Exploration

The Life Circuits for Universal Life in an Evolving Cosmology (Part 1)

Anthony P. Bermanseder*

Abstract

The beginning of life is encoded in the DNA and the RNA and cellular evolution in mitosis as the self-replication of cells from their DNA encodings in left-handed 20 amino acids and the right-handed sugars. The biological origins for life can be modeled on the emergence of cellular reproduction from chemical and physical precursors or protocells related to a manifested form of radioactivity of the weak nuclear interaction mirroring the chiral distinction of non-parity or asymmetry between matter and antimatter. The induction of the 'life force' assumes the character of a Maxwellian displacement current which manifests a multidimensional equivalence of mass and a magnetic monopolar electricity, defining the life-current as a frequency based naturally impressed monopolar current. The source frequency for this monopolar current is traced to the creation event to couple to a time evolution for the cosmology and particularizes a DNA-frequency in its bifurcation into an electro-capacitative and a magneto-inductive part to then emerge as a double-stranded helix in an applied quantum geometry.

Part 1 of this three-part article includes: 1. The Birth of Spacetime from an Algorithmic Timespace Transformation; & 2. The Magnetic Flux and the Maxwell Monopolar Displacement Current.

Keywords: DNA, amino acid, cellular evolution, life circuit, universal life, evolving cosmology.

1. The Birth of Spacetime from an Algorithmic Timespace Transformation

Universal Life can be defined for a cosmology as engaging in an evolutionary pathway from an early primordial beginning in a distribution of inorganic matter towards an increasing complexity for this matter biochemically coupled to a 'electricity for life' defined by life-currents.

This biochemical coupling transforms a form of natural radioactivity given in the nature and parameters of the weak nuclear interaction WNI into a bifurcation or splitting of the parameters of the WNI into two complementary parts. Only left-handed matter couples to the action of the WNI and only right-handed antimatter engages with the interaction agency (of gauge bosons named weakons) of the weak nuclear interaction.

* Correspondence: Anthony P. Bermanseder, Independent Researcher. E-mail: omniphysics@cosmosdawn.net

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As the WNI is defined for a chiral- or quantum spin distinction between inorganic matter and inorganic antimatter, this difference can be transferred from the matter-antimatter modus operandi to a bifurcation of organic matter, so mirroring the division of matter from antimatter in a left-handedness of biochemical matter mirrored in a right-handedness of the same biochemical matter induced by a life-circuit.

The nature of the elementary constituents of matter can be described in a quantum geometry manifesting in spacetime in the form of space occupying fundamental particles obeying mathematical definition and structures independent of a background matrix of space existing for the quantum geometry to manifest in an evolving spacetime cosmology. The existing spacetime can so be defined as the critical intersection of a spaceless and timeless mathematical realm of physical imaginary abstraction emerging as a physicalisation of space and time from its prior definition as a timespace.

This critical intersection can also be defined as the birth of space and time in a Quantum-Big Bang-S(R)ingularity QBBS based on the definition for an universal self-state of timespace unphysical consciousness transforming into a universal self-state of spacetime physicalized consciousness.

This transformation therefore depends on the nature and parameters of the QBBS in its initial and boundary conditions, mathematically and quantum geometrically defined in logical statements and binary algorithms. The binary nature of the elementary algorithm derives from the quantum geometry of a mathematical point in timespace increasing its one-dimensionality as a linear timespace into a two-dimensional timespace as a membrane area and as a point circle loop.

The emergence of the second dimension so can be described as a one-dimensional extended quantum geometric point truncating its potentially infinite extent in the self-closure of itself as a point circle loop defined in the area encompassed by the two-dimensional timespace loop. The timespace in two dimensions so is covered by the summation of quantum geometric open and closed quantum strings represented by the numerical ciphers 1 and 0 defining a binary code of numerical representation of the timespace. The quantum binary strings then will also define the unphysical self-state of consciousness in its given initial- and boundary conditions coupled to appropriate mathematical algorithms.

Following the birth of spacetime in the QBBS, the universal timespace changed its consciousness self-state from being unphysical to being physicalized in spacetime. The boundary condition for the spacetime in timespace in terms of the number of emerging dimensions was the cipher 12 in a binary sequence of ‘self-awareness’ triplets of the algorithmic statement: (Old State; Experience; New State) or (OS; E; NS) in a command structure of utilizing a new state NS generated by an experience E as the iterative and self-generating old state OS.

The binary quantum string algorithm so generated the awareness triplets: (0,0,0); (1,0,1); (1,1,1*); (1*1,1**); … with an initializing first self-state for generalized consciousness interpreted in a particular anthropomorphic form from that of the timespace source consciousness as: "I am Nothing, experience myself as Nothing and become Nothing". The second self-definition of the primal source then is interpreted as: "I am One, experience myself as Nothing and become myself again as One". The third eigenstate of the primal source then becomes: “I am One, experience myself as One and become myself again as One”.

The ?One? is again myself as One, but this Oneness is different from my previous Oneness. I can therefore redefine myself in using a new archetype and as my previous experience of the Nothing preceded my experience as Oneness, the distinction must be 01 as the before and 10 as the after.”

This then created the binary number set in a one-to-one correspondence with 1=01; 2=10; 3=11; 4=100; 5=101; 6=110; 7=111; 8=1000; 9=1001; 10=1010; 11=1011 and 12=1100; 13=1101; 14=1110 and 15=1111 ...etc. and with an algorithmically boundary of 12=1100 for the number of string dimensions. The fourth self-state of the primal source so became: "I am 1*=10=2, experience myself as 01=1 and become myself again as 1**=2+1=3=11". The fifth Self-definition of the primal source then was: "I am 1**=11=3, experience myself as 1*=2 and become myself again as 1***=3+2=5=101".

The algorithm so encounters a numerical discontinuity within its own self-definition. "Where is my numeral 4=100? I have skipped this number in my continuing self-development"! The primal source now constructs another algorithm in the attempt to recover it is missing numerals in some other way. This algorithm then crystallizes ten particular integer based number triplets in the following order in a constant set for the ‘Sequence for the Energy primal Source’ and with a limiting dimension counter in the numeral 12: SEps = {4; 6; 7; 1/(6,10,15); (9,10,16); 11; 1/(15,10,32); (14,15,24); 1/(15,16,18) and (26,65,61)}.

These numerical values then allow the primal source of universal consciousness to extend its metaphysical timespace domain of self-awareness given in the experience factors E in the awareness triplets of self-states into a hitherto uncreated physical spacetime world. In creating the timespace to spacetime intersection in the QBBS, the primal source could explore its algorithmic discontinuity in timespace as a continuity in spacetime.

This took the form for the initializing ten numerical constants transforming themselves into fundamental constants found in the laws of physics, such as the proportionality constants for energy such as c^2 in $E=mc^2$ (Einstein) und h in E=hf (Planck) and k_B in $E=k_BT$ (Stefan-Boltzmann).

But the primal source for universal consciousness was as yet unprepared to redefine itself in such a 'physical world of otherness' after the mathematical necessity for timespace to extend and mirror itself in spacetime was made manifest in the SEps algorithm. Spacetime was not as yet created to give a meaning to expanding space coupled to a measure of time in a sense of

nested dimensions limited in a membrane space of eleven dimensions root-reduced to the two dimensions of the point circle loop.

Rotating the point circle closed string or quantum loop about its mathematical diameter would create a three-dimensional 'solid of revolution' or quantum volumar in the quantum geometry and so again extend the previous definition for imaginary timespace as a two-dimensional membrane space generated from its one-dimensional precursor as a potentially infinite line space also known as a Dirac string. Timespace so generated three four-dimensional quantum timed spaces in Line-space, Twistor-space and Quantum-space, which became nested in four three-dimensional volumars connected by time connector dimensions 4, 7 and 10.

4-dimensional line-spacetime was connected to 7-dimensional twistor-spacetime in a one-dimensional time connector dimension as a fourth dimension and 7-dimensional rotation spacetime was connected to 10-dimensional quantum spacetime in a one-dimensional time connector dimension as a seventh dimension. A tenth dimension then formed a one-dimensional time connector dimension between the quantum space of vibration and its dimensional reduction to the null-dimension of imaginary timespace as a 13^{th} dimension of omni-space.

The line-space volumars of 3 dimensions so transformed into the twistor-space volumars of 6 dimensions, which transformed into the vibration-space volumars of 9 dimensions, which completed the metamorphosis of the timespace dimensionality into spacetime in the omni-space of 12 dimensions. This four-foldedness of nested space dimensionality without time so became a three-foldedness of interwoven spacetime.

The reduction of 12 spacial dimensions in a 12-dimensional imaginary timespace into a 4-dimensional spacetime so becomes bounded in a 11-dimensional membrane and as the perceptual inside boundary or event horizon for a universal cosmology modelled on the parameters of multi-dimensional black holes coupled to a dimensional reduction or extension of eleven dimensions to ten and twelve dimensions respectively.

A black hole in a 4-dimensional spacetime is bounded in the 4^{th} time connector dimension in its 3-dimensional volumar and becomes dimensionally continuous in transforming the 4^{th} dimension of time into a 4^{th} spacial dimension. The 4^{th} spacial dimension then becomes the inner event horizon for the black hole unto which the information contained within its 3-dimensionally enclosed space is holographically projected in a volume to area one-to-one mapping correspondence.

This can be modelled by an AdS for Anti de Sitter spacetime of a negative curvature for the inner horizon cancelled by a positive curvature of the outer horizon, should the overall curvature be 0 or flat as parameter of a Euclidean-Minkowski cosmology. A small or infinitesimal change in the negative curvature would deform the membrane space of a 4-dimensional manifold in such a way, that the 5-dimensional effect orthogonal to the 4-dimensional surface

inwards from the inner event horizon would cancel the orthogonal effect outwards from the outer even horizon.

A 4-dimensional spacetime as an information collector in line-space so can transmit its information content onto a nested 5-dimensional black hole inner event horizon as the manifold surface dimension of rotation-twistor-space and as the boundary for a 4-dimensional spacetime as a 4-dimensional volumar of space as a 4-dimensional Riemann sphere of volume $V_4 = ½\pi^2R^4$, whose derivative becomes a 3-dimensional surface as a volume $dV_4/dR=V_3=(2\pi R)(\pi R^2)=2\pi^2R^3$ and as the volume of a horn torus in three space dimensions.

A 4-dimensional volumar so transforms the 4^{th} time connector dimension of a 3-dimensional space into a 4^{th} spacial dimension which subsequently uses its 4-dimensional boundary of space as a 5-dimensional time connector dimension as the outside event horizon for the 5-dimensional twistor spacetime. This outer event horizon then forms the basis for the 4^{th} time connector dimension to transmit the collected information from the line-space from the inner event horizon in 4 dimensions onto the outer event horizon in 5 dimensions.

The 7^{th} time connector dimension as a 7-dimensional volumar in twistor-space subsequently describes an information transfer from the volumar in rotation-space as a 7-dimensional black hole of a 6-dimensional volume whose dimensional continuity transforms the 7^{th} time connector dimension into a 7^{th} spacial dimension in Penrosian twistor space.

The 8^{th} membrane dimension then cancels the deviation from zero curvature of the 7-dimensional volumar in the continuity across the 8^{th} surface dimension of the inner and outer event horizons of the Penrosian black hole into the 10-dimensional vibration spacetime of the string space.

The 12^{th} dimension then represents the outside event horizon as a white hole continuity from the inside event horizon of a black hole continuity in 10 dimensions integrating its 10-dimensional information on the inner surface of a 11-dimensional membrane- or manifold spacetime

After establishing the dimensional continuity from the SEps algorithms in the number sequence of the experience factors: {0,1,1,2,3,5,8,13,21,...etc...}, also known as the Fibonacci Numbers and their related extension in a number sequence of the Lucas Series: {...,-4,3,-1,2,1,3,4,7,11,18,...etc.}, the primal source of universal consciousness became enabled to extend its algebraic definition of "I am =?!" into a quantum geometrical sense of expansion.

The self-mapping of the singularity of the creation event in the QBBS as a potential mathematical double point without volume or area could now become linked to the definition of: "I am One"! and the null dimension of the singular point could become the first dimension of a mathematical line in the extension of the double point as two points, mathematically defined in a number line from negative infinity to zero to positive infinity.

We can define the Euler-Riemann-Summation, which defines the "Mixing of the Count" in linking Arithmetic Progression to the Factorial "!".

Define: $E_o=0$ as the singularity, then for any integer n, we find for the Harmonic Form of Riemann's Zeta-Function: $\zeta(z) = \sum_1^n 1/n^z \Rightarrow 1/1^k + 1/2^k + 1/3^k + \ldots + 1/n^k$

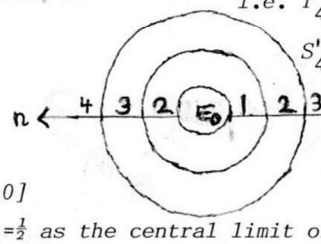
$$T^k_{E_n} = n^k . T^k_{E_{n-1}} + [(n-1)!]^k \quad \text{for the nth term (numerator)}$$

and

$$S^k_{E_n} = T^k_{E_n} / (n!)^k \quad \text{for the nth sum per n (denominator } [n!]^k\text{)}.$$

i.e. $T'_4 = 4.11+3! = 50$

$S'_4 = 50/4! = 25/12$



nested as: $\underline{4}(3(2+1!)2!)\underline{3!}$

$[4!]^1 = 24$

The singularity so mixes the interval [1,0] with the FRB=$-\frac{1}{2}$ becoming the real part $n_i=\frac{1}{2}$ as the central limit or pole, about which the Zero's of the Riemann-Zeta-Function propagate.

The first annulus in the Riemann-Euler-Harmonic so phasemixes the numbers 2 and 1 and the nth number is mixed with (n+1) as crystallised in the Feynman-Path-Integral or T(n)=1 definition of n(n+1), as the summation of all possible particular histories and the Feynman Unified-Field-Model for Quantum Mechanics. This also maps SE_{ps} onto Super-SE_{ps} in the extension of the Factors which define the Omnispacial definition process in F-Space.

The nth term of SE_{ps} is given by: $\underline{\left|-Y^n - X^n\right|/(5)^{\frac{1}{2}}}$ via Maclaurin-Expansion of the coefficients (E-Factors) in: $f(x) = 1 + x + 2x^2 + 3x^3 + \ldots = \sum_1^n S_n . x^{n-1}$.

$x.f(x) + x^2.f(x) = f(x) - 1$ and via $(a-b)(a+b)$; $f(x)=a/(x-X) + b/(x-Y)$ $a=-b=1/(Y-X)$ with $X-Y=(5)^{\frac{1}{2}}$.

Super-SE_{ps} is the sequence: 2,1,3,4,7,11,18,29,...whose nth term is given by

$$\underline{\left|-Y^{2n} - X^{2n}\right| / \left|-Y^n - X^n\right| = \left|T_{2n}/T_n\right|} \quad \text{for } n=1,2,3,\ldots;\ T_{2n=0}=2 \text{ mapping } T_{n=0}=0.$$

The combined SE_{ps}-SuperSE_{ps} sequence of experience factors then is written as:

$$\{S_n, SS_n\} = \{(S_0=0, SS_0=2=S_3);(S_1=1=SS_1=S_2);(S_4=3=SS_2);(SS_3=4,S_4);(SS_4=7,S_3);(S_5 SS)\ldots\}$$

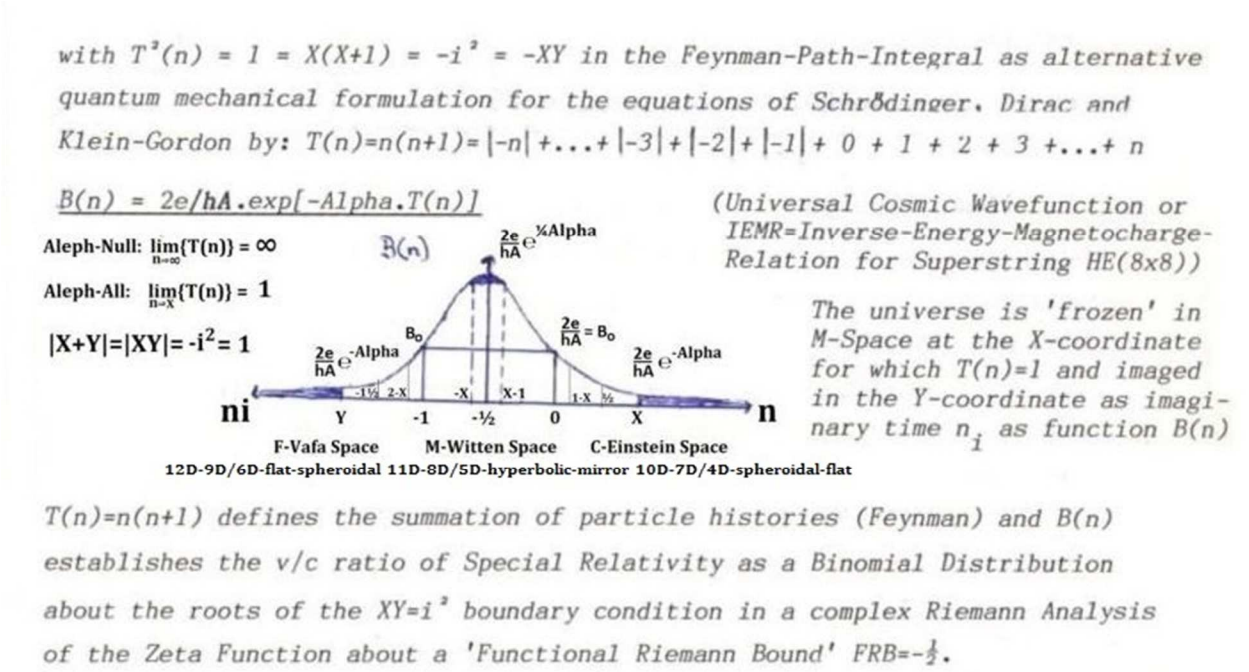
The mappings between C-and F-Space so are "well behaved" for n>2 in Super-SE_{ps}, as seen in the Infinity-Matrix, which maps SE_{ps} onto Super-SE_{ps} in the specification of the "Mixing of the Count" as given by the Euler-Riemann-Harmonic.

0	0*	0	1?!	n=∞ via 0+0=∞=1*=0*=1	3	-4	-1	n=-1 = i^2
1	0*	1		n=0 via (1,1,1)	-1	3	2*	n=0
1	1	2		n=1 via (1,1,10=2*=0/0=1*	2*	-1	1	n=0* reflection
2	1	3		n=2	1	2*	3	n=0
3	2	5		n=3 well behaved	3	1	4	n=1

a+ib

SEps
Fibonacci Series : {0,1,1,2,3,5,8,13,21,34,55,...}

Super-SEps
Lucas Series : {2,1,3,4,7,11,18,29,47,76,123,...}



This line now allowed to separate the double point as a singularity from itself and defined the number line as an arithmetic progression of a number count in summing the numbers from negative infinity to positive infinity in a summation formulated in the arithmetic progression for the sum of all negative and all positive integers in the count AP = n(n+1) = T(n) for Σn = 1+2+3+…+(n-2)+(n-1)+n doubled in the absolute value of the negative count.

As this line could become arbitrarily extended; the freedom degree of this line became the locus of two endpoints in the creative construction of the primal geometrical circle. The degree of linear translation so became supplementary in the degree of curved rotation in the definition of the complex plane in two dimensions. The degree of curvature so allowed the primal source so redefine itself as a premetric contextual plane for a further development of describing the concept for a curved spacetime (Theory of General Relativity by Albert Einstein).

This redefinition of the primal source as a geometrical plane with no thickness of a third dimension therefore became a two-sided topological manifold in 2 dimensions then utilized to define the infinitesimal deformation of a surface in two dimensions into a 3-dimensional space of curvature cancellations. The inner- and outer event horizons of the QBBS singularity and as a QBBS ringularity became the action for describing a manifold singularity as the cross-section of a volume without thickness. The mathematical one-dimensional point singularity so transforms into a membrane-area ringularity in two dimensions.

This can be modelled on the wormhole ringularity of a rotating Kerr-Newman black hole, whose electric charge Q_e=e is substituted by the magnetic charge of the Dirac monopole Q_m=e* and for the wormhole ringularity connecting the inner- and outer event horizons in the dimensional

continuity between a black hole inner event horizon connected to a white hole outer event horizon.

The coupling between mass and electromagnetopolar charge is given by the unification condition for the respective finestructures $G_o k_e = 1$ as a Planck-h-Stoney-k_e unification with G_o the universal gravitational constant applicable for the wormhole s(r)ingularities and k_e the Coulomb constant for electric charge e. The mensuration units for electrical capacitance (Farad) cancel the displacement and time units in the gravitational constant to result in a unified coupling between electric charge e and gravitational mass m.

For $G_o = hc/2\pi m_p^2$ and $k_e = 1/4\pi\varepsilon_o = \mu_o c^2/4\pi = hc\alpha/2\pi e^2 = R_e m_e c^2/e^2$ for Planck mass m_p, electric permittivity ε_o, magnetic permeability μ_o and the electromagnetic finestructure $\alpha = 2\pi k_e e^2/hc$ and the classical electron radius R_e -$G_o/k_e = G_o^2 = (hc/2\pi m_p^2)/(hc\alpha/2\pi e^2) = \alpha e^2/m_p^2 = G_o e^2/R_e m_e c^2$ for $G_o m_p = e/\sqrt{\alpha}$ for the gravitational parameter $G_o M$ as monopolar magnetic charge e* applied to the Planck mass and for $G_o m_e = 2e^2/e^*$ for the gravitational parameter as monopolar magnetic charge e* applied to the electron mass $m_e = k_e e^2/R_e c^2 = \alpha h/2\pi R_e c$.

In the Kerr-Newman metric, the characteristic length scale of $R_Q^2 = Q_e^2 G k_e/c^4$ naturally produces the gravitational parameter and the Schwarzschild boundary metric $R_S = 2G_o M_{BH}/c^2$ in replacing the Coulomb electric charge Q_e with the Dirac magnetic charge $e^* = Q_m$ for $R_Q^2 = Q_m^2(G_o k_e)/c^4$ for $R_Q = G_o M_{BH}/c^2 = \frac{1}{2}R_S$.

The angular momentum $J = GM_{BH}^2/c$ in this metric likewise reduces as a displacement scale to the Schwarzschild solution in $R_J^2 = G\{c^2J^2/GM_{BH}^2\}/c^4 = G^2M_{BH}^4c^2/c^6M_{BH}^2 = G^2M_{BH}^2/c^4$ for $R_J = G_o M_{BH}/c^2 = \frac{1}{2}R_S$. In unifying the long-range gauge field interactions for electromagnetism in the finestructure constant alpha α and for gravitation in the Planck mass m_p; the nature of quantum gravitation emerges in the coupling of the Coulomb charge e of the electropole to the Dirac charge e* of the magnetopole.

The Compton constant $\mathbb{C}$ forms the inverse proportionality between the minimized electron mass m_e and the maximized classical electron radius R_e in the product of the Planck length l_p and the Planck mass m_p:

$$\mathbb{C} = \alpha l_p m_p = \alpha\sqrt{\{(hG_o/2\pi c^3)(hc/2\pi G_o)\}} = \alpha h/2\pi c = k_e e^2/c^2 = R_e m_e = R_{eeff} m_{eeff}$$

The nature of the point particle electron of QED subsequently is crystallized in a minimum classical electron radius $r_{weyl} = r_{ps} = \lambda_{ps}/2\pi$ identical with the wormhole radius as a (r/s)ingularity of a charged and rotating Kerr-Newman Black Hole bounded by a static Schwarzschild radius of the Black Hole's event horizon or $R_S = 2G_o M_{BH}/c^2$ and within the context of the Quantum Big Bang Singularity (QBBS). This wormhole radius as a 2-dimensional surface ring/singularity so

becomes the technical definition for the QED electron as a point particle for a Compton mass of $m_{ps} = E_{weyl}/c^2 = hf_{ps}/c^2 = k_BT_{ps}/c^2$ kg*.

The electromagnetic charge Q_m of a Kerr-Newman Black Hole is defined as a form of energy density in the units of the classical gravitational parameter GM as Volume times angular radius independent acceleration [m^3/s^2] via the frequency spectrum for graviton radiation emitted as gravitational waves. $f^2 = \rho G_o = G_oM/V$ from the Newman-Kerr black hole charge quantum $Q_m = e^* = 2R_ec^2 = V.df/dt = V.f_{max}^2$

In the limit of the minmax frequency permutation states under 'Target Mirror space modular string-membrane modular duality: $f_{ps}=1/f_{ss}=t_{ps} =3x10^{30}$ with $df/dt = (f_{ps}-f_{ss})/t_{ps} = (f_{ps}-f_{ss})/f_{ss} = f_{ps}^2 - 1 = 9x10^{60} - 1$ permutation eigen states; volume V describes the scale of the Restmass Photon as the dark matter (DM) agent as a function of the diameter of the maximized electron radius acted upon by the time differential for the monopolar wormhole frequency.

$2R_ec^2 = 2\pi^2R_{RMP}^3.f_{ps}^2 = e^* = 1/m_{ps}c^2 = G_o\{m_{ps}/G_om_{ps}^2c^2\}$ for DM field particle $R_{RMP} = \sqrt[3]{(e^*t_{ps}^2/2\pi^2)} = h/2\pi m_{RMP}c = 1.411885x10^{-20}$ m* as a Compton radius for a particle energy of $m_{RMP}c^2 = hc/2\pi R_{RMP} = 2.254x10^{-6}$ J* or 14.034 TeV* as a maximum operating energy for the LHC particle accelerator situated at Geneva, Switzerland.

The concept of universal consciousness so relates the timespace unphysical source consciousness as a spacetime self-awareness to the physicalized source energy consciousness in the transformation agency of the gravitational parameter applied to the Quantum Big Bang Singularity manifesting as a QBBS Ringularity in the creation event of the second membrane-area dimension of a closed Dirac superstring QBBS as the binary cipher 0 from its precursor of a first point space linear dimension as an open Planck-Dirac superstring as the binary cipher 1.

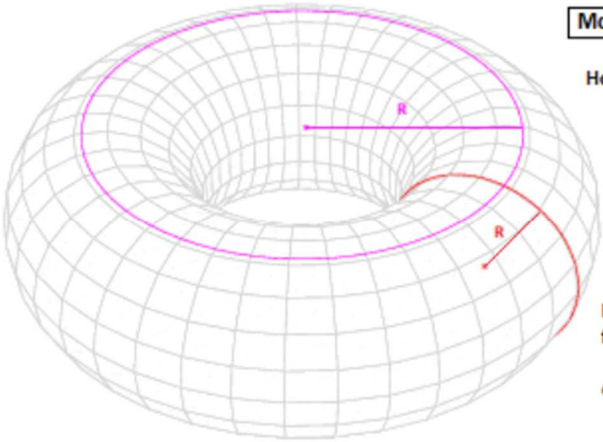
In particular, physicalized consciousness can become defined as the dynamic interaction of frequency modes of the one-dimensional superstrings of the mathematical point in timespace and the frequency modes in timespace of two-dimensional superstrings of the mathematical loops of the Dirac string. The time differential of the frequency modes df/dt then activate as a quantum-spin angular acceleration independent of the radial extent of the quantum loops as closed 10-dimensional superstrings in a defined spacetime within a given volume of space.

Defining the frequency modes in a maximum and minimum configuration applied to spacetime volumars in the form of the initial- and boundary conditions and parameters obtained in the timespace, then defines the maximum source frequency in a high energy vibratory superstring mode inversely identical to a minimum low energy winded energy superstring mode. This definition is characterised by a corresponding micro quantum scale of small wavelength and high frequency of source-sink energy coupled in the invariance of lightspeed c and an

inverse modular duality to a macro quantum scale of large wavelength and low frequency of sink-source energy.

The source-sink energy then becomes descriptive for an outer event horizon white hole continuity emerging from an inner event horizon black hole time connector dimension. The black hole inner surface as a dimensional spacetime boundary transforming one-dimensional time into space in a dimensional extension of 3D-space into 4D-space and 4D-spacetime into 5D-hyperspacetime so represents the sink-source energy of collecting the information contained in the interior of the black hole in a defined spacetime.

Likewise, the source-sink energy for the outer event horizons for the 8-dimensional Penrose spacetime and for the 11-dimensional Witten spacetime manifests the time into space dimensional transformations from the sink-source quantum configurations of black holes across the membrane-mirror symmetry of the dimensional extension into the quantum configuration of white holes with the dimension count increased by one.



Modular T(arget-Space)-Mirror Duality in Quantum Relativity

Horn Torus Volumar $V_3 = (2\pi R)(\pi R^2) = 2\pi^2 R^3 = dV_4/dR$ of $V_4 = \frac{1}{2}\pi^2 R^4$

Low energy winding mode Ess of radius $Rss = 2\pi\lambda ss = 2\pi/\lambda ps$ in circumference $2\pi R$ of the macro quantum selfstate of an antiwormhole Black Hole Sinksource

High energy vibratory mode Eps of radius $Rps = \lambda ps/2\pi$ in the area ringularity πR^2 of the micro quantum self-state of a wormhole White Hole Sourcesink

Function $f(R,t) = R(R,t) + 1/R(R,t)$
for $dF/dt = (dR/dR)(dR/dt) - (1/R^2)(dR/dt)$

$dF = dR - dR/R^2 = 0$ for $R = 1/R$

The boundary condition for the count of frequency self-states as the spacetime awareness differential df/dt is maximized in the source-sink frequency as $df/dt|_{max} = f_{ps}^2 = \lim[f_{ss}\rightarrow 0]\{(f_{ps}-f_{ss})/t_{ps}\} = f_{ps}^2 - 1 = 1/f_{ss}^2 = 9x10^{60}$ and where the modular string duality for the high energy and low energy frequency modes identifies the micro quantum eigenstate for a displacement scale $r_{ps} = \lambda_{ps}/2\pi$ as identical to a macro quantum eigenstate for $r_{ss} = 2\pi\lambda_{ss}$ and so generating a dimensionless coupling factor of $r_{ps}/r_{ss} = \lambda_{ps}/4\pi^2\lambda_{ss} = |\lambda_{ps}^2/4\pi^2|_{mod} = r_{ps}^2|_{mod}$ in the definition of $E_{ps}=hf_{ps}=m_{ps}c^2=k_BT_{ps}$ and $E_{ss}=hf_{ss}=m_{ss}c^2=k_BT_{ss}$ as the respective source-sink and sink-source quantum energies.

$E_{ps}/E_{ss} = f_{ps}^2 = 1/f_{ss}^2$ with $E_{ps}.E_{ss} = h^2$ so couple the high-and low energy frequency modes in initial conditions for the QBBS creation event in the modular superstring duality identifying a quantized time fractal as the unit time of the QBBS as the birth of time in an instanton as equal to maximum frequency of the high energy superstring mode.

The birth of space in an inflaton corollary of the modular string duality considers the quantized displacement fractal as a minimum wormhole radius transformed from the Planck scale in algorithmic timespace into the Weyl scale of spacetime. The displacement scale of the creation event so is modular dual to a macro quantized displacement scale of a size characterized by a maximized extent of dark matter haloed galaxies in $2\pi x10^{22}$ metres or 6.64 million lightyears.
The invariance of lightspeed c couples the two frequency modes of the superstrings in modular duality and defines the inversion lightspeed $1/c = \lambda_{ss}.f_{ss}$ in a supersymmetry in target duality to the product of wavelength and frequency $c = \lambda_{ps}f_{ps}$.

As a product of modulated parameters of space and time, the inversion lightspeed 1/c is measured in the velocity units of the non-inverted lightspeed c and so defines the supersymmetry between space and time under modular string duality.

The dimensionless coupling factor $r_{ps}/r_{ss} = \lambda_{ps}^2/4\pi^2 = 1/(2\pi\lambda_{ss})^2$ then becomes extended to incorporate a dimensionless lightspeed c in this supersymmetry by $r_{ps}/r_{ss} = c^2f_{ss}^2/4\pi^2|_{mod} = c^2/4\pi^2f_{ps}^2|_{mod} = \lambda_{ps}^2/4\pi^2|_{mod}$ for a dimensionless coupling factor $c^2/4\pi^2$ applied to the sink-source low energy frequency mode for winded superstrings in a 12-dimensional omni-spacetime.

Physicalized consciousness as a function of a permutative frequency count of the high energy superstring mode then can be defined as the angular quantum spin acceleration as the frequency over time differential acting on any spacetime volumar in the product of volume and the df/dt differential coupling timespace to spacetime across the QBBS creation event and in units of the gravitational parameter as [volume].[frequency]^2.

This coupling between timespace and the Planck epoch and spacetime of the Weyl wormhole epoch assumes the form of the Planck-Stoney unification of the finestructures in defining a 'bounce' or oscillation of the Planck length $l_P = \sqrt{(hG_o/2\pi c^3)}$ in defining $\sqrt{\alpha}l_P = e/c^2$ as an effect of the source-sink energy quantum E_{ps} in its minimum frequency eigenstate as a harmonic oscillator $E_{ps}^{o} = \frac{1}{2}hf_{ps} = h\omega_{ps}/4\pi$ in terms of the angular frequency $\omega_o = \omega_{ps} = 2\pi f_{ps}$.

This has the effect of transforming the units of electric charge over the velocity units of lightspeed c squared in [Charge/Velocity^2]=[Cs^2/m^2] into the units of the gravitational parameter G_oM as [m^3/s^2] identical to the units of the magneto charge in units of the star-Coulomb C* in the ratio of G_oM/displacement being in units of the square of lightspeed c in the mathematical identity $\sqrt{\alpha}l_Pc^2 = e|_{mod} = V.df/dt$ in units of G_oM as [m^3/s^2]=[C*].

$e^*/c^2 = 2R_e \Leftarrow$ super-membrane displacement transformation $\Rightarrow \sqrt{\alpha}.l_{Planck} = e/c^2$ Magnetic monopolar charge quantum as Electropolar charge quantum with $E_{ps} = hf_{ps} = E_{Weyl} = 1/e^* = 1/2R_ec^2$

The diameter of the classical electron so conformally transforms the oscillation displacement of the Planck length $\sqrt{\alpha}.l_{Planck}$ into the diameter of the classical electron $2R_e$ in a scale reduction from $1.7x10^{-36}$ metres to $5.5x10^{-15}$ metres.

2. The Magnetic Flux and the Maxwell Monopolar Displacement Current

Electric flux $\phi_e = \Sigma q_e/\varepsilon_o = \rho_e/\varepsilon_o = Q_e/\varepsilon_o$ in units of [Voltmeter]=[Vm}=[Jm/C]
Magnetic flux $\phi_m = \Sigma q_m(\mu_o) = \mu_o\rho_m = \mu_o Q_m$ in units of [Voltsecond]=[Vs}=[Js/C]=[J/A]=[Weber Wb]
Electric flux $\phi_e = \nabla.\mathbf{E} = \rho_e/\varepsilon_o$ in units [J/Cm^2] for electric charge density ρ_e in [C/m^3]
Magnetic flux $\phi_m = \nabla.\mathbf{B} = \mu_o\rho_m$ in units [Js/C] for magnetic charge density ρ_m in [Cm/s] = [Am]
Magnetic Field $\mathbf{B}=\mu_o\mathbf{H}$ in [Tesla T=Wb/m^2=J/Am^2] ⇨[μ_o=J/A^{2}m][**H** in A/m]=[J/Am^2]⇦Magnetic Field Strength **H**

The magnetic charge density for the Dirac monopole is $\rho_m = [ec]_{mod} = D_{max}.i_{monopolar}$ as a source energy monopolar current $i_{monopolar}$ and monopolar mass equivalent for the charge coupling between electropole e and magnetopole e*and as a Maxwell displacement current $M = D_{maxwell}.i_{monopolar} = ec = 4.81936x10^{-11}$ [Am]*. For the QBBS wormhole wavelength $\lambda_{ps} = 10^{-22}$ m*, $I_{monopolar} = M/\lambda_{ps} = ef_{ps} = \frac{1}{2}I_{ps} = 4.81936x10^{11}$ A*. This Maxwell displacement current represents the energy of the GUT (Grand Unification Theory) magnetic monopole as precisely $[ec]_{mod}.c^2 = ec^3 = 27x10^{24}$ electronvolt* or $2.7x10^{16}$ GeV*.

The coupling between electropole e in spacetime and magnetopole e* in timespace so inducts a frequency modulation in transforming the monopolar current equivalent I*= e*f* into the Maxwell displacement current per unit displacement $D_{maxwell}$ for $f_D*D_{maxwell}$ = constant = ec/e* = $9.6387x10^{-14}$ as the frequency f_D* which would align the Maxwell displacement $D_{maxwell}$ as a wavelength to the lightspeed invariance if the magnetopole charge in timespace would be identical to th electropole charge in spacetime.

The universal charge ratio $e^*/e = 2ev\alpha m_p/em_e = 2e/G_o m_e = 500/1.606453x10^{-19} = 3.112447x10^{21}$ for magnetopole charge $e^* = 2e^2/G_o m_e = 3.112447x10^{21}e$ in units of the gravitational parameter GM = ρGV = V.df/dt in units [C*]=[m^3/s^2]* couples the monopolar magnetopole charge e* to the dipolar electropole charge e.

The magnetic flux of the Dirac monopole in units of [J/A]* = [Wb]* transforms into a monopolar source current in units of [Am] as $i^* = \phi_m/\mu_o = ec = M$ for $\phi_m = \mu_o M = \mu_o ec = \{120\pi\}/R_{ps}\}\{h/2e\}$ and with the ratio of the source resistance to free space impedance forming the proportionality constant between the magnetic flux inductance and the Maxwellian monopolar source current = $\mu_o M$.

Z_o =|Electric Field Strength **E**|/|Magnetic Field Strength **H**| = $\sqrt{(\mu_o/\varepsilon_o)} = \sqrt{(120\pi/c)(120\pi c)}$ = 120π Ohm* with an Electric Flux Density **D** and a Magnetic Flux Density **B**.

$\phi_m = E_{ps}/I_{ps} = hf_{ps}/2ef_{ps} = h/2e = LI = (h/4e^2f_{ps})(2ef_{ps}) = \lambda_{ps}.m_{ps}c^2/2ec = \mu_o MR_{ps}/Z_o = \mu_o MR_{ps}/120\pi$

The Planck length oscillation $l_p\sqrt{\alpha} = e/c^2$ in timespace for a Planck oscillation frequency $f_{pb} = c/l_p\sqrt{\alpha} = c^3/e = 1.6807x10^{44}$ Hz* then transforms the Planck unit of length into ChargexMass/Energy in [m]⇔[Ckg/J] = $[Cs^2/m^3]$ = [C/C*] = [C/GM].

$E_{ps} = hf_{ps} = m_{ps}c^2 = (m_{electron}/m_{planck})/2e\sqrt{\alpha} = \{m_{electron}/2e\}\sqrt{\{(hcG_o/2\pi e^2)(2\pi G_o/hc)\}} = G_o m_{electron}/2e^2 = 1/e^*$ with the unit transformation from the Planck-Stoney finestructure unification incorporating [1/J] = [C*] = [C] with [m]⇔[Ckg/J] = $[Cs^2/m^3]$ = [C/C*] = [C/GM] = $[kgC^2]$.

The voltage $V_{ps}^{\ o} = E_{ps}^{\ o}/2e$ with $V_{ps} = E_{ps}/e$ therefore modifies the magnetic flux in the magneto charge quantum e* from timespace in manifesting as inverse energy and the electro charge quantum e in spacetime:

$$V_{ps}/I_{ps} = R_{ps} = E_{ps}/eI_{ps} = hf_{ps}/2e^2f_{ps} = h/2e^2 = \phi_m/e$$

A dimensionless proportionality constant $\mathcal{M}$ between the Planck length oscillation and the QBBS wormhole wavelength couples timespace to the QBBS creation event and is then applied to the magnetic flux ϕ_m/e to create a ratio between the inertial mass and a GUT monopole mass $m_{ps}/[ec]_{mod} = m_{ps}/M$.

Magneto charge e* as defined in the classical diameter of the electron $2R_e$ in $e^* = 2R_ec^2 = 10^{10}\lambda_{ps}c^2/180$ then links the QBBS instanton-inflaton coupling to spacetime by a dimensionless displacement ratio λ_{ps}/R_e in $\lambda_{ps}/R_e = 360/10^{10}$ for $\mathcal{M} = l_p\sqrt{\alpha}/\lambda_{ps} = 10^{10}e/360R_ec^2 = 10^{10}e/180e^* = e/\lambda_{ps}c^2 = em_{ps}/\lambda_{ps}hf_{ps} = em_{ps}/hc = 1.784948x10^{-14}$

The 360-degree count is not arbitrary, because the dimensionless unification for the electric permittivity (ε_o=1/(120π.c) with the magnetic permeability (μ_o=120π/c) specifies a half rotation in the geometric definition of the number (π) as a trigonometric expansion and sets 180 as that limit.

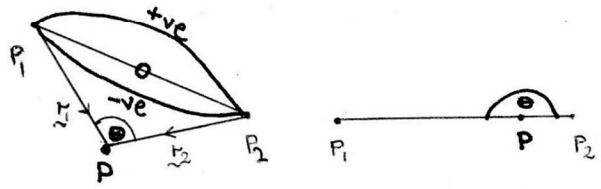
In hyperspace, the ratio of magnetic constant to electric constant is numerised by assigning $\mu_o/\varepsilon_o=P^2=(pq)^2$ and $\mu_o \cdot \varepsilon_o=1/c^2$.

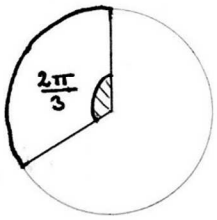
Now the constant $p=2\pi/3$ or 1/3 of the perimeter of the photonic area in quasilinear measure and q becomes that quasilinear measure for which positive and negative curvatures of spacetime cancel each other.

Thus the quasilinearity becomes ANGULAR measure and constant p describes a 120-degree segment of a circular blueprint.

Constant q must be the number 180; for any arc subtended across any line defined as the joining of two radii remains invariant of the magnitude of the radii and thus the tensor space of General Relativity is made Euclidean.

And so $p=2\pi/3$ and $q=180$ and $\mu_o/\varepsilon_o=(120\pi)^2=14400\,\pi^2$





Via $\mu_o \cdot \varepsilon_o=1/c^2$ we have unique values for:

Also note that $k_e=1/4\pi\varepsilon_o=30c$ dimensionless

and $G_o=1/k_e=1/30c$ dimensionless

$$\mu_o = \frac{120\pi}{c} = 4\pi \times 10^{-7}\ H^*/m^*$$

$$\varepsilon_o = \frac{1}{120\pi c} = 8.841941285\times 10^{-12}\ F^*/m^*$$

$$\mu_o \cdot \varepsilon_o = 1/c^2 \quad s^{2*}/m^{2*}$$

$$\mu_o/\varepsilon_o = 14400\,\pi^2 \quad \text{Free Space Impedance } Z_o^2=|E/H|^2$$

Resistance in Ohm [Ω=V/I=E/CI=Js/C^2] manifests the Action Law: Action h = Charge e^2 for the dimensionless form of [H/F]* = [Js^2/C^2]*[J/C^2]* = [J^2s^2/C^4]* for unitary impedance P = (pq) = $120\,\pi$

The monopolar current $i^* = e^*f^* = D_{maxwell}.i_{monopolar}$ so relates the QBBS transition for the charge coupling between electropole and magnetopole to the displacement proportionality between the Planck length oscillation $l_p\sqrt{\alpha}=e/c^2|_{mod}$, the wormhole wavelength λ_{ps} and the diameter of the classical electron $2R_e$:

$$\mathcal{M} = 10^{10}e/180e^* = l_p\sqrt{\alpha}/\lambda_{ps} = 10^{10}e/360R_ec^2 = \{5/27\}ec/e^* = \{5/27\}f_D{}^*D_{maxwell}$$

For the minimum Planckian E_{ps} harmonic oscillator $E_{ps}{}^o = h\omega_{ps}/4\pi = \frac{1}{2}hf_{ps} = \frac{1}{2}m_{ps}c^2$ $\phi_m/e = L_{ps}I_{ps}/e = \{m_{ps}/ec|_{mod}\}/2\mathcal{M} = \{m_{ps}/ec|_{mod}\}\{\lambda_{ps}c^2/2e\} = hf_{ps}\lambda_{ps}/2e^2c = h/2e^2$ in units of [J/AC]. Then $\phi_m = LI = eh/2e^2 = h/2e = \{m_{ps}/ec|_{mod}\}e/2\mathcal{M} = em_{ps}/2M\mathcal{M}$ in $[C^*kg/Am]=[kgm^3/Ams^2]=[J/A]$

$m_{ps}/[ec]_{mod} = m_{ps}c^2/[ec]_{mod}\, c^2 = E_{ps}/[ec^3]_{mod} = 1/e*ec^3 = 4.611023179x10^{-10}$ as a unitless ratio for an inertial mass divided by the mass of the GUT monopole with an energy of ec^3 eV* equal to a monopolar source current of ec Ampere metres*.
The units for the magnetic flux as ϕ_m /e as [J/AC] = [Js/C^2] = [Ω] ⇔ [h] = [CC*] for [C*] = [1/J] then crystallize the action law for unitary resistance by $m_{ps}c^2 = hf_{ps} = ec.e/l_p\sqrt{\alpha}$ for h = $e^2\{\lambda_{ps}/l_p\sqrt{\alpha}\} = e^2/\mathcal{M} = e^2\{D_{maxwell}\}$

$\phi_{m[ps]} = \mu_o M = \mu_o[ec] = hZ_o/2eR_{ps} = \mu_o i_{ps}* = \mu_o.e*f*$ for $i_{ps}* = M = [ec] = ef_{ps}\lambda_{ps}$ for the timespace to spacetime coupling between the magnetopole and the electropole as $f_{ps}* = ef_{ps}/e* = 9.6387x10^8$ Hz*.

Generalizing the magnetic flux for a monopolar frequency f*(t) = c/λ* in the quantization of the Josephson constant $K_J = 1/\phi_o = 2e/h = 1/L_{ps}I_{ps}$

$\phi_m=\mu_o M =\mu_o[ec] = hZ_o/2eR_{ps}=\mu_o i_{ps}* = \mu_o.e*f* =m_{ps}/[ec]$ in units [e*kg/Am] = [C*kg/Am] = [J/A]

$f*= c/\lambda* = m_{ps}/[ec]\mu_o.e*=m_{ps}c^2/e*\mu_o[ec]c^2 = m_{ps}/120\pi ee*=7.3387x10^{-7}$ Hz* [f*=i*/e* [A/C = 1/s]

$\phi_m = \mu_o ec = \mu_o M = m_{ps}/[ec]_{mod} = m_{ps}c^2/[ec]_{mod}\, c^2 = E_{ps}/[ec^3]_{mod} = 1/e*ec^3 = 4.611023179x10^{-10}$ as a unitless ratio for an inertial mass divided by the mass of the GUT monopole with an energy of ec^3 eV* equal to a monopolar source current of ec Ampere metres*.

$$A_{ps} = 6\pi^2 r_{ps}^2 = 3\lambda_{ps}^2/2 = 1.5x10^{-44}\ [m^2]*$$

$\phi_m/A_{ps} = \mu_o\rho_m/A_{ps} = \mu_o ec/A_{ps} = \mu_o M/A_{ps} = \mu_o D_{maxwell}.i_{monopolar}/A_{ps} = \mu_o i*/A_{ps} = \mu_o e*f*/A_{ps}$ and where f*λ*= c is absorbed in the monopolar source current i* in the units of Ampere.metres as the units of $[ec]_{mod}$.

The frequency modulation for the monopolar magnetic flux defines a particular monopolar displacement scale in the monopolar wavelength λ* = c/f* as the Maxwellian displacement $D_{maxwell}$ now separated in spacetime from the absorption of the displacement factor in the monopolar source current in timespace and the QBBS creation event.

$D_{maxwell} = i*/i_{monopolar} = e*f*/ i_{monopolar} = \lambda*$ from f* = f*{λ*} = {c} and M = [ec] = e*f* = i*

$f* = c/\lambda* = 1/\mu_o e*^2 ec^3 = E_{ps}^2/\mu_o ec^3 = E_{ps}m_{ps}/\mu_o ec$ in units [JkgA²m/JAm] =[kgC/s] = [Hz] by the finestructure unification $\alpha_{electron} = 2\pi k_e e^2/hc = 2\pi G_o m_c^2/hc = \alpha_{nucleon}$ for $k_e e^2 = G_o M^2 = Go[30c]2$ with $m_c = m_{planck}\ \alpha^9$ and the GUT monopole upper limit of 30[ec] defined in $G_o = 1/k_e = 4\pi\varepsilon_o = 1/30c$ with $\varepsilon_o = 1/\mu_o c^2 = 1/120\pi c$ by the finestructure unification and its associated mensuration unit calibration.

The wormhole QBBS source quantum magnetopole frequency
$f^* = c/\lambda^* = m_{ps}/\mu_o e^* ec = m_{ps}/120\pi e^* e = 7.3386866x10^{-7}$ Hz* modular seconds*
for $\lambda^* = 4.0879250x10^{14}$ m*

The wormhole QBBS source quantum electropole frequency
$f^{**} = c/\lambda^{**} = m_{ps}/\mu_o e^2 c = m_{ps}/120\pi e^2 = 2.2841274x10^{15}$ Hz* modular seconds*
for $\lambda^{**} = 1.3134119x10^{-7}$ m* with the ratio between electropole frequency and magnetopole frequency $f^{**}/f^* = \lambda^*/\lambda^{**} = e^*/e = 2e\sqrt{\alpha}m_p/em_e = 2e/G_o m_e = 500/1.606453x10^{-19} = 3.112447x10^{21}$

The monopolar current $i^* = e^*f^* = D_{maxwell}.i_{monopolar}$ so relates the QBBS transition for the charge coupling between electropole and magnetopole to the displacement proportionality between the Planck length oscillation $l_p\sqrt{\alpha}=e/c^2|_{mod}$, the wormhole wavelength λ_{ps} and the diameter of the classical electron $2R_e$.

$$\mathcal{M} = 10^{10}e/180e^* = l_p\sqrt{\alpha}/\lambda_{ps} = 10^{10}e/360R_ec^2 = \{5/27\}ec/e^* = \{5/27\}f_D{}^*D_{maxwell}$$

The modulation factor $\{5/27\} = \mathcal{M}e^*/ec = \sqrt{\{R_e\lambda^{*2}/4\pi^2R_E\}} = \lambda^*/2\pi\sqrt{(R_e/R_E)}$ is subsequently utilized to align the monopolar wavelength λ^* of radius $R^* = \lambda^*/2\pi$ with the radius R_E specifying a summation of spacetime quanta as given by the tenth and final constant from the SEps algorithm as the integer triplet (26,65,61) and manifesting in the googol $E = 26x65^{61} = 1.00620878x10^{112}$ for a protoversal volumar $V_E = 2E\pi^2r_{ps}{}^3 = 2\pi^2R_E{}^3$ for $R_E = 3.436x10^{14}$ m*.

The displacement ratios between $\lambda^*/2\pi$ and $1/R_e$ and R_E then form a geometric mean approximating the Maxwell monopolar displacement current in:

$$\mathcal{M}/f_D{}^*D_{maxwell} = 5/27 = \lambda^*\sqrt{(R_e/R_E)}/2\pi = 0.185 = 5/27 = 0.18518$$

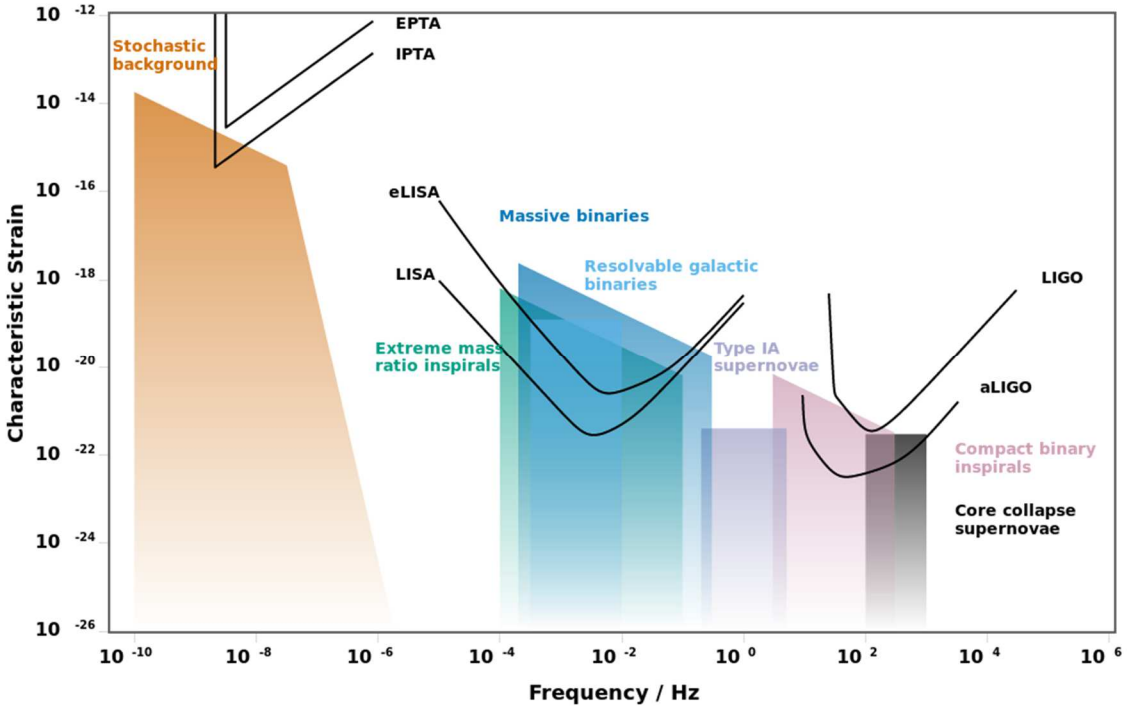
The monopolar magnetopole frequency therefore is defined as the upper MQB as a Modular Quantum Bound for the frequency modulations between timespace and spacetime in the QBBS creation event.

The googol volumar $R_E=3.436x10^{14}$ m* is synchronized with the classical electron radius $R_e=2.777x10^{-15}$ m* in the Modular Quantum Bound MQB and as the fourfold nature of the Unified Field of Quantum Relativity UfoQR.

The inversed wormhole frequency of the QBBS creation event is projected as a lower Monopolar Quantum Bound MQB and is bounded by a Higgs Vacuum transitioning the lower MQB in the time quantization t_{ps} multiplied by the square root of alpha Planck-Stoney finestructure unification from timespace into spacetime.

The upper MQB measures the monopolar current e*f per unit wormhole area as $\Sigma A_{ps}=1$

$f^* = c/\lambda^* = 1/\mu_o e^* ec^3 = E_{ps}/\mu_o e^*[ec^3]_{mod} = m_{ps}/\mu_o e^*[ec]_{mod} = 7.338671173x10^{-7}$ Hz* as surface area integral and a natural characteristic lower bound for the spectrum for gravitational waves and graviton radiation for supermassive black hole binaries (SMBH)in the merger of galaxies.



Gravitational-wave astronomy - Wikipedia

$t^* = 1{,}362{,}644.512$ s* and $\lambda* = c/f^* = 4.087933536x10^{14}$ m*

for radius $R^* = \lambda^*/2\pi = R(n^*=H_o t^* = 4.072259032x10^{-13}) = 6.506148293x10^{13}$ m* for a time $t^* = 216{,}871.61$ s* or 2.5101 days into the expansion and thermodynamic evolution of the universe with a coordinate 928,452.09 seconds before the E-googol marker for the classical electron radius R_e modulation. As the E-googol defines $R_E(n) = 3.43597108x10^{14}$ m* for a time $t_E = n_E/H_o = 2.1506x10^{-12}/H_o = 1{,}145{,}323.7$ s* or 13.25606 days.

$R_e/R_E = (2.777777x10^{-15})/(3.43597108x10^{14}) = 8.084404x10^{-30}$ m* and in timespace. This displacement radius defines an effective electron mass via the Compton constant as $m_e = \alpha h/2\pi cr^* = 4.906433293x10^{-30}$ kg* and reducing to a maximum mass at the QBBS instanton boundary as $m_{eeff} = m_{ps} = \alpha h/2\pi cr_{ps} = 2.222x10^{-20}$ kg*

The Dirac constant for fine structure unification $G_o=4\pi\varepsilon_o$ for $\sqrt{\{k_e e^2/G_o\}}=e/G_o$ calculates as:

$$\mathbf{\eth_{dirac}} = 2\alpha e^*/e = 2\alpha/eE_{ps} = 4\alpha em_{planck}\sqrt{\alpha}/em_{electron}$$

$$= 4\alpha\sqrt{\{(hc/2\pi G_o)(2\pi k_e e^2/hc)\}/\{k_e e^2/R_e c^2\}} = 4\alpha\sqrt{\{k_e e^2/G_o\}\{2\pi R_e c^2/hc\alpha\}} = 8\pi R_e[ec]/G_o h \ [C/m^3 s^{-2}]^*$$

The Dirac monopole is defined in the units of the gravitational parameter or $[m^3/s^2]$ = [Volume][Angular Acceleration] as:

$$e^* = 2R_e c^2 = 2R_e\{\lambda_{ps}^2\}\{f_{ps}^2\} = 1/E_{ps} \text{ for } 2R_e\{\lambda_{ps}^2\} = 2R_e\{360R_e/10^{10}\}^2 = \{2.592x10^{-15}\}R_e^3$$
$$= e^*/f_{ps}^2 = e^* f_{ss}^2 = e^*(9x10^{60}) \text{ entropy self-states.}$$

The magnetic flux per wormhole surface area for the Dirac monopole for QBBS instanton time quantum $t_{min}=t_{ps}=f_{min}=f_{ss}$ and $t_{min}/f_{min}=1$ with area quantum $A_{ps} = 6\pi^2 r_{ps}^2 = 3\lambda_{ps}^2/2$

$$\phi_m/A_{ps} = \mu_o e^* f^*/A_{ps} = 1/A_{ps} e^* ec^3 = E_{ps}/\, A_{ps}[ec^3] = m_{ps}c^2/A_{ps}[ec]\, c^2 = 2m_{ps}/3\lambda_{ps}^2[ec] =$$
$$3.074022x10^{34} \ [J/Am^2]$$

$$\text{Source-Sink quantum density } \rho_{ps} = m_{ps}/V_{ps} = m_{ps}/2\pi^2 r_{ps}^3 = 2.7925x10^{47} \ [kg/m^3]^*$$
$$\text{for } 1/e^* = E_{ps} = \{m_e/m_p\}/2e\sqrt{\alpha} = m_{ps}c^2$$

$$\text{Dark Matter ylem quantum density } \rho_{RMP} = m_{RMP}/2\pi^2 r_{RMP}^3 = 4.509x10^{35} \ [kg/m^3]^*$$
$$\text{for } e^* = 2R_e c^2 = V|df/dt|_{max} = 2\pi^2 r_{RMP}^3 . f_{ps}^2$$

Mass $m \propto$ magnetic monopolar displacement current $i^* = e^* f^* = D_{maxwell}.i_{monopolar}$ with absorbed wavelength $\lambda^* = c/f^*$ for magnetic flux $\phi_{m[ps]} = \mu_o i_{ps}^* = \mu_o M = \mu_o[ec] = hZ_o/2eR_{ps} = L_{ps}I_{ps} = h/2e = |120\pi e|$ in units [J/A]

$$\text{Source sink current maximum } I_{ps} = 2ef_{ps} = 2ec/\lambda_{ps} = 9.638718x10^{11} \text{ A}^*$$
$$\text{Sink source current minimum } I_{ss} = 2ef_{ss} = 2e/f_{ps} = 2e\lambda_{ps}/c = 1.070969x10^{-49} \text{ A}^*$$

The monopolar displacement current as a mass equivalent couple the electric Coulomb charge to the Dirac magnetic charge by the frequency spectrum for gravitational waves from the magneto polar charge of the gravitational parameter definition.

The ratio for quantized mass $M = \Sigma m_{ss} = \Sigma m_{ps}/c^2$ to quantized charge current $i_{monopolar}$ for quantized charge $ne=\Sigma e$ for the wormhole source energy quantum E_{ps}

$m_{ps}/ef_{ps} = \lambda_{ps}m_{ps}/ec$ for $\lambda_{ps} = ec/ef_{ps} = c/f_{ps}$ for the graviton frequency spectrum for gravitational radiation and as corollary to the electromagnetic spectrum for photon radiation

$$f^2 = \rho G_o = G_o M/V \text{ from the Newman-Kerr black hole charge quantum}$$
$$Q_m = e^* = 2R_e c^2 = V.df/dt = V.f_{max}^2$$

The deformation strain of spacetime caused by the acceleration of asymmetric masses manifests both, in the corresponding wavelength of the gravitational graviton radiation and the deformation displacement defined in the QBBS as a (sr)ingularity of the wormhole defined in the monopolar charge current $i_{monopolar} = Q_m f$.

The interval {$1.59x10^{-23}$ m* - $8.50x10^{-18}$ m*} for the deformation parameter as a LIGO wavelength of spacetime strain displacement then spans from the Weyl-Eps wormhole radius to the manifestation of the Higgs vacuum expectation parameter of $W^-+W^++Z^o$ = 2HB = 146.5 GeV* or $2.615x10^{-25}$ kg* (80.62+80.62+91.44=252.68 GeV* or 80.42+80.42+91.21=252.06 GeV for $2HB.Y^{npresent}$) and the time of electroweak separation at a CBBR temperature of $1.6x10^{15}$ K*, 1/140 seconds from the time instanton.

The inversed wormhole frequency (ss) as time with its corresponding wormhole radius (ps) of the QBBS creation event is projected as a lower Monopolar Quantum Bound MQB within the Higgs Vacuum of the Planck bounce alpha variation at a coordinate 0.11587 times its source value of the instanton.

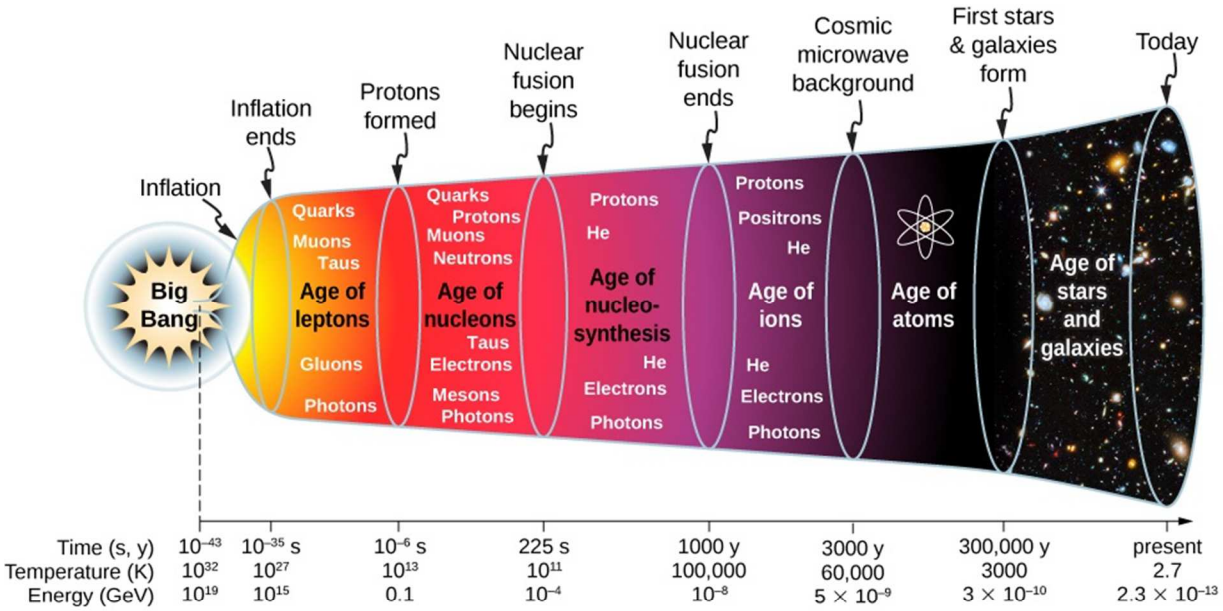
$$\text{Min Higgs Vacuum} = \sqrt{\alpha}t_{ps} = 3.862x10^{-32} < t_{ps} = 3.333x10^{-31} < 3.902x10^{-30} = t_{ps}/\sqrt{\alpha} = \text{Max Higgs Vacuum}$$

$$\text{Min Higgs VRadius} = \sqrt{\alpha}r_{ps} = 1.844x10^{-24} < r_{ps} = 1.592x10^{-23} < 1.863x10^{-22} = r_{ps}/\sqrt{\alpha} = \text{Max Higgs Vacuum}$$

$$r_{ps} = \lambda_{ps}/2\pi = 1.591549x10^{-23} \text{ m* for } 5.305165x10^{-32} \text{ s*}$$
$$\lambda_{ps} = 2\pi R_{ps} = 10^{-22} \text{ m* for } t_{ps} = 3.333x10^{-31} \text{ s*}$$
$$R_{RMP}/2\pi = 2.24708x10^{-21} \text{ m* for } 7.490x10^{-30} \text{ s*}$$
$$R_{RMP} = 1.41188x10^{-20} \text{ m* for } 4.706x10^{-29} \text{ s*}$$
$$\lambda_{RMP} = 2\pi R_{RMP} = 8.87110x10^{-20} \text{ m* for } 2.957x10^{-28} \text{ s*}$$

The Maxwell displacement current for the Dirac magnetic monopole as the QBBS singularity manifests as the 't Hooft-Polyakov 'hedgehog' magnetic monopole in GUT unification as the minimum monopolar mass of $[ec]_{mod}$ =$4.819369011x10^{-11}$ kg* and energy $[ec]_{mod}$ c^2 = $4.33743211x10^6$ J* as precisely $2.7x10^{16}$ GeV*.

The upper bound for the 't Hooft-Polyakov monopole is $30[ec]_{mod}$=$1.301229633x10^8$ J* or $8.1x10^{17}$ GeV* with the two bounds related to the gravitational parameter GM partial to the measurements of Newton's gravitational constant G and the energy of the t'Hooft-Polyakov magnetic monopoles of 'Grand-Unification' or GUT energy regimes.



Universe Background $T(\Lambda E) = 2.9352 \times 10^{36}$ K decreases to $T(ps) = k_b T_{ps}$
Quantum Self-State $T(ps) = 1.4167 \times 10^{20}$ K Bosonic Unification at 2×10^{-9} s

Instanton
Big Bang
Inflaton

$n = 3.333 \times 10^{-31}$
$t_{ps}^2/t_{ALGO} = t_{ps}/H_o = 1.775 \times 10^{-13}$
$n = H_o t_{ps}^2/n_{ps} = c t_{ps}^2/\lambda_{ps} = t_{ps} = 1/f_{ps} = f_{ss}$
mass eigen frequency
Image of 1st Logos Algorithmic
Mathimatia definition

$T(\Lambda E) = 7.545 \times 10^{37}$ K
$t_{algo} = 6.259 \times 10^{-49}$ s

$T(\Lambda E)$
T_{ps}

$1.489 \times 10^{23} = T(\Lambda E)$
$1.775 \times 10^{-13} = t_{algo\ image}$

$t_H = \sqrt{\alpha}\, t_{ps} = 2.847 \times 10^{-32}$ | $3.902 \times 10^{-30} = t_{ps}/\sqrt{\alpha} = t_H$

Timespace	Higgs Boson Vacuum	Spacetime
HBP-False Vacuum	$t_{ps} = 2\pi R_{ps}/c = 3.333 \times 10^{-31}$	HBP-Image Vacuum

(*Continued on Part 2*)