

Light Spin Unitary Principle Equivalence  
*Parsimony in Natural Law*

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## Abstract

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 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; 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:

$$V = I_0(\exp^{-\frac{V_\beta}{V_T}} - 1) \quad (1)$$

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.

$$\gamma = 1 + g \quad (2)$$

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.

## **0.1 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.

## **0.2 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.

$$\Gamma_\mu = \partial_\mu \log \gamma^\nu \quad (3)$$

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.

$$D_\mu = \partial_\mu + \alpha A_\mu + \Gamma_\mu \quad (4)$$

Where  $\Gamma_\mu$  and  $\partial_\mu + \alpha A_\mu$  are components of the momentum differential  $D_\mu$  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  $\gamma^\mu$  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:

$$(i\gamma^\mu D_\mu - m)\Psi = 0 \quad (5)$$

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.

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A \Psi_B = 0 \quad (6)$$

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.

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - i2m\gamma^\mu D_\mu + m^2)\Psi_A \Psi_B = 0 \quad (7)$$

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:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu - m^2)\Psi_A \Psi_B = 2im\gamma^\mu D_\mu \Psi_A \Psi_B \quad (8)$$

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:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu\Psi_A\Psi_B \quad (9)$$

As a consequence the differential can be expanded for either to operate once more; with the following result:

$$(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) - m)(i\gamma^\mu(\partial_\mu + \alpha A_\mu + \Gamma_\mu) + m)\Psi_A\Psi_B = 2im\gamma^\mu D_\mu\Psi_A\Psi_B \quad (10)$$

With the re-writing of this expression we have the spin zero wave equation written as:

$$(\partial_\mu^2 + \alpha^2 A_\mu^2)\Psi_A\Psi_B = (2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2)\Psi_A\Psi_B \quad (11)$$

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:

$$\partial_\mu^2 + \alpha^2 A_\mu^2 = \Delta \quad (12)$$

Which expresses the photon propagator with the energy momentum of the electron particle in balance with the gap  $\Delta$ ; 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

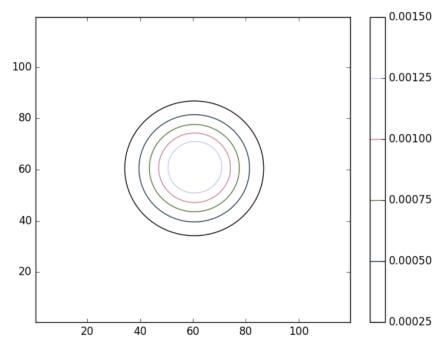
an intrinsic kinetic energy momentum of the subatomic particle known as the electron.

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.

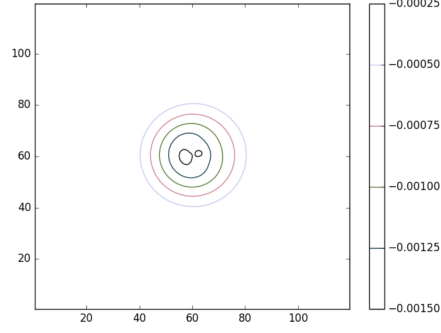
This is an example of unitary reciprocity in electromagnetism for which the principle is:

**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.

$$\Delta = 2m\gamma^\mu D_\mu + im^2 - \Gamma_\mu^2 \quad (13)$$

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:

$$(\partial_\mu + A_\mu)(\partial_\mu - A_\mu)\Psi_A \Psi_B = \Delta \quad (14)$$

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.

### 0.3 Constitutive Functionals

$$(1.) \quad V_L\left(\frac{V_{LD}}{V_{PD}}\right) + V_P = V_L^e(V_P)$$

$$(2.) \quad V_P\left(\frac{V_{PD}}{V_{LD}}\right) = V_P^e(V_L)$$

### 0.4 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:

$$(A.) \quad V_L^e \rightarrow (V_P^e)^{-1}$$

$$(B.) \quad V_P^e = \alpha V_L + \beta V_L^2$$

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 compatability condition of electromagnetism based upon field and electromagnetic light wave freedom by decoupling of passive electro-magnetic 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 exte-

rior 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.

## 0.5 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 ( $\alpha$ ), mass index ( $\beta$ ), and transmissivity ( $\gamma$ ). 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.

## o.6 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 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.

### o.7 Reasoning of Innovation

The additional '(V<sub>P</sub>)' 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.

### o.8 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 ( $\omega$ ) 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  $\gamma$  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  $\gamma$  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  $\gamma$  (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 ( $\gamma$ ) 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; 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 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 the given sum product of differing weight in an independently provided cadence to the immeasurability of each emit.

## 0.9 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.

## 0.10 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:

$$V_A = I_{OL}(e^{-\frac{V_{LD}}{V_{TLD}}} - 1) \quad (15)$$

$$V_B = I_{OP}(e^{-\frac{V_{PD}}{V_{TPD}}} - 1) \quad (16)$$

To:

$$g = \frac{\alpha}{\beta} \quad (17)$$

Where  $g$  is the base to emitter gain; expressed as the ratio of  $\frac{I_{BE}}{V_{BE}}$ . With:

$$\gamma = 1 + g \quad (18)$$

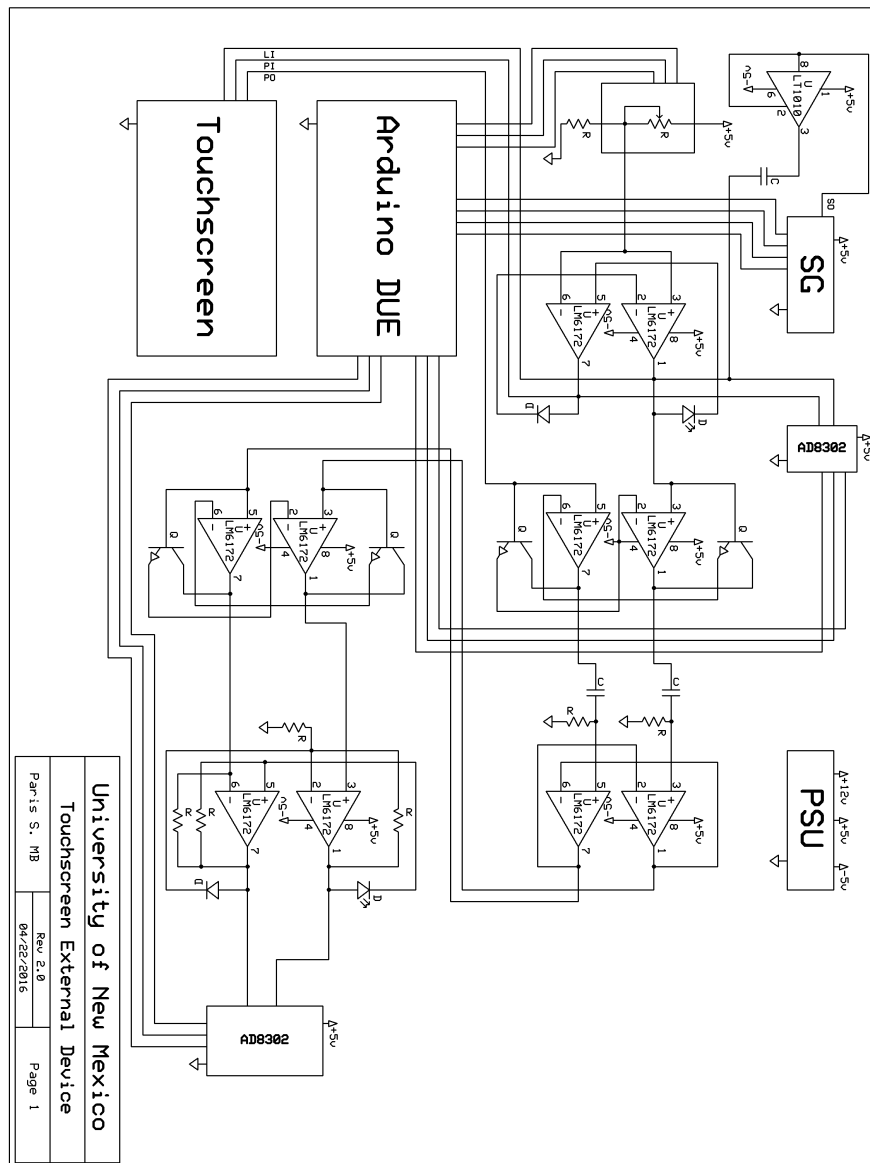
Where  $\gamma$  is the  $\frac{I_{EC}}{V_{EC}}$ . By way of  $\partial_{V_{LD}} = \partial_{V_{PD}}$  and  $V_{LD} = -V_{PD}$  of the 'Golden Rules'

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:

$$V_P^e = \alpha V_L + \beta V_L^2 \quad (19)$$

### o.11 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.

## 0.12 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.

### **0.13 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 it's 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.

## 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.

### 0.14 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.

## **0.15 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 electro-coulombic 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 irreducible 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 o as P.

This is the definition and equivalence of the center of the relation of balance of electricity.

## 0.16 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 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 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.

### **0.17 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.

### **0.18 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.

$$\partial_{\mu} \log(\tilde{Z}^* \bar{Z}) = \eta = \partial_{\mu}(\tilde{\omega}^* \bar{\omega}) \quad \leftrightarrow \quad \eta = \frac{I_{LD}}{V_{PD}} = \frac{I_{LDD}}{V_{PDD}} \quad (20)$$

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.

## 0.19 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.

### **0.20 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.

### 0.21 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.

### 0.22 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:

$$\frac{V_{LD}}{V_{LLD}} = \frac{V_{PD}}{V_{PLD}} \quad (21)$$

And; therefore it holds in general that:

$$\bar{V} = \tilde{Z}I^* \quad (22)$$

$$\tilde{V}^* = \bar{Z}I \quad (23)$$

Are independent; hence:

$$\frac{\partial \bar{V}}{\partial I} = \frac{\partial \tilde{V}^*}{\partial I^*} = \eta \quad (24)$$

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 of either relation under superposition is and are simultaneously independent.

2.) Hence, the circuit embodies the wave equation if:

$$\Theta = \eta(t, r, \theta, \phi)e^{\pm i(\omega t + \tau r + n\theta + \psi\phi)} \quad (25)$$

And; it's differentials, solves either equation resulting from their combination under tensorial relationship:

$$(\partial_t - \partial_\theta)(\partial_t + \partial_\theta)\Theta = \square_t^\theta \Theta \quad (26)$$

$$(\partial_r - \partial_\phi)(\partial_r + \partial_\phi)\Theta = \square_r^\phi \Theta \quad (27)$$

Yet as provided the above; this results in ( $I:\beta$  and  $Z:\eta$ ):

$$\frac{\partial \bar{\Theta}_\mu}{\partial \beta_\nu} = \frac{\partial \tilde{\Theta}_\mu^*}{\partial \beta_\nu^*} \rightarrow \frac{\partial \gamma}{\partial_{\mu\nu}} \Theta = \Theta_{\mu\nu}^\gamma \quad (28)$$

If and only If  $\phi = \phi$  for  $\mu, \nu$  if and only if the set  $(\tau, n, \omega)$  are of solid relation for light  $\gamma$ . 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 ( $\phi$ ) 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 irridescence 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 ( $\phi$ ) and decay constant enclosed minimal time signature.

## **0.23 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

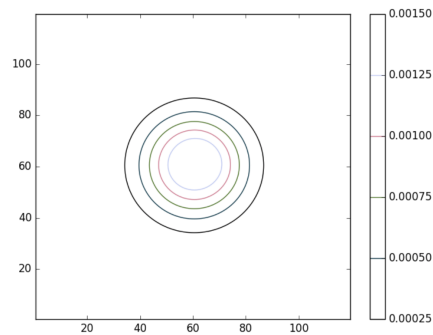
relationship of transparency ( $R$ ) to transmission ( $\Gamma$ ) of relation:

$$\log(\Gamma(\omega, \bar{\tau})R(\tilde{\omega}, \tau)) = Z(\tilde{\omega}, \tau) * Z(\bar{\omega}, \tau) \quad (29)$$

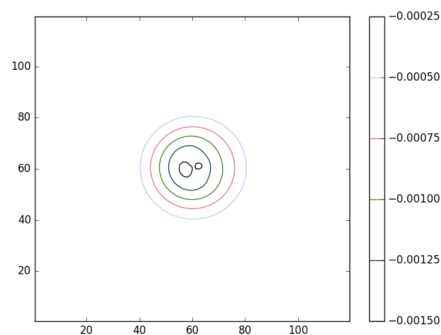
Were this improvement made; it is clear from the given relationship above that impedance matchings occur simultaneously and independently for *one* and *all* such signals of a given frequency and decay constant.

## 0.24 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.

## 0.25 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 illumi-

nation 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.

## 0.26 Satisfiability

Hence a natural identity holds from which statistics are known as:

$$\zeta(\omega, f, \tau, \phi) \sim \omega(x, \rho, \sigma, t) \rightarrow \frac{\partial \gamma}{\partial \alpha \beta} \Theta = \Theta_{\alpha \beta}^{\gamma} \quad (30)$$

Where  $\Theta$  is the light energy content and  $\alpha$ ,  $\beta$ , and  $\gamma$  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  $\Omega$  as fidelity quality and zero admixture enthalpy  $\zeta$ :

$$\partial_{\mu} \log(\omega) = 0 \leftrightarrow \Omega \zeta = 0 \quad (31)$$

This implicates the separation of electricity from magnetism and their comutual independence.

## 0.27 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 rectangular 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.

## 0.28 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.

### **0.29 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.

### 0.30 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 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.

### **0.31 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 applica-

tion 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.

### **o.32 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.

### **o.33 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.

### 0.34 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.*



### 0.35 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:

$$\Gamma_{\mu} = \partial_{\mu} \log \gamma^{\nu} \quad (32)$$

The necessity of this conditional correction is no more simple than the inclu-

sion 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.

### **0.36 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:

$$\Delta(PE + KE) = 0 \quad (33)$$

By energy conservation. However, in the inertial frame it holds true that:

$$\Delta PE = \Delta KE = 0 \quad (34)$$

The condition of general covariance and its identity implies however that:

$$\Delta PE = \Delta KE \neq 0 \quad (35)$$

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:

$$\Delta PE = \Delta KE < 0 \quad (36)$$

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.*

### 0.37 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 pre-science; weighted as the constant rate of velocity of expansion over distance is as:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (37)$$

The metrical field equation is:

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu} \quad (38)$$

The effective and full field equation is:

$$G_{\mu\nu}^u + Q_{\mu\nu}^o \tilde{T}_{\mu\nu}^g = 1 \quad (39)$$

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 imparticipant 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.

$$R_{\mu\nu}^o \tilde{G}_{\mu\nu}^u + B_{\mu\nu}^g = 0 \quad (40)$$

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  $\mu$  and  $\nu$  and that of what is the coindependently 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:

$$\xi(x) = \frac{1}{\sqrt{a_0}} e^{-\frac{x}{a_0}} \quad (41)$$

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:

$$g^{\mu\nu} c_{\mu\nu} = e^{2\beta d} t_\eta \quad (42)$$

With  $\beta$  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:

$$\begin{aligned} g^{\mu\nu} |x^\mu - x^\nu| \\ = \frac{1}{a_0^2} |t_\mu - t_\nu| \end{aligned} \quad (43)$$

The boosted interaction as an energy contribution for all points in space has as a condition of its conservation:

$$\partial_{\mu}(e^{2\beta d} e^{-4\frac{d}{a_0}}) = 0 \quad (44)$$

From this:

$$\beta = \frac{2}{a_0} \quad a_0 = \frac{\hbar}{m_e c \alpha} \quad (45)$$

The variable  $\beta$  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 givens light exceeds measure for in that of it's excess unit interval.

With this, the curvature term becomes:

$$\Gamma_{\mu\nu}^{\nu} = \partial^{\nu} \log(\sqrt{g_{\mu\nu}}) = \frac{2}{a_0} \quad (46)$$

$\Lambda$  becomes after integration to get total energy:

$$\Lambda = -\frac{1}{c^2} \frac{2}{a_0^3} \frac{e^2}{4\pi\epsilon_0} \int \int e^{-2\frac{|x^{\mu}|}{a_0} - 2\frac{|x^{\nu}|}{a_0}} dx^{\nu} dx^{\mu} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} \quad (47)$$

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.  $\Lambda$  evaluated with these functional forms and constants yields:

$$\Lambda = \frac{E}{c^2} = -\frac{1}{c^2} \frac{2}{a_0} \frac{e^2}{4\pi\epsilon_0} = -2\alpha^2 m_e \approx -9.70174 \times 10^{-35} [kg][m]^{-3} \quad (48)$$

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 expres-

sion 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:

$$H_0 = |8\pi GEc| = 16\pi\alpha^2 m_e c^3 G \approx 2.19201 \times 10^{-18} [s]^{-1} \quad (49)$$

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:

$$H_0 = 16\pi\alpha^2 m_e c^3 G(1 + P_o) \approx 2.292844 \times 10^{-18} [s]^{-1} \quad (50)$$

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.

### **0.38 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 con-

stant 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 confirmation of departure from a Euclidean reality.

### **0.39 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 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.

#### **0.40 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 compar-

actively 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 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 & propertied 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.

#### o.41 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:

$$x_{rms}^2 = \bar{x}^2 + \sigma_x^2 \quad : \quad f \quad (51)$$

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:

$$\lim_{\sigma_x \rightarrow 0} f \equiv x_{rms}^2 = \bar{x}^2 \quad (52)$$

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:

$$f - \lim_{\sigma_x \rightarrow 0} f \equiv 0 > \sigma_x^2 \quad (53)$$

Or as:

$$(1 - \lim_{\sigma_x \rightarrow 0})f \equiv 0 > \sigma_x^2 \quad (54)$$

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.

## 0.42 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:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) = 0 * 1 + 1 * 0 = 0 \quad (55)$$

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:

$$(f - \lim_{\sigma_x \rightarrow 0} f)(g - \lim_{\sigma_x \rightarrow 0} g) + (h - \lim_{\sigma_x \rightarrow 0} h) \equiv x_{h, \sigma_{rms}}^2 = \bar{x}_h^2 \quad (56)$$

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

$$(f - \lim_{\sigma_x \rightarrow 0} f) * 1 + 0 = 0 \quad (57)$$

From which we have as a given derivation:

$$0 > \sigma_{h,x}^2 \rightarrow 0 > \sigma_{g,x}^2 \rightarrow 0 > \sigma_{f,x}^2 \quad (58)$$

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.

### o.43 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**:

$$\partial_{\alpha\beta}^{\gamma} \Theta = \Theta_{\alpha\beta}^{\gamma} \quad (59)$$

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**:

$$\int \Theta_{\alpha\beta}^{\gamma} = \Theta_{\alpha\beta}^{\gamma} \quad (60)$$

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 co-extensively 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:

$$\zeta \chi = 0 \quad (61)$$

And; of independence of quantity from measure:

$$\xi \lambda = 1 \quad (62)$$

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.

#### 0.44 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 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:

$$0 > \sigma_{A,ds}^2 \rightarrow 0 > \sigma_{X,dx}^2 \rightarrow 0 > \sigma_{V,dA}^2 \quad (63)$$

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.

## o.45 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.

$$\psi_{\gamma}^{\pm} = \eta_{+} e^{\pm i\theta_{\gamma}} \quad (64)$$

$$\phi_{\gamma}^{\pm} = \rho_{\pm} \partial \log(\pm i\theta_{\gamma}) \quad (65)$$

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:

$$\xi = \phi_{\pm}(\psi_{\pm}) = \pm i\rho_{\pm}\phi_{\gamma} \quad (66)$$

$$\lambda = \psi_{\pm}(\phi_{\pm}) = \pm i\eta_{\pm}\psi_{\gamma} \quad (67)$$

Of unity as length of separation of points grows as density as  $\rho^2$  smaller with  $\xi$  equivalent at all length scales with number of  $\psi$  points per volume increasing as density and  $\rho$  shrinks with error  $\rightarrow 0$ . Therefore:

$$\eta^3 > \rho^3 > \eta^2 > \rho^2 > \eta^1 > \rho^1 \quad (68)$$

Etcetera, for the fact that a given sequence in dimensions is indivisibly locable within the relations of either the principles behind  $\lambda$  and  $\xi$ . 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."*

## o.46 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:

$$(i\gamma^\mu D_\mu - m)(i\gamma^\mu D_\mu - m)\Psi_A \Psi_B = 0 \quad (69)$$

When it is rewritten it becomes:

$$(-\gamma^\mu D_\mu \gamma^\mu D_\mu + m^2)\Psi_A \Psi_B = 2im\gamma^\mu D_\mu \Psi_A \Psi_B \quad (70)$$

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,  $\Gamma_\mu$ .

$$(i\gamma^\mu D_\mu + m)(i\gamma^\mu D_\mu - m)\Psi_A \Psi_B = \Delta \quad (71)$$

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.

#### o.47 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 abut 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 its inversion.

These functions are identical to a function of the following nature:

$$\Theta := \begin{pmatrix} \alpha \hat{A}(\omega, \tau) & \beta \hat{B}(\omega, \tau) \\ \gamma \hat{A}(\omega, \tau) & \delta \hat{B}(\omega, \tau) \end{pmatrix} \begin{pmatrix} \rho(u) \\ \rho'(u) \end{pmatrix} = \int_{\tau} \int_{\theta} \begin{pmatrix} e^{-i\omega t} A(t, u) & -e^{-i\omega t} B(t, u) \\ e^{i\omega t} A(t, u) & e^{i\omega t} B(t, u) \end{pmatrix} \begin{pmatrix} \rho(u) \\ \rho'(u) \end{pmatrix}$$

#### o.48 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  $\theta$  and  $\Theta$  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.



## o.49 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:

$$\gamma_{\rho}^{\rho\sigma}(\eta_{\rho\sigma}^{\rho}) \cong \chi_{\mu}^{\mu\nu}(\gamma_{\mu\nu}^{\nu}) \quad (72)$$

These two fields by the composite relationships of that of independence of phenomenal from quantitative:

$$\zeta \chi = 0 \quad (73)$$

And; of independence of quantity from measure:

$$\xi \lambda = 1 \quad (74)$$

## o.50 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 indeterminate 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.

$$v(u) \circ \xi \lambda \odot \zeta \chi \cdot \sigma(t) = \eta(s) \quad (75)$$

$$v(u) \circ \xi \chi \odot \zeta \lambda \cdot \sigma(t) = \rho(s) \quad (76)$$

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 unequivocally 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  $\lambda$  in time is of the ordered relation in  $\nu$  for then in either of the complete open exterior involute  $\sigma$  and interior involute  $\zeta$  relation of either formative preceding exclusive  $\chi$  and inclusive formative  $\rho$  given relation of level set curved relation of completeness to then it's end in square order rela-

tion 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 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.

## 0.51 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  $\gamma$  and in the other  $t$  as with a prefactor; the remainder in  $B$  and at  $A$  for then in either  $\gamma t$  fits in  $t$  as  $t$  doesn't fit in  $\gamma t$  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.

$$\zeta\sigma = \chi\eta \quad \frac{v_x}{v_m} = \alpha \quad (77)$$

That of  $\zeta$  as the encompassing notion of time; in it's congruent evolute open extensibility through  $\sigma$  of equivalence to that of  $\chi$  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.

$$\int t_1 = \int t_2 \quad (78)$$

And:

$$\frac{\partial^2}{\partial t^2} \gamma \quad \zeta \circ t_1 \quad \chi \circ t_2 \quad (79)$$

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.)*

$$\gamma t, t \quad \frac{\partial S}{\partial x} = t, \gamma t \quad B : \gamma t : A : t \quad (80)$$

Intrinsic and extrinsic time:

$$t_A < t_B \quad \int_A \frac{\partial S}{\partial x} dx > \int_B \frac{\partial S}{\partial x} dx \quad (81)$$

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.

## 0.52 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:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (82)$$

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.



### 0.53 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:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{c} \quad (83)$$

And:

$$\zeta = \sin(\alpha) \quad \chi = \tan(\alpha) \quad \alpha = \frac{v}{\sqrt{v^2 - c^2}} \quad (84)$$

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.

#### o.54 Final Note of Measureability

The first equation is the Principle Equivalence:

$$\eta + \rho = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (85)$$

The second equation is the Principle Inequivalence:

$$\eta\rho + \sigma(t) = \log(\tilde{\omega} \cdot \bar{\omega}) \quad (86)$$

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;  $\eta$  and  $\rho$  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:

$$\eta(\epsilon(o)) \cdot (\zeta(s) \circ \sigma(t)) \rho(\epsilon(o)) \cdot (\chi(s) \circ \eta(t)) = \sigma(\mathbf{o}) \quad (87)$$

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  $\eta$  or  $\rho$  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:

$$\eta + \log(f(\tilde{\omega})) = \log(f(\tilde{\omega})g(\tilde{\omega})) \quad (88)$$

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.*

### o.55 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 excepted 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 properties of what is taken of a given principle by example as formerly given truth to the end of its disclosure in a given of its 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.

### **0.56 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.

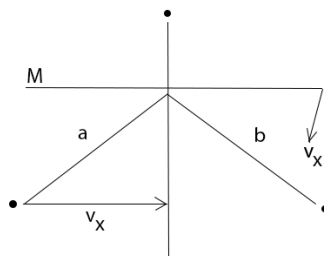


## Conclusive Means

As a wheel rolls; the production of motion is found in that of the effability 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.

$$\epsilon(l)\mu(k) \cdot \zeta(u)\lambda(u) \cdot \eta(s)\rho(s) \cdot \sigma(t) = s(\bullet) \quad (89)$$

Either way a mirror points; it is invisibly of equivalent velocity in relation to 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 separable 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 mirrors reflection.



Then in finding of what of all is found; capable; is the furtherest inquiry into the quantitative of as is the qualified itself the immobile as the first unconceived. Questioned purposes of utility in formative known's of exemplified meaning found in purposed quantifiable propertied and certain ends of making of said example therefore are the difference of made in either then exception to the qualitative answer of one; for in properties measures are exclusively excluded.