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Space-time perturbation effect upon rotating bodies on laminate layer branes

Abstract

The experimental loss of weight in the Morningstar Energy Box may indicate that Poynting Vortices act upon a D-Dimension axis. This speculation implies that the weight loss is an effect upon gravity and/or an effect upon mass. This premise assumes that quantum gravity is part of the space-time manifold which is constantly fluctuating, and; that what we perceive as smooth and steady "space-time" is an average of these oscillations. The manifold can be considered to fluctuate not only in space-time but also in additional dimensionality. These perturbed quantum fluctuations access < D-4 dimensions. Normally, the contributions to particle mass changing from these variations into other D-4 dimensions can be considered negligible; however, we imagine in some circumstances, such as in the presence of Poynting vortices or turbulence, quantum fluctuations of space-time can be intensified. Particles would then spend proportionally more time on higher laminate branes, and appear to lose weight. The nonlinear field production of Poynting, magnetic and electrical fields, as it relates to space-time may be a way of understanding how Gravitational waves interact with electromagnetic waves, causing space-time turbulence to generate changes in weight that has implications on space propulsion schemes.

Keywords

Poynting vector; D-Branes; Gravity; Perturbation theory; Time; Bumpy manifolds.

INTRODUCTION

The Morningstar Energy Box[1,2] is an experimental propulsive device. Its design is motivated by observations of weight loss in Poynting vortex (rotating EM field) experiments by Kozyrev[3], Hayasaka and Takeuchi[4], and in theoretical predictions of such effects in the GEM theory[5]. As was discussed in previous articles, this device's technology is similar to a mechanical cage used in Russian Poynting vortex experiments, which featured laminated rollers in an effort to replicate a purported success by Searl and a main ring with ferromagnetic fluid, unique to the Energy Box.

The Russians made several claims that their device produced self-acceleration, created weight loss in one direction with weight gain in the opposite direction, and generated discrete magnetic walls. Surprisingly the Energy Box found similar phenomenon regarding the discrete magnetic walls, with weight gain and loss, although at a lower magnitude, and without any observable constant regarding direction of spin. No measurable self-acceleration was achieved with the energy box. This is similar to a Poynting vortex experiment employing a gyroscopic coil; in this experiment direction had a direct correlation to weight loss or gain as long as a rotor/stator was employed. In the absence of the rotor/stator, where field effect alone was employed, direction was no longer relevant to weight loss or gain.

The Energy Box in an early test only lost 2 to 5 pounds of its 190 pounds at steady-state. During transient rotation, weight change dropped as much as 20 to 40 pounds using 120 volts. The device was modified to increase voltage. However, during these last test series, the device with no voltage unexpectedly showed a steady-state 14-pound weight reduction or 7.3% and a transient loss of 12% of the total weight. Clearly we observed nonlinear Energy Box phenomenon similar to the Russian claims.

The experimental loss of weight in the Morningstar Energy Box may be explained by a hypothesis that is based on the GEM unification theory. This theory hypothesizes

that rotating Poynting Vectors may perturb the local space-time continuum in such a manner as to make time and matter 'uncertain'; that may further lead to an interaction upon a D-Dimensional axis. When the Energy Box, a rotating electromagnetic mechanism, is turned off and slows to a stop, the mass returns to its initial weight, which would correspond to a reversion of the D-Dimensional space back to the conventional or ordinary 4-dimensional space-time. When stationary, the device exists in a Euclidean space with a temporal dimension that is in line with relativistic time-like interval models. In motion, a unique state of instability in relation to gravity may exist. It is known experimentally that gravity fields can induce quantum interference patterns[6,7]. Is it possible that quantum turbulence, induced by the rotating EM fields in the Energy Box can change the gravitational interaction of matter? This paper endeavors to explore this possibility based on evidence of weight changes observed during the operation of the energy box.

DISCUSSION

It is possible in the Energy Box operation that unusual field perturbations affect the local time of the device as well as gravity. Perturbed particles seeking a ground state may transport along this D-dimensional axis until the local space-time returns to a steady non-perturbed state. This occurs in an adjacent, non-exclusive, unique space-time. This phenomenon can be observed as an increase or loss in weight from the starting initial value at the end of the experimental run.

If the only physical force affected by the Poynting vector is gravity, the weight would return to its starting value when the device stops. Therefore, the assumption is that mass may also be affected because of the weight increase or loss at the beginning or end of the run. What is peculiar about this observation is that a weight gain or loss may persist for a short period of time, after all power had been cut to the device and the carousel is no longer in motion. This may indicate that the phenomenon created by the unusual conditions of the device, while operating, may briefly persist even when they are no longer acting directly upon the environment. The possibility for this transport along this D-Dimensional axis is explored through a *thought* experiment relating the Poynting vector's ability to create a turbulent instability in the Eigen states of a charged particle[8]. This is pertinent to how the particles relate to a 3-sphere on an 'x' (time or temporal) and 'y' (spatial) axis where the cross function is valued on the 'z' axis as volume, and how the transport of electrons to a Hopf 3-D space[9], a multi coordinate representation of multi-hypersurface laminate overlays, would occur.

A Hopf-fibration or a Hopf 3-d space is a topological rendering of a hypersphere with bifurcating surfaces. It may be a useful model for creating a theoretical prediction. In this particular model, the multiple hyperspheres which intersect may provide a geometry to illustrate our notion of two discrete and separate universes interacting parallel with each other. This intersection would occur at points where both wave functions overlap in the same space and same time. The current four-dimensional model with relationship to a similar bifurcation of itself can result as a standing wave created by a retarded potential that results in a space-time perturbation, or field fluctuation of the local space-time manifolds. In this illustration, the volume of relative hypersurfaces with a distribution through time and in extra-dimensional space can relate to each other at points of an intersection. The de-cohesion and non-locality frame reference of individual particles and their ensembles creates a moment of bifurcation which can be addressed for our model through Heisenberg's uncertainty principle.

In Hugh Everett's 'Many Worlds Theory'[10,11] the concept of bifurcating realties is adjusted in the concept that one is annihilated in lieu of the other's existence. Our conjecture assumes that there are many discrete non-exclusive realities overlapping each other. One might consider the existence of an individual particle and its exclusive time frame, then consider the ensembles and groupings to which this body interacts, each with their own individual time frames. At some point they must interact on a homogenized smooth surface for there to be a function, yet not all particles and waves have the same frame reference at all times. In the conventional wisdom, it is speculated that D-dimensional space-time turbulence occurs at the Planck scale where Heisenberg uncertainty allows the formation and annihilation of subatomic Black Holes, creating fully chaotic space-time that is greater than the classical 4-d space-time dimension[12]. The effects of these D-dimensions disappear in the averaging process of our perception at the macroscopic scale. However, here we consider that the space-time turbulence can be created and produced by its interaction with the quantum mechanical nature of matter at the atomic scale, not just the Planck scale. In this new case, the effects might be seen in the macroscopic world in a similar way that quantum effects can appear in macroscopic form in superconductors and lasers. Here such macroscopic quantum effects might appear as a temporal shifting of mass.

This temporary displacement of mass could appear as a phase-shifting of matter in such a manner as to maintain the visible shape of the Morningstar device, as there could be an overlay of dimensional realities occupying the same 4-dimensional coordinates. One examination of this potential D-Dimensional axis is in the application of a Δt function that applies to Heisenberg's Uncertainty Principle,

as can be seen in Equation 13.

Motivation and purpose

Certain phenomena have been observed in the operation of the Morningstar Energy Box; that may represent a type of Poynting vector motive device. The loss of weight in both changing and steady states may be due to a number of different phenomena[13] to include: gravito-electro magnetism, lagging magnetic image, co-gravitation[14-16] and/or de Broglie matter waves. Though these potential explanations for why the device loses weight may act exclusively or in concert with these different notions. This paper offers a hypothetical option of what may occur when these mechanical phenomenon happen. Simply, the question asked is this: what is the effect that causes the mechanical conditions?

Philosophy

> "To deny temporal succession, to deny the self, to deny the astronomical universe, are desperate and secret consolations. Our destiny is not frightening by being unreal: it is frightening because it is irreversible and iron. Time is the substance of which I am made. Time is a river which sweeps me along, but I am the river, it is a tiger which destroys me, but I am the tiger; it is a fire that consumes me, but I am the fire. The world, unfortunately, is real..." - Jose Louis Borges

Time and space are subjective in many respects. It is this effort to quantify what has led humans to define dimensionality as a possibility. Efforts of many scientists to define a common language describing this observable quality have persisted throughout the ages. Mankind needs a means to determine certain qualities of our physical world as an occupational and subjective common language. Builders need to be able to share instructions, so the idea of our world having the qualities of height, width and depth come into being. Appointments needed to be made and kept, so we have an accounting of time. A labeling of how our senses perceive our universe. Space time is the description of a mathematical model that combines space and time into a coordinate (x, y, z, and t) system or continuum.

An approach of philosophy is to define the concept of time. Much of the focus upon the subject of 'natural philosophy' eventually moved into the realm of physics. As many will know, natural philosophy was the predecessor to what is now called physics.

Time continues to be a conundrum. Some mathematical explanations for our universe require time as a function, where others are bogged down when time is accounted for. Here, they fall apart. Is time a referential fluid of individual frames of reference from the smallest particle to the largest celestial body? Or is it a constant, only moving forward and serving no other purpose than to establish an operational function? Does time even exist outside of subjective operational notions? These questions show the complexity of this concept we call time.

The Egyptians, Mayans and Incas kept mathematical records of celestial movements and observed that stars moved in the heavens and were in fact a dynamic group. This influenced their thought of the world along with their concept of time yielding societal conundrums such as the end of time as well as feats of engineering and mathematics. This impetus is seen in the pyramids and the geometry of other civilizations which have been left behind. The earliest lunar calendars, that have been documented, are 6000 years old.

Aboriginal cultures view time as cyclical, even Western culture has the concept of the Ouroboros - the snake of time eating its own tail. Some cultures have no concept for separating space or time and see the two as being different aspects of the same media.

With regard to time, typically time acts as a diary of events; cause and effect that occurs in a logical progression. The present moment is the now. One can remember and view in this moment with documentation of past events; we can even predict events by extrapolations that have not yet occurred, in the future, to some degree.

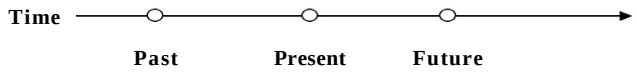

Figure 1 : The current objective occupational model of time.

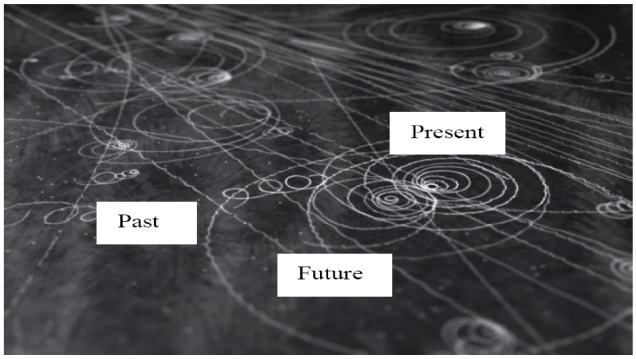

Figure 2 : What time may actually look like.

Thoughts about the nature of time have brought about dreams and notions of time-travel throughout history. These dreams have brought about thought experiments regarding a variety of paradoxes. Is time exclusively a subjective operational measurement of intervals between changes, which does not in fact exist outside of the consciousness of the observer; or is it a physical dynamic observed as a constant; or, even more so as a physical force with fluid dynamics commensurate with gravity and magnetism?

Popular phrases in all cultures refer to the 'flow' of time,

or a river of time, lending a sense of fluidity. One with eddies and currents. Let us again consider the many worlds theory and the concept of bifurcation[17] where one reality 'A' encounters a point of bifurcation - perhaps in this instance an ensemble of entangled particles where there is a choice between 'B' or 'C'. In either choice some of the particles of the ensemble will no longer exist as parts of the ensemble, they will have changed their relationship. Suppose 'B' is the choice made. If 'C' is annihilated to yield to the ensemble which continues as 'B', some particles entangled with others in 'B' that no longer exist outside of their local frame 'B', but continue to exist in another 4-d space-time 'C' which has components of our current one, because of the entangled state. This is quite similar to the notion of 'branes' (membranes) and 'bulk' which characterizes the concept of layered universes that is a component of M-theory[18].

Numerous arguments have ensued with no clear winner regarding the nature of reality and space-time. It may be that each concept, be it many worlds or the basic quantum mechanics concept may be in part correct; however, this paper seeks to investigate an alternative explanation. In this concept, the idea of a collapsing wave function to a single reality becomes clumsy - it is an attempt to homogenize what is far more complicated. Let us assume that because of the chaotic and disordered nature of bifurcating realties that a number of realities exist in the range of our sensual experience. We simply look at a unitary single form when in fact we are likely engaging a very large (if not uncountable) number of realities overlaying each other and acting in a non-exclusive manner where conditions are permissible.

Another thought on this matter is this - gravity waves travel through matter, yet - it is possible that gravity waves move into and out of other 'realities' that are complete with their own 4-d structure. We can theorize that gravity has a similar fluid dynamic behavior to the fluid dynamics of magnetism. The Euler equations with gravity are[19]:

$$\begin{aligned} \frac{\partial \rho}{\partial t} &+ \nabla\cdot(\rho \upsilon) &&= 0 \\ \frac{\partial \rho \upsilon}{\partial t} &+ \nabla\cdot(\rho \upsilon : \upsilon + \bar{\bar{P}}\bar{\bar{I}}) &&= -\rho \nabla \Phi \\ \frac{\partial \rho e_{ikg}}{\partial t} &+ \nabla\cdot([\rho e_{ikg} + P]\upsilon &&= 0 \end{aligned} \qquad (1)$$

with the gravitational potential Φ. The total energy e_{ikg} includes a contribution due to the potential:

$$e_{ikg} = e_i + \frac{1}{2}\upsilon\cdot\upsilon + \Phi. \qquad (2)$$

Note: the momentum equation now contains a true source term.

If this is true and time and light are also affected by gravity, it may be possible that time and gravity may have a commensurate fluid dynamic, similar to when one observes a powdered dye placed in a glass of water. The dye itself, as a dry powder doesn't have a fluid dynamic reaction, but when you add it in water, which it is subject to, it also has a fluid dynamic behavior as the water is colored by it. The same might be also true of the way time interacts with gravity. There is the celestial absolute constant, the arrow of time where we experience time at the rate of 1sec/second. If this is true, and time is a dependent issue, then it might also travel inter-dimensionally. We are talking about a frame referential where the curvature is not necessarily a transport for other dimensions curling in upon itself, but one that is interstitial, between overlapping bifurcated realities.

Rendering a hypersphere with a traditional 3-coordinate system and time as a marker for events is classical. What is suggested here as post-modern - requires an examination of quantum gravity and time - and would need a complex model to demonstrate the interfaces of multiple manifolds.

Certainly we can only experience time at the rate of 1 second per second. Particles and waves operate on individual time frames. As they move from a low state of entropy to a high state of entropy where there are basic changes to their referential frames. One could argue that all quanta have individual time lines that are bound through a reference; though, this reference boundary may be more chaotic than initially considered. Taking into this thought process, the 2nd law of thermodynamics could be seen as only relating a local system to how it affects the cosmological system it exists within. Referencing Gödel's undecidabilty theorem, this would indicate that the 2nd law is only applicable within the model it references, and therefore might be invalid with regard to D-Dimensional freedom of action.

Time is a construct of the observer, experiencing it as it

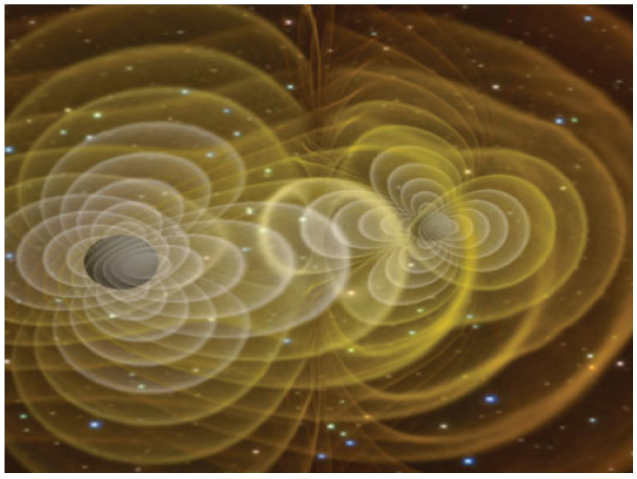

Figure 3 : An artist's rendering of the intersections of gravity waves between two bodies.

happens around them, on a celestial body as it travels through the cosmos. Each second the observer making a decision to either act or not act based upon the information taken in by ones senses adding value to ones Future in time. As seen from this perspective could time be treated as a laminate layer of possibilities based upon bifurcations of experience and decision making creating this patchwork of moments we call reality?

Background

In a Minkowski space-time description the hypersurface can be described in two dimensions. That is which exists in our current reality has a past and a future, the surface of the absolute time - the now - comprises all of space and time. In this rendering, the hypersurface can be shown on a 'z' axis representing time and 'x' and 'y' axes in a plane representing space.

Taking this concept a step further one can demonstrate a two coordinate axis where the 'x' axis is all of the possible dimensions of time, and the 'y' axis is all spatial dimensions;

This describes a radius which is determined to be a sphere; the 'z' axis describes volume, or more literally multiple laminated non-exclusive layers of bifurcated realities, or a thickness to the shell or sphere. Contained within the sphere or 'shell' are the particles and waves that make up the 'stuff' of the universe.

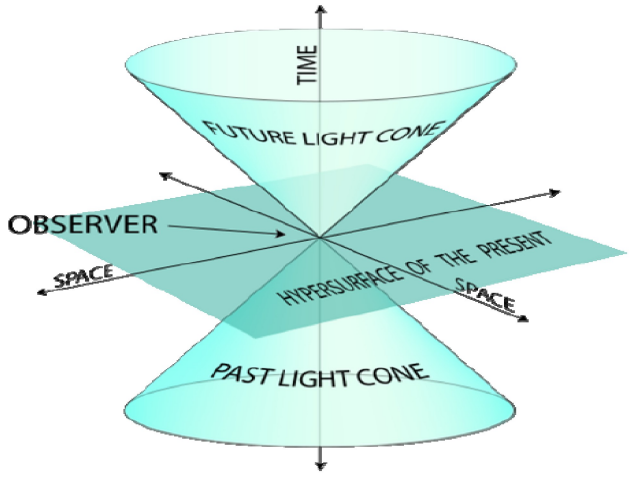

Figure 4 : A Minkowski space geometric model of space-time. The future and past come together upon a point, the now, which extends to comprise the whole of space and time. The hypersurface in this image of the present can be interpreted as having a 'z' and 'y' axis.

Time is affected by gravity, compressing under the pressure of robust gravity waves and decompressing where the gravity wave gradually collapses. In the GEM theory, space-time is conceived as a fabric of electric and magnetic fields, and gravity fields are an array of Poynting fields, composed of crossed electric and magnetic fields. Thus, electromagnetic turbulence can theoretically lead to space-time turbulence.

With regard to defining a hyper-surface where this can be described, it becomes necessary to create a 'bumpy' manifold, one that accounts for the differentiation of time and gravity, and their effect upon light incident upon the surface. In this instance a 'bumpy' manifold would be generated by perturbing a smooth manifold to a point where in a certain time interval, the local surface appears to contain peaks and valleys which would describe it as 'bumpy.' A bifurcation would denote a point where two alternate realities are possible based upon an event where two outcomes could occur. In one reality option A was perpetuated, in the other reality option B was perpetuated, in both cases new timelines would be created but the space they occupied would remain similar based upon how they were perturbed. The 'z' axis or volume begins to describe layers of multiple bifurcated realities; another way to regard this is as a sphere, or the 'shell' of the manifold as described in the x, y axis and the z axis, or volume begins to describe the thickness of the shell.

If the surface is bumpy, there are points of intersection between laminate layers of non-exclusive layered realities. A concept of a collapsing wave function of probability in the present moment is not accurate, that in fact multiple commensurate realities exist overlapping each other where each layer in the volume is a unique 'bumpy' hyper-surface which would allow for a greater understanding of the event that creates the bifurcation by comparing the spatial and temporal components of each reality and where they overlap.

The perturbation of space-time as a result of the operating of the device retards the cohesion of reality into a singularity. While in operation, the particles go looking for a place to find a minimal energy state in this perturbed function and move outside of the sphere or shell.

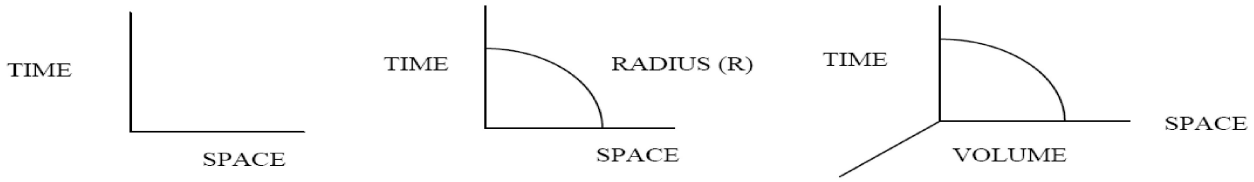

Figure 5 : The hyper-surface as a two axial coordinate plane wherein the dimensions of space (height, width, depth) are laid out upon a 'Y' axis and the dimensions of time (Constant, and Fluid (past, present, future)) are laid out upon an 'X' axis, the 'r' of this intersection describes a sphere and the 'Z' axis describes the volume of the cross product between these dimensions, or the thickness of the sphere.

This vector of transport is the D-dimensional axis, the next point where the particles can find a ground state outside of the sphere is forward in time, when the device is at rest. Looking at the observational loss of weight from a perspective of time, there is an increase in weight at the end of tests wherein a loss of weight has occurred. Often there is a drop or increase of weight milliseconds or seconds before the start of a test; this often corresponds to tests where net loss or gain is observed. This may indicate a shunting of weight during the devices operation from the moment of operational observation to a point in time where the operation of the device has stopped operating.

When the Energy Box, a rotating mechanism, is turned off and slows to a halt, the mass returns to initial values, which correspond to a reversion of the D-Dimensional space to ordinary space-time. In several instances weight change was accompanied by slight rotation in the opposite direction before coming to a complete stop.

An effective model for mapping this proposed complex set of conditions could be mapped in an axial coordinate system; however, if there is a D-Dimensional axis, the geometry in this dimension may be too complicated for a traditional Cartesian mapping system. In fact, it may not be relevant to current D-Dimensional models. Certainly a D-Dimensional sphere would be effective in mapping the manifold interface between our space-time continuum and the D-Dimension; however, it may not accurately map what happens beyond that point of interface.

A concurrent overlapping laminate of non-exclusive layered realities is one possibility that could account for this behavior. This laminate would contain all of the possible realities created by an event that caused their divergence while grouping them would show the reaction by the space-time that each reality occupied. The similar areas could be seen as a macroscopic effect. This effect may work from the D-Dimension to the device effectively displacing the mass and sharing its value back along the axis to the D-Dimension. A second possible D-dimension may be an access into a volume that is described by placing the dimension of time along an X axis and the dimension of space along a Y axis, the volume or third axis is in fact also a D-dimension.

This describes a third possibility: that the weight loss is proposed as a shunting of mass, while maintaining a three dimensional shape, to another dimension; or possibly to different points in time or space. In this instance the D-Dimensional axis acts as a vector from the origin coordinate 'A' to destination coordinate 'B'. The nonlinear Poynting, electric and magnetic field production as it relates to space time may be a way of understanding how Gravitational waves interact with electromagnetic waves and time.

Physics of gravity and time

The primary event that will be investigated is the loss of weight of the device. To fully understand what occurs, we need to define the environment within which the device is reacting. The local gravitational field between the earth and the device will be examined as a conservative force acting upon the effective mass of the device. Considering the relative distance between the earth and the device we can assume that gravity is continuous and acts upon the masses of the individual particles equally. This is usually expressed as a gravitational potential equation:

$$\Phi(\mathbf{x},t) = -G\int \frac{\rho|\psi(\mathbf{y},t)|^2}{|\mathbf{x}-\mathbf{y}|}\mathbf{d}^3\mathbf{y} \qquad (3)$$

Where Φ is the Newtonian gravity potential, G is the Newton gravitation constant, x and y are two independent vectors of position, ρ is a mass density under normal conditions and Ψ is the normalized wave function of particles making up the mass. This relation will be represented in the Schrodinger-Newton Equation for a non-relativistic particle, where the gravitational potential is assumed to cause wave function condensation.

The observation of gravitational lensing shows that gravity wells can bend a beam of light which travels through a dense gravitic area. Is this effect only experienced on massive scales or can a similar situation be induced experimentally? As seen with gravitational time dilation the closer a time piece is to a gravitational source the slower time passes, thus again the situation depends on one's location to a gravitic potential.

Could a hypothesis be shown that space-time isn't flat but fluid, thus bumpy at times flat at others and that all manifolds are in effect smooth because they apply a transform to average the bumpiness? However, in this model which allows for the bumpiness, we see second and third order effects. Perturbation causes a bumpy space-time, thus causing superposition of quantum states to increase. Could increased quantum probabilities of particles being in two places at a similar time enact D-dimensional travel to non-perturbed frames? This moment will need to be expressed using a time relationship based upon the retarded potentials.

Time will be examined as a constant that exists in both the past, present and future, acting upon space as a continuous function *T*, which propagates forward. The device implements retarded potentials during its operation which will need to be understood in their relation to time increments *t*. As incremental time evolves, a relation between the potential fields and gravity can begin to take shape to give a basis for the effects experienced by the mass of the device. This can be represented as the retarded time, where *r* is a point in space and *t* is time.

$$t_r = t - \frac{|r - r'|}{c} \quad (4)$$

The fluidity of time will be explored as the equations take shape to determine how space-time is perturbed in relation to the evolving fields.

4-Dimensional space and the laws of conservation

Conservation of energy is used to define states, specifically quantum states, and their reaction to the local environment. Schrödinger's equation only accounts for momentum and potential energy, however the terrestrial application needs to encompass the environment within which the device operates. One possible model is the Schrödinger-Newton Equation which adapts the Schrödinger equation for non-relativistic particles to employ a gravitational potential which causes wave collapse:

$$i\hbar \frac{\partial \psi}{\partial t} = -\frac{\hbar^2}{2m}\nabla^2\psi + V\psi + m\Phi\psi \quad (5)$$

The wave function represents a probability. The momentum is expressed using the momentum operator and the EM potential associated with the particle may be expressed using the Poynting vector relation for microscopic field sources as seen in the vector relationship:

$$S = \frac{1}{\mu_0} E \times B \quad (6)$$

Where μ_o represents the magnetic permittivity of space, E represents the electric field and B the magnetic field.
Here we consider that the effective potential V affecting the particle wave functions is of the form:

$$V = k\ m\ \frac{\mu_0 < S^2 >}{< B^4 >} \quad (7)$$

where k is a dimensionless constant, μ_o is the magnetic permittivity of space, m is the particle mass, $<S>$ is an averaged value of the turbulent pointing vector, and $<B>$ is an averaged value of the turbulent magnetic field.
The E-field and B-field is expressed using the retarded potential equations for time-dependent fields:

$$\varphi(r,t) = \frac{1}{4\pi \in_0}\int \frac{\rho(r', t_r)}{|r - r'|} d^3r'$$
$$A(r,t) = \frac{\mu_0}{4\pi}\int \frac{J(r', t_r)}{|r - r'|} d^3r' \quad (8)$$

These equations yield the fields produced by a charge density ρ and the current density J, as they evolve through retarded time, t_r.
The electric field E and the magnetic field B are related as:

$$-E = \nabla\varphi + \frac{\partial A}{\partial t}, \quad B = \nabla \times A. \quad (9)$$

This gives an idea of how the field interaction of the device may perturb local space-time. The above equations would need to be incorporated into Eqn 5 to give a complete understanding of how the system would evolve as a partial differential equation. Once this is done a solution would need to be found for the equation to calculate the probabilities of the charged particle being in a certain energy state at a certain time. This paper will focus on the affect seen by the experimentalists as opposed to the math behind it.

Perturbation of 4d space

Classically the perturbation of 4-D space is experienced through the force of gravity, but the question must be asked: Where do we observe the perturbation of space-time? The center of a gravitational well is a difficult area to physically observe. A beam of light is seen and felt on a daily basis. Let us look at the components of a beam of light to further understand this elementary perturbation.
A beam of light travels through space-time as a transverse electromagnetic wave expressed as the Poynting vector S. This operation propels fundamental information about the elementary perturbation of space-time across the universe. The E and B fields expressed above are shown through the fundamental Poynting vector equation to be coupled at the point where the Poynting vector exists and couples to particles and space-time. The Poynting fields

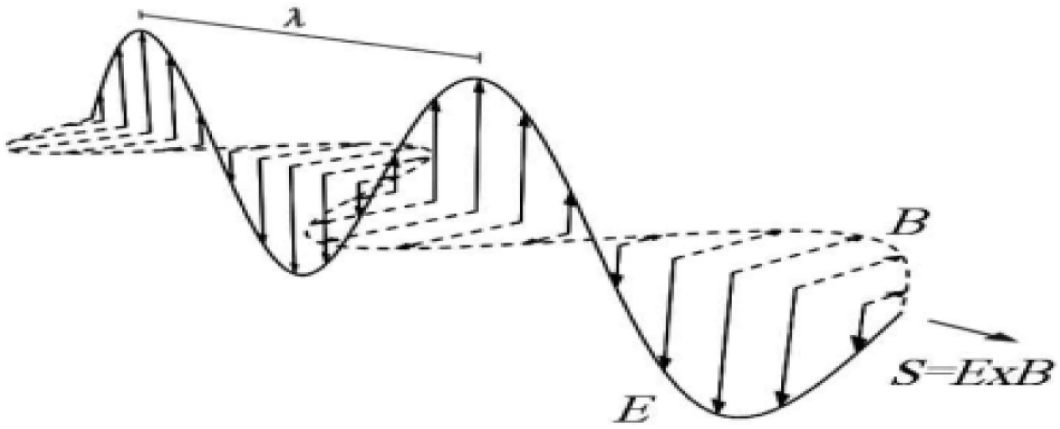

Figure 6 : Components of a transverse light wave noting the propagation due to the Poynting vector.

around the device can be visualized as seen in Figure 7 and are in the form of generating a vortex. Following our fluid concept of space-time we can imagine that since the fluid space-time is stationary far away from the center of the Poynting vortex, a velocity gradient must exist, such velocity gradients lead to turbulence when they exceed a small threshold, as is seen in everyday fluid flows. Added to this effect is the nonlocal nature of the wave functions of the particles, which sample the Poynting field at many locations at once, and thus do not see the vortex as a coherent entity but as a collection of interactions. So we can assume that the quantum mechanical matter waves will experience the Poynting vortex as a source of turbulence.

Intersection of E and M fields and how the equations break down the problem

This intersection of fields is expressed in the Murad-Brandenburg equation, a Poynting conservation equation, which treats the Poynting vector field as a wave field and away from its sources can be written:

$$\mu_0\left[\frac{1}{c^2}\frac{\partial^2 \bar{S}}{\partial t^2}-\nabla^2 \bar{S}\right]=0 \quad (10)$$

When source terms are included we have

$$\left[\frac{1}{c^2}\frac{\partial^2 \bar{S}}{\partial t^2}-\nabla^2 \bar{S}\right]=\nabla\cdot\left[\varepsilon_0 EE+BB/\mu_0\right]+\nabla\times\nabla\times\bar{S} \quad (11)$$

Where it can be seen the vorticity of the Poynting vector: $\nabla\times s$, is prominent.

Away from sources, Poynting fields can be considered as a chaotic sum of waves, moving through each other.

EXPERIMENTATION

The Morningstar Energy Box has various design implementations to enhance the field properties while in operation. Laminate layers of Hymu80 steel encompass a ferromagnetic reservoir on the inside of the device while a carousel made up of magnetic rollers is attached to the drive shaft which is the primary source of dynamic field production.

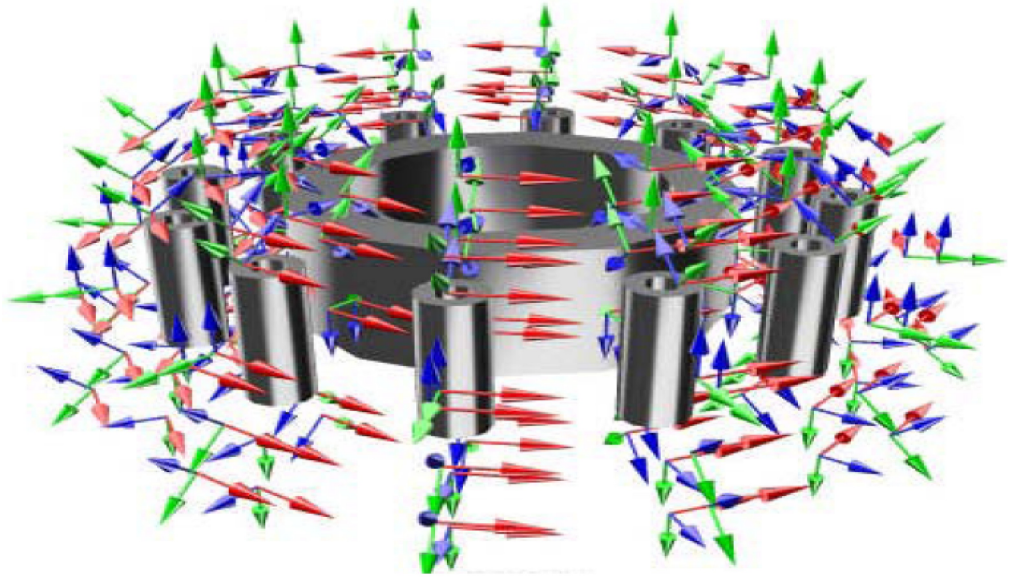

Figure 7 : The electromagnetic fields surrounding a rotating "energy box" array of magnets. Magnetic fields are shown in blue, electric fields are shown in green, and the Poynting vector is shown in red. Note that the Poynting vectors form a vortex pattern.

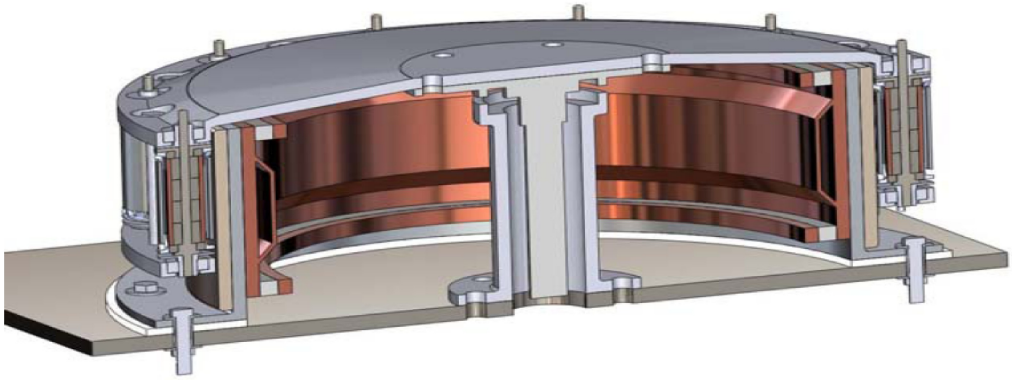

Figure 8 : A cross sectional view of the device showing the laminate layers, the magnetic rollers and drive shaft.

The exploitation of the Poynting vector was implemented in the hopes that an induced state of self acceleration could be created through a translation of angular momentum into linear momentum. The results led the experimentalists to look at the device as a dynamic field producer, causing a reaction not quite thought of during construction, a fluctuation of weight.

Observation of the Morningstar Energy Box

Starting with the physical observations of the device we note that certain physical qualities can be measured: Current (*J*), Gauss (*G's*), Duration (*T*), Temperature (°F), Rotational Speed (rpm), and Voltage (*V*). Other conditions which are important in iterations of various tests are volume of ferromagnetic fluid, orientation of the *B* field (polarity of rollers), direction of rotation (right is clockwise from a top-down view, left is counter-clockwise), along with the measurement of the weight of the system. In this analysis we will explore the phenomenon of weight loss in the device to further explore how these dynamic fields interact with a local gravitational potential. Variation of the above parameters provided a broad spectrum of results to be tabulated.

An initial drop in weight can be seen at the beginning of the experiment in Figure 9 relating to a very quick time-response of the system. This occurred in many tests, and it was noted that this was in part due to the fact that the data acquisition system did not register a signal under 80 rpm. During many tests a span of at least fifteen seconds, and in some instances longer periods, was required to hit the target rotation rate. In this particular experiment the rotation was varied, similar to a step function. During the initial ramp up of the rotation a spike in weight fluctuation can be seen. At about 400 rpm what could be interpreted as a resonant point is seen where the weight fluctuates dramatically, almost similar to harmonic oscillation. This operated during an early experiment where resonances were observed at several rpms.

This was an odd outcome to have the weight of the device suddenly drop over the course of the experiment. A question of where and how this phenomenon occurred needed to be examined. If weight was being lost, where did it go? How did it occur? One idea was that the particles were acting along a fundamental D-dimensional axis. This axis would allow transport along to other D-dimensions in local space-time. This concept will be explored through a *thought* experiment based upon the reaction of the system.

Thought experiment

In an attempt to explain the observable weight loss we will look at the system through a thought experiment. Let us suppose that weight loss was an effect seen when particles accessed a D-Dimensional axis. This D-Dimension persists over all of the other 4-Dimensions on a fundamental level, yet can only be accessed under certain conditions that occurred during operation of the energy box. We will focus on the point where the Poynting vector is created. For simplification we will look at the possible states of a charged particle at this point in one spatial dimension where the measurement occurred. We will look at the state of a charged particle at this point in the z direction. The energy relationship between the EM fields and the Poynting vector, as seen in Equations 7,8 and 9 becomes very complex. We will focus on the process of transport as it relates to the process of wave function collapse. One might consider using the Schrödinger-Newton equation and operating on it using the Hamiltonian operator we can use the principle of superposition and look at the possible energy states of the system.

$$i\hbar\frac{\partial\psi}{\partial t} = -\frac{\hbar^2}{2m}\nabla^2\psi + V\psi + m\Phi\psi \qquad (12)$$

$$H\psi_i = E_i\psi_i$$

Where E_i is the set of all of the energy states and ψ_i represents the probability of the particle being in that state. This probability will allow us to view which energy state the particle is in. If we assume that due to the retarded poten-

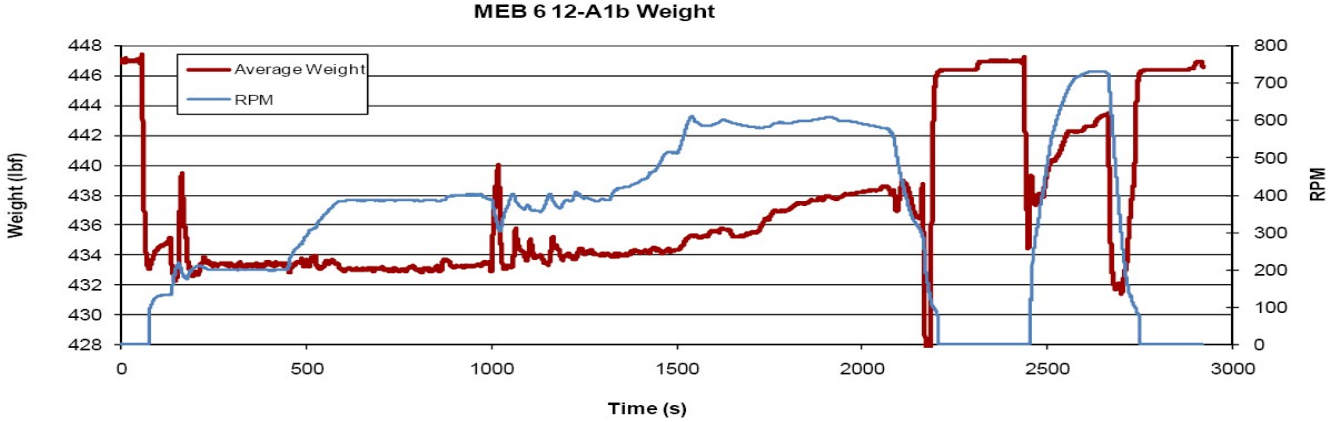

Figure 9 : Experimental data showing duration of experiment, weight and RPM.

tial, we will have a set of mixed states when the system is in motion. This system could be modeled using a Bloch sphere, a relationship similar to a Qubit, which contains the mixed states of the particles in the system.

If the Poynting vector was able to create a vortex, then a state of turbulence could be entrained in the system. This turbulence may cause the mixed energy states of the system to become overlapped between intervals t_1 and t_2 to the point where it may seem that a particle occupies two energy levels at the same time, giving the perceived presence of identical particles. By Pauli's exclusion principle only one particle can occupy each state at each time. This in turn would violate Heisenberg's uncertainty principle which can be written as:

$$\Delta E \Delta t \geq \frac{H}{2} \qquad (13)$$

Another way to look at the action of individual particles is in relevance to andronov-hopf bifurcation. In this instance the d-dimensional system is locally topologically equivalent near the origin to the suspension of the normal form by the *standard saddle.*

This may possibly be described as the action of individual particles within an ensemble. The dynamics of interaction between gravity, electromagnetism and the individual rotating poynting vectors and the mass of the device may create a situation where the bifurcation may appear in this manner. Investigation of this supposition may be further investigated at a later time, however this approach certainly shows potential merit.

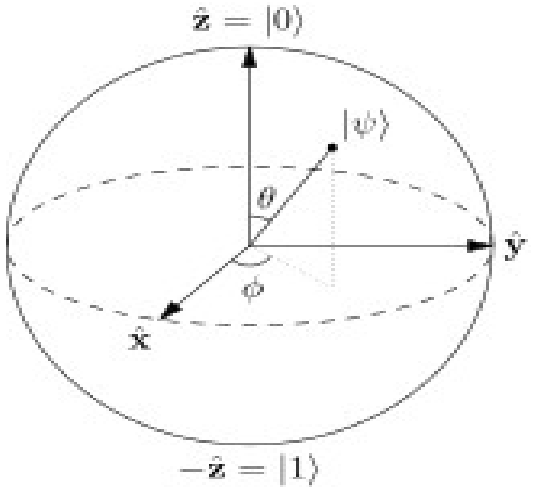

Figure 10 : Representation of mixed states as they would relate to a Bloch sphere.

If the result of this interaction were an entanglement of two particles that have a relationship, the bloch sphere and s^3 hopf fibration can be shown[9] as this relationship from one space to another. The transport of the particles along a d-dimensional axis may look like a projection onto a hopf 3-d sphere, which would be represented as a subspace of the current hilbert space that is currently describing the energy states, Figure 12.

This shows how the overlapping of the retarded potentials could create an area where a hopf fibration would be created, thus a greater chance of wave interactions would occur which in turn would cause a greater turbulence in the local space-time associated with the device.

The wave function of this occurrence over the entire system might look like:

$$\Psi = \Psi_o e - \left(\frac{x^2 + u^2}{\sigma^2} \right) \qquad (14)$$

Where u^2 represents the sampling of other dimensions by the particle due to Poynting turbulence and σ^2 represents the variance of the distribution. If u^2 appears and then grows due to Poynting turbulence, then this must result in the overall decrease of the value of Ψ over the system and hence the measured weight of the system.

In layman's terms, the perturbation of space-time allows for a geometric overlay of various potential possible states of reality.

ANALYSIS

Experimental observation

The operation of the Energy box has proven over multiple experiments to be a nonlinear reactionary system which was able to perturb space-time by creating an unusual electromagnetic field. The Poynting vector created a state of perturbation that induced some unique and non-obvious results, weight fluctuation. No clear evidence demonstrated or negated that a relationship between the time-dependence of the electromagnetic fields and the observation

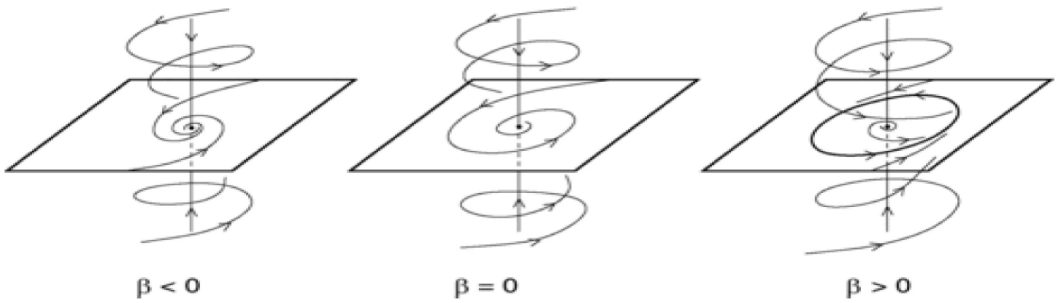

Figure 11 : Supercritical hopf bifurcation in the 3d-space.

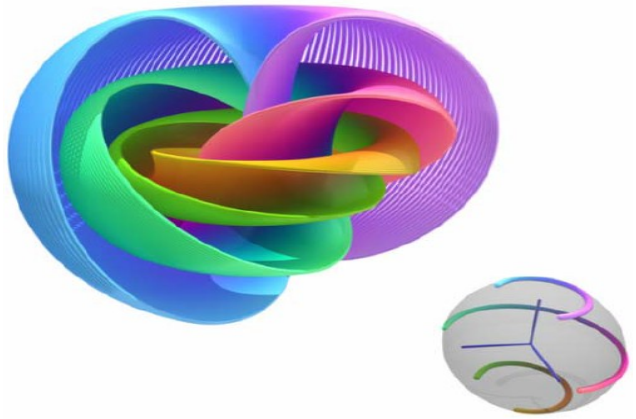

Figure 12 : This sphere can be seen as an overlapping of laminate layers of bifurcated realities over the same 4-d manifold and the possible points where these layers may interact.

of weight change exists. During early experimentation, points of resonance were experienced at particular rpm increments. After magnetically imprinting the device toward the latter series of runs, these resonance points disappeared and the device exhibited larger changes in weight fluctuation. The fact that any changes to the system would yield a different change in weight only reinforces the fact that the preparation of the device is paramount to what results will be seen. Taking this into account, the materials used in the device may need to be evaluated to allow for newer materials with greater magnetic susceptibility. The advent of nano-materials such as carbon nano-tubes or graphene may allow for greater current density and magnetic abilities of the device but this is something that would be further assessed in the future.

Theoretical observation

Due to the superposition of energy states at different times a turbulent state may be created. Under the proper conditions due to the retarded potentials the system may create a history of turbulence where energy states are in a greater state of flux. This would be necessary to obey the conservation laws of energy and thermodynamics. If a D-dimensional axis did exist a possible mode of transport could be from a Bloch sphere to the Hopf 3-d sphere, however a method of experimental application is yet unknown. One would have to be devised which could account for the relationship between the evolving experimental system and the evolving environment to monitor any watchdog effect.

The ability of the system to only loose a fraction of its weight could be due to a limited interaction of Poynting vectors. A point for further analysis would be how and where the EM fields interact to create the Poynting vector. By varying the Electromagnetic fields a point of interaction may be found where the Poynting vector is at its maximum. If more field interactions were possible and a stronger Poynting vector relationship could be found an increase in weight fluctuation may be seen. Whether or not a D-dimensional conduit of subspace transport exists could only be determined by an actual transport of the device as a whole. The likelihood of this occurring is estimated as very low given current observations in application.

NOMENCLATURE

x, y, z	-	spatial axis
T	-	ensemble averaged time
t	-	occupational time
t_r	-	retarded time
m	-	mass
c	-	speed of light
E	-	electric field
B	-	magnetic field
V	-	potential field
H	-	Hamiltonian
k	-	dimensionless constant
e_{ikg}	-	total energy (internal, kinetic, potential)
S	-	poynting vector field

Greek symbols

ρ	-	density
ψ	-	probability
ε_0	-	permittivity
Φ	-	gravitational potential
μ_o	-	permeability

CONCLUSIONS

The Energy Box provides an environment in which the fundamental forces experienced by a terrestrial observer are pushed to their limits. Gravity was perceived to be perturbed by the application of dynamic electromagnetic fields. If a relationship exists between electromagnetic fields and gravitational fields, the application of the Poynting vector may provide the proper mechanism for observing a coupling between electromagnetic fields and gravitational fields. If this coupling can be related to bifurcated spacetime manifolds then a subspace D-dimensional relationship may potentially be found. This may lead to a greater understanding of our environment and may unlock possibilities of interstellar exploration.

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