the general science journal

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The McMahon equations

Abstract: Here, I use the McMahon field theory to theoretically convert the Newtonian velocity of an electron to what would be observed under the laws of relativity. This is done using the McMahon effect equation for the electron. Thus, the equations in this paper can theoretically be used to describe the observable universe.

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

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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.

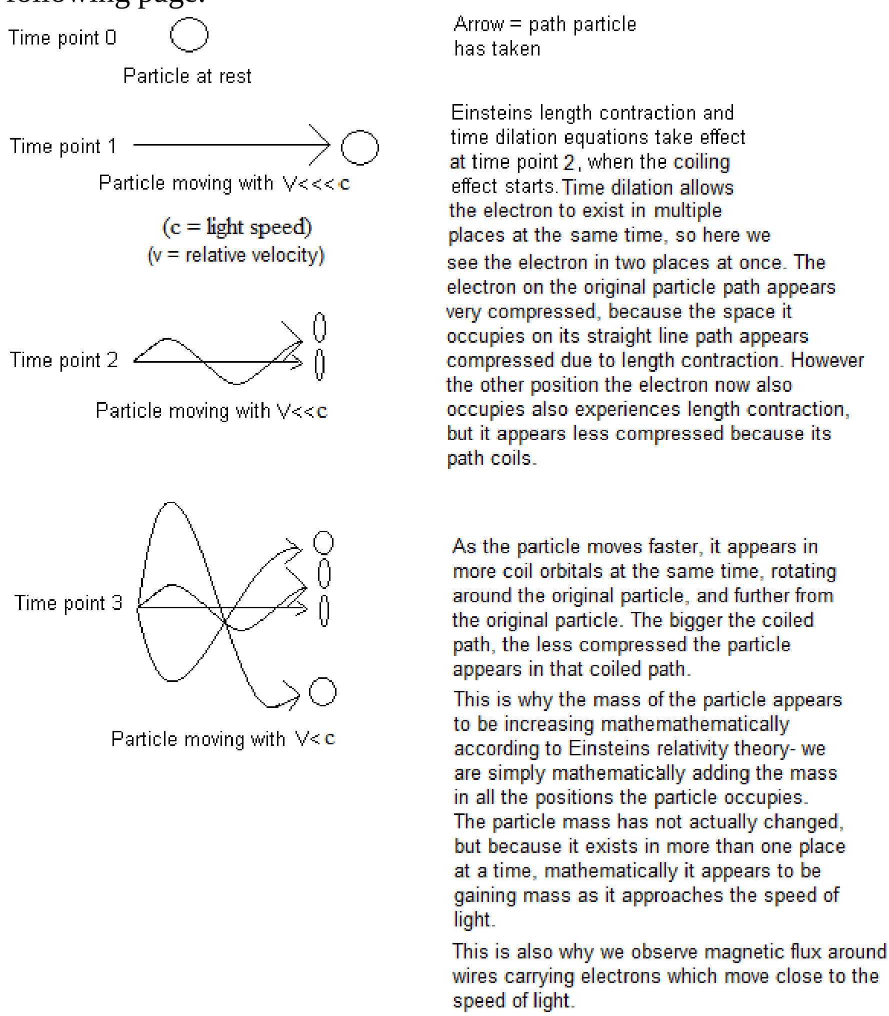


Figure 1: particle relativity- Taken from the McMahon field theory (2010): What we observe as relative stationary observers of a particle as it travels faster.

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:

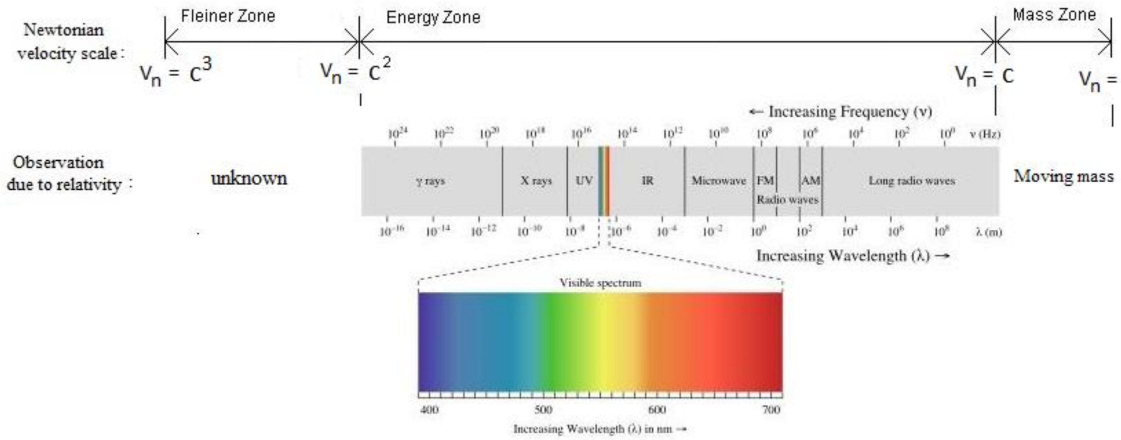


Figure 2: How an electron is observed at different Newtonian speeds: modified from the McMahon field theory (2010): Here, we see that as an electron moves with increasing speed according to Newtonian physics (although the speed we observe is dilated back to that of light because of relativity as in figure 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.

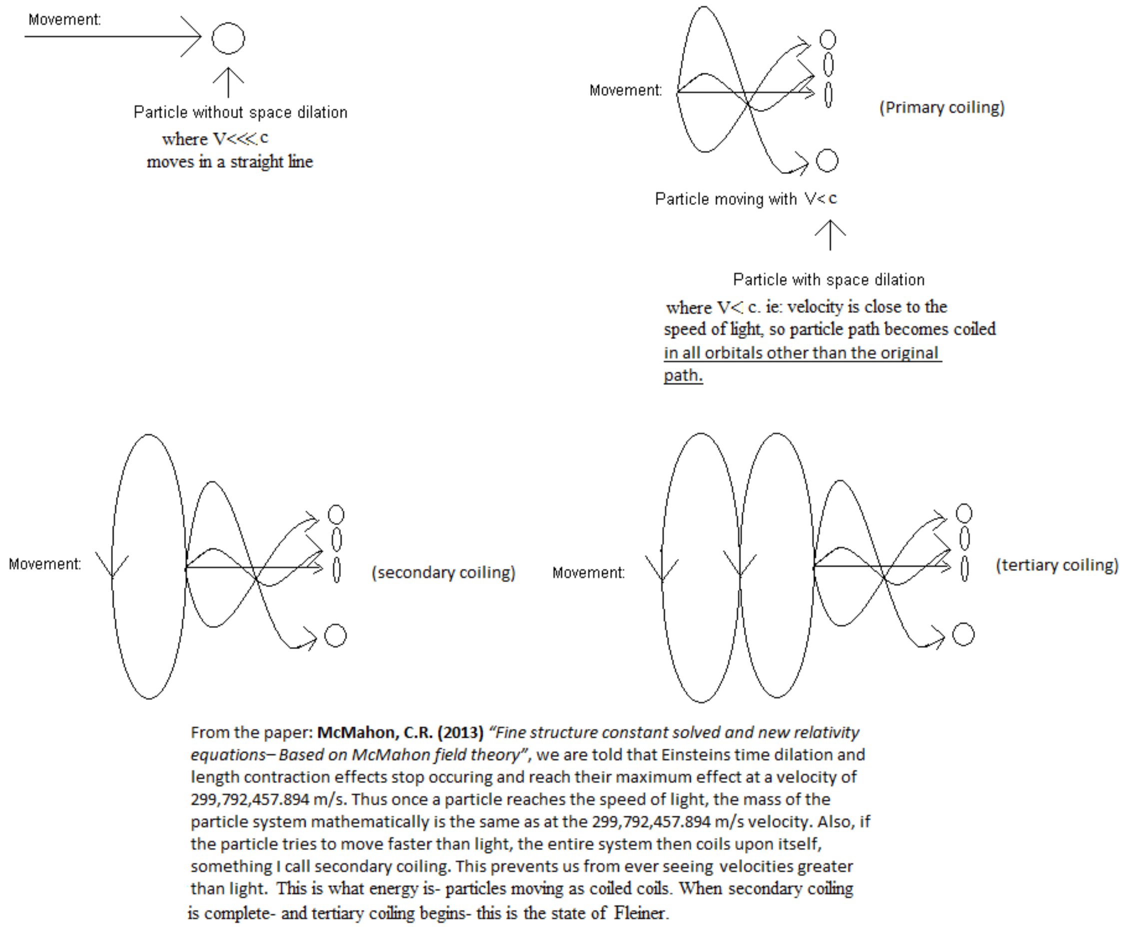


Figure 3: The actual affect Einsteins relativity theory has on the movement of a particle, causing it to first appear as mass during primary coiling, then energy during secondary coiling, and Fleiner during tertiary coiling, during which it becomes dark matter or dark energy. Einstein was unaware of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

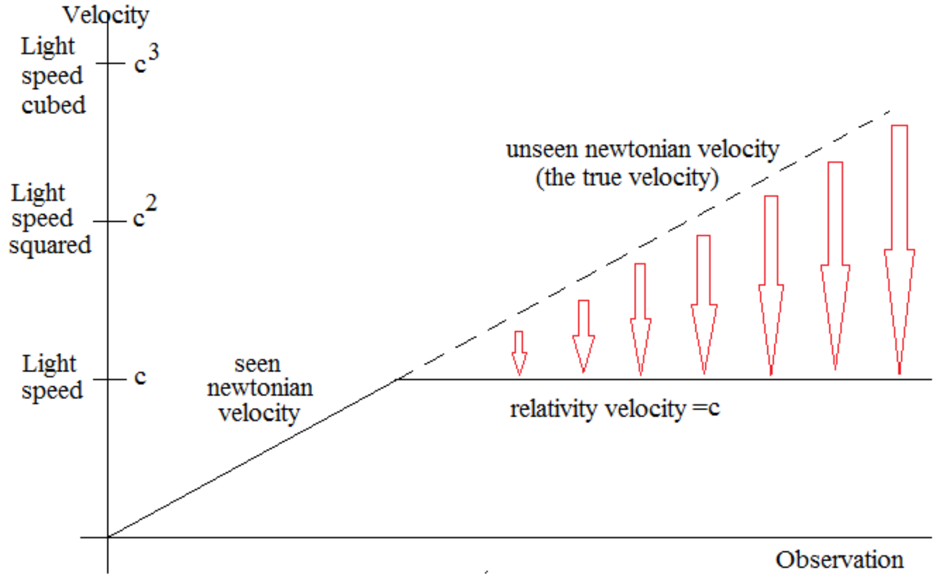


Figure 4: The dilation of the true velocity or Newtonian velocity by relativity. Here, we see that the dotted line represents the true velocity of particles travelling faster than the speed of light, but relativity dilates this velocity down to the speed of light which coils the path of the particle, 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.

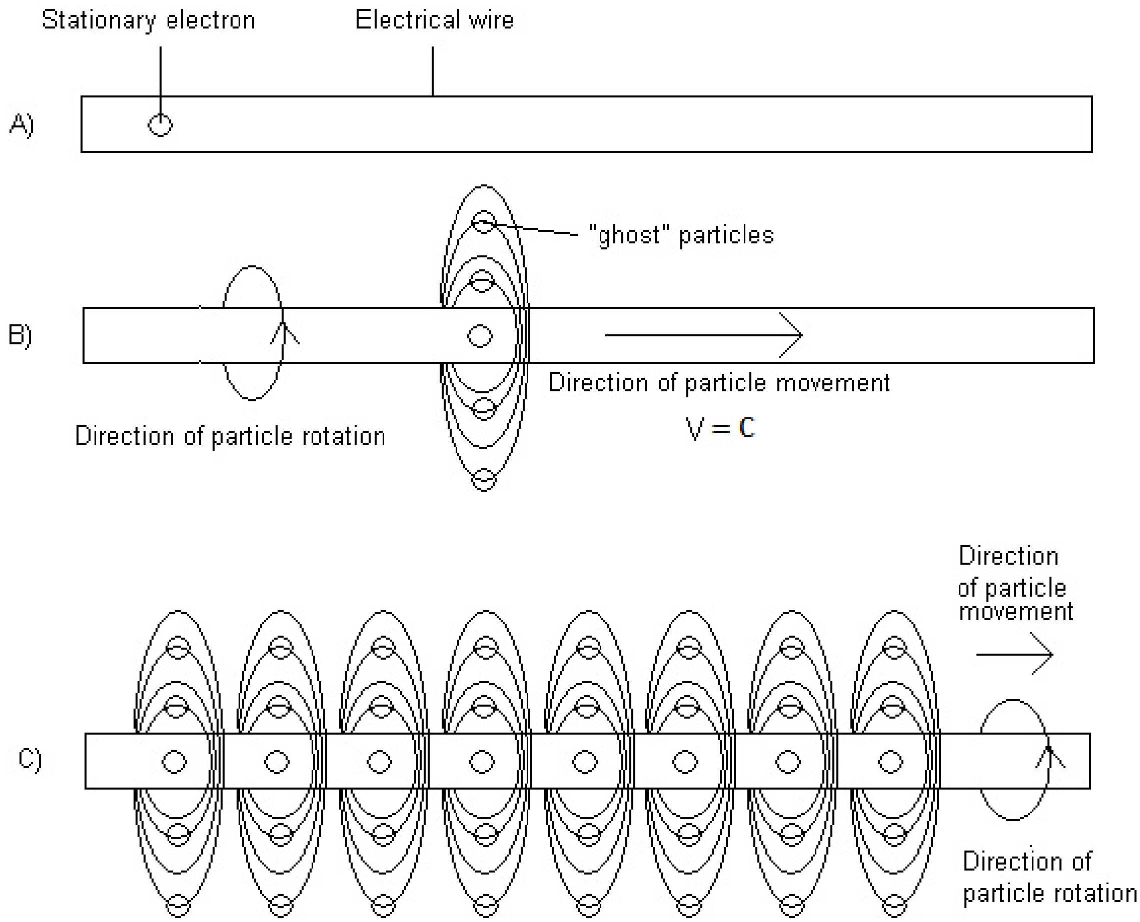


Figure 5: In A), we see a stationary electron in a wire. If this electron moves through the wire at speeds far below c, then the particle simply moves in a straight line through the wire, and no magnetic field is observed.
In B), our electron is now moving at c, so space dilation is occurring, causing 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. <u>Note that conventional current moves in the opposite direction to electron flow.</u>

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.

Using McMahon field theory, we can summarize all observable reality as we know it, which is composed of moving and stationary particles, with some simple equations I will present.

Now, I will discuss the "remaining available mass-to-energy converson formula", as presented in the papers: **McMahon, C.R. (2013)** *"Review of Einsteins E=Mc^2 papers- Einsteins own validation of the McMahon field theory"* The general science journal, and : **McMahon, C.R. (2013)** *"The McMahon equations"* The general science Journal.

From the paper "**McMahon, C.R. (2013)** *"Review of Einsteins E=Mc^2 papers- Einsteins own validation of the McMahon field theory"* The general science journal, we are presented with the derivation of the equation:

$$\text{Remaining available rest mass-to-energy conversion formula} = M_{rest}\, c^2 \sqrt{1 - \frac{v^2}{c^2}}$$

………. equation 1

Where:

Remaining available rest mass that can be converted into energy = Remaining rest mass-to-energy conversion formula (Kg(m^2/s^2))

M_{rest} = Rest mass (Kg)

v = observed velocity (m/s)

c = the speed of light (m/s)

This formula tells us, that as a particle approaches the speed of light, it is automatically converted into energy (coiling), so it's rest mass seems to decrease and becomes harder to detect. Thus, at the speed of light, particles appear massless, even though they actually do have mass. So as the relative velocity of the particle increases, more and more of the particles rest mass is automatically converted into energy. As a result, the "Remaining available rest mass that can be converted into energy" decreases. This is why equation 1 decreases in value as the relative velocity of the particle increases.

According to McMahon field theory, the equation E=hf applies to the energy in the electromagnetic spectrum. When frequency =0, E=hf becomes =0. Also, from McMahon field theory, the electromagnetic spectrum appears once Newtonian velocities above light are considered (unseen Newtonian velocities as in figure 4). We can therefore use the equation E=hf to derive an equation for masses with Newtonian velocities above light. To find an expression that relates frequency to Newtonian velocity, lets begin by considering the units of the equation E=hf.

E =hf has units = (Kg x m^2/s) x (1/s)

Now, h is a constant, known as Planck's constant. From the paper: **McMahon, C.R. (2012)** *"Calculating the true rest mass of an electron – Based on McMahon field theory."* <u>Planck's constant (h) = circular area covered by electron per second X electron</u>

rest mass. Since h is a constant, newtonian velocity must vary as frequency varies. We also see that frequency is a coiling measure, as when the Newtonian velocity (Vn) = c, frequency = 0. Thus, considering the paper **McMahon, C.R. (2013)** *"Rydbergs constant solved"* (which derives equation 2 below), and the fact that frequency is a coiling measure above the Newtonian speed of light, frequency can be theoretically expressed as:

$$f = R\,(V_n - c)$$

……….equation (2

where $V_n > c$, and

Where:
V_n = The Newtonian velocity (unseen, as in figure 4). (units = (m/s))
R = Rydberg constant = 1.097373156853955 x 10^7. units = (m^{-1})
c = speed of light = 299,792,458. units = (m/s)
f = frequency units = (1/s)

Thus, R turns Newtonian velocity into a coiling measure, and subtracting the speed of light ensures particles must have a relative Newtonian velocity greater than light to have a frequency. Multiplying by Plancks constant, thus gives the McMahon effect equation for the electron, which is simply:

$$E_{coiling} = h\,f = hR\,(V_n - c)$$

……….equation (3

Where the magnitude of $V_n \geq c$. If $V_n < c$, then the McMahon effect equation is negative, and is not equal to hf, and where:

R = Rydberg constant = 1.097373156853955 x 10^7. units = (m^{-1})
h = Plancks constant = $6.6260695729\times10^{-34}$ Kg (m^2/s)
f = frequency = [R](V_n - C). units = (s^{-1}), Where $V_n \geq c$
c = speed of light = 299,792,458. units = (m/s)
V_n = The Newtonian velocity, as in figure 4. (units = (m/s))

Note 1:
For the mass state, $V_n \leq c$, and the particle path becomes coiled only to the first degree- namely around the straight line path. As a result, the McMahon effect equation is negative (or 0).
For the energy state, $c < V_n \leq c^2$, and the particle path moves as a coiled coil, so its coiled to the second degree, As a result, the McMahon effect equation is positive.
For the Fleiner state, $c^2 < V_n \leq c^3$, and the particle path moves as a coiled coil coil, so its coiled to the third degree. As a result, the McMahon effect equation is positive.
For the Kelso state, $c^3 < V_n \leq c^4$, and the particle path moves as a coiled coil coil coil, so its coiled to the forth degree. As a result, the McMahon effect equation is positive.

Note 2: Frequency appears once $V_n > c$. Thus, when $V_n = c$, $f = 0$, and when $V_n < c$, there is no frequency as the McMahon effect equation is negative for $V_n < c$.
Note 3: Proof of theory: Note that this theory of coiling for energy (equation 3) is in agreement with Plancks constant (h), in that Energy = Plancks constant x frequency, or E = hf. h has units of kg(m^2/s), and f has units of (1/s). Thus energy is indeed a particle moving as a coiled coil, thus is coiled to the second degree which would give units of kg(m^2/s^2). This is because a coil requires at least two components of velocity to exist, hence m/s x m/s = m^2/s^2. Refer to the paper: **McMahon, C.R. (2013)** *"Plancks constant solved"*. The general science journal, for more information about Plancks constant.

However, equation 3 considers rest mass rather than relative mass, and velocity above light ignoring the velocity component below light. If we consider the papers **McMahon, C.R. (2013)** *"Plancks constant solved"*. And **McMahon, C.R. (2013)** *"Rydbergs constant solved"*, we see that the definition of equation 3 is simply:

$$E_{coiling} = h f = hR\,(V_n - c)$$

$$E_{coiling} = \underbrace{\text{Mass (Kg) x area covered by mass per second}\left(\frac{M^2}{s}\right)}_{h} \text{ x } \underbrace{\frac{\text{total coil circumference per second}\left(\frac{M}{s}\right)}{\text{area covered by mass per second}\left(\frac{M^2}{s}\right)}}_{R} \text{ x } \underbrace{\text{Velocity above light}\left(\frac{M}{s}\right)}_{(V_n - c)}$$

Thus:

$$E_{coiling} = \text{Mass (Kg) x total coil circumference per second}\left(\frac{M}{s}\right) \text{ x Velocity above light}\left(\frac{M}{s}\right)$$

Since the total coil circumference per second in Rydbergs constant is equal to the speed of light as in the paper **McMahon, C.R. (2013)** *"Rydbergs constant solved"*, we see we are left with:

$$E_{coiling} = Mc\left(V_n - c\right)$$

$$E_{coiling} = McV_n - Mc^2$$

………. equation (4

Where:

$$E_{coiling} = McV_n - Mc^2 = hf$$

Total energy (McV_n)

Energy when mass moves at the speed of light (full primary coil state) (Mc^2)

Thus: $McV_n = Mc^2 + hf$ .... equation (4a

Therefore, if we consider the effect of relativity on the mass and the paper: **McMahon, C.R. (2013)** *"Fine structure constant solved and new relativity equations– Based on McMahon field theory* which indicates mass dilation reaches its maximum value at a velocity of 299,792,457.893735 (m/s), we have:

$$E_{(max)} = \frac{M_{rest}\, c V_n}{\sqrt{1 - \frac{v^2}{c^2}}}$$

………. equation (5

Where:
$E_{(max)}$ = maximum possible energy ($Kg(m^2/s^2)$)
M_{rest} = Rest mass (Kg)
v = 299,792,457.893735 (m/s)
c = the speed of light = 299,792,458 (m/s)
$Vn \geq c$ (m/s)

Thus, equation 5 gives us the "above light velocity energy equation", for unseen Newtonian velocities as in figure 4. This applies to the electromagnetic spectrum. Notice that this equation is greater in value than the equation E=hf, as we are considering the effect relativity has on the mass we are observing as energy in equation 5. The equation E=hf does not take relativity into account, and it subtracts all energy in the primary coil state (mc^2).

For further clarity, to show this is the equation for additional energy above light speed, Inserting equation 2 into equation 5 gives us:

$$E_{(max)} = \frac{M_{rest}\, c\, V_n}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$= \frac{M_{rest}\, c \left(\frac{f}{R} + c\right)}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$= \frac{M_{rest}\, c \left(\frac{f}{R}\right) + M_{rest}\, c^2}{\sqrt{1 - \frac{v^2}{c^2}}} = \underbrace{\frac{M_{rest}\, c^2}{\sqrt{1 - \frac{v^2}{c^2}}}}_{\text{Einsteins Particle energy at light speed}} + \underbrace{\frac{M_{rest}\, c \left(\frac{f}{R}\right)}{\sqrt{1 - \frac{v^2}{c^2}}}}_{\text{Additional energy above Einsteins Particle energy at light speed, which we observe as a change in frequency}}$$

………. equation (5b

Where:
$E_{(max)}$ = maximum possible energy ($Kg(m^2/s^2)$)
M_{rest} = Rest mass (Kg)
v = 299,792,457.893735 (m/s)
c = the speed of light =299,792,458 (m/s)
$Vn \geq c$ (m/s)
F= frequency (1/s)
R = Rydberg constant = $1.097373156853955 \times 10^7$. units = ($m^{-1}$)

Now, from the paper: **McMahon, C.R. (2015)** *"De Broglie Wavelength and McMahon field theory."* The general science journal, we are presented with a momentum equation for particles travelling with Newtonian velocities greater than light, as in figure 4. This equation is presented below:

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

$$= \underbrace{\frac{mc}{\sqrt{1-\frac{v^2}{c^2}}}}_{\text{Primary coil momentum component}} + \underbrace{\frac{m\left(\frac{F}{R}\right)}{\sqrt{1-\frac{v^2}{c^2}}}}_{\text{Secondary coil (and higher order coiling) momentum component}} \qquad \text{..........Equation (5c}$$

Primary coil momentum component

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

Where:
p = momentum (Kg x m/s)
m = Rest mass (kg)
$m_{(rel)}$ = Mass under special relativity (kg)
v = 299,792,457.893735 (m/s)
c = the speed of light (m/s)
Vn ≥ c (m/s)
F= frequency (1/s)
R = Rydberg constant = 1.097373156853955 x 10^7. units = (m^{-1})
h = Plancks constant = $6.6260695729 \times 10^{-34}$ Kg (m^2/s)
λ = conventional wavelength (m)

Now, if we also consider equation 5d below, from **Wikipedia (2014)** "*Energy-momentum relation",* which holds for particles with masses we cannot detect, we notice agreement with equations 5b and 5c

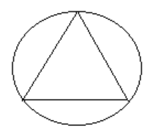
$E = pc$ (which holds for particles with masses we cannot detect) ……….Equation (5d

Where:
E = Energy (Kg x m^2/s^2)
p = momentum (Kg x m/s)
c = light speed = 299,792,458 (m/s)

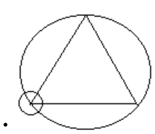
According to equation 5d, if we multiply an equation for momentum (equation 5c) by the speed of light (c), we end up with an equation for energy (equation 5b). This is true. This is because particles travelling with Newtonian velocities greater than light have masses we can't detect, so they appear massless.
Mathematically, as a particle approaches the speed of light relative to an observer, it appears to be in more than one place at a time, so mathematically it appears to increase in mass as in figure 1. However, we cannot physically detect this mass- in fact, as a particle

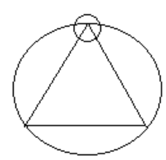
approaches the speed of light, rather than detecting a mass increase, we detect a mass decrease. This is because of equation 1 from the paper "**McMahon, C.R. (2013)** *"Review of Einsteins E=Mc^2 papers- Einsteins own validation of the McMahon field theory"* The general science journal, which shows us that even though as a particle approaches the speed of light it appears in many places at once, we cannot physically detect this mass increase. Instead, it appears that the rest mass of the particle is decreasing as it approaches the speed of light. This is because of the coiling and time dilation that occurs. This is why all particles with observable velocities equal to light, which we observe as energy forms of the electromagnetic spectrum, appear massless. This is why photons appear massless also, even though photons do have mass.

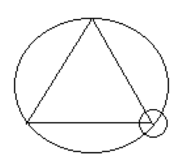
Conventional physics of this day use the equation E =hf, even though it ignores the effect of relativity on the moving mass. Therefore, I will focus on equation 3: The McMahon effect equation.

Let the symbol for the McMahon effect equation be:  .

Let this symbol change according to the particle to which the McMahon effect equation applies.

If the McMahon effect equation is used for an electron, let it be: 

If the McMahon effect equation is used for a proton, let it be: 

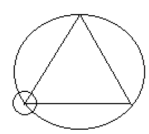
If the McMahon effect equation is used for a neutron, let it be: 

For subatomic particles, other symbols may be derived.

According to the McMahon field theory, the electromagnetic spectrum that we know is nothing more than an electron that has been dilated by the effects of relativity. When a particle is moving at speeds less than but close to c, or light, we observe its mass change, but we still observe the particle as a particle. However, when a particle travels at the speed of light or faster, relativity dilates the velocity we observe back to c. For this reason, nothing seems able to travel faster than light (McMahon field theory makes an exception to this rule for uncharged particles, such as neutrinos and neutrons, which may be able to break this law, I'm not exactly sure.). I can thus create a table of values for the McMahon effect equation for the electron. I don't know for sure what the energy spectrum would look like for the proton or neutron yet, so I have only been able to create a table in the case of the electron.

An easy (short cut) way of using the McMahon effect equation in the case of the electron is to simply use table 1, which I created, using the McMahon effect equation. One can just look up the Newtonian velocity in the table to see how the particle will appear under the effects of relativity.
The Newtonian velocity ignores the effects of relativity, relativity limits observed particle velocity to the speed of light- thus from the Newtonian point of view any velocity is possible.
A McMahon effect equation table for the electron is presented in table 1 below.

Table 1: McMahon equation table for the electron. Derived using the help of: **The Electromagnetic spectrum (2013)** Link: http://csep10.phys.utk.edu/astr162/lect/light/spectrum.html
Link last accessed 16th August, 2013.

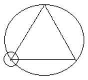
McMahon effect equation table for the electron. Note that c = light speed = 299,792,458 m/s			
Electron state Appearance by relative stationary observer	**Electrons physical Appearance by relative stationary observer**	**Equivalent Newtonian velocity (V_n value).**	**McMahon effect equation value:** 
Mass: no coiling occurring	A stationary electron	0 (m/s)	= -2.17987217132 x 10^{-18} Kg (m^2/s^2)
Mass: primary coiling occurring	A moving mass that increases in value as the observed velocity increases.	> 0 (m/s) and < c (m/s)	> -2.17987217132 x 10^{-18} Kg (m^2/s^2) and < 0 Kg (m^2/s^2)
Mass and Energy: Full primary coiling achieved	Electricity. Full primary coiling observed as magnetic field	= c (m/s)	= 0 Kg (m^2/s^2)
Energy: secondary coiling occurring	Radiowaves	> c (m/s) and ≤ 2.9979273138 x 10^8 (m/s)	> 0 Kg (m^2/s^2) and ≤ 1.98782087187 x 10^{-24} Kg (m^2/s^2)
	Microwaves	≥ 2.9979273138 x 10^8 (m/s) and ≤ 3.00065838115 x 10^8 (m/s)	≥1.98782087187 x 10^{-24} Kg (m^2/s^2) and ≤ 1.98782087187 x 10^{-21} Kg (m^2/s^2)
	Infrared	≥ 3.00065838115 x 10^8 (m/s) and ≤ 3.38976941174 x 10^8 (m/s)	≥ 1.98782087187 x 10^{-21} Kg (m^2/s^2) and ≤ 2.84920991635 x 10^{-19} Kg (m^2/s^2)

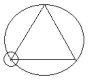
	Visible	$\geq$ 3.38976941174 x 10^{8} (m/s) and $\leq$ 3.68137486791 x 10^{8} (m/s)	$\geq$ 2.84920991635 x 10^{-19} Kg (m^2/s^2) and $\leq$ 4.96955217968 x 10^{-19} Kg (m^2/s^2)
	Ultraviolet	$\geq$ 3.68137486791 x 10^{8} (m/s) and $\leq$ 2.76378039745 x 10^{10} (m/s)	$\geq$ 4.96955217968 x 10^{-19} Kg (m^2/s^2) and $\leq$ 1.98782087187 x 10^{-16} Kg (m^2/s^2)
	X-Rays	$\geq$ 2.76378039745 x 10^{10} (m/s) and $\leq$ 2.73410094411 x 10^{12} (m/s)	$\geq$ 1.98782087187 x 10^{-16} Kg (m^2/s^2) and $\leq$ 1.98782087187 x 10^{-14} Kg (m^2/s^2)
	Gamma Rays	$\geq$ 2.73410094411 x 10^{12} (m/s) and < 8.98755178737 x 10^{16} (m/s)	$\geq$ 1.98782087187 x 10^{-14} Kg (m^2/s^2) and = 6.53509234187 x 10^{-10} Kg (m^2/s^2)
Energy and Fleiner: Full secondary coiling achieved	Gamma Rays	= 8.98755178737 x 10^{16} (m/s) = (c^2)	= 6.53509234187 x 10^{-10} Kg (m^2/s^2)
Fleiner: tertiary coiling occurring	Gamma Rays	> 8.98755178737 x 10^{16} (m/s) and $\leq$ 2.73380115165 x 10^{24} (m/s)	> 6.53509234187 x 10^{-10} Kg (m^2/s^2) and $\leq$ 1.98782087187 x 10^{-2} Kg (m^2/s^2)
	?	$\geq$ 2.73380115165 x 10^{24} (m/s) and < 2.69440024174 x 10^{25} (m/s)	$\geq$ 1.98782087187 x 10^{-2} Kg (m^2/s^2) and < 0.195917140296 Kg (m^2/s^2)
Fleiner and Kelso: full tertiary coiling achieved	?	= 2.69440024174 x 10^{25} (m/s) =(c^3)	= 0.195917140296 Kg (m^2/s^2)
Kelso: quaternary coiling occuring	?	> 2.69440024174 x 10^{25} (m/s) and < 8.07760871306 x 10^{33} (m/s)	> 0.195917140296 Kg (m^2/s^2) and < 5.87344810537 x 10^{7} Kg (m^2/s^2)
Kelso and Unknown: full quaternary coiling achieved	?	= 8.07760871306 x 10^{33} (m/s) =(c^4)	= 5.87344810537 x 10^{7} Kg (m^2/s^2)

McMahon equation Examples:

Example 1: Suppose we have an electron with an undilated velocity, or Newtonian velocity (ignoring relativity) equal to 1.1c, or 1.1 x 299,792,458(m/s) = 329,771,703.8 (m/s). How would this particle appear to a stationary relative observer according to the laws of relativity?

Answer: This Newtonian velocity [1.1c, or 1.1 x 299,792,458(m/s) = 329,771,703.8 (m/s)] is between the magnitude of c and c^2 or 299792458 and 299792458^2. It would therefore appear as a secondary coil- thus an energy state form. Since 1.1c is much closer to c than c^2, it would appear as an energy form closer to the very low frequency end of the electromagnetic spectrum. Using the McMahon effect equation:

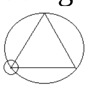
 $= hR(V_n - C) = hR \times [329771703.8 - 299792458]\ Kg\ (m^2/s^2)$,

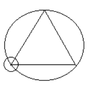
 $= hR(V_n - C) = 2.17987217132 \times (10^{-19})\ Kg\ (m^2/s^2)$

Thus, we see from Table 1 by comparing the Newtonian velocity and McMahon equation value that this electron will appear as Infrared radiation.

Example 2: Suppose we have an electron with an undilated velocity, or Newtonian velocity (ignoring relativity) equal to c, or 299,792,458(m/s). How would this particle appear to a stationary relative observer according to the laws of relativity?

Answer: This Newtonian velocity [c, or 299,792,458(m/s)] is exactly equal to c. It would therefore appear as a full primary coil- thus may be considered as both mass and energy. Since the McMahon field theory theorizes that when an electron has $V_n = c$, an electron exhibits full primary coiling- we observe electricity, thus this particle will appear as electricity, and the full primary coil movement will be observed as a magnetic field.
Using the McMahon effect equation, We have:

 $= hR(V_n - C) = hR \times [299792458-299792458]\ Kg\ (m^2/s^2)$,

 $= hR(V_n - C) = 0\ Kg(m^2/s^2)$

From table 1, we would see the electron as electricity.
Ideally, it would be desirable to have charts drawn up for the different V_n values, and McMahon effect equation values cross referenced with the rest mass values of different particles and their corresponding spectra or appearance. In this way, once a McMahon effect equation value has been determined, as well as V_n, one can refer to the charts to see exactly how the particle will be observed. Such charts do not yet exist, although I have completed as much as I can for the electron using what is known at this time.
Wikipedia (2012) "*Ultra-high-energy gamma ray"* Reports that technology has been developed that detect gamma rays with frequencies as high as 3×10^{31} Hz, which according to equation 8 in this paper gives a V_n value of $2.73380115165 \times 10^{24}$ (m/s). This would push the particle out of the energy state and into the next coiling state, the Fleiner state, namely coiling to the 3rd degree. **I am pleased to see that previously undetectable states are being detected, to help verify the McMahon field theory. Therefore, undetectable higher coiling states which we may have trouble detecting (within Fleiner and above) could be considered as "dark energy" (since they are so hard to detect) and "dark matter" in terms of the fact that the mass of a particle becomes harder to detect as it approaches the speed of light. I have since added this new data to table 1.**

Once secondary coiling starts, we must keep in mind how frequency is measured. Frequency only appears once full primary coiling is completed, so the formula "hf" is valid in magnitude for secondary coiling and higher order coiling. We know from E=hf that energy has units of kg (m^2/s^2). We also know that once full primary coiling is achieved, the observed coil velocity of this primary coil remains = c. The remaining Newtonian velocity causes frequency and in the case of energy secondary coiling.

Note that equation 2 is derived at the end of the paper: **McMahon, C.R. (2013)** *"Rydbergs constant solved"*

Note that Plancks constant is a measure in reference to the full primary coil state only. Thus when f = 0, we have a full primary coil. When $0 \leq f \leq 9.86269804439 \times 10^{23}$ we have energy, when $9.86269804439 \times 10^{23} < f \leq 2.9567624991 \times 10^{32}$ we have Fleiner, when $2.9567624991 \times 10^{32} < f \leq 8.86415097328 \times 10^{40}$ we have Kelso, etc. Refer to table 3.
So that the reader can confirm that all the equations in this paper hold true, I have provided the frequency data I used to construct table 1. This appears in table 2 below. Hence the reader can insert the frequency values of table 2 into the equation E=hf, then into equations 2 and 8 to compare V_n values, thus proving my derivations work with each other. Thus the electron rest mass is as I have determined, as are all the other equations. Thus McMahon field theory holds true.

Table 2: frequency data from The Electromagnetic spectrum (2013) Link: http://csep10.phys.utk.edu/astr162/lect/light/spectrum.html

Link last accessed 18th August, 2013.

Region	Wavelength (Angstroms)	Wavelength (centimeters)	Frequency (Hz)	Energy (eV)
Radio	$> 10^9$	> 10	$< 3 \times 10^9$	$< 10^{-5}$
Microwave	$10^9 - 10^6$	10 - 0.01	$3 \times 10^9 - 3 \times 10^{12}$	$10^{-5} - 0.01$
Infrared	$10^6 - 7000$	$0.01 - 7 \times 10^{-5}$	$3 \times 10^{12} - 4.3 \times 10^{14}$	0.01 - 2
Visible	7000 - 4000	$7 \times 10^{-5} - 4 \times 10^{-5}$	$4.3 \times 10^{14} - 7.5 \times 10^{14}$	2 - 3
Ultraviolet	4000 - 10	$4 \times 10^{-5} - 10^{-7}$	$7.5 \times 10^{14} - 3 \times 10^{17}$	$3 - 10^3$
X-Rays	10 - 0.1	$10^{-7} - 10^{-9}$	$3 \times 10^{17} - 3 \times 10^{19}$	$10^3 - 10^5$
Gamma Rays	< 0.1	$< 10^{-9}$	$> 3 \times 10^{19}$	$> 10^5$

Take note of equation 2. It shows that only particles that are moving with a Newtonian velocity above c have a frequency. Thus slow moving objects, or objects in the mass state have no conventional frequency component (unless you consider the De Broglie wavelength which applies to primary coiling, whereas conventional frequency refers to secondary and higher order coiling). Thus, conventional oscilloscopes detect conventional frequencies that are secondary coiling states and above.

Table 3: Frequency magnitude range table, in accordance with equation 4.

State	Degree of coiling	Frequency range
Mass	Primary coiling (1)	N/A
Energy	Secondary coiling (2)	$0 \leq f \leq 9.86269804439 \times 10^{23}$
Fleiner	Tertiary coiling (3)	$9.86269804439 \times 10^{23} < f \leq 2.9567624991 \times 10^{32}$
Kelso	Quaternary coiling (4)	$2.9567624991 \times 10^{32} < f \leq 8.86415097328 \times 10^{40}$
Higher states (above primary):	State dependent (x)	$[R](c^{x-1}-c) < f \leq [R](c^{x}-c)$

What else can equation 2 tell us? According to **Wikipedia (2013)** *frequency*, we are told that:

$$f = \frac{c}{\lambda}$$

here, the observed or phase velocity (not Newtonian) v = c

……….equation (6

If we insert equation 2 into equation 6, we have:

$$f = R\left(V_n - C\right) = \frac{c}{\lambda}$$

where observed or phase velocity v = c, Newtonian velocity $=V_n$

……….equation (7

Thus equation 7 holds true for energy states and above. This equation can be used to find the Newtonian velocity for a particle moving as energy, or a higher coiling state, or with $V_n \geq c$, if its wavelength is known.

Thus, for energy and higher coiling states, where $V_n \geq c$, the phase velocity (v) becomes constant, and is always equal to c. Thus wavelength is given as:

$$\lambda = \frac{c}{R\left(V_n - C\right)} = \frac{c}{f}$$

Where $V_n \geq c$

……….equation (8

Thus equation 8 holds true for the energy state and higher order coiling states.

For energy and higher states, both frequency and wavelength change, and as a result, the velocity we observe (phase velocity) is always equal to c. We don't observe changes in phase velocity for energy and higher coiling states.
Thus, to summarize equations for frequency and wavelength, we have:

Table 4: Frequency and wavelength formulas

State:	Frequency (s^{-1}):	Wavelength (m):

Mass	N/A	N/A
Energy	[R](V_n - C)	c/(R[V_n-C])
Fleiner	[R](V_n - C)	c/(R[V_n-C])
Kelso	[R](V_n - C)	c/(R[V_n-C])
Higher states	[R](V_n - C)	c/(R[V_n-C])

From "Wikipedia (2013) Rydberg formula", The Rydberg formula is used to describe the spectral lines (electron orbitals or coils) of chemical elements. From the equations just derived for frequency and wavelength in table 4 above, we can insert the wavelength formulas into the Rydberg equation to find the equivalent Newtonian velocity differences of electrons in the orbital shells of hydrogen. Using the simplest case, the Rydberg formula (as for hydrogen) is:

$$\frac{1}{\lambda_{\text{vac}}} = R\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right)$$

...........equation (9

Where

λ_{vac} is the wavelength of electromagnetic radiation emitted in vacuum,
R is the Rydberg constant, approximately 1.097 * 10^7 m^{-1},
n_1 and n_2 are integers greater than or equal to 1 such that $n_1 < n_2$

Notice that equation 9 varies as n_1 and n_2 vary, thus the wavelength will vary. We must therefore use the wavelength equations for energy and above.
Thus equation 9 becomes:

$$\frac{1}{\lambda_{\text{vac}}} = R\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right) = \frac{R\,(V_n - C)}{c}$$

.... equation (10

Interestingly, from this we see that:

$$\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right) = \frac{(V_n - C)}{c}$$

.... equation (11

Solving for Vn we have:

$$c\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right) + C \;=\; V_n$$

.... equation (12

This equation appears to show that orbitals closer to the nucleus have a faster Newtonian velocity, so Niels Bohrs model of the atom is back-to-front.

From equation 12, it appears valid to infer that:
(Newtonian velocity of orbital n_1) – (Newtonian velocity lost from n_1 orbital now it also exist in the n_2 flux orbital) = (Newtonian velocity considering coiling of flux or ghost orbital n2)

$$\left(\frac{c}{n_1^2}\right) - \left(\frac{c}{n_2^2}\right) + C = V_n$$

……….equation (13

McMahon field theory principles tell us that Einsteins time dilation effect permits real particles to exist in more than 1 location at any time. This effect has been described in the McMahon field theory as ghost particles or flux. Applying this principle to equation 13, I see that:

Actual Ghost or flux particle newtonian velocity of original electron in n_1 orbital now it also exists in the n2 flux orbital, thus this is the n_2 flux or ghost orbital newtonian velocity considering coiling

Original particle newtonian orbital velocity considering coiling

$$\left(\frac{c}{n_1^2}\right) + C - \left(\frac{c}{n_2^2}\right) = V_n$$

Ghost or flux particle newtonian velocity lost from original electron now that it exists in another orbital location. (at the same time).

To depict this, refer to figure 6 below:

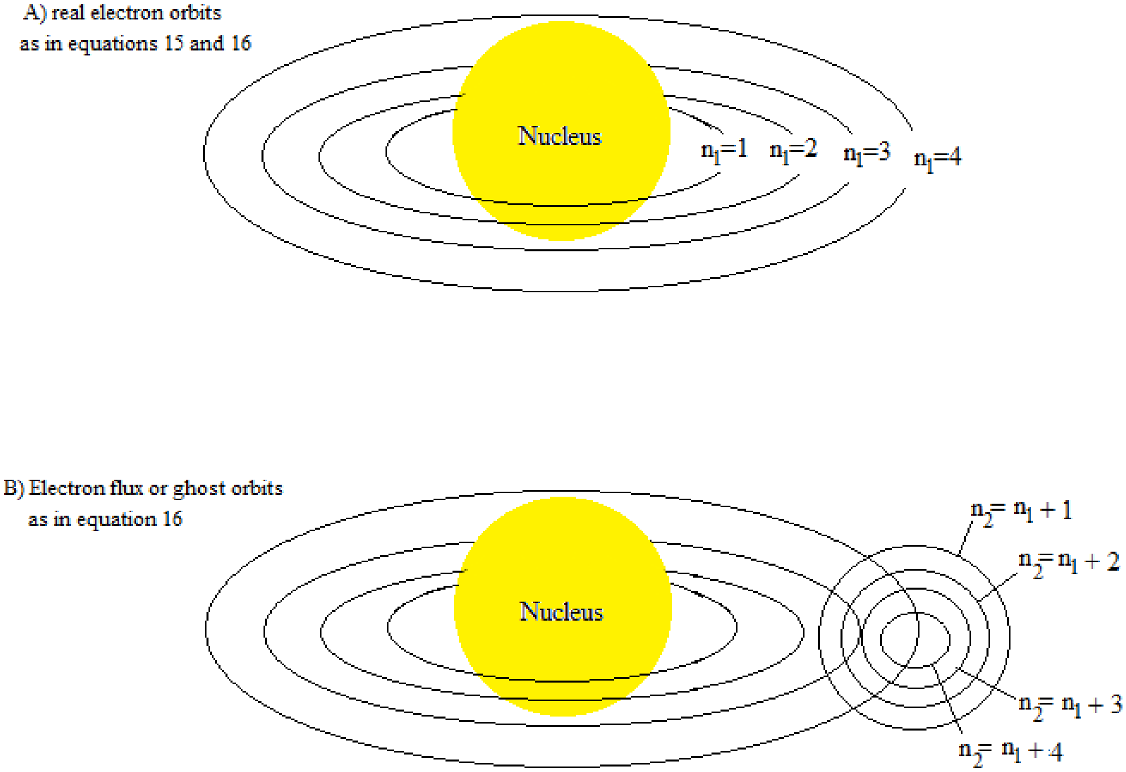


Figure 6: Real electron orbits and electron flux or ghost orbits for hydrogen. In A) we see how n1 is labeled, in that as n1 increases, we move further away from the nucleus. In B), we see how the flux orbits are labeled, in that as n2 increases, we move further towards the real n1 orbit. Flux orbits occur tangentially to the real electron orbits. Thus, considering image B), if we want to calculate the Newtonian velocity considering coiling of the depicted flux orbital n2 = n1+1, using equation 15 we set n1=4 as we are considering the 4th real orbital, thus n2 = n1+1 becomes: n2 = 4+1=5. This is done using equation 16.

If we relate this to wavelength, we have:

$$\frac{c}{R\,\lambda_{\mathrm{vac}}} + C = \left(\frac{c}{n_1^2}\right) - \left(\frac{c}{n_2^2}\right) + C = V_n$$

……….equation (14

Thus, to find the velocities of real electrons in an atom, we use equation 15, but to find the velocities of electrons that appear as flux orbitals or ghost particle orbitals we use equation 16, as shown below.

For real (original) electrons use:

$$\left(\frac{c}{n_1^2}\right) + C = V_n \qquad \text{......... equation (15}$$

For the flux particles that exist because of the original electrons use:

$$\frac{c}{R\,\lambda_{vac}} + C = \left(\frac{c}{n_1^2}\right) - \left(\frac{c}{n_2^2}\right) + C = V_n \qquad \text{.......... equation (16}$$

Thus, if we vary n_1, (and set n_2 =0) we can find the Newtonian velocities of real or original electrons in atoms, where if n_1=1 this gives the Newtonian velocity of the electron closest to the nucleus, if n_1 =2 this gives the Newtonian velocity of the electron second closest to the nucleus, etc.
If we vary n_2 where $n_2 > n_1$, we can find the Newtonian velocities of the ghost or flux particles associated with the original electron in the n_1 orbital. In this way, V_n in equation 16 will give us the Newtonian velocities considering coiling of all the spectral lines of hydrogen, which are the flux lines or ghost particles of the electron in the n_1 orbital. Ie: if we set n1=1, and vary n2, we find all the spectral lines of the Lyman series which are ghost orbitals based on the real electron in the n1 orbital. if we set n1=2, and vary n2, we find all the spectral lines of the Balmer series which are ghost orbitals based on the real electron in the n2 orbital, etc.

Lets test this by using equation 16. If we set n_1=1, and vary n_2 where n_2 is a set of integers where $n_2 > n_1$, we find all the Newtonian orbital velocities considering coiling of the ghost or flux particles known as the Lyman series.
If we set n_1=2, and vary n_2 where n_2 is a set of integers where $n_2 > n_1$, we find all the Newtonian orbital velocities considering coiling of the ghost or flux particles known as the Balmer series.
Refer to table 5 below:

Table 5: n1 and n2 values.

Series:	n1 value	n2 value	V_n value (m/s)	Appearance according to table 1:
Lyman series	1	2	5.246368015×10^8	ultraviolet light
	1	3	$5.66274642889 \times 10^8$	ultraviolet light
	1	4	$5.80847887375 \times 10^8$	ultraviolet light
	1	5	5.8759321768×10^8	ultraviolet light
Balmer series	2	3	$3.41430299389 \times 10^8$	Visible light
	2	4	$3.56003543875 \times 10^8$	Visible light
	2	5	3.6274887418×10^8	Visible light
	2	6	$3.66413004222 \times 10^8$	Visible light

From "**Wikipedia (2013)** *Hydrogen spectral series*", we see that table 5 is in agreement with conventional appearance data. Therefore, table 1 is valid, as are all the equations derived in this paper. We also see that as the n2 value increases, the Newtonian velocity

increases. This means the first line of the Lyman series is furthest from the nucleus as it has the slowest velocity, so as n2 increases we are moving closer to the real electron orbital n1. The same is true for the Balmer series and all other spectral series. Such perfect agreement with conventional observation of spectral lines indicates McMahon field theory is true.
Note that some hydrogen spectral lines are brighter than others- this is because of the time dilation effect on the real electron that allows the electron to exist in the flux orbitals of the hydrogen spectral series. The brighter the spectral line, the more often the electron is in that flux orbital.

Now, let's look at Comptons scattering equation. According to Wikipedia (2013) *"Compton scattering"*, Comptons scattering equation is given as:

$$\lambda' - \lambda = \frac{h}{m_e c}(1 - \cos\theta),$$

...........equation (17

Where:

λ is the initial wavelength,
λ' is the wavelength after scattering,
h is the Planck constant
c is the speed of light
θ is the scattering angle.
m_e is the conventional electron rest mass, which ignores the effect of relativity.

From the paper: McMahon, C.R. (2013) *"Fine structure constant solved and new relativity equations– Based on McMahon field theory"*, we are shown, and should take note that:

$$m_e = \text{conventional electron rest mass} = \text{true electron rest mass x relativity factor} = \frac{hR}{c} \times \frac{2}{\alpha^2}$$

……….equation (18

Thus, the true electron rest mass = hR/c

If we insert equation 8 into equation 18, we see that:

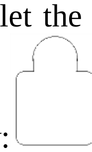
$$\lambda' - \lambda = \frac{h}{m_e c}(1 - \cos\theta) = \frac{c}{R[V_{n2} - C]} - \frac{c}{R[V_{n1} - C]} = \frac{c}{R}\left(\frac{1}{[V_{n2} - C]} - \frac{1}{[V_{n1} - C]}\right)$$

……….equation (19

Where V_{n1} = Newtonian velocity before scattering
V_{n2} = Newtonian velocity after scattering

Here, we see that the change in wavelength is because the electron has lost some Newtonian velocity considering coiling. This is exactly what we expect to occur if the electron collides with something. Equations 7 and 8 can be used to convert Newtonian velocities considering coiling into their corresponding frequencies and wavelengths, and vice versa. Equation 19 however, shows us that Comptons scattering formula holds true because Newtonian velocity is lost from the moving electron. This information is in agreement with the information from the paper: **McMahon, C.R. (2013)** *"Fine structure constant solved and new relativity equations– Based on McMahon field theory"*, which reveals that the fine structure constant approaches 1/128 (increase in value) at interaction energies above 80 GeV, which indicates more Newtonian velocity is lost.
Note: We must however, realize that the fine structure constant contains within it a limit for the maximum observable mass, to prevent the appearance of infinite mass upon approaching the speed of light, so it is best not to use the fine structure constant to directly determine Newtonian velocity, which can be greater than c, whereas the velocity value used to calculate the fine structure constant is always less than c.
Equation 19 can be used with table 1.

Above light velocity energy equation symbol:

Equation 5, extended as equation 5b, is significant. It is called the "above light velocity energy equation", because relativity dilates velocities above light back down to the speed of light for observers, as shown in figure 4. Rather than seeing velocities above light, we as observers see frequency instead, which is secondary and higher order coiling. This equation was derived from the great works of Johannes Rydberg, Max Planck, and Albert Einstein. To honour the memory and great works of these men, let the symbol for this equation be given by the simple geometric figure of a man, namely: 

References:

Einstein, A. (1905) *Does the inertia of a body depend upon its energy content?* Annalen der Physik. **18**:639.
Einstein,A. (1905) *On the electrodynamics of moving bodies.* June 30, 1905. Annalen der Physik. **322** (10): 891–921
McMahon, C.R. (2010) *"McMahon field theory: Theoretical unification of relativity and quantum physics, thus methods to generate gravity and time."* The general science Journal.
McMahon, C.R. (2012) *"Calculating the true rest mass of an electron – Based on McMahon field theory."* The general science journal.
McMahon, C.R. (2013) *"Fine structure constant solved and new relativity equations– Based on McMahon field theory".* The general science journal.
McMahon, C.R. (2013) *"Plancks constant solved".* The general science journal.

McMahon, C.R. (2013) *"Review of Einsteins E=Mc^2 papers- Einsteins own validation of the McMahon field theory"* The general science journal.
McMahon, C.R. (2013) *"Rydbergs constant solved".* The general science journal.
McMahon, C.R. (2015) *"De Broglie Wavelength and McMahon field theory."* The general science journal.
McMahon, C.R. (2015) *"Electron velocity through a conductor*". The general science journal.
Strassler, M. (2012) *How did Einstein do it.* Link: http://profmattstrassler.com/articles-and-posts/particle-physics-basics/mass-energy-matter-etc/mass-and-energy/how-did-einstein-do-it/
The Electromagnetic spectrum (2013) Link: http://csep10.phys.utk.edu/astr162/lect/light/spectrum.html
Link last accessed 16th August, 2013.
Wikipedia (2012) *Ultra-high-energy gamma ray* http://en.wikipedia.org/wiki/Ultra-high-energy_gamma_ray. Link last accessed 20th August, 2013.
Wikipedia (2013) *Compton scattering.* Link: http://en.wikipedia.org/wiki/Compton_scattering. Link last accessed 17th June 2013
Wikipedia (2013) *electromagnetic spectrum.* Link: http://en.wikipedia.org/wiki/Electromagnetic_spectrum Link last accessed 16th August, 2013.
Wikipedia (2013) *frequency* http://en.wikipedia.org/wiki/Frequency Link last accessed 30th August, 2013.
Wikipedia (2013) *Hydrogen spectral series.* Link: http://en.wikipedia.org/wiki/Hydrogen_spectral_series. Link last accessed 2nd September, 2013
Wikipedia (2013) *Rydberg formula.* Link: http://en.wikipedia.org/wiki/Rydberg_formula. Link last accessed 8th June, 2013.
Wikipedia (2014) *Energy-momentum relation.* Link: http://en.wikipedia.org/wiki/Energy%E2%80%93momentum_relation Link last accessed 25th February, 2015