

The Real Reason Special Relativity Theory Will Never Be Compatible With Quantum Mechanics

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It is very well known throughout all of theoretical physics today that the primary problem preventing us from revealing the path to an all encompassing "Theory of Everything" is the fact that, after more than three-quarters of a century, we still have not found any possible way to connect Relativity Theory to Quantum Mechanics. This interconnection of relativity (space-time physics) to atomic structure (Quantum Mechanics) is, as is also very well known by theoretical physicists everywhere, vital to our overall understanding of the universe. Finding the solution to this problem would be finding the "Holy Grail" of physics, since once we find this pathway interconnecting space-time physics to Quantum Mechanics, it is believed we would then be able to expose the answers to many of the age old questions describing the fundamental nature of the universe.

1. Introduction

We begin our examination by calculating the wavelength of the innermost, or [n1], orbit $\lambda_{o[n1]}$ of the Bohr hydrogen atom.

$$\lambda_{o[n1]} = \frac{hc}{E_{o[n1]}} = \frac{2}{\alpha^2} \frac{h}{m_e c} = 9.11263687257 \times 10^{-8} \text{ m} \quad (1)$$

and
$$E_{o[n1]} = \frac{\alpha^2 m_e c^2}{2} \quad (2)$$

where

$$\begin{aligned} h &= 6.62605 \times 10^{-34} \text{ kg-m/s}^2 = \text{Planck constant} \\ c &= 299,792,452 \text{ m/s} = \text{speed of light} \\ E_{o[n1]} &= 13.605698856 \text{ eV} \\ &= 2.1798737776 \times 10^{-18} \text{ J} = \text{Bohr energy of [n1]} \\ m_e &= 9.1093897 \times 10^{-31} \text{ kg} = \text{Electron rest mass} \\ \alpha &= 7.29735257 \times 10^{-3} = \text{Fine Structure Constant} \end{aligned}$$

As we can observe here, because we are using the energy level of this [n1] orbit, the value of which is very well known since it is used to design and construct everything from cell phones, to computers, to generators that produce electrical power, divided into two very well known constants, the speed of light and Planck's constant, we find we are able to calculate the value of this wavelength of the [n1] orbit of the Bohr hydrogen atom to a very great degree of accuracy. Subsequently what this means is that this wavelength value we calculate for this [n1] orbit of the atom $\lambda_{o[n1]}$ is as accurate as the known value of the energy level of this [n1] orbit $E_{o[n1]}$.

2. A Faulty Attempt

If Special Relativity were mathematically consistent with current Quantum Mechanics, then we should be able to use the mass increase Equation of Special Relativity, along with the de Broglie wavelength equation of Quantum Mechanics, to also obtain this same exact value for the wavelength of this [n1] orbit of the atom we found in Fig. 1. In Fig. 2 directly below we now illustrate how we can combine the mass increase equation of Special Relativity where:

$$m^* = \frac{m_e}{\sqrt{1 - \frac{v_{o[n1]}^2}{c^2}}} \quad (3)$$

with the de Broglie wavelength equation of Quantum Mechanics:

$$\lambda_{o[n1]}^* = \frac{h}{m^* v_{o[n1]}} \quad (4)$$

where $v_{o[n1]} \equiv \alpha c = 2,187,691 \text{ m/s}$. We now attempt to calculate this same result for $\lambda_{o[n1]}$ we found earlier in Eq. (1).

$$\lambda_{o[n1]}^* = \frac{h \sqrt{1 - \frac{v_{o[n1]}^2}{c^2}}}{m_e v_{o[n1]}} = \frac{\sqrt{1 - \alpha^2}}{\alpha} \frac{h}{m_e c} \quad (5)$$

However, we immediately observe that $\lambda_{o[n1]}^*$ is more than 100 times greater than the correct $\lambda_{o[n1]}$ in Eq. (1).

From these equations we can now understand why the mass increase equation of Special Relativity, when used in conjunction with the de Broglie wavelength equation of current Quantum Mechanics, will never correctly describe the orbital structure of the atom. Subsequently, as we are now able to realize, this illustration reveals to us the mathematical "road-block" that is directly responsible for preventing theoretical physicists today, or at any time in the near, or distant, future, from ever finding a way of combining Relativity Theory (space-time physics) with atomic structure (Quantum Mechanics).

3. Light Cone vs. Time Cone

So now the obvious question becomes: What could possibly be so fundamentally wrong with our present understanding of the universe to produce this mathematical "road-block" at the very heart of theoretical physics forever preventing us from ever uniting these two major theories? In order to understand why this fundamental problem exists in the first place we need to go back in time approximately 2500 years to the era of the early Greek Philosopher-Mathematicians (Aristotle, to be specific).

To Aristotle and the early Greeks the “still” position as arranged throughout the universe was defined as being characteristic of a “static”, three-dimensional, plenum type of structure, where time simply passed “linearly” from one moment to the next at a constant and unchanging rate. Sir Isaac Newton adopted this “static configuration” and used it as the “foundation concept” upon which he based his ideas of “absolute space” and “absolute time”. Einstein however, even though he did do away with the concepts of both absolute space and time with Special Relativity, still described the “still” position within the stationary frame of reference, from which all other relative motion is measured, as a: “static configuration” simply existing linearly from one moment to the next in time. We know this to be true because the Time Vector in the Light Cone Diagram of Relativity is at a 90° angle with respect to the space vector representing the still position of the observer as shown below in Fig. 3a.

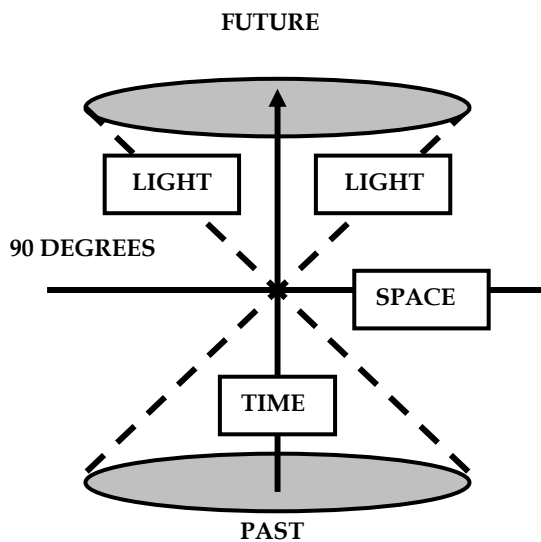


Fig. 3a. Light Cone. Static 3D Configuration of Still Position

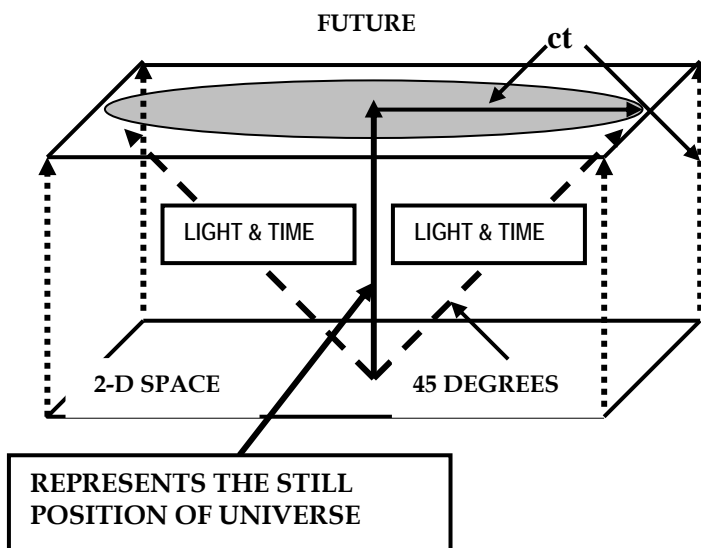


Fig. 3b. Time Cone. “Active” 3D Dynamic Process

In Fig. 3 we now illustrate the difference between the “static” background reference for motion as described by Relativity Theory, and a dynamic process. *The Light Cone* (Fig. 3a) contains

a time vector at 90° with respect to the space vector. This “static” configuration of space and time is taken directly from the Galilean system of classical dynamics. However, instead of using absolute space to define the still position with respect to which motion is measured, Relativity uses the speed of light to construct an absolute stationary configuration of “still” position within the “still” frame of the observer with respect to which all other “relative” motion is defined, meaning that both space and time now become only “relative” concepts.

In Fig. 3b we now illustrate how Reality Physics completely changes our way of looking at the universe as we reveal: *The Time Cone*. We immediately notice here that the time vector, which was originally vertical with respect to space in the Light Cone Diagram of Relativity, has been moved outward 45° in both directions so that it now overlays the light vectors, meaning that both time and light move out into space together at the speed of light, or c , as still position in space moves vertically upward in the diagram.

So by letting the speed of time be equal to the speed of light, we now create the condition where still position in space must continually experience an “active”, two-dimensional, omnidirectional, omnipositional displacement of time with space at the speed of light, now immediately explaining to us why time continues to pass in the universe. What this obviously means is that the three-dimensional still position, within which we all continually exist and which extends throughout the entire universe, is not just “here” from one moment to the next for some unknown reason, *but is continually being formed by the outward motion of time with space at the speed of light.*

4. Static vs. Dynamic

Possibly the best way to illustrate this is to imagine an average size room completely filled with miniature light bulbs, each one being completely transparent to the light emitted by the others. If we now imagine that all of the miniature light bulbs are turned on at the same instant we would observe the light flash from each one to displace its point of origin as a sphere of light expanding omnidirectionally outward into the room at the speed of light. If we now let the room represent space and the light expanding outward from each of the light bulbs represent time, we find we now have an analogy illustrating how the “Now Point” in time continually expands with an “active”, 2-D, omnidirectional, omnipositional displacement at the speed of light to continually form the three-dimensional still position defining the “stationary rest frame of reference” existing throughout the universe.

This now describes to us what is meant here by this new term: “active” background reference, as defined by Reality Physics, as opposed to the “static” type of background reference, as is currently assumed today throughout theoretical physics Academia. This new “active” background reference, unlike with the “static” background reference as described by current thought in theoretical physics, is *continually being formed* at the speed of light, or what should be more properly called: “the speed of time through space”. So, unlike the “static” background reference where time simply passes linearly from one moment to the next, this new “active” background reference, as described by Reality Physics,

is: “continually being formed”, or: “renewed”, or: “regenerated”, as time continually passes omnidirectionally, omnipositionally, outward into space at the speed of light. What this means is, we can no longer think of ourselves as existing in a universe where the background reference defining the “still” position within which we continually exist simply exists linearly from one moment to the next in time. What we must do in order to reach the real truth describing the actual physical nature of this universe is to begin to realize that we exist in a universe characteristic of an “active” background reference defining the “still” position in this universe as an entity that is continually being formed at the speed of light by: “the ‘active’, two-dimensional, omnidirectional, omnipositional, speed of time through space”.

This new active configuration of the universe, as described by the Time Cone Diagram of Reality Physics in Fig. 3b, is very important here since it completely changes the fundamental nature of the universe from the static configuration, as currently described by the Light Cone Diagram of Special Relativity, as shown in Fig. 3a, to an “active” configuration now described as a: “Dynamic Occurrence”, continually being: “brought into being” by the continual action of this speed of time through space. This continual, two-dimensional, omnipositional, omnidirectional “action” of this motion of time with space is what is directly responsible for transporting photons outward into space at the speed of light. It is also responsible for creating the background reference in the universe allowing time dilation to occur for objects in motion with respect to a “still” frame of reference.

A clock remaining at a “still” position in space will start out at point “S”, as shown on the two-dimensional plane representing space near the bottom of the diagram in Fig. 3b, and move vertically upward in the diagram along with this “still” position of space as it experiences the total, or greatest, displacement of time possible, meaning this “still” clock will be recording time to pass at its greatest rate possible. This now immediately explains to us the real reason why the Fitzgerald Formula, which mathematically interconnects time dilation Δt to velocity v_o , where

$\Delta t = \sqrt{1 - v_o^2/c^2}$ describes clocks remaining at a still position in the universe to experience a “time dilation” of one, in that they record time to pass at its greatest rate possible. This is because they are “still” with respect to the stationary position of the universe where time will always continue to pass at its greatest rate possible. This means that any clock originating at point “S” in Fig. 3b and moving through space with a “sub-light”, or a “sub-time”, velocity will follow an angled path and end up somewhere within the circle inscribed within the top plane representing 2D space. Obviously, since this “moving” clock is moving with respect to the still position of space where time is passing at its greatest rate possible, it will actually, physically begin to: “catch-up” to this 2D, omnidirectional motion of time with space, and therefore experience a “Time Dilation” with respect to a clock located at a still position in space where time continues to pass at its greatest rate possible.

5. The “Now Point”

So, unlike with Special Relativity, this continual outward motion of time with space now provides us with a real, working physical relationship illustrating how time and space can be

physically interconnected in an “active” configuration now explaining the real reason why time dilation occurs in the first place for a clock moving with respect to a still frame of reference. It is because this clock, by moving with respect to space where time is continually passing at its greatest finite rate, will begin to “catch-up” to this outward motion of time meaning it will experience less time to pass for it, as compared to the “still” clock located stationary in space. Since this “Now Point” in time is passing outward into space at the nonlinear rate as described by the nonlinear rate at which a surface area of a sphere increases in size with respect to a linear incremental increase in its radius, the rate at which this time dilation will occur with respect to a linear incremental increase in velocity will be at this same nonlinear rate. This now explains why the Fitzgerald Formula mathematically interconnects a nonlinear incremental increase in time dilation to a linear incremental increase in velocity, since the moving clock would be catching-up to an “active” nonlinear displacement of time expanding outward into space at the speed of light.

This also immediately explains to us why the Fitzgerald Formula calculates a time dilation of zero for a clock traveling at the speed of light. This is because, by traveling at the speed of light this clock would simultaneously also be traveling at the speed of time since, according to Reality Physics, the “Now Point” in time always continually moves omnidirectionally outward into space at the speed of light. We can observe why this is true by going back to our Time Cone Diagram in Fig. 3b as we visualize how a clock starting out at point “S” and moving at the speed of light, or time, will simply follow the path as described by the two “time-light” vectors extending outward at a 45° angle as dashed lines from point “S”. Since this clock, by moving through space at the speed of light, is simultaneously also moving along with the “Now Point” in time, it would now have “caught-up” to this motion of time: c . This means it would experience absolutely no displacement at all in time causing its hands to stop rotating completely now explaining, for the first time in the history of theoretical physics, why the Fitzgerald Formula calculates a zero time dilation for a clock moving at the speed of light.

This new concept of an “active” background reference as described by Reality Physics also allows us to explain why photons always travel out into space at the speed of light: c . This is because photons are made of light and light must always travel at the speed of time which is always moving outward into space omnidirectionally at c since, according to Reality Physics: “Light must always travel at the speed of Time”. This now reveals to us the real reason why photons, as they move outward into space at the speed of light, never age, or experience the passing of time. It is because, as we can observe from the diagram in Fig. 3b, according to Reality Physics, light always moves along with the speed of time through space as illustrated by the two “time-light” vectors extending outward at a 45° angle from point “S”. So now we have finally answered that age old question explaining why light always travels omnidirectionally out into space at c . It is because light (a photon) must always remain stationary with respect to the “Now Point” in time as it continually, omnidirectionally displaces the still position of space at c , now revealing to us the real reason why photons never age or pass through time.

What we need to do now is to go back to the beginning of this communication to our original question and investigate how this

new description of an “active” universe, as revealed here by Reality Physics, is able to expose the *correct* way of interconnecting space-time physics to current Quantum Mechanics. The “key” to our accomplishing this is to understand that: *It is not only the inertial background reference of the universe that is continually being created at the speed of time (light), but also all of the rest of the matter in the universe, meaning all fermion subatomic particles, electrons, protons, neutrons, etc.*

What this means is, according to Reality Physics, all fermion subatomic particles must be made of spinning light (a photon rotating at the speed of time). Since, as we also know from Reality Physics, light always travels at the speed of time, we can now reason that it is this 2D, omnipositional, omnidirectional speed of time continually displacing the fermion subatomic particle that causes it to spin at the rate at which it does. This now creates the condition, unlike with current thought in theoretical physics academia today, where the exact same action: “*this two-dimensional, omnidirectional, omnipositional speed of time with space*” is now simultaneously creating both the inertial reference background within which the particle exists, and the particle, itself. This means that the rate at which the particle is spinning is at the same exact rate at which the inertial reference background within which the particle exists is continually being created. The end result of this is that this new “active” configuration of the fermion, as described here by Reality Physics, unlike with the “static, Billiard Ball particle model of current Quantum Mechanics, now allows the action of the photon spin motion of the fermion to *directly communicate* with the action of the speed of time displacing space continually forming the inertial reference background of the universe within which the particle (fermion) continually exists.

By combining this new concept of Reality Physics, where light always travels at the speed of time, with the this new concept of Reality Physics as just introduced, where all fermion subatomic particles are actually made of light spinning at the speed of time, we see how the motion of a fermion with respect to this new “active” inertial reference background, by causing a time dilation to occur, would simultaneously further cause the speed of light spinning within the particle (since light always travels at the speed of time) to slow down its rate of spin at the same rate time dilation occurs, as velocity with respect to a still frame of reference increases.

So according to this new “active” description of fermions as introduced here by Reality Physics, fermions remaining stationary with respect to the still position of the inertial reference background of the universe, as it is continually being formed by the “active”, 2D, omnidirectional, omnipositional motion of time with space, would experience time to pass at its greatest rate possible. Since it is this motion of time that continually “drives” the spin rate of the photon rotating within the fermion to continually form the fermion, we observe how a fermion stationary with respect to the still frame of the universe would experience the greatest possible amount of interior photon spin motion v_p .

This means we can now define fermions as: “*very small clocks that always keep perfect time*”, immediately explaining to us why the increased vector velocity of the fermion v_o causes a time dilation to occur. So we can see how, according to Reality Physics, be-

cause light must always travel at the speed of time and this speed of time is “slowing down” within the fermion due to the time dilation as caused by its vector velocity v_o , this would simultaneously also cause the photon spinning within the fermion v_p (the interior velocity, or the “photon spin velocity”) to slow down its rate of spin at this same rate time dilation occurs.

6. The Mechanics of Motion Equation

Consequently, according to Reality Physics, this new “active” version of the fermion now has this ability to directly reduce its rate of interior photon spin: v_p at the same rate time dilation occurs, as its vector (exterior) velocity: v_o increases. This now enables us to understand how, unlike with current thought in theoretical physics today, this increase in vector velocity will directly affect the innate composition of the particle. This is because, unlike with Special Relativity, Reality Physics defines time dilation as being “physically real” and therefore able to cause “real physical change”. With Special Relativity, time dilation is defined to be “only appearances and measurements” and can be “transformed away” using Relative Simultaneity. This means, according to current thought in theoretical physics today, the time dilation experienced by a moving particle cannot possibly affect its innate physical composition. This same exact sentiment is echoed by current Quantum Mechanics which defines all fermion subatomic particles as “static”, Billiard Ball, type entities where its is completely impossible for their exterior velocity: v_o to affect their innate internal physical composition.

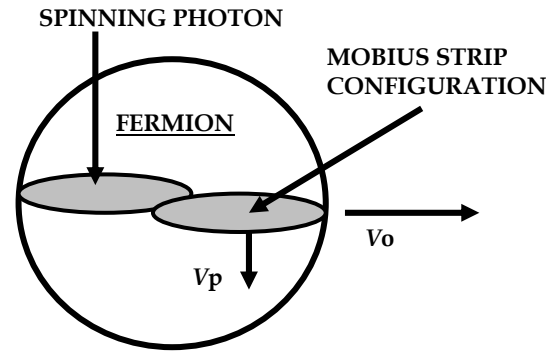


Fig. 4. The Mechanism of Motion

In Fig. 4 we illustrate how Reality Physics mathematically describes this ability of time dilation to decrease v_p as v_o increases with a very simple equation called the “Mechanism of Motion”:

$$v_p = \sqrt{c^2 - v_o^2} \quad (6)$$

This new equation reveals to us how the interior photon spin velocity v_p within the fermion, reduces its rate of rotation at the same rate time dilation occurs as the exterior velocity v_o of the fermion, increases, as the particle moves with respect to a “still” frame of reference.

From Fig. 4, we can now immediately observe that all fermion subatomic particles, electrons, protons, etc., must contain their greatest amount of v_p , or “internal photon spin action” when their exterior vector velocity: $v_o = 0$ since, if we substitute $v_o = 0$ into this equation, we calculate $v_p = c$. This, as we know is true

because we have already revealed how, according to Reality Physics, all matter (fermion subatomic particles) is made of “spinning light” (or a photon rotating at the speed of time). Accordingly, since all fermion subatomic particles are made of spinning light that always moves at the speed of time, then any fermion particle located stationary within a “still” frame of reference where time passes at its greatest rate will always have a $v_p = c$.

As we can also observe from this equation in Fig. 4, any increase in v_o would immediately and simultaneously, cause the v_p within the fermion to reduce its rate of spin at the same rate time dilation occurs, as some of this “photon spin action”, usually used to form the particle, is now “siphoned-off”, or “subtracted”, from the total amount of “photon spin action” of the “stationary” particle and “transformed” into the “action” used for the v_o , or exterior vector velocity of the particle. Consequently, as v_o increases in linear increments, v_p decreases in nonlinear increments at the same rate time dilation occurs, as the increasing v_o of the fermion now causes it to continually “catch-up” to the motion of time expanding two-dimensionally, omnidirectionally, omnipositionally, out into space at c . So we can now understand how Reality Physics, by creating this condition of an “active” inertial reference background, requires that fermions, since they are composed of “action” in the first place, must “sacrifice” some of their “internal motion” (or photon spin velocity v_p) in order to “move” with respect to the “active” still position of the universe, as it is continually being created by the motion of time with space.

By again looking back to Fig. 4 and noticing how this Mechanism of Motion equation mathematically describes the diagram in the left hand portion of Fig. 4, we immediately observe how a $v_o = c$ would produce $v_p = 0$. This means that, according to Reality Physics, matter (fermion subatomic particles) traveling at the velocity of light would result in a situation where the photon spinning to form the particle would, since it has now “caught up to” the speed of time, stop rotating completely. This, as we have earlier stated, is because by traveling at the speed of light the particle is now also, simultaneously, moving along with the speed of time, meaning time can no longer displace the particle’s position. This now explains to us why, according to this new Mechanism of Motion, matter traveling at the speed of light simply becomes light since, as has also been previously stated, all matter (fermion subatomic particles) is composed of light (photon spin) to begin with.

As we now combine this Mechanism of Motion with the new concept of Reality Physics where both the mass and the physical configuration of all fermions is continually being formed by the action of this photon spin v_p , we observe how this new Mechanism of Motion equation requires that, as v_p decreases due to an increase in v_o , the total amount of mass must also decrease as the fermion’s exterior vector velocity increases. This means, according to this Mechanism of Motion of Reality Physics, fermions contain their greatest amount of mass when they are located stationary within a “still” frame of reference where time is passing

at its greatest rate, and their $v_p = c$. As the fermion increases its v_o , it by now experiencing a time dilation which further causes a decrease in its v_p , must simultaneously also experience a “mass decrease” since, according to Reality Physics, it is the action of this photon spin that continually creates the mass of the fermion to begin with.

7. Dynamic Mass

So according to Reality Physics, all fermion subatomic particles must experience a “mass decrease” as their v_o with respect to a “still” frame of reference increase. We can calculate this mass decrease, due to the fermion’s v_o , by combining the reasoning from the Mechanism of Motion, as illustrated in Fig. 4, with the equation we are all very familiar with defining energy in terms of kinetic energy $E_K = mv_o^2/2$. To obtain the energy decrease for electron due to vector velocity E_D , subtract kinetic energy E_K from the total energy $E_e = m_e c^2$ of a “still” electron.

$$E_D = E_e - \frac{m_e v_o^2}{2} \quad (7)$$

Now divide by c^2 to obtain the remaining mass m_D .

$$m_D = m_e - \frac{m_e v_o^2}{2c^2} \quad (8)$$

m_D is the amount of mass remaining within the moving electron due to vector velocity, while the last term on the right is the amount of mass subtracted from the total original mass used to form the electron, now transformed into vector velocity.

So we can see how, by now defining both the inertial reference background of the universe, and the particles (fermions) contained within it as “active” entities, as opposed to the “static” configurations they are now both assumed to be by current thought in theoretical physics academia today, we produce the situation where the vector velocity of the fermion now causes a “mass decrease”, rather than the “mass increase” as proposed by Special Relativity. This means, if this mass decrease, as it is mathematically described here by Reality Physics is correct, we should be able to substitute this amount of “mass decrease”, due to the electron’s orbital velocity as shown in the right hand portion of the equation in Fig. 5b, into the de Broglie Wavelength equation to calculate the correct value for the wavelength of the [n1] orbit. As was stated earlier, the real reason we can do this is because we are now able to use this new Mechanism of Motion of Reality Physics to show how some of the total amount of “mass-action”, usually used to continually form the “still” electron v_p , has now been “transformed” into the “mass-action” now used to form the v_o of the [n1] orbit.

In Fig. 6 directly below, we show how, by now substituting this subtracted amount of mass, as mathematically described by the term as shown on the right hand side of the equation in Fig. 5b (where the mass of the [n1] orbit $m_{o[n1]} = m_e v_o^2 / 2c^2$ for the m factor in the de Broglie Equation (4): $\lambda_{o[n1]} = h / mv_o$, (where we let the v_o term in the de Broglie Equation equal c since we are

now defining electrons as getting both their quality of mass and physical configuration from the “angular momentum of photon spin”), we are able, after some simple algebraic manipulation, to arrive at this equation which allows us to calculate the correct value for the wavelength of the [n1] orbit using the electron’s mass and the orbital velocity of the [n1] orbit, as shown.

$$\lambda_{o[n1]} = \frac{2hc}{m_e v_{o[n1]}^2} = \frac{2}{\alpha^2} \frac{h}{m_e c} = 9.11263687257 \times 10^{-8} \text{ m} \quad (9)$$

We find we can use this new “corrected de Broglie wavelength equation” of Reality Physics to calculate the correct wavelength value for all of the atom’s orbits when the total mass of the electron: m_e -, and the specified orbital velocity of the given orbit, where $v_{o[n]} = v_{o[n1]}/n$ are used in this equation, as shown.

In Eqs. (10 and (11) below we show how we can further modify this new version of the de Broglie wavelength equation to result in these four new equations as revealed below now allowing us, for the first time ever in the history of Quantum Mechanics, to mathematically interconnect both orbital velocity and time dilation to atomic structure.

$$\lambda_{o[n]} = \frac{2hc}{m_e v_{o[n]}^2} = \frac{2h}{m_e c (1 - \Delta t_{[n]}^2)} \quad (10)$$

$$\lambda_{EP} = \frac{2hc}{m_e (v_{o[n-in]}^2 - v_{o[n-out]}^2)} = \frac{2h}{m_e c (\Delta t_{[n-out]}^2 - \Delta t_{[n-in]}^2)} \quad (11)$$

As shown, we find we are now able to use this equation to correctly calculate the value of the wavelength of any of the atom’s orbits using the specified orbit’s velocity $v_{o[n]}$ as shown.

We can also calculate the correct value of these orbital wavelengths of the atom with this equation using the time dilation of that specified orbit $\Delta t_{[n]}$, as calculated by substituting the orbital velocity of the specified orbit into the Fitzgerald Formula. We then substitute this time dilation corresponding to that orbit into this equation to again calculate the correct value of the orbit’s wavelength. The center term in (11) shows how the “difference” of the orbital velocity of the outer orbit subtracted from the orbital velocity of the inner orbit correctly calculates the wavelength of a photon λ_{EP} , emitted by an electron “down-jumping” orbits within the atom. The last term in (11) shows how to correctly calculate the wavelength of a photon emitted by an electron “down-jumping” orbits, using the “difference” of the time dilation of the inner orbit subtracted from that of the outer orbit.

We find it is easy to prove the validity of these two equations, as shown in Eq. (11), calculating the wavelength of a photon emitted from an electron as it “down-jumps” orbits, as we now substitute in the time dilation of the third, or [n3], orbit (the orbit the electron “down-jumps” from), and the time dilation of the second, or [n2], orbit (the orbit the electron “down-jumps” to), into the equation as shown in Fig. 7-4. Using a time dilations of $\Delta t_{[n3]} = 0.9999970416 \text{ sec}$ and $\Delta t_{[n2]} = 0.9999933436 \text{ sec}$ we calculate the wavelength for this emitted photon to be 656 nanometers (RED), which is known by experiment to be the correct wavelength of this photon as emitted from an electron “down-jumping” from the third to the second orbit within the atom.

8. Corrected de Broglie Wavelength Equation

To now understand why this new “mass decrease” of Reality Physics does work to produce the correct answers mathematically describing both the known values of the orbital wavelengths of the atom, and the wavelengths of photons emitted from electrons as they “down-jump” orbits within the atom, whereas the “mass increase” of Relativity cannot, we go back to our original de Broglie wavelength equation $\lambda_{o[n1]} = h/mv_o$. As illustrated in Fig. 8 we find we can calculate the correct value of the wavelength of the [n1] orbit of the atom using this de Broglie wavelength equation, if we use the correct values for the “mass decrease” due to velocity, rather than a “mass increase”, in this equation as calculated by Reality Physics as shown.

$$m_{o[n1]} = \frac{h}{\lambda_{o[n1]} c} = \frac{m_e v_{o[n1]}^2}{2c^2} = \frac{h}{\lambda_{o[n1]} c} = 2.452436 \times 10^{-35} \text{ kg} \quad (12)$$

$$\lambda_{o[n1]} = \frac{h}{m_{o[n1]} c} = 9.11263687257 \times 10^{-8} \text{ m} \quad (13)$$

Substituting in the mass of the [n1] orbit: $m_{o[n1]}$, as calculated using this new “mass decrease” equation of Reality Physics, as shown in Eq. (12), into this “corrected” de Broglie wavelength equation, as shown in Eq. (13), we find we now calculate the correct value for the wavelength of the [n1] orbit as shown. What this now demonstrates to us is the fact that, as revealed here by Reality Physics, all fermion subatomic particles are actually composed of: “the angular momentum of photon spin rotating at the speed of time (light) to continually form both the mass, and the physical configuration, of the fermion”.

We can observe, as we look at the denominator on the right hand side of this equation as shown in Eq. (13), how we calculate this “subtracted amount of angular momentum” used to form the [n1] orbit of the atom by multiplying the: “total amount of angular momentum” usually used to form a “still” electron (where its photon spin velocity would equal c), by the amount of mass subtracted from, or “siphoned-off” from, a “still” electron, due to the “mass decrease” as incurred due to orbital velocity: $m_{o[n1]}$, as mathematically described by Reality Physics. By now dividing this “subtracted amount of angular momentum * ” into Plank’s Constant, we obtain the correct value of this wavelength of the [n1] orbit, as shown on the right hand side of Eq. (13) above.

We find we can calculate the correct known value for the wavelength of all of the atom’s orbits using this new “corrected” de Broglie wavelength equation of Reality Physics, $\lambda_{o[n1]} = h/m_{o[n1]} c$ by simply substituting in the orbital mass: $m_{o[n]}$ of the specified orbit (which we can calculate using Eq. (10), into the denominator on the right hand side. This ability we now have to accomplish this is directly due to the fact that we are now defining fermion subatomic particles as “active” entities (photons spinning at the speed of time) continually being formed by the same continual action that is continually forming the inertial reference background within which they exist. By doing this we now create the ability of the fermion particle to directly communicate the action of its v_o to the action of the outward motion of time with space continually forming the inertial reference background of the universe, as mathematically described by the Mechanism of

Motion, further causing a “mass decrease” to occur in the fermion due to its v_o .

As was stated earlier, this new ability of Reality Physics to now mathematically interconnect the orbital velocity of the electron $v_o[n]$ to the amount of mass “subtracted” from the total amount of mass of a “still” electron and then used to form the atom’s orbit: $m_o[n]$, is the **KEY** to our now being able to reveal how orbital velocity is directly responsible for configuring the atom’s orbital structure. In Fig. 9 below we reveal the mathematical path of Reality Physics interconnecting the velocity of the orbit to the amount of mass used to form this orbit, and then used to in the corrected de Broglie Equation to calculate the value of the wavelength of the atom’s orbit.

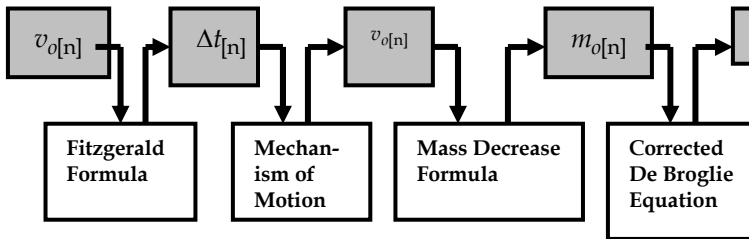


Fig. 9. The Mechanism of Motion

9. Conclusion

So from what has been revealed here we find we are now able, for the first time ever in the entire history of theoretical physics, to expose the real reason explaining why Special Relativity will never be compatible with Quantum Mechanics. It is because both Special Relativity and current Quantum Mechanics incorrectly assume a “static” inertial reference background as existing within the universe. This means that, according to the Light Cone Diagram of Special Relativity, the “stationary” position within the “still” frame of reference from which all other inertial motion is measured is a “static” configuration that simply passes “linearly” from one moment to the next in time. Consequently, this means there is no possible way for it to “interact” with fermion subatomic particles since there is no “continual action” occurring within the background reference with respect to which the “action” within the particle could be compared. Similarly, since current Quantum Mechanics defines all fermion subatomic particles as “static”, “billiard ball” type entities, where electrons must obey: “The Uncertainty Principle”, then, even if they did exist in an “active” inertial reference background, there would be no possible way they could “communicate” with it because they contain no internal action of their own. So as we observe, Theoretical Physicists could try for the next 2500 years to connect Special Relativity to Quantum Mechanics and they would find themselves to be no closer to accomplishing this than they are right now.

By our now understanding how Reality Physics defines both the inertial reference background within which the fermion subatomic particles exist, and the particles themselves, as “active” entities, as opposed to the “static” configuration they are miss assumed to be today by theoretical physics academia, we find we are now able to observe how the same “action” continually creating the inertial reference background within the universe also continually “drives” the particle spin of the fermion. Since ac-

cording to Reality Physics: “Light always travels at the speed of Time, and fermions are composed of photons that must always spin at the speed of light, then as the fermion increases its vector velocity, it must now experience a time dilation to occur. Accordingly, since light must always travel at the speed of time and the speed of time is now slowing down because of the time dilation due to the fermion’s vector velocity v_o , the photon spinning within the fermion must now slow its rate of spin v_p at this same rate time dilation occurs. Because, according to Reality Physics, photon spin v_p is what actually creates both the mass and the physical configuration of the fermion to begin with, this now causes the fermion to simultaneously also experience a “mass decrease” as its vector velocity increases.

This was mathematically described by: “The Mechanism of Motion”, as introduced back in Fig. 4, as we illustrated how some of this internal “photon spin action within the fermion v_p ” is physically “transformed” into the exterior, or vector, velocity of the fermion v_o , as it moves with respect to the still position as defined by the inertial reference background of the universe. Further we also found that by using this new concept of “mass decrease” due to vector velocity, we could calculate the exact amount of mass subtracted from a “still” electron and then used to form any of the orbits within the atom as shown in Eq. (10). We also found we could easily prove the validity of this new “mass decrease” Equation of Reality Physics as we substituted this amount of “mass decrease”, due to orbital velocity, into the corrected de Broglie Equation as shown in Eq. (13) to now calculate the correct value for the wavelength of that specified orbit within the atom.

This ability of Reality Physics to demonstrate how this new concept of an “active” universe now enables us to mathematically interconnect space-time physics directly to Quantum Mechanics using this new concept of “mass decrease”, as opposed to the “mass increase” of Special Relativity, also further reveals to us how it is completely impossible for current thought in theoretical physics to ever accomplish this since they incorrectly define the universe to be: “a static condition simply existing linearly from one moment to the next in time”. It is this incorrect 2500 year old mis-assumption defining the universe, and the fermion subatomic particles that exist within it as “static” entities, that has, for the past three-quarters of a century, created the “road-block” directly responsible for preventing theoretical physics Academia from being able to interconnect Relativity (space-time physics) to atomic structure (Quantum Mechanics). Let us hope that this new discovery of Reality Physics, describing both the universe, and the fermion subatomic particles existing within it, as “active” entities, allows us to see beyond this 2500 year old miss assumption, now finally revealing to us that there is no longer any need to continue to try and interconnect space-time physics to Quantum Mechanics since, as has been conclusively proven by Reality Physics, they have always been a part of the same internally consistent mathematical system that will hopefully lead us into a bright new future for physics.

References

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