

# On the Origin of Mass, Inertia, and Gravity - The Unification of Electromagnetism to Gravity

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## Abstract

This paper will present the author's vision of the underlying mechanism that explains the origin of mass, gravity, and inertia. In this document, I shall demonstrate that the current concept of rest mass is a fictitious hypothesis. This paper will reveal that mass, gravity, and inertia are caused by the same physical mechanism. The mechanical process that is the central cause of force emerges from the interaction between electromagnetic particles and the space they move within. Therefore, at the foundation of reality, force or action at a distance is not the result of a particle to particle interaction. Instead, force and perpetual particle motion emerge into existence due to a particle field to space field interaction. The model of reality that I speak of is called the Theory of Super Relativity. Super Relativity is based upon a metaphysical interpretation that confirms Einstein's vision of our physical Universe. Therefore, I believe that Einstein assumed that we live in a real objective Universe. I will describe the constituent parts of this physical realm and show how the individual components of reality interact with space to generate fields of force, action at a distance, and autonomous motion of all particle/field types. The mechanistic view I propose corrects the incompleteness of both Special and General Relativity. This solution also demonstrates the complete futility of using Quantum Mechanics as a path leading to a Theory of Everything. The unity of the true forces of nature comes about by discovering and using the proper definition of what force is. In this paper, I demonstrate that force fields are deformations of the continuous aether. The motion of the one primary field (the Electrostatic Field) within space causes the two secondary fields to emerge into reality. Large scale secondary fields of force materialize due to the interaction of particle fields in various types of motion relative to the spatial medium. The definition of the primary and secondary force fields will be provided in this paper.

## Introduction

The unification of gravity to electromagnetism has been a long-standing problem that goes back to James Clerk Maxwell's era. Later on, Albert Einstein was the first to fully articulate the goal of unifying gravity to electromagnetism. Einstein helped us understand how the force of gravity worked by demonstrating that the gravitational force bent the geometry of space. The specific type of deformation that occurs due to a gravitational field is a simple contraction of space. This is a fact of our reality that many modern-day physicists have not fully acknowledged. The recognition that the contraction of space is equivalent to gravity has not been accepted because of misinterpretations of Einstein's theories.

Newton gave us a formula that showed the strength of gravity, but that formula did not reveal to the world how gravity exerts its force of attraction. In neither case was the mechanical origin of the gravitational field explained. Until the theory of Super Relativity, we did not have a mechanical explanation for the origin of mass, gravity, or inertia. This is the critical issue that needs to be addressed. We must have the full foundational, mechanical explanation for how all three of these phenomena work. As it turns out, all three have the same mechanical cause.

### The Early Mathematical Formulations are Clues that Point to a Pattern to be Recognized

Both Einstein and Newton demonstrate that there is a link between gravity and accelerated motion. There is a pattern to be recognized here. Newton discovered the formula  $F=m*a$ . This is Newton's second law. [1] It has the following meaning, "The acceleration of an object as produced by a net force is directly proportional to the magnitude of the net force, in the same direction as the net force, and inversely proportional to the mass of the object." [2]

### Clue #1 - Accelerating Motion of Unbalanced Charges Causes Gravity - Electrostatic Fields are Vortex Torsion Fields of Force

It is important to note that energy and force are not defined as the same thing, but they are related. A force is a push or a pull (which corresponds to a mechanical field of force). Super Relativity theory says that the secondary fields of force (magnetism and gravity) are always created by moving electrostatic energy fields. All particle fields are vortex fields which are ultra-small electrostatic fields of force. These field structures are the cause of autonomous particle velocities. Understanding the relationship between moving charges and the aether they reside within is the beginning of the pattern to be recognized. An electrostatic field of force or energy in accelerated motion creates mass. The more we accelerate an energetic particle, the greater its mass will be. This conceptual pathway is the same pathway discussed in Einstein's paper, "Unified Field Theory Based on Riemannian Metrics and Distant Parallelism." In this paper, he discusses the twist of local systems related to Special Relativity's tensors. He also states that he was working on deriving the equations of motion for particles. [3]

### Clue #2 - Balanced Charges in Linear Motion Manifest No Mass - Unbalanced Charges Moving in Accelerated Motion Impart Upon a Particle the Property of Mass

Einstein also said  $E=mc^2$ . This equation given to us by Einstein has a physical meaning. Somehow energy can be transformed into mass, and mass can be transformed into energy. Again, if we change this equation to solve for mass, we get  $E/c^2=m$  which says something very similar to Newton's equation. **If we put energy in accelerated motion (an unbalanced charge in accelerated motion), we will discover that mass will emerge as a result.**

**On the other hand, if we put energy in motion (a **balanced** charge in motion at the speed of light), we will discover that the particle becomes pure energy and will have no mass.** Pure energy is an electrostatic field composed of a balanced charge. This type of particle structure creates no mass as it moves. Photons are balanced charged energy fields. Photons travel in a straight line and do not accelerate. The pattern to be recognized is as follows. Energy in accelerated motion causes mass to emerge. Energy that does not accelerate does not cause mass. The next step is to refine the principle by specifying the circumstances. What type of energy and motion causes the phenomena of mass, gravity, and inertia? [4]

### **Clue #3 - The Principle of Equivalence is the Vital Realization that Pointed to the Origin of Mass**

Over time, Einstein realized the **Principle of Equivalence**, and it states that an accelerated system is completely physically equivalent to a system inside a gravitational field. [5] Somehow, gravity makes massive objects accelerate, and when objects accelerate within space, their mass increases. The key is in understanding the mechanical cause of this strange relationship between acceleration and gravity. The Super Relativity reality model explains the causal nexus of the gravitational field as it relates to acceleration.

### **Strategic Concepts Included in this Paper**

Research into the History of Physics concerning both electromagnetism and gravity  
Correct the Errors of Misinterpretation that Changed the Course of Physics  
Choose the Proper Path and Physical Model  
Explain the Super Relativity Reality Model  
Recognize the Hidden Patterns from the Clues Embedded within the History of Physics  
Recognize and Repair Improper Interpretations  
Establish and Enhance Principles of Physical Theory  
Explain the Central Cause of Gravity, Mass, and Inertia  
Discovery of Anti-Gravity Field

### **Research into the History of Physics**

To find the correct solution for the Unified Field Theory, I put great effort into evaluating and understanding the history of theoretical physics. I journeyed as far back as Isaac Newton's time 1642-1726. The purpose of this effort was to ascertain which model is the correct model. The main choices were Classical Mechanics, which includes Special and General Relativity (Objective Reality), a theory of the macroscopic realm, and Quantum Mechanics, a theory of the microscopic realm. These two models are fundamentally different theoretical models that have different formulations. It is not just a matter of scientific terminology; it is a clash of genuinely incompatible descriptions of

reality. [6] In general relativity, the field of force is continuous and deterministic, meaning that every cause matches a specific, local effect.

In quantum mechanics, events produced by the interaction of subatomic particles happen in jumps (yes, quantum leaps), with probabilistic rather than definite outcomes. Quantum rules allow connections forbidden by classical physics. [7] Based on the evidence, I had to decide whether the Universe is built upon a principle of uncertainty or a deterministic principle. I chose the deterministic object reality model. That model makes scientific sense. Speaking from the scientific point of view, I have come to believe that a theory that makes sense is the theory that leads to absolute truth. I am talking about discovering a theoretical model that can explain experimental evidence in a sensible way. In my opinion, a sensible scientific theory will always be the theory that turns out to be correct. The theory of Super Relativity is about the acknowledgment of the correct interpretation for explaining how the Universe works.

#### Clue #4 - The First Major Discovery Concerning Gravity - Newton Links Acceleration to Mass

There is much evidence stored away within the annals of physics that supports the deterministic theory. I went as far back as Newton's time to accumulate supporting evidence. Newton discovered a momentous principle which was the establishment of the Second Law of Motion. Newton's Second Law of motion is  $F = ma$ . The proper interpretation of the meaning of this formula is crucial. It is the first clue of a significant pattern to be recognized. Newton discovered that a force in accelerated motion  $F/a=m$  would result in a quantity of mass. [8] This discovery establishes the first link between acceleration and mass. A force in an accelerated motion = mass. This concept demonstrates that there is a mechanical relationship between acceleration and gravity. I believe that Newton's  $F=ma$  should be considered as the mechanical cause of inertial mass. Then there is Newton's Gravitational mass equation,  $F=GMm/r^2$ . [9] This equation strongly suggests that the origin of gravity or mass comes about from the same mechanical process. According to the theory of Super Relativity, the gravitational force is emitted from particles due to the fundamental particle's (quarks) inertial motion relative to a stationary aether. [10] In this case, rotational kinetic energy leads to the emergence of a gravitational field.

This formula means the force (**F**) acting on an object is equal to the mass (*m*) of an object times its acceleration (*a*). Therefore, the more mass an object has, the more force you need to accelerate it, and the greater the force applied to the object, the greater the object's acceleration. [11] According to the Theory of Super Relativity, when we modify this equation to solve for mass, we have this equation:  $F/a=m$ . We should now interpret the equation to mean that we can generate mass when we put a **force into an accelerated motion**.

#### The Next Two Clues Concerning Gravity and Mass come from Einstein.

1. The Strong Equivalence Principle Analysis
2. Mass Equivalence Principle is Linked to the Motion of Energy Within the Aether

### Clue # 5 - The Strong Equivalence Principle Analysis

The next piece of evidence to deal with comes from Einstein's Strong Equivalence Principle. Einstein realized that an accelerated system is equivalent to a system inside a gravitational field. [12] Somehow, when objects that already have so-called rest mass are accelerated, they experience the same force of gravity (via inertial resistance to acceleration) as a person who is in a stationary gravitational field. The Equivalence Principle means that by some unknown physical reason, the acceleration of an object with rest mass through empty flat Euclidean space has the same effect as an object with rest mass being in a gravitational field. The force that the accelerating object experiences is a virtual force of gravity.

### Clue # 6 - Mass to Energy Equivalence Principle is Linked to the Motion of Energy Within the Aether

This previously mentioned clue is  $E=mc^2$ . This equation also shows the link that energy in motion relative to the aether is equal to mass.  $M=E/c^2$

There is a clear pattern emerging from all three phenomena. Gravity, mass, and inertia are all linked to energy in motion within a spatial medium. Energy or a force in motion seems to be able to generate gravity, mass, and inertial resistance to motion. This was the pattern I recognized many years ago [13]

### Faraday's Discoveries Leads to Maxwell's Electromagnetic Theory

There are other clues that have been ignored or misinterpreted that came from the work of Michael Faraday and James Clerk Maxwell, along with other scientists of that time. These great scientists were on the correct path for revealing the central cause of the gravitational field and electromagnetism.

Many of the concepts that these brilliant men had established in their time guided me to important discoveries that are now included in the theory of Super Relativity:

1. The aether theory was then and is now the correct explanation for our objective reality. The aether is the medium in which forces and particles act out their roles in providing the emergence of an objective reality and the observable Universe.
2. The theory of Super Relativity agrees with the scientists of the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> centuries. All particles and fields of force are waves in the medium and are consubstantial with the medium. Particle structure waves (particles) exist in the aether medium and are manifest as quanta. Particles are various types of deformations of a quasi-elastic solid. [14] The three primary fields of force are continuous force fields and are large-scale mechanical deformations within the quasi-elastic solid.
3. The critical discovery that gets all of the world of physics moving in the right direction comes from Michael Faraday. Faraday, the chief experimentalist in electricity and magnetism of the 19<sup>th</sup> century and one of the greatest experimental

physicists of all time, worked on and off for ten years trying to prove that a magnet could induce electricity. [15] He proved that the motion of two related force fields was the critical ingredient for connecting magnetism to electricity. He proved that the motion of electrostatic charge created magnetism, and the motion of the magnetic field caused electrons to move within a conductor. For me, the great realization was that magnetism always comes about as the motion of charge within the aether. [16] The Universe loves symmetry. Now we can proceed to Maxwell's discoveries that came from Faraday's experiments and observations.

### The History and Discoveries of James Clerk Maxwell

Most modern physicists regard Maxwell as the scientist of the 19<sup>th</sup> century who had the greatest influence on 20<sup>th</sup> century physics. Maxwell is ranked with Sir Isaac Newton and Albert Einstein as one of the most influential physicists of all time. In 1931, on the 100<sup>th</sup> anniversary of Maxwell's birth, Einstein described the change in the conception of reality in physics that resulted from Maxwell's work as "the most profound and the most fruitful that physics has experienced since the time of Newton." [17]

The relationship between the motion of particle-wave energy relative to an aether continues with Maxwell's work. His theory of electromagnetism was based upon an aether theory model. Like Newton, he was a firm believer in the aether.

Maxwell said, "Another theory of electricity, which I prefer, denies action at a distance and attributes electric action to tensions and pressures in an all-pervading medium, these stresses being the same in kind with those familiar to engineers, and the medium being identical with that in which light is supposed to be propagated." [18]

The theory of the plenum has been refined in the theory of Super Relativity. It has evolved from being considered a gaseous or a fluid material to its final most sensible state. I like Einstein and Lorentz believe the aether to be a quasi-elastic solid. Maxwell also believed in the idea of a plenum. He stated, "The theory of the plenum is associated with the doctrine of mathematical continuity, and its mathematical methods are those of the Differential Calculus, which is the appropriate expression of the relations of continuous quantity." [19] I completely agree with this statement.

Maxwell's most significant contribution was his Theory of Electromagnetism. He measured the ratio of electromagnetic and electrostatic units of electricity and confirmed that it was in satisfactory agreement with the velocity of light as his theory predicted. [20]

It was Maxwell's research on electromagnetism that established him among the great scientists of history. In the preface to his *Treatise on Electricity and Magnetism* (1873), the best exposition of his theory, Maxwell stated that his primary task was to convert

Faraday's physical ideas into mathematical form. Maxwell constructed a mechanical model to illustrate Faraday's law of induction (that a changing magnetic field gives rise to an induced E-field or electric current). He found that the model gave rise to a corresponding "displacement current" in the dielectric medium, which could then be the seat of transverse waves. On calculating the rate of motion of these waves, he found that they were very close to the velocity of light. Maxwell concluded that he could "scarcely avoid the inference that light consists in the transverse undulations of the same medium which is the cause of electric and magnetic phenomena." [21]

### **The Aether is a Solid**

It is now widely known that transverse waves primarily travel within solids. [22] This realization is more evidence that proves the existence of the aether. Maxwell's discoveries of light and electric and magnetic waves being undulations in a medium eventually paved the way for scientists of later generations to realize that the plenum had to be of a solid form. We know this to be true because only solids have shear strength. The shear strength of a solid medium is necessary to hold the objects together and prevent them from falling apart. It was also thought by the scientists of the nineteenth century that the medium had to be a solid because particles are persistent and therefore stable. This fact means that particles must be consubstantial with the medium they reside within. If the medium was either a liquid or a gas, particle geometries would not be stable and able to last for billions of years.

### **The Einstein - Lorentz Aether – is a Quasi-Elastic Solid**

Eventually, as more experiments were performed and a better understanding of classical field theory was obtained, it became firmly established that the aether must be a quasi-elastic solid. From 1890 to 1905, both Hendrick Antoon Lorentz and Albert Einstein worked on the electrodynamics of moving bodies. Henri Poincaré, the brilliant French mathematician and physicist, also discovered and independently developed the mathematical formulas known as the Lorentz Transformations. The Lorentz Transformations are the heart and soul of Special Relativity. All three of these great scientists firmly believed in the existence of the aether. How could so many great scientists be wrong? The aether hypothesis must be correct. Then came the experiment that changed the course of physics.

### **The Michelson-Morley Experiment**

The Michelson-Morley experiment was an experiment that was designed to detect the Earth's motion relative to the stationary luminiferous aether. All attempts to reveal the aether wind failed. The experiment compared the speed of light in perpendicular directions to detect the relative motion of the Earth through the stationary luminiferous aether ("aether wind"). [23] The result was negative. Michelson and Morley found no significant difference between the speed of light in the direction of movement through the presumed aether and the speed of light at a right angle to the direction of motion.

This result is generally considered to be the first strong evidence against the then-prevalent aether theory and initiated a line of research that eventually led to special relativity, which supposedly rules out a stationary aether. [24] The first results of the experiment were released in 1887, well before Einstein released his paper On the Electrodynamics of Moving Bodies, Special Relativity.

### The Michelson-Morley Experiment influenced Einstein's Theory of Special Relativity

Einstein knew about the Michelson-Morley null result while working on Special Relativity. Subsequently, it has been well established that Einstein was aware of the null result years before he completed his Special Relativity Theory. It has become my belief that Einstein deliberately disassociated the Theory of Special Relativity from Aether Theory. Instead, Einstein emphasized a kinematical solution and injected into physics one of the most significant flaws in modern-day physics. Kinematics is the branch of mechanics concerned with the motion of objects **without reference to the forces which cause the motion.** I believe that the cause of particle motion must be considered in equations that model physical reality. When including this aspect of physical reality, we will be able to explain the Michelson-Morley experiment's null result adequately. I now realized that the explanation provided by Einstein and others concerning the null result of the Michelson-Morley experiment in 1905 was not the proper explanation. This mistake created significant problems in physics, which sent everyone in a direction away from a classical and mechanical interpretation of our physical reality.

## The Incorrect Conclusion Explaining the Michelson-Morley Obtained as a Consequence of the Null Result.

Since the M&M experiment failed to detect the Earth's movement relative to the stationary aether, it was assumed by everyone at that time to mean there was no aether. What the experiment failed to do was detect an aether wind. Since there was no aether wind, it was assumed there was no aether. At that time, scientists failed to properly analyze and discover the true reason for the null result.

My research and analysis have led me to the proper explanation of the null result. The reason for the failure to detect absolute motion relative to the aether is hidden in plain view. It is clearly stated in Special Relativity. Einstein says within Special Relativity, "We will raise this conjecture (the purport of which will hereafter be called the "Principle of Relativity") to the status of a postulate, and also introduce another postulate, which is only apparently irreconcilable with the former, namely, that light is always propagated in empty space with a definite velocity which is independent of the all other moving frames of reference." [25]

What is not stated is how light accomplishes the independence of its state of motion. Kinematics allows us to ignore the cause of light's motion. So, what actually causes photons to move?

## The Explanation for Why the Aether Wind was Not Detected

**The only way the null result can be explained sensibly is to realize that light's velocity is an absolute motion relative to the stationary aether.** Furthermore, its velocity is self-caused. None of a photon's motion comes about from an external cause. All of light's autonomous motion comes about as a result of its geometric structure. The internal vortex structure causes a pressure wave gradient field to be formed within the photon structure. The vortex structure causes space to rotate, and this has a stretching effect which changes the metric of space within the photon. The change in the metric of space along the x-axis of a particle causes a pressure gradient within all particle types. The pressure wave gradient is what provides 100 percent of light's velocity. The maximum speed of a photon is determined by the two fundamental properties of space: permittivity and permeability. This equation defines the maximum velocity of a fundamentally stable balanced charge particle within the aether.

$$c = \frac{1}{\sqrt{\mu_0 \epsilon_0}}$$

[26] Maxwell's Equations: Electromagnetic Waves Predicted and Observed

Thus, with the help of a sensible approach, it can now be understood that the Michelson-Morley Experiment could never detect the absolute motion of the Earth as it traveled within the aether. No externally caused-motion that comes from a light-emitting source will have any effect on the motion of photons. Therefore, I have concluded that the design of the experiment was flawed from the beginning. Since we did not understand the cause of the photon's motion, we had no possibility of properly interpreting the null result. Thus, the experiment was doomed to failure. We did, however, prove that the speed of light is constant relative to all other moving frames of reference. The only exception is that the velocity of light can be changed when we bias the medium with a force field such as gravity or magnetism.

Since Galileo's time, physicists have used the concept of kinematical analysis to analyze moving systems. I have discovered that this type of limited analysis leads to the development of incomplete theories. Therefore, we now have a situation in which all three of the major successful theories in use now are incomplete. I am not saying they are incorrect. They are simply limited in what they can tell us about the foundational mechanics of reality. This incompleteness is apparent when the equations fail to describe certain natural but extreme circumstances. In these extreme circumstances, the equations break down and cause infinities to appear. Quantum Mechanics is incomplete, as Einstein said, and both Special and General Relativity are also incomplete. The theory of Super Relativity completes Special and General Relativity by extending them to include the cause of the motion of all fundamental particles.

### **The Greatest Error of Interpretation in Modern Day Science**

The null result of the Michelson-Morley Experiment led Einstein to change his explanation for the Lorentz Transformations. This event forced him to change the interpretation of Special Relativity from using an aether model into a model in which an aether does not exist. Historians have become clear that Einstein was aware of the Michelson - Morley Experiment null result in advance of their final announcement, which happened in 1905, just a few months after Einstein submitted his paper on Special Relativity. The experiment was first performed in Germany in the years 1880-1881 by Michelson. The experiment was later redone in 1887 by Michelson and Morley. This null result seriously discredited the aether theories of the time, and it ultimately led Einstein to declare the speed of light is a universal constant. [27]

Here are the statements that Einstein deliberately inserted into Special Relativity to detach the theory of Special Relativity from the aether, leading to the misinterpretation of Special Relativity.

*"Examples of this sort, together with the unsuccessful attempts to discover any motion of the earth relatively to the "light medium," suggest that the phenomena of electrodynamics as well as of mechanics possess no properties corresponding to the idea of absolute rest. They suggest rather that, as has already been shown to the first order of small quantities, the same laws of electrodynamics and optics will be valid for all frames of reference for which the equations of mechanics hold good. We will raise this conjecture (the purport of which will hereafter be called the "Principle of Relativity") to the status of a postulate, and also introduce another postulate, which is only apparently irreconcilable with the former, namely, that light is always propagated in empty space with a definite velocity  $c$  which is independent of the state of motion of the emitting body.*

*The introduction of a "luminiferous ether" will prove to be superfluous inasmuch as the view here to be developed will not require an "absolutely stationary space" provided with special properties, nor assign a velocity-vector to a point of the empty space in which electromagnetic processes take place." [28]*

Unfortunately, the misinterpretation of the null result of the Michelson–Morley experiment caused Einstein to disassociate the Theory of Special Relativity from the aether. This rift in the interpretation of reality and this change in thought caused the world of science and humanity to be guided toward the new paradigm in physics, which was the up-and-coming Quantum Mechanics. I believe the Quantum Mechanics model will eventually be proven to be an improper model for explaining the fundamental mechanics of the Universe. The incompleteness of Quantum Mechanics is a large, complicated topic beyond this document's scope.

Later, after Einstein discovered General Relativity, he realized that the aether must exist, and he tried to restore the aether model. But, unfortunately, by then, it was too late. The world had become entranced by Quantum Mechanics and has fallen under the spell of its many false doctrines.

Here are some statements that come from his speech *Ether and the Theory of Relativity*. He made this speech at the University of Leiden on 5 May 1920. In my opinion, this document is undoubtedly one of the most important and comprehensive discussions concerning the metaphysical aspects of our physical reality. But, unfortunately, for the most part, it has been ignored by the world of modern-day physics.

I include the entire speech here with my commentary and analysis injected within the document. [My comments are in blue](#). In addition, I add the information of how Super Relativity refines the elder day aether theory.

## Ether and the Theory of Relativity

by  
**Albert Einstein**

*"How does it come about that alongside of the idea of ponderable matter, which is derived by abstraction from everyday life, the physicists set the idea of the existence of another kind of matter, the ether? The explanation is probably to be sought in those phenomena which have given rise to the theory of action at a distance, and in the properties of light which have led to the undulatory theory. Let us devote a little while to the consideration of these two subjects.*

*Outside of physics, we know nothing of action at a distance. When we try to connect cause and effect in the experiences which natural objects afford us, it seems at first as if there were no other mutual actions than those of immediate contact, e.g., the communication of motion by impact, push and pull, heating or inducing combustion by means of a flame, etc. It is true that even in everyday experience weight, which is in a sense action at a distance, plays a very important part. But since in daily experience the weight of bodies meets us as something constant, something not linked to any cause which is variable in time or place, we do not in everyday life speculate as to the cause of gravity, and therefore do not become conscious of its character as action at a distance."*

The theory of Super Relativity deals directly with the cause of gravity. In order to achieve a solution for Einstein's Unified Field Theory, we must discover the mechanical cause of the gravitational field. Once this is known, we can model that physical reality using the proper equation. The force of gravity and its action at a distance is achieved due to a contraction deformation to the aether medium. Particles that have mass generate their mass and, therefore, their own gravitational field. The mass/gravity deformation effect comes about due to unbalanced fundamental charges moving in an accelerated manner. [29] This type of motion causes a mechanical deformation of contraction within and around every accelerating particle. This force field is a gradient field of force, and its field strength diminishes in accordance with the Inverse Square Law:

General Rule

*I = Intensity  
D = Distance*

*Gravity*

*F represents the force of gravity between two objects  
G is Newton's Gravitational Constant  
M and m are the masses of the objects  
R is the distance between them*

Newton was partially correct in saying that gravity is caused by an action at a distance type of force. The distant attractive force comes about due to a contraction of a solid (continuous medium), the aether medium. So, the trick to understanding the force of gravity is that it is a local force that extends across a continuous space as tension within the aether medium.

*"Newton's theory of gravitation first assigned a cause for gravity by interpreting it as action at a distance, proceeding from masses. Newton's theory is probably the greatest stride ever made in the effort towards the causal nexus of natural phenomena. And yet, this theory evoked a lively sense of discomfort among Newton's contemporaries because it seemed to be in conflict with the principle springing from the rest of experience, that there can be reciprocal action only through contact, and not through immediate action at a distance."*

The theory of Super Relativity states that there is direct contact between points in space. It does not matter how far they are separated. Our reality is this way because the aether is a quasi-elastic solid that provides continuous contact between two massive objects. It is a local action at a distance but is not immediate. If point A is adjacent to B and B is adjacent to C, then A is adjacent to C. The appearance of distance happens because there is a finite speed at which communication energy or field of force can travel. If the speed of light were infinitely fast, both distance and time would cease to exist in this dimension.

*"It is only with reluctance that man's desire for knowledge endures a dualism of this kind. How was unity to be preserved in his comprehension of the forces of nature? Either by trying to look upon contact forces as being themselves distant forces which admittedly are observable only at a very small distance and this was the road which Newton's followers, who were entirely under the spell of his doctrine, mostly preferred to take; or by assuming that the Newtonian action at a distance is only apparently immediate action at a distance, but in truth is conveyed by a medium permeating space, whether by movements or by elastic deformation of this medium."*

The second assumption above (action at a distance conveyed by a medium) turns out to be correct. The theory of Super Relativity states that force (action at a distance) comes about due to various types of deformations of space (the aether). The different bending types of space are the primary fields of force. A field of force is a deformation of physical space (the aether). There are only so many ways that space can be bent. Gravity is a contraction of space. Anti-gravity is a physical expansion of space, and magnetism is a torsional reaction of space that is caused by moving electrostatic charge within space. A negative electrostatic charge is a clockwise rotation, and the positive electrostatic charge has a counterclockwise rotation of space. The negative charge has lines of force that have an inward direction of bending towards the core. The positive charge has an outward movement of the lines of force away from the core point of origin.

*"Thus the endeavor toward a unified view of the nature of forces leads to the hypothesis of an ether. This hypothesis, to be sure, did not at first bring with it any advance in the theory of gravitation or in physics generally, so that it became customary to treat Newton's law of force as an axiom not further reducible."* Thanks to the Theory of Super Relativity, the mechanical aspects of force have been revealed, so the law of force has been reducible to the foundation of reality. *"But the ether hypothesis was bound always to play some part in physical science, even if at first only a latent part."*

*"When in the first half of the nineteenth century, the far-reaching similarity was revealed, which subsists between the properties of light and those of elastic waves in ponderable bodies, the ether hypothesis found fresh support. It appeared beyond question that light must be interpreted as a vibratory process in an elastic, inert medium filling up universal space."* This is a correct assumption. *"It also seemed to be a necessary consequence of the fact that light is capable of polarization that this medium, the ether, must be of the nature of a solid body, because transverse waves are not possible in a fluid, but only in a solid."* I consider the statement above as authoritative proof and, therefore, direct evidence that the aether exists and is a quasi-elastic solid. *"Thus the physicists were bound to arrive at the theory of the "quasi-rigid" luminiferous ether, the parts of which can carry out no movements relatively to one another except the small movements of deformation which correspond to light-waves."* This is another correct assumption. This idea should also be expanded to small movements of a continuous medium caused by magnetic fields and gravitational fields.

*"This theory - also called the theory of the stationary luminiferous ether - moreover found a strong support in an experiment which is also of fundamental importance in the special theory of relativity, the experiment of Fizeau, from which one was obliged to infer that the luminiferous ether does not take part in the movements of bodies."* This statement needs to be closely examined. While it is true, the aether itself does not move, what does move are the particles of matter and energy that exist as particle fields consubstantially within the aether. Particles are nothing more than microscopic

electromagnetic **field configurations of space**. They travel within space as self-contained waveform structures.

Consequently, they behave within the aether like ultra-small quanta of rippling field structures. These objects act like particles because they have a specific field structure, and it is this field structure that moves within space and not the aether. The aether plays an active part in the motion of particles because the particle structures have an internal pressure gradient. This allows the particle structure within the aether to move but not the aether itself. *"The phenomenon of aberration also favored the theory of the quasi-rigid ether."*

*"The development of the theory of electricity along the path opened up by Maxwell and Lorentz gave the development of our ideas concerning the ether quite a peculiar and unexpected turn. For Maxwell himself the ether indeed still had properties which were purely mechanical, although of a much more complicated kind than the mechanical properties of tangible solid bodies. But neither Maxwell nor his followers succeeded in elaborating a mechanical model for the ether which might furnish a satisfactory mechanical interpretation of Maxwell's laws of the electromagnetic field. The laws were clear and simple, the mechanical interpretations clumsy and contradictory."* Maxwell was correct in assuming that the aether and its particle waves should be described using a mechanical model. The vortex particle model of that time was the correct model. Unfortunately, at that time, it was not realized that the vortex mechanical model could account for the cause of the autonomous motion of particles. It was not discovered that the cause of particle motion was due to the particle's internal pressure gradient structure. The theory of Super Relativity corrects the situation by providing a simple mechanical explanation for particle behavior and particle interaction with the aether medium. *"Almost imperceptibly the theoretical physicists adapted themselves to a situation which, from the standpoint of their mechanical programme, was very depressing. They were particularly influenced by the electro-dynamical investigations of Heinrich Hertz. For whereas they previously had required of a conclusive theory that it should content itself with the fundamental concepts which belong exclusively to mechanics (e.g. densities, velocities, deformations, stresses) they gradually accustomed themselves to admitting electric and magnetic force as fundamental concepts side by side with those of mechanics, without requiring a mechanical interpretation for them."* Super Relativity theory restores their mechanical interpretation as fundamentally correct. All three forces - magnetic, electrostatic, and gravitational, are spatial deformation fields. These deformations types are various forms of physical bending and conformations of the aether. These deformations are what we call the fields of force. *"Thus the purely mechanical view of nature was gradually abandoned. But this change led to a fundamental dualism which in the long-run was insupportable. A way of escape was now sought in the reverse direction, by reducing the principles of mechanics to those of electricity, and this especially as confidence in the strict validity of the equations of Newton's mechanics was shaken by the experiments with b-rays and rapid cathode rays."*

*"This dualism still confronts us in unextenuated form in the theory of Hertz, where matter appears not only as the bearer of velocities, kinetic energy, and mechanical pressures, but also as the bearer of electromagnetic fields. Since such fields also occur in vacuo - i.e. in free ether-the ether also appears as bearer of electromagnetic fields."* This is a correct assumption. *"The ether appears indistinguishable in its functions from ordinary matter. Within matter it takes part in the motion of matter and in empty space it has everywhere a velocity; so that the ether has a definitely assigned velocity throughout the whole of space."* The aether theory of Super Relativity disagrees with this concept. The aether does not have a velocity in space. What actually moves through space are particle-wave structures that possess within them an internal pressure/density wave. This internal pressure wave is what conveys motion to all particle waves. *"There is no fundamental difference between Hertz's ether and ponderable matter (which in part subsists in the ether)."*

*"The Hertz theory suffered not only from the defect of ascribing to matter and ether, on the one hand mechanical states, and on the other hand electrical states, which do not stand in any conceivable relation to each other; it was also at variance with the result of Fizeau's important experiment on the velocity of the propagation of light in moving fluids, and with other established experimental results."* On the other hand, the theory of Super Relativity declares that electrical states, magnetic states, and gravitational states are all equivalent to mechanical states within the aether.

*"Such was the state of things when H A Lorentz entered upon the scene. He brought theory into harmony with experience by means of a wonderful simplification of theoretical principles. He achieved this, the most important advance in the theory of electricity since Maxwell, by taking from ether its mechanical, and from matter its electromagnetic qualities. As in empty space, so too in the interior of material bodies, the ether, and not matter viewed atomistically, was exclusively the seat of electromagnetic fields."* The previous statements are partially correct. The structure of electrostatic charge causes motion, and this motion creates magnetism which then becomes electromagnetism. Then the accelerated motion of unbalanced charges causes mass and gravity. *"According to Lorentz the elementary particles of matter alone are capable of carrying out movements; their electromagnetic activity is entirely confined to the carrying of electric charges. Thus Lorentz succeeded in reducing all electromagnetic happenings to Maxwell's equations for free space."* He used the proper mechanical model and achieved a successful theoretical model.

*"As to the mechanical nature of the Lorentzian ether, it may be said of it, in a somewhat playful spirit, that immobility is the only mechanical property of which it has not been deprived by H A Lorentz. It may be added that the whole change in the conception of the ether which the special theory of relativity brought about, consisted in taking away from the ether its last mechanical quality, namely, its immobility."* Unfortunately, Einstein introduces an incorrect interpretation for Special Relativity that

has now plagued mankind since 1905. This erroneous interpretation was triggered by the incorrect interpretation of the null result of the Michelson-Morley Experiment. *"How this is to be understood will forthwith be expounded.*

*"The spacetime theory and the kinematics of the special theory of relativity were modelled on the Maxwell-Lorentz theory of the electromagnetic field. This theory therefore satisfies the conditions of the special theory of relativity, but when viewed from the latter it acquires a novel aspect. For if  $KK$  be a system of coordinates relatively to which the Lorentzian ether is at rest, the Maxwell-Lorentz equations are valid primarily with reference to  $KK$ . But by the special theory of relativity the same equations without any change of meaning also hold in relation to any new system of co-ordinates  $K'K'$  which is moving in uniform translation relatively to  $KK$ . Now comes the anxious question:- Why must I in the theory distinguish the  $KK$  system above all  $K'K'$  systems, which are physically equivalent to it in all respects, by assuming that the ether is at rest relatively to the  $KK$  system? For the theoretician such an asymmetry in the theoretical structure, with no corresponding asymmetry in the system of experience, is intolerable. If we assume the ether to be at rest relatively to  $KK$ , but in motion relatively to  $K'K'$ , the physical equivalence of  $KK$  and  $K'K'$  seems to me from the logical standpoint, not indeed downright incorrect, but nevertheless unacceptable."* In Super Relativity Theory, the aether is considered to be at rest relative to all other systems of motion.

*"The next position which it was possible to take up in face of this state of things appeared to be the following. The ether does not exist at all. The electromagnetic fields are not states of a medium, and are not bound down to any bearer, but they are independent realities which are not reducible to anything else, exactly like the atoms of ponderable matter. This conception suggests itself the more readily as, according to Lorentz's theory, electromagnetic radiation, like ponderable matter, brings impulse and energy with it, and as, according to the special theory of relativity, both matter and radiation are but special forms of distributed energy, ponderable mass losing its isolation and appearing as a special form of energy."* The Theory of Super Relativity clearly states that electromagnetic fields are states of the aether medium, so all matter and energy are bound down to and consubstantial to the bearer. All interactions and properties of particles come about due to an interaction between the particle field structures and the aether they are moving within. The electrostatic field vortex structure causes motion within the aether. Once the movement of the charge is established, the magnetic field emerges as a result of the charge moving within the aether. Gravity comes about and is caused by the accelerated motion of unbalanced electromagnetic particle fields. This special type of motion within space causes a contraction of space in and around the accelerating particle field. The full explanation will be provided within this document.

*"More careful reflection teaches us however, that the special theory of relativity does not compel us to deny ether. We may assume the existence of an ether; only we must*

give up ascribing a definite state of motion to it, i.e. we must by abstraction take from it the last mechanical characteristic which Lorentz had still left it." In Super Relativity Theory, the aether still has a state of motion. It is the same as Lorentz said. It is stationary. It also has other mechanical characteristics. The aether has the properties of density, pressure, and a specific metric that can be altered by applying to it one or more of the three primary forces. The aether also has the properties of permittivity and permeability, which are affected by the primary forces.

*"We shall see later that this point of view, the conceivability of which I shall at once endeavor to make more intelligible by a somewhat halting comparison, is justified by the results of the general theory of relativity."*

*"Think of waves on the surface of water. Here we can describe two entirely different things. Either we may observe how the undulatory surface forming the boundary between water and air alters in the course of time; or else-with the help of small floats, for instance - we can observe how the position of the separate particles of water alters in the course of time. If the existence of such floats for tracking the motion of the particles of a fluid were a fundamental impossibility in physics - if, in fact nothing else whatever were observable than the shape of the space occupied by the water as it varies in time, we should have no ground for the assumption that water consists of movable particles. But all the same we could characterize it as a medium."*

*"We have something like this in the electromagnetic field. For we may picture the field to ourselves as consisting of lines of force. If we wish to interpret these lines of force to ourselves as something material in the ordinary sense, we are tempted to interpret the dynamic processes as motions of these lines of force, such that each separate line of force is tracked through the course of time. It is well known, however, that this way of regarding the electromagnetic field leads to contradictions."*

*"Generalizing we must say this:- There may be supposed to be extended physical objects to which the idea of motion cannot be applied. They may not be thought of as consisting of particles which allow themselves to be separately tracked through time. In Minkowski's idiom this is expressed as follows:- Not every extended conformation in the four-dimensional world can be regarded as composed of world-threads. The special theory of relativity forbids us to assume the ether to consist of particles observable through time, but the hypothesis of ether in itself is not in conflict with the special theory of relativity. Only we must be on our guard against ascribing a state of motion to the ether." In Super Relativity, the aether is not made up of particles. It is a quasi-elastic continuous medium that can be bent into fields of force. Particles are ultra-small fields of force structures that move as ripples within the medium, but the medium itself does not move. All of this conversation by Einstein concerning relative motion attempts to validate the Special Theory of relativized motion between two moving systems by ignoring the aether. In my opinion, he is trying to save the Theory of Special Relativity from being invalidated by using an interpretation that does not make sense. In truth,*

the Lorentz Transformation succeeds in making valid predictions because motion relative to the aether causes a transformation within the particle in its motion relative to the aether. The relative difference between two systems happens because one system is at zero motion relative to another system. This case is never really correct. What is actually happening is that both systems are in motion relative to the aether.

*"Certainly, from the standpoint of the special theory of relativity, the ether hypothesis appears at first to be an empty hypothesis. In the equations of the electromagnetic field there occur, in addition to the densities of the electric charge, only the intensities of the field. The career of electromagnetic processes in vacuo appears to be completely determined by these equations, uninfluenced by other physical quantities. The electromagnetic fields appear as ultimate, irreducible realities, and at first it seems superfluous to postulate a homogeneous, isotropic ether-medium, and to envisage electromagnetic fields as states of this medium."* However, the evidence that I have uncovered and placed into this paper, along with Einstein's discovery of General Relativity, demonstrates without a doubt that electromagnetic fields are completely influenced by the physical existence and properties of space (the aether).

*"But on the other hand there is a weighty argument to be adduced in favor of the ether hypothesis. To deny the ether is ultimately to assume that empty space has no physical qualities whatever. The fundamental facts of mechanics do not harmonize with this view. For the mechanical behavior of a corporeal system hovering freely in empty space depends not only on relative positions (distances) and relative velocities, but also on its state of rotation, which physically may be taken as a characteristic not appertaining to the system in itself. In order to be able to look upon the rotation of the system, at least formally, as something real, Newton objectivizes space. Since he classes his absolute space together with real things, for him rotation relative to an absolute space is also something real."* Newton is absolutely correct about this. "Newton might no less well have called his absolute space "Ether"; what is essential is merely that besides observable objects, another thing, which is not perceptible, must be looked upon as real, to enable acceleration or rotation to be looked upon as something real." The Theory of Super Relativity bases the unification of the forces on this correct assumption.

*"It is true that Mach tried to avoid having to accept as real something which is not observable by endeavoring to substitute in mechanics a mean acceleration with reference to the totality of the masses in the Universe in place of an acceleration with reference to absolute space. But inertial resistance opposed to relative acceleration of distant masses presupposes action at a distance; and as the modern physicist does not believe that he may accept this action at a distance, he comes back once more, if he follows Mach, to the ether, which has to serve as medium for the effects of inertia. But this conception of the ether to which we are led by Mach's way of thinking differs essentially from the ether as conceived by Newton, by Fresnel, and by Lorentz. Mach's ether not only conditions the behavior of inert masses, but is also conditioned in its*

*state by them.*" According to the Super Relativity Model, Mach's principle is mostly incorrect. Super Relativity states that inertia is caused by the accelerated motion of particles with a self-generated rotational inertial mass (rest mass). The rest mass of particles, such as the neutron and proton, is caused by their constituent parts' accelerated motion. Therefore, its rest mass also has an inertial cause. We are now at the point where a full explanation of both rest mass and inertia needs to be explained. I will also supply the Super Relativity Principle of Inertia.

### **The Concept of Inertia**

Inertia is a tendency that massive bodies have to resist changes in their state of motion. The mystery in Newton's first law comes about when a person tries to determine the mechanical cause of the resistance to the change in motion of an object. An example of inertial resistance is the resistance your arm and hand feel to the forward motion while throwing a ball. Another example is how your body is pulled back into the seat when you rapidly accelerate your automobile. [30]

### **Modern-Day Science Explanation for Inertia**

If you ask a scientist why a massive object resists a change in motion, you will get a number of different answers ranging from "we do not know" to various attempts for an explanation using Newton's laws. You may have some people attempt to use multiple unproven quantum theories. Some will say inertia is equal to mass. Other scientists would argue that is wrong. The bottom line here is the question is not answered. Answering this foundational question is in the realm of metaphysics. Basically, in modern-day physics, the foundational cause of inertia is an unsolved question. [31]

### **No Such Thing as Rest Mass**

At this point, a very important distinction should be made. I am repeating my explanation of rest mass here with added detail because rest mass is an important component of the inertia phenomenon. So now what needs to be done is to thoroughly define rest mass and then link it to inertia. As I stated in my book, *Master of Reality*, there is no such thing as true rest mass where fundamental particles are concerned. In reality, sub-atomic particles are never motionless. According to Super Relativity Theory, if a particle were to be completely at rest and stationary relative to the "aether," the result of the lack of motion relative to the aether would cause the particle to no longer generate a magnetic field or gravitational field. This is because the electrostatic charge needs to be in motion to generate these two fields. Therefore, in actuality, particles in motion are actually conditioning space. Consequently, even though a composite particle like the proton may be at rest relative to the aether, the quarks that make up the proton are rapidly moving in an accelerated fashion inside the proton at a rate near the speed of light relative to the aether.

Subsequently, whenever I use the phrase "rest mass" in this document, please keep the description that I have provided above as your reference to what is really happening inside of protons and neutrons. In the case of the electron, it is also never stationary

relative to the aether, which is why it has a so-called rest mass. The electron has mass because it is an unbalanced charge in accelerated motion. [32]

### **Super Relativity Rest Mass Definition**

The rest mass of a composite particle such as the neutron or proton is generated by the accelerated motion relative to the ether of its constituent particles, which are the quarks. The rest mass of fundamental particles, such as the electron, is generated by the accelerated motion of the electron inside its orbital structure relative to the aether. [33]

### **Super Relativity Definition of Inertia**

An object that has a rest mass will experience an inertial drag any time that object is forced to accelerate in the macroscopic frame of reference. The inertial drag is caused by the contraction of space in the direction of motion surrounding all of the particles that make up the atoms of the accelerating object. As soon as the acceleration stops, the additional contraction in the direction of the accelerated motion stops. When any macroscopic object is no longer accelerating, it no longer experiences inertial resistance to motion. So what causes inertia according to Super Relativity Theory? [34]

### **Inertia Postulate and Definition**

**Inertial resistance to motion is caused by the contraction of length and an increase of spatial density of the space surrounding and within massive particles caused by the increased straight-line accelerated motion of those particles. When this contraction happens, there is a temporary mechanical resistance to the increased motion of the particle. A direct mechanical action between particles and the aether causes each particle waveform to adhere to the space within and around the particle in a cohesive manner when a contraction of that particle geometry occurs due to its temporary acceleration. The greater the acceleration of an object, the more particle contraction will happen within that object and, therefore, the greater the inertial resistance to that acceleration.**

The act of the contraction of all the particles in the object causes the inertial drag that we feel. When the straight-line acceleration stops, the inertial mass increase is stored in the particle in the form of the contracted structure of the particle in the direction of motion. As a result of this contraction, that object is now more massive, and the energy of motion is stored within the compressed particle structure. This causes an inertial mass of the particle to be increased and stored until a deceleration of the macroscopic object's motion relative to a stationary aether. This motion is absolute, and it relates directly to a stationary ether. [35]

### ***Now we can continue with Einstein's speech.***

*"Mach's idea finds its full development in the ether of the general theory of relativity. According to this theory the metrical qualities of the continuum of spacetime differ in the environment of different points of spacetime. They are partly conditioned by the matter existing outside of the territory under consideration. This spacetime variability of the reciprocal relations of the standards of space and time, or, perhaps, the recognition of the fact that "empty space" in its physical relation is neither homogeneous nor isotropic, compelling us to describe its state by ten functions (the gravitation potentials  $G_{mn}$ ), has, I think, finally disposed of the view that space is physically empty." Super Relativity Theory agrees with the above statements. Space is not empty. But therewith, the conception of the ether has again acquired an intelligible content although this content differs widely from that of the ether of the mechanical undulatory theory of light. The ether of the general theory of relativity is a medium which is itself devoid of all mechanical and kinematical qualities, but helps to determine mechanical (and electromagnetic) events." I don't see how this could be possible. How could the aether help determine mechanical and electromagnetic events and be completely devoid of those mechanical qualities? Einstein himself uses Special Relativity to demonstrate the mechanical process for the creation of the gravitational field. The Ehrenfest Paradox is a paradox that was deepened further by Albert Einstein. Einstein showed that measuring rods that are aligned and inserted along the periphery of a rapidly spinning disc will contract as the disk rotation increases. This would mean that more measuring rods would fit around the circumference of the spinning disk. The circumference of this spinning disk would then measure greater than  $2R$ . This indicates that geometry is non-Euclidean for rotating observers, and this discovery was important for Einstein's development of general relativity. [36] Since the space around the spinning disc perimeter contracts in response to the accelerated spinning disc, this demonstrates that space itself has mechanical properties because it experiences a real physical contraction. This contraction will cause an actual transformation of the spatial metric. I believe the above statements by Einstein were further attempts to defend his incorrect interpretation of his Theory of Special Relativity.*

*"What is fundamentally new in the ether of the general theory of relativity as opposed to the ether of Lorentz consists in this, that the state of the former is at every place determined by connections with the matter and the state of the ether in neighboring places, which are amenable to law in the form of differential equations; whereas the state of the Lorentzian ether in the absence of electromagnetic fields is conditioned by nothing outside itself, and is everywhere the same." According to Super Relativity, the aether is conditioned by the motion of electromagnetic fields, which means that the accelerated motion of electromagnetic fields creates gravity. The non-accelerated motion of electrostatic charge also conditions the aether. In this case, the magnetic*

field is generated along with a slight expansion of the spatial metric. "The ether of the general theory of relativity is transmuted conceptually into the ether of Lorentz if we substitute constants for the functions of space which describe the former, disregarding the causes which condition its state. Thus we may also say, I think, that the ether of the general theory of relativity is the outcome of the Lorentzian ether, through relativation."

"As to the part which the new ether is to play in the physics of the future we are not yet clear. We know that it determines the metrical relations in the spacetime continuum, e.g., the configurative possibilities of solid bodies as well as the gravitational fields, but we do not know whether it has an essential share in the structure of the electrical elementary particles constituting matter." The Super Relativity aether both determines the metrical relations of the spacetime continuum and completely determines the structure of electrical elementary particles. Elementary particles are field structures contained within the aether. "Nor do we know whether it is only in the proximity of ponderable masses that its structure differs essentially from that of the Lorentzian ether; whether the geometry of spaces of cosmic extent is approximately Euclidean. But we can assert by reason of the relativistic equations of gravitation that there must be a departure from Euclidean relations, with spaces of cosmic order of magnitude, if there exists a positive mean density, no matter how small, of the matter in the Universe."

"In this case, the Universe must of necessity be spatially unbounded and of finite magnitude, its magnitude being determined by the value of that mean density."

"If we consider the gravitational field and the electromagnetic field from the standpoint of the ether hypothesis, we find a remarkable difference between the two. There can be no space nor any part of space without gravitational potentials; for these confer upon space its metrical qualities, without which it cannot be imagined at all." This previous statement is a very accurate and important statement, except for one thing. When the linear motion of electromagnetic fields is experienced by space, the aether also experiences a negative effect of metrical expansion and density decrease. "The existence of the gravitational field is inseparably bound up with the existence of space. On the other hand a part of space may very well be imagined without an electromagnetic field; thus in contrast with the gravitational field, the electromagnetic field seems to be only secondarily linked to the ether, the formal nature of the electromagnetic field being as yet in no way determined by that of gravitational ether." All the primary fields of force which are the electrostatic, magnetic, and gravitational fields, are primarily linked with the aether as they are consubstantial with the aether. Each field is a different type of deformation of the continuous aether medium. "From the present state of theory, it looks as if the electromagnetic field, as opposed to the gravitational field, rests upon an entirely new formal motif, as though nature might just as well have endowed the gravitational ether with areas of quite another type, for example, with fields of a scalar potential, instead of fields of the electromagnetic type."

This interpretation is incorrect. Each field affects the metrical qualities of space. The electrostatic and magnetic fields expand and decrease the spatial metric while the gravitational field contracts the metric.

*"Since according to our present conceptions the elementary particles of matter are also, in their essence, nothing else than condensations of the electromagnetic field, our present view of the Universe presents two realities which are completely separated from each other conceptually, although connected causally, namely, gravitational ether and electromagnetic field, or - as they might also be called - space and matter."*

*"Of course it would be a great advance if we could succeed in comprehending the gravitational field and the electromagnetic field together as one unified conformation. Then for the first time the epoch of theoretical physics founded by Faraday and Maxwell would reach a satisfactory conclusion. The contrast between ether and matter would fade away, and, through the general theory of relativity, the whole of physics would become a complete system of thought, like geometry, kinematics, and the theory of gravitation. An exceedingly ingenious attempt in this direction has been made by the mathematician H Weyl; but I do not believe that his theory will hold its ground in relation to reality. Further, in contemplating the immediate future of theoretical physics we ought not unconditionally to reject the possibility that the facts comprised in the quantum theory may set bounds to the field theory beyond which it cannot pass."*

*"Recapitulating, we may say that according to the general theory of relativity space is endowed with physical qualities; in this sense, therefore, there exists an ether. According to the general theory of relativity space without ether is unthinkable; for in such space there not only would be no propagation of light, but also no possibility of existence for standards of space and time (measuring-rods and clocks), nor therefore any spacetime intervals in the physical sense. But this ether may not be thought of as endowed with the quality characteristic of ponderable media, as consisting of parts which may be tracked through time. The idea of motion may not be applied to it."*

Einstein's speech is provided in this document as authoritative proof for establishing the existence of the aether.

Einstein asserts there is an aether. Still, without a firm grasp on a solution for the Unified Field Theory, it is difficult for him to say precisely how this medium interacts with objects in the physical realm. Unfortunately, in his effort to protect his mechanical interpretation of the Theory of Special Relativity, he makes many incorrect conclusions about the aether's mechanical aspects.

## The Theory of Super Relativity Revives the Aether Concept

To achieve the Unified Field Theory solution, as Einstein envisioned, electromagnetism and gravity must emerge as aspects of a single fundamental field. The question is, what is the fundamental field? The fundamental field must be the aether. Without the existence of a fundamental field, there can be no Unified Field Theory.

### Aether Definition

The aether in Super Relativity Theory is composed of a quasi-elastic solid. If this thing truly exists, then it should have certain qualities.

#### Quality 1 – Quasi-Elastic Means It Can Be Deformed

Quasi-elastic implies that the aether can be deformed (bent) by a primary or secondary force and when the force that bends it is removed, it will snap back in place and become a flat Euclidean spatial metric.

#### Quality 2 - Solid Means It Is a Continuous Substance

Solid means that the aether must be a continuous substance and is not composed of parts or separate physical elements. It is all one and the same thing. Therefore, our physical reality and all the objects in the Universe are physically connected. All microscopic objects exist as electric fields that are consubstantial with the spatial medium.

### Evidence That Proves the Existence of the Aether

There is a great deal of evidence that supports the Super Relativity Aether Model.

According to Super Relativity, the aether is a quasi-rigid medium that can be bent in only a small set of deformation types. These deformation types lead to stresses, tensions (vector fields), gradient pressures, and gradient density fields within the aether medium. These tensions and pressure gradients are the central cause of the three primary fields of force.

#### Mechanical Deformation Forces

1. Stretching the aether leads to a drop in the density and a drop in the spatial pressure within the expanded area. These gradient fields lead to particle motion and anti-gravity effects. Therefore, Torsion Field Theory is the preferred method of analysis.
2. Contracting the aether leads to the emergence of mass, gravity, and inertia. Classical Field Theory, in conjunction with Torsional Field Theory, is the preferred method of analysis.
3. Twisting of the aether medium happens as the result of the field of force known as the electrostatic field (or Coulomb Force). There are two types of torsion fields of force:

a. The clockwise field of rotation is a geometric rotation within the fundamental aether field. The clockwise direction of rotation forms a negatively charged electric field within the aether. In this case, the lines of force move inwards relative to the central rotational core. Classical Field Theory, in conjunction with Torsional Field Theory, is the preferred method of analysis.

b. Counterclockwise field rotation is a geometric rotation within the fundamental aether field. This results in a positively charged electrostatic field with the lines of force moving outwards relative to the central rotational core. Classical Field Theory, in conjunction with Torsional Field Theory, is the preferred method of analysis.

4. A rotation of the fundamental aether field is what we call the magnetic field, and it happens as a response to moving electric charge. Typically, the motion of electrons in a conductor causes the magnetic field to emerge from the conductor. The magnetic field is induced into the aether medium at 90 degrees from the direction of the moving charge of motion. The magnetic field is a torsional reaction to the electric charge as it moves within space. The lines of force move outward from the north pole, wrap around the surrounding space, and eventually move inward toward a magnet's south pole. Classical Field Theory, in conjunction with Torsional Field Theory, is the preferred method of analysis.

#### Electromagnetic and Gravitational Fields Are Aspects of the Fundamental Aether Field

All of these fields of force emerge into our reality as aspects of the single fundamental field. These fields are deformations of the aether medium and come about due to the aether being the transmission medium for all of these fields of force. The most common theory of what space subsists of happens to be an incorrect concept. The most common theory is that the vacuum of space is a completely empty void made of nothing. In reality, this idea cannot be correct because it is impossible to bend something that is not there. This concept leads to an inconsistency of logic which in the long run has proven to be insupportable.

#### Transverse Waves Are Evidence That the Aether Is a Solid

To further support the aether Super Relativity Hypothesis, all particles are electromagnetic in composition. Electromagnetic fields are known to be transverse waves. For transverse waves, the displacement of the medium is perpendicular to the direction of propagation of the wave. **Transverse waves** cannot propagate in a **gas** or a liquid because there is no mechanism for driving field deformations perpendicular to the propagation of the **wave**. [37]

#### Einstein Provides Authoritative Proof for the Existence of the Aether

In Einstein's speech *Ether and the Theory of Relativity*, Einstein states that space is endowed with physical qualities; therefore, there is an aether.

#### Evidence of the Aether - Physical Standards for Space and Time

Time and time again, it has been demonstrated that the physical standards for space and time are observable. This means that space has a real, physical, and measurable density that determines the metric of space. If space was an empty void and made of nothing, we would then be able to travel anywhere in space at infinite speed. Since space is composed of a physical substance, it takes time to traverse a measurable distance. The following formula substantiates this:  $\text{Distance}=\text{Rate}*\text{Time}$  when we solve for  $\text{Time}=\text{Distance}/\text{Rate}$ . If space were truly equal to nothing, then space would be equivalent to a quantity of zero. Zero divided by any rate would be equal to zero. Since this has never been observed, space must be an actual physical object that takes time to traverse. If space were truly empty, it would take zero time to travel through space regardless of the distance or rate of motion. The concept of distance would, therefore, be meaningless. Time intervals would no longer exist, and the speed of light would become infinitely fast.

### Space Has Real Measurable Physical Properties

The Aether has two measurable properties:

**The Permeability of Free Space** =  $1.25663706 \times 10^{-6} \text{ m kg s}^{-2} \text{ A}^{-2}$ , which is the magnetic constant.

**The Permittivity of Free Space** =  $8.85418782 \times 10^{-12} \text{ m}^{-3} \text{ kg}^{-1} \text{ s}^4 \text{ A}^2$ , which is the electric constant.

Since space is endowed with these real, measurable physical properties, we must conclude that the aether is an actual physical thing. If space were made of nothing, permeability and permittivity would have no measurable values, and therefore these properties would be equal to zero. This is clearly not the case in free space.

### The Aether Has a High Tension

We know that the tension of space is very high. We know this because the speed of light is very fast, which means that light vibrates at a very high frequency. Vibrational frequencies beyond .0001nm, which are gamma rays, are possible. Therefore, the tension of the medium must be very high. Think of a string on a guitar; the tighter the string, the higher the frequency of the note when the string is made to vibrate. The aether medium works the same way.

### The Aether Has a Density

Assuming that space exists as a quasi-elastic solid, then the metric of space between any two points must have a value for describing the density between those two points. This density can be related to the amount of permittivity and permeability of free space in a particular region of space. The denser the spatial substance or plenum, the slower light will appear to move within the denser region. A commonly known fact is the refraction of light when light enters a denser medium.

Here is a short list of refractive indices:

Air	Refractive Index No.
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<a href="#">Vacuum</a>		1 (by definition)
<a href="#">Air</a>		1.000293
<a href="#">Water</a>		1.333
<a href="#">Glass</a>		1.458

We can see a general pattern here. The denser the medium, the larger the refractive index. In all cases, according to Super Relativity Theory, light is interacting with a medium. Light goes fastest in the least dense medium, which is free space. Since light does not travel infinitely fast in the medium of free space, this proves that the medium of space exists as a real physical substance with a very thin density of a continuous fundamental field.

### **The Density of Space Determines the Speed of Light**

Now that we have determined that the speed of light is determined by the density of the fundamental aether field, we can establish that the gravitational field affects the density of space. This leads us to assume that light will be slowed down when entering a gravitational field. The analysis of this particular situation is somewhat complex because it depends on how you measure the speed of light when it passes through a gravitational field. There are two methods of measurement:

1. Local area measurement under the influence of a gravitational field
2. Observer located away from the gravitational field where the light is passing through

It is currently believed that in the case of the local measurement, it will appear that the speed of light has not slowed down. In theory, this happens because the clocks used to measure the speed of light have also slowed down due to gravitational time dilation. However, in the other case where the observer is outside of the local gravitational field, the measurement clock will run faster, and in this case, the outside observer will see that the speed of light has appeared to slow down.

The above current-day description for the measurement of the speed of light is most likely incorrect. I base this assumption on the works coming from these three scientists:

Barry Satterfield, "History of the Speed of Light – Speed Debate" [38]

Paul Davies, "Has the Speed of Light Slowed Down?" [39]

Niayesh Afshordi and João Magueijo, "Did Light Break Its Own Speed Limit" [40]

It seems that we can use a variety of measurement techniques and determine locally that the speed of light is slowing down. The evidence is piling up in favor of the Super Relativity Theory, which states the speed of light is slowing down. The cause of the reduction of the speed of light is due to an ever-increasing Universal Scale increase of the gravitational field strength coming from Titan-sized Black Holes, which are growing in strength. The only reasonable explanation for this is that the Universe is not expanding; it is collapsing. Since, according to Super Relativity, gravity is a contraction of space, the density of space increases whenever a gravitational field is present. Therefore, light will take more time to travel across a fixed length as the gravitational field increases. Accordingly, this also suggests that when the gravitational field increases in strength, permittivity, and permeability will also increase. The increase in the permittivity and permeability of free space will correspond to a slower maximum speed for the speed of light. All of this supports the idea that the speed of light is slowing down due to the increased density of the spatial metric.

The Super Relativity interpretation of this scenario explains what is really happening. Technically speaking, the speed of light has remained constant. What has not remained constant is the density of space. Gravity, according to Super Relativity, causes the density of space to increase. According to the Theory of Super Relativity, the gravitational field is a gradient field of contracted space. As the gravitational field strength increases, the density of space increases. All the examples of the refraction indices of materials with different densities above prove beyond a doubt that increased plenum density will make light move slower. The pattern to be recognized is this. **The speed of light is slowing down and is not constant.** I realize by making this statement that the established authority and scientific institutions will judge my theory harshly. It will be said that a belief in any significant variability of the constants of nature is fatal to the spirit of science, as science is now understood. I believe that it is a tragic occurrence that some scientists can be blinded by their presuppositions.

#### **The Phenomenon Known as Inertia Provides Additional Evidence That Supports Aether Theory**

When an object in outer space is forced to accelerate, resistance is experienced in opposition to the accelerating force. The resistance is produced because the object has a rest mass that is really created by the orbital accelerated motion of all its internal particles. The question then becomes, what is the source cause of inertial resistance to accelerated motion of the macroscopic object? The cause of inertial resistance, according to Super Relativity Theory, comes about as an interaction between all of the object's compositional particles and their motion relative to the aether. The full definition and cause for inertia according to Super Relativity has already been provided earlier within this document.

## Summary of the History of Physics and the Conclusions Drawn from Theoretical Concepts of the Past and Observation

The master physicists of the past believed in the existence of the aether. It only took one ill-conceived experiment to convince the world to abandon the aether. In this paper, I have revealed proper interpretation for the Michaelson-Morley experiment. By correcting the null result misinterpretation of the M & M Experiment, I have been able to uncover the evidence that confirms the existence of the aether. This has made it possible to solve the Unified Field Theory that Einstein envisioned. **Electromagnetism and gravity emerge as aspects of a single fundamental field. The electrostatic field, the magnetic field, and the gravitational field are different aspects (fields of force or deformations) of the single fundamental field (the aether.)** [41]

## The Solution for the Unified Field Theory Requires One to Follow the Correct Path

There are two paths to choose from to achieve the Unified Field Theory. There is:

1. Einstein's pathway, in which electromagnetic field and gravity are aspects of a single fundamental field.
2. Quantum Mechanics, which employs the Standard Model path.

The basic difference between the two is the way force is defined. Quantum Mechanics defines particle interactions as forces. The Quantum method means force comes about from a particle-to-particle interaction. Einstein's and my version are both classical field theories, which means that force comes about due to a particle to space interaction. Particles are microscopic fields of force (or quanta) that move autonomously within space. I chose the path that Einstein chose. Therefore, the Theory of Super Relativity restores the idea that force (action at a distance) comes about as the result of a field of force. The force field is defined as a continuous medium in which the field of force emerges into reality due to stresses and tensions of the quasi-elastic medium. The knowledge of the existence of the aether is crucial for the development of the successful solution for the Unified Field Theory. My theory states that force, (or action at a distance) comes about from stresses, tensions, and pressure differences within the medium of space.

## The Foundational Concepts of the Theory of Super Relativity

The Theory of Super Relativity is based upon the foundational work of five of the most prominent physicists of the past. Isaac Newton, James Clerk Maxwell, Michael Faraday, Hendrick Lorentz, and Albert Einstein. Their combined efforts revealed a pattern to be recognized within nature. The foundational forces and primary particles in nature are all consubstantial with the fundamental field.

### Newton

Newton discovered that forces and objects interact with each other in some sort of purely mechanical way. Unfortunately, he never understood the mechanical method for explaining force (action at a distance). He suspected that force interactions had something to do with a mechanical process that somehow involved the aether. Newton was also the first person to formally link acceleration to mass.

### Faraday

Faraday moved science further along by performing an experiment that demonstrated that electric charge and magnetism were related to each other and had a fundamental connection through a mysterious electrical process called induction. Faraday's Law of Induction is a basic law of electromagnetism that predicts how a magnetic field will interact with an electric circuit to produce an electromotive force. [28] The explanation for this is that a magnetic field in motion relative to the conductor causes electrons in a conductor to move. This motion is what we know as electric current. Faraday's Law of Induction also describes how electrons in motion (which is an electric current) produce a magnetic field. In each case, the linking mechanism is motion. The most important thing to recognize is that electromagnetism emerges as the result of a moving charge. The magnetic field only happens when a charge moves. The question then becomes what is the linking mechanism between moving charge and the magnetic field. The single most logical explanation is that the moving charge is interacting with something and the result of that interaction is the magnetic field. The theory at that time was that a fundamental field was the thing that magnetism and electrostatic charges were interacting with. Oddly, the only person to disagree with that idea was Faraday. He thought that magnetic and electrostatic fields were separate but somehow interrelated entities.

According to Super Relativity Theory, when an electric charge (which is a torsional field) moves within the fundamental field, the fundamental field reacts to this motion by rotating around the charge as it moves within the aether. This provides us with the most sensible explanation for the emergence of the magnetic field. They have a common ancestry, which is the aether. The electrostatic and magnetic fields are two different aspects (or deformations) of the fundamental aether field. The electrostatic field is a permanently embedded torsion field. Embedded within the torsion field is a pressure/density field gradient. This secondary deformation (field of force) happens due to the gradual increase of the twisted electrostatic charge within space. This torsion field structure causes the motion of the particle. The magnetic field is a torsional reaction field that emerges as a result of the motion of the electrostatic field.

What is vitally important to realize is that a particle's structure determines its motion within space. Scientists at the University of Glasgow have verified this and have demonstrated that changing the photon's structure effectively slowed down the photon's velocity in free space. This is rock-solid evidence that it is the structure of particles that determines their velocity. Please see the article: '*Scientists slow down the speed of light traveling in free space*'. [42]

## Maxwell

The next step forward into the evolving pattern to be recognized comes from James Clerk Maxwell. Faraday's Law of Induction was later incorporated into the more comprehensive Maxwell's Theory of Electromagnetism. Scottish physicist James Clerk Maxwell developed Maxwell's equations for describing electromagnetism to explain the relationship between electricity and magnetism. He essentially united the two independent fields into a single electromagnetic force. He proposed that light is an undulation in the same medium that is the cause of the electric and magnetic phenomena. Eventually, this theory came to include all electromagnetic waves, including radio waves, visible light, X-rays, and gamma rays. [43] We now have an excellent mathematical description for help in describing the mechanical model of electromagnetism. Maxwell's electromagnetism model was created by using an aether reality model. It is also interesting to note that the electrostatic field, the magnetic field, and gravity all obey the inverse square law. These three forces have much in common. This establishes that all three of these forces exist in a three-dimensional space.

## Lorentz

The next step forward comes from Hendrik Antoon Lorentz. He derived the now-famous Lorentz transformations, the same transformations used by Albert Einstein in the Special Theory of Relativity. This very successful set of equations was also based on the aether theory model. At the time of their discovery, both Lorentz and Einstein were firm believers in the aether model. With all these successful theories and mathematics generated using the aether model, it should seem reasonable to assume that the aether theory is correct. [44]

## Michelson – Morley Experiment

Then the greatest mishap in the history of physics occurred, which was the catastrophic misinterpretation of the null result of the Michelson-Morley experiment. I believe that this event triggered Einstein to disassociate the Theory of Special Relativity with the aether. Unfortunately for the world of physics, these one-two punches to the Aether Theory led to the complete abandonment and rejection of the aether model. Then the final blow was delivered by the rise of Quantum Mechanics and the idea that objective reality might not even exist. [45]

## Einstein

All of the previous efforts from Newton, Faraday, Maxwell, and Lorentz were then used to form the basis for Einstein to formulate his two most important theories: The Theory of Special Relativity and the Theory of General Relativity. Unfortunately, as stated earlier, Einstein chose to abandon the aether in response to the Michelson-Morley null result. This experimental result led to a colossal error in how the Lorentz Transformations were interpreted within Special Relativity. The real cause of the null result was that photons always move at the maximum velocity allowable through space. The motion of the photons is entirely dependent upon their self-caused perpetual motion. Therefore, the speed of the photon is completely independent of the emitting and receiving motion frames of reference. This explains why the Earth's absolute motion relative to the aether was not detected. Later in life, Einstein returned to support the aether after completing the Theory of General Relativity. So, we are left with a mixed message coming from Einstein. [46]

## The New and Improved Classical Reality Model

The new Super Relativity Reality Model sets aside the many misinterpretations of reality that come from modern-day physics and the many advocates of Quantum Theory. As Richard Feynman once said to Lee Smolin of the Perimeter Institute, "If all your colleagues have tried to demonstrate that something's true and failed, it might be because that thing is not true." He was referring to String Theory and Quantum Mechanics. [47] Richard Feynman also said, "The extreme weakness of quantum

gravitational effects now poses some philosophical problems; maybe nature is trying to tell us something new here: maybe we should not try to quantize gravity." [48]

More authoritative evidence comes from Lee Smolin, who said, "What if Quantum Theory is wrong? This is the soft underbelly of the whole project of quantum gravity. If Quantum Theory is wrong, then trying to combine it with gravity will have been a huge waste of time." [49]

I have come to believe that the mathematical formulas used in Quantum Mechanics do not and cannot explain the mechanical processes of how the Universe works. I believe Quantum Mechanics is a mathematical language that can only describe particles in a limited way. All QM can do is describe elementary particles and their interactions as a world of potentialities or possibilities. This means it can't tell us how the world works, and therefore the mathematical formulations can't be used to derive a Theory of Everything. Thus, the mathematics of QM is ill-suited for that task.

The new, improved Classical Reality of Super Relativity is built upon the most successful theories of the past. It is a theory that quite literally takes us "back to the future." I combined and extended Maxwell's Theory of Electromagnetism, Special Relativity, and General Relativity to solve Einstein's Unified Field Theory problem.

## The Framework of Super Relativity

### The Problem to Solve

Discover how the electrostatic field, the magnetic field, and gravity emerge as related aspects of a single fundamental field.

In the 33 previous pages, I established arguments and evidence that proves the existence of the primary single fundamental field (the aether). I next deconstruct electromagnetism back into two of the three various aspects of the fundamental aether field.

### The Primary Forces of Nature

Fields are deformations of a continuous space. Deformations of space are distortions or bending in the shape of space. These deformations lead to vectored pressure changes within the aether material substance. I have discovered that only a certain number of possible deformations can occur in the quasi-elastic solid of space. There are only a small number of ways that space can be deformed. [50]

1. The electric charge, also known as the Coulomb Force, is the primary field of force. It is a twist of space. It is a torsional field that exists within the aether as a structurally persistent object. All particles are composed of twists or convolutions of space. These vortex structures cannot be dismantled. High energy collisions can deform particles and cause particles to merge or shatter, but individual particles cannot be undone and caused to annihilate. The vortex structure within the aether medium gives rise to a particle-wave configuration of space

in which the charged object acquires a velocity as a result of its internal structure. Consequently, the Coulomb force breathes life into the Universe.

2. Space can be rotated. The magnetic field of force is another type of deformation of the fundamental aether field. The magnetic field emerges into reality as the result of a moving charge. This has been powerfully demonstrated by the experimental evidence that comes from Michael Faraday. The Law of Electromagnetic Induction establishes a relationship between a moving charge and magnetism. Magnetism only happens when electric charges move. Magnetism is a torsional reaction to moving charges. In other words, space within and around the charged particle rotates slightly as a reaction to the motion of the twisted electric charge.

3. Space can be contracted. The **force of gravity is a contraction of a continuous space.** Gravity can also be referred to as a Hyperbolic Field. In other words, space and time warp around massive objects. In Dr. Amir D. Aczel's book, *God's Equation*, Einstein confirms this idea. According to Dr. Aczel, the mind experiment described below was Einstein's happiest thought:

*"Einstein followed the line of reasoning that began with the "happiest thought" of his life. Still at the Swiss patent office, he conducted one of his famous thought experiments. Einstein imagined a circle spinning in space. The center of the circle did not move, but its circumference was moving quickly in a circular direction. Einstein compared what happens in several reference frames, a standard tool he had used in developing the special relativity theory. He concluded, using his special relativity, that the boundary of the disk contracted as it spun. There was a force acting on the circle at the boundary – the centrifugal force – and its action was analogous to that of a gravitational force. But the same **contraction** that affected the outer circle left the diameter unchanged. Thus, Einstein concluded, in a way that surprised even him, the ratio of the circle to the diameter was no longer pi. He deduced that in the presence of a gravitational force (or field), the geometry of space was non-Euclidean. [51]"*

I believe that many physicists fail to accept or realize that Einstein's mind experiment reveals the actual mechanism that particles use to create mass. According to Super Relativity, all fundamental unbalanced charges particle objects generate their mass via their accelerated motion within the aether. I offer Einstein's happiest thought as authoritative proof that the warping of space is a real and intrinsic physical phenomenon. The world considers Einstein as being the foremost authority on matters concerning gravity and the gravitational field. I believe the Ehrenfest paradox is the foundational principle of General Relativity. Unfortunately, there is an increasing consensus from mainstream physics that the final theory of General Relativity does not extend the principle of relativity to accelerating motion in any interesting way. **This misunderstanding is one of the most significant roadblocks to genuinely comprehending the mechanical explanation for General Relativity.** Gravity, mass, and inertia all come about as the result of unbalanced fundamental accelerating

charges. When unbalanced charges accelerate, they cause space to contract. Contracting space is the foundational cause of the gravitational field.

4. Space can be expanded or stretched apart. The mechanical stretching and expansion of space is the soon-to-be-discovered force of anti-gravity, which can also be referred to as the Inverse Hyperbolic Field. If gravity, as I claim above, is a contraction of space, then it is natural to assume that anti-gravity is an expansion of space. The key to achieving anti-gravity will come about by discovering a motion of energy that causes space to expand rather than contract. By biasing space using an anti-gravity field, the force field of gravity can be shielded from objects that have mass. This will make objects that are above the anti-gravity field weightless.

These are all the different types of spatial deformations that are possible in a 3-dimensional space:

Type	Effect
1. Stretching or expansion of space.	Spatial Density decrease Increase in the speed of light Decrease in the permittivity of space Decrease in the permeability of space Decrease in gravitational field strength Increase in clock speed
2. Rotation of space clockwise and counterclockwise	Polarization Positive and negative charge Electric charge (twist or inversion of space) Magnetic field (rotation of space)
3. Contraction of space	Increase in permittivity of space Increase in permeability of space Increase gravitational field strength Slowing of the speed of light Decrease in clock speed Spatial Density increase

Therefore, force or action at a distance is caused by stresses and tension within the aether plenum.

#### **Quantum Mechanics Field Theories Versus the Classical Field Theory of Super Relativity**

Super Relativity Theory replaces the concept of fields and particles being mathematical abstractions that do not represent real things in themselves. Super Relativity states that space is a real physical object that is composed of a quasi-elastic solid. Fields,

therefore, manifest as deformations of the continuous elastic medium. According to Super Relativity Theory, particles are very tiny fields that are composed of degrees of convolutions. Particles of energy and mass are nothing but convolutions of spacetime. They exist permanently within spacetime. Particle structures become persistent and stable because their field structures, which are finite in size, can never find an edge to unravel and return into a flat Euclidean space. This is true because the medium they exist within is unbounded. This is confirmed by the laws of conservation of both energy and mass. Mass can transform into energy or energy into mass, but neither one can be made to dissipate into nonexistence.

## **Problems with Quantum Theory for Both the Quantum Electrodynamics and Quantum Chromodynamics Theoretical Pillars**

The problem I am most concerned with is the Quantum Theory of Quarks. I found many weaknesses and inconsistencies in the so-called Quantum Mechanical Model.

### **The Standard Model Quark Masses Are Incorrect**

I believe the quark masses as defined by QM and the Standard Model are woefully incorrect. The mass estimates that are given by modern-day science are entirely too small. According to the Super Relativity Model, the neutron and proton masses come entirely from the accelerated motion of the three quarks and nothing else. So, according to Super Relativity, each of the three quark masses are equal to one-third of the total neutron mass and one-third of the total proton mass.

### **Improper Measurement of Quark Masses**

We currently use a very indirect method to measure quark masses at this point in time. The quarks are never observed directly inside a proton or neutron. Instead, their masses are reconstructed from the quark's decay products after the neutron or proton structure has been shattered. This measurement technique is improper because the quarks that are observed and their subsequent decay particles come into existence due to high energy collisions. The measurement collisions force the quarks to be transformed into a myriad of composite particles or malformed unstable particles. When this happens, the composite or malformed particles acquire kinetic energy from the collisions. The kinetic energy collision modifies both particles that collide. Therefore, in my opinion, the result of these collisions are unstable products that are improperly classified as new particle types. Hence, in the case of the quarks, we measure the quarks indirectly after we have disturbed them. The mass of the new particles will not be correct because the collision modifies the motion type of the particles. Their motion temporarily becomes more linear and less accelerated.

In many cases, the particles lose their angular momentum and therefore give improper mass values. Unfortunately, the act of measuring the quarks in this way leads to an

invalid measurement. This measurement problem is known as the Observer Effect. When we bounce particles off of particles that we are trying to observe, we modify the particles we are trying to watch.

**According to Super Relativity, the mass of all particles comes about as an interaction of the accelerated motion of unbalanced charges relative to the stationary aether.** Unfortunately, the current methodology used to measure quark mass disturbs the Super Relativity quark mass generation mechanism. This invalidates the measurement of the mass of particles.

The new particles generated by using the collision method in an accelerator are distortions of the original particles that collided. These intermediate particles are typically short-lived composite particles that decay within fractions of a second. We then observe the decay products of these particles, and we use the decay products to reconstruct the masses of the quarks before the collision.

The problem with this method is that these intermediate decay product particles have been disturbed. We have disturbed the quark dynamical trefoil geometry of accelerated movement and injected a linear type of motion into the quark system of trefoil rotation. The up and down quarks stop moving in the trefoil pattern and temporarily move in a straight-line motion, generating less mass. The linear unaccelerated motion of an unbalanced charge particle generates less mass according to the Super Relativity Model.

Additionally, the deformed quark decay products also have less mass because they lose some of their angular momenta due to the high energy collision. These collisions often generate temporary quark malformation particles, which we give names to like the charm, strange, top, and bottom quarks. These quarks are typically paired and exist in helical structures that temporarily generate more mass because they have greater angular momentum. The only valid way to measure the quark mass is to measure a neutron or proton in an undisturbed manner.

To further compound the problem is the whole issue of the running coupling problem. This problem means that the quark's rest mass doesn't even make sense, which I agree with. According to Super Relativity Theory, there is no such thing as rest mass. All mass is manifested and comes into being as the result of the accelerated motion of fundamental particles. According to Super Relativity Theory, this is how both the neutron and proton acquire their mass.

### **The Neutron and Proton Internal Structure**

According to my theory, the quarks move in a very specific way. This special type of unbalanced charge motion is manifested in the form of a trefoil pattern. I have referred to this geometric motion pattern in my book as the Signature of God. When the quarks move in this way, they generate mass and form a dynamical geometric structure that

binds the quarks together. The source of the strong binding force is created as the result of the trefoil knot geometry. [52] *Master of Reality*, Mark Fiorentino, Chapter 16:

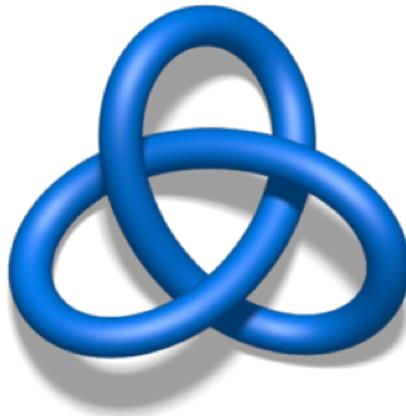


Figure 1. Quark Trefoil Knot Geometry Is the Signature of God

#### Mathematical "Hocus-Pocus" Further Confuses the Particle Mass Issue

In addition to the measurement inaccuracies, modern-day physics has also constructed a highly questionable method of predicting particle masses using the mathematics of Quantum Mechanics.

The statements below are statements from the article How Mathematical 'Hocus Pocus' Saved Particle Physics. "In the 1940s, trailblazing physicists stumbled upon the next layer of reality. Particles were out, and fields — expansive, undulating entities that fill space like an ocean — were in. One ripple in a field would be an electron, another a photon, and interactions between them seemed to explain all electromagnetic events." [53]

"There was just one problem: The theory was glued together with hopes and prayers. Only by using a technique dubbed "renormalization," which involved carefully concealing infinite quantities, could researchers sidestep bogus predictions. The process worked, but even those developing the theory suspected it might be a house of cards resting on a tortured mathematical trick." [53]

"It is what I would call a dippy process," Richard Feynman later wrote. "Having to resort to such hocus-pocus has prevented us from proving that the theory of quantum electrodynamics is mathematically self-consistent." [53]

Years afterward, this technique was enhanced even more, which pushed The QCD and QED theories forward, leading us further down into the rabbit hole.

#### The Super Relativity Explanation for the Mechanical Origin of Mass, Gravity, and Inertia

Shown below is the system of equations that I used to mathematically model how the neutron and proton generate their rest mass. According to the Super Relativity model,

particles do not have rest mass, so this terminology needs to be deprecated. All mass is created by the interaction of the accelerated motion of unbalanced charges (electromagnetic fields) and the aether (or spacetime continuum). Therefore, there is no such thing as rest mass. For the property of mass to exist, particles have to move. The mathematics shown below demonstrates the physical process of how the accelerated motion of quarks generates the entire mass of the neutron and proton. This is the most straightforward and most sensible process for the production of mass. The gravitational field is caused by spatial contraction, which happens whenever a moving charge accelerates within the aether. This mechanical process that I have explained and these equations describe the root cause of the gravitational field. This model establishes a real physical link between Einstein's gravitational field equations and the force of gravity. The formula should be interpreted to mean that the accelerated motion of moving charge in the form of rotational kinetic energy causes space to contract, generating a gravitation field gradient that we call mass. The space in and around particles in accelerated motion is a gradient field of contracted space. The macroscopic world of large-scale objects inherits the combined field contractions of all microscopic accelerating charges into a continuous gradient field of contraction of the aether medium that we call gravity.

### Calculating the Quark Speed Parameter

The first step is to calculate the linear velocity of the quark that is necessary to obtain the proper mass value for the quark. This was computed by using the Einstein/Lorentz increase in mass formula. These calculations are described in full in my paper "*The Origin of Gravity and Force Unification via the Electromagnetic Bridging Model as Defined by Super Relativity*" [54].

The Solution set =

Up Quark Velocity  $v_1$  gives the correct mass for the

UpQuark = 299778627.86850 mps

Down Quark Velocity  $v_1$  gives the correct mass for the

DownQuark = 299737589.0490 mps

Then I used a midpoint between these two velocities as the assumed average speed for both quark types. This case was the most sensible approach. If the Up and Down quark speeds varied too much, this situation would lead to quark collisions inside both the neutron and proton. We would then see a decay of the neutron and the proton. In reality, we only see the isolated neutron's decay and not the proton. The decay of the neutron is, in my opinion, one of the most powerful pieces of evidence that confirm

Intelligent Design. The full discussion of this assumption is beyond the scope of this document. It is discussed in my book, *Master of Reality*. The speed estimate was done in the same spirit as Newton did when discovering the Gravitational Constant. Using a single quark speed allows both particles to be stable.

The Midpoint Quark Velocity value is 299758108 mps

The next step is to use the calculated linear quark velocity and convert it to revolutions per minute or find the proper angular velocity:

Convert Linear Velocity To RPM

$$\text{RPM} = (V * 60 / 2\pi) / r$$

Quark Speed = 299758108 mps

Final Quark Speed 2.997581e+8 mps

Radius of Neutron = 0.0000000000000008

RPM = 3.578099e+24

Calculate - .0001%

The next step is to calculate the angular velocity for the rotation disk. In this case, the rotating disk is considered to be equivalent to a rotating quark disk inside either the proton or neutron. So, this system of calculations equates the three quarks inside the neutron and proton to act like three rotating disks.

Now calculate to obtain the angular rotation rate:

Angular Velocity for Rotating Disk  
 Variables are Global

$w=2*\pi*f$ .  $w$  =Angular rotation rate

RPM =

$\omega$  =   $2\pi$  rad/ sec

The next step is to calculate the Moment of Inertia of the Quark Disk, which in this case is equal to:  $r^2$

In this calculation, I use what I believe to be the real mass of a quark. I use the value of  $5.566667e-28$  to represent the true mass of the quark. There is much controversy concerning the indirectly measured mass values for the Up and Down Quarks that are used within the Standard Model. Please see the above sections for an explanation of why I use a calculated value.

### Section Heading - Problems with Quantum Theory for Both the QED and QCD Theoretical Pillars

#### Subsections Headings - The Standard Model Quark Masses are Incorrect

- Improper Measurement of Quark Masses
- Mathematical "Hocus-Pocus" further confuses the Particle Mass Issue

The computation below yields a value for the perfectly rigid quark disk mass by dividing the neutron mass by three. This is understandable because the Super Relativity Model says that the entire mass of the Neutron comes from the three rapidly rotating quarks within the neutron. The same is also true for the proton. Therefore, non-modifying measurement techniques used to measure the neutron and proton masses are much more reliable and accurate than the modern-day invasive techniques used to estimate the quark masses described in the standard model:

### Moment Inertia of a Disk

Variables are Global

$I_{\text{disk}} = \frac{1}{2}mr^2$  Equivalent of mass  
for a disk in rotation is moment of  
Inertia (IDisk)

Quark Disk Mass =  kg

Quark Disk Radius =  meters

IDisk =   $\text{kg/m}^2$

This calculation yields the value of  $1.781333e-58 \text{ kg/m}^2$  for the moment of inertia for the quark disk. This moment of inertia for the rotating quark disk is necessary to determine the Rotational Kinetic Energy of the quark disk, which is in Joules.

The next step is to determine the Rotational Kinetic Energy (RKE) of the quark disk. We must have the RKE to calculate the mass of the quarks inside the neutron and proton:

Rotational Kinetic Energy of Disk

Variables are Global

$RKE = 1/2(I_{Disk})\omega^2$

$\omega =$

$I_{Disk} =$   kg/m<sup>2</sup>

RKE in Joules =

Now we have acquired all of the necessary inputs to calculate the mass of the quark. The final equations are then used to solve for the Moment of Inertia for the quark. They are immediately followed by solving for the mass of the quark disk, under-going a full rotation of accelerated motion. This final equation is a simple algebraic transformation of the Moment of Inertia equation for a rotating disk. Finally, I use all of the calculated inputs to solve for the mass. In this model, the quark motion within the neutron and proton is approximated to a rigidly rotating quark disk. The primary model is the trefoil pattern of rotation. Using the same technique, this model can be constructed, and it will also solve for the correct mass of the neutron and proton.

The physical model for this idea comes from Einstein's happiest thought that I discussed on page 35 of this document. It is also known as the Ehrenfest Paradox. It was actually Max Born who had the idea of using a high-speed rotational motion of a rigid disk to force a contraction of space at the perimeter of the spinning disk. Then it was Paul Ehrenfest that came up with the idea of using a rotating cylinder. Eventually, it was Einstein who realized the profound physical importance of this mind experiment. The original formulation comes from Ehrenfest in 1909. Einstein referred to the rotating disc that was perfectly or ideally rigid in publications in the years 1912, 1916, 1917, 1922. [55] The number of times Einstein writes about the Ehrenfest Paradox is a clear indication of its importance. **I believe that Einstein recognized that this concept revealed a mechanical solution for the explanation of how particles could generate their mass as a result of the accelerated motion of unbalanced charges. This physical model explains the origin of mass and the origin of gravity.**

I extended this idea to particles and their motion relative to the stationary aether they reside within. This particular type of accelerated particle motion, like the quarks, is possible because the quarks are consubstantial within the aether. The critical concept is that all particles generate their motion internally. Einstein suspected this was true and was trying to discover the method of autonomous particle motion. Please review Einstein's paper, "Unified Field Theory Based on Riemannian Metrics and Distant Parallelism." I was pleasantly surprised to discover that Einstein came to the same realization as I did. He believed that particles were composed of twists of space, and it was this twisting geometry that was the cause of every particle's perpetual motion within space. The last two sentences in that document demonstrate that Einstein and I are working in the same direction. Einstein states, "Nevertheless, I'm still far away from claiming the physical validity of the equations I derived. The reason for that is that I did not succeed in deriving equations of motion for particles yet." [56]

I have discovered the cause of particle motion, but I did not need to describe it in this paper to validate my solution. I am certain for completeness sake that this can be done. It will have to be done in another paper. I use kinematics, as everyone else has to discover the origin of mass. The difference is the Theory of Super Relativity asserts that particle motion has a physical cause and that physical cause explains the source of all particle motion. The accelerated motion of particles relative to a stationary aether is the final linking concept that describes how the accelerated motion of unbalanced charged particles causes space to contract, and spatial contraction explains the cause of gravity and mass as well as inertia.

Therefore, it can now be said that the aether is a quasi-rigid material that can be caused to contract, but not fly apart from the centrifugal force when particle fields are rotating at speeds near the speed of light. Thus, the above physical model is what the equations are modeling.

By performing calculations using the calculated quark speed obtained from my *Bridging Model Paper* and then converting it to Revolutions Per Minute (RPM), we can then calculate the angular velocity for the quark rotating disk, which in this example is assumed to be the size of the radius of the neutron. Once we have acquired these input parameters, we can calculate the Moment of Inertia for the quark disk. We will then need to calculate the Rotational Kinetic Energy of the quark disk by using the angular velocity for the rotating disk and the Moment of Inertia for that rotating disk. This gives us the vitally important Rotational Kinetic Energy of the rotating quark disk. The value is defined as the amount of rotating charge measured in Joules.

At this point in the process, we have all that is needed to solve for the mass of the Rotating Quark, which is approximately equal to one-third the mass of the neutron:

Solve for Total mass of a Particle

IDisk=  $RKE*2/\omega^2$  Variables are Global

RKE =

$\omega$  Omega =

Single Quark IDisk Mass =

Radius of Neutron Quark Dis

Quark mass  $m = IDisk * 2/r^2$

Final Recalculated Quark Mass

Final Neutron Mass

The final calculation is then performed to get the actual mass of the quark.

This equation yields the actual quark mass =  $5.566665 \text{ e-}28$

Since there are three quarks inside the neutron, the neutron mass can then be calculated to be three times the single quark mass.

The Final calculated Neutron mass =  $1.669999\text{e-}27$ . This matches exactly the measured mass of the Neutron. The same calculations for the proton mass can be done, and this process will yield the exact mass of the proton.

The origin of mass, gravity, and inertia is achieved by using the same mechanical method.

### The Super Relativity Origin of Mass Principle

Gravity is caused by the accelerated motion of fundamental unbalanced charges. When charges move in this way, they cause the space in and around the particle to contract. Thus, gravity is a contraction of the spatial medium.

Mass is a property of space and is caused by particle motion relative to a stationary space. Matter acquires its mass due to its inertial motion, which causes the space around and within the particle to contract. [57]

### No Such Thing as Rest Mass

Both mass and gravity emerge as a result of the mechanical model that I have described above. The Super Relativity Model states that there is no such thing as rest mass. Both mass and the force of gravity are caused by the inertial motion of unbalanced fundamental charges.

### The Slip Field Causes Perpetual Motion

All charges have perpetual or autonomous motion because of their internal structures. The internal structure of all particles is a vortex geometry, and this type of geometry forms a pressure gradient within the particle. The internal particle pressure gradient causes the particle to have velocity. Now, physics no longer needs to be based on math that just uses kinematics. The Super Relativity Theory has established the Theory of the Slip-Wave, which is the geometrical–mechanical explanation for all particle motion. The Slip-Wave Theory will be described in a future paper. [58]

### The Theory of Super Relativity Principle of Anti-Gravity

The final item that needs to be addressed is Super Relativity's Explanation for anti-gravity. Since a contraction of space causes gravity, I have assumed that anti-gravity can be manifested as an expansion of space.

Anti-gravity is an Inverse Hyperbolic Field. The Inverse Hyperbolic Field can be generated by creating intense magnetic fields. A magnetic field is a rotation of space caused by the motion of electrostatic fields, which are torsional field structures. Space (the aether) will be stretched as a result of its rotation. Magnetic fields are created by the unaccelerated linear motion of electric charge. Whenever a charge moves in this way, **only** a magnetic field is created. An intense magnetic field causes space to expand, which can be used to shield against gravity. The magnetic field will also reduce the amount of permittivity and permeability. This will allow massive objects to be propelled through space without the effect of inertial resistance to motion and, at the same time, will allow an object within the Slip-Wave to exceed the light speed barrier. The full explanation of anti-gravity will be provided in a forthcoming paper. [59]

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