hypothesis of alternative theories as mutually result free; the relationship of differing bodies to depart as a result of different proportionality combined with theoretical dependence (which was disconfirmed); and the bidirectionality of the post conditions on prior conditions as equivalently larger in error for either such path. This is indication of the formation of unbiased physical law for the indistinguishable and the displacive.

From this it is reconstructible that logical seamless integration of quantities and qualities is an indivisible relationship of quantity & it's quantified property with inclusion of quality & proper-tied quality for any two such bodies. Upon the level so inferred this is the direct outcome that the indistinguishable or displacive in either theory apart or together are existent as independent and in mutual agreement. This is objective proof that the two principles of physics are independent for their results from interactions in the alternative theory & that physical principles are objectively provable and confirmable under measurement.

316 Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation by traditional symbolism and law; for which certain total certainty is possible with the following relation in mind; for which is summarized as:

Foundation of Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with a preliminary notion of that of prediction in relation to the root mean square deviation there is that of the relation to standard derivation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (2689)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (2690)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (2691)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (2692)$$

By which it is true that $f \rightarrow x_\sigma^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measureability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_\sigma^2 \rightarrow x^2$ & $x_\sigma \equiv x$ of either given expected distribution, therefore: quantities that exceed **guarantee** formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable and unitless measure nature.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship as remainder. Equation four suffices to be understood as the proof that which is the master statement:

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

The end irreducible of two errors alone is then known as indivisible division of inseparability; the guarantee of certification for which no true division of reduction to error less than expectation exists; verifying one end absolute nonpredictive outcome is certain.

317 Proof of Translation

That then of the relation of one observable to an other of measureability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to given process.

For that which is found in a derived concept is of the relation to derivation as at that of result of given proof through to latter statement; which always finds re-expression as a given subsidiary set notion.

The proof of this is as simple as the observation that one singular difference along the path of instruction leads to at least two orders in relation to singular difference of inclusion. The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (2693)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as

of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,\sigma_{rms}}^2 = \bar{x}_h^2 \quad (2694)$$

From which we have the representation for either of f or of g . Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (2695)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (2696)$$

Which means that in either given limit of ordinancy of that which is within limitation of relation from a beginning of a sequence of given order unto a given distribution of finite and relational symbolism to limit end occurrence of past or future with consideration of the present; a limitation is expressed as a given truncation of error to greater predictive quality; therefore a guarantee to limitation by any end of a symbolical set.

318 Ideal Principle Equivalence

The equations which dictate the function, form, and nature of the universe are two, as follows:

Conclusive Remark on Light: *The speed of light varies such that the observer's reflection is invariant & the observer's reflection is as a given null with respect to the given principle equivalence of displacement of time rate of accrual of observed & observer.*

1.) Light is Quantum Mechanics which is the statement of **Quiescence**:

$$\partial_{\alpha\beta}^{\gamma} \Theta = \Theta_{\alpha\beta}^{\gamma} \quad (2697)$$

This formula is one to one with the given first forward transformation of which is the generalization of the property of light and quantum mechanics in relation to gravitation and space time; as an equation inclusive of pure ordinary directionality and order in relation to reality. The second is knowable as given the name:

Conclusive Remark on Space: *In general the physical results of differences in measurables of quantities between observer and observed are physically real, however physical results of differences in measurement of observables by observers are measurably null and unphysical.*

2.) Gravitation is Space Time which is the statement of **Prescience**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (2698)$$

This is the given statement that of either given separability of philosophical inquiry into natural law is of similarity to coherence of algebraic expression for that of when similarities of mathematical expression derive of or from a common relation of order.

It is therefore true any two quantities of measurement and measured are coextensively null in measure by that of indivisibility of algebraic expression as independence of property from quality with the given as the expression of null indistinguishability invariance:

$$\zeta\chi = 0 \tag{2699}$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \tag{2700}$$

As an algebraic free projection of any vector into any one form of geometry of null displacement invariance and null indistinguishability invariance; the general and full expression of a principle equivalence with a general null covariance is expressed as a relative principle inequivalence.

319 Confirmation of Theory

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common co-moving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error.

The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment.

The conclusion so far is that alternative theories are mutually result free; the relationship of differing bodies to depart from motion with different proportionality of mass to inertia is no longer true; and do not exist with theoretical dependence.

Then as there is bidirectionality of post conditions on prior conditions as equivalently larger in error for either such path or return; physical law is unbiased and deterministic for the indistinguishability and displacive properties of physical law; for seamlessness of extensibility and coextensibility are natural consequences of emptiness of property to that of the extrinsic nature of properties of physical processes; if not object.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law. Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and reality:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,dA}^2 \tag{2701}$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and dA is an area element.

320 End Proof

Therefore by the preceding logic there is not one but two given separated zeroes between that of each identifiable point like limits of physical reality; with no local to global conveyance of the identity or naturalized point relation of absolute form. This conservative tendency of the involute relation of either relation; implicates that despite fixture; nothing is defined as a given absolute; in the same manner by which no identity exists.

$$\psi_{\gamma}^{\pm} = \eta_{\pm} e^{\pm i\theta_{\gamma}} \quad (2702)$$

$$\phi_{\gamma}^{\pm} = \rho_{\pm} \partial \log(\pm i\theta_{\gamma}) \quad (2703)$$

From which through the given process of a chain of deduction and induction leads through this process to a conclusion that these quantities and defined as following are of an absolute null invariance given no third reduction exists in reverse:

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (2704)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (2705)$$

Of unity as length of separation of points grows as density as ρ^2 smaller with ξ equivalent at all length scales with number of ψ points per volume increasing as density and ρ shrinks with error $\rightarrow 0$. Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (2706)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind λ and ξ . The final proof is as simple as induction on the step of reduction; that inerrantly we cannot reduce beyond the means we begin with as an initial standpoint of zero dimensional error. Finally we arrive at some new conclusions:

As for the quantum principle; we find three new interpretations and a new one: *"The particle wave duality is harmonic."* *"No particle wave duality exists within a limit."* *"The boundary condition is a harmonic criterion."* are all equivalent statements of the quantum principle as well as: *"Space and time do not exist for a particle at two places in space and time simultaneously."* This is the given answer to that of the question, as well as the answer to: *"Does any particle exhibit both particle and wave properties at once?"* With the answer: **"No."**

As a consequence we are left with little other than that of the following conclusions for clarification. The first; prescience; is null displacement invariance; known as general relativity; and the second; quiescence is null indistinguishability invariance; known as quantum mechanics. We require two properties to be certain these are the only two remaining elements:

"Are these identifiable and equivalent symmetries?"

"Is one the given reduction of the other as unique?"

No is the answer to the first question as either is the origin or the originless center.

No is the answer to the second question as both are the container and the contained as two.

As for the final prediction: light and causation has a terminus in the past:

"When and as either alone exist apart there is a null causation in a given future for that of light ending in the past as the defined alone indicates a boundary of non-extensibility beyond that of which

the particle horizon for the integral is known as a particle boundary in the past. Then, for these given relationships of integral and differential property are as therefore outside null invariant displacement of space and time there exists a particle boundary condition in the future in relation to that of the adirectional particle wave structure of light; a past."

321 Exchange Locality Theorem

To begin, we identify a given admixture of partial differential following the principle of a connection to a given here ultimately knowable quantity; that of a placeholder for what conventionally known as spin; is the entire property of which is a free impedance relation provided by a ring of crystals; and found as that of the orientation and juxtaposition of the electron's inertial field.

This is necessary to account for any provision of physical continuity of which is deterministic and to provide for the definition of limitation of reality for that of full space like extension under temporal evolution from one point of reality to an other; the indivisibility of which defines in turn a before and after of consequence cause and effect; a limitation for which would be undefined without this notion.

With the statement of symmetry being:

"Extrinsic modifications to a given equation under antisymmetry of operators and symmetry of operators have symmetric and antisymmetric parallels under operation of exchange of particle with pair field."

This is entirely consistent with the interpretation of what an electron is; and what properties it has.

Under these provisions the properties of a two body electron particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of the involute theorem of it's given self enfolding for one particle and a replicated particle and partner field of impedance:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = 0 \quad (2707)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu \Psi_A\Psi_B \quad (2708)$$

The gap remains as variant and free yet as commonly dependent on the differential. For, one constant of mass is fixed to that of the finite and fixed dimension of exterior scale; and forms a union of space and time with an exterior space; forming from that of surrounding notion on differential of exterior boundary under fixed mass of variant gap by weight of coupling and gauge connection, Γ_μ .

$$(i\gamma^\mu D_\mu + m)(i\gamma^\mu D_\mu - m)\Psi_A\Psi_B = \Delta \quad (2709)$$

Which means that two electrons are the generator under the anticommutation and commutation relationship of their subsidiary operators of a full notion of particle and antiparticle product relationship with a mass gap equivalent to the splitting equivalent to each of their reductions in energy at the relativistically accommodated energy level of the full energy momentum of either one such particle.

This explains a mass energy gap; for that of the two body electron equation which is a real energy lowering; of what is understood when taken as the absence of one electron in it's surrounding

notion as in the presence of the other electron as an positron; for what is of presence is of absence with matter; and together forming a solid whole of which the energy momentum is lower by a double accounting for that of either electron.

322 Simpler Means

Therefore, this transformation appears to be a local and global attribute of harmonic functions and elliptical functions with but two modular relationships and arguments related to the two cardinal harmonic conditions as about to elliptical conditions. The connection between these is that of the given relationship between that of tension, torsion, and that of elliptical semi-major and semi-minor axes.

As proof that this is possible; the summation that is the elliptical functions is reduced under the transformation to that of a summation of harmonic functions with strict logarithmic differential amplitude and phase relationships as the foundation for such functions and such transformations. Hence a self isomorphism is potentially existent under it's inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha \hat{A}(\omega, \tau) & \beta \hat{B}(\omega, \tau) \\ \gamma \hat{A}(\omega, \tau) & \delta \hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix} = \int_{\tau} \int_{\theta} \begin{pmatrix} e^{-i\omega t} A(t, u) & -e^{-i\omega t} B(t, u) \\ e^{i\omega t} A(t, u) & e^{i\omega t} B(t, u) \end{pmatrix} \begin{pmatrix} \wp(u) \\ \wp'(u) \end{pmatrix}$$

323 Inverse Relation

If the inverse transformation surjective onto limit is to be defined in relation to any two such harmonic affinities then the triangle inequality is broken with a hole unless there exists a forward application of the homeomorphism so preserved by the transformation under the prior considerations of a non simply connected space.

The surjective limit cannot exist and no analytic expression in dual periods would exist without closure under a self inverse homeomorphism or such extensions under internal locally, globally weighted and independent notions of analyticity; for a hole produces an automorphism in either such space as a representation of an analytic function which are incompatible notions under the forward application of the transformation as a homeomorphism with priorly backward existing limit for the inverse; as a potential exception when the space is not simply connected. If this were not the case the given homeomorphism would not be independent of either such functional space; as it must for a general function if the space is topologically connected as a genus one space with a given hole.

This exception is a potential incongruity of the mapping and a realistic consideration with the existence of a hole when this space is identified with a conjugate space as therefore with two harmonic conditions the spaces are otherwise independent in full and necessitated generality if and only if this consideration is brought to bear; the inverse mapping of which is therefore:

$$\theta := \begin{pmatrix} \tilde{A}(\omega, \tau) \\ \tilde{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \partial_{\mu} \log \alpha(u, t) & \partial_{\mu} \log \beta(u, t) \\ \partial_{\mu} \log \gamma(u, t) & \partial_{\mu} \log \delta(u, t) \end{pmatrix} \begin{pmatrix} e^{-i\omega t} \\ -e^{i\omega t} \end{pmatrix} = \begin{pmatrix} -\tilde{A}(\theta, \tau) & -i\tilde{B}(\theta, \tau) \\ i\tilde{A}(\theta, \tau) & \tilde{B}(\theta, \tau) \end{pmatrix}$$

Which defines the θ and Θ functions in a logical symbolic set relation; for which the one form

under conjunction is self isomorphic to a free group of generally deductive angle free variables.

These variants of the relation of symbolical ordered set under logical organization correspond to all variables of the free magnitude wave number space for all interchanging or ordering of variants with only exception to a free radical phase (here made nilpotent). As a consequence of the infinite shrinking of the surjective onto mapping set theoretic union of a space under solid free relation (pictured as a flat mirror like surface) of each full dimensional reduction to each of every finite limit this relation collapses to a hole.

In this we find the variants hold the potential and reality condition of being in essence all observables; while the transformation itself represents the 'mirror' of which is depicted the full 'motion' of both mirror through the transformation of such variants; and that of each such objective reality 'reflected' in the mirror; as a 'hole' in reality; for which connectedness is imputed.

324 Inseparability of Comutual Independent Causation

The given passive and active properties of admissibility and reluctance of the defining relation of physical and animate forms of that of electromagnetism in reality found within that of nature are then defined as the given causeless division of physical from aphysical form.

The defining relation of which is a smooth quadrature from that of the given norm defining extant relation of indivisibility of separability of coordinate and definition in four fold open exterior reduction under base supposition of boundlessness interior limitation of physical domain; as defined as layers of component and electrical design; with the limitation of causation.

The defining relation; is that of the provision of admittance and reluctance as a relation of impedance and permeability with permittivity to that of the defining light field as the equation:

$$\gamma_{\rho}^{\rho\sigma}(\eta_{\rho\sigma}^{\rho}) \approx \chi_{\mu}^{\mu\nu}(\gamma_{\mu\nu}^{\nu}) \quad (2710)$$

These two fields by the composite relationships of that of independence of phenomenal from quantitative:

$$\zeta\chi = 0 \quad (2711)$$

And; of independence of quantity from measure:

$$\xi\lambda = 1 \quad (2712)$$

325 Displacement Sans and Serif

Articulation of any verifiable expressed physical principle in the authoritative conveyance of properties and qualities subsidiary to notions of equivocal or non inclusive expression of physical law and associated meaning in either of any then given truthful extension or limitation of furtherly established or given formative, latter, or differing notion of exception of included relation of quality of postulated or observational evidence of fact is complimentary to mathematical truth in that for what of the inclusion of a differing alternative; the demarcation of all but one subtension of it's pretext is the given of the other for what of the former is a difference in similitude of multiplicity.

As then, in either end of qualitative limitation of particle notion or participle past or post, the quantified property in establishment of presented or formerly understood law of physical nature for then in any; either, or both such latter truth under projective identification is the forward (normal) inclusive proposition of which there is a difference in one of what of formerly is a held two of one point of observation.

As conveyed as (back) upon any given assured difference of which a property of conventional reality is established as a pure notion of clear and valid positively confirmed truth; to that of the point of observation as in either (subjective) limitation to be known as either given truth of representation in one as at what for these is then one given point of validity of physical principle apart from naturalized law or mathematical theory.

The declarative valuation of principles of nature is to be found in terms of observer present position of former as latter secondary present observer; the former principle of mathematical truth of position for that of physically pure inanimate theory of naturalized law a perfect relation of congruence of articulation of meaning in relation to mathematically given truth; as invertible by that of for what is adjacent observer under it's tandem motion through a swept angle by the arc of it's given triad of motions in one; of equivalence to the furthest extension of either.

Among these either the three as the truth of what is of a former the given of these for which there is two of the former of a given to the end of effect of priority is the relation to the subjective in the other of what is the latter of the objective in truth of that of which is the later is the presumption of prior consideration and conception as truth in the reflection of that of the truth of what is principle as found in that of the truth of any then known two of eternal differences in the included relation of one formative hypothetical in the beginning as a unity.

This is the consideration of a lemma that such a truth is found only in that of the beginning-less beginning and origin of their conclusive end in that of what is either indeterminant relation as of any two in either the empirical physical pretext or that of the phenomenological mathematical presupposition to conclusion; when it is taken as a foundational principle that their similitude under mathematical phenomenological empiricism is a given absolute.

For then in an singular formative prior both as then in the later; and the quantitated in relation to the nondeterminant and discernible limitation of the formative prior consideration of a priorly given former hypothetical presupposition in alternative of similarity and difference of inclusion of then either two given base foundational results of either other theory of independent relation.

The lens; and it's given difference of what is found through examination of the relation of what is quantified and what is measured; the furthest of inclusive equipartition of any given general similitude of drawn and distinction of layers of a class structure of equivalence and partition are then known as articulated motion; the equated and equable of which are interrelated by the following.

$$v(u) \circ \xi\lambda \odot \zeta\chi \cdot \sigma(t) = \eta(s) \tag{2713}$$

$$v(u) \circ \xi\chi \odot \zeta\lambda \cdot \sigma(t) = \rho(s) \tag{2714}$$

This equation is the epitome of the natural motions of the equivalent equation in that of the gravitational metrical relation and electrical quiescent current subsidiary relation of non terminal equivalence with connected relation of displacement in either real or imaginary rotationally free stereographic relation of any two multiplied dimensional free relations of boundaryless domain;

as in either of any given binary modal relation of variables the surrounding notion of space in point like relation to point like space is the temporal relation in empty open exception to both of part cuspid relation in departure to either given involute or evolute of subtended arc like nature; as the evolute of it's given circumscribed uncontainability of exterior angle to summative relation.

The given established complementarity of either the given of qualities of inductive or susceptibility and admittance and capacitative are related simply to that of the unqualifiability of either then known given of permanence; impermanence; codependence; and nondeterminant truth of either then given yielding to what are the partial and the complete as in relation to a rounded continuous diffeomorphism of what remains in the whole to that of arbitrary remainder of convex hull and remainder of open boundary of exterior concave relation and to which is it's support of a concavity in one given difference of birefringent capacity of admixture of phase and attenuated departure from collinearity by abbea; of which there is the formative known that a lens can focus in only one given way.

With the reverse relation the second with interchange of that of the inequivalently and unqualified properties as indeterminant and demonstratively an evolute relation of ordered excess to measure; as in the deficit return of void for what is verifiable principle of closure the remainder relation is one of which three exterior groups λ in time is of the ordered relation in v for then in either of the complete open exterior involute σ and interior involute ζ relation of either formative preceding exclusive χ and inclusive formative ρ given relation of level set curved relation of completeness to then it's end in square order relation of time; is re-constructive of pure rational spatial order of temporal union and pure logical order of factual relation.

In either both such end factual given of five such choices, one choice, or four givens in remainder of self removal or to a third consecutive action; of a given and a formative assumptive relation of either two taken truths of spatial rectilinear; curvilinear; or temporal relation in null zero return of their sum product there is a given difference of null and void; the totality of which is the given of two non-abstract penetrative dis-included returns of either; the freedom of the direct product independent relation of any two commensurately free variables of any given closed relation of atemporary relation of ordination; as of the spatial; the qualitative and unquantified as to time; is the propertied as undetermined; then the exclusively exact order as the unqualified & codetermination of one alone defined.

326 Time

Time as a circle of infinite length as a straight line in a curved space; or as a circle of finite length in a curved space is the open difference of any two dials of reference to effect for what of condition is the center in part to portion of remainder of what is yet so as receding of past yet to be of each one future of exact difference in either.

Then therefore time as a circle of finite length as a circle of infinite length in a flat space as the knowable difference of what is a differing contrasted limitation of point to certain difference of contrasted notion. In one; the relation of γ and in the other t as with a prefactor; the remainder in B and at A for then in either γt fits in t as t doesn't fit in γt which is as an equable inequality.

Therefore from either of two observers the co-adjoint relation of one at the formative of either general subclass of it's remainder in contradistinct to the former of its viewpoint as in the vantage of the other general specialized orbit of relation in that of the former is the general specialized

relation of the whole embodiment of time as the temporal in extension between any two independent points; the making of which is the device so established by displacement in time; as to be distinguished from that of the spatially free in total equality to indifferently chosen relations of any two real displacements in space.

$$\zeta\sigma = \chi\eta \quad \frac{v_x}{v_m} = \alpha \quad (2715)$$

That of ζ as the encompassing notion of time; in it's congruent evolute open extensibility through σ of equivalence to that of χ as it's involute containability found within that of momentary exteriorly provided geometric extension of temporary equated equivalence is the completely open independence of either of any two points of eternity; the very definition of which when only expressed is it's given equivalence of weightless measures.

$$\int t_1 = \int t_2 \quad (2716)$$

And:

$$\frac{\partial^2}{\partial t^2}\gamma \quad \zeta \circ t_1 \quad \chi \circ t_2 \quad (2717)$$

As then the inflection of two turnings of a moment is the given in that of either a limitation or a possessive of the notion of one moment seamlessly passing by of what is another's given difference of the contradistinction of their pertinence and permanence in either of a given equivalence or similarity of distinction or discernibility of choice.

Definition: *As a body in motion is with a body in motion; that of the lesser is attributable to the body to which observation is the referenced as imparted in virtue of the degree to which the simplest means of self identity are equated and equable as the standing measure of inequivalence of the contradiction that is all other bodies in motion meanwhile holding to unequable return (of either) greater or lesser. (time.)*

$$\gamma t, t \quad \frac{\partial S}{\partial x} = t, \gamma t \quad B : \gamma t : A : t \quad (2718)$$

Intrinsic and extrinsic time:

$$t_A < t_B \quad \int_A \frac{\partial S}{\partial x} dx > \int_B \frac{\partial S}{\partial x} dx \quad (2719)$$

Mass excess of deficit is in diminishment of excess measure as each point of observation away from it's given center is off by a complete composite measurable and foreshortened of either end incomplete relation when any two singular comparative measurements are collectively formed. As that of a stationary observer & observer in motion comparatively weigh either given time in balance with that of one given return; the observer of lesser time is that of which observers in motion that of the stationary observer; as that of the greater time under no return is in given contradiction.

As that of the distant observer in observation of that of the point of the first observer is when in motion of a greater measure with reference to the observer under observation, it is true the observer under observation observes a lesser time comparatively to that of the observer of it's given observation and greater comparatively to what it comparatively observes as the two natures of time in relation to any one (of either) such observers.

Either way a mirror points; it is invisibly of equivalent velocity in relation at all relative motions in which under parallel effective motion and consideration it is also known as of the lesser effective time of observer equivalent to observed and separably for that of the observer equivalent observed that of the greater effective time by separably that of the time for extrinsic observation greater less than intrinsic per a mirror's reflection.

327 Conclusion

As a consequence either given end is not to be found; even in the singular; for the projective forward and backward relations contain no common zero; and time as a relation is an intermediary identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of distant observer in observation of that of the point of the first observer is when in motion of a greater measure the reference to the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the vertical and the horizontal velocity comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2720)$$

For the tangential and the perpendicular velocity; as the time of a point and of a circle in relation to a curved space as a straight line of time is as a circle within a curved space.

The implications are that the universe is whole; and that no point of which the universe has originated begins or ends in the present; but within only that of the divine nature of a singular unifying mathematically empty and physically null relationship of balance. The singular defining relation is that time and space can be balanced against one another only by the undefinable completeness of an empty relationship by the meeting point everywhere in space and time as a singular balancing counter-participant to the identity.

328 Final Theorems

The difference of this theory from relativity is non-difference of inclusion of disparate measure by comparability; a standard by which the given division of meaning can only be found with the abstraction which is merely that of the ratio of a circumference to perimeter as an apsis of revolution; a general standard of given equipartition into equivalent parts; with two given specifics; that of an equivalence relation of directed unidirectional symmetry and undirected relation of co-deterministic symmetry.

Therefore there are two fundamental limitations of physics at the bottom; in order for there to be any self or other consistency of descriptive means in mathematics as in physics; of articulation:

Principle of a Mass Deficit: *As a fundamental any given mass of matter is equivalent in proportion and weight to any given apportion of it's given light content; and no greater or lesser under conversion*

in of or to any given unitless based system.

Property of Light Variance: *The speed of light in being fixed to a universal standard; implicates that all such velocities under conversion are identical with and greater than the speed of light universally; for the property of dilation is obverse to a measure of fixed relation.*

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of a system of units to that of the system of conversion of circumference to perimeter; as an areal relation to that of pointless given limitation of interior domain; with equivalence to that of a measure of units of the system for which the standard is inequivalently proportioned exactly.

Therefore the given holds as true; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2721)$$

And:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (2722)$$

Although the equations would implicate the speed of light is always in excess of unity; this is the same determining factor as that of a given open relation of the velocity of all bodies greater than c as subtraction of an interior finitistically defined zero locus of time enfolded everywhere locally in reality. This principle of equivalence is to be contrasted with the exterior symmetry of space of dual exclusive nature:

Free light field independence of established co-determinism:

$$l \log_{Ac}(\tilde{t}(g)) \doteq w \log_{Bc}(\tilde{t}(g)) + g_{AB}(\bar{t}_c) \quad (2723)$$

329 Final Note of Measureability

The first equation is the Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2724)$$

The second equation is the Principle Inequivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2725)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union.*

These two properties; η and ρ are then given as equivalent to the deficit of a regular periodic time measure of any rotary or square indicator by conversion in units of delimited zero:

$$\eta(\epsilon(o)) \cdot (\zeta(s) \circ \sigma(t)) \circ \rho(\epsilon(o)) \cdot (\chi(s) \circ \eta(t)) = \sigma(\mathbf{o}) \quad (2726)$$

The given then of what are in two a formative conclusive nameable in that of time and that of space are the aforementioned qualities in juxtaposition of properties which differ by only that of one and only similitude of irreducible exception to an ordered relation; as unqualifiability and quantifiable relation of ordered relation in the remainder of sum in commensurate division as insolubility & reduction to contextual division; the colocal origin of existent remainder of time.

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that which forms the uniqueness condition of that of any two point like limits of relativity; for that of each such Principle Equivalence of time and Principle Inequivalence of co-determinism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassed of either of two subcomponents of the alternative exterior difference of any two signal areas is constructible; as are any two given exterior alternative differential spaces by singular or multiplicity of exterior space as at even or odd frequencies any number of frequencies add to two; for any relation of an encompassed concave space; as then any circumflex round operator of self connected relation encloses all such pole subcomponents.

Therefore:

$$\eta + \log(f(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (2727)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of two given amplitudes of differential nature.

Therefore:

Final Theorem: *Considered together these two imply that either of any two given impenetrabilities exist.*

330 Final Conclusion

The proposal of this thesis formulation is that of the development, design, and creation of a 'Light Gyroscope,' 'Universal Gear,' 'Exterior Space,' 'Null Point,' or 'Entropy Bubble;' as even a method to balance light on a quantitated point with all such other light in existence.

As an emanation of difference between light and darkness; for which there is a balance between complete physical form and nonphysical formlessness; from that of a non-dual relation of physical electrical component design of general form of an infinite cascade of quarter wave reflectors of finite dimension and volume; of the nature for which the cascade is unrelated to that of the quadrature condition of elliptic function is met with a dual to an infinite cascade of ordinary elliptical operator solutions as their dual sine wave harmonic functions of free extension in space, time, and quantifiable moment of temporal singular event structure.

Therefore there exists an infinitely encompassed volumetric space of infinite dimension by co-parallelism of electricity and magnetism of no form other than topological nature; with infinite

depth of four fold relation; therefore for that of topological considerations; it is true therefore that; there is one point like relation in of exception in four dimensions; which is demonstrative of the following lemma:

An electron is a hole in a light field.

As this container of which the electron is one; the light is one; and the null relation is the given inseparability; when even seen then as a separability of light from darkness; the essential difference of body in a sense through this; a jar is made of protons only; and wood possesses no electrons; so a wooden jar is empty. One then known example of this principle is the acuity with which a theorem can be tested by it's hypothesis; in that of a lemma of supposition produced retroactively from a dilemma; as in that of the former truth being known under presentment to that of it's effect.

The end of this given is then the primary principle by which all given's of science are produced in that of what is knowable then tested formatively by hypothesis to the former end of presentment of known fact of relation prior to proof of statement and principle. As in that of asking the question to a ponderous unity of the given connective between any two known relevancies in one; and that of one sideless intermediary apart by that of the connecting difference entitled into either for in that of what are an example producing contrast of two newly produced counters.

When then as a given empiricism is restored to it's proper place; the given presentment of a relevant known relation to then what is different in two; is the given of what is accepted principle; and the newly created principle of derivation fitting in to it's proper place remains as a foundational truth. Then in the 'at' of a loss to a 'what;' a former known beginning at; for what, in that of established known; the principle of verifiability in exception is found naturally in that of each; for what; is then in a given is but a departure to of what alternatively is the given of expected indifferent knowns under a connective; to which a principle of then established ordinancy is founded with what is it's ancillary known fact.

As then to take for example a bowl; a jar; and a urn; the given of what is difference is the all inclusive consideration of either; for then in both; what is the given part to the exceeded capacity of another is with a relation of parts for which there is a whole property only in consideration of what of each is together as indivisibly; an electron; a photon; and space; as with what is neutral; the given part of one is to the contribution of the other as the departed with of that of the water as water is to either of the fire it was formed from.

Leaving that of clay and emptiness with the exception the part of it's filling in that of what is the open difference of included of color; transparent differences of which in part of these then centralize and complete with their former part of the lid of that of what is a closure on the atom of which it is composed; the only remainder of that of what is when all of each are formed.

To consider then the formless of one; with the exceeded capacity of one in part to doing; the formative exception of what is included of another is one part of one to half the part filled to each; as then the whole of it's remainder is the transparent and darkened boundary within the void of excess before that of it's curtailed formation; as no such further given is possibility within formable hypothesis; the then newly found truth of two a given of what is a momentary pause in time before their completion.

As the finding that one is opened or that one is closed to either of two other's; the difference of water and earth; with fire then the forming agent to it's completion in the seal of a lid formed from clay fired by that of the wind; the only open containability of which leaves one open; to find that ultimate closure in two is a third to that of that of what is one of water evaporated by for what is a jar is; it's residual the air of a free molecule; of which excludes nothingness; to be found in that of the opened and emptied bowl; of none of which hold fire.

Then; when it's consideration of one of the urn for then in that of the bowl is in two and two; there is one for the in formative given of what is included of these; the then given permanence of differed contrast to notion of the free water as water in either; air of air in one; and fire of fire in two; the then known exception to it's formed property as defined notion and meaning of definition; and quality of earth founded on that of either any both of two free given three of jar, bowl, or urn opened to self alone.

The matter and importance of which is the factual representation of a path to it's end in prior given understanding of nature in all her furtherances and back as in a path to it's beginning of a past yet untold or communicated by a people of timelessness in the factual and real return of naturalized and established known laws of this world.

The constructability of the proof then rests on that of the many; by and in of the few; each so known supposition is it's proof; of that of what is in the open difference of one what is found in the alternative of choices of interpretation of what is given to it's endowed further and prior in momentary difference of inclusion; to find as it were that each foundational expressly known is only of their and others given.

The reparable action in reductive and continual progression of absence in the former for what is a knowable prior; by then in any withdrawal from a furtherance of otherwise than protection to a world; people; and article of historical; liturgical; or continued context and meaning in of what is known of general and conciliated certainty; as a path of return to that of life as once known.

Any true law of understanding of nature in plural form is then the given to that of the measureless propertied of what is taken of a given principle by example as formerly given truth to the end of it's disclosure in a given of it's established and then known fact unto principle established hence. As it is true the given precedes the presented by that of in another; what is taken is given; as for then in that of what is the free choice of another is so granted to continuance.

331 Sense of Operation of Device

As the given determinacy can form no indivisible limit comparability to direction; adirectionality; or of that of causation of light from determination of bridge to bridge or stage to stage when considered under reverse deduction that of these are knowable as determined as apart if either is presumed untrue; hence it is determined therefore that of adirectionality is determined by that which is directionality; as non difference to difference to difference.

Hence that of the sense of the causation is determined; therefore that of a given photovoltaic absorption of darkness of action is balanced by the sense of the concept and in physical form by that of the intentional formulation of incongruity of difference of symmetry determined by that of null and comparatively non null relations of photoreception.

Unknowable however the simplicity of the relation by defining the causal of the contractile meeting of time; space; and light is openly defined by that which is defined acausal; that of their difference; sameness; and quantifiable union of inseparability of the defined before that of the undefined; the indivisible separation of the physical and electrical in one or a part. Therefore symmetry and symmetry forms, therefore; that of asymmetry.

332 Purview of Precipitate

Poem of the Narwhal

equivalence within & without two parts; so separated
time stops, as for such at
a finite volume encloses an exterior defines
that within is without that with no boundary

that which is of, is so as
to that which becomes
of surrounded as that
of it which it is within, without

that of that is, is within
it of that which is of one
of it that which is of limit
so within it of that which is without

without that of there is not
which is of it as one of it
therefore that is that is without would not exist without that which is
therefore that is which exists is without & within, as that which is, exists.

Conclusive Means

As a wheel rolls; the production of motion is found in that of the affability of the yet-to-be plane as in moving towards a carried motion of release priorly by the actionable given of a subsistence on furthest limitation of subsidiary notion of straightly down; as lateral to the given of formerly held; a cart; the founding of a carriage as held below by that of what is in the produced; the axial and surmounted difference in that of two level returns as in that of either given open turning in two; for then of what is later is priorly the given of one similarity in the formerly existing given; of life as found in that of the wood it supports. So it is with the action; motion; and carried.

$$\epsilon(l)\mu(k) \cdot \zeta(u)\lambda(u) \cdot \eta(s)\rho(s) \cdot \sigma(t) = s(\mathbf{0}) \quad (2728)$$

Then in finding of what of all is found; capable; is the furthest inquiry into the quantitative of as is the qualified itself the immobile as the first unconceived.

Exchange Locality Theorem

In this paper we wish to bring resolution and comparativeness into solutions of the two body problem to explain the appearance of matter and light. To begin we identify a given admixture of partial differential equation following the principle of a connection to a given here ultimately knowable quantity; that of the orientation and juxtaposition of the particle's inertial field(s). With the statement of symmetry:

Statement of Symmetry: *"Extrinsic modification to an equation under antisymmetry of operators and symmetry of operators have intrinsic interior symmetric and antisymmetric parallels under operation of exchange of a particle with a pair field."*

Under these provisions the properties of a two body particle and field equation are decomposed into a regeneration of the operator; seen alternatively as a completeness of it's given self enfolding for one particle and a replicated particle and partner field. The general properties of hyperbolic equations implicate that an equation take a form of a wave equation:

$$(f(\tilde{\omega}) - \alpha^\mu \partial_\mu)(g(\tilde{\omega}) - \beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (2729)$$

When it is rewritten it becomes:

$$(f(\tilde{\omega})g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2 + (\gamma^\mu \cdot [\partial_\mu](f(\tilde{\omega}) + g(\tilde{\omega}))))\Omega(\alpha, \beta) = 0 \quad (2730)$$

The idea here is to factor the equation in a different manner; owing due to phase and conjugate phase freedom from the logarithmic identities of principle equivalence and principle inequivalence provided. First; we need phenomenological reason to believe that a composite factoring of the two body equation occurs in the first place; the foundational reason of which is provided by relativity.

Relativity Theorems

To comparability there are two given's in physics with *displacement* as the proof:

Principle of Equivalence (I) (Parsimony):

Comparative measurement with reference to what is measured.

Principle of Inequivalence (I) (Synchronicity):

Measuring with reference to what is performing the measurement.

Therefore there are fundamental limitations of physics; to which in order for there to be self and other consistency of articulation; must be *geometric* in nature:

Property of Light Variance (1): *The speed of light in being fixed to a universal standard; implicates that all such velocities under deduction to time itself must be measured greater relative to the speed of light universally for their comparative difference of rate congruent to light as measures.*

$$\gamma_c > \gamma_m \quad (2731)$$

Property of Light Variance (2): *For; the property of dilation is obverse to a measure of fixed relation; therefore the rate of time for mass is always measured lesser than light; and to deduce the rate of*

passage of time we must convert to a system in which all velocities must be as a given greater than c .

In this, γ is seen as a measure of a rate to a rate, with light, unity in it's own frame; and of matter; less than unity for time to time conversions (for of matter light is of the opposite propensity) precisely because for a moving clock referenced to a stationary one; time moves more slowly; therefore to which it ticks more rapidly, and acquires a greater interval in any duration of a path at motion. This is consistent with the special theory of relativity and gravitation because a thrown ball will experience greater accumulation of time than one stationary on the Earth (for comparative *to* a stationary frame time went more rapidly and more accumulated). Therefore measurement dictates that the comparative measure of the rate of time for the thrown ball is diminished; to which it's extension over a path is longer comparatively to any other observer, such as the one stationary on Earth.

Therefore as the rate of time goes more slowly in the moving frame referenced to the stationary one; more time is acquired comparatively to either observer alone and individual measurements reference equivalence for the two body problem.

Note of Measureability

In order then to investigate a potential factoring of the Dirac equation into which the two body problem can be dissected; it is necessary at first to understand that the reference of the measurement is to one body or the other; to which we escape the twin paradox; a local phenomenon of which either measures lesser or greater of an otherwise equivalent situation with differing descriptions.

In this then we prescribe that $\{\tilde{\omega}, \bar{\omega}\}$ are different wave descriptions of particles; to which belong to differing frames; denoted by \sim or $-$:

Principle of Equivalence (II) (Parsimony):

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2732)$$

The first equation described here just above is the equation we arrive at to describe the addition of velocities into which sum to a finite difference in an externally situated point of measure and reference. The second equation is to which we find that inequivalent velocity combinations in their own frame's (under their congruence) afford for extra proportionality of either given intermediary time dilation contraction effect (here denoted σ):

Principle of Inequivalence (II) (Synchronicity):

$$\eta\rho + i\sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (2733)$$

The direct consequence is that: *Any two such contraction dilations are uniquely independent of any other by that of commensurate action of congruency of geometric difference under open relation of objective addition of factor; for in that of one following adirectionally apart; together; or separately; there is seamless transparency of beginning to end of logical union of motion; with an interior dilation contraction factor owing due to their comparative measurement of time.*

The substitution of one of η or ρ under either given point-like relation of relativistic factor is a free substitution which forms either given difference of that of perspective and vantage; that

which forms the uniqueness condition of that of any two point like limits of relativity; for that of each such principle equivalence of time and principle inequivalence of codeterminism.

The implication of this for signals of frequency and functional form under transformation is that of the fact that: By comparative differential to quantifiable means with difference of driving frequency the encompassing of either of two subcomponents of the alternative exterior difference is constructible.

Therefore with general functions:

$$\eta + \log(g(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (2734)$$

Implies:

In log decibels any two differently concordant rhythms are separable by any measure; as each singular log decibel pertains to a different frequency of any given equipartition of each such given foundational means of comparability of any choice of any two given amplitudes of differential nature. Therefore considered together these two imply:

Principle of Measure: *Either one (parsimony); or both (two) (synchronicity), given absolutely relative and arbitrary limits of independent codeterministically shared point-like relation(s) of proportion of measure of quantum & relativistic argument agree to (a) given variety of non-locality and exist(s); for which with but one; the beginning or end congruent relation is empty of measure; the implication of which is that measure is certain (parsimony) and measurement is semi-deterministic (synchronicity).*

To illustrate that this is not impossible; non-locality would need to be insisted to violate (12) and (13) for which an exterior probe of measurement would need under all conditions measure the relative rates of time of the two constructible relationships. Therefore it is perfectly amenable to analysis to conclude the equations (12) and (13) hold in general for the two body quantum problem; and as these are consistent with the special and the general theory of relativity per the derivation; there is no necessity of further discussion. The outcome of logarithmic addition is the extension of electromagnetism when this variety of phenomenon is admitted.

Reduction under the Temporal

Therefore the given representation of the above equations with that of the velocity divided by the speed of light as a unitless measure is of unity proportion in the measure of system of units. Therefore the given holds as true by the following; that:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2735)$$

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (2736)$$

Are equivalent parameterizations of the same problem.

This principle of inequivalence is to be contrasted with the exterior space of symmetry of the theory of relativity when it is considered that actual determinations of validity are certain when one is deducing from time rather than spatial measure. This is the requirement for that of the

two body problem; as for what for one would hold as time; the other would hold as merely and (exclusively) hold as a deduction from time. Therefore, $\sigma(t)$ is to be found as either of ζ or χ depending on the projection. As a consequence either given end is not to be found; for time as a relation is an intermediary identity everywhere for which there are no two to be found.

Conclusive Remark on Time: *The relation of a distant observer in observation of that of a point of the first observer is when in motion of a greater measure the reference to which the observer under observation observes a lesser time comparatively to that of the observer of it's given observation & greater, comparatively; to what it comparatively observes; as the two natures of time in relation to any one (of either) such observers differ by equivalence under separation.*

The Principle Inequivalence with σ is then the marriage of the one to the two body problem by which either agrees with reason and consistency; the extra σ being the accordance by phase of that of a temporal signature to inertia. When then one analyzes a mirror with this concept in mind; for that of the velocity of *that object* we result in two defining relations by analysis of the 'vertical' and the 'horizontal' rate of time comparative to a given arbitrary velocity of the mirror as:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (2737)$$

Proof of Certainty

The rules of probability, statistics, and expectation impart a rule for that of the comparison of mathematical expectation to physical expectation; for which certain total certainty is possible with the following relation in mind; which is:

Measure and Empirical Validity: *"Via dimensional analysis quantities of measure that exceed in dimensionless unit guarantee absolute certainty in principally equivalent dimensionless quantities; without which physical law is not established."*

Beginning with a preliminary notion of that of prediction in relation to the root mean square deviation there is that of the relation to standard deviation for which a functional relation is defined as:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (2738)$$

Then defining a limit of $\sigma_x \rightarrow 0$ and hence the terms under which expectation deviance and variance exceed zero shrinking to a limit of local relation of zero and null relation there is defined:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (2739)$$

The relation of that which is greater assuming the relation of a subtraction of one equation beside the other reduces the expectation to that of a verifiable difference of one; and conveyed as such:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (2740)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (2741)$$

By which it is true that $f \rightarrow x_{rms}^2 = x^2$ in practice for that of colocal observables in relation to empirical deduction from which mathematical law and expectation is based; in virtue of measureability (inclusive of singular variants). Therefore as $\sigma_x > 0$ implies $x_{rms}^2 \rightarrow x^2$ & $x_{rms} \equiv x$

of either given expected distribution: quantities that exceed *guarantee* formatively for unit based systems by dimensional analysis of smooth differential quantities of a given functional form with variants of mixed quantifiable expectations of a unitless measure nature, certainty.

In this a simple ratio does not suffice; however any quantities derived from dimensional analysis of unit based system do function for the given reason that quantities under elimination by units of measure reduce to subsets of sampling for which error exceeds expectation under surjective subset to set relationship.

Proof of Translation

The relation of one observable to another of measureability and the empirical proof of which is found in reproducibility reduces to the given of a statement for which principles can be deduced, and when understood echoes the relation of former to formative to latter; whether of colocal or differential order for that of relation to a given process. The proof of this is as simple as the observation that one singular difference along any path of instruction leads to at least two orders in relation to singular difference of inclusion of principle for which displacement is afforded.

The proof proceeds as:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (2742)$$

Then; deriving the relation in reverse as an expansion for the sense in which 0 is within means to be expressed as a local zero null relation to that of the former of the given open relation as of either distribution; and leaving behind the sense in which 0 is representational of absence although; keeping exclusively of absence as indicated in an affirmative we have:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h,rms}^2 = \bar{x}_h^2 \quad (2743)$$

From which we have the representation for either of f or of g . In this statement going back a multiplication is married to it's surjective division; by which certainty is achieved. Equation ten is to be understood as the proof that is the master statement; for the reason that in reduction; any surjective limit is less than a given ϵ :

Given of Whole: *To be dearly noted is that of the manner in which any two errors of given nature impose a directly false relation when they encompass a greater union; therefore as error never exceeds half; and half squared is less half; no error of one falsifies a count; nor does any for quantitative means signify a true doubt.*

Then:

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (2744)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (2745)$$

Which means that in either given limit of that which is within limitation of relation of measurement, from a beginning of a sequence of given order unto a given distribution of finite and relational quantifiability to limit end occurrence with consideration of time; a limitation is expressed as a given truncation of error to greater than reproducibility; therefore a reduction to

zero by any end quantifiability.

In summary the error introduced by any such dependence scales as the inverse of parabolic temporal relationship of path and always exceeds any given accuracy of experiment as a consequence of separation in time of arrival and departure as dependent upon initial conditions. As a result geometric parabolic relation of common comoving equivalence principle a terminus of the path represents a dimensionless sensitivity on initial conditions as the square root of the path like error. The error introduced by different freely falling bodies would then therefore be larger than that so produced by any experiment all of which are in confirmation for the reason that expectation exceeds prediction in validity.

This is true because if the contribution of error by the interval exceeding the limitations of the test equipment is indicated under all conditions other than a transparent, indivisible, and independently true relation then the result of the experiment can be used to provide positive indication of the elimination of the alternative, and for what ever remains, the provability of a natural law. Therefore verifiable and valid confirmation of the principle equivalence of physical law for that of certainty of relation is proven as can be confirmed as the surface area is always less than volumetric quantity; therefore error is certain below the limit of surface threshold for each such interior point by the dual of the statement of unitary reciprocity in electromagnetism and world:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,da}^2 \quad (2746)$$

Where A is an area, V is a volume, and X is a point area, and ds is a path dx is a point infinitesimal and da is an area element.

Methods of Displacement

We therefore have two natures to this problem; one of the quantum analogue of a generator of a time signature (σ) which relates to the given of an impartially hidden local contraction time dilation factor of which is privately shared between any two given bodies; and that of certainty in that of the equations of motion; by which error threshold exceeding predictive to experimental verification leads to empirical validity of experiment; for displacement capacitates solid relations. The first 'constitutive' argument goes as follows. Take for instance the local theorem of the Principle of Measure; these here serve as translation tools by which:

$$\eta = \langle \psi_1 | \quad \rho = \langle \psi_2 | \quad (2747)$$

Are two measurements on the quantum wave-functions in involution; position and momentum. Then; $\sigma = \langle \psi_1 | \psi_2 \rangle$. Clearly; then;

$$\beta : \eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) = \eta\rho + i\sigma(t) \quad (2748)$$

Is satisfied; therefore the old intuition remains with the Given of the Whole; (where δ derives from error in β):

$$(1 - \lim_{\delta \rightarrow 0})\beta \equiv 0 > \delta^2 \quad (2749)$$

Therefore δ vanishes to zero (signifying the appearance of $\sigma(t)$ and it's shared interpretation as covariance of uncertainty and time in the two body problem) when performing either a two body or one body experiment with displacement freedom and a potential. *This is the exact statement that two indistinguishable particles hold null identity and null coordinate dependence.* Therefore as uncertainty covaries; it diminishes from 'above' for a relation to γ ; for in taking the return from a relativistic limit the uncertainty in the two body problem diminishes to zero as the Schwartz and

Triangle Inequality agree ($\lim_{\sigma \rightarrow 0} \beta = 0$). The proof is as simple as noting that general covariance insists that we possess coordinate freedom; and as frame descriptions are null (there is no one absolute frame of reference); leaves the uncertainty a null and empty relationship in the two body problem (for the particles possess no identities respective of relativity). This means that natures of certainty founded on probability and geometry are of two *distinct* natures in the one body; and for (in deduction from) any two given body systems of an *identical* nature. Therefore the law of principle measure of inertia in mass, light and motion displacement freedom is the instance of certainty in derivation from semi-determinism as the core of measurement as a process on measure.

Abstraction in Conclusion

We wish to convert from the hyperbolic equations to the spherical equations to produce a proof in certainty and manifest disappearance of asymmetry by displacement to matter. The equations (4),(5) explicate the process. By substitution:

$$(f(\tilde{\omega})g(\tilde{\omega}) + i\sigma(t) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (2750)$$

$$(f(\tilde{\omega}) + g(\tilde{\omega}) + \alpha^\mu \beta^\mu \partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (2751)$$

If two particles are in different frames; then they experience the rate differential of time and space differently; to which when one slows it's consequent experience of time deduced from motion depreciates it's partial differential in the other frame. Therefore of what of one is of the greater in time accumulated comparatively to the other in owing due relativistic factors (explicated phenomenologically here) co-conspire to bind a state to it's displacement freedom. Under subtraction of twice the second prior equation from the second prior:

$$(f(\tilde{\omega})g(\tilde{\omega}) + (\alpha^\mu [\partial_\mu], g(\tilde{\omega})) + (\beta^\mu [\partial_\mu], f(\tilde{\omega})) - \alpha^\mu \beta^\mu \partial_\mu^2)\Omega(\alpha, \beta) = 0 \quad (2752)$$

The equation which under reduction becomes the equation for light:

$$(f(\tilde{\omega}) - i\alpha^\mu \partial_\mu)(g(\tilde{\omega}) - i\beta^\mu \partial_\mu)\Omega(\alpha, \beta) = 0 \quad (2753)$$

Therefore all light and mass exists with inherent *displacement freedom* in an otherwise particle equation of neither attraction nor repulsion with pair potential lesser than zero. Therefore the equation for light (9, 33) and mass (33, 9) are seen *both* as instances in which an energy gap furnishes *displacement freedom* by which they are descriptively free and certain (29) (making inertia the only certain thing) when $\Delta > 0$; where:

$$\Delta = \sqrt{\sigma} \quad (2754)$$

Time is then seen as something that is co-participated in and, of, in particular, participated in; but that time for a differing point does indeed differ both quantitatively and qualitatively to that of the process of measurement and measured. The corollary of this is that all motions differ by merely a displacement freedom (Synchronicity); and, it's counterpart, inertia being the conglomerate and aggregate of two body problem relations (Parsimony) *together*, explaining mass, motion, certainty, and light; for certainty in Δ exists for all finite displacive motion and positive energy (otherwise (34) describes a tacheon).

Thought Experiment

The following thought experiment illustrates that if the Meissner effect is complete, then the foregoing conclusions are valid and apply to superconductivity.

The first hypothesis is:

Hypothesis of Superconductivity I: *The superconductor magnet force to gap relationship is indistinguishable from the gravitational force to mass relationship.*

If the gap Δ is equivalent to a rest mass energy then it is invariant with respect to all observers and is expressible as the integral of a field of curvature:

$$\Delta = \lambda \int_{\tau} \gamma^{\mu} \Lambda_{\mu} dx^{\mu} \quad (2755)$$

With λ a constant and:

$$\Lambda_{\mu} = \partial_{\mu} \log \Lambda_{\mu}^{\nu} \quad (2756)$$

A curvature field of the Lorentz transformation that has spatiotemporal dependence. This quantity is defined such that γ^{μ} is the Lorentz factor of weight associated with gravitational freefall, and Λ_{μ} is the inverse factor corresponding to the length contraction and time dilation of space.

For if instead Δ is not equivalent to a rest mass energy then, it is frame dependent and it would vary with the structure of spacetime and increase or decrease with the metric under inertial freefall. The center of mass would no longer be preserved covariantly in general but would exist with a varying gap for different inertial rest masses (Galileo). So it must be that Δ is equivalent to a rest mass energy and invariant and it is conserved under inertial freefall, although the factor γ^{μ} may vary with kinetic motion. Additionally, because the field energy goes into the motion, the energy mass content remains the same by energy conservation in an inertial freefall experiment with magnet and superconductor under mutual repulsion.

Hence the hypothesis follows that:

Hypothesis of Superconductivity II: *The field of the Meissner effect is reciprocal to the field of factors of γ from general relativity so as to render Δ and the total mass energy covariant and the Meissner effect complete.*

Consider that the scenario envisioned is one where particles A and B, a superconductor and magnet, move apart freely in space. It has been shown that the gap, or Δ , can be considered a rest mass energy with no dependence on the curvature of spacetime. If we consider the two particles then; from the rest frame perspective of particle A, particle B appears to recede with its own factor of relative γ ; and from the perspective of particle B, particle A appears to recede with its own factor of relative γ . In their own internal frame description, γ for particles A and B are equal to 1 and, external to this frame, they carry γ factors nonequivalent to unity.

The hypothesis follows that:

Hypothesis of Superconductivity III: *The change in inertial mass energy content is indistinguishable from the change in potential energy mass content for the mechanism of superconductivity.*

To prove these hypotheses, consider a magnet and superconductor in alignment with the direction of gravitational freefall and under gravitational freefall. If M is for the magnet and S is for the superconductor, which is at rest in its comoving frame of inertial freefall, the electromagnetic four potential of the superconductor is some transformation of the electromagnetic four potential of the magnet:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2757)$$

Our intention is to show that this relationship must hold true by contradiction with the Meissner effect and energy conservation simultaneously. If there is no equivalency we could attribute outside factors, if there is equivalency then Λ and Ω show equivalent and opposite curvatures. Ω is the currently unknown factor we attribute to the effect of magnetic mirroring. In the rest frame of the superconductor there is a quantity which exists if the magnet approaches the superconductor with a differential as:

$$\partial_\mu \log(A_\mu^S) = \alpha_\mu \quad (2758)$$

And we separately analyze the partial differential of the other side of the equation to show they must be equivalent:

$$\partial_\mu \log(\Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M) = \beta_\mu \quad (2759)$$

If it does not hold true that these are equivalent, then these differentials would differ and the integration constant would be potentially nonzero.

An electric field does not exist from motion because the relative velocity is coparallel with the magnetic field. If one occurs from change in the magnetic field in time then it would either be the case that the magnetic fields are equal and opposite and there is no electric field, or they are not equal and opposite, and there is an electric field. Energy conservation implies that α_μ and β_μ change in such a fashion so as to preserve the electromagnetic field energy which is conserved by definition in the rest frame. But with one becoming smaller, and the other larger if an electric field existed, the Meissner effect would be violated. Hence it cannot be the case that $\alpha_\mu \beta^\mu = C$, a constant, with $\alpha_\mu \neq -\beta_\mu \neq 0$.

The Meissner effect implies that $\alpha_\mu = -\beta_\mu$, and that these could be nonzero, but they cannot be nonzero if energy conservation is to hold true in the rest frame since then the total energy content would be changing. Since there is no electric field and the magnetic field energy would change in the rest frame by the dot product of their magnetic fields, it cannot be the case that these are nonzero. Consequently this also implies the integration constant is zero. Thus the Meissner effect and energy conservation can be mutually satisfied if and only if:

$$\alpha_\mu = \beta_\mu = 0 \quad (2760)$$

Identically, and with an integration constant of zero to produce:

$$A_\mu^S = \Omega_\mu^\nu \Lambda_\nu^\mu A_\mu^M \quad (2761)$$

Now we shift our discussion to determine the nature of Ω , which is a transformation related to the infinite magnetic mirroring. We posit that a superconductor and magnet are at rest relatively in a noninertial frame of the gravitational field of the Earth, an electromagnetic pulse traverses the medium of air between them vertically, and we analyze a series of snapshots of the electromagnetic wave between them.

Taking as an arbitrary initial configuration that the electromagnetic field of the magnet is some function of distance from the magnet and begins to traverse the medium of air downwards at the speed of light as confirmed by relativity, it will travel faster than the normal speed of light in vacuum by a proportionality of the relativistic factor:

$$\gamma \tag{2762}$$

This will be a function of distance due to the curved nature of the spacetime of in the vicinity of the Earth and its accompanying gravitational field. Additionally, there is a slowing relative to the normal in vacuo speed of light due to the presence of air, which we will neglect, presuming we are doing our experiment in a vacuum. The magnet would ordinarily fall in the presence of the gravitational field, but it is supported by the superconductor which we take to be additionally supported by a table with a vat of liquid nitrogen that is sufficient to cool the superconductor to superconducting capability.

The nature of a superconductor, which is an experimentally verifiable phenomenon, is to exhibit a Meissner effect whereby all magnetic fields are actively expelled from the superconductor such that the magnetic field interior to the superconductor is zero. This is supported by the notion that it is also a perfect conductor, and there exist superconducting super currents on the surface of the superconductor which shield the interior from a magnetic field penetrating the superconductor in the type one normal phase.

For now, we will exclude the type two superconducting phase from discussion, where the magnetic field can penetrate the superconductor. In the normal phase, the superconducting Meissner effect is the effect that when cooled, a superconductor is not only a perfect conductor, but a perfect diamagnet, because the magnetic field will be expelled from the interior, and not left trapped, as it would with only a perfect conductor. Taking the superconductor and magnet to levitate is an indication of this complete field repulsion of diamagnetism, as we know two opposed magnets repel. Taking the magnet to be with a magnetic moment of:

$$\mu \tag{2763}$$

The falloff in space is described by a function which incorporates the direction of freefall as \hat{z} :

$$\mu f(z)\hat{z} \tag{2764}$$

Where \hat{z} is the normal direction in which the magnetic field is pointing and the direction in which the magnetic and superconductor are separated vertically in space. For now, we assume the experiment could be performed with a perfectly small point like magnet and point like superconductor. The magnetic moment of the superconductor is another function, now displaced in space, but, it is a mirrored moment, critically at the location of the original magnet, because a perfect conductor will create super currents that mirror the magnetic moment. Besides simplifying our discussion, it can be easily seen that only this mirroring of the magnetic moment can create complete field cancellation in the interior of the superconductor. Thus the magnetic moment of the superconductor is to exhibit a displaced magnetic moment at the position of the magnet of:

$$-\mu f(z)\hat{z} \tag{2765}$$

This is the same as if it were to have the opposite direction or the opposite moment. The magnetic field of the magnet remains as its usual moment and is not diminished by this effect, but there is still the behavior of the mirroring field which concerns us. For the light of the

electromagnetic wave that traverses the medium completes two trips in this effective loop through space and time. A snapshot view illustrates that first, the magnetic moment is made larger by a relativistic factor of:

$$\gamma \tag{2766}$$

This occurs from transformation via its representation at the position of the superconductor, and then is made smaller by this same factor on the rebound. However, the light that traverses the medium when taken from the viewpoint of an observer that is distant is this value. The given fields are not made any larger or smaller locally in the non-inertial frame of free fall with the magnet and superconductor. If we were to remove the support, and allow the magnet and superconductor to undergo inertial free fall, we would encounter a different set of snapshots. In the viewpoint of a distant observer viewing the free fall in comoving coordinates, the magnet will exist with a magnetic field:

$$\mu f(z) \hat{z} \tag{2767}$$

And the superconductor with a magnetic field:

$$-\mu f(z) \hat{z} \tag{2768}$$

However, we know that the factor of γ is changing at the same time. Comparatively, the magnetic field of the magnet will become in our representation viewing the system from afar:

$$\gamma \mu f(z) \hat{z} \tag{2769}$$

While the magnetic field of the superconductor will become in our representation viewing the system from afar:

$$-\gamma \mu f(z) \hat{z} \tag{2770}$$

This is remarkable, because somehow the magnetic field of the magnet has been affected so as to become larger by super currents from a comparatively smaller source. Taking snapshots of viewpoints, first we have a magnetic field of the following from the magnet at its location, equation (16). The distance between the superconductor and magnet is as a given:

$$R = cdt \tag{2771}$$

While the distance viewed from the distant observer is getting progressively smaller due to length contraction by a distance also equivalent to, as viewed by the local observer:

$$r = vdt \tag{2772}$$

Comparatively, what is witnessed is a force acting through a distance R from the distant observer and through a distance r from the local observer. This is equivalent to a contraction of the electromagnetic field with each successive bounce of the electromagnetic field as the superconductor and magnet fall together. This is the ratio:

$$\frac{r}{R} = \frac{vdt}{cdt} \tag{2773}$$

Including for the sake of placing these in the same external observer from afar viewpoint we must replace the velocity with the boosted velocity, while the time dilation factor is left common for we compare these in the same present location:

$$v \rightarrow \gamma v \tag{2774}$$

What we are left with is the comparative ratio of strength between each bounce in each snapshot viewpoint of reflection of the magnetic field via light between the magnet and superconductor within the comparative viewpoint of an observer from afar versus the local observer. Summing over the infinite reflections to find the potential energy produces:

$$\begin{aligned}
 \vec{B}_M \cdot \vec{B}_S &= - \sum_{n=0}^{\infty} (-1)^n \mu^2 f(z)^2 \gamma^2 \left(\frac{v \gamma dt}{cdt} \right)^{2n} & (2775) \\
 &= -\mu^2 f(z)^2 \gamma^2 \frac{1}{1 - \frac{v^2}{c^2} \gamma^2} \\
 &= -\mu^2 f(z)^2 \gamma^2 \gamma^{-2} \\
 &= -\mu^2 f(z)^2
 \end{aligned}$$

Where the alternating series is from the reflection of each contribution under which the sign of the magnetic field changes. The per superconductor or magnetic moment field is then:

$$\xi = \pm \mu f(z) \hat{z} \tag{2776}$$

This vindicates a viewpoint that the magnetic moment is unaffected by gravity while in inertial free fall because it is a quantum phenomena. Not only does this illustrate that inertial considerations apply to magnetic superconducting levitation and other quantum phenomena independently of gravity, it says that these effects may be subsumed into the architecture of general relativity for a system as if quantum mechanics remains inertial while undergoing inertial free fall with a different metric.

Or, analogously moving back to the rest position in non inertial levitation, this phenomenon is also inertially supported. So, for all considerations quantum mechanics can be considered to be an inertial phenomenon above and beyond any other considerations. Indeed in this experiment the result is that there is no effect of general relativity upon the quantum system, for the transformation is removed. But, $\beta = \gamma^{-1}$ which cancels the relativistic γ of relativity is associated with Ω .

This points to a given transformation from the perspective of general relativity that when invoked if we were to apply general relativity to quantum mechanics we would have to immediately reverse our direction and apply the inverse transformation upon all quantities. This has the side effect of meaning that quantum mechanics is inherently a theory which embodies the inverse of the transformations of general relativity under the same auspices of considerations of inertia. For instance, a magnet and superconductor that are stuck together by the flux pinning will illustrate inertial evolution analogous to the moon about the Earth in parallel analogy to general relativity.

The two theories are such that quantum mechanics remains in its ultimate state free from coordinate transformation. Saying this embodies a translational motion for inertia in circumferential motion is the same as saying the inverse of the transformation provided by general relativity as applied to quantum mechanics is the same as the forward transformation provided by quantum mechanics upon quantum mechanics. Furthermore, this result shows that the well known Meissner effect is an illustration of the general covariance of quantum mechanics. This results in two viewpoints;

A:) In the first, the field transformations are reciprocal such that in any rest frame the energy momentum remains as a constant by the requirement of the Meissner effect and energy conservation.

B:) In the second, the field transformation does not lead to a constant energy momentum of the bodies and the Meissner effect magnetic fields change in magnitude, but the global frame must change.

And this is a comparative type of equivalence to that of the well known general covariance, for it works reciprocally in quantum mechanics. The first can be seen as the internal rest frame description. The second can be seen as the externally viewed description. Yet, they are equivalent physically. This is the resolution of our hypothesis:

These two viewpoints are equivalent under equivalency of electromagnetic field potential mass energy lowering and inertial mass energy lowering.

Equation (7) indicates that Λ changes the slope of the function in time in inverse proportion to the change in magnitude from Ω . From this, the log derivative represents the functional argument of this scaling. Thus it is the functional argument of the boost. This is the very expression of curvature in our quantum system. For we may of course hold true that:

$$A_{\mu}^S = -A_{\mu}^M \quad (2777)$$

From the very Meissner effect we started with. This is the expression of diamagnetism and is definitional of superconductivity. One could argue that inertially these must be two pure Lorentz-like transformations, but such is not the case in the noninertial levitation. For here the system is interacting, and we have no direct inverse for the transformation, although they form the identity. So we must hold as true that:

$$\partial_{\mu} \log(\Omega_{\nu}^{\mu}) = -\partial_{\mu} \log(\Lambda_{\nu}^{\mu}) \quad (2778)$$

This allows us to reason that both Λ and Ω carry spatiotemporal dependence, and for the considerations of any mechanism of superconductivity there must be a curved representation for the variables of position and momentum in the uncertainty principle. We end with a conclusion regarding the mechanism of superconductivity:

Conclusion: *Quantum states and electromagnetic fields are subject to a quantization condition holding invariance such that they are relatively inertial with respect to each other's quantities in each other's frames. The reciprocal relationship between the magnetic field mirroring and field transformation from relativity is the very condition that they be mutually inertial within each others frames under inertial freefall or noninertial support, in confirmation of the application of general covariance to quantum mechanics. The effect of the transformation which is the Meissner effect is the instantiation of general covariance within quantum mechanics.*

Comparative equivalence is now an appropriate term for the coexistence of a principle of relativity in quantum mechanics and general relativity, and that the results of measurements do not depend on coordinate system transformations or displacements. In this, comparative equivalence can also be defined as:

Comparative Equivalence: *The physical results of differences in measure between an observer that is stationary & an observer that is in motion are physically real and measurable, however differences in the physical results of the process of measurement between an observer that is stationary & an observer that is in motion are unphysical & null.*

Conclusion

Why is superconductivity not gravity's mirror in a quantum pool?

For instance, what was established was null covariance. That when inertially accelerated under the force of gravity, a magnet-superconductor will inertially maintain the same distance of separation. This is consistent with an effect 'mirroring' over the superconducting magnet interaction. It is only the implication that there is no covariance separable for magnet and superconductor and gravity. They are one in the same, but mysteriously the Meissner effect maintains its distance of separation of magnet and superconductor, and covariance and contravariance co-conspire to produce null covariance upon quantum mechanics. In this sense, quantum mechanics becomes independent of gravity, but it is really the combined effect and its reciprocal taking place at the same time. Thus we can conclude that the Meissner Effect and general relativity are not separable instances of general covariance, for it is merely with the application of general relativity to the Meissner Effect that we find 'complete' agreement between the effects of the contravariance and covariance, both implied by general relativity. But the question is why when we transform back to the state of non-inertial support why the force demonstrated is then not of the same variety, for it should transform in the reciprocal fashion to support the magnet.