

## CHAPTER 4

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# QUANTUM MECHANICS (QM) AS A FUNCTION OF THE ETHER

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Chapter 4 is divided into seven sections:

- 4.1 Introduction
- 4.2 The Bohr Model
- 4.3 The (QM) Model
- 4.4 The Modified Bohr Model
- 4.5 The Dual Nature of Light
- 4.6 Conclusion
- 4.7 Epilogue

### **Prologue**

For a more detailed explanation of the concepts presented within this chapter, a review of appendixes E, I, and J is suggested. But first, the *Merriam-Webster Dictionary* definition of quantum mechanics: *a theory of matter that is based on the concept of the possession of wave properties by elementary particles, that affords a mathematical interpretation of the structure and interactions of matter on the basis of these properties, and that incorporates within it quantum theory and the uncertainty principle—called also wave mechanics.*

Essentially the purpose of this chapter is to posit a three-dimensional model of the micro-world of the universe as a function of the ether, moreover, equivalent to the purely mathematical micro-world of quantum mechanics (QM).

### **4.1 Introduction**

A small minority of modern-day dissident physicists have endeavored to substitute the concept of the ether with other terminology, such as zero-point energy, virtual particles, quantum foam, and the Higgs field. It is the author's opinion that this is their attempt to maintain a no-ether theory consistent with relativity, while still implying, essentially, an ether. This is because all the terms used insinuate that a perfect vacuum contains something; therefore, it is not nothing.

They avoid the word ether, but this is what they are actually describing, not necessarily as defined by this article; nevertheless, something that occupies what is presumed to be the empty space (nothing). In essence, they are trying to bypass the extreme opposition of mainstream physics to use the term ether by calling it by another name.

For instance, the Higgs field (permeating all of space/universe) resists the acceleration by force of particles (fields). This is the definition and cause of inertia. Chapter 1 explained how this function relates to inertial mass and the rate of time, moreover, how given that assumption, one can explain the existence of the ether (the preferred frame for the velocity of light which is the classic definition of the ether). Therefore, the Higgs field is a part of the ether. See Chapter 1 for a full explanation.

So how does the existence of the ether relate to quantum mechanics? In fact, it is very easy to do so, as now presented. In the beginning, during and after the big bang, we start with the universe consisting of only the ether and absolutely nothing else.

Subsequently, within the ether, a wave then forms, called electromagnetic radiation (EMR). This is to some extent analogous to how waves form in motionless water. Next, EMR transforms into matter (particles) and vice versa. After that, matter coalesces to form stars and planets, etc. What is more, magnetic and electric fields are part of, and are derived from, the ether as well. In essence, everything, except for the ether itself, arises from the ether—quarks, gluons, mesons, etc.

Moreover, as it will be demonstrated later on within this chapter, the electro-chemical quantum nature of matter and energy are also a function of the ether—including all of life. Therefore, considering all of the above, as in the book of Genesis, this is essentially a story of creation.

Nonetheless, this theory does not answer the age-old question: From where does the ether originate, or framed in another way, where does the universe, or even more specifically, where do we come from? At present, that answer is unknowable absent the belief of an architect (creator). Presupposing there is, then the ether must be a creation of, or else is the creator. And so, conceivably with reference to the latter, we are a fractal of the maker.

The *Merriam-Webster Dictionary* defines a fractal as *any of various extremely irregular curves or shapes for which any suitably chosen part is similar in shape to a given larger or smaller part when magnified or reduced to the same size*.

Perhaps then, we are made in the semblance of God, a fractal of the whole with freewill. For those who believe in the Lord as this author does, the creator is the Lord of all that there is, even time. And so, assuming the Lord and the ether are one and the same, then this gives explanation for why, when we look out into the universe, it appears endless, because there is nothing else; that is all that there is.

By using the presupposition of the ether's existence as presented in chapters 1 (PFSRT) and 2 (PFGRT), one can easily mentally visualize the physical processes of the micro world as just described. In addition, one can comprehend them with analogies relevant to the real world. In contrast, regarding QM, it is difficult to make the invisible visible. This is because QM consists of complex mathematical equations that correlate input observation with output results. Even so, there is no logical pictorial understanding as to exactly how this process transpires.

Regardless, QM has great practical value, therefore, extremely profitable for business and industry. If one wishes to understand a basic primary drive for human behavior, then follow the money. As such, in all likelihood it will be extremely difficult to displace, what is more, overturn QM.

The Ptolemaic theory predicted the movement of the Sun and planets with great accuracy, and the author assumes it was used in its day to foretell the seasons, thus beneficial for determining when to plant crops. Later on, when the Copernican theory arrived along with Kepler's elliptical hypothesis, it produced identical results, however, also eventually resulting in a whole new world of Galilean physics—a tremendous advancement in science. Likewise, in

this author's opinion, if one perceives QM from the perspective of the ether, then entirely new scientific avenues will arise.

Obviously, there is only one overall universe encompassing both the macro universe (relativity) and the micro universe (QM). So, somehow, they must be interconnected. And how are they connected? By the ether. Understand this link, and as above, a new physics will arise, and with a new physics, new inventions, and with new inventions, profit, and eventually, with profit, recognition. However, as with all new paradigm-shift theories, until profit, most likely prior to acceptance, then extreme resistance.

Chapter 4 is the weakest chapter of the entire article for its foundation blocks are fashioned with sand. This is because QM's myriad number of subatomic particles and the four basic forces are extremely complicated. Therefore, with reference to the three dimensions, its functions are extremely difficult to visualize, moreover, explain. This weakness is also partially due to the author's paucity of knowledge regarding subatomic physics, as well as their interactions with one another. And then there's the author's lack of interest in this subject due to its complexity, for it is very difficult to visualize something that is fundamentally purely mathematical.

In addition, compared to the first three, this chapter is significantly fragmented and disjointed. Regarding those chapters, the pieces of the puzzle seamlessly fit together to form an overall picture. On the other hand, vis-à-vis this chapter, the pieces are still considerably scrambled, therefore, for the average reader more difficult to assemble into one overall easy-to-comprehend visual image. Principally, this chapter's diverse concepts do not integrate well with one another.

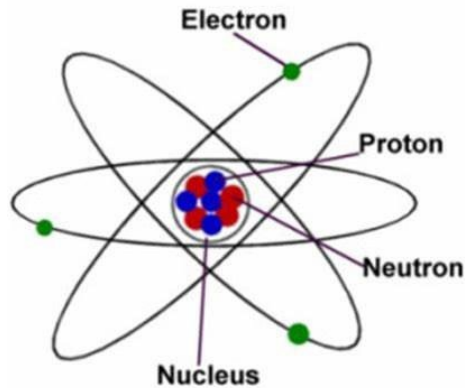
As already stated, this weakness is predominately due to the author's basic lack of understanding of QM. But then again, perhaps the author is not alone. For example, here again is a quote by the famous quantum physicist Richard Feynman, a Nobel laureate, supporting this notion, "If you think you understand QM, then you don't understand QM."

Nevertheless, the author has chosen to simplify the explanation as to how matter and energy are both functions of the ether (QM) by positing, first, a modified Bohr model of the atom, focusing somewhat on the electron, and, second, the dual particle/wave nature of light.

Before proceeding, it should be noted that the following descriptions and explanations are clearly too simple to characterize the true reality of the micro-universe. In addition, some of the concepts presented may not even be correct. Regardless, the primary goal by the author is to demonstrate to the reader a different way of thinking about and perceiving QM.

## 4.2 The Bohr Model of the Atom

In order to appreciate the modified Bohr model of the electron and understand exactly how it relates to the ether, here's a description of the classical Bohr model. Subsequent to that, the QM model will be presented and finally, an explanation of the new modified Bohr model, essentially an amalgamation of both. First, the Bohr model is depicted below in Figure 4.1.



*Deeper into the Mystery of Matter – Electrons! (And more weirdness...) — Alex LeMay – Science*

**Figure 4.1** Bohr Model [Fair Use]

*The Bohr model is analogous to our planetary solar system.*

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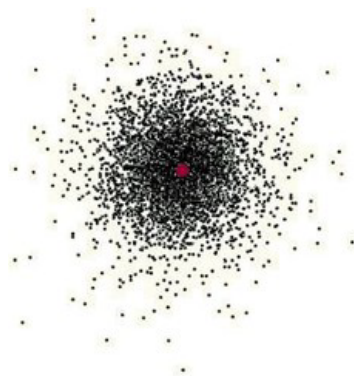
The Bohr model of the atom is to some extent comparable to our planetary solar system, whereby the central nucleus possesses a positive charge or charges (Sun), with the negatively charged point like electron particles orbiting it (planets). In addition, the orbital shells containing the electrons become increasing more volumetric the further from the nucleus. Again, this is, to some extent, similar to the layout of the solar system. However, in contrast to the solar system, there can exist more than one electron per orbital shell and the orbiting electrons are not planar. Furthermore, the energy state of the electrons becomes increasing greater the further from the nucleus, what is more, in discrete units called quanta. Take note, the Bohr model is reasonably easy to visually grasp.

The following website relates to the Bohr model of the atom. It is titled "The Bohr Atom."

<https://www.youtube.com/watch?v=GhAn8Q-d8>

### 4.3 The QM Model of the Atom

Figure 4.2 is the QM model of the electron.



*commons.w.wikimedia.org*

**Figure 4.2** Single Electron Probability  
A Single Hydrogen Atom (electron density model) [Fair Use]

*The black dots are the electron cloud—the darker it is, the more likely the electron is there.*

In contrast, the QM model of the atom is significantly more intricate. For that reason, the author has chosen to focus mainly on the electron, a fundamental particle of all theories of the atom.

In essence, QM posits that if one determines the exact location (position, vis-à-vis QM) of an orbiting electron, then one cannot calculate its precise velocity (momentum, vis-à-vis QM). And if one knows its precise velocity, then one cannot define its specific location. Fundamentally, it is impossible to know the electron's exact position and exact velocity simultaneously.

Even so, at any given point in time, one can calculate the probability of its location, as well as the probability of its velocity. Therefore, over a given interval of time, if one wishes to transform this concept into pictorial imagery, then surrounding the nucleus, the electron/electrons take on the form of a probability cloud, unlike the point-like particle concept of the Bohr model.

In addition, each of the elements is associated with different configurations of its probability cloud. The same concept also holds true for other subatomic particles. Nonetheless, this author does not have the knowledge, moreover, the desire, to explain them in detail.

For further clarification, the following websites relate to the QM model of the atom:

"Quantum Mechanical Model"

<https://www.youtube.com/watch?v=accyCUzasa0>

"Quantum Mechanics: The Structure of Atoms"

<https://www.youtube.com/watch?v=-YYBCNQnYNM>

"What Is Quantum Mechanics?"

<https://www.livescience.com/33816-quantum-mechanics-explanation.html>

Furthermore, QM also posits the superimposition concept, where light is both a wave and a particle at the same time and only differentiated when observed.

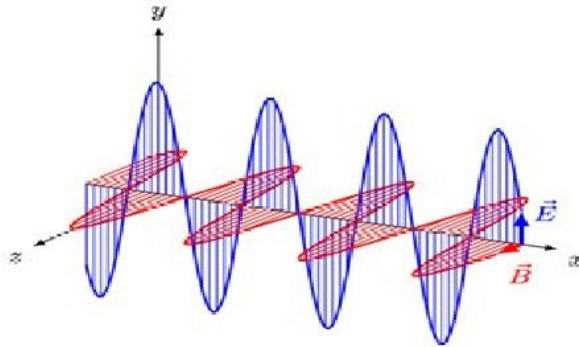
#### 4.4 Modified Bohr Model

The modified Bohr model is also extremely complex; therefore, to simplify the explanation, the focus will again be directed mainly, but in this case, not entirely, on the electron. However, keep in mind that all of the subatomic structures can be perceived in the same way.

But first, before proceeding, there are 14 basic attributes that one must acknowledge in order to understand the new, modified Bohr model, moreover, its connection to the ether. These attributes are listed below.

##### One

Electromagnetic radiation (EMR) is a wave of the ether—to some extent analogous to how waves traverse through water. In addition, EMR consists of alternating right-angled electric and magnetic fields, traveling at  $(c)$ . (See Figure 4.3.) Furthermore, in one of its forms, it takes on the configuration of a given packet of energy, with a specific frequency, amplitude, and length, defined as a photon, a quantum.



Wikimedia Commons

**Figure 4.3** EM Radiation [Fair Use]

*Image shows alternating right-angled magnetic and electric fields. This, in association with its given length, frequency, and amplitude, is the photon.*

##### Two

An electron (matter) is essentially a reorganization of the electric and magnetic fields of EMR. In other words, EMR's linear momentum traversing through the ether at  $(c)$  is converted into angular momentum. This is because it curls upon itself and spins. As a result, it then transforms into an electron, but now at rest or near rest with the ether. Additionally, the EMR's electric and magnetic fields rearrange to form a central radiating spherical electric field surrounded by a circular rotating magnetic field.

Furthermore, the plane of the circular magnetic field is oriented perpendicular relative to its motion through space or citing other terminology, the ether of PFSRT (Figure 4.4). Essentially, the electron at rest with the ether of PFSRT is only a spherical field; there is no particle. What is more, the field is the charge. For future reference regarding this chapter, generally although not exclusively, the terms electric field and electron are assumed to be synonymous.

Before proceeding, viewing the website given below from 0 min to 9 minutes 36 sec and 29 min 30 sec to 30 min 18 sec. will explain the classic interpretation of electromagnetism and

the electron. The author uses some of the concepts presented in the video to describe the new theory but now from the reference frame of the ether.

*<https://www.youtube.com/watch?v=9Tm2c6NJH4Y>*

The author now posits a more inclusive hypothesis from a different perspective; the electron intrinsically consists of only a spherical electrical field and nothing else. Now, as this spherical field traverses through the ether of PFSRT, it then distorts that ether to form a circular rotating magnetic field. Just as a boat produces waves as it travels through water, so too does the spherical electrical field (electron) distort the ether, as a function of its own velocity relative to that ether.

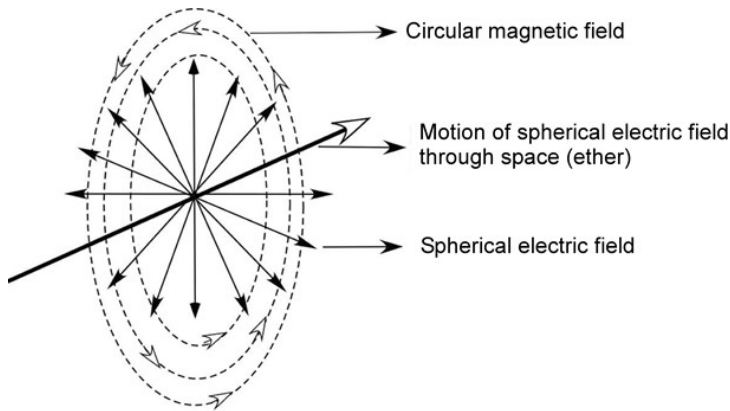
Fundamentally, the circular magnetic field is not an intrinsic property of the electron; rather, it is a distortion of the ether as a function of the electron's (field) motion through that ether. Additionally, as the velocity of the electron (field) increases linearly relative to the ether (PFSRT), the circular magnetic field increases by an LTF. Later on in this chapter, it will be explained how this concept correlates to inertia and inertial mass.

This attribute is extremely significant. Therefore, for the benefit of the nonscientist, the author will re-explain it with more detail.

The electron is only a spherical electric field, but as it plows through the ether, it distorts that ether; the distortion then is the magnetic field. This is somewhat similar to a boat plowing through water; it then distorts that water to form waves. However, the magnetic field and the water waves are only somewhat analogous. Therefore, in contrast to a boat where the water responds (resists) to both velocity and acceleration, the ether reacts (resists) only to the electron's acceleration. The resistance represents inertia and the inertial mass of the electron.

Basically, water's resistance increases exponentially with respect to a boat's velocity and acceleration; whereas the ether's resistance increases by an LTF as a product of only the electron's acceleration factor.

What is more, since there are two directions of electron magnetic field rotations, the spherical electrical field (electron) must also involve two forms as well. So, as one form plows through the ether, the ether then rotates in one direction (magnetic field). And when the other type plows through the ether, the ether rotates in the opposite direction (magnetic field). These two categories of directional rotating ether are, in effect, the two opposite types of rotating magnetic fields associated with the electron.



**Figure 4.4** The Electron is not a Particle

*The electron consists of only a spherical central radiating electrical field along with a circular magnetic field, the latter with its plane oriented perpendicular relative its motion through space (ether of PFSRT). There is no particle, only fields.*

### Three

EMR can transform into an electron (EMR into a spherical electric field electron) and vice versa. However, this only transpires as a function of a precise packet with a specific energy, in other words, a quantum. In addition, as a speculation, the direction of the spin of EMR (photon) could be related to the type of spin of the electron (e.g., up or down).

### Four

The electron is not a particle with associated radiating fields; rather, the field or fields are the electron, just as EMR consist of only alternating fields. The notion of a particle is only a →false perception← which occurs when the fields, which are the electrons, then interact with the fields (electrons) of the measuring instrument. So, for that measuring device, this interaction then produces a quantum change in its orbital shell structure. Principally, the quantum interaction involving only fields located within the detector's electron shell structure is what is then perceived as a particle—but there is no particle, only interacting fields.

### Five

A positron and an electron, both at rest relative to the PFSRT, can mutually annihilate one another, therefore producing two 0.511 MeV photons, which then travel in opposite directions at (c). Conversely, EMR at (c) can transform into an electron and a positron, at rest with the PFSRT.

### Six

The electron possesses intrinsic spin, which is extremely rapid. This is because the photon's translational momentum at (c) then transforms into the electron's spin angular momentum, perhaps again at (c).

### Seven

Electrons possess two forms of magnetic fields. The first is related to the electron's intrinsic spin within the ether (up/down). This is a function of EMR spinning upon itself, therefore,



transforming into an electron (electric field). The second is a function of the electron's velocity, with regard to the ether of PFSRT (Chapter 1). For future reference, these two categories of magnetic fields will be defined as: first, the spin electromagnet field (SMF), and second, the velocity magnetic field (VMF).

### **Eight**

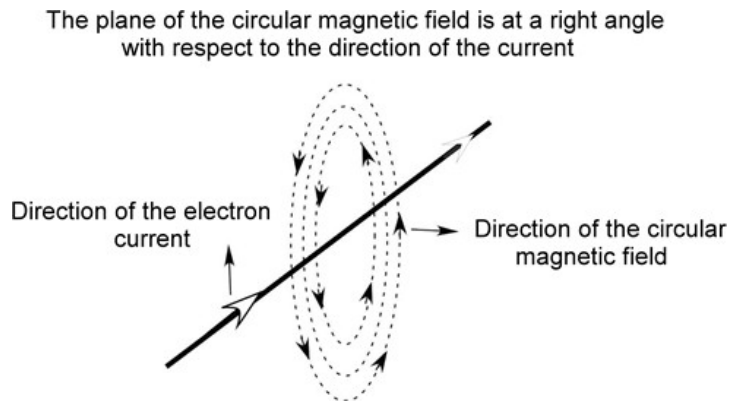
In addition, there are two opposite types of (SMFs-up/down), as well as two opposing rotating forms of VMFs. What is more, the two categories are interrelated. So, as one form of the electron's SMF (up) travels through the ether, the VMF rotates in the same direction as its SMF. And likewise, as the other form of the electron's SMF (down) traverses through the ether, the VMF rotates in the same direction as its SMF. However, compared to each other, the two types of SMF/VMFs are spinning/rotating in opposite directions.

It is also conceivable that the VMF is derived from and is an enlargement of the electron's SMF. This transpires when the electron with its associated SMF (up or down) travels at a velocity relative to the ether of PFSRT. So, when that occurs, the SMF enlarges to become the VMF.

In addition, it is also conceivable that photon spin, electron spin (SMF), and the VMF are all interrelated. For instance, when a photon curls upon itself and spins in one direction, this transformation produces an electron (field), moreover, possessing the same directional spin (SMF) as the originator photon. Furthermore, when that same electron then travels at a velocity relative to the ether of PFSRT, a rotating circular VMF forms, again oriented in the same direction.

### **Nine**

An electric current located within a straight wire conductor induces a circular magnetic field surrounding the wire. Moreover, to some extent, the greater the coulombs or current, then the stronger the magnetic field, and the higher the voltage, the larger the magnetic field. (See figures 4.5 and 4.6 below). These two figures show the orientation of the circular magnetic field, induced by a current, located within a straight wire conductor.

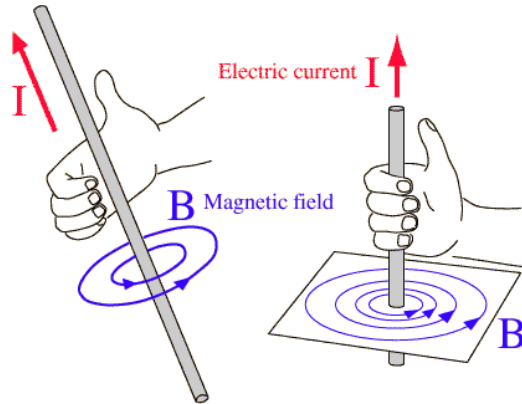


**Figure 4.5** Electron Current with Magnetic Field

*An electron current (charge) within a conductor produces a circular magnetic field, as shown above. Alternatively, for a positive charge current, the shape of the magnetic field is in the opposite circular orientation, as depicted below in Figure 4.6.*

*In reality, there is only an electron current. A positive current is not real, since a current only involves electrons. →The electron current is a net current since the electrons orbit the nuclei of the atoms of the conductor at an extremely high velocity but overall, travel from atom to atom along the conductor very slowly←.*

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www.electrical4u.com

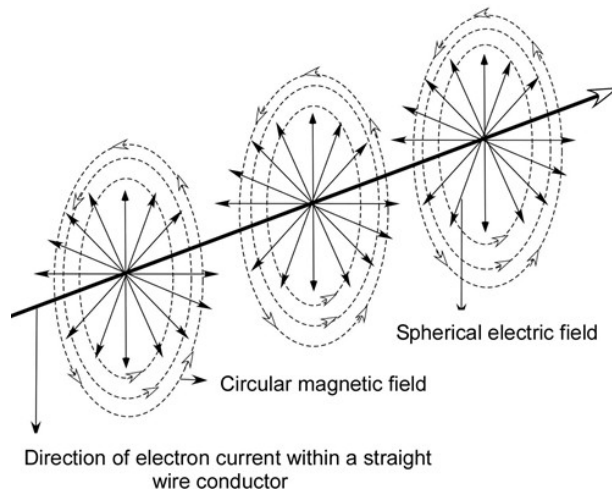
**Figure 4.6** Right-Hand Rule [Fair Use]

*Orientation of magnetic field relative to the **direction of the current (+ charge)**. An electron current would be the Left-Hand Rule (- charge), a mirror image of the Right-Hand Rule.*

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For future reference, moreover, referring specifically to this chapter, only an electron current is deliberated, not a positive current.

Figure 4.7 below demonstrates that the typical circular magnetic field induced by an electron current is the summation of the magnetic field of each of its individual electrons. Observe, the sum total of all of the individual electron's magnetic fields as presented in Figure 4.7 is then the current's overall magnetic field as pictured in Figure 4.5.



**Figure 4.7** The Magnetic Fields of Individual Atoms of the Current

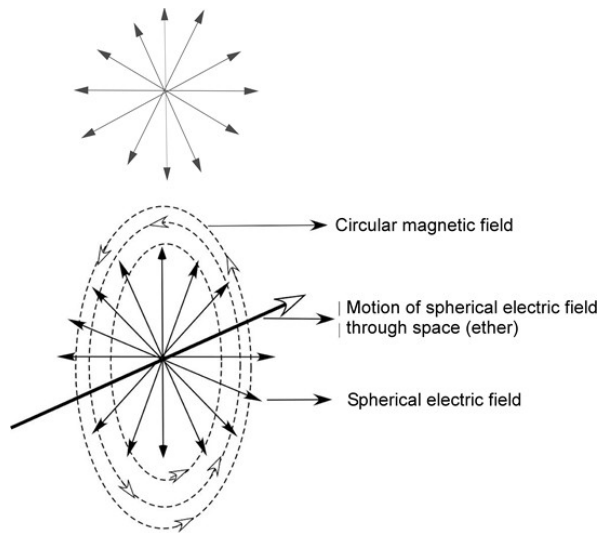
*Referring to a single straight wire conductor with an electron current, the summation of the magnetic fields produced by each individual electron of that current then creates the classical circular-shaped magnetic field surrounding the wire.*

*Note, within the conductor, there is an equal number of electrons and protons. For that reason, there is no overall electric field, given that the opposite and equal electric fields neutralize one another. On the other hand, there is an overall magnetic field from the current, since the opposing, moreover, unequal magnetic fields, →do not counteract one another←.*

Again, the velocity of the current within the conductor is a function of the voltage. Consequently, the higher the voltage, the greater then is the electron’s velocity, and in turn, the larger the magnetic field. But the question is, velocity relative to what? The answer is relative to the ether of PFSRT/PFGRT.

See Appendix I for further clarification. A solitary electron at rest with the PFSRT consists of only an electric field with an associated SMF (spin). However, there is no (VMF), because by definition, it is at rest with the PFSRT. Alternately, when the electron possesses a velocity, relative to the PFSRT, a circular VMF then forms. In addition, as its velocity increases linearly, again relative to the ether of PFSRT, this field increases by an LTF.

Furthermore, the plane of the circular rotating magnetic field (VMF) is oriented perpendicular, with respect to the electron’s motion through the PFSRT (ether). (See Figure 4.8 below.)



**Figure 4.8** Plane of the Magnetic Field is Perpendicular to its Motion Relative to the Ether (PFSRT).

(Top) An electron at rest with the ether consists of only an electrical field with intrinsic spin (SMF).

(Bottom) However, when an electron travels at a velocity relative to the ether (PFSRT), it then forms a circular magnetic field (VMF), moreover, with its plane oriented perpendicular with respect to its motion, through the ether of PFSRT.

### Ten

When an electron is accelerated relative to the PFSRT simultaneously, its VMF increases. Now, when the acceleration stops, the increased VMF persists, since the electron's velocity relative to the PFSRT remains. Essentially, the VMF is directly related to its relativistic inertial mass, for they are, in fact, one and the same.

In theory, a solitary electron at rest with PFSRT possesses no VMF; therefore, it has no inertial mass. And an electron at (c), with respect to the PFSRT, possesses an infinite VMF so an infinite relativistic inertial mass (LTF). You can now picture in your mind the rationale for why matter, including the electron, cannot be accelerated faster than the speed of light.

This new theory posits that relative to the ether, when the velocity of an electron increases linearly, its relativistic inertial mass then increases by an LT function. Similarly, with reference to the ether, this theory presumes, as the velocity of an electron increases linearly, then in the same way, its circular rotating magnetic field increases by an LT function. Take notice of the identical relationship. For this reason, the author postulates this theory: The electron's increased magnetic field (VMF) is what produces, and moreover, is the increased **relativistic** inertial mass. This is compared to its **rest** inertia mass, which occurs whenever the electron is at a 0 velocity with respect to the ether (no VMF).

Canadian physicist and professor Dr. Marmet's abstract proposing this hypothesis is given below.

*Relativity theory gives a relationship predicting the increase of mass of relativistic moving particles, but no physical model has been given to describe the fundamental physical mechanism responsible for the formation of that additional mass. We show here that this additional*

*kinetic mass is explained by a well-known mechanism involving electromagnetic energy. This is demonstrated taking into account the magnetic field generated by a moving electric charge, calculated using the Biot-Savart equation.*

*We show that the mass of the energy of the induced magnetic field of a moving electron is always identical to the relativistic mass  $M_0(g-1)$  deduced in Einstein's relativity. Therefore, the relativistic parameter can be calculated using electromagnetic theory. Also, we explain that in order to satisfy the equations of electromagnetic theory and the principle of energy and momentum conservation, toroidal vortices must be formed in the electric field of an accelerated electron. Those vortices are also simultaneously compatible with the magnetic field of the Lorentz force and the well-known de Broglie wave equation.*

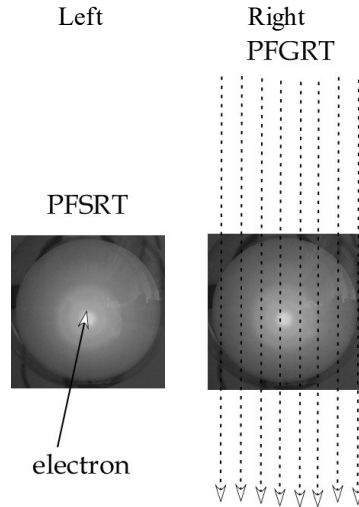
*This leads to a physical description of the internal structure of the electron in motion, which is at the same time compatible with the Coulomb field, the de Broglie wavelength equation, mass-energy conservation, and the magnetic field predicted by electromagnetic theory. That realistic description is in complete agreement with all physical data and conventional logic. The paper concludes with an application, which is a first classical model of the photon, fully compatible with physical reality, without the conflicting dualistic wave-particle hypothesis.*

This inertial mass proposal and quote were obtained from the article titled, "Fundamental Nature of Relativistic Mass and Magnetic Fields," authored by Paul Marmet, published in the International IFNA-ANS Journal *Problems of Nonlinear Analysis in Engineering Systems* No. 3 [19], Vol. 9, 2003 Kazan University, Kazan, Russia.

To recap, when an electron's velocity increases linearly with respect to the ether, the magnetic field (VMF) induced by this process increases by an LTF. And so, for that electron, this effect produces an increased resistance to its further acceleration by force = increased relativistic inertial mass. In essence, the electron's relativistic inertial mass is a function of its VMF. In turn, that magnetic field is a function of its velocity relative to the ether.

See Figure 4.9 below. If one presumes PFGRT assumptions to be valid, then the velocity factor of the inflowing ether at the Earth's surface is 11.2 km/sec. As a result, at the Earth's surface, there are no solitary electrons at rest with the PFGRT. We assume they are at rest relative to us, because we do not perceive the inflow of space (ether) with our five senses; moreover, we do not associate the concept of gravity with an inflowing space/ether.

Therefore, given the above, all solitary electrons on the Earth's surface possess a relativistic inertial mass as a function of their velocity with respect to the inflowing ether (11.2 km/sec).



**Figure 4.9** Electron at Rest vs. Electron Moving at the Earth's Surface

*The image on the left is that of a solitary electron at rest with the ether (PFSRT). The image on the right depicts a solitary electron located on the surface of the Earth. For that reason, it possesses a relative velocity with respect to inflowing space (PFGRT) as symbolized by the hollow vertical dotted arrows. This relative velocity is equal to 11.2 km/sec, which corresponds to the velocity of the inflowing ether at the Earth's surface.*

### Eleven

An object, an association of atoms, is constructed from subatomic entities consisting of both positive and negative electric fields (protons and electrons). In addition, generally, there are about equal numbers of them. Consequently, these opposing electric fields negate one another. So, for that object, there is no overall electric charge.

In addition, assuming the object possesses a velocity relative to PFSRT/PFGRT (e.g., 0.5  $c$ ), there is then the production of VMFs (relativistic inertial mass) as a LTF. Now, within the object, there are an equal numbers of opposite VMFs derived from all the different subatomic entities (protons, electrons, etc.). Consequently, these opposing fields negate one another. For that reason, the object has no overall magnetic field, just as it has no overall electrical field.

Nevertheless, with respect to only the function of relativistic inertial mass, the sum total of all the VMFs, regardless of their opposing directions, do not cancel one another. Fundamentally, there are two functions. So, even though there is no overall magnetic field (function 1), the relativistic inertial mass of the object remains (function 2).

This description is rather abstract and for that reason, probably confusing especially for the novice. Therefore, it will now be re-explained from a slightly different perspective. Again, assume the object possesses a velocity relative to PFSRT. Typically, matter is constructed from an equal number of electrons and protons containing opposite electric fields. Therefore, they counteract one another. As a result, for that object, the overall electric field is null.

In addition, the object's protons and electrons are associated with unequal magnetic fields. Recall: The electron's magnetic field is significantly greater than the proton's field. Even so, within the atom, electrons and protons also possess identical opposing magnetic fields (VMF). So overall within the object, there are an equal number of opposite magnetic fields. As a

consequence, all these complex fields then negate one another. And for that reason, the object (matter) has no overall magnetic field.

Now, with respect to the ether, when an object (matter) is accelerated by force ( $F = ma$ , LSA), resulting in an increased velocity relative to that ether (e.g.,  $0.1c$  to  $> 0.9c$ ) then its relativistic inertial mass increases by an LT function.

So, with respect to this new theory, by what means does this transpire? Here's how. While increasing its velocity relative to the ether, moreover, within the object, there is a symmetrical increase involving all of the counteracting opposite magnetic fields (VMF), produced by all of the subatomic units. And so, taken as a whole, even though this increase exists (the inertial mass increases), the opposing magnetic fields still counteract one another.

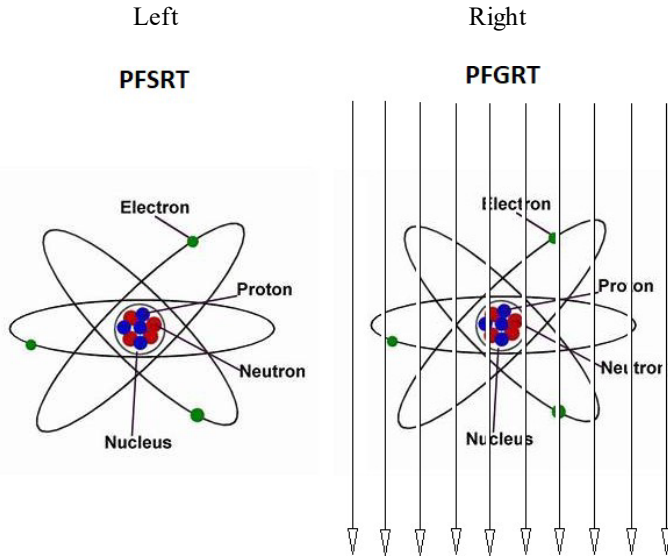
To be specific, for that object, there is no apparent overall magnetic field. Nevertheless, the remaining perception is an increase in its relativistic inertial mass.

### **Twelve**

Generally, although not exclusively, electrons are not solitary entities; rather, they orbit a nucleus. Thus, while in orbit, they exist at a velocity with respect to the ether of PFSRT. As a result, a magnetic field forms. This is not their intrinsic revolving (spin) magnetic field (SMV), rather their (orbital) velocity magnetic field (VMF). And so, assuming an atom is overall at rest with the PFSRT, its orbiting electrons are not. (See Figure 4.10 below.) As a consequence, they produce VMFs.

If you really think about it, the overall rest inertial mass of an atom is actually a function of the relativistic inertial masses of all its rapidly orbiting subatomic entities. This is because as they orbit, they all possess a velocity relative to the PFSRT. And as a result, they also possess relativistic inertial masses. The sum total of all those subatomic relativistic masses is the rest inertial mass of the atom. Again, this is assuming the overall atom is at rest with the PFSRT.

See Figure 4.10 below and the captions for an expanded explanation of inertial mass.



**Figure 4.10** Expanded Explanation of Inertial Mass

1. The figure above focuses mainly on the electron. However, in the following captions, the ideas presented initially will then be expanded to encompass all the subatomic entities.
2. On the left, by definition, the overall atom is at rest with the ether (PFSRT); nevertheless, its orbiting electrons are not. For that reason, the velocity of each electron, relative to the ether of PFSRT, is equal to its own orbital velocity around the nucleus. Consequently, they all then possess relativistic inertial mass, and the sum total of the relativistic masses of all its electrons is the rest inertial mass of the atom.
3. On the right, the overall atom possesses a velocity relative to the inflowing ether (PFGRT) as symbolized by the downward vertical dotted arrows. In this setting, the velocity of each electron relative to the ether is equal to its own orbital velocity around the nucleus plus the velocity of the inflowing ether. So, in this case, the sum total of all the relativistic masses of all its electrons is now the relativistic inertial mass of the atom. The same effect holds true when an atom possesses a velocity relative to PFSRT.
4. The above description involves only electrons, which cannot account for the total inertial rest mass of the atom. So, let's now broaden the concept. Within the internal structure of the atom, all of the subatomic units (fields) in one form or another are in orbit, including quarks (protons neutrons—all fields). As for the later (nucleus), they all revolve around one another relative to a theoretical physical center-point—there is no particle, only revolving fields. Therefore, they all possess a velocity with respect to the ether of PFSRT/PFGRT. Consequently, for all these entities, as a function of their orbital velocities, they produce relativistic inertial masses, analogous to the electron model just presented.
5. In the case where the overall atom is at rest with the PFSRT, the sum total VMF of all orbiting entities produces for that atom its rest inertial mass as shown on the left side of Figure 4.10.
6. Alternatively, if the overall atom possesses a velocity with respect to the PFSRT/PFGRT, then again, the sum of the VMF of all the orbiting subatomic entities produces its relativistic inertial mass as shown on the right. Take note: The relativistic inertial mass (6) is greater than the rest inertial mass (5), because with reference to the former, all the subatomic entities possess a  $\rightarrow$ greater velocity relative to the ether (PFSRT/PFGRT) $\leftarrow$ .



### Thirteen

Einstein's equation of  $E = mc^2$  posits that energy and matter are equivalent, moreover, interchangeable. Mathematically, this is straightforward. Nevertheless, it is very difficult to visualize how this actually transpires by using a nonmathematical physical mechanism. On the other hand, bearing in mind this new theory, it is fairly easy to envision vis-à-vis the electron (as an example).

Fundamentally, it involves two separate functions. The first is the transformation of electromagnetic *energy* (EMR) into subatomic particles (electron field). This process occurs as a function of a specific packet of *energy* (quantum), then producing the inertial rest mass of the electron, moreover, at a 0 velocity relative to the ether. Recall, the electron is only an electric spherical field of energy. This is of our simplified model.

The second process is, as the rest inertial mass of an electron increases its linear velocity with respect to the ether (PFSRT), its magnetic field (VMF) then increases by an LT function. In effect, the increased magnetic field, which is a gain *energy*, is the electron's relativistic inertial mass.

Bear in mind, regarding both scenarios, one can easily picture in your mind the actual physical mechanism whereby *energy* is related to the rest inertial mass, as well as the relativistic inertial mass of the electron, or in other lexicology, how  $E = mc^2$ .

### Fourteen.

Electrons orbiting a nucleus are arranged in the form of a quantum shell configuration. In addition, moving from shell-to-shell outwards, away from the nucleus, they are associated with distinctly higher and higher energy levels. Furthermore, with respect to the different orbital shells, the electron's energy state is not continuous; rather, related to unique separate energy values. This indicates that relative to the ether of PFSRT, the outer shell electrons, when compared to the inner shell electrons, possess a higher velocity. For that reason, they are associated with a larger magnetic field and a greater relativistic inertial mass. As a result, one of the reasons the outer orbital shells are wider/more volumetric is that their VMFs are larger.

### The New QM Modified Model

Now, by employing these basic 14 premises, the posited model of the modified Bohr atom is presented. Again, recall the definition of QM. "The branch of mechanics that deals with the mathematical description of the motion and interaction of subatomic particles, incorporating the concepts of quantization of energy, wave-particle duality, the uncertainty principle, and the correspondence principle." [Source: <http://bit.ly/2aDfolp>]

When reading the following three-dimensional descriptions, compare how those imageries correspond to the above definition, which is only based upon the complex mathematics of classic QM.

1. Within the atom, there are multiple attracting and repelling forces (fields). For example, electrons repel each other. Protons repel one another. Electrons attract protons. The opposite magnetic fields of the electrons attract one another. The same magnetic fields of the electron repel one another. The opposite magnetic fields of the protons attract each other. The same magnetic fields of the protons repel one another, and so on and so forth.

2. Matter is made up of only fields, which are actually forces. And as they interact, moreover, when they self-assemble into a stable equilibrium, this creates what is called an atom. In addition, there are only a specific number of stable equilibrium points, and each represents a single element. They are characterized by different configurations, e.g., circular vs. dumbbell shape, as classically illustrated in the literature and shown below in figures 4.11 and 4.12.

3. Nevertheless, some elements, while most of time stable, on rare occasions, as the fields interact, relative to one another, assume an unstable configuration. So in that setting, they disintegrate into other equilibrium points, photons, and fields (like the electron). This is known as radioactive decay.

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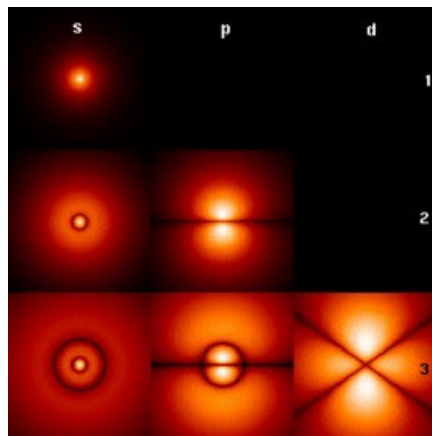


Wikipedia

**Figure 4.11** Examples of Different Cloud Patterns [Fair Use]

*Some electron cloud patterns: hydrogen atom in lowest energy or ground state, hydrogen atom in an excited state, and carbon atom in ground state.*

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Wikipedia

**Figure 4.12** Different Elements with Dissimilar Stable Equilibrium Points [Fair Use]

*Fundamentally, different elements are associated with dissimilar stable equilibrium points which are depicted above.*

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4. At this juncture, let us describe what happens when EMR (a photon) interacts with an orbiting electron of atoms/molecules. Essentially, the EMR adds energy, or, in other words, orbital velocity, to that electron, both relative to its own nucleus and also with respect to the ether (PFSRT). After this interaction, if the electron’s increased orbital velocity is sufficient to achieve a new equilibrium configuration, then it jumps into the next outer shell.

What this signifies is that relative to the ether, the outer shell electrons possess a greater velocity/energy compared to the inner shell electrons, and as a result, a larger magnetic field. For that reason, and for that electron, there is then increased relativistic inertial mass. Moreover,

given that the outer shell electrons possess a larger magnetic field, then by necessity, the shells must progressively become wider/more volumetric the farther from the nucleus. Additionally, in general, there are more electrons per shell in the outer shells compared to the inner shells as a part of the equilibrium state. So this is a part of the equation as well.

Conversely, if an outer shell electron falls back into a lower inner shell with an ejection of a photon, its magnetic field/energy then decreases; as such, it gives up some of its relativistic inertial mass.

5. Fundamentally, an electron is purely an electric field with spin (SMF). In addition, it exists within, moreover, is a part of, the ether in the configuration of a volume, but more importantly, not a point-like particle. Theoretically, this field extends to infinity.

6. Furthermore, an electron, which is orbiting the nucleus, possesses extreme angular velocity. What is more, its velocity increases the further from the nucleus, both in respect to its own nucleus and to the ether of PFSRT.

7. The atom's different types of fields (forces) interact, moreover, travel, with respect to one another at extremely rapid rates. In fact, the process is so rapid that it cannot be accurately measured with our experimental equipment.

8. Since the electron's two fields have no precise location and given that they move too fast to accurately measure, then all one can do is mathematically calculate a probability of the electron's location and a probability of its velocity. Mathematically, one cannot simultaneously determine the exact position and the exact velocity (momentum) of the orbiting electron. This is Quantum Mechanics (QM)—the probability cloud.

9. What this model signifies is that the fields that make up matter, such as the electron, actually exist as three-dimensional entities. Nevertheless, in order to understand their function, we utilize the mathematics of QM. However, this mathematical skill does not describe their actual physical structures, or in the vernacular, what they actually look like.

10. This new QM model is analogous to, although not identical to, classic QM, for there are numerous similarities, as well as differences, some of which are described below.

10.1. With regard to QM, the specific properties (e.g., electron) are present only when observed (interact with other atoms/molecules/subatomic structures). Alternatively, with reference to this new theory, the properties are intrinsic to its own (e.g., electron) internal three-dimensional structure.

10.2. Unlike QM, the quanta of this new theory are all a function of the ether.

10.3. Assuming the new modified Bohr model actually portrays fact, then perhaps, classic QM is only a mathematical working representation of this reality. Nevertheless, QM does not depict actual physical structures or the visual mechanism of their interactions. In other words, even though QM accurately predicts outcomes, it does not precisely describe the actual physical shape of the atom, or, for that matter, EMR. Conceivably, this dichotomy is the reason why it is difficult to translate what is essentially the advanced mathematics of classic QM into words that actually make common sense.

10.4. The following quote reinforces this notion. *Just because we have a mathematical formulae that allows us to calculate and predict properties of an atom, this does not mean that the wave function is a mathematical description of the atom or worse still that the waveform is the atom.* ("Quantum A Guide for the Perplexed," pg. 80, by Jim Al-Khalili).

11. QM successfully predicts the outcome of particle physics and subatomic physics with extreme accuracy. In addition, it is the basis for countless successful modern-day inventions. Therefore, most likely, it describes the true "function" of the micro-world, nevertheless, strictly mathematically, not structurally or three-dimensionally. On the other hand, this new theory is a visual representation of that same micro-world of classic QM. Basically, both theories describe

the exact same process; one by math, the other pictorially. Therefore, presuming one could mathematically describe the new theory, the same cause and effect relationships would emerge. Presupposing this, then at that time, it would be equivalent to classic QM.

12. This new model is actually QM described in terms of a modified three-dimensional Bohr model of the atom. Fundamentally, it is a different way of perceiving QM. It is only presented as a new way of thinking, for obviously, protons, quarks, mesons, and gluons, etc. are not accounted for; therefore, this model is incomplete. In addition, there is no explanation for quantum entanglement.

The following list is presented for review, reinforcement, further elucidation, and from another perspective. This methodology is for the benefit of the novice, the primary intended recipient of this publication. In the author's opinion, repetition is the best technique for retained learning, especially if explained from different points of view.

Once again the definition of QM: *the branch of mechanics that deals with the mathematical description of the motion and interaction of subatomic particles, incorporating the concepts of quantization of energy, wave-particle duality, the uncertainty principle, and the correspondence principle.* (Quizlet, <http://bitly/2D3Nv0B>)

12.1. The vacuum of space is actually the ether; it is something, rather than nothing.

12.2. A wave forms in, moreover, is a part of the ether, somewhat analogous to waves developing in motionless water. This is defined as electromagnetic radiation (EMR) or photons.

12.3. Photons (EMR) can transform into subatomic particles (fields), such as the electron, and vice versa but only at specific energy levels (quanta).

12.4. The atom is constructed from multiple diverse fields (forces) bound together into a stable equilibrium. Essentially, the diverse interacting forces self-assemble into an atom.

12.5. Subatomic particles, such as the electron, are actually only purely fields which occupy a volume of space (ether); moreover, they are not point-like entities.

12.6. As a part of the atom, moreover, with reference to its equilibrium state, the electron orbits the nucleus at an extremely high velocity.

12.7. Therefore, given the limitations with our experimental measuring equipment, all we can do is calculate a probability of the electron's velocity (QM). And second, since it exists as a volume, not a point particle, all we can do is calculate only a probability of its location. As a result, together we perceive this as the probability cloud. Furthermore, given the same reasons mathematically, one cannot simultaneously determine the exact position and the exact velocity (momentum) of the orbiting electron = QM.

12.8. Different kinds of fields are essentially synonymous with various types of forces, such as the electric force.

12.9. The VMF of an electron is produced whenever it travels at a velocity with respect to ether of PFSRT. In addition, relative to the ether of PFSRT, the greater the linear velocity, then as an LTF, the greater is the magnetic field. This field (VMF) is its relativistic inertial mass. Furthermore, the plane of the VMF orients at a right angle with regard to its motion through the ether of PFSRT.

12.10. As a corollary, even though an overall atom is at rest with the PFSRT, since its electrons rapidly orbit that nucleus, then with respect to the ether of PFSRT, they travel at an extremely high velocity. For that reason, they possess relativistic inertial masses.

12.11. The rest inertial mass of an atom is the summation of the relativistic inertial masses of all its subatomic orbiting entities not just the electrons.

12.12. Some atoms maintain a persistent equilibrium state. Therefore, they are stable. Other atoms are stable most of the time, but rarely over time, as the fields interact, the overall configuration assumes an unstable form. Thus, the atom breaks apart to form other particles (fields), waves, and other equilibrium stabilization points. This is defined as radioactive decay.

12.13. The transformation from one equilibrium state to another is a function of quantum interactions. What is more, all of the interactions are a function of the ether.

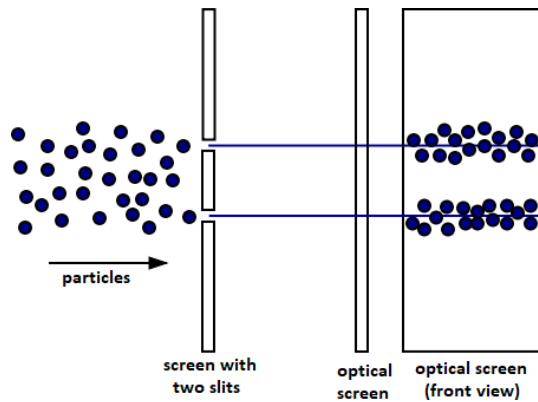
12.14. For other elements, the equilibrium configuration is intrinsically unstable. So, in that setting, the atom, in some cases, decays very rapidly and somewhat slower in other instances.

12.15. Given the presupposition that atoms are equilibrium states of interacting fields, this effect then explains the quantum nature of matter and energy. For example, to move an electron from one shell to another (different equilibrium states) requires a loss or gain of a specific discrete amount of energy or quanta. In this case, it is either an emitted or absorbed quantum (e.g., photon). All chemical reactions are, in fact, changes in atoms and/or molecules from one form of equilibrium configuration into another. Moreover, this process occurs with reference to discrete energy units. So, without the quantum nature of the ether of the universe, atoms and molecules would not even exist. The equilibrium states of matter and energy, moreover, their quantum interactional nature, produce all of the electrochemical interactions, including life.

12.16. Therefore, considering all of the above, the quantum nature of matter and energy are a function of the ether.

#### 4.5 The Dual Nature of Light

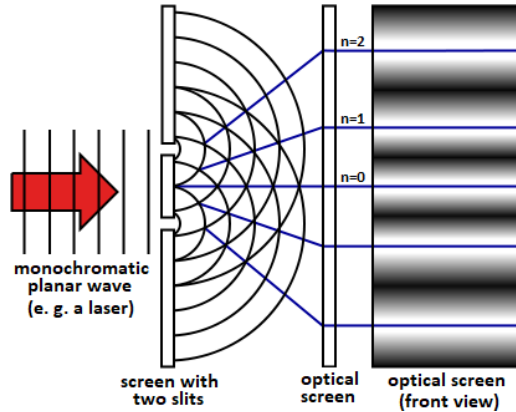
Figures 4.13 and 4.14 are pictorial representations of two postulated forms of light: the particle nature of light, and the waveform of light, together known as the dual nature of light. The figures below depict the quandary of the double slit experiment.



*Wikipedia*

**Figure 4.13** Particle Nature of Light [Fair Use]

*Figure 4.13 depicts an incident beam of particles being divided by the double slit into two separate beams of particles which then travel to the detector.*



Wikimedia Commons

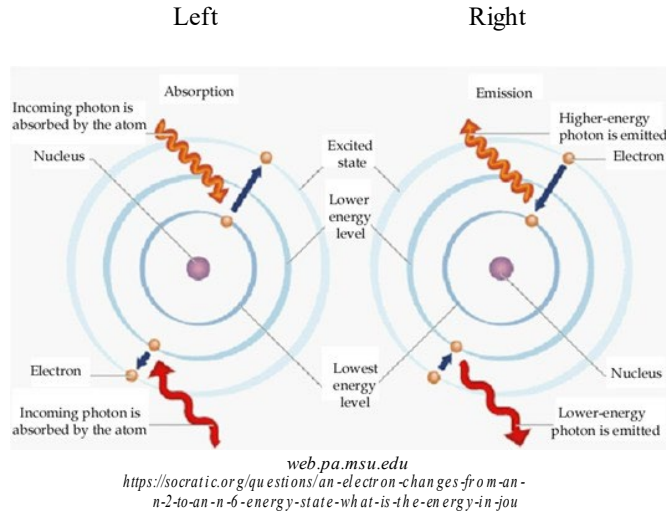
**Figure 4.14** Waveform Nature of Light [Fair Use]

Figure 4.14 demonstrates a single wave of light being divided by the two slits, then transforming into two separate waves, which at the location of the detector, subsequently interact with one other to produce an interference pattern.

Both of the above figures (4.13 and 4.14) depict the outcome of the double slit experiment, one with reference to the particle nature of light, while the other with respect to the wave nature of light.

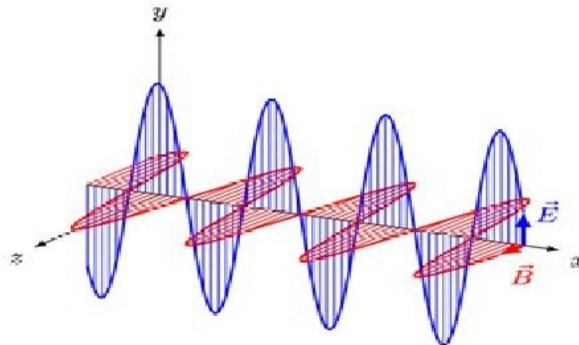
Figure 4.13 depicts the particle nature, whereas Figure 4.14 demonstrates the waveform of light. However, the particle concept of light is incorrect for the following reason as now presented. A photon consists of a wave of alternating fields of the ether with a frequency, amplitude, and a discrete length. But most importantly, it is not a point-like particle. In addition, a photon is only considered a particle, because it produces, in a shell of a detector, a quantum jump of an electron (a field) into a higher energy shell. Essentially, the particle nature of light is due to the fact that our measuring sticks, the instruments of detection, function on the basis of only quanta.

For that reason, we define this detection process (quantum interaction) involving a wave of alternating fields (photon) interacting with a field (electron) in a shell of a detector, as a particle. The function just described above is shown below in Figure 4.15 (left). Even so, the particle/waveform concept of light is more complicated than this, as will be clarified in the following paragraphs.



**Figure 4.15** Absorption and Emission of Light [Fair Use]

Observe on the left, the photon (a wave of alternating fields with a beginning and end) displaces an electron (field) from a middle shell into an outer shell of the detector. This interaction is then perceived as the particle nature of light. The image to the right depicts the reverse function with the production of a photon.



Wikipedia

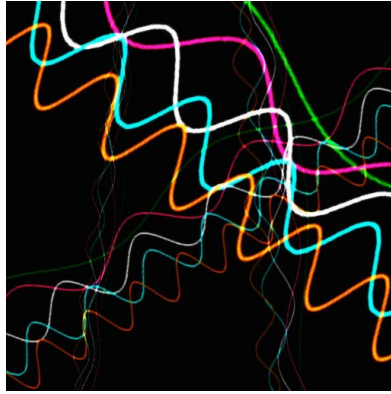
**Figure 4.16** Repeat of Figure 4.3 [Fair Use]

Image shows alternating right-angled magnetic and electric fields. This, in association with its given length, frequency, and amplitude, is the photon.

So as illustrated above, these quantum interactions involving photons and an electron, are perceived as a particle. →However, in reality, they are actually waves of alternating fields (photon) of the ether, interacting with a field (electron) of the detector.← In effect, there is no particle, only fields.

See Figure 4.17 below. There is another aspect to consider. If an electron continually vibrates within the ether, it then produces a continuous wave of the ether called EMR. This is perceived as the waveform of light, not a particle or photon.

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*Wikimedia Commons*

**Figure 4.17** Wave Form of Light [Fair Use]

*Figure 4.17 depicts continuous streams of waves of electromagnetic radiation within the ether. This function is perceived as the waveform of light as opposed to Figure 4.16.*

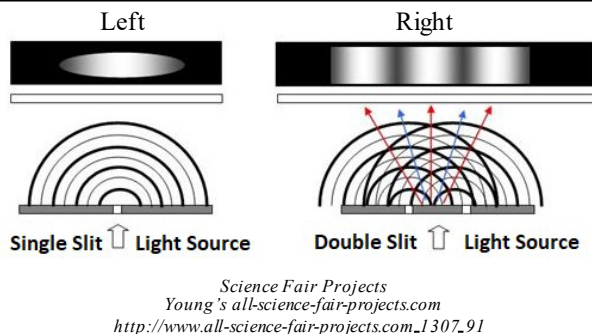
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Considering all of the above, this gives explanation to the double slit, wave vs. particle experiment, as now presented. The imaging instrument or, in other words, our measuring stick, only detects →photons/contiguous waves← with enough energy (frequency) to cause an electron (field) of the detector to then jump into a higher-energy shell, a different equilibrium state. This is the reason why it is detected.

See Figure 4.5 below. Now, in the setting with only one slit (left), there is no interference pattern. This is because after the single light beam (a field of alternating waves) passes through the one slit, it is still only a single alternating field. So, at the location of the detector, if the photon/continuous wave possesses enough energy the electrons (fields) of the detector respond with a quantum jump (higher-energy shell), relative to a single point of brightness. This single point is perceived as the particle nature of light.

On the other hand, with reference to a double slit (right), the original single beam, given that it is a field of waves existing over an area/volume and not a point particle, then passes through both slits simultaneously.





**Figure 4.18** Single and Double Slit Experiments [Fair Use]

By doing so, it then divides into two separate streams. Subsequently, at the site of the detector, they interact with each other to form an interference pattern. Where there is enough energy to affect a quantum jump of an electron, the detector surface turns bright and where there is not, it remains dark. This interference pattern formed at the detector's surface is typical of what is assumed to be a wave. So, we then call this pattern the wave nature of light.

First, our misconception belies the fact that the detector only reacts to quanta. So, with regard to a single slit, a particle is perceived, because all the quantum interactions occur at one location. However, with a double slit, a wave is presumed, because the quantum interactions at the detector surface are a function of an interference pattern. Second, our bewilderment is also the product of a lack of a clear understanding that light (fields) can possess different lengths within the ether. Thus, if it has a discrete length, it is perceived as a photon or particle. Alternatively, if it possesses a continuous length, it is then perceived as a wave. Both of the above misunderstandings, in combination, result in our confusion.

To summarize, in reality, light (EMR) exists as a wave of alternating fields, either continuous or with a discrete length (photon). There is no particle in the classic sense. If you really think about it, fundamentally, everything in the universe is either a field of the ether (e.g., electron, proton, etc.), a wave of fields of the ether (e.g., light or EMR), or the ether itself. There is nothing else.

So light does not exist as a superimposed quantum state of both a particle and a wave. Our measuring sticks, the instruments of detection, determine the perception of a particle or wave.

Schrodinger's cat example refutes QM's concept of the superimposition of subatomic entities until they are observed. This new theory validates Schrodinger's analysis. See numbers 15–18, section 4.6.

Again, the new theory hypothesizes that it is the only the measuring device, as a function of quantum interactions, that determines whether or not the fields of EMR are →perceived← as a particle or a wave.

## 4.6 Conclusion

Again, for reference, the following is the classic definition of QM.

The branch of mechanics that deals with the mathematical description of the motion and interaction of subatomic particles, incorporating the concepts of:

- Quantization of energy
- Wave-particle duality
- The uncertainty principle

- The correspondence principle

In summary, regarding the entire chapter, as portrayed below are analogous three-dimensional alternative descriptions of the processes that are usually associated with classic QM. Compare how they are similar to, although not identical to, QM.

1. The origin of the ether is unknown, perhaps unknowable, without the presumption of a creator.
2. The ether is the essential, basic building block of all that there is.
3. A wave then forms, within ether, which travels at (c), defined as EMR.
4. EMR, a wave of the ether, instead of traveling through itself (ether) at (c), subsequently spins upon itself, to form an electric field (force) with intrinsic spin (SMF), then defined as a particle (e.g., field, electron). This transformation occurs at specific energy levels (quanta). (*Quantization of Energy*)
5. An electron at rest with the ether exists as only a spherical electric field with an intrinsic magnetic field spin (SMF). Additionally, there are two forms of opposite (SMF up and down).
6. An electron (field) with spin (SMF), possessing a velocity relative to the ether of PFSRT then produces a velocity magnetic field (VMF). Moreover, as the electron's velocity increases linearly relative to the PFSRT, then the VMF increases as an LTF. In addition, the VMF represents or is its relativistic inertial mass. Furthermore, the velocity magnetic field's plane orients perpendicular relative to its motion through the space of PFSRT. What is more, there are two forms of opposite VMFs and two types of opposing SMFs.
7. Different types of fields/forces (electric fields, magnetic fields, etc.) interact with one another to self-assemble into a number of stable equilibrium points, thus creating the elements and on larger scale, molecules. (*Quantization of Energy*)
8. In essence, everything in the universe is either a wave of fields of the ether (EMR), a field of the ether (e.g., electron), or the ether itself. There is nothing else.
9. The equilibrium configurations of different elements and molecules are associated with diverse specific discrete energy levels. As a result, chemical interactions take place in quantum jumps from one equilibrium state into another, moreover, with a concurrent consumption or production of energy (fields). The quantum equilibrium interaction of fields (particles) and EMR is what holds matter together; furthermore, it produces all chemical reactions. It is QM. (*Quantization of Energy*)
10. This new quantum theory is consistent with the principle of correspondence, for it is based on three-dimensional space (ether) just like PFSRT and PFGRT. (*The Correspondence Principle*)
11. QM uses mathematical probability curves for describing an electron orbiting an atom. Then again, this new theory assumes that the electron (field) exists as a volume, rather than a point source. In addition, it moves too fast to accurately measure with our experimental equipment. Therefore, integrated over a short period of time, it forms a cloud-like pattern surrounding the nucleus. So, with reference to the electron, this three-dimensional time integrated "cloud-like pattern" corresponds to the probability curve of QM. In other words, QM is a mathematical theory, whereas this new theory is visual; nevertheless, they are equivalent. (*The Uncertainty Principle*)
12. Alternately stated, atoms are constructed from only fields, a actual three-dimensional structures, which then interact with each other in an extremely-extremely rapid and convoluted manner (e.g., the formation of atoms). In fact, it is so complex that one cannot even envision it. Accordingly, in this context, it is then virtually impossible to employ the classic ideas of physics to describe this confusing/multifaceted function. Fundamentally, it is too difficult to do. On the other hand, by using only the equations of QM, we are able at least cursorily to do

so. The error in our reasoning is this: The complex mathematics of QM is the only way that one can superficially understand/explain what, in fact, happens at the atomic/subatomic level; correct input observations vs. output results even though one cannot visualize the underlying process by the use of those complicated mathematics.

Essentially the equations of QM do not represent the true three-dimensional actuality of what is really going on. Nonetheless, we presuppose in erratum that those equations of QM epitomize true realism, which when applied to the macro-world then makes no logical sense. As an analogy, as presented in the onset of this book, the Ptolemaic theory described the correct function of the solar system (only using mathematics and geometry) and was beneficial, the author assumes, for determining when to plant crops (very useful), but it did not represent true realism which is the Copernican/Kepler theory. So it is with QM; it describes the function of the subatomic world correctly (very useful) with mathematics alone, but not the true visual reality of that subatomic world (three-dimensions)←.

13. Light is fundamentally only a wave of the ether, but when it interacts with a measuring device (field), it does so in quanta, then assumed in erratum to be a particle. Additionally, the assumed particle nature of light is a function of the quantum nature of the measuring device. (*Wave-Particle Duality*). *There is no particle, only fields.*

14. There is only one universe that we know of; therefore, the macro world (relativity) and the micro-world (QM) must somehow interconnect. At present, QM and relativity are mathematically distinct from one another. However, the existence of the ether can tie them together, initially visually as demonstrated by this paper, and eventually with time by rigorous mathematical proof. (*The Correspondence Principle*)

15. Pertaining to QM, by utilizing purely mathematical equations, one can obtain correct outcomes. However, other interrelationships could be overlooked, furthermore, observed contradictions are often ignored.

16. Given below is a website containing a discussion and video of the Schrodinger's cat hypothesis where he demonstrated that—QM's assumption of the dual nature of an atom's state of radioactive decay vs. not decay (superimposition) until observed is not realistic, moreover absurd.

*<http://whatis.techtarget.com/definition/Schrodinger's-cat>*

17. Bear in mind, regarding this new theory, there is no superimposition as presented below.

18. Alternatively, referring to this new modified Bohr theory, atomic decay is basically a function of the equilibrium of fields, then called an atom. Now for some elements, randomly over a period of time, as all of the subatomic structures orbit one other, then each atom of that element rarely assumes an unstable configuration. When this occurs, that atom then ejects a photon(s) (fields) or particle(s) (fields), and simultaneously reassembles to form a new equilibrium state(s). Consequently when given a large conglomeration of these atoms, in the form of matter, this random function produces continuous radioactive decay in the form of a probability curve at a specific "rate of time" or half-life.

19. Here is the key concept. This new theory presumes radioactive decay is a product of actual three-dimensional structures, which are only fields, moreover, ultimately derived from the ether. What is more, as just presented, it posits radioactive decay is not a function of the dual nature of subatomic entities or what is called superimposition.

20. QM is only a mathematical representation of three-dimensional interacting fields, but even so, it cannot picture how this actually occurs.

21. QM has been so successful in predicting outcomes that it will be extremely difficult to overturn. Nevertheless, the major advantage with reference to this new theory is this: If one can visually perceive in three-dimensions the actual cause and effect of relationships of

the micro-world, then one ought to be able to conceive new and novel ideas, moreover, create new inventions never before contemplated.

22. The author acknowledges that mathematics has been given a bum rap with reference to this article, undeservingly so. Part of the problem lies in the fact that unless one has the overall big picture of the true physics of the universe, true reality is then difficult to discern. So, with regard to modern-day physics, in the face of confusing observations and disparate experiments, along with their associated complex math, which cannot be merged, reality is then disregarded, so long as the math employed produces correct conclusions for specific and limited applications, especially if profitable.

23. If the overall big picture of the physics of the universe remains unknown, then the pure mathematics of physics becomes paramount, what is more, the main focus. Those results often are nonsensical (not representing reality), even so still ignored. In addition, in the author's opinion, it is very difficult for many physicists to describe their theories utilizing only words and imagery. It is far easier for them to explain them by employing math, which is often not reconcilable with the real world, even though the input-output results are correct. However, if and when the overall big picture is eventually revealed, a new physics and its interrelationships supported by mathematics will be thrust upon the world.

24. The author's description of the micro-world is obviously deficient. For instance, the three-dimensional configuration of the photon must be different than postulated, since photon spin and light polarization are not taken into account; furthermore, quantum entanglement remains an enigma.

25. And so, one main objective of the chapter is to alter the perception of what is/are EMR, electrons, protons, mesons, quarks, etc. They are, in fact, three-dimensional structures/fields. Therefore, in the author's opinion, if one knows what they actually look like spatially, then even for the average individual, this hidden micro world will, at that time, be understood. In other words, the invisible mathematical functions of (QM) will then transform into the visible interactions of three-dimensional structures, therefore, easily comprehensible for all.

26. For example, as an analogy, without foreknowledge about the three-dimensional configuration of an enzyme, it is almost impossible to picture its physical mechanism of action, even though the beginning and end results are known. Alternatively, if one can envisage its 3D contour, then its functions, moreover, its interactions, are decipherable. This analogy is a fact, and so, for industry, profits have then ensued. In the author's opinion, the same philosophy should hold true relevant to the micro-world of QM.

27. The most important concept to take home is this chapter/book posits that the big picture of reality is PFSRT/PFGRT, with its presumption of the ether, which then can be merged with the assumed ether of the modified QM theory to fashion one overall unified theory for everything (TOE). This last presupposition is the main thrust and focus of Chapter 4.

28. This chapter leaves a lot to be desired, but, perhaps, the ideas presented here within will point the scientific community to a new and correct direction. Hopefully, the author has provided the framework so the scientific community can then finish the building.

29. **Regardless of whether or not anything else posited in this chapter is valid, the bridging of relativity with QM, both as a function of the ether, is the main concept the reader should consider.**

## 4.7 Epilogue

Given the concepts as presented in chapters 1, 2, and 4 consider the following.

Assume the reality of the ether. Next presume that the ether gave rise to a wave, as water waves are to water, defined as electromagnetic radiation (EMR). Subsequently, presuppose

EMR at times can spin upon itself to form charged particles (fields). After that, posit that those charged particles, as part of an equilibrium state, on occasion can self-assemble to create atoms, molecules, matter, planets, stars, etc. Observe, all of that described above is a function of motion/movement (spin, velocity, orbit/vibrations), what is more motion is actually time (see Chapter 1, section 1.4, page 7). Accordingly in the beginning when the Creator →set in motion← (formed) all of the physical universe from the ether, so too did time simultaneously come into existence.

