Electrogravitational Energy Resonance
As A Vertical Energy Ladder To Space

- by -
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August 01, 2002

Abstract: My postulate concerning the mechanics of gravity is that gravity is the result of a non-local action which then engenders a local reaction. That is, the gravitational action is instantaneous while the resultant reaction must be viewed in our local space in relativistic terms. The action is related to a standing wave that defines mass on a quantum scale which is not quite a perfect standing wave. The result is an energy that relates to a constant offset in distance per unit time, or a quantum velocity constant. This of course relates to a quantum mass low energy constant which can be related to Planks E = hf.

Some critics have said, "it has not been observed that this frequency exists." My answer is that if we have a small difference in an electrical standing wave between the forward velocity and the reflected return velocity, there is radiation of an electromagnetic wave as a result. An electromagnetic wave is detectable by conventional methods such as radio reception into a tuned circuit. However, a slight difference between the forward and reflected wave of a matter wave would have purely quantum results insofar as detectable radiation is concerned. That is, the quantum result would be non-local transfer of energy while the electrical energy radiation is via the electromagnetic wave process which is by definition at the speed of light in free space. The first is non-detectable by electromagnetic reception processes while the second is detectable.

As an example, the generation of a photon or electromagnetic wave radiation occurs as a result of a velocity differential of electric charge, which amounts to accelerating the charge. For the non local quantum energy that is responsible for the gravitational action, it is a quantum space/time differential that yields a constant velocity. A constant velocity does not radiate an electromagnetic wave. It generates a magnetic field such as would be generated by an ordinary electromagnet.

This constant velocity related to the standing wave that defines electron mass has an energy equivalent and thus can be related to Plank's statement for energy E = hf where E is energy, h is Plank's constant and f is the quantum frequency, which herein, is not considered as an electromagnetic frequency, but more related to a loss frequency such as energy spreading or entropy would be associated with. Then the energy that drives the gravitational action force is work being done and thus gravity cannot be considered purely as a static field. In fact, it is my contention that there is no such thing as a static field, even when affected systems of particles or individual particles are at rest relative to each other. There is always energy 'flowing' between particles affected by each other, through their non local quantum space structure and returning through external fields via their external local space structure.

For many years an idea has been repeatedly occurring to me that the energy at a given point in the gravitational field of a large mass such as the Earth should have an energy that could be related to and made resonant with the quantum energy that defined the basic energy of the gravitational action, always a constant quantum of energy. In chapter 1 of my book "Electrogravitation AS A Unified Field Theory', I presented an equation that had the basics such as acceleration of the gravitational field as well as time in the macroscopic as well as quantum sense, but until I was able to derive the 'quantum frequency' related to quantum electrogravitational energy that defined by the energy in the quantum gravitational action, it was an equation in two unknowns of time. I present below the solution to where we can expect to resonate the quantum action of gravity with the energy in the gravitational field at an arbitrary point vertically above the surface of the Earth. In equations 6, 7, 8, and 9, I relate the acoustic frequencies that correspond to the cross length distances of the corbelled Grand Gallery of the Great Pyramid at Giza to physical distances along the gravitational gradient of the Earth.. Acoustic frequencies are those that vibrate atoms of air and thus are moving mass in a quantum sense. Then sound waves in air can be expected to interface with the gravitational quantum action for the purpose of resonance when coupled with an electric field in cross-product fashion. Thus, control of the correct acoustic as well as electrical frequencies will raise or lower a craft according to the the frequency employed.

Main Paper:

I have presented in previous papers the concept of acoustic (or sound) frequencies being mixed with electrical potentials at the same frequencies to obtain a cross-product vector that is 90 degrees to both the sound nonlinear gradient and the electrical nonlinear gradient directions. If both the nonlinear sound gradient and the nonlinear electrical gradient are moving horizontally to the surface of the Earth, the resulting cross product nonlinear energy gradient will be in a perpendicular direction to the Earth's surface. This principle may be applied to the mechanics of a tornado as well as the energy gradient associated with the Great Pyramid at Giza, Egypt.

First, the acoustic frequencies associated with the Grand Gallery in the Great Pyramid will be developed for analysis purposes. Then I will develop a formula that relates sound frequencies to quantum energy equation $E_{LM} = h*f_{LM}$ where f_{LM} is the quantum constant entropic energy loss frequency developed in my book, "Electrogravitation As A Unified Field Theory", available on-line at my website titled Electrogravitational Mechanics at http://www.electrogravity.com.

From the equation that ties the macroscopic to the quantum energies, I develop distances related to the Great Pyramid that relate to each acoustic frequency in the Grand Gallery. These vertically related energy steps could be used by a craft that matched the frequencies of each step in ascending order to launch the craft into space.

First, we determine the velocity of sound in the air of the Grand Gallery that will yield 1/2 the Kings Chamber resonant frequency of 438 Hz when the Earth's Schumann frequency of 7.83 Hz is multiplied by 28 equal distance intervals up the gallery length. The gallery length is 153 feet. Multiplying this by the Schumann frequency of 7.83 Hz yields the required velocity of sound that will yield one wavelength of the 7.83 Hz Schumann frequency.

Or: $v := 7.83\cdot(153)$ $v = 1.19799\cdot 10^{3}$ where the result is in feet per second. 1)

Next we solve for the required air temperature by means of the standard known formula below.

We rearrange $v = 49\cdot\sqrt{459.4 + F}$ to solve for F, the temperature in degrees Farenheit. 2)

Or: $F := -459.4 + 4.1649312786339025406\cdot 10^{-4}\cdot v^{2}$ thus $F = 138.342623948355$ deg. F.

This temperature rise above 72 degrees ambient may be expected during operation of the pyramid which may have been using Hydrogen gas explosions generated in the Queens chamber to provide acoustic shock waves to begin the process of amplifying the energy of the Earth frequencies such as the Schumann frequency.

Next, since there are open 28 intervals of distance marked out by 27 floor recesses in the Grand Gallery, dividing the length of the Gallery by 28 will give the wavelength of each interval.

Or: $\lambda_I := \frac{153}{28}$ $\lambda_I = 5.464285714285714$ in ft. 3)

The frequency relate to the interval above is: $f_I := \frac{v}{\lambda_I}$ $f_I = 219.24$ Hz 4)

The above frequency in Eq. 4 is almost exactly equal to 1/2 the resonance frequency of the Kings Chamber coffer of 438 to 440 Hz.

Or: $2 \cdot \left(f_I\right) = 438.48$ Hz 5)

Next, the frequencies associated with the air velocity of sound and the cross-dimensions of the corbelled Grand Gallery are calculated.

$N := 0, 3 .. 21$ Change of width of gallery corbels in inches = 3. Also, let: $\Phi := \frac{1+\sqrt{5}}{2}$

$$f(N) := \frac{v}{\left(\frac{62 - N}{12}\right)}$$

The bottom of the Gallery is 62 inches wide and the top is 41 inches in 7 steps of 3 inches each.

$f(N)$

231.8690322580645
243.6589830508474
256.7121428571429
271.2430188679245
287.5176
305.8697872340426
326.7245454545455
350.6312195121951

This agrees with actual calculator values based on dimensions of the gallery width. The steps do not follow the power law of musical scales such as the notes per octave of a piano that uses the equal tempered scales based on notes where the present note times $2^{\frac{n}{12}}$ is the next higher note n.

The difference between the two lower end frequencies is 1/2 the difference between the two high end frequencies.

The equation I develop next was presented briefly in my book above in Chapter 1.

Quantum energy is given by Planks expression as E = hf where f is the differential frequency developed in an energy transition denoted by the differential energy E and h is planks constant. Newton's expression for force resulting from acceleration of a mass is given as F = m*a where mass is m and a is acceleration. A related expression gives the distance (d) a body travels in the time (t) given the acceleration (a), or d = 1/2 a*t2 . I will drop the 1/2 term in the d expression since it is not needed for this discussion as it refers to average distance.

Then: $h \cdot f = (m \cdot a) \cdot \left(a \cdot t^2\right)$ which sets the plank energy on the left of the equal sign equal to force times distance associated with acceleration on the right. 6)

We can solve Newton's gravitational equation for acceleration of the electron m related to radius distance from the Earth where large M is the mass of the Earth as:

$m \cdot a = \frac{G \cdot m \cdot M}{r^2}$ which is then expressed as $a = \frac{G \cdot M}{r^2}$ 7)

On the next page we combine the immediate above three equations for r.

Combining expressions, we have:

$$h\cdot f = \left[m\cdot\left(\frac{G\cdot M}{r^2}\right)\right]\cdot\left[\left(\frac{G\cdot M}{r^2}\right)\cdot t^2\right] \text{ simplifies to } \quad h\cdot f = m\cdot G^2\cdot\frac{M^2}{r^4}\cdot t^2 \quad \text{and then} \qquad 8)$$

we solve for r since h*f is a constant for each electron being considered. This is by reason that gravity works on the smallest quantum particles to achieve on a macroscopic scale what we have in the past perceived to be only a large scale action. Also, t is the inverse of each of the frequencies in the Grand Gallery.

Solving for r, $h\cdot f = m\cdot G^2\cdot\frac{M^2}{r^4}\cdot t^2$ has solution(s) 9)

$$\begin{bmatrix} m^{\left(\frac{1}{4}\right)}\cdot\sqrt{G}\cdot\sqrt{M}\cdot\dfrac{\sqrt{t}}{\left[h^{\left(\frac{1}{4}\right)}\cdot f^{\left(\frac{1}{4}\right)}\right]} \\ -m^{\left(\frac{1}{4}\right)}\cdot\sqrt{G}\cdot\sqrt{M}\cdot\dfrac{\sqrt{t}}{\left[h^{\left(\frac{1}{4}\right)}\cdot f^{\left(\frac{1}{4}\right)}\right]} \\ i\cdot m^{\left(\frac{1}{4}\right)}\cdot\sqrt{G}\cdot\sqrt{M}\cdot\dfrac{\sqrt{t}}{\left[h^{\left(\frac{1}{4}\right)}\cdot f^{\left(\frac{1}{4}\right)}\right]} \\ -i\cdot m^{\left(\frac{1}{4}\right)}\cdot\sqrt{G}\cdot\sqrt{M}\cdot\dfrac{\sqrt{t}}{\left[h^{\left(\frac{1}{4}\right)}\cdot f^{\left(\frac{1}{4}\right)}\right]} \end{bmatrix}$$

We immediately see that not only do we have the possibility of both positive and negative values of r but positive and negative values of imaginary values of r are also possible.

$G := 6.672590000\cdot 10^{-11}\cdot newton\cdot m^2\cdot kg^{-}$ (Gravitational Constant

$M := 5.98\cdot 10^{24}\cdot kg$ (Earth mass.)

$m_p := 4.80808\cdot 10^{9}\cdot kg$ (Pyramid mass)

$h := 6.626075500\cdot 10^{-34}\cdot joule\cdot sec$ (Planks constant)

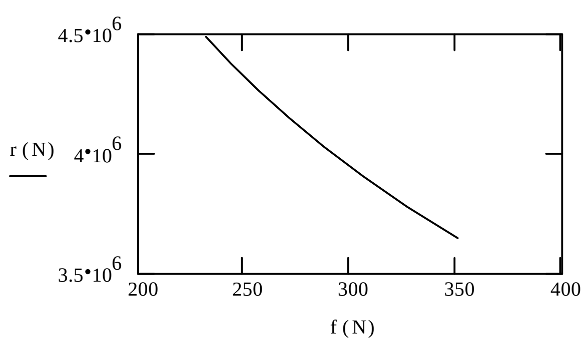
$f := 1.003224805\cdot 10^{01}\cdot Hz$ (My Electrogravity Constant)

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

We now let m_e stand for m where m_e is the mass of one electron.

$t(N) := \frac{1}{f(N)}\cdot sec$ Selecting a positive value for r:

$$r(N) := m_e^{\left(\frac{1}{4}\right)}\cdot\sqrt{G}\cdot\sqrt{M}\cdot\frac{\sqrt{t(N)}}{\left[h^{\left(\frac{1}{4}\right)}\cdot f^{\left(\frac{1}{4}\right)}\right]}$$



r (N)
$4.488333274956372\cdot 10^{6}\cdot m$
$4.378398218743846\cdot 10^{6}\cdot m$
$4.265630825179079\cdot 10^{6}\cdot m$
$4.149800201399657\cdot 10^{6}\cdot m$
$4.030642267226815\cdot 10^{6}\cdot m$
$3.907852666257262\cdot 10^{6}\cdot m$
$3.781077602482218\cdot 10^{6}\cdot m$
$3.64990180837942\cdot 10^{6}\cdot m$

Multiplying r(N) by Φ puts r(N) range bracketing the Earth's actual radius of 6.37 * 10^6 m.

In the above solution for r, where the Grand Gallery corbelle distance related frequencies are used for finding the distance from the center of the Earth that equals the energy of the quantum electrogravitational constant energy, r is seen to be less than the actual radius of the Earth, r_E. However, lower frequencies will increase the radius value. In fact, I propose that the Grand Gallery was capable of downscaling the base frequencies shown above through a range multiplier equal to 1/2 raised sequentially from a power of 1 to a power of 27, which is the number of intervals along the Gallery floor marked off by recesses designed to hold something in place.

Christopher Dunn, in his book "The Giza Powerplant" suggested that resonators were in place along the gallery floor which tuned the gallery to multiples of its base frequencies. I suggest that downscaling was possible as well as upscaling. If we raise 1/2 to a power of 27, we move (r) out to a distance of $5.2 * 10^{10}$ meters. This is over $3.2 * 10^7$ miles from the center of the Earth.

The acoustic motion of the air inside the pyramid chambers is the nonlinear quantum mass-energy aspect of motion while a transverse electric field is the nonlinear electrical energy aspect so that both of these motions and gradients are 90 degrees to each other and horizontal to the surface of the Earth. The cross-product of the two motions of non linear energy gradients yields the vertical energy gradient capable of interacting directly with the gravitational field of the Earth below the pyramid and the space above it when the acoustic frequencies inside the pyramid are low enough.

The purpose of this paper is thus to connect my concept of the quantum electrogravitational constant energy equal to planks constant times my derived quantum least energy differential related frequency f_{LM} to the macroscopic world via Newton's gravitational equation and his law of accelerated motion expressed by force being equal to mass times local acceleration. The end result of combining these equations is expressed by Eq. 8, 9, and 10.

Thus, a resonance or phase adjustment near resonance at a point in the Earth's gravitational field along a radius line will be a gravitational control point for a craft that while at that point the craft may use gravitational resonance to draw energy from the gravitational field and if the acoustic frequency that determines that gravitational resonance point is changed, the point will move, moving the craft with it.

As a result, we are solving for a radius from the center of the Earth that will yield the same energy as my electrogravitational energy constant equal to $E_{LM} = h*f_{LM}$. The resultant solution gives the exact point along the radius line r where the energy related to the Great Pyramids Grand Gallery calculated frequencies yield the same electrogravitational quantum energy constant. It establishes a gravitational connection point between the quantum electrogravitational constant for the electron to a fixed point in space related directly to a specific fundamental frequency of the dynamic geometry of the pyramid.

If we were in a craft that could match the exact rate of electrogravitational delta energy constant in the manner of the pyramid analysis above, changing the acoustic frequency might move the craft to a point in space that resonated with the electrogravitational energy constant at that point primarily established by the energy of the Earth's gravitational field.

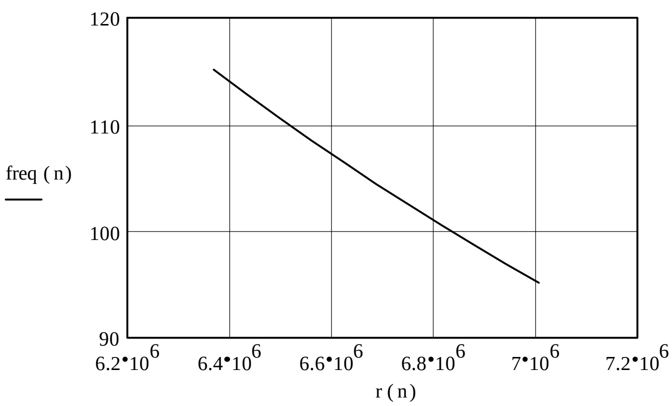
If we solve Eq. 9 for t in terms of r, the exact frequency of cross product action will be revealed for any distance along the gravitational action line of the Earth's radius.

$$h \cdot f = m \cdot G^2 \cdot \frac{M^2}{r^4} \cdot t^2 \quad \text{has solution(s)} \quad \begin{bmatrix} \dfrac{-1}{\left[\sqrt{m} \cdot (G \cdot M)\right]} \cdot r^2 \cdot \sqrt{h} \cdot \sqrt{f} \\ \dfrac{1}{\left[\sqrt{m} \cdot (G \cdot M)\right]} \cdot r^2 \cdot \sqrt{h} \cdot \sqrt{f} \end{bmatrix} \qquad 10)$$

Choosing the positive part for analysis of the frequency related to Earth radius and solve for frequency directly by inverting the time solution above, we start at the surface of the Earth and move upwards by the n multiplier below.

$r_E := 6.37 \cdot 10^{06} \cdot m \qquad n := 1.00, 1.01 .. 1.10 \qquad r(n) := r_E \cdot n$

$$freq(n) := \left[\frac{1}{\left[\sqrt{m_e} \cdot (G \cdot M)\right]} \cdot r(n)^2 \cdot \sqrt{h} \cdot \sqrt{f} \right]^{-1} \qquad 11)$$



freq (n)
$115.1155729807815 \cdot sec^{-1}$
$112.8473414182741 \cdot sec^{-1}$
$110.6454949834501 \cdot sec^{-1}$
$108.5074681692727 \cdot sec^{-1}$
$106.4308182144799 \cdot sec^{-1}$
$104.4132181231578 \cdot sec^{-1}$
$102.4524501430949 \cdot sec^{-1}$
$100.5463996687758 \cdot sec^{-1}$
$98.69304953770701 \cdot sec^{-1}$
$96.8904746913403 \cdot sec^{-1}$
$95.13683717419951 \cdot sec^{-1}$

At the Earth's surface, the vehicle's frequency of the cross-product of the horizontal nonlinear electric and acoustic energy vectors 90 degrees to each other and parallel to the surface of the Earth starts at 115.115 Hz (to match the Earth's frequency) and decreases as the radius distance from the surface of the Earth increases. Then as the frequency lowers, the altitude raises so that the energy $E_{LM} = h*f_{LM}$ in the rising point of resonance stays constant.

The rise in altitude for the range of radius due to frequency change shown above is equal to 800,000 meters, or about 497 miles. This suggests that the frequency must be held to a very stable value to keep the craft from bouncing around. Again, it (the craft) is riding in a resonance bubble equal in energy to electron electrogravitational energy times all electrons the resonance is interacting with. We are surfing on a whole system of electrons in the affected vehicle.

If we look at the range of frequencies comprising the Grand Gallery calculations just below Eq. 5 above, we see that the difference from the high of 350.631 Hz to the low of 231.869 Hz gives a difference of 118.762 Hz which is close to the frequency calculated for the surface of the Earth at 115.115 Hz by Eq. 12 above. Bracketing the electrogravitational resonance frequency may ensure that the energies associated with gravitational resonance at the surface of the Earth stay stable enough to keep the energy build up the gallery operating continuously.

I suspect that the energy starts at the low end of the gallery and is built up in 27 stages by piezoelectric methods utilizing crystals which were placed 1/2 wavelength apart such that the waves crosswise to the length of the gallery had their crests and valleys opposite. This would effectively act as series capacitors where the voltages would add along the length of the gallery. The voltages may even have added in the manner of the Fibonacci sequence increase for a total of 27 Fibonacci interval increases. (This would be a tremendous increase in voltage and power, 317,118 times the input for the voltage and the square of that for the power, power = voltage squared over the impedance!) If you are interested, that is a power gain of 1.005 x 10^11.

Peter Tomkins in his book "Secrets Of The Great Pyramid" recounts the story of Russian archeologists finding a crystal sphere in the sand near the Great Pyramid that could have only been shaped by crystals of material (Oxcide of Cerium) derived from heavy electrical arching of metal. Further, that we could find it extremely difficult even with today's technology to shape such a hard crystal.

The control for such a huge power potential was likely at the top of the Grand Gallery, where an antechamber with three suspended doors of heavy granite were available for acting as a gain control for the power entering the Kings Chamber, just beyond the antechamber. At the top of the Grand Gallery was a small tunnel that pierced the first resonance gap just above the King's Chamber which I suggest was a feedback channel to help stabilize the level of the sound entering the antechamber from the Grand Gallery. In fact, the five air gaps above the King's Chamber may have been sound or shock wave attenuators to smooth out sudden fluctuations in the acoustic feedback process, the whole process being one of resonance driven by the energy of the Earth's gravitational field calculated for frequency as above.

It must have been at the very least awe-inspiring to stand near the Great Pyramid while the gravitational resonance was in full operation. The subsonic vibrations and audible tones may have blended to create a fantastic musical sound as well as waves through the body that vibrated to the marrow of the bones. It may be only one of perhaps 9 other pyramids, according to my theory, that were every 90 degrees around the Earth, 30 degrees above and below the equator, with the last two being located at the north and south poles. If you have a world globe handy, check out the locations this idea suggests. Of course, the Sargasso sea near Bermuda is one of the locations while the Great Chinese pyramids are also in the sites located by this quadrature method.

The cross product of a radial electric field and a matter field (acoustic air wave for example) which are in relative motion 90 degrees to each other and horizontal to the Earth generating a vertical action vector that can react electrogravitationally with the Earth's gravitational energy field is further examined by the files added below which are germane to the foregoing discussion concerning gravitational resonance.

CrossProduct.MCD

Assume a circular conductive rim of arbitrary mass rotating in the y plane about a center axis established in the z direction in a standard Cartesian frame of reference. Further let a voltage V be established between the center axis at the intersection of the z axis with the x-y plane (labeled as Center) and the rotating rim and we label this as the x vector. The center is insulated from the rim. There is a capacitance C between the rim and the Center. There is also an acceleration of the rim with respect to time and the cross-product is taken with respect to the electric force on the radius and the force due to acceleration of the rim to establish a possible force in the z direction as for a tornado vortex action which provides 'lifting force.

First we define and establish the force for the radius electric field as:

$V := 1.2\cdot 10^{04}\cdot\mathrm{volt}$

$C := 600\cdot\mathrm{pF}$

$Q := C\cdot V \qquad Q = 7.2\cdot 10^{-6}\cdot\mathrm{coul}$

$r := 0.5\cdot\mathrm{m}$

$E_x := 1.2\cdot 10^{04}\cdot\mathrm{volt}\cdot r^{-1} \qquad E_y := 0\cdot\mathrm{volt}\cdot r^{-1} \qquad E_z := 0\cdot\mathrm{volt}\cdot r^{-1}$

$$F_x := Q\cdot\begin{pmatrix} E_x \\ E_y \\ E_z \end{pmatrix} \qquad F_x = \begin{pmatrix} 0.1728 \\ 0 \\ 0 \end{pmatrix}\cdot\mathrm{newton} \qquad 12)$$

Next we solve for the force related to the acceleration of the rim mass as:

$m_I := 0.1\cdot\mathrm{kg}$

$\Delta v1_x := 0\cdot\mathrm{m}\cdot\mathrm{sec}^{-1} \qquad \Delta v1_y := 10\cdot\mathrm{m}\cdot\mathrm{sec}^{-1} \qquad \Delta v1_z := 0\cdot\mathrm{m}\cdot\mathrm{sec}^{-1}$

$\Delta v2_x := 0\cdot\mathrm{m}\cdot\mathrm{sec}^{-1} \qquad \Delta v2_y := 5\cdot\mathrm{m}\cdot\mathrm{sec}^{-1} \qquad \Delta v2_z := 0\cdot\mathrm{m}\cdot\mathrm{sec}^{-1}$

$$F_y := m_I\cdot\left[\begin{pmatrix} \Delta v1_x \\ \Delta v1_y \\ \Delta v1_z \end{pmatrix} - \begin{pmatrix} \Delta v2_x \\ \Delta v2_y \\ \Delta v2_z \end{pmatrix}\right]\cdot\mathrm{sec}^{-1} \qquad F_y = \begin{pmatrix} 0 \\ 0.5 \\ 0 \end{pmatrix}\cdot\mathrm{newton} \qquad 13)$$

Cross product result:

$$F_z := F_x \times F_y \qquad F_z = \begin{pmatrix} 0 \\ 0 \\ 0.0864 \end{pmatrix}\cdot\mathrm{newton}^2$$

Only one of the Newton terms is a variable in the Newton2 result.

From ElecMass.MCD:

The following is an analysis of mass related to a standing wave of current in a transmission line.

The voltage and currents along the line with respect to time are given by the following equations below, which is the sum of the forward and reverse propagating waves. [1]

$$V\left(z_{vec}\right) = V_{plusvec} \cdot e^{-j \cdot \left(\frac{\omega}{u}\right) \cdot z} + V_{negvec} \cdot e^{j \cdot \left(\frac{\omega}{u}\right) \cdot z} \qquad 14)$$

z = any point on line.

$$I\left(z_{vec}\right) = \frac{V_{plusvec}}{R_c} \cdot e^{-j \cdot \left(\frac{\omega}{u}\right) \cdot z} - \frac{V_{negvec}}{R_c} \cdot e^{j \cdot \left(\frac{\omega}{u}\right) \cdot z} \qquad 15)$$

where the $V_{plusvec}$ and V_{negvec} terms are generally complex numbers as:

$$V_{plusvec} = V_{mplus} \cdot e^{j \cdot \theta} \quad \text{and} \quad V_{negvec} = V_{mneg} \cdot e^{-j \cdot \theta} \qquad [1] \qquad 16)$$

The following quote applies directly to the concept of particle standing waves and also linear motion. This will be seen as very similar to the case for a transmission line as presented above. The following is a quote from the reference [2] at the end of this paper. {Begin quote}

"A spatial wavefunction is complex if the particle it describes has a net motion; a spatial wavefunction is real if the particle has no net motion. For example, the spatial wavefunction (the only component we consider from here on) for a particle with linear momentum kh/2π is:

$$\psi = e^{i \cdot k \cdot x} = \cos(k \cdot x) + i \cdot \sin(k \cdot x) \qquad 17)$$

The wavefunction is complex, and the particle has a net momentum (to the right, increasing x). The real and imaginary components of ψ are drawn in figure C. 13a, {NOTE: This figure drawing not included in the quote}, and we see that the imaginary component precedes the real component in phase (that is, the imaginary component is shifted in the direction of the particle's motion). The wavefunction of a particle traveling with the same momentum in the opposite direction is:

$$\psi = e^{-i \cdot k \cdot x} = \cos(k \cdot x) - i \cdot \sin(k \cdot x) \qquad 18)$$

Now the imaginary component is shifted to the left of the real component (Fig. C13b), {NOTE: This figure drawing not included in the quote}, and so once again its relative location marks the direction of travel.

The wavefunction ψ = cos kx is real and corresponds to a standing wave with no net motion in either direction. It can be expressed as a superposition of the wavefunctions for motion to the left and right, because,

$$\psi = \cos(k \cdot x) = \frac{1}{2} \cdot \left(e^{i \cdot k \cdot x} + e^{-i \cdot k \cdot x}\right) \qquad 19)$$

and the imaginary, direction-indicating component of the wavefunction has been canceled." {End of quote.}

The similarities of the above equations involving quantum particles to the equations involving standing waves of a transmission line above are quite apparent. Then, it is suggested that since the quantum and macro-electronic equations are so similar, it may be possible to cause movement of a macro-quantum craft simply by altering its *phase* or *wavefunction*. It is also suggested that quantum space is very similar to transmission line geometry as far as how the particles move through space. Then, if you can see it, it is real and has a standing wave that is real. This may be how the so-called UFO's may most likely appear and disappear so suddenly.

The following is also quoted from source [2] to further illuminate the nature of the wavefunction and its action on the particle motion:

"All wavefunctions of definite and nonzero energy are complex if we allow for their time dependence, since a time dependent wavefunction is the product of a spatial wavefunction ψ and a factor $e^{-iEt / 2\pi h}$. The rate at which a time dependent wavefunction changes from real to imaginary is therefore determined by its energy: The higher the energy the faster the wavefunction oscillates between purely real and purely imaginary. In this sense (and perhaps all the other rich, familiar attributes of energy are consequences of this sense), 'energy' is the rate of modulation of a wavefunction from real to imaginary." {End of quote.}

Also quoted: "a purely real (or purely imaginary) time-independant wavefunction represents a system with no net motion." {End of quote.} [3] Thus a UFO could be standing still (and be invisible) if it were totally in the imaginary wavefunction mode.

This may also explain why UFO's seem at times to be translucent and also why they would want to avoid radar. Radar would tend to interfere with the wavefunction, maybe even cause the UFO to crash. Just a Roswell type thought.

In summary, the foregoing has established that the mass related to the electron, (and possibly all other particles), is the result of quantum electrical standing waves. Based on this analysis, it is predicted that a large scale system may also be constructed which will mimic the electron in a quantum sense, that is, tunnel through ordinary space to pop out somewhere else instantaneously.

The energy required to do this 'jump' is not contained in the particle or structure, but simply gated in from energy space by controlling the particle or systems wave- function in a suitable fashion as described above. We may say that in order that the standing wave that makes up the particle be conserved, the energy is gated in to move the particle to a new point in space which in effect will conserve the standing wave and thus the integrity of the particle itself. This also suggests a method of tapping into energy space using a system of coherently managed particles where a single wavefunction would control them all and the energy imparted to the particles in unison from energy space would be converted by a suitable energy exchange device for use on an ordinary electric power grid.

REFERENCES

[1] Introduction To Electromagnetic Fields; Paul, Clayton R. and Nasar, Syed A., McGraw-Hill International Editions, 1987, p. 394, eq. 37a & 37b.

[2] Quanta; Atkins, P. W., Oxford University Press, 1991, pp. 61-62.

[3] Quanta; Atkins, P. W., Oxford University Press, 1991, p. 394.

Note: For those who wish an excellent and understandable companion reference to the book "Quanta" above, I recommend P. W. Atkins book, Molecular Quantum Mechanics by P. W. Atkins and R. S. Friedman. I obtained the third edition, (Oxford University Press), 1997, from Barnes & Noble on the web.