the general science journal

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De Broglie Wavelength and McMahon field theory

Abstract: Here, I use the concepts of the McMahon field theory to explain the mechanics of the De Broglie wavelength, and how it compares to conventional wavelength. Also, I use the work of de Broglie to verify the McMahon field theory.

Theory:

Special relativity applies to particles or masses moving close to the speed of light, which is the case for electrons moving as electrical current in a wire, as shown in the paper: **McMahon, C.R. (2015)** *"Electron velocity through a conductor*". Thus, special relativity applies to such particles, which allows us to observe special relativity in the real world as the magnetic field. Thus, through the magnetic field, McMahon field theory explains that particles moving near the speed of light appear as energy fields.

First, allow me to present a new understanding of energy, as already presented in McMahon field theory: Theoretical unification of relativity and quantum physics, thus methods to generate gravity and time. (2010).

This theory begins explaining the nature of light using an example of electrons moving through an electrical wire. Since the velocity of these electrons can be considered as at or near the speed of light, we can assume that they are affected by both time dilation and length contraction, effects predicted by Albert Einstein's famous theory of relativity.

Let's perform a thought experiment: Let's imagine a stretched out spring. Let the straight stretched out spring represent the path of electrons moving in an electrical wire. Now, since length contraction occurs because of relativity, the electron path is affected. As a result, the straight line path of the electron is compressed. This is the same as allowing a spring to begin to recoil. As a result, the straight line path of the electron begins to become coiled. I call this primary coiling. This is the effect length contraction has on mass as is approaches the speed of light and is dilated by length contraction. When a particle such as an electron reaches the speed of light, it becomes fully coiled or fully compressed, and Einsteins length contraction and time dilation equations become equal to zero and "undefined". This particle, now moves as a circle at the speed of light in the same direction it was before. If this particle tries to move faster still, it experiences secondary coiling. Ie: the coil coils upon itself, becoming a secondary coil. This is why energy is observed on an Oscilloscope as waves: we are simply looking at a side on view of what are actually 3-dimentional coiled coils or secondary coils. Waves are not simply 2 dimensional; rather, they are 3 dimensional secondary coils. It was easy for scientists of the past to assume waves were 2 dimensional in nature, as the dimensional calculations and drawings for relativity were carried out on flat pieces of paper which are also 2-dimentional. The human imagination, however, is able to perform calculations in multiple dimensions. Now, let's consider the effect of time dilation.

When an electron approaches the speed of light, according to relativity, it undergoes time dilation. What does this actually mean? I believe this is the effect: time dilation allows a body, particle or mass- in combination with the effects of length contraction, to exist in multiple places at the same time. This is why we observe magnetic flux. Electricity is composed of high speed electrons, so these electrons would be affected by time dilation and length contraction. As a result, the electron is both inside the electrical wire, and orbiting around the wire as magnetic flux (because of full primary coiling at the speed of light). Magnetic flux is the combined effect of length contraction and time dilation on the electron. The coiling effect is why electrical wires carrying electricity exhibit magnetic fields- the electron path is compressed into coils, and time dilation permits the electron to occupy multiple positions at the same time, which is why magnetic flux is detected as coils at different distances from the electrical wire. Please refer to figure 1 on the following page.

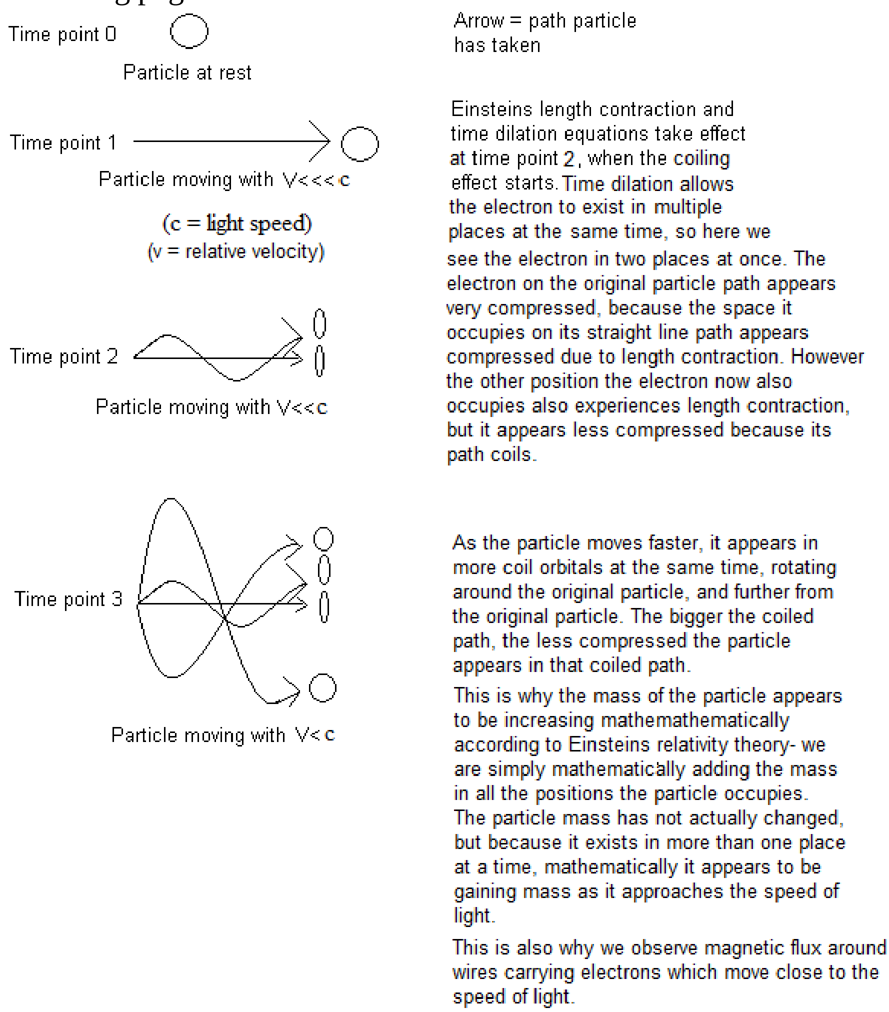

Figure 1: particle relativity- Taken from the McMahon field theory (2010): What we observe as relative stationary observers of a particle as it travels faster.

However- the McMahon field theory goes on to explain much more, including the electromagnetic spectrum- hence light, which I will briefly cover now. Refer to figure 2 below:

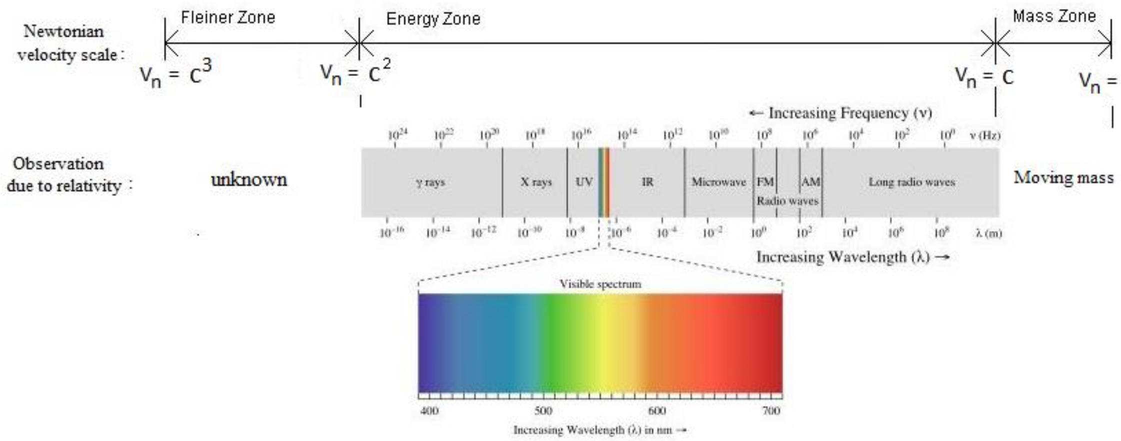

Figure 2: How an electron is observed at different Newtonian speeds: modified from the McMahon field theory (2010): Here, we see that as an electron moves with increasing speed according to Newtonian physics (although the speed we observe is dilated back to that of light because of relativity as in figure 4) and becomes a coil because of relativity, as the electron speed is increasingly dilated back to light it is observed as different types of energy. This is because the electron becomes more coiled (more velocity dilation) as it tries to move faster, so we say that the frequency increases and wavelength decreases. In this diagram, let the value of true, un-dilated Newtonian velocity due to relativity be Vn as in figure 4, and let the velocity of light be equal to c. I believe that electrons are on the boarder of mass and energy, so in the diagram above electricity would be at the point where Vn=c. If the electrons in electricity tried to move faster, they would be compressed further into a secondary coil to become long radio waves, then AM radio waves, then FM radio waves, then microwaves, then Infra-red (IR), then X-rays, then y-rays. Hence, the electromagnetic spectrum is nothing more than an electron dilated by different magnitudes of relativity. Other particles, such as protons and neutrons, will also have their own spectrums, which may be different or similar to that of the electron.

From Figure 2, we see that if electricity or electrons in an electrical wire tried to move faster, the electrons path would be compressed further, making it coil upon itself again creating secondary coiling or a coiled coil path. Hence it would be further affected by length contraction. As a result, the electron will be observed as different forms of energy. In the figure above, we see that an electron is considered as mass when it has an undilated velocity or Newtonian velocity between 0 and c. If an electron tries to travel faster than this, it enters the energy zone, where the electron path becomes fully compressed and moves as a full primary coil or circle which undergoes secondary coiling or coils upon itself. A particle moving as energy or a secondary coil has an un-dilated velocity or Newtonian velocity range between c and c^2. In this range, the particle now experiences secondary coiling, so the coil now coils upon itself. Figure 3, taken from the McMahon field theory (2010), also explains what happens if an electron tries to move faster than C^2: The secondary coiled or coiled coil path becomes overly dilated, and the length contraction effect becomes so great that the particle now undergoes tertiary coiling- ie it becomes a coiled coil coil. As a result, because of excess coiling the particle becomes undetectable or unidentifiable. These undetectable states are what are known as dark matter and/or dark energy. See figure 3.

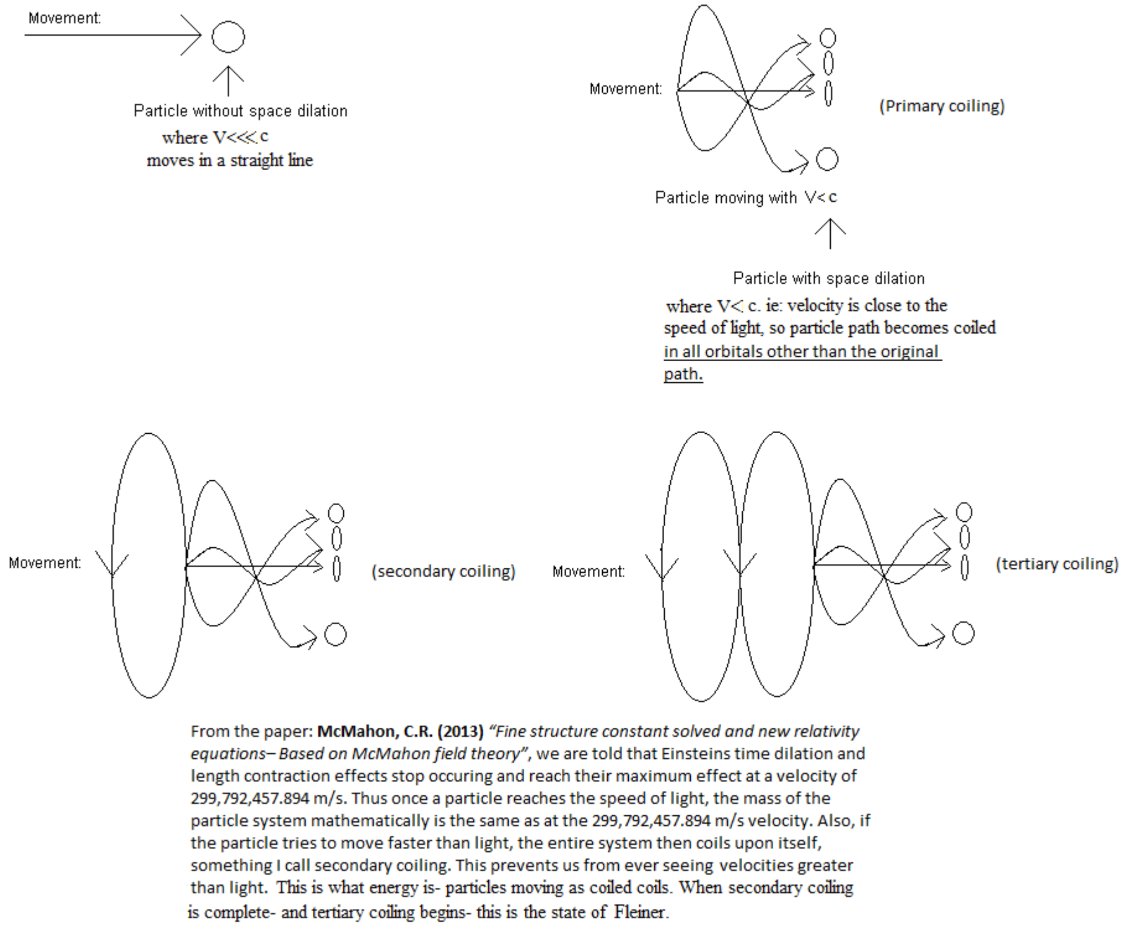

Figure 3: The actual affect Einsteins relativity theory has on the movement of a particle, causing it to first appear as mass during primary coiling, then energy during secondary coiling, and Fleiner during tertiary coiling, during which it becomes dark matter or dark energy. Einstein was unaware of this.

Now, we must consider conventional science of the current day. Conventional oscilloscopes are used for energy only. Therefore, the "waves" we see on oscilloscopes are in fact, the side views of secondary coils and higher degrees of coiling. Once full primary coiling is achieved, the fully compressed primary coil remains as it is, but with more momentum it begins to coil upon itself, which is secondary coiling. Thus, "wavelength" and "frequency" according to the science of this day are measurements from the reference point where a full primary coil forms.

Lets consider McMahon field theory (2010). From the McMahon field theory, we realize that magnetic flux arises due to the length contraction and time dilation of the electron. We observe this flux differently depending on the Newtonian velocity of the electron (ie: the electromagnetic spectrum in figure 2). Keep in mind that relativity prevents observers from measuring the true velocity (Newtonian velocity) of the electron- relativity dilates velocities greater than light back down to the speed of light. Refer to figure 4 below.

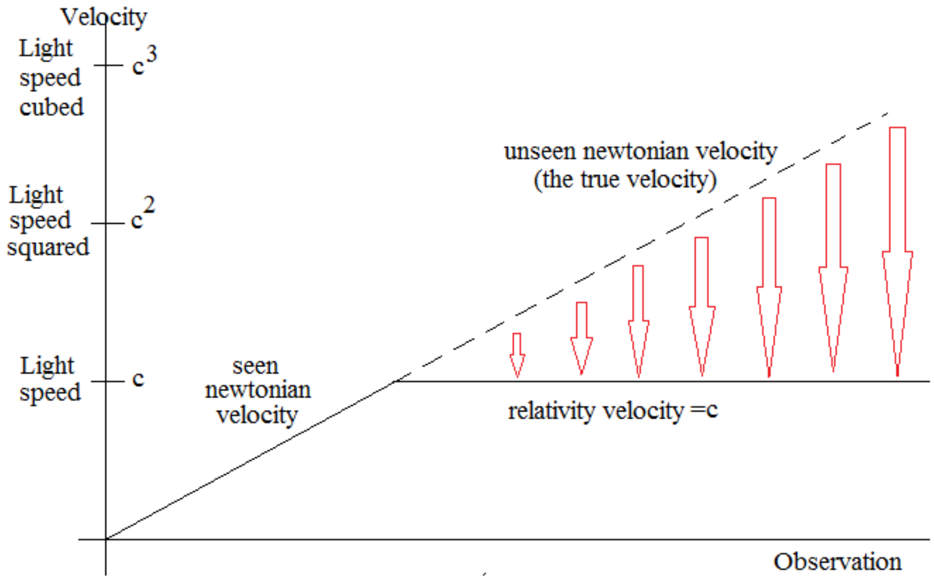

Figure 4: The dilation of the true velocity or Newtonian velocity by relativity. Here, we see that the dotted line represents the true velocity of particles travelling faster than the speed of light, but relativity dilates this velocity down to the speed of light which coils the path of the particle, so observers don't ever see particles travelling faster than light. The degree of velocity dilation is represented by the red arrows. Hence, the solid lines represent that which is seen, but the dotted line, which is the true velocity above light, is unseen due to dilation by relativity.

Now, figures 1 and 3 depict the length contraction effect on the electron, but the length contraction effect occurs simultaneously with the time dilation effect, which causes the electron to exist in multiple places along-side itself at the same time. As a result, as a particle approaches the speed of light, the original electron remains in its original linear position, but it also exists tangentially to itself, which rotates around its original self.

From figure 5 in A), we see a stationary electron in a wire. If this electron moves to the other end of the wire at speeds much less than N, or C for us on Earth, the particle obeys the laws of Newtonian Physics. In B), we see our electron now moves through the wire with a speed of c, so as discussed earlier it undergoes full primary coiling, which results in the appearance of a magnetic field (the magnetic field is the primary coiling) so it obeys the laws of relativity. From Einstein, when the electron moves at a speed where V=c, t'= undefined (time dilation = undefined) and s'= 0 (length compressed to zero). This means that to us, the particle no longer experiences time as in Newtonian physics, and now moves as a full primary coil or circle which propagates along with a speed equal to c. Because t'=undefined, the electron is able to be in more than one place at a time. Because s'=0, the particle is seen to move as a full primary coil or circle, which moves along the wire, always with a relative speed equal to c. this means that the electron is both inside the wire, and orbiting around the wire in multiple orbits multiple distances from the wire at the same time.
These "ghost or flux particles" which are all one particle that exist in different places at the same time, are responsible for the strange observations and theories made in quantum physics. These theories arise from the fact that ghost particles appear in their experiments

involving high speed particles, such as the double slit experiment, and physicists cannot explain what they observe.

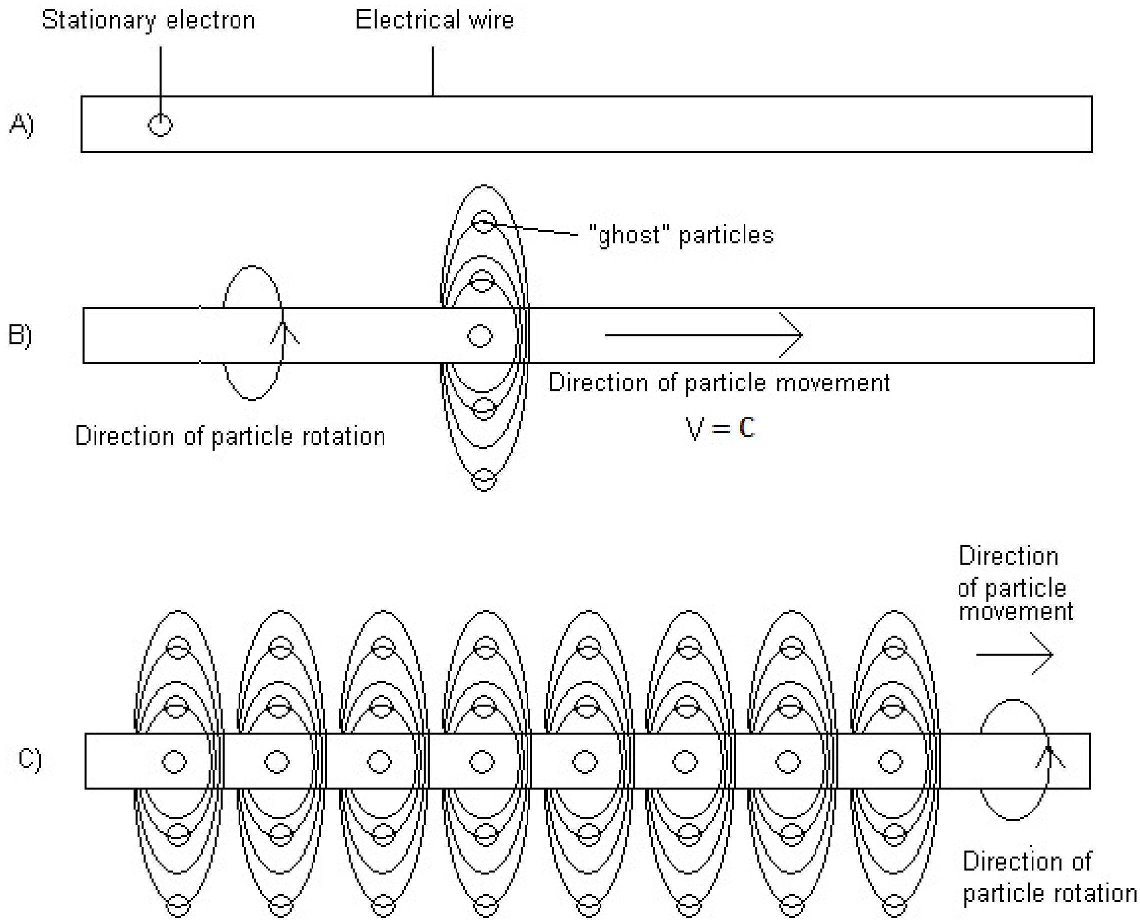

Figure 5: In A), we see a stationary electron in a wire. If this electron moves through the wire at speeds far below c, then the particle simply moves in a straight line through the wire, and no magnetic field is observed.
In B), our electron is now moving at c, so space dilation is occurring, causing the electron to now move as a circle (full primary coil) rather than in a straight line. As a result, the entire primary coil is always seen to move at a relative speed of c. However, the particle is experiencing maximum time dilation, t'=undefined. As a result, relative to us as stationary observers, the electron is in more than one place at the same time. In fact, the electron is both inside the wire, and orbiting around it in multiple orbital positions at the same time. As a result, we observe a magnetic field around the wire, which is just the electron orbiting around the outside of the wire. This is explained in section II table 1 of the McMahon field theory. When a particle is seen in more than one place at the same time, I call this a ghost or flux particle.
In C), the situation described in B) is exactly what is observed when electricity moves through an electrical wire. Note that conventional current moves in the opposite direction to electron flow.

From figure 5, we see that the original moving electrons we observe as electricity still exist inside the wire, but the length contraction and time dilation effects allow these electrons to simultaneously exist tangentially to their direction of movement outside the wire.

De Broglie Wavelength

According to **Wikipedia (2015)** *Louis De Broglie*, De Broglie is quoted as stating that: "The fundamental idea of [my 1924 thesis] was the following: The fact that, following Einstein's introduction of photons in light waves, one knew that light contains particles which are concentrations of energy incorporated into the wave, suggests that all particles, like the electron, must be transported by a wave into which it is incorporated... My essential idea was to extend to all particles the coexistence of waves and particles discovered by Einstein in 1905 in the case of light and photons." "With every particle of matter with mass (m) and velocity (v) a real wave must be 'associated'", related to the momentum by the equation:

$$\lambda = \frac{h}{p} = \frac{h}{mv}\sqrt{1 - \frac{v^2}{c^2}}$$

……….Equation (1

where λ is the De Broglie wavelength, h is the Planck constant, p is the momentum, m is the rest mass, v is the velocity and c is the speed of light in a vacuum."

Figure 1, from the McMahon field theory (2010) we see perfect agreement with De Broglies idea: That energy moves as waves which are made of particles. From figure 1, we see that as a particle approaches the speed of light, Einsteins time dilation allows said particle to exist in multiple places at the same time. The length contraction effect causes the particle trajectory to coil in all locations occupied by the particle except on the particles original straight line path. ***This 3-dimensional coiling in figure 1, when viewed from the side, appears wave-like in 2-dimentions.*** Thus, McMahon field theory (2010) finally unifies quantum physics and relativity and explains why particles have properties of waves, and why waves have properties of particles. McMahon field theory (2010) finally explains the reason thus mechanism by which particles appear as waves and vice versa.

McMahon field theory (2010) takes the idea further, and also shows that the entire electromagnetic spectrum is composed electron particles undergoing secondary coiling, in that since the speed of light is the speed limit of relativity, newtonian velocities above light are dilated back down to light speed, which results in secondary coiling, whereby the entire system coils upon itself. Secondary coiling is what conventional physics refers to as wavelength and frequency. This is also why all energies on the electromagnetic spectrum move at the speed of light.

De Broglies idea, however, refers only to the primary coiling that occurs as a particle approaches the speed of light, not to secondary coiling and higher order coiling states. Thus De Broglies wavelength appears to be an average of all the coil wavelengths when viewed from the side in 2-dimentions for primary coiling only. Conventional wavelength refers to secondary coiling and higher coiling states which is different to the De Broglie wavelength. In equation 2 below, De Broglie uses momentum (p) for particles experiencing primary coiling only. I will now derive an equation to express momentum for particles which appear as energy, thus as energy forms of the electromagnetic spectrum, thus have Newtonian velocity (Vn) values greater than c as in figures 2 and 4.

Re-arranging equation 1 leads us to:

$$p = \frac{h}{\lambda} = \frac{mv}{\sqrt{1 - \frac{v^2}{c^2}}}$$

………. Equation (2

where λ is the De Broglie wavelength, h is the Planck constant, p is the momentum, m is the rest mass, v is the velocity and c is the speed of light in a vacuum."

We see from figure 4 that equation 2 applies for velocities between 0 m/s and the speed of light. However, from the paper: **McMahon, C.R. (2013)** *"Fine structure constant solved and new relativity equations– Based on McMahon field theory".* The general science journal, we see that Einsteins relativity effects have a limit- more specifically in that Einsteins time dilation effect stops occurring at a velocity of 299,792,457.894 m/s. As a result, the value of v in the denominator (bottom line) of equation 2 can only take on values between 0 m/s and 299,792,457.894 m/s. If v is actually greater than 299,792,457.894 m/s, simply take v in the denominator as 299,792,457.894 m/s. This prevents infinite momentum from occurring.
The value of v in the numerator (top line) of equation 2 is a different story: From figure 4, we see that if Einsteins relativity theory is ignored, velocities above light (the dashed line in figure 4) would not be dilated back down to the speed of light (the solid horizontal line in figure 4). The diagonal line which starts off as solid but becomes dashed in figure 4 is referred to as the Newtonian velocity (Vn), which is the velocity that would be observed under newtonian physics if relativity theory is ignored. Thus, v in the numerator of equation 2 should be taken as Vn. Thus equation 2, considering primary, secondary and higher order coiling, given conventional wavelength becomes:

$$p = \frac{h}{\lambda} + m_{(rel)}c = \frac{m\,\mathrm{Vn}}{\sqrt{1 - \frac{v^2}{c^2}}}$$

………. Equation (3

Where:
P = momentum (m/s)
h = plancks constant ($6.6260695729 \times 10^{-34}$ $Kg.M^2/s$)
λ = conventional wavelength (m)
m = rest mass (kg)
$m_{(rel)}$ = mass under special relativity
c = the speed of light (299,792,458 m/s)

v = observable velocity, where if v is greater than 299,792,457.894 m/s, it is simply taken as 299,792,457.894 m/s.
Vn = the Newtonian velocity (m/s), as in figure 4.

From the paper: **McMahon, C.R. (2013)** *"Rydbergs constant solved".* The general science journal, we are presented with the derivation of the equation:

$$\frac{c}{\lambda_{vac}} = F = R(Vn - c)$$
………. Equation (4

Where:
f = frequency (s^{-1})
λ = conventional wavelength (m)
c = the speed of light (299,792,458 m/s)
R = Rydbergs constant = 1.0973731568539(55) x 10^7 M^{-1}
Vn = the Newtonian velocity (m/s) as in figure 4.

Re arranging equation 4 gives us:

$$Vn = \frac{F}{R} + c$$
……….Equation (5

Inserting equation 5 into equation 3 gives us:

$$p = \frac{h}{\lambda} + m_{(rel)}c = \frac{m\,Vn}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$= \frac{m\left(\frac{F}{R} + c\right)}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$= \frac{m\,c}{\sqrt{1 - \frac{v^2}{c^2}}} + \frac{m\left(\frac{F}{R}\right)}{\sqrt{1 - \frac{v^2}{c^2}}}$$
……….Equation (6

Primary coil momentum component

Secondary coil (and higher order coiling) momentum component, (which we observe as changes in frequency)

Where:
P = momentum (m/s)
R = Rydbergs constant = 1.0973731568539(55) x 10^7 M^{-1}

h = plancks constant (6.6260695729 x 10^{-34} Kg.M^2/s)
λ = conventional wavelength (m)
f = conventional frequency (s^{-1})
m = rest mass (kg)
$m_{(rel)}$ = mass under special relativity (kg)
v = observable velocity, where if v is greater than 299,792,457.894 m/s, it is simply taken as 299,792,457.894 m/s.
c = the speed of light (299,792,458 m/s)

Equation 6 holds for momentum values for particles appearing as energy forms of the electromagnetic spectrum, and higher energies. Thus equation 6 holds for all Vn values greater than or equal to light, or 299,792,458 m/s. To easily convert equation 6 for use with slower Vn values (primary coiling) for particles travelling much slower than light, and for use with the De Broglie wavelength, we must realize two simple things. Firstly, we must ignore the secondary and higher order coiling component of equation 6, as this is used for higher order coiling. Secondly, we must realize that since the velocity we observe is not equal to light anymore as we are considering particles with velocities much less than light, we must replace the Mc term in equation 6 with Mv. Thus, comparing momentum in terms of the De Broglie wavelength which holds for primary coiling only, against momentum in terms of conventional wavelength which holds for secondary and higher order coiling only (eg, secondary coiling, tertiary coiling, etc), we have:

$$p = \underbrace{\frac{h}{\lambda}}_{\text{De Broglie wavelength}} = \underbrace{\frac{mv}{\sqrt{1-\frac{v^2}{c^2}}}}_{\text{Primary coil momentum component}} \qquad \text{..........Equation (7}$$

$$p = \underbrace{\frac{h}{\lambda}}_{\text{conventional wavelength}} + m_{(rel)}c = \underbrace{\frac{mc}{\sqrt{1-\frac{v^2}{c^2}}}}_{\text{Primary coil momentum component}} + \underbrace{\frac{m\left(\frac{F}{R}\right)}{\sqrt{1-\frac{v^2}{c^2}}}}_{\text{Secondary coil (and higher order coiling) momentum component, (which we observe as changes in frequency)}}$$

Where:
P = momentum (m/s)
R = Rydbergs constant = 1.0973731568539(55) x 10^7 M^{-1}
h = plancks constant (6.6260695729 x 10^{-34} Kg.M^2/s)

λ conventional = conventional wavelength (m)
λ De Broglie = De Broglie wavelength (m)
f = conventional frequency (s^{-1})
m = rest mass (Kg)
v = observable velocity, where if v is greater than 299,792,457.894 m/s, it is simply taken as 299,792,457.894 m/s.
Vn = The Newtonian velocity, which in the case of equation 7 for primary coiling only is any velocity less than light or equal to light.
c = the speed of light (299,792,458 m/s)

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