



# **WHY GOD'S UNIVERSE IS NOT RELATIVE DESPITE QUANTUM PHYSICS**

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## **ABSTRACT**

The Theory of Special Relativity presented in 1905 has completely altered our perception of reality. As a result, scholars now wonder how a universe where time can be reversed, existence is uncertain, and alternative realities may emerge can be the creation of the Christian God. Our research challenges such a distorted perception by weaving together recent experimental findings with new theoretical developments. The outcome is an alternative conceptual pillar for modern physics that connects the Newtonian world with the quantum realm in a framework where there is a single future from creation to the end of time and unambiguous behaviors in all the elements of existence.

## **1.0 INTRODUCTION**

At the dawn of the 20th century, scientists started to discover unusual behaviors in matter and electromagnetic energy at the atomic (quantum) level that cannot be explained by existing equations in physics stemming from the days of Sir Isaac Newton. The conclusion of scientists at the time was that a new form of physics must be discovered to handle atomic and sub-atomic research. This philosophical foundation for quantum physics immediately placed a conceptual divide between the macro and micro definitions of the universe and prevented any attempts at developing a continuous understanding of the universe based on modifications of Newton concepts. The success of quantum physics equations ushered in the atomic age and even the computer age. As a result, whole generations of young scholars grew up never even daring to question the modern / quantum physical interpretation of existence. The problem this creates is that such an interpretation includes time and space as relative mediums and opens up the ideas of reversing the effects of time, non-absoluteness in the creation of the universe, and alternative dimensions of reality based on different vectors of change across time. These ideas turn the Christian understanding of God's will and absoluteness upside down. In doing so, it is nearly impossible for young scholars to rationally embrace modern physics and God as known through Christianity.

To save our young scholars from this conflict of scientific philosophy versus Christian understanding, our research will challenge the fundamental pillar of modern physics that created the concept of mutable time, flexible universal laws, and alternative realities. Specifically, we will show that there are now good reasons to question Albert Einstein's Theory of Special Relativity and that there is another model for the construct of the universe that can satisfactorily explain the phenomena addressed by Special Relativity. This new model for the construct of matter and space can bridge the gap between Newtonian physics and quantum physics by showing that quantum equations for explaining wave-particle duality, quantum tunneling, subatomic uncertainties, and particle spin are actually effective mathematical ways to describe previously unrealized components of the Newtonian universe. In so doing, we will have shown that modern physics with some corrected theories can align with a Christian perspective of the universe.

Christians know through our relationship with God that the universe is on a single course from creation to the end of time. There is a single history that cannot be altered and there is a single future which only the creator knows. There are no alternative realities and there are no uncertainties except those caused by the limitations of human awareness. Other dimensions for the spirit exist, but such dimensions support and does not confuse the course of this world and reality. With today's empirical discoveries and mathematical techniques, we can show that what Christians know is scientifically rational.

## **2.0 THE ORIGINS AND PROBLEM WITH SPECIAL RELATIVITY**

Very few non-physicists know that Albert Einstein formulated the Theory of Relativity from a long lineage of scientific debate that stretched back to when Gottfried Leibniz (1646 - 1716) opposed Sir Isaac Newton's view of inertia as an innate property of matter within a universal reference frame. Leibniz argued that empty space cannot sustain a

constant reference frame to base acceleration. Ernst Mach (1838 - 1916) expanded this argument to state that there is no absolute space and that all motion is relative (Gilman, 1970). Albert Einstein contributed to this argument by postulating in 1905 that all the laws of physics governing mass, length, time are relative to the reference frame of motion. Further, his second postulate stated that the speed of light is constant to all observers from all reference frames of motion. With this second postulate, Einstein was able to derive equations for relative difference in time, mass, and length for objects when observed from two different reference frames of motion. These time, mass, and length dilation equations have conformed to all experimental results to date, and the relativistic mass equation allowed Einstein to derive the almighty equation  $E = mc^2$ . This equation has been firmly proven to show the relationship between matter and the energy that it can convert to, and is thus the most important equation in quantum physics. On the other side, the defenders of the Newton concept of a universal reference has desperately tried to detect the existence of a universal ether in the early 20th Century with the hope of defeating Leibniz's arguments by showing that space is not empty. Their failure allowed modern physics to embark on a path in conflict with Christian understanding.

After over ninety years of relying upon Einsteinian equations, new research results are starting to show that Einstein's two fundamental postulates may not be correct. While the speed of light based in the experimental capabilities of the early 20th Century may appear to be constant and at its maximum in space, recent experiments reveal that light is not at its maximum speed in space (Wang, 2000). By firing a pulsed laser through a chamber of cesium vapor, the photons were able to travel across the chamber 310 times faster than if the chamber had been a vacuum as that of space. Other experiments in photonic tunneling also leads to this conclusion by showing that photons striking select barriers can travel across the barrier (tunneling) at speeds many times faster than what physicists assumed as the constant speed of light (Freedman, 1998). These results suggest that space actually impedes light and may therefore not be completely empty. If light is impeded in space, then the observation that light speed is constant for all moving observers would be a phenomenon of space propagation instead of a universal law to base theoretical developments.

The second set of results that challenged the emptiness of space extend from William Unruh's, University of British Columbia, work in the 1970s which showed through quantum analysis that a radiant heat bath emerges for objects accelerating in space. Puthoff (1989) and Haisch (1994) continued this path of formulation to develop the Zero Point Field Theory which states that space is filled with virtual particles creating a field that induces inertia on moving objects through high frequency electromagnetic drag and gravity through fluctuations in charged matter. Along with these results some scientists are starting to debate how inertia could exist if space is truly empty (Matthews, 1994), and others are starting to rethink the correctness of relativity in general (Yilmaz, 1991) (Peterson, 1994). A few physicists have even tried to return to more Machian concepts to re-derive relativistic equations based on a postulate of universal time (Spencer, 1996). However, while a handful of physicists work on to challenge relativity (Assis, 1999) and publish books on a new philosophy in physics (Kelly, 2005), the vast majority of the physics community stand in support of relativity – down playing recent experiments and

potential paths of research that could shed more light. The inconsistencies between a relative universe and God's universe endure in the wake of peer pressure and sustaining scientific reputations.

### **3.0 A NEW THEORETICAL FOUNDATION FOR RELATIVISTIC EFFECTS**

As Christian scientists, we should be more comfortable with the concept that space is not empty and that God created the universe as a continuous medium instead of discreet elements of matter and energy spreading across nothingness. Our challenge is then to discover a construct for space that can scientifically explain the known relativistic effects and the famous relationship between matter and energy. If this can be accomplished, then relativistic effects are merely phenomena in the behaviors of matter and space in a universal reference and not justification for an upside down universe. One such construct has been published by this author several years ago and merits further exploration (Ren, 2001).

#### **3.1 An Integrated Construct for Space, Matter, and Energy**

Postulating that space has composition that is yet undetectable by current scientific instrumentations, we can propose that the origin of space is related to the origins of matter and energy as all three must tie back to the beginning of the universe. Based on this proposition, we can revisit the assumption that matter converts into energy and theorize instead that energy resides passively in the structure of matter to give that structure the detectable properties of mass, gravity, and spatial presence. So, matter does not actually convert to energy but release energy and the empty structure that is left behind would be similar to the structures that form space. Energy can likewise enter into a space structure to give it matter properties, but the energy has not become matter. When energy flows into and out of such structures in an unstable manner, we have the observable behaviors of wave-particle duality. When electromagnetic energy flows through a region of such space structures in a continuous manner, we have impeded light propagation across space. And when an object travels through a region of such space structures, we have impedance in the form of inertia and distortion of the space medium that yield relativistic behaviors.

This construct fits well into current research in that the space structures can contain residual or traceable levels of energy that is releasable when disturbed by a moving object to yield the minute radiant heat bath. The totality of this traceable energy spread across the universe may explain the existence of dark matter (Krauss, 1986). And, the distortion of the space medium by rotating objects may provide a physical explanation to the Lense-Thirring Effect which is currently being viewed as a confirmation of general relativity (Ciufolini, 1998). However, the real test of this theoretical construct is whether it can replace Special Relativity in holding up modern physics.

#### **3.2 Re-deriving Einstein's Famous Equation**

Given our structure for matter,  $E = mc^2$  can be simply derived without used the concept of relativistic mass. If matter is composed of energy deposited into an empty structure, then there are two forms of energy that is lost when mass is lost. The first form of energy is that which creates the properties of mass and gravity. Thus, when that energy is

released from the structure in the form of electromagnetic radiation, its magnitude is equal to the kinetic energy associated with the mass that it represented.

$$E_{\text{Properties}} = E_{\text{kinetic}} = \frac{1}{2} (\text{Associated Mass}) \times (\text{Velocity when Released})^2$$

The second form of energy lost is represented by the quantum kinetic vibrations of the structure. The higher vibration / thermal states of matter are well proven and so we can consider that matter structures would have vibration states also. All this vibration energy must go somewhere when mass is lost. The energy of a vibrating structure is the kinetic energy associated with the mass of the structure moving at velocities created by the vibration.

$$E_{\text{Vibration}} = E_{\text{kinetic}} = \frac{1}{2} (\text{Mass of Structure}) \times (\text{Velocity in Vibration})^2$$

Therefore, the total energy released when mass is lost is:

$$E_{\text{Total}} = E_{\text{Properties}} + E_{\text{Vibration}} = \frac{1}{2} \text{Mass} \times [(\text{V when Released})^2 + (\text{V in Vibration})^2]$$

If energy is released into space where it travels at the speed of light  $C$  and if the structure quantum vibrates at near the speed of light also, then we get the Einstein equation.

$$E_{\text{Total}} = mc^2$$

Our method of derivation yields a dilemma when the energy in matter can be released into an environment where it can propagate faster than  $C$ . Since such energy cannot be increased, we are then led to consider that the classic equation for kinetic energy is only for conditions where empty structures in the vacuum of space and between atomic particles impede motion. This understanding of kinetic energy shows us that such energy at all levels is a true energy and not just a mathematical construct like potential energy. This insight allows us to continue with derivations.

### 3.3 Redriving the Time, Motion, and Length Dilation Equations

If the kinetic energy of object motion in space is a true energy that cannot simply be accounted for as potential energy when it disappears, then we must find the manner in which the structure of matter will store such energy. Physical behaviors suggest that such energy could be stored and extracted as the kinetic motion within matter at all levels - down to the base structures proposed in this research. Thus when an object speeds up to near light speeds, all parts within the object slow down. When an object comes to rest, all parts within the object will speed-up to the rate of the universal reference. We already know that the kinetic motion of subatomic particles can convert to emitted electromagnetic energy, the concept of one form of kinetic energy converting to another is reasonable. At slower rates of object motion the impact to subatomic activities is nearly unobservable because the base vibration state of the matter structure is accounting for most of the kinetic energy shift. But at near light speeds, the impact on the object is an appearance that time has slowed down for the object. Since all the senses of an observer

on the objects will have slowed to match, that observer will not see the effect observed from the universal reference frame.

To quantify this variation in the perception of change, let us consider a simple model of a particle revolving in a circle inside an object accelerating from the universal reference frame to near light speed. Initially, the particle revolves at  $v_o$  and a time of  $t_o = 2 \pi r / v_o$  is required for one revolution. As the object increases its external speed  $v_m$ , the internal revolution slows to  $v$  so that  $t = 2 \pi r / v$ . This means that the change in revolution can be expressed as  $t / t_o = v_o / v$  and that the change in the energy of internal kinetic activity can be expressed as  $E_{\text{Internal} - o} / E_{\text{Internal}} = (t / t_o)^2$ . Since most of the internal kinetic activity is at the level of the matter structures forming the object, we can approximate  $E_{\text{Internal} - o} = E_{\text{Vibrations}} = 1/2 mc^2$  based on previous derivations. As the object accelerates, the internal energy is then reduced by the kinetic energy of the object motion. This leads to the following relationship which reduces to an equation that matches Einstein's time dilation equation.

$$(t / t_o)^2 = E_{\text{Internal} - o} / E_{\text{Internal}} = 1/2 mc^2 / (1/2 mc^2 - 1/2 m v_m^2)$$

**Reduces to:  $t = t_o / (1 - v_m^2 / c^2)^{1/2}$  Time Dilation Equation**

This derivation of the time dilation equation shows that time is not a medium but an absolute part of the universal reference frame. Objects can be less affected by the passage of time because of kinetic energy transfer and observers may have different perceptions of time as measured by change depending on whether they are a part of the change. However, what has passed cannot be changed and what is to come does not already exist. Even more so, there are no alternative branches of reality but the path designed by God.

Proceeding on to explaining mass dilation, the reduction of kinetic activity within an object in motion will create an imbalance between  $E_{\text{Vibration}}$  and  $E_{\text{Properties}}$ . Specifically, with the lost of vibration in the mass structures, the energy in matter structures giving rise to mass properties will become more dominant. Therefore, even as the energy for properties remains the same, we should see an increase in mass from the original rest mass in the universal reference frame. As with time, an observer on the moving object will have his / her own mass and scale for measuring mass altered in parallel. So, the observer cannot see the changes in the object but the relative changes of other objects moving at different speeds. If the property of mass is increased by the decreasing vibration / velocities of the matter structures then the relationship can be quantitatively expressed as follows.

$$m/m_o = [\text{Effect of } E_{\text{Properties}} (v_o / v)] / \text{Effect of } E_{\text{Properties}}$$

**Reduces to:  $m = m_o / (1 - v_m^2 / c^2)^{1/2}$  Mass Dilation Equation**

This derivation of the mass dilation equation shows that mass is actually increased in the universal reference frame by motion but that increase cannot be observed from the mass itself. It also implies that mass is a variable property of matter or that matter can exist

independent of mass. This observation opens up new realms in the universe which scientists cannot yet see, perhaps realms of the spirit.

Finally in re-deriving the length dilation or Lorentz contraction equation, we note that the impedance on object motion caused by the structures of space can impact the matter and space structures within the object. Beyond causing inertia and perhaps the release of a radiation heat bath from the space medium, the impedance could compress structures in the linear path of motion. It would be hard for us to quantify the compression of space structures in an object but the compression of matter structures would yield a change in rotational kinetic energy for the structures. This change in rotation energy would contribute to the overall energy transfer as explained earlier and so the proportionality of change should match the ratio for total energy change. Quantitatively, the comparison of standard spin kinetic energy equations with our previous derivations leads to a formulation for the reduction in object length due to uniform compression of matter structures.

$$(\text{Spin } r / \text{Spin } r_0)^2 = (\text{length} / \text{length}_0)^2 = E_{\text{kinetic}} / E_{\text{kinetic-0}} \quad \text{where } r = \text{radius of matter structure}$$

**Reduces to:  $\text{length} = \text{length}_0 (1 - v_m^2 / c^2)^{1/2}$  Length Dilation Equation**

The above derivation assumes that the mysterious space structures within an object would be compressed in a likewise manner as the matter structures spread across them. The consistency of structural spin as the object accelerates would mean that structure spin is invariant to motion. A key particle propriety that is relativistically invariant is the charge in particles. Therefore, we are left to explore whether particle charge and spin in our matter structures are related. And, how our concept of structural spin is associated with the mathematical derivation of particle angular momentum in quantum mechanics, which is described as a quantum spin state, must also be investigated.

### **3.4 Explaining the Behaviors of Light**

The last piece of the puzzle in explaining how the medium of space, which sustains a Newtonian type universal reference frame, can cause the unusual phenomena in modern physics is the behavior of light. Why is light speed always constant regardless of the speed of the source? Why does a single light source seen by two observers passing at different speeds appear as if the source is simultaneously emitting from the moving reference frames of each observer? Why is the wavelength shift of light caused by a moving source or receiver different from the wavelength shift of sound in a fluid medium?

To answer these questions, we turn to the concept that the structures of space impede light, can be distorted by object motion, and behave like a fluid medium. This implies that regardless of the velocity initially invested in emission, light motion through the space medium will always reach a set constant velocity that is a function of the space structures impedance factor. In physical objects moving through measurable fluids, we see the effects of drag on achieving terminal velocity. The question for future research is

whether we can detect an extremely rapid speed adjustment when light leaves a source moving at near light speeds.

The perceptual existence of a single light source in multiple moving reference frames is more challenging to explain. This behavioral, which initially seems to support relativity, can occur in our space medium because light propagates by moving through the structures of space. Thus once light has left the source, the emitted light in different space regions can be moved by moving the space structures that they are propagating through. As an object pass by the source, we can then suggest that the object distorts that region of space structures and carries off the portion of the emitted light around the object. This light then continues to propagate away from the moving object to create the perception that the source is in the moving reference frame of the object. While the distortion patterns of space may be somewhat easy to envision for one or two objects passing at different speeds, the passing of multiple objects across a source may yield specific behaviors that separate this explanation from the assumption of relativity.

Finally, if space is a true fluid then the well understood Doppler Shift equations for waves in fluids should apply to light in space. The unique effects in Doppler Shifting light are therefore constrained to the emission of light from the source and the absorption of light at the receiver. When sources and receivers move at near light speeds, we have already shown that internal activities slowdown dramatically so that  $t$  becomes a great deal longer than  $t_0$  even though this slowing cannot be observed from the source or receiver. The impact of this slowing on light emission should be a stretching out of the waveform or a reduction of the rate of energy released as expressed by frequency. The impact of this slowing on light reception should be a perceived compression of waveform or perceived increased in the rate of energy gathered because the measurement scales have been distorted. Therefore, we only need to take the normal Doppler Shift equations for fluids and multiply them by the percent slowdown of emissions in the source ( $t_0 / t$ ) or the percent increase in perceived capture level in the receivers ( $t / t_0$ ) to get the Doppler Shift equations for light.

$$\begin{aligned} \text{Shifted Freq.} &= \text{Initial Freq.} \left[ \frac{1}{1 \pm v_s / c} \right] \times t_0 / t \text{ (percent slowdown)} \\ &= \text{Initial Freq.} \left[ \frac{1}{1 \pm v_s / c} \right] \times \left[ \frac{1 - v_s / c}{1 + v_s / c} \right]^{1/2} \\ &\text{Doppler Shift for a moving light source} \end{aligned}$$

$$\begin{aligned} \text{Shifted Freq.} &= \text{Initial Freq.} \left[ \frac{1 \pm v_r / c}{1} \right] \times t / t_0 \text{ (perceived capture level)} \\ &= \text{Initial Freq.} \left[ \frac{1 \pm v_r / c}{1} \right] \times \left[ \frac{1}{\left( \frac{1 - v_r / c}{1 + v_r / c} \right)^{1/2}} \right] \\ &\text{Doppler Shift for a moving light receiver} \end{aligned}$$

The decomposition of the Doppler Shift equations for light above shows that, while normal Doppler Shift is dependent on the direction of motion, the effects within the moving source or receiver are invariant to the direction of motion. This last derivation very elegantly completes our integration of modern physics with a conceptual pillar that is not against the outcomes of creationism. Yet, recent research shows that there is one trick left in light propagation. Apparently under very unique conditions, light can be blocked from the propagation mechanism of going through space structures. At that

point, there is suddenly no impedance on light and the light will travel at hundreds of times faster speeds until it reenters the normal propagation mechanism. During this period of unimpeded motion, light energy may actually not be discreet. This mystery leads us into a new world of energy interaction with matter and space structures as well as matter and space structure interactions with one another.

#### **4.0 MODERN PHYSICS AND THE UNIVERSE OF GOD**

While our endeavor in modern physics is still in the realm of theories, it turns the mathematical accomplishments of quantum analysis into the description of a wondrously connected universe. The Schrodinger Wave Equation which describes the wave and particle properties of matter, the Heisenberg Uncertainty Principle which describes the inability to measure / isolate matter existence at the quantum level, and the concept of quantum tunneling which describes particle interaction with energy barriers are then explanations for how the energy and structures of the universe work together to create reality. Starting with the empty structures of space, the continuity of reality would be as follows:

**Empty Space Structure:** structures that contain trace levels of energy that may account for universal dark matter and can be released through disturbance by high speed objects

**Photon:** transient presence of light in space structures which gives light particle properties and the impeded propagation of light by space structures which creates waveforms and terminal speeds

**Neutrino:** a structure with the lowest amount of internal energy to be detected as matter but there is still only a suggestion of mass.

**Electron:** the first stable structural energy state where there is clearly detectable mass but the structure has a propensity to lose energy as radiation under particle acceleration.

**Muon, Pion, Kaon, and Meson:** lepton and meson class particles where the structure cannot retain its internal energy for prolonged periods - decay often in around  $10^{-8}$  seconds.

**Proton:** the next highest state after electron where the level of internal energy in structures can be sustained. The opposite charge of protons allows it to combine with electrons.

**Neutron:** A structure with the combined energy of one electron and one proton that can remain stable in an atomic nucleus configuration. Neutrons will however release the electron energy into empty space structures in 932 seconds after being set free.

**Hyperions:** baryon class particles where energy beyond proton levels are forced into structures and the energy will be release in about  $10^{-10}$  seconds.

In the above description of our universe at the quantum level, we see how hard it is for energy to stably reside in the structures of space to form matter structures. This leads us to consider that space structures have dipoles where energy enters from one point and leaves at another. This dipole may be associated with the spin axis and if our concept of spin is relate to quantum angular momentum which aligns with magnetic fields, then the dipole may have an association with the causality of magnetic fields.

Thinking about space and matter structures as containers with input and output points along an axis, we can then envision the kinetic characteristics of structures as what determines how much energy it will hold. This energy can be spread inside the container in a manner where clusters can be measured as quarks and the miracle of creation is that there are two kinetic states that give rise to the electrons and protons which make up matter. As electrons and protons carry opposite charges, attract one another, can combine energy into one structure, we are led to consider that the kinetic behavior of electron and proton structures have precise diametrical components. One way for this diametric behavior to exist is for the spin directions of these structures to be opposite one another and spin direction will only have meaning in structures that has an input / output axis. With different spin directions electron and proton structures can literally come into contact with one another without bouncing away as long as the linear velocity of the structures are the same at the point of contact. The Newtonian view of particle interaction means that if the electron is structurally smaller then it will have to spin faster then the proton. Once contact is made, the electron can then surrender its kinetic energy and its internal energy to the proton to yield a neutron particle.

Since protons would in turn have common spin directions relative to the input / out axis, they cannot come into contact with one another. Elements in the universe would therefore have to be formed with the critical assistance of neutrons acting as connectors for protons. In this process, a neutron with no specific directional state would destabilize a proton that it is forced to contact, this forced contact is reflected in the process of fusion and the destabilization would cause both structures to release energy. The lack of energy for neutrons and protons to exist independently of one another may account for the binding force in atomic nuclei. Binding force under this concept would then be a function of the number of neutron and protons involved, their configuration, and the translation of this force into the center of a nucleus. As a nucleus extends beyond a certain size the inside of the nucleus would in theory become loosely bounded and experiments do show that the binding energy per nucleon drops when the number of neutrons and protons exceed 56.

Around our concept of an atomic nucleus are the electron orbits. The failure of classical physics to explain why electrons losing energy under angular acceleration could sustain their orbits under the Rutherford model of an atom has often been referenced as a proof of wave particle duality. Wave particle duality in a universe filled with space structures is not a relativistic concept but an actual behavior of energy to structure interactions. Specifically, an electron structure in atomic orbit will indeed lose energy according to classical physics. However, the abilities of space structures to retain such energy, moving matter structures to pull space structures along its path of motion, and electron structures

to reabsorb energy back into its stable state mean that a cloud of energy and electron particles will exist in atomic orbit. At any one point the energy of an electron could indeed be propagating as a wave or as a particle, and because we cannot measure electrons at a specific point we must regard both wave and particle properties as being ever present in electrons. However, there is no ambiguity in creation by God and in the eyes of God an electron will at any one time be either a particle or a propagating wave consistent with our model.

As we complete the conceptual structure of an atom in God's universe, we see that modern physics does not have to be against a Christian God and Christianity does not have to bend its understanding to accommodate modern physics. The Newtonian view of quantum activities may be somewhat more complex than what Newton himself could have imagined. That complexity, however, does not call for physics to completely distort our intuitive or spiritual awareness of the permanence of reality. All the endeavors of modern physics can continue and great many more discoveries can be made without the notion of reversible time, alternate realities, and uncertainty in existence. As future scientists learn to displace the structures of space, all parts of the universe will be open to man's travels. As they learn to control the release of energy from matter structures by altering kinetic states, nearly unlimited power will be available to man. And, as they learn to form matter from empty structures through energy insertion, the authority of creation will be passed to man. These are the wonders of the universe that God has created, and these are the gifts in the universe that God has left for man. Man, in such a universe, is not so insignificant after all.

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