

Fusion and Fission on a Cluster with Gravity



Hello. I am Doctor Gene K. This presentation is “Fusion and Fission on a Cluster with Gravity. In prior presentations I have shown how mass balance and stoichiometry for Santilli’s ICFP and for AquaFuel provide a high degree of certainty for fusion outside of the Lawson Criterion. A balanced nuclear reaction type, the Kidman Reaction, involves a series of elementary fusion steps between hydrogen or deuterium starting with oxygen. Further the final fusion product will fission to nitrogen. Since a series of reactions occurs and the medium is liquid or gas, it is proposed that the reaction series occurs on the surface of a cluster of masses. In this presentation one considers why “gravity” may be part of the mechanism of the cluster.

Why Consider an Electrical Force Acting as “Gravity”

“Far in the universe, a large amount of stars repeat their generation and depletion. Neutron stars and black holes could be produced by gravitational collapse of those massive stars. However, similar reactions should be easily induced by the electromagnetic force, since it is about 40 orders stronger than the gravitational force. Recently, during the study of so-called Cold Fusion (CF) phenomena, the author discovered a nuclear collapse which was directly induced by the electromagnetic force (August 25, 1990). The phenomenon was called Electro-Nuclear Collapse (ENC), which was one of the most remarkable ENRs. (ENR, Electro-Nuclear Reaction).”

In T. Matsumoto’s introduction in “Steps to the Discovery of Electro-Nuclear Collapse” (January 5, 2000) Let me paraphrase his statement.

Throughout the universe, many stars repeat the cycle of star formation and fuel depletion. The collapse of massive stars due to gravity could produce neutron stars and black holes. Likewise, (here on earth) similar reactions should be easily induced by the electromagnetic force since the electromagnetic force is about 40 orders stronger than the universal gravitational force. Recently, during the study of so-called Cold Fusion (CF), the author discovered the collapse of atomic nuclei. This nuclear collapse was directly induced by electromagnetic force (August 25, 1990). The phenomenon was called Electro-Nuclear Collapse (ENC), which was one of the most remarkable kinds of Electro-Nuclear Reactions.

The point is that an attractive force produced by the electromagnetic force could appear to be a kind of “gravity”.

Why Consider an Electromagnetic Force Acting as “Gravity”

Richard Feynman to Ken Shoulder's

“When you were in my office I could not see how 10^{10} or 10^{11} electrons could be kept as a ball in a vacuum without ions. So I was skeptical and didn't let you tell me about them. I must apologize for it has come to my attention that it is indeed possible”

An easy model for ball lightning is a positive charge cluster of atoms in the ball's center surrounded by a dielectric material with a negative charge on the outside of the dielectric. But as Feynman says in this letter to Ken Shoulder it is also possible to have electrons in a ball in a vacuum without ions. Ken Shoulder call this ball of electrons an EV.

Further there could be other actions between electrons in combinations with yet unknown particles. Let's consider further the EV.

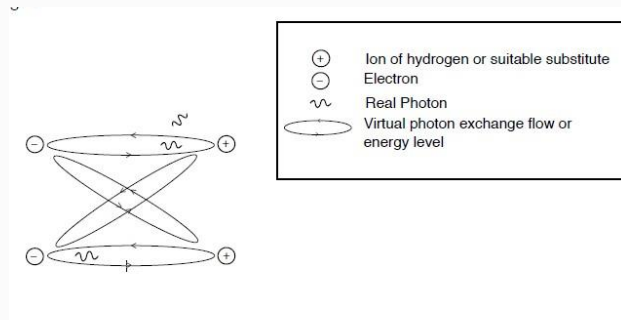
Ken Shoulder s on How an EV Forms

This is a very complex process; it is a wonder that anyone has figured out anything about it, even if it has taken over 80 years... And then a miracle happens. Somehow, out of this mess an EV emerges. If there was ever an example of how order is created out of chaos, this is it. I have not been privy to the finest details of this birth because it is a deep dark secret, veiled by a high density of particles moving like mad hornets around a despoiled nest. What I have seen, by observing from the outside with an electron camera, is an EV emerging from the plasma cloud.

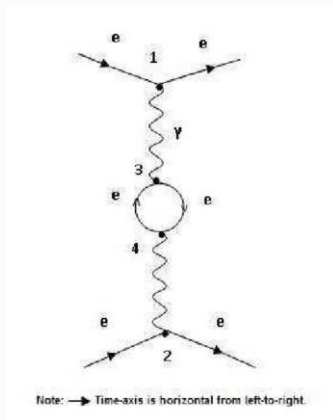
Ken Shoulder seemed certain that there was an organizing principle that produced the EV. This is what he said “This is a very complex process; it is a wonder that anyone has figured out anything about it, even if it has taken over 80 years... And then a miracle happens. Somehow, out of this mess an EV emerges. If there was ever an example of how order is created out of chaos, this is it. I have not been privy to the finest details of this birth because it is a deep dark secret, veiled by a high density of particles moving like mad hornets around a despoiled nest. What I have seen, by observing from the outside with an electron camera, is an EV emerging from the plasma cloud.”

From many particles emerged a single object. One possibility is that light merges with particles, then the resultant pseudoparticles cause the merger to a single object. Let's consider one such effect. First with protons and electrons involved and then with electron but proton free.

Phat equation $E=n^2h\nu$

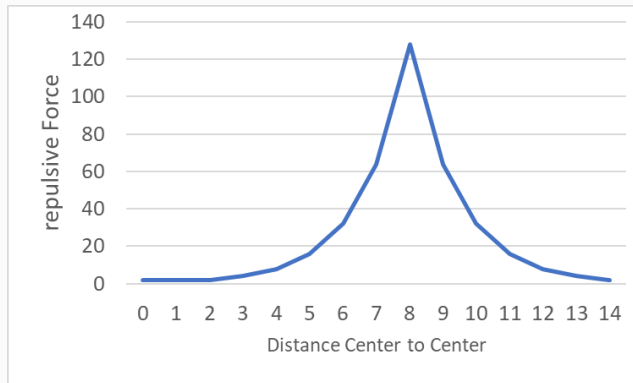


Pharsis William's phat equation predicts the additional spectra produced from the ionization of hydrogen. The spectra were as easy to find as just looking at the data with bureau of standards. These spectra result from quantum energy levels. The ionization energy most of us are familiar with is the quantum action between one hydrogen ion and one electron. However, the phat equation illustrates that there are interactions between several identical pairs when there are quantum indistinguishable identical particles. If all the energy levels are filled and a boson condensate occurs involving all those energy levels, then a higher energy photon is produced from the sum of interacting energy levels. The fact that multiple identical particles interact this way means that particles coming from multiple trajectories are statically affected as if by some common effect. Hence, as if the affect were a form of "gravity." Although, the particle pairs for the phat relationship could involve a proton, it should also be true that the particle pairs could involve some other unknown particle instead of a proton.



Pairs in
phat
equation
could be
proton free

When Richard Feynman considered higher order electron interactions such as electron/antielectron pair production, he treated the higher order interactions as possessed by the electron. Hence, the electron could possess some other unknown particle yet follow a phat type of relationship. In such a case, the pseudoparticles could have a phat relationship but could be proton free. This would be a better fit for EVs since Ken Shoulder and Richard Feynman were considering an ion free model for an EV.



KEY TO EV EMERGENCE IS FORCE BALANCE

Repulsive force =
coulomb repulsion +
attraction by "gravity".

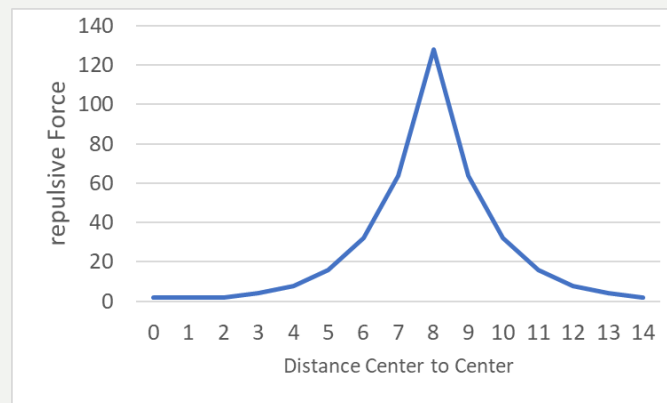
Getting electrons to feel attracted and getting enough of them attracted around the same axis is the key to formation of an EV. In general, one can model the formation of an EV from force distribution on individual electrons as a function from distance from the axis or center of attraction. Here I chose to use a center of attraction for gravity as an attractive force. An electron approaching the cluster must overcome a barrier to become part of the cluster.

Sharp change in force is the escape point

High energy = high orbit

Inside Particles get out with the escape velocity or higher.

Outside Particles get in over the coulomb barrier energy.



Once inside the barrier a particle shares energy by collision. However, collisions are somewhat random, so energies are not equal. Further, because of gravity, particles near the center have high kinetic energy and low potential energy. While particles in high orbit have low kinetic energy and high potential energy. The higher the total energy of a particle the higher the height a particle can obtain. A particle at the greater height will most likely collide with another particle which is also at great height to obtain the energy necessary to get the velocity necessary to escape.

Energy Balance for Planetoid

$$kq_e q_p / r = G_{re} m_e m_p / r$$

$$kq_e^2 (\# \text{ of } e) / r = G_{re} m_e^2 (\# \text{ of } e) / r$$

$$G_{re} = kq_e^2 / m_e^2$$

$$V = kq_e (\# \text{ of } e) / r$$

If the unknown particle in the pseudoelectron has an extremely small mass, then the electron and the pseudoelectron would be indistinguishable with respect to mass and charge. The escape horizon is a point for an energy balance on a pseudoelectron because it could either fall back into the cluster/ planetoid or escape. In the first equation potential energy from coulomb repulsion is on the left and potential energy for an attraction model as a type of gravity is on the right. The subscript p is for the planetoid and the subscript e is for the pseudoelectron. Since the planetoid is composed of pseudoelectrons, then some number of pseudoelectrons multiplied by the mass or charge of an electron can substitute for the mass or charge respectively of the planetoid. This allows the number of electrons divided by the distance from the center to the escape horizon to be removed from both sides of the balance. Then the equation can be solved for a coupling constant for form of gravity. That gravitational constant is for kind of gravity that caused the attraction between pseudoelectrons. Since the electrical potential on electron at the escape horizon is potential energy per unit charge, and since the potential energy of the ejected electron converts to kinetic energy, then kinetic energy of the ejected electron can be predicted from the second equation.

Cluster or Planetoid Based Fusion

The greater the number of pseudoelectrons, the greater the voltage at the escape horizon.

Any atom could be a fusion/fission reactant if it can penetrate to the escape horizon of large enough planetoid.

Energy from projectiles is shared in the planetoid. Fusion energy can be captured by the planetoid. Escape of a particle from the planetoid depends on the height of its orbit and the energy it receives by collision from other particles just prior to its escape.

One can summarize the expectation for fusion based on the model. A projectile would be a pseudoelectron or two pseudoelectrons combined to a proton. The kinetic energy of projectile is larger if the cluster or planetoid is larger. The target could be any atom provided it could penetrate to the escape horizon of the planetoid. A target with a large coulomb barrier to fusion will require a large planetoid to trigger fusion. In this model there is no need to claim a low energy nuclear reaction since the planetoid could provide high energy requirement normal for fusion. Further, energy of fusion can be captured by the planetoid. Finally, the energies of the escaping particles are function of how the energies are distributed within the planetoid.

The Purpose of a Model is a Basis for Analysis

Having established a plausible basis for the interaction of electrons and a strong magnetic field to create the appearance of stronger coupling of gravity to electrons, one can look for this effect in the images produced by T. Matsumoto.

Having a plausible connection of pseudoelectron -to-pseudoelectron interaction to an energy distribution described by the phat equation, one can look for this effect on fusion triggering and on energies of particles emitted from a proposed cluster catalyzed reaction

There are many theories that one can take seemingly endless time discussing. In contrast the purpose of a model is to do something. It becomes a basis for the testing of data by analysis. In a betatron electrons are curved toward the axis by strong magnetic field. That curvature appears like an attraction to the axis.

Further any attraction toward the center or axis might generally be modeled as a type of gravity. In this model a value for a gravitation coupling factor was found that is in the range expected by Matsumoto. Hence, one can look at the images produced by Matsumoto for observations to support or deny this model.

Further, a plausible theory relates Pharis Williams' phat equation and pseudoelectron to pseudoelectron interaction. If electrons can possess phat states, then one can look for connections between the phat equation and fusion triggering and between the phat equation and an energy distribution governed by a phat equation.