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The Cause of Gravity, E M, and Q M

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The Cause of Gravity, EM, and QM

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Newsgroups: sci.physics,sci.physics.relativity,sci.physics.new-theories
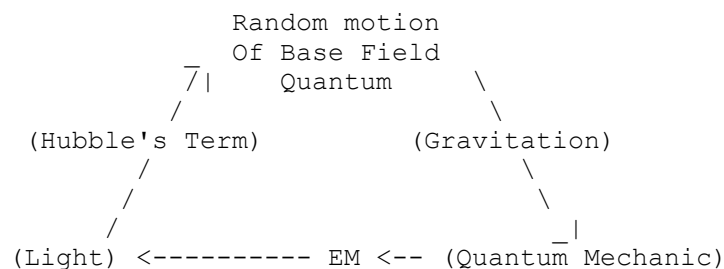**Subject:** The cause of Gravity, EM, and QM

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   This article is to present an overview discussion for a conceptual
model which is based on basic kinetic theory, and Maxwell's model of
atomic vortices.  It also encompasses gravitation and its Newtonian
derivation, Quantum Mechanic & Planck's constant, and EM (as well it
should, being based on Maxwell's model).  The model does specifically
predict certain differences that are not currently covered in the
standard physics models as they exist today.  These include:

* A thermal emission component that is directly related to the
gravitational field of a material body.

*  A drag component for any mass with translational motion in free
isotropic space.

*  Distorted orbital rotation velocities for very large gravitating
mass distributions and bodies.

*  An acceleration field results from any E field gradient.

*  The actual value of elemental charge is not constant, and depends on
the permitivitty and permeability of the region of space in which it
occupies.
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Now the actual model is the ultimate in simplicity. It assumes that
there are individual entities that have a distinct amount (Quantum) of
linear momentum, that they occupy a non-zero volume, and cannot occupy
the same s
pace at the same time. The actual volume (size) and momentum (and
equivalent mass) of same is not discernable based on matter
interactions. This is because this "field" of particles (covered by
simply kinetic theory) approximates an ideal "fluid" or superfluid, and
constitutes the foundation of Maxwell's atomic vortices & vortex sponge
state.

Each of these vortices has a permanent existence in an ideal perfect
medium, and cannot be destroyed. They therefore can be considered
individual entities, which will in turn interact with each other in
complex but predictable fashions. Thus the vortices can be considered
quasi-particles but have the added complexity of circulation
interactions (action at a distance forces) and string like vibrational
modes which radiates waves and permits transmission of same. It is at
this level, and NOT the basic particle level mentioned in the previous
paragraph, that EM & QM occurs.

Gravity on the other hand is seen in this model as the transfer of
basic field energy from the "random walk" kinetic field into the
vibration/circulation energy within the vortices. That is to say, the
underlying field constantly feeds energy into the vortices, which
converts to vibrations and ring circulation. Now it is quite clear
that if this were a "one way" affair, the entire system energy would
soon all be tied up in this form. However, entropy is never zero, and
thus there is constant "dissipation" back into the randomized state.
Thus we have what I've come to call the fundamental feedback triad.


```
                      Random motion
                _     Of Base Field
               /|     Quantum         \
              /                         \
         (Hubble's Term)             (Gravitation)
            /                             \
           /                               \
          /                               _|
       (Light) <---------- EM <-- (Quantum Mechanic)
```


Thus, in this model, no big bang or expansion is necessary. We have
instead a form of the "tired light" hypothesis.

 The model therefore encompasses LeSage's idea that "field" energy is
dissipated in matter resulting in large scale directional
"momentum/energy gradients that "pushes" bodies together. The
Newtonian force equation is a direct consequence of this. However,
this also means that there is a real energy dissipation occurring in
matter, which in turn must be transformed into an EM form (thermal
radiation).   For this to be true, a large gravitating body must "heat
up" and radiate black body radiation proportional to the gravitational
field created. This is the first test of this concept, namely, can
this be correlated and confirmed or falsified (like a lawy
er, never ask a question that you don't already know the answer to: yes
the thermal emission can, with high correlation, be linked to the
gravitational potential of the body)?

Moreover, as Feynman pointed out (Volume 1 Chapter 7, page 9-10 of the
"Lectures") this process must also produce a "drag" component on any
matter that is in translational motion relative to the underlying
"field". The magnitude of which is easily calculated and, at first
glance, spells the death knoll for this concept. But the key to this
is the phrase "that is in translational motion RELATIVE to the
underlying field". For the earth, like all solar planetary bodies, the
system is "assumed" to have formed from a co-rotating solar nebula.
The underlying "field" thus would be also co-rotating, therefore there

is no relative motion between the planetary bodies and the underlying
field. However, rouge stars and large wandering bodies not in such a
co-moving state, should experience this drag. This will have real
consequences in astrophysics

Since gravitation in this model is an attenuation of "field" energy in
bodies, there is a cumulative "loss" of intensity as it passes through
subsequent bodies.   Given sufficient attenuation, this effect will
"weaken" the resulting interaction of any bodies that are "shielded" by
such outer shells. This means that their predicted orbital speed will
diverge from the standard model and will be progressively slower than
would otherwise be expected. In the case of this model's gravitation,
the sun's attenuation factor is $2GM/rc^2$ and is on the order of 1E-06.
The standard attenuation equation is:

 $dFee = Fee\_o(1 - e^{-ux})$ Where Fee is the field flux, and ux is the
attenuation factor

When ut is much less than one, e^{-ux} simplifies to $(1 - ux)$ and thus in
the above equation we get:

$dFee = Fee\_o(ux)$

and x is the travel distance through the attenuator and is directly
related to the radius (r) of the spherical bodies. We find therefore
that for such a weak solution, this effect is a direct function of
 the sum of all radii encountered. For a system such as a galaxy, this
is directly correlated to the stellar density and galactic "depth $dR =
R_t - R$. We also so know that galactic orbital velocity is, in
Newtonian gravitation, $a = V^2/R = GM/R^2$ and thus $V^2 = GM/R$, which is
a linear function of $1/R$. Since the weakening is a linear function of
dR and V^2 is a linear function of $1/R$ we find that, for a given
density, these effects can cancel, resulting in a "flat" or constant
rotation profile. This could resolve the "dark matter" issue related
to such observed "flat" rotation profiles.

Since we can treat the vortices as quasi-particles, given a sufficient
density, this system can also be consider a complex form of standard
kinetic theory, as modified to account for interactive forces extending
from the vortices. Thus this system will also have a form of pressure,
density, temperature and fundamental action. It is this fundamental
action term on which we will focus next. Action, as defined in kinetic
theory is the mean interaction parameter. This function leads to the
concept or idea of "least action". This parameter is very easy to
define, it is the scalar quantity of the magnitude of the "least"
momenta that can in fact "interact" multiplied by the mean distance
between such interactions. To have an "interaction" we need two
entities which each having a quantum of momentum (p). L can designate
the average [mean] distance between such interactions, thus
mathematically action (h) can be defined as:

$h = 2pL$ and the unit are (in MKS) kg-m^2/sec

Planck did not overlook this similarity when he discovered that light
was divided into quanta. He called this term the "Quantum of Action
(h)"

If, for the vortices, we define the quantum of momentum p as 5.15E-27
and the Mean Free Path [MFP] L as 6.43E-08 we get:

$h = 2(5.15E-27)(6.43E-08) = 6.63E-34$

or Planck's constant. Now I have left out the full rigorous derivation
of p & L. To obtain this, contact me and ask for my paper "Simply
Beauty" or simply search the web for this title, since it is published
at several locations.

It is important to note that the MFP of the vortices is 6.43E-08
meters.   This corresponds to the so-called UV edge (onset of

ionization). In this model, this is interpreted as the point at which the vortices alone can no long directly support wave propagation (since the wavelength drops to less that their mean spacing) and the underlying "field" must predominantly assume this role. This causes a distinctly different characteristic for radiation with wavelengths shorter than this value.

As can be seen by the definition above, for field action to be non-zero, L must be non-zero. This means that by definition, within the bounds of basic continuum mechanics, the field must be compressible. Any compressible field has the following mathematical characteristic:

Div v > 0

where v represent the velocity "field" of a differential volume element. Since linear momentum p = mv, and assuming a conservative field, then:

Div p > 0

and must be a fundamental property of the field.

Given that the definition of Divergence is:

Div = (d/dx + d/dy + d/dz)

Div p will then become:

(dp/dx + dp/dy + dp/dz) = e where e > 0

taking the simplest case where dp/dy = 0 and dp/dz = 0, we can one dimensionally say:

e = dp/dx = 2p/L = 1.602E-19 kg/sec

The consequence of this definition is, to say the least, fascinating. Let look at Coulomb's equation:

F = (1/4pi[eps])e^2/r^2 ->

Given the definition above, we find that eps (permitivitty) resolves to units of kg/m^3 or ordinary density.

Thus given that:

c^2 = 1/mu[eps] (c is light speed)

we find that this corresponds to the basic thermodynamic equation:

c^2 = xP/rho

Where P is pressure and rho is density.

If this is fact the relation, we can define permitivitty based on the defined parameters of p, L, and c. Simply put, permitivitty should be proportional to p/cL^3. Therefore eps should be:

eps = ?(p/cL^3)

We find that, to get the proper value, the unknown term (?) must be 137, or the fine structure constant.

In other words, we now have a one to one correlation of a standard fluid medium to all EM properties, as Maxwell surmised.

The consequence of this shows us that the vector quantity E (electric field) is a velocity term, having within this model, units of m/sec. Thus the gradient of velocity with respect to time would produce an

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                 acceleration,
                  m/sec^2.  This is easily testable, all one has to do is create a
                 "shaped" asymmetrical electric field and place any neutral object
                 within the field an look for an imposed acceleration.

                 To close the triad proposed above, we must provide a mechanism by which
                 EM radiation is dissipated.  This can be thought of as a resistance,
                 and on a per unit distance basis, must have the form:

                 dE/dx = kg-m/sec^2 = dp/dt = (dp/dx)(dx/dt)

                 and would be the "resistance", or dissipation "force" acting on wave
                 motion through space.  Now Hubble's term is estimated to be between 50
                 & 100 km/sec-MPC and we will use the mean difference between these
                 values (75,000 m/sec-MPC) in this discussion.  Inspecting the equation
                 above we see a dp/dx, which can be related in the model to elemental
                 charge e.  The dx/dt term would then become E, the inherent electric
                 field intensity.  Thus we get:

                 dE/dx = eE-> = h(dnu/dx) = (p/c)a    Where p/c is the mass equivalence
                 of a photon with momentum p, & a is acceleration.

                 We know that a is (75,000)^2 / (2(9.46E+21)) or -2.97E-18 m/sec^2 based
                 on published values.  So we can quantify this effect, but at this
                 point, not prove its existence.

                 Clearly, as I showed in "Simply Beauty", we can define all the QM/EM
                 constants in terms of p, L, c, and the fine structure constant.  So, in
                 this regard, the model is both internally consistent and fully
                 compatible with existing data.  Moreover, it encompasses gravity,
                 defines elemental charge, and predicts new aspects of known processes
                 that can in fact be tested.  So, I now comes the question, "is there
                 something in this model that is incompatible current observations"?  If
                 so, specifically what & why.  If not, is there any other single model
                 that encompasses as much and is equally simple in its foundation?
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Paul Stowe

On Wed Mar 04 10:30:12 PM PST 1998, "J.J. Gauch" < Physicsgod@technologist.coOm > asks:

What, pray tell, doest your aether theory predict?

Paul Stowe responds .....

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        The aether model has a lot going for it including:

      - derivations of Planck's constant, elemental charge, Boltzman's
        constant, Rydberg's term, Permeability, Permitivitty from standard
        fluid properties

      - Derivation of Newtonian Gravitation and a definition of the physical
        properties that create the gravitational constant G

      - A foundation for Quantum Mechanics and a simple link to gravitation

      - An explanation for the pure transverse nature of light

      - Derivation of the 2.8 degree K background radiation

      - A consistent framework for all physical phenomena

      - An explanation for the distorted rotation profile of galaxies without
        invoking "dark matter"
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- Explanation of Galvantic potential

And does so from a simply, single common basis. These are not pie in
the sky descriptions but full mathematical derivations and definitions.
So its kind of hard to argue with math since these a not arbitrary.
Two "isolated" (that is to say no attempt is made in this post as to
explain their origin) examples are illustrated below.

Boltzman's constant k in MKS is:

k = ue/2a  = h/ec

Where

h = Planck's constant
u = permeability
e = elemental charge
c = light speed
a = fine structure constant
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