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Primordial A-Vector
Firmament Creation Field

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Abstract

This work is a culmination of my many previous papers on electrogravitational field theory. In it is presented the concept of a ubiquitous **A**-Vector field in three dimensions that interfaces between local relativistic normal space and non-local energy space. As such, it is a creation field capable of creating the electrogravitational action force as well as mass and charge directly from energy space via the **A**-Vector interface field.

The mechanics of a general **A**-Vector field is presented in terms of a precipitating action vector having the same units as Planck's constant but containing the required **A**-Vector coming from any proton. The double cross-product is then utilized as the necessary mechanics for reversing the action into a net reaction in the negative energy sense. The result is gravitational action.

The acceleration of mass is force and when the mass is accelerated through a distance, it is force times distance, or work. Work translates to energy and on a quantum scale this further translates to a radiated frequency by $E = hf$. Then moving an object through a distance by acceleration should cause each constituent quantum particle to radiate energy at a frequency related directly to the amount of acceleration. For a bulk object, such as a baseball being accelerated off of a bat, the quantum particles would radiate in a non-coherant manner and in all directions which would be noise to a spectrum analyzer.

However, if a material is used which has its quantum particles (atomic domains) aligned in a coherent manner, such as is the case for a quartz or ruby crystal, accelerating the crystal would produce coherent radiation and in a given direction only. As a further step, influencing the domains via an external electric field, as from a pulse of electrical energy, the particles would accelerate and radiate while the entire bulk would exhibit a reaction force if the radiation energy exited in a coherent fashion and in a given direction.

Taking the above statement one step further, exciting the crystal at just the right angle and frequency with regard to the atomic alignments of the atoms, energy could be made to induce from energy space and if not careful, the crystal would be destroyed by the rapidly increasing energy input. Instead of a crystal, coherent management of atomic Hydrogen could be utilized and the energy induced from energy space would be much easier to control. Pure clean energy in effectively unlimited amounts would be one result and electrogravitational control would be the other major result. The proton is herein presented as the major contributor to this process. As such, the Hydrogen atom is the most simple and effective source mechanism of energy extraction and gravitational action.

Fixed Universal S.I. Constants: Base File: PrimePwr.MCD

$q_o := 1.602177330 \cdot 10^{-19} \cdot coul$ Basic electron charge.

$\Phi_o := 2.067834610 \cdot 10^{-15} \cdot volt \cdot sec$ Fluxoid quantum.

$m_e := 9.109389700 \cdot 10^{-31} \cdot kg$ Electron rest mass.

$\mu_o := 4 \cdot \pi \cdot 1 \cdot 10^{-07} \cdot henry \cdot m^{-1}$ Permeability of free space.

$v_{n1} := 2.187591417 \cdot 10^{06} \cdot \dfrac{m}{sec}$ Bohr Hydrogen-1 atom, n1 velocity.

$R_{n1} := 5.291772490 \cdot 10^{-11} \cdot m$ Bohr Hydrogen-1 atom, n1 radius.

Derived Least Quantum electrogravitational constants applied to the n1 energy level of the Bohr Hydrogen atom based on established SI accepted constants for the fields between two elemental charges, q_o:

$v_{LM} := 8.542454612 \cdot 10^{-02} \cdot m \cdot sec^{-1}$ $f_{LM} := 1.003224805 \cdot 10^{01} \cdot Hz$ **Electrogravitational constant parameters.**

$t_{LM} := f_{LM}^{-1}$ (A) $\lambda_{LM} := v_{LM} \cdot f_{LM}^{-1}$ (B)   1)

$B_{LM} := \dfrac{\Phi_o}{\lambda_{LM}^2}$ or, $B_{LM} = 2.851983202936 \cdot 10^{-11} \cdot tesla$ **Note that λ_{LM}^2 is the surface area of a torus.**   2)

$F_{LM} := 4 \cdot \pi \cdot q_o \cdot v_{n1} \cdot B_{LM}$ or, $F_{LM} = 1.256127201944 \cdot 10^{-22} \cdot newton$ **Bohr Hydrogen-1 n1 magnetic force.**   3)

$E_{LE} := \dfrac{2 \cdot \Phi_o}{R_{n1} \cdot t_{LM}}$ or, $E_{LE} = 7.840484364397 \cdot 10^{-4} \cdot volt \cdot m^{-1}$ **Note: E_{LE} and B_{LM} are based on Φ_o.**   4)

$F_{LE} := (q_o \cdot E_{LE})$ or, $F_{LE} = 1.256184630486 \cdot 10^{-22} \cdot newton$ **Bohr Hydrogen-1 n1 electric force.**   5)

Where also: $A_f := 1.515726345559 \cdot 10^{13} \cdot Hz$ 5A) $f_{FQK} := -3.809435809685 \cdot 10^{14} \cdot Hz$ 5B)

The above referenced frequencies, A_f and f_{FQK}, are the **A** vector and the EG force constant derived quantum electrogravitational frequencies respectively. Note that the frequency f_{FQK} is negative.[1]

In free space for electromagnetic waves: $E \equiv cB$ where c is the velocity of light.   6)

For the case of E_{LE} and B_{LM} however, instead of c, a velocity related to the E field and B field in the n1 shell of the Hydrogen atom is determined as shown below and is designated as $vn1_{field}$.

$vn1_{field} := \dfrac{E_{LE}}{B_{LM}}$ where, $vn1_{field} = 2.749134131058 \cdot 10^7 \cdot m \cdot sec^{-1}$ **The result is exactly 4π times the velocity v_{n1} of the n1 shell.**   7)

A cross-product form for F_{LMnew} is shown below. <u>A force field vector is thus established inwards (or outwards) from the current element source</u> as for the case of an ordinary transmitting antenna.

$$F_{LMnewneg} := \begin{bmatrix} B_{LM} \\ -B_{LM} \\ 0 \cdot tesla \end{bmatrix} \times \begin{bmatrix} 0 \cdot coul \cdot \dfrac{m}{sec} \\ 0 \cdot coul \cdot \dfrac{m}{sec} \\ 4 \cdot \pi \cdot \left(q_o \cdot v_{n1} \right) \end{bmatrix} \qquad F_{LMnewneg} = \begin{bmatrix} -1.256127201944 \cdot 10^{-22} \\ -1.256127201944 \cdot 10^{-22} \\ 0.000000000000 \end{bmatrix} \cdot newton \quad 8)$$

Note that the resulting force is negative and is thus a uniform circular force around a current (or n1 energy level) and is directed inwards. This occurs by reason of the mechanics of the cross product matrix which does not commute. Again, the above eq. 8 relevant electrogravitational parameters are:

$$4 \cdot \pi \cdot \left(q_o \cdot v_{n1} \right) = 4.404399018378 \cdot 10^{-12} \cdot amp \cdot m \quad where, \quad B_{LM} = 2.851983202936 \cdot 10^{-11} \cdot tesla \qquad 9)$$

If the order of multiplication is reversed, the result is opposite to the force shown above. That is, the force vector is uniformly distributed around the current vector and is expanding outwards.

$$F_{LMnewpos} := \begin{bmatrix} 0 \cdot coul \cdot \dfrac{m}{sec} \\ 0 \cdot coul \cdot \dfrac{m}{sec} \\ 4 \cdot \pi \cdot \left(q_o \cdot v_{n1} \right) \end{bmatrix} \times \begin{bmatrix} B_{LM} \\ -B_{LM} \\ 0 \cdot tesla \end{bmatrix} \qquad F_{LMnewpos} = \begin{bmatrix} 1.256127201944 \cdot 10^{-22} \\ 1.256127201944 \cdot 10^{-22} \\ 0.000000000000 \end{bmatrix} \cdot newton \quad 10)$$

The **double cross-product** of electric, magnetic and the **A** vector fields will be presented next for deriving both the negative and positive **electrogravitational force** between two electron fields at R_{n1}. Note that the product of charge and velocity utilizes the same units as for current times distance. Further, the product of the permeability of free space and current is the vector magnetic potential, also formally known as the **A** vector. Its units are weber per meter or volt-second per meter. Therefore, let the following S.I. constants be established for the purpose of numerical analysis:

$\alpha := 7.297353080 \cdot 10^{-03}$ — Established SI fine structure constant.

$h := 6.626075500 \cdot 10^{-34} \cdot joule \cdot sec$ — Established SI Plank's constant.

$f_{n1} := m_e \cdot v_{n1}^2 \cdot (h)^{-1}$ — $f_{n1} = 6.579082358401 \cdot 10^{15} \cdot Hz$ — R_{n1} energy level standing wave average frequency.

$t_{n1} := f_{n1}^{-1}$ — $t_{n1} = 1.519968812555 \cdot 10^{-16} \cdot sec$ — R_{n1} energy level time.

$i_{n1} := q_o \cdot f_{n1} \cdot 4 \cdot \pi$ — $i_{n1} = 0.013246031071 \cdot amp$ — R_{n1} derived current constant.

$A_{n1} := \mu_o \cdot i_{n1}$ — $A_{n1} = 1.664545356129 \cdot 10^{-8} \cdot \dfrac{weber}{m}$ — R_{n1} derived **A** vector constant.

$\lambda_{LM} := \dfrac{h}{m_e \cdot v_{LM}}$ — $\lambda_{LM} = 8.514995416263 \cdot 10^{-3} \cdot m$ — EG derived wavelength constant.

Note that the following expression relates the n1 level **A** vector to the natural number (e) and the fine structure constant (α) in the form of a ratio that yields a number very close to unity.

First: $\Phi_{An1} := A_{n1} \cdot 2 \cdot \pi \cdot R_{n1}$ $\Phi_{An1} = 5.534478007908 \cdot 10^{-18}$ ·weber   11)

Where: $\dfrac{\Phi_o}{(\Phi_{An1})} \cdot \left(\dfrac{\alpha}{e}\right) = 1.003020968003$ $q_o \cdot A_{n1} = 2.666896834347 \cdot 10^{-27}$ ·kg·$\dfrac{m}{sec}$ 12)

Further, the n1 **electrogravitational form of Plank's constant** is stated below as:

$h_{fLM} := q_o \cdot \Phi_{An1}$ $h_{fLM} = 8.867215197655 \cdot 10^{-37}$ ·joule·sec   13)

The electrogravitational Plank's constant is related to the standard Planks constant as shown below where again, the natural number e and the fine structure constant α both figure into the ratio of the standard and the electrogravitational Planks constant so that the result of the ratio is also very close to unity.

$$\frac{h}{h_{fLM}} \cdot \left(\frac{\alpha}{2 \cdot e}\right) = 1.003020972746$$ 14)

A frequency related to the electrogravitational Plank's constant is derived below based on the least allowed electrogravitational velocity v_{LM} and the rest mass of the electron.

$f_{hfLM} := \dfrac{m_e \cdot (v_{LM}^2)}{h_{fLM}}$ $f_{hfLM} = 7.496652725881 \cdot 10^3$ ·Hz   15)

Acoustically modulating the air space inside of a Tesla coil at the above frequency may cause a resonance to occur with the incoming electrogravitational h_{fLM} parameter (eq. 13 above) that is normal to the Earth's surface since this parameter is assumed in this paper to be the action vector of the electrogravitational force. Further, the air space may be filled with pure Hydrogen gas insulated from the outside environment with a non-magnetic container such as plastic or ceramic. The reason Hydrogen is chosen is that the hyperfine frequency that radiates from the proton and electron combination may be considered to be a continuous source of energy that can be utilized to provide not only an electrogravitational force interaction between systems of mass but can provide a direct source of free power. [2]

The hyperfine frequency of the Hydrogen atom is: $f_{H1} := 1.420405751 \cdot 10^{09} \cdot Hz$

$\dfrac{f_{H1} \cdot \alpha^2}{f_{hfLM} \cdot \left(\dfrac{4}{\pi}\right)^2 \cdot 2 \cdot \pi} = 0.990548268608$ The ratio at the left establishes a correspondence between f_{H1}, f_{hfLM}, α, π, and the golden ratio which is expressed as the square of $4/\pi$.   16)

The h_{fLM} term in eq. 13 above is to be taken as the instantaneous quantum electrogravitational action vector and can be expressed as momentum times wavelength or energy times time as for the standard Plank form of h. The momentum parameter can also be stated as the product of charge times the **A** vector. Then we can form a first term in the double cross product that forms the total electrogravitational action containing h_{fLM} in the **Z** axis remembering that it is composed of the product of wavelength, charge, and the **A** vector. **These parameters must exist as fundamental uncertainties by the Heisenberg uncertainty principle.**

The double cross-product suggests that the **A** vector may interact with the cross-product of **E** and **B** fields at a point distant from the source that originates the **A** vector and further that it does so instantaneously. Putting it more succinctly: The cross product of the **A** vector is taken with the distant cross-product of another systems' quantum standing wave, non-radiating **E** and **B** field, and it does so instantaneously. For example, the field of a Tesla coil is a standing wave where the **E** and **B** fields are in the same direction spatially but are out of phase timewise by 90 degrees. **Thus, a Tesla coil mounted parallel to the surface of the Earth may react directly with the vertical electrogravitational A vector coming from the Earth.**

$$F_{EGneg} := \begin{bmatrix} 0 \cdot joule \cdot sec \\ 0 \cdot joule \cdot sec \\ h_{fLM} \end{bmatrix} \times \begin{bmatrix} B_{LM} \\ 0 \cdot tesla \\ 0 \cdot tesla \end{bmatrix} \times \begin{bmatrix} E_{LE} \\ 0 \cdot \dfrac{volt}{m} \\ 0 \cdot \dfrac{volt}{m} \end{bmatrix}$$

This initial form of double cross-product demonstrates a force of attraction in the **Z** direction which is is the vertical axis. The **B$_{LM}$** and **E$_{LE}$** fields, both in the **X** axis, form a standing wave. The second and third vectors are 90 degrees apart in time. The first and second vectors are 90 degrees to each other in space.

17)

Thus:

$$F_{EGneg} = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ -1.982791757595 \cdot 10^{-50} \end{bmatrix} \cdot newton \cdot \dfrac{henry}{m} \cdot newton$$

The magnetic permeability μ_o and <u>one of the newton</u> terms are constants and thus do not show up as variables in observations of ordinary gravitational actions.

18)

$$F_{EGZXY} := \begin{bmatrix} 0 \cdot joule \cdot sec \\ 0 \cdot joule \cdot sec \\ h_{fLM} \end{bmatrix} \times \begin{bmatrix} B_{LM} \\ -B_{LM} \\ 0 \cdot tesla \end{bmatrix} \times \begin{bmatrix} 0 \cdot \dfrac{volt}{m} \\ -E_{LE} \\ E_{LE} \end{bmatrix}$$

This example demonstrates the case for **tornado or cyclone action** where the **X** and **Y** plane has a circular **B** field and a **Y** and **Z** electric force field.

19)

$$F_{EGZXY} = \begin{bmatrix} 1.982791757595 \cdot 10^{-50} \\ -1.982791757595 \cdot 10^{-50} \\ -1.982791757595 \cdot 10^{-50} \end{bmatrix} \cdot newton \cdot \dfrac{henry}{m} \cdot newton$$

The vector result is indicative of rotational motion as well as attraction towards the Earth.

20)

Finally, the case for **electrogravitational <u>repulsion</u>** in the **Z** direction (vertical) with regard to eq. 17 above is obtained by changing the direction of the electric field vector by 180 degrees:

$$F_{EGpos} := \begin{bmatrix} 0 \cdot joule \cdot sec \\ 0 \cdot joule \cdot sec \\ h_{fLM} \end{bmatrix} \times \begin{bmatrix} B_{LM} \\ 0 \cdot tesla \\ 0 \cdot tesla \end{bmatrix} \times \begin{bmatrix} -E_{LE} \\ 0 \cdot \dfrac{volt}{m} \\ 0 \cdot \dfrac{volt}{m} \end{bmatrix}$$

Note: Reversing the direction of current or voltage of <u>any odd number</u> of vectors will also result in a reverse force of electrogravitation.

21)

$$F_{EGpos} = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ 1.982791757595 \cdot 10^{-50} \end{bmatrix} \cdot newton \cdot \dfrac{henry}{m} \cdot newton$$

Thus it is demonstrated that the two-step cross-product of electric and magnetic vector fields will yield action that is demonstrated on a daily basis by natural forces.

22)

Therefore, the double cross product has the property of returning a result along the same vector that begins the interaction, namely the least quantum electrogravitational h_{fLM} least action vector.

For example, in eq. 17 above, the cross product result of the first two vectors to the right of the equals sign causes a 90 degree twist from **X** to **Y** in the second vector B_{LM} as shown below in eq. 23.

$$\text{Step1} := \begin{bmatrix} 0 \cdot \text{joule} \cdot \text{sec} \\ 0 \cdot \text{joule} \cdot \text{sec} \\ h_{fLM} \end{bmatrix} \times \begin{bmatrix} B_{LM} \\ 0 \cdot \dfrac{\text{weber}}{m^2} \\ 0 \cdot \dfrac{\text{weber}}{m^2} \end{bmatrix} \qquad \text{Step1} = \begin{bmatrix} 0.000000000000 \\ 2.528914880053 \cdot 10^{-47} \\ 0.000000000000 \end{bmatrix} \cdot \text{kg} \cdot \text{volt} \qquad \text{23)}$$

Then the **Y** result (Step1) of eq. 23 is cross multiplied with the **X** value in the third vector to the right of the equals sign in eq. 17 and the result is the final vector in the **Z** direction as shown below.

$$\text{Final} := \text{Step1} \times \begin{bmatrix} E_{LE} \\ 0 \cdot \dfrac{\text{volt}}{m} \\ 0 \cdot \dfrac{\text{volt}}{m} \end{bmatrix} \qquad \text{Final} = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ -1.982791757595 \cdot 10^{-50} \end{bmatrix} \cdot \dfrac{\text{kg}}{m} \cdot \text{volt}^2 \qquad \text{24)}$$

NOTE:
The resulting units
are equivalent to the
units expressed by
eq. 22 above.

We see the result as exactly equal to the eq. 18 result for eq. 17 above.

The units of newton times henry/meter times newton can also be expressed as weber times Pascal times weber as shown below for the above expression in eq. 24.

$$\text{Final} = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ -1.982791757595 \cdot 10^{-50} \end{bmatrix} \cdot \text{weber} \cdot (\text{Pa}) \cdot \text{weber} \qquad \text{25)}$$

This is the normal case
of attraction by gravity,
which has a negative sign.

The result forms two interlocking magnetic flux rings (a torus) that may be visualized as forming a moving pressure wave in local space. In a previous work, *Hydrogen As A Free Energy Source Defines A New Universe*,[3] I proposed that the proton was a source of negative energy but also of a positive outwards moving pressure wave. This is an addendum to the main paper in reference 2 which starts on page 26. The result in eq. 26 above suggests a similar action associated with electrogravitation since the interlocking magnetic flux rings (webers) in combination with the pressure unit (Pascal) can be viewed as similar to the mechanics of the proton pressure wave. However, the total electrogravitational result is a negative pressure wave instead of a positive pressure wave. That would be interpreted as a collapsing pressure wave. Note that the unit Pascal is equal to newton per meter squared.

$$\text{For example:} \qquad 1 \cdot \dfrac{\text{newton}}{m^2} = 1.000000000000 \cdot \text{Pa} \qquad \text{26)}$$

Then the newton can be considered to be a force constant similar to the gluon force constant and the meter squared is the local dimensional variable required for the gravitational force to fall off as $1/\text{meter}^2$. Then it is possible that the electrogravitational Pascal unit arises from the connection to nonlocal energy space and to normal space at the center and outside interfaces of the proton, respectively.

To recap, the double cross product mechanics of eq. 17 above, the first cross-product involves the electrogravitational Plank constant $\mathbf{h_{fl.M}}$ from eq. 13 and $\mathbf{B_{LM}}$, the R_{n1} electrogravitational magnetic value presented in eq. 2. The result is presented in eq. 23 above. The result is found to be in the $\mathbf{Y}$ vector. This amounts to a twist from $\mathbf{X}$ to $\mathbf{Y}$ and this twist is initiated by the $\mathbf{Z}$ vector, the $\mathbf{h_{fl.M}}$ parameter consisting of the $\mathbf{A}$ vector, charge, and a quantum wavelength. The primary action of interest is the $\mathbf{A}$ vector, which I consider to be a fundamental, non-local momentum changing vector, which also acts on all quantum matter and cannot be shielded against. The twist to the $\mathbf{Y}$ plane then allows for the second cross product with the $\mathbf{X}$ vector (E_{LE}) to initiate a final twist back towards the $\mathbf{Z}$ vector direction. The <u>dot product</u> of the $\mathbf{E}$ and $\mathbf{B}$ vectors divided by μ_o yields power per meter squared which is <u>not radiated</u> but is an <u>imaginary standing wave power</u>. This is shown below.

$$S_{stdwv} := \left[\begin{bmatrix} B_{LM} \\ 0 \cdot tesla \\ 0 \cdot tesla \end{bmatrix} \cdot \begin{bmatrix} E_{LE} \\ 0 \cdot \dfrac{volt}{m} \\ 0 \cdot \dfrac{volt}{m} \end{bmatrix} \right] \cdot \dfrac{1}{\mu_o} \quad \text{or,} \quad S_{stdwv} = 1.779426247750 \cdot 10^{-8} \cdot \dfrac{kg}{sec^3} \qquad 27)$$

The <u>cross-product</u> of the above form will yield zero in the $\mathbf{Z}$ direction which is the vector of propagation for an electromagnetic wave based on the above parameters of $\mathbf{E}$, $\mathbf{B}$ and $1/\mu_o$. However, when the $\mathbf{A}$ vector causes a 90 degree twist of the $\mathbf{B}$ vector, the cross product with $\mathbf{E}$ yields a $\mathbf{Z}$ vector which is the axis of field motion and thus is detectable and perhaps useful external <u>negative-energy electromagnetic radiation</u>.

$$S_{real} := \left[\begin{bmatrix} 0 \cdot tesla \\ B_{LM} \\ 0 \cdot tesla \end{bmatrix} \times \begin{bmatrix} E_{LE} \\ 0 \cdot \dfrac{volt}{m} \\ 0 \cdot \dfrac{volt}{m} \end{bmatrix} \right] \cdot \dfrac{1}{\mu_o} \quad S_{real} = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ -1.779426247750 \cdot 10^{-8} \end{bmatrix} \cdot watt \cdot m^{-2} \qquad 28)$$

Note: $\quad h_{fLM} \cdot \mu_o \cdot S_{real_2} = -1.982791757595 \cdot 10^{-50} \cdot newton \cdot \dfrac{henry}{m} \cdot newton \qquad 29)$

Note that the result from the above cross product of $\mathbf{E}$ and $\mathbf{B}$ is negative and thus the field motion is opposite in direction along the $\mathbf{Z}$ axis as the $\mathbf{A}$ vector was. This amounts to a force of attraction since a negative energy field is directed back towards the Earth. (The net system motion follows the field.)

It is of interest that the units of $\mathbf{S}$ are also equal to mass per time cubed. Then the negative electromagnetic real power above has a frequency of interaction with the electron equal to:

$$f_{Sreal} := \left(\dfrac{S_{real_2}}{m_e} \right)^{\frac{1}{3}} \quad \text{then,} \quad f_{Sreal} = 1.346584386635 \cdot 10^7 + 2.332352574331 \cdot 10^7 i \quad \cdot Hz \qquad 30)$$

Note that 60 degrees and even multiples of 60 degrees are key to molecular structure angles related to Hydrogen bonding with molecules such as Oxygen, forming water molecules, for example.

where, $\quad \arg(f_{Sreal}) = 60.000000000000 \cdot deg$

A 'mathalogical' approach to the mechanics of electrogravitation is shown next in a simplified form. First, the two step cross product and its result is shown. This is for the case of a standing wave where the first **A** vector may generate the magnetic **B** field and the second vector may generate the electric **E** field.

(A) $\begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} \times \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} = \begin{pmatrix} 0.000000000000 \\ 0.000000000000 \\ 0.000000000000 \end{pmatrix}$
The two vectors have a 1 in the **X** direction. The result is the same if we place a 1 in both rows of the **Y** or **Z** axis. The field radiation along the **Z** vector is equal to zero.

31)

The result is shown below for a 1 in the **Y** and the **X** rows. The result is a -1 in the **Z** direction.

(B) $\begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix} \times \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} = \begin{pmatrix} 0.000000000000 \\ 0.000000000000 \\ -1.000000000000 \end{pmatrix}$
This vector cross product does generate an output in the **Z** direction and therefore field propagation does occur.

32)

The exchange of the rows in the cross product above will change the polarity of the output as shown below.

(C) $\begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} \times \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix} = \begin{pmatrix} 0.000000000000 \\ 0.000000000000 \\ 1.000000000000 \end{pmatrix}$
This vector cross product also generates a field propagation but in the opposite direction as for the above result.

33)

In the case of the standing wave in example (A), if we twist the first vector direction of **X** into **Y**, we arrive at the vector expression in (B) which then generates an output in the **Z** direction. <u>If we consider that the atomic realm is composed of standing waves, then the release of the energy in the standing waves will cause the standing wave field energy to radiate</u>. I suggest that the energy released is in the form of my proposed pondermotive pressure wave whose singular action is positive. Further, the energy lost from the standing wave is refreshed from the energy space I have postulated to exist as the same energy space that created the Big Bang. The energy released is much less than the energy level of the n1 energy level of the H-1 atom and in fact is likely closely related to the hyperfine energy radiation at 1420 MHz.[3]

A double cross product will effect the twist in the first vector of (A) above and this is shown below.

(D) $\begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} \times \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} = \begin{pmatrix} 0.000000000000 \\ 0.000000000000 \\ -1.000000000000 \end{pmatrix}$
The output of the double cross-product shows that a **Z** input yields a negative **Z** direction output. Thus the positive input action yields a negative output reaction. This fits the actual result of the action of gravitation.

34)

It is demonstrated in example (E) below that the action of the first vector in example (D) causes the twist to occur in the second vector from **X** to **Y** as described above.

(E) $\begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} = \begin{pmatrix} 0.000000000000 \\ 1.000000000000 \\ 0.000000000000 \end{pmatrix}$
This result times the third vector in (D) above will yield the result as shown in (D) to the right of the equals sign and is also shown in (B) above.

35)

It is possible (even highly probable) that the standing wave format in (A) above may exist in three dimensions at once. It is demonstrated below by eq. 36 that the output of the double cross product still generates the largest output in the axis of the input action but of opposite direction. This is demonstrated in example (F) below.

(F) $\left[\begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \right] \cdot \dfrac{1}{2} = \begin{pmatrix} 0.500000000000 \\ 0.500000000000 \\ -1.000000000000 \end{pmatrix}$ Here we take the average of the possibilities by dividing by two and the result is exactly equal to the result in (D) above. **Note that lesser (rotation) outputs in the X and Y direction also exist.**   36)

The next examples in (G) and (H) show that the main reaction is along the axis of input action of vector 1 but of the opposite direction of the input.

(G) $\left[\begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \right] \cdot \dfrac{1}{2} = \begin{pmatrix} 0.500000000000 \\ -1.000000000000 \\ 0.500000000000 \end{pmatrix}$ The reaction is in the opposite direction to the action and along the same axis of the action vector of vector 1.   37)

(H) $\left[\begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \right] \cdot \dfrac{1}{2} = \begin{pmatrix} -1.000000000000 \\ 0.500000000000 \\ 0.500000000000 \end{pmatrix}$ The reaction is in the opposite direction to the action in vector 1 and is also along the same axis.   38)

The input may also be considered as multi-directional and is shown in (I), (J), (K) and (L) below.

(I) $\left[\begin{pmatrix} 1 \\ 1 \\ 0 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \right] \cdot \dfrac{1}{2} = \begin{pmatrix} -0.500000000000 \\ -0.500000000000 \\ 1.000000000000 \end{pmatrix}$ (J) $\left[\begin{pmatrix} 1 \\ 0 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \right] \cdot \dfrac{1}{2} = \begin{pmatrix} -0.500000000000 \\ 1.000000000000 \\ -0.500000000000 \end{pmatrix}$ 39)

(K) $\left[\begin{pmatrix} 0 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \right] \cdot \dfrac{1}{2} = \begin{pmatrix} 1.000000000000 \\ -0.500000000000 \\ -0.500000000000 \end{pmatrix}$ (L) $\left[\begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} \right] \cdot \dfrac{1}{2} = \begin{pmatrix} 0.000000000000 \\ 0.000000000000 \\ 0.000000000000 \end{pmatrix}$ 40)

The case for repulsion of the Earth's gravitational field is made for inputting an action as shown in (I) above since the main output is positive along the **Z** axis. In (J) and (K), the main output is along the **Y** or **X** axis direction respectively. Finally, the case is shown in (L) for an equal action input in all three directions of **X**, **Y** and **Z** such as for the center of the Earth or any other ponderable mass. Thus an object in such a scenario would quite possibly feel no net gravitational force in any direction. (Neglecting of coarse the tremendous additive force of the surrounding mass pushing in from all sides.)

The case of the (I) example is of particular interest since it suggests a method of raising ponderable mass and thus creating a means of launching into space heavy objects without the use of chemical combustion such as used by present day rockets. A strong vertical **A** vector imposed simultaneously on the **X** and **Y** plane of suitable material may cause a positive **Z** output along the **Z** axis. The lesser forces suggest a rotational aspect such as what occurs in tornadoes and hurricanes. The gain in energy may even be applied to explaining the coherent action of ocean waves where the synchronizing phase wave of action is along the crest of the wave and the rotational motion is around that phase wave in a circular motion.

The quantum inductance related to the n1 level of the H-1 atom is derived next based on the known quantum fluxoid Φ_o. The required capacitance is also calculated as shown below. First, let constants be stated as:

$$\text{Mult} := 1836.152756 \qquad r_{LM} := \frac{\lambda_{LM}}{2\cdot\pi} \qquad l_q := 2.817940920\cdot10^{-15}\cdot m \qquad \varepsilon_o := 8.854187817\cdot10^{-12}\cdot\frac{\text{farad}}{m} \qquad 41)$$

$$L_{Qu} := \frac{\Phi_o}{i_{n1}\cdot(\text{Mult})} \qquad \text{and} \qquad C_{Qu} := \frac{\varepsilon_o\cdot(R_{n1})^2}{(l_q)}\cdot\left[\left(\left(\frac{\pi}{4}\right)\right)\right] \qquad\qquad R_{Qu} := \sqrt{\frac{L_{Qu}}{C_{Qu}}} \qquad 42)$$

$$L_{Qu} = 8.502002369700\cdot10^{-17}\ \cdot\text{henry} \quad C_{Qu} = 6.910493396602\cdot10^{-18}\ \cdot\text{farad} \quad R_{Qu} = 3.507567865806\ \cdot\text{ohm}$$

Note also that: $\quad \dfrac{\mu_o\cdot R_{n1}^2}{R_{n1}}\cdot\left[\left(\left(\dfrac{4}{\pi}\right)\right)\right] = 8.466835984000\cdot10^{-17}\ \cdot\text{henry} \qquad f_{n1} = 6.579082358401\cdot10^{15}\ \cdot\text{Hz}$

Then: $\qquad f_{LMu} := \left(2\cdot\pi\cdot\sqrt{L_{Qu}\cdot C_{Qu}}\right)^{-1} \qquad \text{or,} \qquad f_{LMu} = 6.566062202745\cdot10^{15}\ \cdot\text{Hz} \qquad 43)$

The distance required to make L_Q/meter equal to an <u>adjusted</u> permeability of free space is:

$$\frac{4}{\pi} = 1.273239544735 \qquad r_x := \frac{L_{Qu}}{\mu_o} \qquad \text{or,} \quad r_x = 6.765678516584\cdot10^{-11}\ \cdot m$$

Note: r_x is larger than R_{n1} ~ the square root of the Golden Ratio. 44)

$$\Phi_{gold} := \left(\frac{4}{\pi}\right)^2 \qquad \text{where,} \quad \frac{r_x}{\left[\left(\sqrt{\Phi_{gold}}\right)\cdot R_{n1}\right]} = 1.004153427061 \quad \text{and} \quad \frac{r_x}{R_{n1}} = 1.278527852316 \qquad 45)$$

Where, $\qquad \alpha\cdot\text{Mult}\cdot r_x = 9.065369834864\cdot10^{-10}\ \cdot m \quad \text{and} \quad \Delta R_{n1} = 9.040055579244\cdot10^{-10}\cdot m$

See eq. 118 of Ref. 3 for how r_x above relates to the natural number e and ΔR_{n1} of Ref. 3!

It is of further interest that the multiplier (Mult) above is equal to the ratio of the proton to the electron rest mass. This places the <u>adjusted permeability</u> of free space relative to the mass of the proton equal to the proton/electron mass ratio. Then the mass of the electron and proton can be stated as:

$$m_{elec} := \frac{q_o\cdot(\mu_o)\cdot q_o}{4\cdot\pi\cdot l_q} \qquad \text{and} \qquad m_{prot} := \frac{q_o\cdot(\mu_o\cdot\text{Mult})\cdot q_o}{4\cdot\pi\cdot l_q} \qquad 46)$$

$$m_{elec} = 9.109389691413\cdot10^{-31}\ \cdot kg \qquad m_{prot} = 1.672623098737\cdot10^{-27}\ \cdot kg \qquad 47)$$

Where: $\quad m_e = 9.109389700000\cdot10^{-31}\ \cdot kg \quad \text{and} \quad m_p := 1.672623100\cdot10^{-27}\cdot kg \qquad 48)$

Further, it is established in this paper by eq. 2 and 4 above that:

$$B_{LM} = 2.851983202936\cdot10^{-11}\ \cdot\text{tesla} \qquad \text{and} \qquad E_{LE} = 7.840484364397\cdot10^{-4}\ \cdot\frac{\text{volt}}{m} \qquad 49)$$

Where also the A vector is: $\quad A_{n1} = 1.664545356129 \cdot 10^{-8} \cdot \dfrac{weber}{m}$ 　　　50)

Also: $\quad h_{fLM} = q_o \cdot \left(A_{n1} \cdot 2 \cdot \pi \cdot R_{n1} \right) \qquad \dfrac{h}{h_{fLM}} = 747.255519608079$ 　　51)

$\mu_{o'} := \dfrac{L_{Qu} \cdot Mult}{r_x} \qquad \mu_{o'} = 2.307377603647 \cdot 10^{-3} \cdot \dfrac{henry}{m}$ where, $\quad \mu_o = 1.256637061436 \cdot 10^{-6} \cdot \dfrac{henry}{m}$ 　52)

$\mu_{rel} := \dfrac{\mu_{o'}}{\mu_o} \quad$ or, $\quad \mu_{rel} = 1.836152756000 \cdot 10^3 \qquad \dfrac{d}{dr_x}\left(\dfrac{L_{Qu}}{r_x} \right) = -1.857370341135 \cdot 10^4 \cdot kg \cdot coul^{-2}$ 　53)

Also: $\quad f_H := 1.420405751786 \cdot 10^{09} \cdot Hz \qquad$ and let $\quad t_H := \dfrac{1}{f_H} \qquad$ **f_H = Hydrogen hyperfine frequency.** 　54)

Then: $\quad t_H = 7.040241837536 \cdot 10^{-10} \cdot sec \qquad t_H^{-1} = 1.420405751786 \cdot 10^9 \cdot Hz$ 　55)

$$AVec1 := \begin{bmatrix} 0 \cdot \left(0 \cdot kg \cdot m^2 \cdot sec^{-1} \right) \\ 0 \cdot kg \cdot m^2 \cdot sec^{-1} \\ q_o \cdot \left(A_{n1} \cdot 2 \cdot \pi \cdot R_{n1} \right) \cdot Mult \end{bmatrix}$$

This vector is <u>non-locally</u> transferred from the proton to all other matter and carries the information as shown in the **Z** direction. The <u>local reaction</u> is in the opposite direction to the action along axis **X**, **Y** or **Z**. **The *Mult* parameter infers proton action.** 　**56)**

$$AVec1 = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ 1.628156162322 \cdot 10^{-33} \end{bmatrix} \cdot joule \cdot sec$$

Reversing the direction of the **Z** axis **A** vector will reverse the direction of the final electrogravitational force along the **Z** axis. The output also has the units of momentum times length of action. 　**57)**

Let time t_u be established for the correct B flux below as: $\quad t_u := \dfrac{0.000099535905}{Mult} \cdot sec$

where, $\quad t_u^{-1} = 1.844713981352 \cdot 10^7 \cdot Hz$

The next two vectors show the 3 dimensional generation of the **B** and **E** vectors respectively.

$$BVec2 := \begin{bmatrix} \dfrac{d}{dr_x}\left[\dfrac{L_{Qu}}{r_x \cdot Mult} \cdot \left[q_o \cdot \left(t_u \right)^{-1} \right] \right] \\ \dfrac{d}{dr_x}\left[\dfrac{L_{Qu}}{r_x \cdot Mult} \cdot \left[q_o \cdot \left(t_u \right)^{-1} \right] \right] \\ \dfrac{d}{dr_x}\left[\dfrac{L_{Qu}}{r_x \cdot Mult} \cdot \left[q_o \cdot \left(t_u \right)^{-1} \right] \right] \end{bmatrix} \qquad EVec3 := \begin{bmatrix} \dfrac{d}{dt_H}\left[\left(\mu_{o'} \right) \cdot \left[q_o \cdot \left(t_H \right)^{-1} \right] \right] \\ \dfrac{d}{dt_H}\left[\left(\mu_{o'} \right) \cdot \left[q_o \cdot \left(t_H \right)^{-1} \right] \right] \\ \dfrac{d}{dt_H}\left[\left(\mu_{o'} \right) \cdot \left[q_o \cdot \left(t_H \right)^{-1} \right] \right] \end{bmatrix}$$ 　**58)**

Where: $\quad B_{LM} = 2.851983202936 \cdot 10^{-11} \cdot tesla \quad$ and $\quad E_{LE} = 7.840484364397 \cdot 10^{-4} \cdot \dfrac{volt}{m}$ 　59)

$$BVec2 = \begin{bmatrix} -2.989711756759 \cdot 10^{-11} \\ -2.989711756759 \cdot 10^{-11} \\ -2.989711756759 \cdot 10^{-11} \end{bmatrix} \cdot tesla \quad \text{and} \quad EVec3 = \begin{bmatrix} -7.458544750563 \cdot 10^{-4} \\ -7.458544750563 \cdot 10^{-4} \\ -7.458544750563 \cdot 10^{-4} \end{bmatrix} \cdot \frac{volt}{m} \quad 60)$$

The second and third vectors are changing with regard to distance and time, respectively. <u>Further, these vectors also start with the **A** vector as the primary vector in **X**, **Y** and **Z**.</u> The second or third vectors are changed via vector 1 which is the action of electrogravitation. The major output force is in the same axis (**Z**) as for the input vector 1 but is opposite in direction as will be demonstrated in the following equations.

First, if we examine the cross product of vector 2 times vector 3 we see that the result indicates that real power is not available in the result since the total cross product of the vectors internal parameters will equal zero.

$$S_{ExB} := \frac{1}{\mu_o} \cdot BVec2 \times EVec3 \quad S_{ExB} = \begin{pmatrix} 0.000000000000 \\ 0.000000000000 \\ 0.000000000000 \end{pmatrix} \cdot \frac{watt}{m^2} \quad \begin{array}{l} \text{The cross product yields a null} \\ \text{but the hidden } \mathbf{B} \text{ and } \mathbf{E} \text{ field} \\ \text{parameters still have magnitude.} \end{array} \quad 61)$$

The above field is ubiquitous and may be considered as a zero-point energy field. Further, its field mechanics may be the reason probability theory exists and is stated as Heisenberg's uncertainty principle.

The first row product reveals the reactive (imaginary axis) power hidden in the cross-product field.

$$S_{EB} := \frac{1}{\mu_o} \cdot BVec2_0 \cdot EVec3_0 \qquad S_{EB} = 1.774489995034 \cdot 10^{-8} \cdot \frac{watt}{m^2} \quad 62)$$

Next, we form a double cross product such that vector 1 is a cross product of vector 2 and that result is also taken as a cross product of vector 3. The output is shown below.

The resulting electrogravitational force is for the <u>proton to electron</u> in the n1 energy level of the Hydrogen atom. The **A** vector is initiated by the proton and is instantaneously transmitted to the electron via vector 1 above. We see that the order of cross-product of vector 2 and 3 is irrelevant but vector 1 must appear first as the initiator. The average force result is shown as a force of attraction.

$$FEG_{AxBxE} := \frac{AVec1 \times BVec2 \times EVec3}{2} \quad FEG_{AxBxE} = \begin{bmatrix} 1.815304485218 \cdot 10^{-47} \\ 1.815304485218 \cdot 10^{-47} \\ -3.630608970435 \cdot 10^{-47} \end{bmatrix} \cdot \frac{henry}{m} \cdot newton^2 \quad 63)$$

$$FEG_{AxExB} := \frac{AVec1 \times EVec3 \times BVec2}{2} \quad FEG_{AxExB} = \begin{bmatrix} 1.815304485218 \cdot 10^{-47} \\ 1.815304485218 \cdot 10^{-47} \\ -3.630608970435 \cdot 10^{-47} \end{bmatrix} \cdot \frac{henry}{m} \cdot newton^2 \quad 64)$$

Both BVec2 and EVec3 as shown above have as their basic structure the **A** vector and this is shown below.

$$BA_{Vec2} := \frac{L_{Qu}}{r_x} \cdot \left[q_o \cdot (t_u)^{-1} \right] \qquad \text{or,} \qquad BA_{Vec2} = 3.714064877708 \cdot 10^{-18} \cdot \frac{volt \cdot sec}{m} \qquad 65)$$

The derivative with respect to the r_x distance is essentially equivalent to a <u>variable permeability with distance</u>. Recent tests involving a variable permeability saturable core current transformer generated a small lift when pulsed by a fast rise-time current.[4]

For the electric field generating A vector:

$$EA_{Vec3} := (\mu_{o'}) \cdot \left[q_o \cdot (t_H)^{-1} \right] \qquad \text{or,} \qquad EA_{Vec3} = 5.250995880004 \cdot 10^{-13} \cdot \frac{volt \cdot sec}{m} \qquad 66)$$

The derivative with respect to time t_H infers no change of free space electric field permittivity. Then the electric field does not change axis in response to an external **A** vector. Further, the electric field **E** circulates around the center of a torus winding to its edge making it 90 degrees to the **B** field which runs through the central windings of the toroid doughnut. Finally, an **E** field is also generated along the open major central axis of the toroid in response to a changing current in the toroid windings.

The permeability relative to the proton is given as $\mu_{o'}$ which is also expressed as $(L_{Qu}*Mult)/r_x$.

$$\text{For example:} \qquad \mu_{o'} := \frac{L_{Qu} \cdot Mult}{r_x} \qquad \text{where,} \qquad \mu_{rel} := \frac{\mu_{o'}}{\mu_o} \qquad 67)$$

where μ_{rel} is equal to the ratio of the proton to electron rest mass. $\qquad \mu_{rel} = 1.836152756000 \cdot 10^3 \qquad 68)$

A medium having the relative permeability shown by eq. 68 above as μ_{rel} may allow for non-local energy space to be interfaced to the macroscopic world. This would allow for energy extraction from the quantum realm and electrogravitational control as well. In creating the proper medium, perhaps a hydrocarbon medium of some type of light oil having in suspension microscopic sized grains of iron powder may create the quantum energy to macroscopic energy field release interface. The permeability would be adjusted by the amount of iron powder in the oil so as to achieve the permeability shown above.

Then the electrogravitational action foundation can start with two **A** vectors of different magnitude and thus different base parameters related to the interaction of the proton and electron at the n1 level of the Hydrogen atom. The two **A** vectors lay along the same axis initially and can exist in any direction as a pair.

The BA_{Vec2} may be acted on first by the incoming action vector of vector 1 which can be a special form of Plank's constant designated herein as h_{fLM}. The h_{fLM} action vector causes the **A** vector of BA_{Vec2} above to change with respect to distance and this translates to a **B** vector which is 90 degrees to the **A** vector and thus if the **A** vector is in row 1, which is the **X** axis, the newly created **B** vector is now in row 2 or the **Y** axis of vector 2. Next, the EA_{Vec3} **A** vector in vector 3 is acted on by the newly created **B** vector in vector 2 to change EA_{Vec3} with respect to time. This will create a new **E** vector field which will not change rows in vector 3. As a result, the second row **Y** axis of vector 2 will cross multiply with the first row (the X axis) **E** field of vector 3 to create an output pressure wave field as shown above as FEG_{AxBxE} which is the major output in the **Z** axis direction.

The output of the electrogravitational equations above always lay along the same axis as the incoming **A** vector axis. Then the reaction force result is along the same axis as the direction of the incoming **A** vector action contained in h$_{fLM}$. Further, the initial **A** vector in vector 1 may be likened to a phase wave which travels at superluminal velocity. Thus, the first interaction works at 90 degrees to the superluminal **A** vector phase velocity axis upon the **X** or **Y** axis of vector 2. This causes the **B** vector to be generated at a 90 degree twist in relation to the **A** vector, either the **X** or **Y** axis in vector 2. The next interaction concerns the **E** vector in vector 3 and is at 90 degrees to the **B** vector axis. This interaction is in the **X** axis if the **B** vector is in the **Y** axis and vis-versa. The final result is a net 180 degree twist back towards the h$_{fLM}$ action source of the **A** vector in vector 1 and is a reverse momentum action to that incoming **A** vector.

Equations 28, 29 and 62 state the required Poynting vector power (**S**) in the electromagnetic radiation that occurs as a result of the double cross product that is the total electrogravitational action. Since it is energy per meter^2 per second, we can solve for the Plank related frequency related to the time constant.

Plank quantum frequency possibly related to **B$_{LM}$** in eq. 2.

$$f_{BLM} := \frac{S_{real_2} \cdot t_{n1} \cdot \left(\lambda_{LM}\right)^2}{h} \qquad f_{BLM} = -295.955984569332 \cdot KHz$$

69)

Plank quantum frequency possibly related to **E$_{LE}$** in eq. 4

$$f_{ELE} := \frac{S_{real_2} \cdot t_{LM} \cdot \left(2 \cdot \pi \cdot R_{n1}\right)^2}{h} \qquad f_{ELE} = -295.928924539595 \cdot KHz$$

70)

Note that the square of (λ_{LM}) and $(2\pi R_{n1})$ are equal to the surface area of a torus.

Note also the following: $\qquad \dfrac{f_{BLM} - f_{ELE}}{e} = -9.954828617841 \cdot Hz \quad$ and also:

71)

$$F_{hS} := h_{fLM} \cdot \mu_o \cdot S_{real_2} \qquad F_{hS} = -1.982791757595 \cdot 10^{-50} \cdot \frac{kg}{m} \cdot volt^2$$

72)

Where it has been established by eq. 17 and 18 above that:

$$F_{EGneg_2} = -1.982791757595 \cdot 10^{-50} \cdot newton \cdot \frac{henry}{m} \cdot newton$$

73)

Finally, $\quad f_{BLM} \cdot (2 \cdot \pi)^3 = -7.341194514198 \cdot 10^7 \cdot Hz$

These are De Broglie frequencies that are standing wave frequencies and they are nearly equal. Thus both the **E** and **B** fields have the same interaction frequency.

74)

And: $\quad f_{ELE} \cdot (2 \cdot \pi)^3 = -7.340523289583 \cdot 10^7 \cdot Hz$

75)

Therefore, f_{BLM} and f_{ELE} are strong candidates for being common electrogravitational force interaction frequencies. Further, the above frequencies are very close to A'_{dbf} main frequency predicted for the De Broglie interaction frequency in a previous paper, *A Testable Dual Frequency Solution For The Electrogravitational Action Mechanism*, where $A'_{dbf} = 7.340523441 \times 10^{07}$ Hz. **[5]**

The Schuman frequency of 7.83 Hz is also very close to the product of f_{ELE} or f_{BLM} and the fine structure constant squared divided by 2 as shown below.

$$\frac{f_{ELE} \cdot \alpha^2}{2} = -7.879309139645 \cdot Hz \qquad\qquad 76)$$

It is possible to solve for a common De Broglie wavelength related to the frequencies shown above when referenced to the n1 force derived in eqs. 3 and 5 previously.

$$\lambda_{BLM} := \frac{h \cdot f_{BLM}}{F_{LM}} \cdot 2 \qquad \lambda_{BLM} = -3.122337762287 \cdot 10^{-6} \cdot m \qquad 77)$$

$$\lambda_{ELM} := \frac{h \cdot f_{ELE}}{F_{LE}} \cdot 2 \qquad \lambda_{ELM} = -3.121909549037 \cdot 10^{-6} \cdot m \qquad 78)$$

Let the velocity of light be stated as: $\qquad c := 2.997924580 \cdot 10^{08} \cdot \dfrac{m}{sec}$

The above wavelengths is very close to the main De Broglie wavelength calculated in my previous work which is equivalent to:

$$\lambda_{db} := \frac{c}{2 \cdot \pi \cdot A_f} \qquad \lambda_{db} = 3.147893531848 \cdot 10^{-6} \cdot m \qquad 79)$$

$$\frac{f_{BLM} \cdot \lambda_{db}}{e \cdot (4)} = -0.085682610223 \cdot m \cdot sec^{-1} \qquad \sqrt{\alpha} = 0.085424546121 \qquad 80)$$

I have proposed that quantum standing wave energy may be considered as mass and further that in order for the proton and the electron to be able to create an external field, the centers of the proton and electron must be connected to what I call Energy Space. Further, there is no distance between centers in energy space nor is there time as measured in our normal space. Thus, all matter is connected via Energy Space through their centers of action. Also, Energy Space is the same space that supplied the creation energy for the Big Bang and still supplies the necessary refresh energy to support the standing waves that define the stability of the electron and proton structure in spite of the field loss during acceleration caused by interaction externally with other particles. As long as the required refresh energy is less than the rest mass energy, the energy from energy space will be supplied to the proton and/or electron as required to support the standing wave structure that defines the particle's mass structure. Then it is possible that providing the proper quantum to macroscopic energy transition medium will allow for the extraction of energy utilizing the frequency and permeabilitys of the medium as shown above. An added benefit is macroscopic gravitational control.

It is of interest that in eqs. 24 and 72 above, the units equivalent to newton times henry/m times newton are also expressed as kg/m times (volts)[2]. If we utilize the mass of the proton, we can solve for a very large distance that is unique to the electrogravitational action in terms of the R_{n1} peak voltage.

$$\text{volt}_{Rn1} := \frac{q_o}{4 \cdot \pi \cdot \varepsilon_o \cdot R_{n1}} \qquad \text{volt}_{Rn1} = 27.211396094867 \cdot \text{volt} \qquad \qquad 81)$$

$$R_{Universe} := \left| \frac{m_p \cdot \left(\text{volt}_{Rn1}\right)^2}{F_{hS}} \right| \qquad R_{Universe} = 6.246297047566 \cdot 10^{25} \cdot m \qquad \qquad 82)$$

The above distance shown as $R_{Universe}$ is how far we must shrink the radius of the Universe to get to the beginning point. Put another way, it is the effective radius of the present Universe in terms of the electrogravitational force parameters of the R_{n1} level of the Hydrogen atom.

The following sets of cross-products fit the measured results involving a horizontal **A** vector field aligned along the main axis' between two current transformers mounted on a moving balance beam and two non-moving rigidly mounted current transformers having their main axis' vertical to simulate the vertical **A** vector h_{fLM} field coming from the Earth. Thus the non-moving current transformers are mounted below the moving transformers. The first set of equations are for a series current that establishes an upward **A** vector from the non-moving current transformers and also an **A** vector pointing along the balance beam arm away from the fulcrum for the moving current transformers. The second set of equations are for all currents reversed which are stated as a negative time to show current flow in the opposite direction. The currents' are pulsed at a repetition rate of 20 KHz.

The imaginary operator i is added as a product to h_{EG} below to account for angular momentum or spin associated with the proton that creates the h_{fLM} action vector. A spin accounts for the handedness of the reaction that causes either an attraction or loss of attraction from the Earth's electrogravitational parameter, h_{fLM}. Therefore, interaction with the existing **X** and **Y** rotation field of eq. 36 is strengthened in favor of an angle of interaction that may be related closely to half of the atan of $4/\pi$: (~ 26 degrees.)

$$h_{EG} := q_o \cdot \left(A_{n1} \cdot 2 \cdot \pi \cdot R_{n1}\right) \cdot \text{Mult} \cdot i \qquad h_{EG} = 1.628156162322 \cdot 10^{-33} i \cdot \text{joule} \cdot \text{sec} \qquad \qquad 83)$$

$$B_{EG} := \frac{d}{dr_x} \left[\frac{L_{Qu}}{r_x \cdot \text{Mult}} \cdot \left[q_o \cdot \left(t_u\right)^{-1} \right] \right] \qquad B_{EG} = -2.989711756759 \cdot 10^{-11} \cdot \text{tesla} \qquad \qquad 84)$$

$$E_{EG} := \frac{d}{dt_H} \left[\left(\mu_o\right) \cdot \left[q_o \cdot \left(t_H\right)^{-1} \right] \right] \qquad E_{EG} = -7.458544750563 \cdot 10^{-4} \cdot \frac{\text{volt}}{m} \qquad \qquad 85)$$

$$\begin{bmatrix} 0 \cdot h_{EG} \\ 0 \cdot h_{EG} \\ h_{EG} \end{bmatrix} \times \begin{bmatrix} B_{EG} \\ B_{EG} \\ B_{EG} \end{bmatrix} \times \begin{bmatrix} E_{EG} \\ E_{EG} \\ E_{EG} \end{bmatrix} \cdot \frac{1}{2} = \begin{bmatrix} 1.815304485218 \cdot 10^{-47} i \\ 1.815304485218 \cdot 10^{-47} i \\ -3.630608970435 \cdot 10^{-47} i \end{bmatrix} \cdot \text{volt}^2 \cdot \frac{kg}{m} \qquad 86)$$

The sign of the Poynting power is:

$$\begin{bmatrix} 0 \cdot tesla \\ B_{EG} \\ 0 \cdot tesla \end{bmatrix} \times \begin{bmatrix} E_{EG} \\ 0 \cdot \dfrac{volt}{m} \\ 0 \cdot \dfrac{volt}{m} \end{bmatrix} \cdot \dfrac{1}{\mu_o} = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ -1.774489995034 \cdot 10^{-8} \end{bmatrix} \cdot kg \cdot sec^{-3} \qquad \begin{array}{l} \text{This is a collapsing power field} \\ \text{since it is negative in sign. It is} \\ \text{in the } \mathbf{Z} \text{ direction.} \end{array} \qquad 87)$$

Now let the currents be reversed as follows:

$$A_{n1neg} := A_{n1} \cdot -1 \qquad\qquad t_{uneg} := t_u \cdot (-1) \qquad\qquad t_{Hneg} := t_H \cdot (-1)$$

$$h_{EGneg} := q_o \cdot \left(A_{n1neg} \cdot 2 \cdot \pi \cdot R_{n1} \right) \cdot Mult \cdot i \qquad\qquad h_{EGneg} = -1.628156162322 \cdot 10^{-33} i \; \cdot joule \cdot sec \qquad 88)$$

$$B_{EGneg} := \dfrac{d}{dr_x} \left[\dfrac{L_{Qu}}{r_x \cdot Mult} \cdot \left[q_o \cdot \left(t_{uneg} \right)^{-1} \right] \right] \qquad\qquad B_{EGneg} = 2.989711756759 \cdot 10^{-11} \; \cdot tesla \qquad 89)$$

$$E_{EGneg} := \dfrac{d}{dt_{Hneg}} \left[\left(\mu_{o'} \right) \cdot \left[q_o \cdot \left(t_{Hneg} \right)^{-1} \right] \right] \qquad\qquad E_{EGneg} = -7.458544750563 \cdot 10^{-4} \; \cdot \dfrac{volt}{m} \qquad 90)$$

$$\begin{bmatrix} 0 \cdot h_{EGneg} \\ 0 \cdot h_{EGneg} \\ h_{EGneg} \end{bmatrix} \times \begin{bmatrix} B_{EGneg} \\ B_{EGneg} \\ B_{EGneg} \end{bmatrix} \times \begin{bmatrix} E_{EGneg} \\ E_{EGneg} \\ E_{EGneg} \end{bmatrix} \cdot \dfrac{1}{2} = \begin{bmatrix} 1.815304485218 \cdot 10^{-47} i \\ 1.815304485218 \cdot 10^{-47} i \\ -3.630608970435 \cdot 10^{-47} i \end{bmatrix} \cdot volt^2 \cdot \dfrac{kg}{m} \qquad 91)$$

It is of immediate importance that the derivative with respect to time of the **E** vector yields an electrogravitational force result that is independent of the signed polarity of the time as is shown above.

The Poynting power for the reversed current is shown below.

$$\begin{bmatrix} 0 \cdot tesla \\ B_{EGneg} \\ 0 \cdot tesla \end{bmatrix} \times \begin{bmatrix} E_{EGneg} \\ 0 \cdot \dfrac{volt}{m} \\ 0 \cdot \dfrac{volt}{m} \end{bmatrix} \cdot \dfrac{1}{\mu_o} = \begin{bmatrix} 0.000000000000 \\ 0.000000000000 \\ 1.774489995034 \cdot 10^{-8} \end{bmatrix} \cdot kg \cdot sec^{-3} \qquad \begin{array}{l} \text{This is an expanding or} \\ \text{growing field since it is} \\ \text{positive in sign.} \end{array} \qquad 92)$$

The units of kg/sec^3 are equivalent to watts/m^2.

An alternating polarity of current will create a pulsating field. Thus, an electromagnetic radiation occurs.

Note that the initiator **A** vector (for example, eq. 83 above) has the proton multiplier (Mult) which suggests that the initiator of the electrogravitational action (h_{EG}) is the proton. Further, in the second vector involving the **B** flux, the (Mult) adjusted permeability (L_{Qu}/r_x) is used which also suggests a reaction involving a target proton. Finally, for the third vector, which is the electric field **E** vector, $\mu_{o'}$ which is μ_o times the (Mult) ratio of m_p/m_e also suggests proton action in the final reaction product.

Next, if the direction of current is reversed only in the non-moving current transformers with respect to the moving current transformers, the following action product is observed.

$$\begin{bmatrix} 0 \cdot h_{EGneg} \\ 0 \cdot h_{EGneg} \\ h_{EGneg} \end{bmatrix} \times \begin{bmatrix} B_{EG} \\ B_{EG} \\ B_{EG} \end{bmatrix} \times \begin{bmatrix} E_{EG} \\ E_{EG} \\ E_{EG} \end{bmatrix} \cdot \frac{1}{2} = \begin{bmatrix} -1.815304485218 \cdot 10^{-47} i \\ -1.815304485218 \cdot 10^{-47} i \\ 3.630608970435 \cdot 10^{-47} i \end{bmatrix} \cdot volt^2 \cdot \frac{kg}{m} \qquad 93)$$

Finally, reversing all of the currents with the non-moving transformer still reversed with respect to the moving transformers will again yield the same result as above.

$$\begin{bmatrix} 0 \cdot h_{EG} \\ 0 \cdot h_{EG} \\ h_{EG} \end{bmatrix} \times \begin{bmatrix} B_{EGneg} \\ B_{EGneg} \\ B_{EGneg} \end{bmatrix} \times \begin{bmatrix} E_{EGneg} \\ E_{EGneg} \\ E_{EGneg} \end{bmatrix} \cdot \frac{1}{2} = \begin{bmatrix} -1.815304485218 \cdot 10^{-47} i \\ -1.815304485218 \cdot 10^{-47} i \\ 3.630608970435 \cdot 10^{-47} i \end{bmatrix} \cdot volt^2 \cdot \frac{kg}{m} \qquad 94)$$

A reverse of the action vector h_{EG} is akin to an antiproton action source which would have a reverse spin along the h_{fLM} action vector.

If the time related to the derivative of t_H is made smaller within a limited range, the force output of the electrogravitational equation increases a magnitude of 10 times or maybe even more. If the time is made <u>too</u> small, the force suddenly becomes smaller and may even change sign.
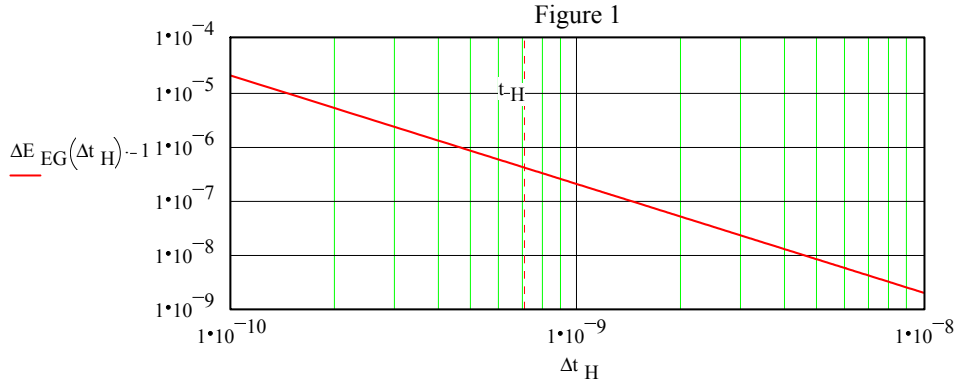
The derivative of the E_{Eg} **A** vector involving t_H with respect to t_H can be simplified as shown below.

$$E_{EG} = \frac{d}{dt_H} \left[(\mu_{o'}) \cdot \left[q_o \cdot (t_H)^{-1} \right] \right] \qquad \text{Simplifies to:} \qquad 95)$$

$$E'_{EG} := -\mu_o \cdot \frac{q_o}{t_H^2} \qquad\qquad E'_{EG} = -4.062050244017 \cdot 10^{-7} \cdot \frac{volt}{m} \qquad 96)$$

The time related to t_H can be made a variable and the output plotted as shown below.

$$\Delta t_H := 1 \cdot 10^{-10} \cdot sec, 1.1 \cdot 10^{-10} \cdot sec \,..\, 1 \cdot 10^{-08} \cdot sec \qquad \text{Then,} \qquad \Delta E_{EG}(\Delta t_H) := -\mu_o \cdot \frac{q_o}{\Delta t_H^2} \qquad 97)$$

Figure 1

The plot above is converted to a positive value by multiplying the output of the $\Delta E_{EG}(\Delta t_H)$ equation by -1 since the plot is in log scale and Mathcad would not allow a negative value to be plotted on a log scale. It is obvious that the output is increased by the inverse of the square of Δt_H as shown. Thus the output actually grows exponentially greater in the negative direction as the inverse square of the time related to Δt_H grows smaller. The point to be made here is that if an artificial field is created to simulate the mechanics of the quantum electrogravitational field interaction (**E**) X (**B**) target , adjusting for a smaller time interval parameter related to the electric field $\mathbf{E_{EG}}$ would intensify the total electrogravitational field interaction proportionally as related to the mechanics of the above equation 29 parameter, $\mathbf{S_{real}}$.

It is my contention that energy space is for all practical consideration a source of unlimited energy. Further, it is the same space that supplied the original Big Bang energy and continues to supply the necessary **refresh energies** which hold the electron and proton standing waves stable. The standing waves define the 'mass' of the proton and electron and are quantum waves related to the Compton wavelength. The external fields from the proton and electron have in themselves an infinite energy potential. This is by reason that if we view the field of either the proton or electron as surrounding the charge associated with the particle, the field may fill all of space over all possible time with field energy. This would require that the particle in question supply an amount of energy for the field that would be nearly infinite over all of time and space. This must be true in spite of the fact that the particle has a rest mass energy which is finite and much less in the extreme than its associated field energy.

I have proposed that the energy from energy space may be gated into the field of a particle as required to support the standing wave in the action of building the external field. A time pulse multiplied by an area may be used. However, another way of looking at normal space is to consider the possibility of space being constructed only of time vectors associated with a given velocity and therefore distance is established by considering that the 'measure' of distance arises from the passage of time multiplied by some constant velocity, such as the velocity of light in free space. Then time becomes the fundamental aspect of 'normal' or local space and distance is artificial, arrived at by allowing for the speed limit of local space to be set at the velocity of light. Thus, in our observations, distance equals velocity times time in the accepted fashion.

In eq. 27 above, the Poynting power vector was expressed in the units of mass per time cubed. It is of interest then that in a theoretical sense, it is possible to derive the mass of the proton and/or the electron by careful selection of only the time parameters related to the electric and magnetic fields associated with the Poynting power vector.

$$\text{Mass}_{TH} := \int_{0 \cdot \text{sec}}^{f_{LM}^{-1}} \int_{0 \cdot \text{sec}}^{f_{ELE}^{-1}} \int_{0 \cdot \text{sec}}^{f_{n1}^{-1}} S_{stdwv} \, dt_{LM} \, dt_{LM} \, dt_{LM} \tag{98}$$

$$\text{Mass}_{TH} = -9.110222667161 \cdot 10^{-31} \cdot kg \qquad \text{where,} \qquad m_e = 9.109389700000 \cdot 10^{-31} \cdot kg \tag{99}$$

Where the ratio: $\dfrac{1}{f_{ELE}^{-1} \cdot 4 \cdot \pi^2 \cdot f_{hfLM}} = -0.999908559351$ is very close to unity and contains the key frequencies f_{ELE} and f_{hfLM} as established above. (100)

Proton mass is: $\quad (\text{Mass}_{TH}) \cdot \left[\left(\dfrac{e}{\alpha} \right) \cdot \left(\dfrac{\pi}{4} \right) \cdot (2 \cdot \pi) \right] = -1.674664690659 \cdot 10^{-27} \cdot kg \quad$ where, (101)

$$(\text{Mass}_{TH}) \cdot \left[\left(\frac{e}{\alpha} \right) \cdot \left(\frac{\pi}{4} \right) \cdot (2 \cdot \pi) \right] \qquad \text{simplifies to} \qquad \frac{\text{Mass}_{TH}}{2} \cdot \frac{e}{\alpha} \cdot \pi^2 \tag{102}$$

Note: $\quad \left(\dfrac{e}{\alpha} \right) \cdot \left(\dfrac{\pi}{4} \right) \cdot (2 \cdot \pi) \cdot \left(\dfrac{m_e}{m_p} \right) = 1.001129048428$ **The natural number e, the square root of the golden ratio, the fine structure constant and pi are all present in this expression.** (103)

and $\quad \left(\dfrac{e}{\alpha} \right) \cdot \left(\dfrac{\pi}{4} \right) \cdot (2 \cdot \pi) = 1.838225861038 \cdot 10^3 \quad$ where, $\quad \dfrac{m_p}{m_e} = 1.836152755656 \cdot 10^3$ (104)

The salient point to be made by the above integration of the Poynting power energy related to the H1 radiation of the Hydrogen atom is that by integrating over properly chosen intervals of 'gate' times, one can create mass out of a field energy that in the beginning appears to be much less than is required for the respective particle rest mass energy. I am also saying that certain frequencies are the key frequencies to opening up the energy input from energy space and that the energy related to the H1 Poynting power is intimately connected to energy space. The possibility of mass creation also may explain in a rather direct form the reason why the negative energy and dark matter exist in our present day universe. Then there may be much more to the radiated H1 energy than meets the 'eye' capable of observation.

For the sake of comparison of the H1 S_{real} energy to rest mass energy of the electron and proton:

$$E_{Sreal} := h \cdot f_{H1} \qquad E_{Sreal} = 9.411715746760 \cdot 10^{-25} \cdot \text{joule} \tag{105}$$

$$E_e := m_e \cdot c^2 \qquad E_e = 8.187111168007 \cdot 10^{-14} \cdot \text{joule} \tag{106}$$

$$E_p := m_p \cdot c^2 \qquad E_p = 1.503278673200 \cdot 10^{-10} \cdot \text{joule} \tag{107}$$

Then the energy that makes up the electrogravitational equivalent mass ($Mass_{TH}$) may arise from integrated fields as shown by the three dimensional time integral above. It should be noted that in the integral with respect to time that derives the electrogravitational negative field mass ($Mass_{TH}$), the three vector 'times' are directly stated in terms of f_{LM}^{-1}, f_{ELE}^{-1} and f_{n1}^{-1} which are fundamental quantities as developed in the previous equations above.

Rest mass may be considered as a scalar mass formed up as standing waves of field energy supported by an input refresh pulse from energy space when necessary to support an external electric or magnetic field. Rest mass may also be considered to be *inertial mass* since there is a time lag to redefine or support the standing wave mass structure and its associated fields when that mass is moved through space-time from one position to another.

Electrogravitational mass on the other hand may be viewed as being created by the reaction integral (MassTH) involving three vectored times as shown above. For the case of ordinary gravitational reaction, as on the Earth or other ponderable masses, the required equivalent field mass is created at the time of reaction. This electrogravitational field mass is a vector, in deference to the inertial mass as defined immediately above. The horizontal components of electrogravitational mass field creation may involve f_{ELE} and f_{n1}, while the vertical component may involve f_{LM} only.

Thus, the mass formation required for the above mechanics of electrogravitation may result in what is considered as dark matter and even dark energy in the final result over extended time since the beginning of the universe. The field mass formed as described above may not have an associated external electric or magnetic field and thus appear invisible to ordinary electromagnetic radiation. It may however react and interact directly with other electrogravitationally formed field mass.

The derived mass $Mass_{TH}$ is formed from the triple integral of eq. 27, (S_{stdwv}), with respect to three distinct fundamental times. Namely, the electrogravitational time f_{LM}^{-1}, the f_{ELE}^{-1} and the f_{n1}^{-1} times with respect to the inverse of the related electrogravitational and H-1 atomic fundamental frequencies. The field power of S_{stdwv} is herein defined as existing throughout all of space as a standing wave of energy per unit time and area that can be released with the key frequencies as stated above. Utilizing the triple integral equation that creates mass from the S_{stdwv} field, it is possible to derive fundamental charge from basic principles as defined herein for the creation of mass of the electron and proton derived from the ubiquitous S_{stdwv} field.

$$q_e := \left(\sqrt{\frac{Mass_{TH} \cdot 4 \cdot \pi}{\mu_o}} \cdot l_q \right) \cdot i \qquad q_e = -1.602250581030 \cdot 10^{-19} \cdot coul \qquad \text{108)}$$

$$q_p := \left[\sqrt{\frac{\left(Mass_{TH} \cdot \frac{e}{\alpha} \cdot 2 \cdot \pi^3 \right)}{\mu_{o'}}} \cdot l_q \right] \cdot i^3$$

Note the multiplier of $2\pi^3$ under the radical which is related to torus volume of $Volume = 2\pi^3 r^3$. Also, the imaginary operator i is also cubed to arrive at positive real charge magnitude as shown below, 109)

where; $\quad q_p = 1.603154834965 \cdot 10^{-19} - 2.944850395588 \cdot 10^{-35} i \quad \cdot coul$ 110)

It is of interest that the S_{stdwv} field is also intimately related to the H-1 hyperfine radiation frequency of 1420 MHz by the three dimensional derivative with respect to time t_H of eq. 54 above in the more fundamental A vector Evec3 of eq. 58 above.

It was suggested above that field mass may be created that does not have an associated electric or magnetic field. It may also be possible that a charge may be created by the above process under the radical that does not have an associated mass. Further, there is the possibility of mass or charge creation that does not have the value of the known constants of mass and charge. These would be ephemeral to ordinary mass and charge but would have to be taken into account when calculating the total electrogravitational action.

It is also possible that the created charge and mass may exist in alternate times an thus change from one form to the other in alternating fashion. This describes neutrino action and in fact may be the process of neutrino mechanics as observed to occur.

In equations 56, 57 and 58 above it was presented that the action as well as the interaction that created the net electrogravitational reaction was accomplished via the proton in all three vector instances. Thus it is proposed herein that it is primarily the proton that creates the electrogravitational action as well as final reaction. Further, as was brought forth in a previous work, (see reference 3 on page 22 below), the proton may be considered as a free energy source as well as exhibiting a positive pressure wave.

Equation 56 also presents the action vector $AVec1_2$ as having the same units as Plank's constant h. It is of interest that the ratio of Plank's constant h to $AVec1_2$ times pi yields a number very close to the square root of the Golden Ratio which herein is taken as $4/\pi$.

$$\frac{h}{AVec1_2} \cdot \pi = 1.278527858363 \qquad \text{where,} \qquad \frac{4}{\pi} = 1.273239544735 \qquad \qquad 111)$$

The square root of the golden ration infers a direct relationship to a growing field which is also taken as a creation field.

Finally, in equations 109 and 110 above, the imaginary operator i is introduced to allow for real value magnitudes of charge. The operator i infers angular momentum which also infers spin. Thus charge may arise from a fundamental property connected with spin as shown in equations 109 and 110. Note that in equation 110, the imaginary operator is cubed and that the proton actually is composed of three quarks.

In conclusion, the deft manipulation of the general A-Vector field may allow for direct control of electrogravitational force as well as unlimited energy from the proton utilizing the appropriate timed pulsed frequencies as developed in the main body of this work.

Jerry E. Bayles

May 07, 2006

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