

The Space-Flux Coupled Alternator: An Abstract Approach to Abstract Phenomena.

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The reader of this concept of an infinite source of infinite energy should try not to think in terms of so called rational concepts of scientists of the past or present. When dealing with magnetic phenomena; keep in mind, things are not what they may appear to be. A rash statement will be made here that surely will offend many members of the scientific community: A magnetic field consisting of so called abstract lines of force or flux, contrary to popular belief is not a property of an electromagnet or a permanent magnet, any more than water is a property of the pipe it flows through. It is a property of a universal space field consisting of incoherent individual packets of energy, magnetic in nature. These packets or quanta, are magnetic ash, a spin-off of the Big Bang some 15-20 billion years ago. All space is permeated by these dimensionless quanta as related to our three dimensional space.

However, these bits of energy are not absolute fundamental particles of matter, but do reflect force on all other particles of matter within a field of influence. Thus the very recent discovery of a flaw in Galileo's work regarding the acceleration of falling bodies is explained. The challenging of both Galileo's and Einstein's concepts is based on the existence of a fifth force recently discovered to exist. This force is called "hypercharge", it is described as weak and local, weak due to incoherency, local due to the primitive state of the art in dealing with abstracts outside the realm of three dimensional entities. Science is trying to measure things in other dimensions with three dimensional rulers, an impossible task.

One has only to observe the behaviour of matter in outer space to understand what's going on in inner space. One is a mirror of the other – one approaching negative infinity, the other positive infinity. Neither will ever reach the respective infinities, therefore the ultimate fundamental particle will never be isolated. Neither will the expanding universe reach positive infinity. Infinity is as far away from the farthest galaxy as it is from us.

Why the field of a magnet is not the property of the magnet: First the electromagnet – it takes power from a source to initiate and bring to steady state the field of the magnet. Once the field is stabilised and the exciting current is no longer changing, no further power is needed from the source. The only power required is that needed to support the I^2R losses due to the ohmic resistance of the conductor comprising the coil of the magnet. This loss appears as heat.

Now we have a magnetic field, a potential source of energy in existence without support of the source of power to the coil. True, the moving charges through the copper conductor are accompanied by a magnetic field, also true this field requires no power from the source. As stated, the only power is that supporting the I^2R losses. Then the field due to the moving charges is not a property of the current drawn from the source but a property of incoherent energy quanta in the

surrounding space interacting coherently with fields produced by moving charges on the electrons in motion through the coil.

Current is deemed as a quantity or number of charged particles moving from P_1 to P_2 in time t , or as the charge transferred in one second by a current of one ampere. The coulomb is the charge on 6.24×10^{18} electrons. Electric fields are due to the presence of charges. Magnetic field effects are due to the motion of charges. Current is the net rate of flow of positive charges. This is a scalar quantity.

In the specific case of positive charges moving to the right and negative charges to the left, the effect of both actions is positive charge moving to the right. Current to the right is: $I = +\frac{da^+}{dt} + \frac{da^-}{dt}$. Negative electrons flowing to the left contribute to the current flowing to the right.

Voltage: The energy transfer capability of flow of electric charge is determined by the potential difference or voltage through which the charge moves. A charge of 1 coulomb receives or delivers an energy of one joule or watt-second in moving through a voltage of 1 volt or $v = \frac{dw}{dq}$.

Electric field strength: The "field" is a convenient concept in calculating electric and magnetic forces. Around a charge we visualise a region of influence called an "electric field". The electric field strength, a vector, is defined by magnitude and direction of the force on a unit positive charge in the field. In vector notation $f = \partial\epsilon$ where ϵ could be measured in newtons per coulomb. Bearing in mind, however, the definition of energy and voltage. Note: force/charge = force x distance/charge x distance = energy/charge x distance = voltage / distance. The electric field strength in newtons per coulomb is just equal and opposite the voltage gradient or

$$e = -\frac{dv}{dl} \text{ in } V/m$$

Magnetic Flux Density: As defined by accepted, derived and in some cases postulated assumptions of the behaviour of an abstract entity. Around a moving charge we visualise a region of influence called a "magnetic field". In a bar magnet the current consists of spinning electrons in the atoms of the iron. The effect of the current on the spinning electrons of an un-magnetised piece of iron results in the familiar force of attraction.

The intensity of the magnetic effect is determined by the magnetic flux density, a vector defined by the direction and magnitude of the force exerted on a moving charge in the field. In vector notation: $f \approx au \times B$. A force of 1 newton, is experienced by a charge of 1 coulomb, moving with a velocity (u) of 1 meter per second, normal to a magnetic flux density of 1 tesla (1 tesla = 10,000 gauss).

Magnetic flux: Magnetic fields were first described in terms of lines of force, or flux. There are convenient abstractions which can be visualised in the familiar iron filing patterns. Magnetic flux in webers is a total quantity obtained by integrating magnetic flux density over an area by $\phi = \int B \cdot dA$. Flux density may be considered a derived unit and expressed in: *webers/meter²*. In this paper, the tesla is used as the primary unit.

Power and energy: As the writer will be expected to predict, power and energy transformations in terms of current and voltage outputs of the space-flux-coupled alternator, the following defining equations of instantaneous power and total energy are in order:

$$v = \frac{dw}{da} \text{ and } i = \frac{da}{dt} \text{ and instantaneous power } p = \frac{dw}{dt} = \frac{ds}{da} \frac{da}{dt} = vi \text{ and total energy is } w = \int p \cdot dt = \int vidt.$$

Note: This writer does not agree in respect to method regarding Millikan's oil drop experiment determining charge of a single electron. A flaw in the derivation will affect a change in the concept.

Underlying Principals of the "Space Flux Coupled Alternator".

Neodymium-Iron Boron permanent magnets of extremely high energy product are arranged on a rotating field structure. Two such field structures are assembled on a common shaft. The stationary armature windings are arranged using modular construction between the field structures. The magnets are positioned on the shaft so a N pole is opposite to a S pole in attraction mode. The cross flux is very intense, and the source of this flux is not a property of the magnet itself but a property of the space field. There for, the energy product of the magnets is not the limiting factor of the machines output, but is only the limiting factor on the influencing coherent force on the incoherent quanta comprising the universal space field.

Thus the Gauss-orsteads or energy product level determines "how much" of the existing incoherent quanta are influenced into a coherent energy state. If the universal space field did not exist, even fundamental magnets would not exist, and the motion of fundamental particles would not produce a magnetic field. Electrical energy as we know it would not exist.

The source of all energy exists in space. A natural magnet was not magnetised by any source on earth. The power of the universe controls all. When the rotor magnet assembly is driven by a prime mover the rotating magnetic field sweeps over the conductors comprising the coils in the stationary armature, sometimes called the stator. As the direction of the flux reverses during Δt , the induced output waveform is sinusoidal. The induced voltage in the winding obeys Faraday's law as quantified by Neumann $E_{av} \frac{\Phi}{t} \times 10^{-8} v$. This is average value and must be multiplied by 1.11 form factor RMS effective volts.

Another feature of the Space Flux Coupled machine is that the load current is sensed simultaneously with the output voltage. This power product is feed back coupled to the ampere turn product of the stator windings, as the machine sees all loads at unity power factor. Changing power factor loads has no effect on voltage regulation and there is zero loss due to reactive loads. This is due to the fact there is no ferromagnetic flux path, as the stator contains no iron. Thus there is zero eddy current and hysteresis loss as far as the stator assembly is concerned.

The load current flowing in the stator coils will have some effect on the close proximity field magnets, but the field produced by the moving charged through the coils is small relative to the exciting fields. Its doubtful induction coupling of the stator to the magnets will have very much effect.

Now let us consider the losses. Copper or $Cu I^2 R$ losses remain but may be minimized by using wire of larger than usual cross-sectional area. There will be some bearing friction loss unless magnetic bearings are employed. There is windage loss, which may be minimised by good configuration architecture. How does the Space Flux Coupled Alternator appear to operate beyond unity? An approximate analogy, not by any means perfect, is as follows:

Picture a side-wheel paddle steam boat making its way down stream in the same direction as a fairly strong tidal flow. Assume the steam engine to be highly efficient, say 80%. Now assume the engine to be working at this efficiency and that the tidal energy integrates with that of the engine in propelling the ship. The acceleration increases to a point where the horsepower increases beyond that equivalent energy consumed by the engine. If one were not aware of the tidal flow energy integrated with that of the consumed energy, one would conclude the engine efficiency was greater than unity. This is hypothetical. As the momentum of the tide relates only to the mass of the steamboat's displacement of the medium, water. Actually if the forward momentum of the tide was able to relate only to the paddle wheel the forward or positive force would tend to force the wheel to turn in the opposite of negative direction.

Then in the hypothetical case, the force of the tide on the mass of the ship would equal the force acting on the paddle wheel and the ship would be motionless. In order to move in the forward direction, the engine would need to overcome the negative force of the tide on the wheel. Little engine hp would be needed, as it would integrate with the positive flow of the tide, acting on the displacement mass of the ship. The above is not achievable in practice, as the only way the tide could relate to the paddle wheel in such a manner, the mass of the ship would have to be completely out of the water and only the wheel within the flow of the tide would turn, as the momentum of the flow of the tide would not be in effect. This is reactive power – no work is done. The wheel turns but the ship is motionless. Conversely, if this were a possibility, then a ship moving against a strong tide, would be able to traverse a river without either engine or sail, by means of the force of a moving mass of water against the wheel paddles. As stated, the force of the mass of water flowing against the displacement mass of the ship predominantly opposes the positive motion of the ship. The analogy though far from perfect, suggests that if one were not aware of the visible force acting on the movement of the ship, at times, assuming all parameters were measurable, the indication might be that the engine was capable of greater than unity efficiency.

In the case of the Space Flux Coupled machine, there is no visible entity. It's abstract. A steady state coherent force is present when brought under the influence of the electromagnetic controllable forces. It returns to an incoherent state when the initiating magnetic forces are absent (except in the case of a permanent magnet).

The feedback loop: Previously mentioned, you will more clearly see how the loop functions at the time you see the physical construction of the stationary armature of stator assembly. The underlying principal (forget Millikan's experiment) has been derived in that magnetic effects vary on the square of the current. As the load on the machine increases, the volt-ampere product increases. The rate of flow of charges increases. Quantum mechanics state not all electrons in copper are free to carry charges. Then it's time to set the wheels in motion to free them from binding magnetic forces. Once this is done, conductivity will improve and resistance decrease as we are dealing only with electrons. Copper will not change to another metal as atoms which are mostly empty space would have many electrons to spare anyway. To free enough electrons to effect conversion would require magnetic forces approaching infinity.

An illustration will help to clarify how the feedback principal counters the magnetic force binding the electrons in orbits, restraining them from motion as charged particles in the form of an electric current.

Assume a load on the machine draws a measured current of 1.0A at a terminal voltage of 240 V. At a power factor of unity, the current and voltage are in phase. The power output is in watts and $P = \sqrt{3} EI = (1.732)(240)(1.0) = 415.68$ watts. The current is sensed by conventional current transformers having a 1:1 ratio, rectified by a three phase full wave bridge. This D.C. output is applied to a current winding closely coupled to the power-phase windings, but isolated to a degree that prevents transformer action from including voltage in the D.C. winding. This winding produces a magnetic field that varies in intensity as the square of the load current on a 1:1 isolation ratio. This is the same magnitude as the load current peak value. The D.C. flux varies as the square of the current and not sinusoidally as does the voltage and current of the power phase windings, with proper capacitors across the D.C. control voltage. The D.C. flux remains constant sustaining a constant flux during Δt . The flux produced by the moving charges comprising the load current goes through zero, thus the complimentary flux, that is integrated with the coherent flux, aiding the cross flux between the attracting magnets. Thus the system is self-regulating. As the load current increases, the complimentary flux adds to the cross flux. The voltage output remains constant. The primary limiting factor is the cross sectional area of the phase winding conductor.

Function of the voltage feedback: To provide a means of capturing more incoherent quanta to complement the existing integrated flux densities and BH_C or energy product. More feedback in the form of volt-ampere product at a \cos of = 1 or unity of watts in the form of D.C. potential. This is obtained by potential transformers sensing the output terminal volts as this is virtually constant. The transformers are needed for isolation and for providing a much lower voltage that is rectified by a 3 phase full wave bridge and applied to a special potential winding in the stator assembly. How both the current and potential windings are assembled into the stator winding assembly is proprietary.

The current and potential windings require relatively little power, and are applied in such a manner that rate of flow of moving charges may be accelerated beyond
 $1 \text{ ampere} = 6.24 \times 10^{18} \text{ electrons/second}$. Thus the duty factor of the copper changes. $I^2 R$ Losses diminish and more charges drawn from the now coherent space field flow at a faster rate as current to the load. This means as more current is required by varying loads more feedback magnetomotive forces free more electrons from binding forces complimented by potential magnetic forces of the orientated, coherent space field. Thus a conductor that formerly had a temperature rise above ambient labelled as a factor of 10 would now operate at a temperature of 1.0. Thus the same gauge wire would carry 10 times more current at the same temperature.

Even better results may be forthcoming. The energy conversion conservation is fantastic. On a separate sheet will appear a derived equation of long series of partial differentials that dispute many textbook expressions defining fields produced by moving charges. The equation is simplified to a point that may be understood by most rational people.