

## Variable Inductance Geometry and Energy Gain

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June 25, 2006

A standard S.I. Physics formula (eq. 1a below) states that inductance is a function of the product of the permeability of the medium times the cross sectional area of the center opening times the square of the number of turns per unit length all times the total length.

Based on the formula as stated above, if the radius is changing, we see that the inductance changes as the square of the radius change.

A changing inductance per unit length reveals an interesting result concerning the amount of potential field energy change associated with the changing inductance since the average potential field energy of an inductor is proportional to the product of the inductance times the square of the current all divided by 2. The current must be considered as the same in any portion of the turns since it is a series circuit having no branches. Therefore, for a coil of fixed length, the variable energy is directly proportional to the changing inductance of the coil which in turn changes as the square of the radius change.

I suggest that an inductance gain relative to the square root of the golden ratio may be desirable since this number is ubiquitous in nature concerning dynamic growth of many processes. Numerically this is equivalent to  $4/\pi$ .

It is this geometrically 'conical' concept that may be embodied in the field dynamics of the Hydrogen atom as was explained in my online paper "Hydrogen As A Free Energy Source Defines A New Universe," pp 26-37 and "Negative Energy and Positive Pressure," pp 38-42. Both are available at:

[http://www.electrogravity.com/EnergySpiral\\_3/EnergySpiral\\_3.pdf](http://www.electrogravity.com/EnergySpiral_3/EnergySpiral_3.pdf)

The coherent action of sympathetic atomic vibrations, when aligned vertically, may generate tornadoes and hurricanes, which generally resemble the same geometry of the microscopic atoms, which are generating the macroscopic tornado or hurricane. For the horizontal mode, the action of ocean waves and the energy gain at the crest is much better understood in light of the increasing radius of motion that may be likened to a rotational current that is increasing in radius over a period of time.

The total inductance may not be as important as the rate of inductance change per unit length or even unit time. Thus, the importance of caduceus coil geometry may be based on the rate of change of inductance rather than the total amount of inductance.

An important implication is that energy may be extracted from the variable inductance via a changing radius geometry since there would be more potential energy at one end of the coil than at the other end. In other words, suitable feedback windings may cause a net power gain in the main spiral winding. Thus, research along the above line of thought may yield important results concerning free energy.

If the derivative of the net energy of the main coil is taken with respect to the changing radius, force is the result. The force changes in direct proportion to the change in radius. Since the coil impedance is totally reactive, the imaginary operator  $i$  is connected with the instantaneous current and as a result, the square of the current yields a negative result for an increasing radius. Then the energy is negative and so is the force.

The force is considered to be along the main coil winding path and an energy void is implied by the negative energy term. Therefore, having free ionic charged particles such as in a plasma that may be contained in a caduceus coil could allow for energy feedback to the same particles that created the original coil field which would increase the force on the particles, each feedback force being somewhat less than the one previous due to the initiating impulse 'ring' causing a damped wave train. A coil of wire would not lend itself to such a free particle energy gain dynamic since the charge carriers are contained in a closed series circuit and thus are not as mobile as a free particle is. Then the modern day UFO's may depend on a plasma surface or some material that allows for free ionic charge carrier movement outwards from the center in a spiral fashion.

The center of the ancient vamina craft supposedly utilized a caduceus coil, which has a center shaft aligned vertically. The Bob Lazar S-4 craft and the Roswell craft both have a vertical shaft in the center of the craft as well. See: <http://www.electrogravity.com/index2.html>. I propose that the vertical shaft may serve as a pulse generator/wave guide for 'ringing' the external inductive surface. Therefore, the vertical center shaft may provide a fixed polarity pulse of energy, which transits a super conductive waveguide path to the craft's surface.

The external inductive surface of the craft might also be a deposited film, high temperature super conductive spiral wound coil and form a nearly flat spiral conductor, such as the power transmitter that Tesla was going to implement for power transmission at Wordencliff. The flat spiral gives the maximum inductance change per change of the coil radius, which translates to the greatest possible energy differential across the coil. This would induce the maximum amount of energy from energy space per 'ring' cycle of the quarter-wave coil. Around the rim of the craft, a winding connected to another winding wrapped around the top of the spiral winding may be utilized so that the gain in energy could be fed back to the beginning of the main winding.

I am proposing this scheme to be similar to the voltage increase of the Di-Rod electrostatic generator, only the doubling of magnetic energy instead of electrostatic potential with each cycle.

A recent experiment by me has indicated a small increase of energy with a feedback coil as described above utilizing a sloping gradient coil with the feedback coils mounted at the top and bottom of the Tesla style cone shaped coil. Another interesting result is a self-resonance, where the coil is freely resonating with a naturally occurring pulse coming from the Earth's field? The source has yet to be determined exactly.

### Mathematical Caduceus Coil Model

Let the geometry of a circular coil of changing radius be examined for related dynamic force. First, a formula for inductance is stated and then the average potential energy is found by taking 1/2 the inductance times the current squared in the coil. Note that n is the turns per unit length.

(Below inductance formula  $\Delta L_{ind}$  format from Modern Technical Physics, (Beiser) copyright 1966, p. 454.)

$$\Delta L_{ind} = \mu_o \cdot n^2 \cdot \text{lgth} \cdot \pi \cdot \Delta r^2 \quad [a] \quad \text{Then:} \quad \Delta E_{pot} = \frac{1}{2} \cdot \left( \mu_o \cdot n^2 \cdot \text{lgth} \cdot \pi \cdot \Delta r^2 \right) \cdot \left( \frac{q_o}{\Delta t} \right)^2 \quad [b] \quad 1)$$

Energy (work) equals force times distance. Therefore, the force dynamic is directly proportional to the change in coil radius for a constant time related current.

$$\Delta F_{rdyn} = \frac{d}{d\Delta r} \left[ \frac{1}{2} \cdot \left( \mu_o \cdot n^2 \cdot \text{lgth} \cdot \pi \cdot \Delta r^2 \right) \cdot \left( \frac{q_o}{\Delta t} \right)^2 \right] \quad \text{simplifies to} \quad \Delta F_{rdyn} = \mu_o \cdot n^2 \cdot \text{lgth} \cdot \pi \cdot \Delta r \cdot \frac{q_o^2}{\Delta t^2} \quad 2)$$

Then for a standard fixed length, the force is directly proportional to the change in radius,  $\Delta r$ .

$$\mu_o := 4 \cdot \pi \cdot 1 \cdot 10^{-07} \cdot \frac{\text{henry}}{\text{m}} \quad \Delta r := 0.0381 \cdot \text{m} \quad q_o := 1.602 \cdot 10^{-19} \cdot \text{coul} \quad \Delta t := 1.0 \cdot 10^{-06} \cdot \text{sec}$$

$$\text{lgth} := .5 \cdot \text{m} \quad N := 1000 \quad n := \frac{N}{\text{lgth}} \quad n = 2 \cdot 10^3 \cdot \text{m}^{-1} \quad (\text{Turns per meter.})$$

Note that  $\Delta r$  is positive which indicates an increasing radius along the coil length.

Assume a purely reactive 1 ampere of coil current where:  $\Delta r = 1.5 \cdot \text{in}$

$$\text{mult} := \frac{1 \cdot \text{amp}}{q_0} \cdot \Delta t$$

(Note: 1 ampere in coil =  $6.242 \cdot 10^{18}$  electrons per second past a given point.)

$$\Delta F_{\text{rdyn}} := \mu_0 \cdot n^2 \cdot \text{lgth} \cdot \pi \cdot \Delta r \cdot \left( \frac{q_0 \cdot \text{mult}}{\Delta t \cdot i} \right)^2 \quad \Delta F_{\text{rdyn}} = -0.3008255421 \cdot \text{newton} \quad 3)$$

It is obvious that the output force is also inversely proportional to the *square* of the of the current through the coil. The greater the current, the greater the force during the change in time by the square of the current ( $q_0/t$ ) related to a fixed number of electrons ( $q_0$  times mult) per changing time.

At least two important results are indicated by the above analysis. Firstly, if the radius does not change, there is no force developed since  $\Delta r = 0$ . Secondly, if there is a change in radius along the coil, the force is directly proportional to the change in radius. Also, if there is a change in radius, the force is additionally proportional to the square of the change in current which is a function of the number of charges moving past a given point per unit time.

In which direction is the force directed? A most logical answer is along the current path direction. Further, the force is a net average force since the force was calculated based on the total current. The force on each particle is much smaller. It is of interest also that since a coil is a series circuit, (which in the above analysis is a bounded conductor), the force on each particle may not have the required velocity changing effect on the individual charge particle velocity.

Then, the more logical approach to changing the charge particle velocity in the above cone shaped coil is to allow for freedom of movement in a vacuum or plasma environment. (To allow for a change in charge particle velocity is to allow for the individual charge particles to extract energy from the force field energy differential related to the changing radius per unit length of the coil.) I suggest this is the secret to the caduceus coil supposedly used in the ancient vamina aircraft which was said to roar like a lion when heated to a point where the (electrically charged?) mercury vapor inside the coils began to resonate back and forth through the vertically wound coils of increasing radius. Again, please visit the below link for a detailed image of just such a caduceus coil.

<http://www.electrogravity.com/index2.html>

The above caduceus coil mechanism would be extracting energy from energy space and would have to be carefully controlled to prevent a runaway energy input which may then cause an explosion of the coil. I further suspect the coil was made from some sort of ceramic so as to act both as an insulator and also to contain the high pressure of the super heated mercury.

Heated Mercury vapor is extremely caustic and therefore dangerous to humans. As a result, it is suggested that the working superheated plasma can be ionized  $\text{H}_2\text{O}$ . This ties in directly to the paper cited above at:

[http://www.electrogravity.com/EnergySpiral\\_3/EnergySpiral\\_3.pdf](http://www.electrogravity.com/EnergySpiral_3/EnergySpiral_3.pdf)

The Helmholtz resonator is a natural choice for the mechanics of resonance of the caduceus coil which then also ties directly with the mechanics of the Power Generation by the Great Pyramid at Giza.

Finally, a negative energy 'sink' implies gravitational repulsion, a dark halo around the mechanism, a cooling effect on the surroundings, a deadening of radio and other forms of electromagnetic waves, failure of ordinary conductors to carry current normally and even reverse time effects on the local surroundings. Some, (or even all) of these effects have been noted concerning reported UFO encounters.