

## MILES MATHIS KEY PAPERS SUMMARY

### WITH REFERENCE TO THE RECIPROCAL SYSTEM OF DEWEY B LARSON

Dr. Bruce Peret and Dr. Gopi Krishna

January 2015



This paper serves to compare the different approaches to a general theory of physics that has been attempted independently by two researchers, in order to show the overlapping concepts side by side. It is not intended to do what is traditionally done in science (establishing and fighting over priority) but to show how very similar ideas can be reached by anyone who takes an honest look at current scientific data.

International Society for Unified Science, Inc.

1680 Atkin Ave, Salt Lake City, UT 84106-3727

## Unified Field Theory: Unraveling the Charge Field

1. <http://milesmathis.com/ug.html> (First Paper Jan 2005 on G)

It has always seemed puzzling that a constant should have so many unexplained dimensions... "Velocity relative to what?" you may ask. "If everything is expanding, then what is our background?" The velocity we will find must be relative to two things. It is relative to the velocity of the radius at  $t_0$ , which we define as zero. And, it is relative to the speed of light,  $c$ . Einstein defined the speed of light as the universal background, and I continue to accept that definition.

(Refer NBM Ch. 3 pg 32, 35)

But, as has been explained, the reference datum for physical magnitudes in a universe of motion is not zero speed but unit speed. The natural datum is therefore continually moving outward (in the direction of greater magnitudes) from the conventional zero datum, and the true speeds that are effective in the basic physical interactions can be correctly measured only in terms of deviation upward or downward from unity. The finding that the natural system of reference in a universe of motion is a moving system rather than a stationary system, our first deduction from the postulates that define such a universe, is a very significant discovery. Heretofore only one so-called "universal force," the force of gravitation, has been known.

2. <http://milesmathis.com/moon.html> (Moon gravity anomaly)

My proof relies on only two postulates. The first is that the E/M field is an exclusionary field created by bombardment or an equivalent mechanism. There is nothing revolutionary in this postulate, since we already accept that meteors are affected not only by the atmosphere of the Earth, but by its E/M field. The second postulate concerns the variance of an E/M field when it is created by a spherical object. We know that in a non-spherical E/M field the field varies with the inverse square law. For this reason, a large spherical E/M field will vary as  $1/r^4$ , if measured from a distance.

(Refer NBM Ch.12 pg 155, SPU: Ch. V pg 29)

The time region speed, and all quantities derived therefrom, which means all of the physical phenomena of the inside region, as all of these phenomena are manifestations of motion, are therefore second power expressions of the corresponding quantities of the outside region. This is an important principle that must be taken into account in any relation involving both regions. The intra-region relations may be equivalent; that is, the expression  $a = bc$  is the mathematical equivalent of the expression  $a^2 = b^2c^2$ . But if we measure the quantity  $a$  in the outside region, it is essential that the equation be expressed in the correct regional form:  $a = b^2c^2$ ... The force at a distance  $s$  is hence proportional to  $(s^2)^2$  or  $s^4$  rather than to  $s^2$ .

3. <http://milesmathis.com/ellip.html> (Ellipse requires 3 forces)

To get the correct shape and curvature to the (elliptical) orbit, you have to vary the object's innate motion. But the object's innate motion cannot vary. The object is not self-propelled. The solution is

that the orbital field is a two-force field. It is not just determined by gravity. Therefore any orbiter must be exhibiting at least three basic motions. The two above, and one other. This other is a motion due to the combined E/M fields of the orbiter and the object orbited. The force created by the E/M fields is a repulsive force, like that between two protons. It is therefore a negative vector compared to the gravitational field, which is an attractive field. And so the total field described by gravity and E/M is a differential of the two. In the end, you subtract the E/M acceleration from the acceleration due to gravity.

(Refer NBM Ch. 5 pg 63-64)

The identification of a second general force, or motion, to which all matter is subject, provides the much needed “antagonist” to gravitation, and enables explaining many phenomena that have never been satisfactorily explained on the basis of only one general force. It is the interaction of these two general forces that determines the course of major physical events. The controlling factor is the distance intervening between the objects that are involved. Inasmuch as the progression of space and time is merely a manifestation of the movement of the natural reference system with respect to the conventional stationary system of reference, the space progression originates everywhere, and its magnitude is always the same, one unit of space per unit of time.

4. <http://milesmathis.com/uft.html> (Gravity is a coupled force)

The only way to completely dispense with attraction is to treat gravity as a real acceleration outward. The problem of the Himalayas is easy to solve once you realize that gravity is not an attraction. It is a motion.

(Refer NBM Ch. 5 pg 59-60)

The photons of radiation, for instance, are observed to be moving outward from the emitting objects. Similarly, each of the rotating photons in the local environment is moving toward all other rotating photons, by reason of the inward motion in space in which all participate, and the change of relative position in space can be observed. The inward motion in all directions of space is gravitation, and the rotating photons are the physical objects that gravitate; that is, atoms and particles. Collectively, the atoms and particles constitute matter.

5. <http://milesmathis.com/coul.html> (Coulomb’s constant and Bohr Diameter)

If the constant  $k$  is just a cgs kludge, as has been claimed by many physicists and engineers, why does it happen to be equal to the inverse of the Bohr diameter?

6. <http://milesmathis.com/uft2.html> (Gravity and Coulomb)

$F = G(DV)(dv)/r^2$ ,  $F = k(DV)(dv)/r^2$ , If  $k$  and  $G$  had been the same number, all this would have been seen earlier. It would have then been easy to see that Coulomb’s equation was just the inverse of Newton’s equation. But because the constants were not the same number, the problem was hidden.

(Ref: SPU Ch.XXIX pg 82)

Since each material substance affects the electric and magnetic forces in a manner determined by its rotational characteristics and its ability to respond to induction, it is possible in each case to derive a numerical value which represents the magnitude of the effect produced by the particular substance. This value, a dimensionless ratio, is the dielectric constant,  $\epsilon_r$ , in the electric system and the permeability,  $\mu$ , in the magnetic system. For free space the value of each of these quantities is unity. We may now generalize the electrical force expression, equation 123, so that it is applicable to the situation in which the charges  $e$  and  $e'$  are separated by a medium of dielectric constant  $\epsilon_r$ .

$$F = ee'/\epsilon_r s^2$$

Equation 127, the corresponding magnetic expression, may be similarly modified to cover the general situation in which the intervening medium has a permeability  $\mu$ .

$$F = MM'/\mu s^2$$

7. <http://milesmathis.com/disp.pdf> (Maxwell equations)

The permittivity of free space is misassigned to free space. The constant is not the permittivity of free space, it is gravity as created by nucleons. So we already see that Maxwell's displacement field is simply another name for my charge field. And this explains—in yet another way—why the charge field has been undercover for about 150 years. In Maxwell's equations, it has been the electrical field and magnetic field that have gotten all the attention and fame, while the displacement field has been all but hidden.

(see item 8)

8. <http://milesmathis.com/disp2.pdf> (Maxwell equations, contd.)

$$D = \epsilon_0 E + P = (D - P)/\epsilon_0 = (C - P)/g = (C_A + C_N)/g$$

That is, ambient charge and nuclear charge. If we seek just one main reason that contemporary physics is so gloriously ignorant of the charge field, it is this. Maxwell's failure to explain the mechanics of the displacement field in 1861 buried field at that time, and it has been buried since. It was immediately pushed into the background, and has existed in the dark all these generations.

(Refer BPOM Ch. 15 pg 170-172)

When the full capacity of the capacitor at the existing voltage is reached, the opposing forces arrive at an equilibrium, and the flow of electrons into the capacitor ceases. Just what happens while the capacitor is filling or discharging is something that the theorists have found very difficult to explain... Because accepted theory requires the “displacement current” to behave like an electric current without being a current, conventional science has had great difficulty in ascertaining just what the displacement actually is... This impasse between theory and observation that now prevails is another

of the many items of evidence showing that the electric current is *not* a movement of charged particles.

9. <http://milesmathis.com/lag3.pdf> (Lagrangian equation)

The Lagrangian ... props up both celestial mechanics and quantum mechanics. In quantum mechanics, the Lagrangian has been extended into the Hamiltonian. The Hamiltonian does nothing to correct the Lagrangian, taking it as true and given.  $L=T-V$ . The non-zero Lagrangian is telling us very clearly that we have two fields. Just as gravitational potential cannot resist gravitational kinetic energy, charge potential cannot resist charge. Indirectly, this must tell us how that mass is responding to the photon density, which tells us how the gravity field and charge field are fitting together in this particular problem. So the variable T corrects the variable V, giving us a total field energy L that is an improvement on any energy Newton could find or predict.

(see item 3)

10. <http://milesmathis.com/gauss.pdf> (Gauss Law, C/g equation)

As far as the Electrical field E goes, the equation is blistering clear and simple:  $E = C/g$ . E is the ratio of two fields, C and g. One way to unify two variables is to put them in a ratio. Two variables: one term: hence, unification. Two become one: that is what "unify" means. Gravity always points in toward the center of any real object, and if photons are being recycled, they are moving both in and out. But in almost all cases, what we call charge is the photons going out, not the photons going in. Why? Because the greatest results of charge normally happen near the nucleus or proton. Matter tends to take a chaotic and undirectionalized ambient charge field and focus it.

(see item 3)

11. <http://milesmathis.com/gauss2.pdf> (Gauss electric and gravity law)

Since it is known that Gauss' gravity equation is equivalent to Newton's gravity equation, I have just linked up Newton's equation with Maxwell's equations. I have shown how to go directly from one to the other. Since Gauss' electrical equation is known to be equivalent to Coulomb's equation, I have also linked up Coulomb's equation with Newton's equation.

12. <http://milesmathis.com/cc.pdf> (Cosmological Constant and charge field)

You see the problem is that everyone from Newton on down has just assumed that the field was gravity-only. The field equations express a total force, that force is a single force, therefore the field must be a single field, right? Wrong. A single force does not in any way imply a single field. A compound field, made up of two completely separate fields, would also create a single total force. The charge field is in vector opposition to the solo-gravity field, so I suppose you could call them anti-gravitational if you like. I just take the existing and known spectrum and use it as the charge field. Then I give all atomic and subatomic particles spin. I change very little there, since they already

have several spin quantum numbers. I just make the spin real. Then I propose that these particles recycle the charge field, by actually taking the photons in and re-emitting them.

(see item 3)

13. <http://milesmathis.com/laplace.html> (Laplace uses tricks to account for repulsion)

In Forest Ray Moulton's book from 1914, which is published in full on the web by Google Books2, you can see (p.202) that Laplace uses the first and second derivatives of the direction cosines, and these angles are taken directly from the three or four real observations. In other words, the angles aren't based on calculations from Newton's equations or theory, they are taken directly from the data.

14. <http://milesmathis.com/easy.html> (General Relativity by including repulsion)

This vector reversal had the mathematical effect of turning the field equations inside out. The objects in the field got larger with time, but the space around them reverted to a rectilinear or Euclidean field. In this field I could do very simple math, achieving the same numbers as Einstein. Then, when I was finished, I just turned the vector back around, to suit myself. The first problem is the precession of the perihelion of Mercury...If you think that was a coincidence, watch the same solution applied to the bending of starlight by the Sun.

15. <http://milesmathis.com/stefan.html> (Obtaining 4th power law with Temp.)

We found that, other than the radius, the transform was composed of  $g^2/c$ . I have simplified the derivation specifically to make the mechanics transparent, but what mechanics have we seen here? Why  $g^2/c$ ? That transform gives us both the gravitational field and the E/M field, the two fields that determine this equation. We simply rewrite that term as  $(g)(g/c)$ . The first term is gravity, obviously, and the second is the E/M field. The E/M field travels  $c$  through the gravity field, so we have to relate one to the other. Yes,  $g^2/c$  is the simplest of the simple unified field transforms. I found it only because I was looking for it.

(Refer BPOM Ch. 5 pg. 57)

Radiation originates three-dimensionally in the time region, and makes contact one-dimensionally in the outside region. It is thus four-dimensional, while temperature is only one-dimensional. We thus find that the energy of radiation is proportional to the fourth power of the temperature.

**Structure of Matter**

16. <http://milesmathis.com/super.html> (Stacked spins)

That said, it is possible to have simultaneous x and y spins, but you must apply the second spin to a center outside the object. What I mean is that the electron must spin end over end, rather than spin about the axis through its center. To be specific, if we let the z axis spin about its center rather than about one end, we don't get a doubling of the spin radius with each added spin. **We need that.**

(see 17)

17. <http://milesmathis.com/wave.html> (Combining spins and dimensions)

I have shown the mechanical genesis of five separate wave motions, motions that may be expressed by Schrodinger's equations. As you can see, this does not imply that space is now five-dimensional, in any strange or esoteric sense. We still have only three directional dimensions here. It is only a complex stacking of spins and linear motions that gives us the extra functions or variables (or whatever you want to call them in your math and equations).

(see (a)-(b)-(c) tables, SPU Ch. III pg 16-18)

Displacement	Element	Atomic No.
2-1-1	Lithium	3
2-1-2	Beryllium	4
2-1-3	Boron	5
2-1-4	Carbon	6
2-2-(4)		
2-2-(3)	Nitrogen	7
2-2-(2)	Oxygen	8
2-2-(1)	Fluorine	9

18. <http://milesmathis.com/elec2.html> (Experiment suggests spin structure)

In relative or scaling equations, the mass and the velocity can even be treated as equivalent, as we have seen. This is because mass is a motion itself. You will say, "If electron motion is determined by photon motion, what determines or causes photon motion?" Unknown. It may be residue of a big bang, or c may be the groundstate of the universe. Every theory hits a wall at some first cause, and mine hits the wall here. Even if I showed some cause of c, I would have to show the cause of that cause. Like Einstein, I am satisfied taking c as a first postulate, and going from there. (see 1)

19. <http://milesmathis.com/tired.pdf> (Photon spin loss may create redshift)

The electron lost its outer spin, and an electron that loses its spin is, by definition (in my theory), a photon. An electron is just a photon with extra spins. That is what my particle unification was about. All the fundamental particles, including photon, electron, meson, proton, and neutron, are just different spin levels of the same particle. (see 21)

20. <http://milesmathis.com/quark.html> (Quarks and photon spin)

+a+x+y+z

We have four possible spins on every quantum. A quantum may have all these spins, or only some of them. A quantum that loses an outer spin will seem to change from one quantum to another. As a start, you may think of the three x,y,z levels as replacing the up, down and strange quarks. The a-level then becomes the color variable.

(Refer NBM Ch. 10 pg 127)

Geometrical considerations indicate that two photons can rotate around the same central point without interference if the rotational speeds are the same, thus forming a double unit. The nature of this combination can be illustrated by two cardboard disks interpenetrated along a common diameter C. The diameter A perpendicular to C in disk a represents one linear oscillation, and the disk a is the figure generated by a one-dimensional rotation of this oscillation around an axis B perpendicular to both A and C. Rotation of a second linear oscillation, represented by the diameter B. around axis A generates the disk b. It is then evident that disk a may be given a second rotation around axis A, and disk b may be given a second rotation around axis B without interference at any point, as long as the rotational speeds are equal.

21. <http://milesmathis.com/meson.html> (Analysis of pions etc. and neutrino oscillation)

I show that mesons may be explained by stacked spins, without quarks or chromodynamics. I do a full analysis of the muon, the pion, the kaon, the tau, the D meson, the eta meson, the charmed eta meson, the bottom eta meson, the Z particle, the muon neutrino, and the tau neutrino. Also additional theory for neutrino oscillation.

(see NBM Ch. 15, 16 pg 189, 193, 203)

Cosmic System		Material System				
c-helium	(2)-(1)-0	2-3-0	Argon			
c-neon	(2)-(2)-0	2-2-0	Neon			
c-argon	(3)-(2)-0	1-2-0	Helium			
c-krypton	(3)-(3)-0	1-1-0	2 neutrons			
c-Atomic number	Element	Grav. charge	Inter-stage	Theor.	Mass Obs. **	Mass Individual Values
3	c-Li <sup>6</sup>			621		
			a	673	700	
2-1/2	*c-Li <sup>5</sup>			745	(760)	750,770
			a	797	784	



			d	952	(951)	940,953-958
36	*c-Kr	1		983	(986)	970,990,997
18	*c-Ar	1		1034	(1031)	1020,1033,1040
12	c-Mg	1		1086	(1090)	1080,1100

22. <http://milesmathis.com/elecpro.html> (Proton = electron + spins)

$$[1 + 8], [1 + (8 \times 16)/2], [1 + (8 \times 16 \times 32)/2^2], [1 + (8 \times 16 \times 32 \times 64)/2^4]$$

$$= [1 + 2^3], [1 + 2^6], [1 + 2^{10}], [1 + 2^{14}] = 9, 65, 1025, 16385.$$

The electron with all spins has an energy of 16,385. The electron with no spin has an energy of 1. The electron with axial spin has an energy of 9. If we divide 16,385 by 9 we get  $16,385/9 = 1820.56$ .

(Refer NBM Ch. 13 pg 167)

Mass Composition	Particle	Mass	
		Calculated	Observed
e - c	charged electron	0.00054874	0.00054876
e - c	charged positron	0.00054874	0.00054876
e	electron	0.00057870*	massless
e	positron	0.00057870*	massless
e	neutrino	0.00057870*	massless
p + m + e	massless neutron	1.00697075*	massless
p + m + 2e	proton	1.00754945	unobserved
p + m + 2e + C	charged proton	1.00759439	1.007593
p + m + 3e	hydrogen (H <sup>1</sup> )	1.00812815	1.008142
p + m + 3e + E	compound neutron	1.00899621	1.008982

23. <http://milesmathis.com/gf.pdf> (Bohr magneton g factor correction)

To do that, we have to realize that both e and h will be affected by the Earth's charge. In my paper on Millikan, I showed how the charge field of the Earth enters the equation for e, causing a .0973% change in e. That is,  $.009545/9.81 = .000973$ . We divide the Earth's charge by it's solo gravity to discover how much of the unified field is due to charge. That is our correction to e.

(see 22)

24. <http://milesmathis.com/photon.html> (Unifying photons with other particle)

Now for the toughest question begged: "How can an electron be composed of a photon, with two levels of stacked spins, plus its own axial spin, and then emit photons in order to create the charge field? In this scenario, you have photons emitting themselves!" Good question, and it is made even more difficult if you add this one: "If a photon can dodge the charge wind, made up of other photons, how does it ever get the seven extra spins to become an electron?" Photons do collide all

the time, but because they are the same size, they normally don't cause much slowing. The odds of a direct hit are very small. Indirect hits cause spin, not slowing. So collisions do cause all the spins, without much slowing. (see 22)

25. <http://milesmathis.com/heat.html> (Heat is due to charge field)

Since photons are already traveling as fast as they can (at  $c$ ), we cannot speed them up to increase motion or energy or temperature. We can only increase the number of photons in a given space. So heat is photon density. When you add heat to a vessel, you are adding photons.

(Refer BPOM Ch. 5 pg 56)

From the physical standpoint, therefore, the thermal motion is a net outward motion that adds to the gravitational motion (which is outward in the time region) and displaces the equilibrium point in the outward direction.

### Mathematics

<http://milesmathis.com/are.html> (Curved velocities and calculus)

In fact, as I will show, they were both based on the same conceptual error: that of applying diminishing differentials to a mathematical curve (a curve as drawn on a graph). The binomial expansion was an infinite series expansion of a complex differential, using a fixed method. In trying to express the curve as an infinite series, he was following the main line of reasoning in the pre-calculus algorithms, all the way back to the ancient Greeks. Berkeley called Newton's fluxions "ghosts of departed quantities" that were sometimes tiny increments, sometimes zeros. He complained that Newton's method proceeded by a compensation of errors, and he was far from alone in this analysis.

<http://milesmathis.com/pi.html> (Series of 4, Comparison with cycloid motion)

You do not have an orbital velocity, since there is no such thing as an orbital velocity. Velocities do not curve. What you have is a sort of orbital acceleration. It is a vector addition of your tangential velocity and the centripetal acceleration... The centripetal acceleration and the tangential velocity are independent motions(**pi**) If we study the generation of the cycloid closely, we find more evidence of this, since the arc of the cycloid isn't some sort of integration of the circumference with the distance rolled. With the cycloid, the x-to-y integration of distances is explicitly including time. (**pi2**) The arc is defined as a curve composed of linear or straight vectors, therefore it can never be continuous. Logically, the time or length cannot go to zero, since there is no time or length at zero. (**pi3**) It has been known for some time that the orbit of Explorer 1 contained a huge anomaly, billions of times larger than the Pioneer Anomaly, in fact. (**pi4**).

