How Should Humanity Steer the Future?

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Throughout all of our adventurous past, mankind's tenacious spirit has driven us on a bold and timeless quest for greater knowledge and truth about the fundamental physical laws that govern the tempestuous electromagnetic-sea that we simply call our universe. But what truly is the essence of our universe and how does such awe-inspiring knowledge impact our heading as we steer the fate of humanity through the chaotic waves crashing all around us from the high-voltage current induced by the best and brightest minds who are vigorously fighting intellectual battles in order to increase the technological advancement of mankind? I truly believe that the greatest direction humanity could steer the future is towards the path of setting aside our differences, overcoming our own selfish ambitions (that are based upon money, greed, power, prestige, or pridefulness), and embracing revolutionary new ideas that can create a better world for the next generation of man to set foot upon the face of the earth. However, steering in the right direction is only part of the equation. I am certain you already know that a velocity depends upon both its magnitude and its direction!

The state that humanity can realistically achieve is a complete unification of all the fundamental forces of nature and the physical laws of the universe. We should be able to mathematically simulate the universe at the quantum level on our computers in order to develop new and innovative products of human imagination at the greatest efficiency and precision possible on an exponential curve of human development with increasing complexity. My plan for getting us there is to personally achieve everything that is necessary to make that dream a reality regardless of the support of the academic community through my own great mathematical achievements and create some of the most amazing applications of the Equation of Everything.

My name is Stephen Tuck and I have derived and integrated this equation. It is the Unified Field Equation that Einstein sought for Gravitation and the Electromagnetic Force. On December 28, 2009, I began a great journey with a simple theory that matter falling into a black hole converts into Space, causing the accelerated expansion of the universe. From this theory, I derived the equation that was my first major step in this process. I determined that the c^2 in Einstein's Mass-Energy Equivalence equation ($E=mc^2$) stood for the variables of Space and Time (initialized by the c-constant). Then I subsequently linked this to the Lorentz transformations of Mass-Increase and Time-Dilation to form the Tuck-Einstein Equation. I later realized that this equation not only mathematically finishes Special Relativity, it also correctly replaces the Dirac Equation of Quantum Mechanics (since both are 4-Component Wave Equations, First-Order in Space and Time, that apply a form of Quadratics). Below is this first equation:

<u>Tuck-Einstein Equation:</u>
Energy = (Space * Mass * Time) / (1 - (v^2/c^2))^0.5

Eventually, I figured out what the 8PI in Einstein's Field Equation for Gravitation represented. See 2PI Radians stands for one full 360-degree rotation. This translates into Electric Charge because I found out that Charge itself is due to Rotational Kinetic-Energy, which transfers through Subspace causing the forces of attraction and repulsion. All elements are naturally dipolar because they contain both positively and negatively charged particle-pairs. Since 2PI represents one charge, a dipole would be equivalent to 4PI and the summation between two dipoles is thus the 8PI that is contained within Einstein's Field Equation. While it took nearly 20-steps to integrate, isolate, derive, and simplify several equations, I was able to unify a variant of Ampère's Force Law with the right-hand side of Einstein's Field Equation. This integration is the unification of an Electromagnetic Force Law with Einstein's Equation for Gravitation, which by its definition is the Unified Field Equation. What I discovered while working with the equation is that it represents a Perfectly Spherical Earth. The q-variable is equivalent to the PI-constant, radius is 1 (which is unity), and Force is that of gravitation. However since this equation of a Perfectly Spherical Earth does not contain the deviations of the Equatorial Bulge or for mountains and valleys, the gravity variable equals PI^2. Below is the Unified Field Equation. Interestingly, I have found mathematical evidence of my equation when you divide 2PI Radians (a full 360-degree rotation) by 31,536,000 seconds (365 days * 24 hours * 60 minutes * 60 seconds). The answer you get is 2 x 10^-7 rad/sec, which is the same value as the Ampère. Could Angular Frequency with units of Radians per Second (rad/sec) be equivalent to Ampère's Force with units of Newtons per Meter (N/m)? My equations show that the charge of a particle is equivalent to 2PI where gravity is due to dipolar, rotational kinetic-energy. Additionally the value of the Gaussian Gravitational Constant is seen in an adjustment of the equation for the deviation effects to yield the standard value for earth's gravitation. Interestingly, Newton's Law of Universal Gravitation measures the Force between two bodies of mass (gravity) in Newtons and the Gravitational Constant is in units of N*(m/kg)^2. This is an example of the equivalence of Ampère's Force (with Angular Frequency or rotational kinetic-energy) and Gravitation since it is a calculation of the Average Angular Velocity of the earth around the sun. After all, Angular Frequency is synonymous with both Orbital Frequency and the magnitude of the Angular Velocity vector. The Centripetal Force of an object must be equal and opposite to the Gravitational Force in order for an object to have a stable satellite orbit.

Equation of Everything:
((F * 8*PI * r) / (q^2 * c^2)) =
(((4*PI * m1) / (Energy1 *(1 - (v^2/c^2))^0.5)) +
((4*PI * m2) / (Energy2 *(1 - (v^2/c^2))^0.5)))

**Equation of Everything Adjusted for the
Spherical Deviation and Earth's Velocity
(with the radius now specified in meters):**
((F * 8*PI * (r / 6.33680e6)^2) / (q^2 * c^2)) =
(((4*PI * m1) / (Energy1 * (1 - ((v + 1.71941e6)^2 / c^2))^0.5)) +
((4*PI * m2) / (Energy2 * (1 - ((v + 1.71941e6)^2 / c^2))^0.5)))

        However, I did not stop there because I knew from all the great knowledge
that I learned from the equations that there had to be an inverse-form of the
equation. I derived that form by placing (16 * PI^2) into the denominator and then
simplifying the equation. What I learned from this form of the equation is that it is
the Quantum Entropic Force Equation. This allowed me to perform temperature
mapping of the equation to the Electromagnetic Spectrum and derive equations
for temperature based upon Electromagnetic Frequency. This should solve the
debate about Gravitation being an Entropic Force since they are obviously an
inversely related phenomena.

Standard Entropic Force Equation:
Force = k * (q^2 / d^2) * (1 - ((β * lp^2) / (PI * d^2)) - ((μ * lp^4) / (4*PI^2 * d^4)))

**Quantum Entropic Force Equation
(Inverse EoE Formulation):**
((F * r^2) / (2*PI * q^2 * c^2)) =
((m1 / (4*PI * Energy1 * (1 - (v^2/c^2))^0.5)) +
(m2 / (4*PI * Energy2 * (1 - (v^2/c^2))^0.5)))

Variable Values:
d = Pi-constant
r = Pi-constant
k = 1.38065e-23
lp = 1.61628e-35
q = Pi-constant
β = 1
μ = 1
c = 2.99792458e+08
Energy1 = 5.36752e+41
Energy2 = 5.36752e+41
m1 = 5.97219e+24
m2 = 5.97219e+24
v = 0

Electromagnetic Unit Relations:
(Mass / Energy) = 1.112653e-17
1 Microgaussian = 1.112653e-17 Decifarads
(Mass / Energy) = 1 Microgaussian
Microgaussian = Magnetic Flux Density
Magnetic Flux Density = Magnetic Field
(Mass / Energy) = Magnetic Field
1 Farad = 8.987528+16 Microgaussian
c^2 = 8.987552e+16
c^2 = 1 Farad
$(1 / c^2)$ = 1 Microgaussian
Molecule Size = 10^{16} Hertz
c^3 = 2.6944e+25
$(1 / c^2)$ = 1.11265e-17
$f = (c / \lambda)$

Molecular-Temperature Range:
Farad to Microgaussian
c^2 to c^3
$(1 / c)$ to $(1 / c^2)$

Molecular Frequency Range (Hertz):
8.987552e+16 to 2.6944e+25
c^2 to c^3

Molecular Wavelength Range (meters):
3.33564e-09 to 1.11265e-17
$(1 / c)$ to $(1 / c^2)$

Molecular Temperature-Frequency Derivation:
Kelvin = $(((frequency * c) / (1 - (v^2/c^2))^{0.5}) - c^3)$
frequency = $((Kelvin * (5.12413e+18 / c^3)) + c^2)$
frequency = $((Kelvin * 1.90177e-07) + c^2)$

Kelvin-Frequency EM Spectrum Equation:
Kelvin = $((frequency - c^2) / 1.90177e-07)$

Gravitational Constant Equations:
G = $((h * c) / (2*PI * M_p^2))$
G = $((\hbar * c) / M_p^2)$
G = $(4\pi / (\mu_0 * c^2))$
G = $(l_p * c^2) / M_p$

Einstein Field Equation Kaluza-Klein Fifth Dimensional Derivation (c^5):

$((8PI * G) / c^4) =$

$((8PI * (1 / (16PI * c))) / c^4) =$

$((8PI / (16PI * c)) / c^4) =$

$((1 / (2 * c)) / c^4) =$

$(1 / (2 * c^5))$

Maxwell Equation Relations:

In Free-Space, where $\rho = 0$ and $J = 0$, Maxwell's Equations say:

$\nabla \cdot E = 0,$

$\nabla \cdot B = 0,$

$\nabla \times E = - ((1 * \partial^2 * E) / (c * \partial t)),$

$\nabla \times B = ((1 * \partial E) / (c * \partial t)).$

Using the vector identity:

$\nabla \times (\nabla \times F) = \nabla (\nabla \cdot F) - (\nabla^2 \cdot F),$

the curl ($\nabla \times$) of the last two of Maxwell's Equations reduce to the following Wave Equations (where divergence of the field is 0):

$(\nabla^2 \cdot E) - (((1 \cdot \partial^2 \cdot E) / (c^2 \cdot \partial t^2)) = 0,$

$(\nabla^2 \cdot B) - (((1 \cdot \partial^2 \cdot B) / (c^2 \cdot \partial t^2)) = 0.$

Since $(1 / c^2) = (\mu 0 * \varepsilon 0)$ then:

$(\nabla^2 \cdot E) - ((\mu 0 \cdot \varepsilon 0 \cdot \partial^2 \cdot E) / \partial t^2) = 0,$

$(\nabla^2 \cdot B) - ((\mu 0 \cdot \varepsilon 0 \cdot \partial^2 \cdot B) / \partial t^2) = 0.$

In which case, these equations are equivalent to:

$(\nabla^2 \cdot E) = ((\mu 0 \cdot \varepsilon 0 \cdot (\partial^2 / \partial t^2)) \cdot E),$

$(\nabla^2 \cdot B) = ((\mu 0 \cdot \varepsilon 0 \cdot (\partial^2 / \partial t^2)) \cdot B).$

Interestingly, these equations look a lot like the Tuck-Einstein Equation:

Energy = (Space * Mass * Time) / (1 - (v^2/c^2))^0.5

Imagine the following substitutions
(where E and B are components of Mass):
Energy = (∇^2 · E),
or Energy = (∇^2 · B),
Space = μ0,
Time = ε0,
((∂^2 · E) / ∂t^2) = (Mass / (1 - (v^2/c^2))^0.5),
or ((∂^2 · B) / ∂t^2) = (Mass / (1 - (v^2/c^2))^0.5).

  From Maxwell's Wave Equation, you end up with the Tuck-Einstein Equation if you consider that the Electric and Magnetic Field components disappear into Energy and Mass within my equation. The partial-derivatives should disappear when all of the correct variables are expressed within the Multivariate Calculus formulation of the equation. The Energy and Mass-components are expressed in terms of either the Electric Field or the Magnetic Field. Both are equally valid in the measurement of energy, just like frequency and wavelength for the Electromagnetic Spectrum. Maxwell's Equations use the Parameters of Space (the Electric and Magnetic Constants) rather than their counterparts of Space and Time that are used in my equation.

  My recent theoretical work has greatly evolved to the point that I have connected Quantum Mechanical Phenomena (like Elementary Charge or Electron Spin Magnetic Dipole Moment and the Bohr Magneton) to high-level Electromagnetic variables like the Magnetic Field Flux Density (the B-Field measured in Teslas) and Magnetic Field Strength (the H-Field measured in Amperes per Meter), Coulombs, Voltage, Amperage, and Resistance. I can also see the mathematical relation that is within the Lorentz transformations (conversion of Frequency or the Time-component into Wavelength, which is Mass or the Space-component). When the Electric Field (Electron Orbital Motion) slows down then chemical and therefore biological (biochemical) processes slowdown, which we call Time-Dilation. What we call "Spin" is really the Angular Momentum of an Electron per Revolution around the nucleus of an atom. That is the reason why Angular Momentum L divided by the Reduced Planck Constant yields the value of 1/2, which is the intrinsic-value of all Fermions (Spin-1/2 particles). Therefore in a Gravitomagnetic Field, the Velocity of Electrons slowdown but the Mass of the Electrons increase. This is due to the Momentum Relationship $p = (m * v)$. However, the Angular Momentum L of an Electron includes the Radius. Amazingly, this is actually Keplar's Second Law of Planetary Motion (which is the Law of Areas). This law states that, "a line joining a planet and the sun sweeps out equal areas during equal intervals of time."

Spin-1/2 Particle Mathematics:
(L / ℏ) = (5.27285e-35 / 1.05457e-34)
(L / ℏ) = (1 / 2)

Electron Spin Angular Momentum:
$S = (((0.5 * (0.5 + 1))^{0.5}) * ℏ)$
$S = ((((L / ℏ) * ((L / ℏ) + 1))^{0.5}) * ℏ)$
$S = ((((L / ℏ) * ((L + ℏ) / ℏ))^{0.5}) * ℏ)$
$S = (((((L^2 + (L * ℏ)) / ℏ^2))^{0.5}) * ℏ)$
$S = ((((L^2 / ℏ^2) + (L / ℏ))^{0.5}) * ℏ)$
$S^2 = (((L^2 / ℏ^2) + (L / ℏ)) * ℏ^2)$
$S^2 = ((L^2 + (L * ℏ)))$
$S = ((L^2 + (L * ℏ)))^{0.5}$
$S = 9.13286e-35$

Electron Spherical Standing Wave Equation:
$μ = -1 * ((e * v * r) + ((e^3 * v * r) / (4*PI * ε0 * h * c)))$

//////////////////////////////////
Electron Radius:
r = 1.01044e-22 meters
Electron Frequency:
v = 5.72856e+17
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What is really incredible about the Electron Spherical Wave Equation is that I get a value close to Hans Dehmelt's high-precision results for the Electron Radius that he did with a Penning Trap in 1988. The Velocity variable is the Electron's Frequency. The value 5.72856e+17 corresponds where it should be on the Electromagnetic Spectrum and this is the same equation that yields the correct Electron Radius. I interpret this as the Frequency of the Standing Wave oscillating within the Electron. This would be similar to Newton's Cradle where Wave-Motion is transferred into Linear Motion thus demonstrating a Conservation of Momentum. Interestingly, the Velocity variable representing Frequency is the part of the Electron Magnetic Dipole Moment that is composed of the Fine Structure Constant. That provides more evidence that the Velocity is that of the Standing Wave. I believe that *e^3* is representative of a 3D-Sphere.

According to my theory, the Electron Spin Magnetic Dipole Moment is the Orbital Motion. It relates to the Volt in Electric Current since their Angular Velocity translates to Linear Velocity of electrons moving between atoms within a length of wire. The Bohr Magneton is the Rotational Motion, which relates to the Ampère. It makes up the Magnetic Field or B-Field. When an object travels at a relativistic velocity, frequency-energy (which relates to velocity in an equation) converts to photonic-string length thus increasing Mass and Rotational Motion. This is due to Conservation of Energy. Velocity is Linear Motion whereas Mass is due to Rotational Energy. That is the reason that particles have much more Mass and exhibit Electric Charge due to the direction of their Spin in relation to their orientation within the fabric of space (clockwise or counter-clockwise). Photons

can also increase wavelength. A Magnetic Field is a reorientation of subspace based-upon a polarized, rotational-axis alignment of electrons. A Gravitational Field is very similar to a Magnetic Field, but it is not as polarized since it is due to dipolar, rotational kinetic-energy. Magnetic Fields exert torque upon charges moving through their rotational field. Moving charges flowing through looped coils of wire cause a Pseudo-Scalar Magnetic Field. A Magnetic Field has to vary in intensity to cause unbalanced torque that induces the Linear Motion or Voltage that results in an Electric Current.

I believe that Electrons have the vibrational motion of a Standing Wave, have 2-axis Rotational Motion (Spin and Orbital), and that there is a Precession within their orbits that lets them cover the area of a sphere (which appears as the Electron Cloud Model). I also think that the Atomic Orbital spacing may be due to Vibrational Energy.

Interestingly, Electron Orbitals are important for chemical properties of Atomic Elements. Something very intriguing is that the Dipole Moment of Atoms are also important because they define electrical characteristics like Piezoelectricity. Proteins are known to be piezoelectric, which I believe is a necessary component for life because they are the cellular building blocks (where protein-folding is required to form highly-complex biological structures). I already had linked the Equation of Everything for Physics to Chemistry (which is Linear Equations versus 3D-Volumetric Reactions) because the pressure component is part of the Stress-Energy Tensor. This is obviously due to the fact that Tensors consist of Vectors so Pressure would be the product of the dynamics between the multiple force vectors of charged particles. From the summation of my scientific work, it is easy to see how Fluid Dynamics, Thermodynamics, and Electrodynamics are interrelated phenomena. I believe these insights would be immensely useful in the simulation or decoding of Recombinant DNA functionality since Biology is just a form of Biochemistry. The proton-folding could be modeled through a mathematical analysis of the encoded sequences of nucleic acids.

Electron Spin Magnetic Moment:
$gs = 1.99487$
$\mu S = (e / (2 * m)) * g * S$
$\mu S = 1.60218e-23$

$\mu S = (gs * \mu B * (S / \hbar))$
$\mu S = 1.60218e-23$

Something quite interesting that I found out is that the Electron Spin Magnetic Moment would be equivalent to Elementary Charge had the decimal places between the Tesla and Coulomb not have been shifted 4-places. This is possible because they are mathematically linked through the Lorentz Force Law. The Lorentz Force Law states that, "a particle carrying a charge of 1 Coulomb that is passing through a magnetic field of 1 Tesla at a speed of 1 meter per

second perpendicular to the field experiences a force with a magnitude of 1 Newton." The Coulomb was increased 10^4, while the Tesla shifted by 10^-4. In the CGS System of Measurement the Gauss = 10^-4 Tesla. It is the value that 1 Tesla should equal in order for Elementary Charge to be equivalent to the Electron Spin Magnetic Moment. Its value is 1.60218e-23, whereas Elementary Charge is equal to 1.60218e-19 Coulombs.

Also, if you have two Spin-1/2 particles and you take the energy from one in order to rotate the other by one full 360-degree (2PI) rotation, it will only rotate it by 180-degrees or a 1/2-rotation. It takes 4-PI or 720-degrees to rotate the other particle one full-rotation. I believe that this is the reason why rotating a spin-1/2 particle 360-degrees does not put it back to the same quantum state.

In conclusion, I have done my best to take the helm and steer humanity towards a destiny filled with many new and exciting applications of technological advancement through all the mathematical work that I have done during the last 5-years. However, there is plenty of opportunity for other brilliant minds to join me in collaboration, academic support, and research and development. There is a certain level of emotional detachment that you feel when you are always stuck in a quantum-haze of mathematical equations with little concern for the world of people just outside your secret window. While I may not be the perfect candidate for a person of my accomplishment, I am doing all that I can to utilize my natural, god-given talents for the benefit of mankind. I view technology simply as a tool. I don't see a reason for needless debate over whether its better for people to kill each other with hammers or handguns. I believe that the ethics falls upon those that utilize technology to ensure that it is not used maliciously. Society will have to impose its own sanctions for the purposes of regulating technology. After all to quote the character Dr. Ian Malcolm from the movie Jurassic Park, "If there is one thing the history of evolution has taught us it's that life will not be contained. Life breaks free, it expands to new territories and crashes through barriers, painfully, maybe even dangerously, but, uh... well, there it is." I imagine that applies equally well to the technological advancement of mankind!

"Strength of Mind and Strength of Heart;
Question Everything and Trust No-one!" - Stephen Tuck