Quantum Electrogravitational Power Constant Dynamics

Chapter 5

This chapter presents the Poynting power vector examined in light of quantum electrogravitational formulas previously presented. The Poynting vector contains the **E** and **B** electric and magnetic fields 90 degrees to each other and also 90 degrees to the direction of travel.

First the constants of the equations to be used are stated below.

$c := 2.997924580 \cdot 10^{08} \cdot m \cdot sec^{-1}$	Free space velocity of light.
$\mu_o := 1.256637061 \cdot 10^{-06} \cdot henry \cdot m^{-1}$	Magnetic permeability.
$\varepsilon_o := 8.854187817 \cdot 10^{-12} \cdot farad \cdot m^{-1}$	Free space dielectric permittivity.
$V_{LM} := 8.542454612612 \cdot 10^{-02} \cdot m \cdot sec^{-1}$	Quantum electrogravitational velocity.
$q_o := 1.602177330 \cdot 10^{-19} \cdot coul$	Electron charge
$l_q := 2.817940920 \cdot 10^{-15} \cdot m$	Classic electron radius
$r_{n1} := 5.291772490 \cdot 10^{-11} \cdot m$	Bohr radius
$r_c := 3.861593223 \cdot 10^{-13} \cdot m$	Compton electron radius
$\alpha := 7.297353080 \cdot 10^{-3}$	Fine structure constant
$f_{LM} := 1.003224805 \cdot 10^{1} \cdot Hz$	Quantum electrogravitational frequency.
$t_{LM} := f_{LM}^{-1}$	Quantum electrogravitational time.

And also let us define two phase angles as;

$$\theta := \frac{\pi}{2} \qquad \phi := \frac{\pi}{2}$$

and the case for the quantum electrogravitational magnetic flux density **B** is stated as;

(171) $$B := \frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot l_q \cdot r_{n1}} \quad \text{or,} \quad B = 9.178257004950398 \cdot 10^{-3} \cdot tesla$$

which is the same as equation 82a, page 36, in chapter two. The Poynting power vector is given below in terms of B as:

(172) $$Smax := \frac{c \cdot B^2}{\mu_o} \qquad \text{or,} \qquad Smax = 2.009700163795925 \cdot 10^{10} \cdot watt \cdot m^{-2}$$

which gives the magnitude of **S** as being equal to the rate at which energy is being transported per unit cross-sectional area and the direction of **S** (the vector) is the direction of the wave itself. The electric field may be found by solving for **E** since **S** and **B** are given above by equation (173) below.

(173) $$E := \frac{Smax \cdot \mu_o}{B} \qquad \text{or,} \qquad E = 2.751572227669798 \cdot 10^{6} \cdot volt \cdot m^{-1}$$

which is related to the expression;

(174) $$S := \frac{E \cdot B}{\mu_o} \qquad \text{where,} \qquad S = 2.009700163795926 \cdot 10^{10} \cdot m^{-2} \cdot watt$$

note that;

(175) $$q_o \cdot V_{LM} = 1.368652712288088 \cdot 10^{-20} \cdot amp \cdot m$$

and;

(176) $$I_B := \frac{q_o \cdot V_{LM} \cdot \sin(\phi)}{l_q} \qquad \text{or,} \qquad I_B = 4.85692479417946 \cdot \mu A$$

(= Electrogravitational current constant through the hyperspace distance, l_q.)

where then;

(177) $$B' := \frac{\mu_o \cdot I_B \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}} \qquad \text{or,} \qquad B' = 9.1782570049504 \cdot 10^{-3} \cdot tesla$$

solving for Smax in terms of current/meter where, $S'max := Smax$;

(178) $$\frac{S'max \cdot \mu_o}{c} = \frac{\mu_o^{\,2} \cdot I_B^{\,2} \cdot \sin(\theta)^2}{\left(4 \cdot \pi \cdot r_{n1}\right)^2}$$

has solution(s)

(179) $$S'max := I_B{}^2 \cdot \frac{\sin(\theta)^2}{16 \cdot \pi^2 \cdot r_{n1}{}^2} \cdot \mu_o \cdot c$$ where

where, $S'max = 2.009700163795926 \cdot 10^{10} \cdot watt \cdot m^{-2}$

and where, $R_s := c \cdot \mu_o$ or, $R_s = 376.7303133310859 \cdot \Omega$

(= Free-space impedance.)

also, $$S''max := \left(I_B{}^2\right) \cdot R_s \cdot \frac{\sin(\theta)^2}{16 \cdot \pi^2 \cdot r_{n1}{}^2}$$

and thus, $S''max = 2.009700163795926 \cdot 10^{10} \cdot watt \cdot m^{-2}$

The above power in **S**`max is very large compared to expected quantum power levels at the Bohr radius of r_{n1}.

The formula for quantum power related to the electrogravitational least quantum velocity vector V_{LM} is given below in equation (180). First some more constants need to be defined however.

$h := 6.626075500 \cdot 10^{-34} \cdot joule \cdot sec$ $m_e := 9.109389700 \cdot 10^{-31} \cdot kg$

$$r_{LM} := \frac{h}{2 \cdot \pi \cdot m_e \cdot V_{LM}}$$ or, $r_{LM} = 1.355203610805924 \cdot 10^{-3} \cdot m$

$$L_Q := \frac{\pi \cdot \mu_o \cdot \left(r_{LM}{}^2\right)}{l_q}$$ or, $L_Q = 2.572983215823832 \cdot 10^{3} \cdot henry$

$$C_Q := \frac{4 \cdot \pi \cdot \varepsilon_o \cdot \left(r_{LM}{}^2\right)}{r_{n1}}$$ or, $C_Q = 3.86159328077506 \cdot 10^{-6} \cdot farad$

then;

(180) $$S_{LMmax} := L_Q \cdot \overbrace{\left(\frac{q_o}{t_{LM}}\right)}^{I_{LM}} \cdot \frac{1}{t_{LM}} \cdot \overbrace{\left(\frac{q_o}{t_{LM}}\right)}^{I_{LM}}$$ where, $$I_{LM} := \frac{q_o}{t_{LM}}$$

Then, And,

$S_{LMmax} = 6.668880003409421 \cdot 10^{-32} \cdot watt$ $\quad$ $I_{LM} = 1.607344039464671 \cdot 10^{-18} \cdot amp$

and also,

(181) $$R_Q := \frac{h}{{q_o}^2} \quad \text{or,} \quad R_Q = 2.581280587436064 \cdot 10^{4} \cdot ohm$$

or,

(182) $$P_Q := \left(\frac{q_o}{t_{LM}}\right)^2 \cdot R_Q \quad \text{or,} \quad P_Q = 6.668880009798361 \cdot 10^{-32} \cdot watt$$

Resolving equation (179) for max power to equations (180) and (182) quantum power;

(183) $$S_{QLM} := \left({I_B}^2\right) \cdot R_s \cdot \frac{\sin(\theta)^2}{16 \cdot \pi^2 \cdot {r_{LM}}^2} \cdot \left(2 \cdot r_c \cdot I_q\right) \quad \text{or,}$$

where,

$$S_{QLM} = 6.668879942072169 \cdot 10^{-32} \cdot watt \quad \text{and,} \quad \frac{S_{QLM}}{P_Q} = 0.999999989844443$$

The relationship of equation (183) above to Planks constant is established by the equation (184) below.

(Pc)

(184) $$h' := \left[\left({I_B}^2\right) \cdot R_s\right] \cdot \frac{\sin(\theta)^2}{16 \cdot \pi^2 \cdot {r_{LM}}^2} \cdot \left(2 \cdot r_c \cdot I_q\right) \cdot \left({t_{LM}}^2\right)$$

$h' = 6.626075432708512 \cdot 10^{-34} \cdot joule \cdot sec$ where the ratio of h to h\` is;

where, $\frac{h}{h'} = 1.000000010155557$

The equation in (184) above is similar to the equation (15) on page 9 where the macroscopic forms of field energy density times a **gate** consisting of area times time yielded the least quantum related output form. Note that r_{LM} instead of r_{n1} is used in the denominator of equation (184) above which suggests that the conversion process from the electromagnetic domain of the **S** poynting power vector to the quantum electrogravitational domain is reliant on the least quantum electrogravitational distance r_{LM}^2 as a surface interface that when multiplied by the area time gate ($2\, r_c\, l_q\, t_{LM}^2$) interfaces directly to the quantum Plank power constant, h.

Note also that there is a power constant expressed by the I^2R term in equation (184) above and its numerical constant result is shown in equation (185) below.

(185) $P_c := \left(I_B^2\right) \cdot R_s$ or, $P_c = 8.886962025439721 \cdot 10^{-9} \cdot \text{watt}$

(= Electrogravitational power constant through the hyperspace distance, l_q.)

where again, $I_B = 4.85692479417946 \cdot 10^{-6} \cdot \text{amp}$ from equation (176).

The quantum electrogravitational voltage constant through the hyperspace distance related to the power and current constants above is;

(186) $E_P := \sqrt{P_c \cdot R_s}$ or, $E_P = 1.829750799536748 \cdot \text{mV}$

where, $I_B = 4.85692479417946 \cdot \mu\text{A}$

and a quick check yields the product of E and I as;

(187) $P'_c := E_P \cdot I_B$ or, $P'_c = 8.886962025439721 \cdot 10^{-9} \cdot \text{watt}$

This power constant is a power kernel that may be tapped by the appropriate frequency differential pulse probe as examined on pages (66-68) previous in chapter 4. This power constant is also postulated as existing throughout all of space and the power kernel also embodies a constant force as will be shown later in eq. (196).

It may be of interest to relate the free space Poynting vector power expression to the electrogravitational expression where the electrogravitational expression is repeated below from equations (82a), (82b), & (83) of pages 36-37 previous.

(newton)^2 (henry/m)

(188) $$F_g := \left[q_o \cdot V_{LM} \cdot \sin(\phi) \cdot \left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot l_q \cdot r_{n1}} \right) \right]^2 \cdot \mu_o$$

where, $F_g = 1.982973075765094 \cdot 10^{-50} \cdot newton^2 \cdot \frac{henry}{m}$

and the Poynting vector power is presented below (as a rearranged form of equation (179)) in a form similar to equation (188) above.

(H) (H)

(189) $$Sc := \left(\frac{q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot l_q \cdot r_{n1}} \right) \cdot R_s \cdot \left(\frac{q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot l_q \cdot r_{n1}} \right)$$

The terms in parenthesis are equal to amp/meter = magnetic field strength, = (H) which is generally independent of the medium

or, $Sc = 2.009700163795926 \cdot 10^{10} \cdot watt \cdot m^{-2}$

where, $\left(\frac{q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot l_q \cdot r_{n1}} \right) = 7.303824859061991 \cdot 10^{3} \cdot amp \cdot m^{-1}$ (= (H) at r_{n1})

and both equation (188) and (189) above can be combined into the equation below for the electrogravitational expression containing the Poynting power vector and related constants in separate parenthesis.

r_{n1}

(weber) (newton/m^2) (weber)

(190) $$Fgp := \left(\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\phi) \right) \cdot \frac{Sc}{c} \cdot \left(\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\phi) \right)$$

where, $Fgp = 1.982973075765095 \cdot 10^{-50} \cdot m^{-2} \cdot newton \cdot weber^2$

and,

(191) $$gk := \left(\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\phi)\right)$$

note:

where, $gk = 1.719899721899381 \cdot 10^{-26} \cdot weber$ (volt x sec = weber)

Returning to equation (189) for the moment, it is of interest that the variable form of the Poynting vector power expression can be shown as equal to a power constant that is contained in the electrogravitational form as well as the electromagnetic form. This is shown below in equation (192).

(192) $$ScK := \overset{I_B}{\left(\frac{q_o \cdot V_{LM} \cdot \sin(\phi)}{I_q}\right)} \cdot R_s \cdot \overset{I_B}{\left(\frac{q_o \cdot V_{LM} \cdot \sin(\phi)}{I_q}\right)}$$

where, $ScK = 8.886962025439721 \cdot 10^{-9} \cdot watt$ (= a radiation power constant.)

and, from the above related equations in (186-187),

$P'_c = 8.886962025439721 \cdot 10^{-9} \cdot watt$ as a check.

Then utilizing the power constant in equation (192) above;

(193) $$Fgrav := \overset{(weber/m)}{\left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}}\right)} \cdot \overset{(newton)}{\left(\frac{ScK}{c}\right)} \cdot \overset{(weber/m)}{\left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}}\right)}$$

or, $Fgrav = 1.982973075765095 \cdot 10^{-50} \cdot newton \cdot weber^2 \cdot m^{-2}$

and, $Fgrav = 1.982973075765095 \cdot 10^{-50} \cdot newton^2 \cdot \frac{henry}{m}$ also.

where,

(194) $$gk_{rn1} := \left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}}\right)$$

or, $gk_{rn1} = 2.586378598852638 \cdot 10^{-17} \cdot \frac{weber}{m}$ (at r_{n1})

and checking dimensional units;

(195) $$gk_{rn1}{}^{2}\cdot\frac{ScK}{c} = 1.982973075765096\cdot10^{-50}\cdot newton\cdot\frac{weber^{2}}{m^{2}}$$

where, $ScK\cdot\frac{1}{16\cdot\pi^{2}\cdot r_{n1}{}^{2}} = 2.009700163795926\cdot10^{10}\cdot watt\cdot m^{-2}$ (at the Bohr radius.)

and, $ScK = 8.886962025439721\cdot10^{-9}\cdot watt$ = the universal electromagnetic / electrogravitational quantum constant of least power radiation.

Also, it may be of interest to note that there is now demonstrated a new force constant related to the connecting term of the power constant divided by the velocity of light in equation (193) above and that is shown below in equation (196).

(196) $$F_{GP} := \frac{ScK}{c} \qquad \text{or,} \qquad F_{GP} = 2.964371447076138\cdot10^{-17}\cdot newton$$

The force constant F_{GP} will also be ubiquitous to all of space and exist as part of the 'fabric' of space-time for all time.

Equation (193) above is a statement involving a product of potentials times a power constant which suggests that the electrogravitational interaction may be an interaction involving the product of magnetic vector potentials and a least quantum power constant of radiation. The dimensional units in equation (195) tend to suggest that magnetic potentials seem to be at the heart of the electrogravitational action mechanism. There is also an interesting facet involving a unit of dimension related to fluid mechanics that relates to the electrogravitational expression. This is called the **poiseuille** and the definition is given below as a quote from the McGraw-Hill Dictionary of Scientific and Technical Terms, Fifth Edition as;

"***poiseuille -*** *A unit of dynamic viscosity of a fluid in which there is a tangential force equal to one newton per square meter resisting the flow of two parallel layers past each other when their differential velocity is one meter per second per meter of separation; equal to 10 poise; used chiefly in France. Abbreviated Pl."*

The other unit, the **weber**, is defined as:

"**weber -** *The unit of magnetic flux in the meter-kilogram-second system, equal to the magnetic flux which, linking a circuit of one turn, produces in it an electromotive force of 1 volt as it is reduced to zero at a uniform rate in 1 second. Symbolized Wb."* (From the same source as the definition of the poiseuille.)

Then repeating equation (193) in equation (197) below;

$$\text{(197)}\qquad Fgrav := \overset{\text{(weber/m)}}{\left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}}\right)} \cdot \overset{\text{(newton)}}{\left(\frac{ScK}{c}\right)} \cdot \overset{\text{(weber/m)}}{\left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}}\right)}$$

and now the poiseuille is defined in terms of the poise as:

$$poiseuille := 10 \cdot poise$$

then; $\qquad Fgrav = 1.982973075765095 \cdot 10^{-50} \cdot weber \cdot volt \cdot poiseuille$

The units of gravity (electrogravitation) expressed in weber-volt- poiseuille directly implies the concept of induced potential linked to flowing parallel layers of flux and is also strikingly related to a facet of chaos theory involving chaos caused by viscosity when flow is pushed past the limit of local stability to bifurcation. It implies that gravity may exhibit chaotic action if the density of the local field were pushed high enough and the potential gradient were strong enough. This was explored in part in pages 43 to 47 of chapter three. The link to fluid mechanics by the equation in (197) previous is intriguing to say the least.

Other units resulting from further dimensional analysis of equation (193) can be illustrated as shown below as equation (198) below.

$$\text{(198)} \qquad Fgrav := \underbrace{\left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi}\right)}_{\substack{\Phi \\ \text{(weber)}}} \cdot \underbrace{\left(\frac{ScK}{c}\right)}_{\substack{F \\ \text{(newton)}}} \cdot \underbrace{\left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}^{\,2}}\right)}_{\substack{B \\ \text{(tesla)}}}$$

where,

$$Fgrav = 1.982973075765095 \cdot 10^{-50} \cdot weber \cdot newton \cdot tesla$$

and the units in parenthesis may be listed as follows for their values as;

$$\text{(199)} \qquad weber_{GK} := \left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi}\right)$$

or, $weber_{GK} = 1.368652711813313 \cdot 10^{-27} \cdot weber$ (= a constant.)

$$\text{(200)} \qquad newton_{GK} := \left(\frac{ScK}{c}\right) \quad \text{where} \quad ScK = 8.886962025439721 \cdot 10^{-9} \cdot watt$$

(= Equation (192))

or, $newton_{GK} = 2.964371447076138 \cdot 10^{-17} \cdot newton$

= a constant = eq. (196).

$$\text{(201)} \qquad \Delta tesla := \left(\frac{\mu_o \cdot q_o \cdot V_{LM} \cdot \sin(\theta)}{4 \cdot \pi \cdot r_{n1}^{\,2}}\right)$$

or, $\Delta tesla = 4.887546854556 17 \cdot 10^{-7} \cdot tesla$ (At r_{n1})

The above analysis of equation (198) by equations (199), (200), and (201) present the electrogravitational equation in the form of a constant weber unit times a constant involving a quantum power unit divided by the velocity of light (which produces a newton force constant) and finally the product of those two times a tesla unit whose strength is inversely proportional to the square of the action radius in the denominator and this net final product equals the quantum electrogravitational force.

The analysis clearly shows the electromagnetic nature of gravitation as well as the mechanics of the constituents in their contribution to the total electrogravitational action. Equation (199) is the quantum electrogravitational flux constant (weber), equation (200) is the quantum power-newton constant, and equation (201) is the quantum variable of magnetic induction (tesla) inversely proportional to the interaction radius squared. (Also tesla is known as the weber/meter^2 and is usually denoted by the capital letter B. Also the weber is denoted by the symbol Φ.) From the above the action can be said to flow like a fluid that contains a quantum magnetic constant and a quantum power constant with a magnetic induction strength inversely proportional to the square of the interaction distance.

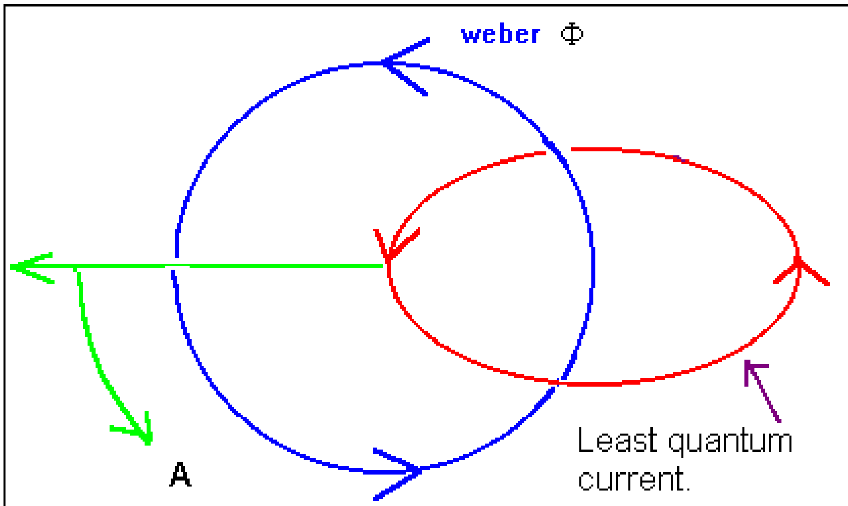
It may be of interest to ponder about whether or not the electrogravitational action has a quantum wave nature and the force is controlled by that wave from one point of interaction to another somewhat like an ordinary electromagnetic wave or if it has a medium of transport that is only a little like the electromagnetic wave or even if the action is not of the wave process at all. It may well be that it certainly has an energy density and thus an equivalent frequency in the quantum sense. Further, that energy equivalent frequency is most likely related to a packet mechanism, also in the quantum sense. Thus it is proposed that it can exhibit local wavelike properties at the point of action-reaction but may not travel from one point to another like an ordinary electromagnetic wave.

That is, the ScK/c portion representing the power constant of equation (192) divided by the free space velocity of light, (which further defines the quantum force constant in equation (196)), may exhibit local wave like properties. This is shown in equation (197) and (198) in its entire form. It is also postulated that in between local action points the electrogravitational energy flows in quantum packets of magnetic flux that over time appear to be continuously acting on all matter. **In other words the gravitational energy spends part of the time in hyperspace and part of the time in normal space.**

This is closely related to the wavefunction ψ as encountered in quantum mechanics. This wavefunction can be utilized in Schrodingers wave equation to arrive at the probability of where a particle is as well as its amplitude at any given time. This quantum concept will be examined fully in the last chapter where the vector magnetic potential is more fully examined in light of the work by David Bohm. His pioneering work on potentials related to wave mechanics has far reaching implications that are very close to my own work insofar as the non-local aspect of particle interaction at a distance is concerned.

The vector relationship of the electrogravitational constituents in equation (198) may well place the variable tesla at 90 degrees to the q_o*V_{LM} current and the force constant 90 degrees to the weber constant. Then the direction of potential would be 90 degrees to the weber constant and the variable tesla unit. This of course is a fourth dimensional unit not directly perceivable in normal three dimensional space. A likely mechanism showing three of the four action motions is shown next in figure 5. The fourth action will be left to the reader to imagine as being in hyperspace where all points in three dimensional space become one point.

Figure 5



The circulation of the least quantum current causes the flux in webers to form the shape of a torus which results in webers/meter squared, or tesla. The vector magnetic potential (A) follows the current.

The torus packet would appear as an expanding probability wave with three dimensional locations connected by four dimensional hyperspace.

Then in a partial sense, the electrogravitational action may well act at a distance instantaneously but the reaction result in normal space must be at a velocity less than the velocity of light in free space.

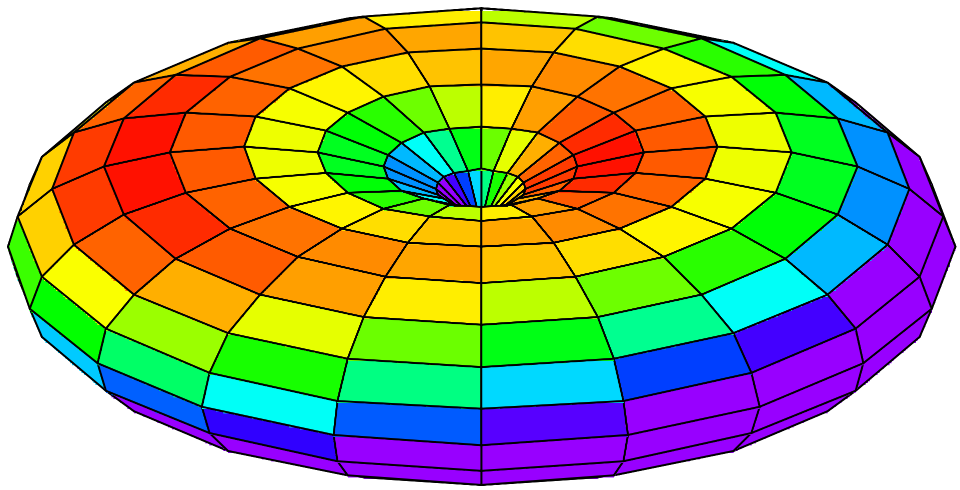
The resulting torus shape in three dimensions can be shown with the aid of Mathcads ability to plot parametric surface plots. In fact there exists in the Mathcad user guide the following useful and pertinent example. This is a static example. (Non-expanding.) First, the following parameters are established:

$a := 0..20 \qquad b := 0..20 \qquad r := 1 \qquad R := 1 \qquad \phi_a := \frac{2\cdot\pi\cdot a}{20} \qquad \theta_b := \frac{2\cdot\pi\cdot b}{20}$

$X_{a,b} := \left(R + r\cdot\cos\left(\theta_b\right)\right)\cdot\cos\left(\phi_a\right) \qquad Y_{a,b} := \left(R + r\cdot\cos\left(\theta_b\right)\right)\cdot\sin\left(\phi_a\right)$

$Z_{a,b} := r\cdot\sin\left(\theta_b\right)$ See plot #7 on page 103 next.

Plot #7



X , Y , Z

The above is from page 425 of the Mathcad 5.0+ manual.

The outside surface of the torus is the variable tesla component inversely proportional to the area at some instant of time and is step-expanding outwards at a rate directly proportional to time. The area of a torus at r_{n1} is given below in eq. (202).

(202) $A_T := 4 \cdot \pi^2 \cdot r_{n1}{}^2$ where, $A_T = 1.105508446674703 \cdot 10^{-19} \cdot m^2$

This is equivalent to linking two wavelengths through each other and then rotating and expanding them at the same time.

Returning to equation (192), the concept of a radiation power quantum constant is important in the sense that it must be ubiquitous to all matter or radiation. It is making the statement for a power that can be tapped if the proper control probe frequencies are applied. The power constant eq. in (192) is repeated in equation (203) below.

Restoring the initial phase angle definitions, $\theta := \frac{\pi}{2}$ $\phi := \frac{\pi}{2}$

Then,

(203) $$ScK := \left(\frac{q_o \cdot V_{LM} \cdot \sin(\phi)}{I_q}\right) \cdot R_s \cdot \left(\frac{q_o \cdot V_{LM} \cdot \sin(\phi)}{I_q}\right)$$

where, $ScK = 8.886962025439721 \cdot 10^{-9} \cdot watt$

Since power is energy per unit time then a time product with the ScK power above that would equal the least quantum electrogravitational energy quantum is derived below in equation (204).

where, $E_{LM} := h \cdot f_{LM}$ or, $E_{LM} = 6.647443301402777 \cdot 10^{-33} \cdot joule$

then,

(204) $$t_{ScK} := \frac{E_{LM}}{ScK}$$ or, $t_{ScK} = 7.479995168623291 \cdot 10^{-25} \cdot sec$

the maximum energy in electron volts related to t_{ScK} is solved for below in equation (205). (Derived from Heisenbergs uncertainty principle h = E x T and electron volts = energy / q_o.)

where, $Gev := 1 \cdot 10^9 \cdot volt$ then:

(205) $$eV_g := \frac{h}{q_o \cdot t_{ScK}}$$ or, $eV_g = 5.528973142799933 \cdot Gev$

The equation in (205) above may suggest the existence of a quasi-particle that ordinarily is invisible but can make itself felt gravitationally and perhaps in some way electromagnetically or through the weak force. The ratio of the energy in electron volts of the proton by comparison is given below.

where, $m_p := 1.672623100 \cdot 10^{-27} \cdot kg$

then, $eV_p := \dfrac{m_p \cdot c^2}{q_o}$ or, $eV_p = 9.382723404280287 \cdot 10^8 \cdot volt$

or,

(206) $qVratio := \dfrac{eV_g}{eV_p}$ and $qVratio = 5.892716756712322$

Equation (206) suggests the expectant mass of the quasi-particle carrying the constant power ScK to be equal to the mass of the proton times the ratio in equation (206).

then,

(Electrograviton and/or Higgs boson?)

(207 $M_{ScK} := m_p \cdot qVratio$ or, $M_{ScK} = 9.856294169034111 \cdot 10^{-27} \cdot kg$

It is postulated here that the M_{Sck} quasi-particle may be likened to the H^o (Higgs) boson if not at times the same. Then the link for a connection particle between the electromagnetic, electroweak, and the electrogravitational force-action may be embodied in the above constant power particle in equations (205), (206), and (207). Further, the ScK power constant may be complex constant power in the sense that if it were terminated into a proper conjugate load it would supply that power to the load indefinitely. (Definitely food for thought.)

It is of interest that the force constant of ScK divided by c (which was presented by equation (196)) further divided by the mass of the M_{Sck} particle is shown to yield the quantum electrogravitational acceleration constant A_{em} which was first presented as equation (56) on page 22.

This is shown in equation (208) next.

(208) $$A_{LM} := \frac{F_{GP}}{M_{ScK}} \qquad \text{or,} \qquad A_{LM} = 3.007592302175207 \cdot 10^{9} \cdot m \cdot sec^{-2}$$

and, $$A_{em} := c \cdot f_{LM} \qquad \text{or,} \qquad A_{em} = 3.007592302175207 \cdot 10^{9} \cdot m \cdot sec^{-2}$$

where the two accelerations are shown to be identical.

The electrogravitational equation in (198) above may provide some clue to how the ScK power constant particle may be induced to make an appearance. The generation of the appropriate weber and tesla field interaction by quantum means would likely create the connection particle ScK. Thus control of an electrogravitational field as well as creating a tap into a limitless power source is a possible result of the correct application of a system of interacting magnetic fields on a quantum scale.

In order that the electrogravitational equation may be applied to the macroscopic scale with the proper force sign a small change may be made to the action-reaction angle for ϕ in equation (203) above. This is accomplished in equation (209) below as well as some scaling for the proper force magnitude by reason of mass ratios of the individual masses being considered to the mass of one electron. The total force being considered will be for a one kilogram mass at the surface of the Earth and the ratio of the total mass of the Earth to one electron will represent the #1 multiplier and the mass of one kilogram to one electron will represent the #2 multiplier. Also the ScK constant power function will then become a sum total of the multiples of the mass of an electron that will equal the #1 multiplier with the product of the sum total of the multiples of the mass of one electron that will equal the #2 multiplier. Let the following constants be established for input:

Earth mass | Surface body mass

$M1 := 5.98\cdot 10^{24}\cdot kg$ $\qquad$ $M2 := 1\cdot kg$

$R1 := \frac{M1}{m_e}$ $\qquad$ $R2 := \frac{M2}{m_e}$

$\phi 1 := \frac{\pi}{2}$ $\qquad$ $\phi 2 := -\frac{\pi}{2}$ (conjugate angle of interaction)

(209) $$ScK' := \overbrace{\left(\frac{q_o\cdot V_{LM}\cdot \sin(\phi 1)}{l_q}\right)}^{I_{B1}}\cdot R_s\cdot \overbrace{\left(\frac{q_o\cdot V_{LM}\cdot \sin(\phi 2)}{l_q}\right)}^{I_{B2}}$$

and, $ScK' = -8.886962025439721\cdot 10^{-9}\cdot watt$

thus, $Smac := R1\cdot R2\cdot ScK'$ or, $Smac = -6.404363079308414\cdot 10^{76}\cdot watt$

Now include a statement for the radius of the Earth and then apply equation (198) to yield the electrogravitational force.

or, $r_E := 6.37\cdot 10^{6}\cdot m$

(210) $$F1grav := \overbrace{\left(\frac{\mu_o\cdot q_o\cdot V_{LM}\cdot \sin(\theta)}{4\cdot \pi}\right)}^{\substack{\Phi \\ \text{(weber)}}}\cdot \overbrace{\left(\frac{Smac}{c\cdot r_E^{\,2}}\right)}^{\substack{\text{total quantum} \\ \text{pressure} \\ \text{(Pascal)}}}\cdot \overbrace{\left(\frac{\mu_o\cdot q_o\cdot V_{LM}\cdot \sin(\theta)}{4\cdot \pi}\right)}^{\substack{\Phi \\ \text{(weber)}}}$$

or, $F1grav = -9.861952401350994\cdot Pa\cdot weber^2$ (The negative power = an energy / time sink.)

and,

(211) $Press' := \left(\frac{Smac}{c\cdot r_E^{\,2}}\right)$ or, $Press' = -5.264733323319333\cdot 10^{54}\cdot Pa$

Compare eq. (210) with the standard gravitational force in equation (212) below.

where, $G := 6.672590000\cdot 10^{-11}\cdot newton\cdot m^2\cdot kg^{-2}$ then,

(212) $Fstandard := \frac{-G\cdot M1\cdot M2}{r_E^{\,2}}$ or, { A (-) force is one of attraction.}

where, $\quad F_{standard} = -9.833695575561464 \cdot newton$

The forces are very nearly equal and note that the standard gravitational force equation does not include the total quantum electrogravitational mechanism. Equation (209) and (211) yielded a very large power and pressure respectively and both are moderated by the volt x time of the weber function as equation (213) shows below.

(213) $\quad \Phi := E_P \cdot t_{ScK} \quad$ or, $\quad \Phi = 1.368652714031948 \cdot 10^{-27} \cdot weber$

The time t_{Sck} ,when used as a multiplier to form a time-gate much like the one established by equation (184) previous, will scale the large magnitudes of equation (209) and (211) to much smaller values. This is shown in equation (214) below.

where, $\quad t_{ScK} = 7.479995168623291 \cdot 10^{-25} \cdot sec$

and $\quad E_P = 1.829750799536748 \cdot 10^{-3} \cdot volt \quad$ then,

(214) $\quad \Phi \cdot Press' \cdot \Phi = -9.861952433324145 \cdot Pa \cdot weber^2 \quad$ (= F1grav above.)

The time-gate rations out the very large magnitudes associated with hyperspace to values or magnitudes that we are accustomed to in our three dimensional space. It is as if our space receives its portion out of the energy that serves as the input source for many universes like ours. It may be likened to a four dimensional Nautilus shell where there are a great many compartments, only in the case of our universe, the compartment is our known three dimensional space. This is a version of the many worlds of quantum mechanics.

The negative ScK power constant can be examined for the time-gate value as in equation (204) for equation (215) next.

(215) $t'_{ScK} := \frac{E_{LM}}{ScK'}$ or, $t'_{ScK} = -7.479995168623291 \cdot 10^{-25} \cdot sec$

therefore, $M'_{ScK} := \frac{h}{t'_{ScK} \cdot c^2}$ or, $M'_{ScK} = -9.856294169034111 \cdot 10^{-27} \cdot kg$

The negative mass term in equation (215) above implies a negative energy aspect to the electrogravitational action mechanism which of course would also account for gravity being a force of attraction since at the interaction point the momentum would also be negative or towards the incoming electrograviton which is the $M`_{Sck}$ particle above in equation (215). As a check on the mechanics, equation (213) is stated in terms of negative time below in equation (216).

(216) $\Phi' := E_P \cdot t'_{ScK}$ or, $\Phi' = -1.368652714031948 \cdot 10^{-27} \cdot weber$

then,

(217) $\Phi' \cdot Press' \cdot \Phi' = -9.861952433324145 \cdot weber^2 \cdot Pa$ which is equivalent to:

$\Phi' \cdot Press' \cdot \Phi' = -9.861952433324145 \cdot newton^2 \cdot \frac{henry}{m}$ (= F1grav in (210))

The negative weber units are a direct result of the negative time unit of eq. (215).

The time $t`_{Sck}$ may be related to a relativistic expression concerning the time-gate becoming larger with an increase of relative velocities between electrogravitationally interacting systems or particles.

let $Vrel := 2 \cdot 10^8 \cdot m \cdot sec^{-1}$ thus, $t''_{ScK} := \frac{t'_{ScK}}{\sqrt{1 - \frac{Vrel^2}{c^2}}}$

then, the new flux value will be;

(218) $\Phi'' := E_P \cdot t''_{ScK}$ or, $\Phi'' = -1.837258464081576 \cdot 10^{-27} \cdot weber$

thus, $F1rel := \Phi'' \cdot Press' \cdot \Phi''$ or, $F1rel = -17.77120559300159 \cdot weber^2 \cdot Pa$

It is demonstrated by equation (218) above that the force of gravity will increase by a factor of $(\Phi``)^2$. This also applies to equation (212) for Fstandard where M1 and M2 will be relativistically affected since neither can be considered the absolute frame of reference.

It is also demonstrated that the antiparticle for M_{ScK} of equation (207) is developed in equation (215) as $M`_{ScK}$ which is identical in mass but opposite in mass or energy sign.

The final equation that brings it all together as the force of electrogravitation equivalent to the normal force of gravitation encompassing the case for the inclusion of relativistic effects between relative observers is shown below.

Let; $v_x := 1 \cdot m \cdot sec^{-1}$ and $\Gamma := \sqrt{1 - \frac{{v_x}^2}{c^2}}$

then,

(219) $Fg_{rel} := \frac{\Phi'}{\Gamma} \cdot Press' \cdot \frac{\Phi'}{\Gamma}$ or, $Fg_{rel} = -9.861952433324145 \cdot weber^2 \cdot Pa$

where $\Phi`$ was defined previously by eq. (209), (215), and (216) and Press` was defined by eq. (209) and (211).

Thus it can be postulated that the actual mechanics of gravitation that is hidden behind the veil of the contemporary understanding of gravitation contains the secret to a power source that is cleaner and by far more vast than fission or fusion power can ever expected to be. Perhaps the stars are just around the quantum corner.