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Rules of electromagnetic induction -Explained using McMahon field theory.

Abstract: In this paper, I use the McMahon field theory to explain electromagnetic induction, hence why the left and right hand rules hold true. Electromagnetic induction is the generation of an electrical current through an electrical conductor moving through a magnetic field. Although the laws of electromagnetic induction are known, it has not been explained before as to why these laws are true. From the right and left hand rules, which tell us about the direction of conductor movement or force, conventional current direction, and magnetic flux direction, we see that if we know at least two of these directions, we can determine the third.

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.

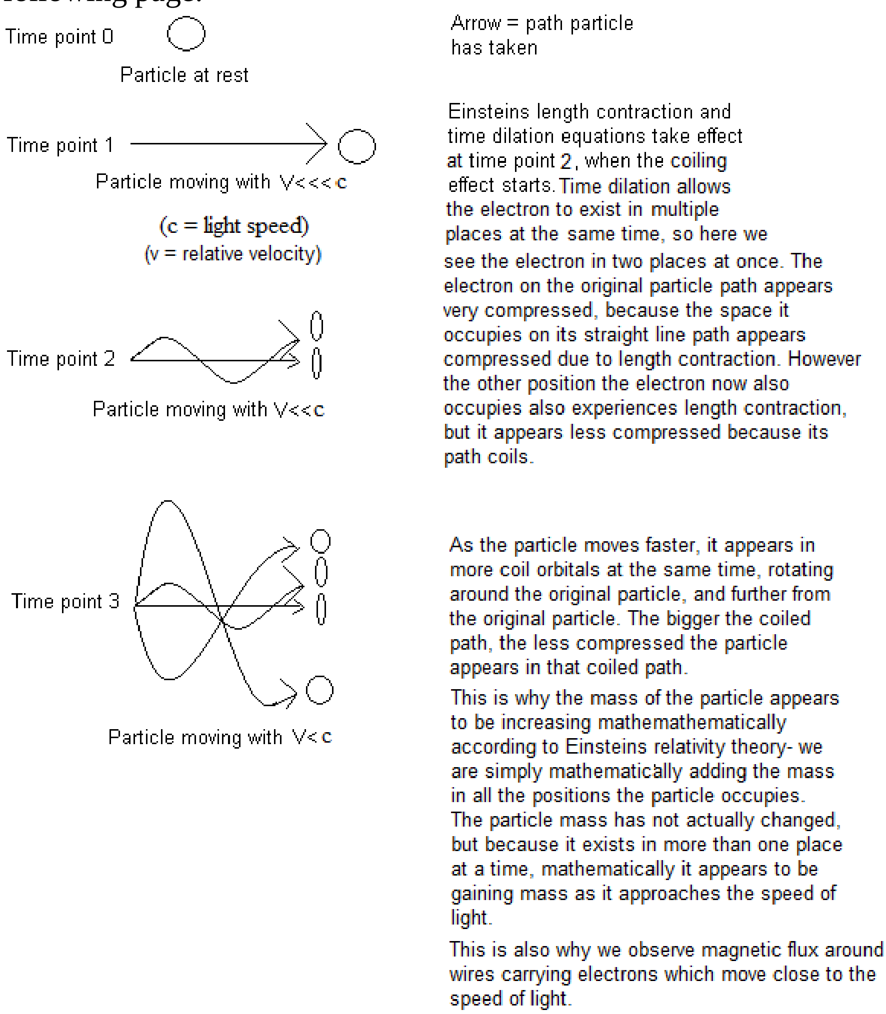


Figure 1: particle relativity- Taken from the McMahon field theory (2010): What we observe as relative stationary observers of a particle as it travels faster.

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:

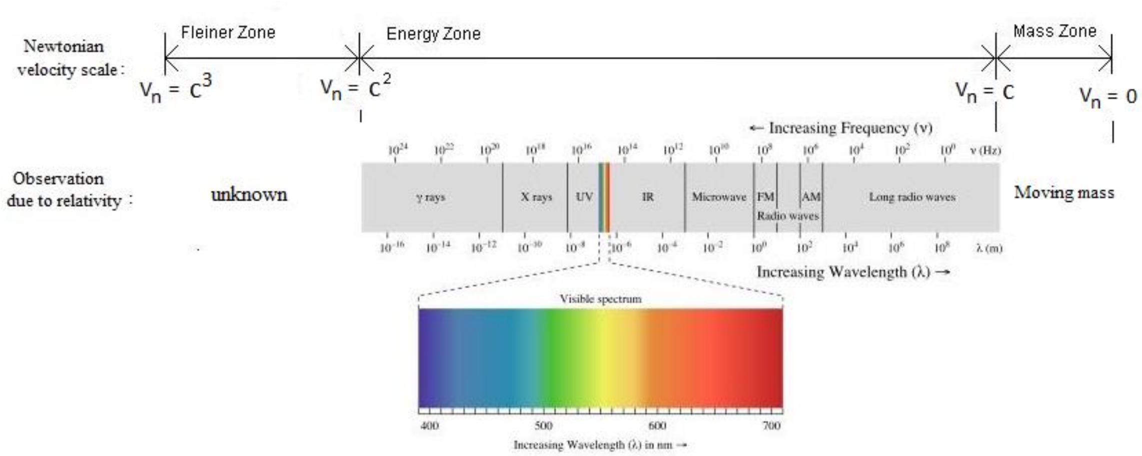


Figure 2: How an electron is observed at different Newtonian speeds: modified from the McMahon field theory (2010): Here, we see that as an electron moves with increasing speed according to Newtonian physics (although the speed we observe is dilated back to that of light because of relativity as in figure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

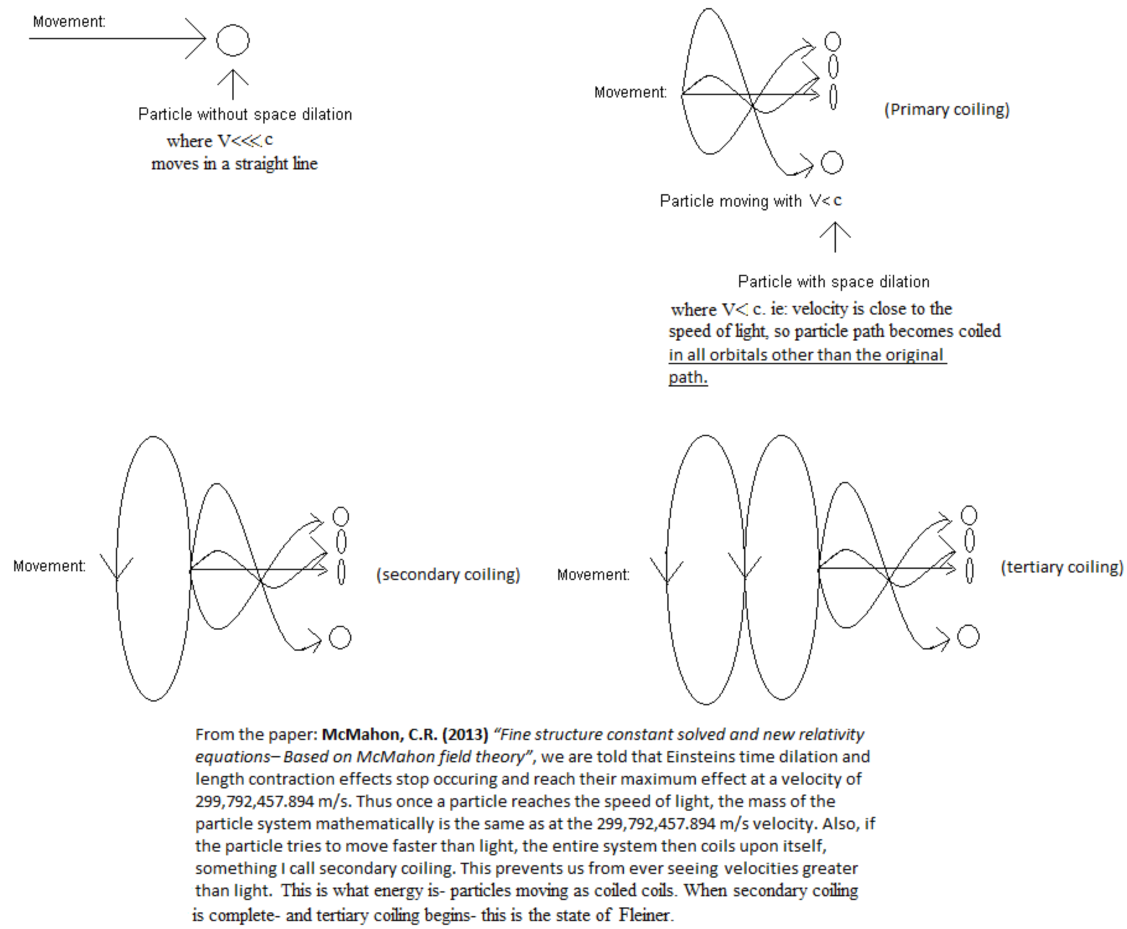


Figure 3: The actual affect Einsteins relativity theory has on the movement of a particle, causing it to first appear as mass during primary coiling, then energy during secondary coiling, and Fleiner during tertiary coiling, during which it becomes dark matter or dark energy. Einstein was unaware of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

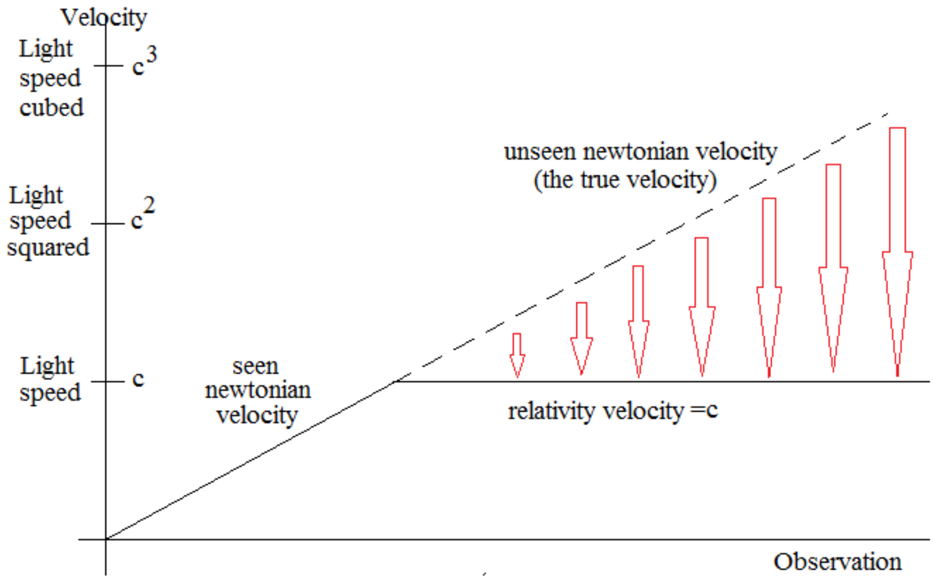


Figure 4: The dilation of the true velocity or Newtonian velocity by relativity. Here, we see that the dotted line represents the true velocity of particles travelling faster than the speed of light, but relativity dilates this velocity down to the speed of light which coils the path of the particle,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

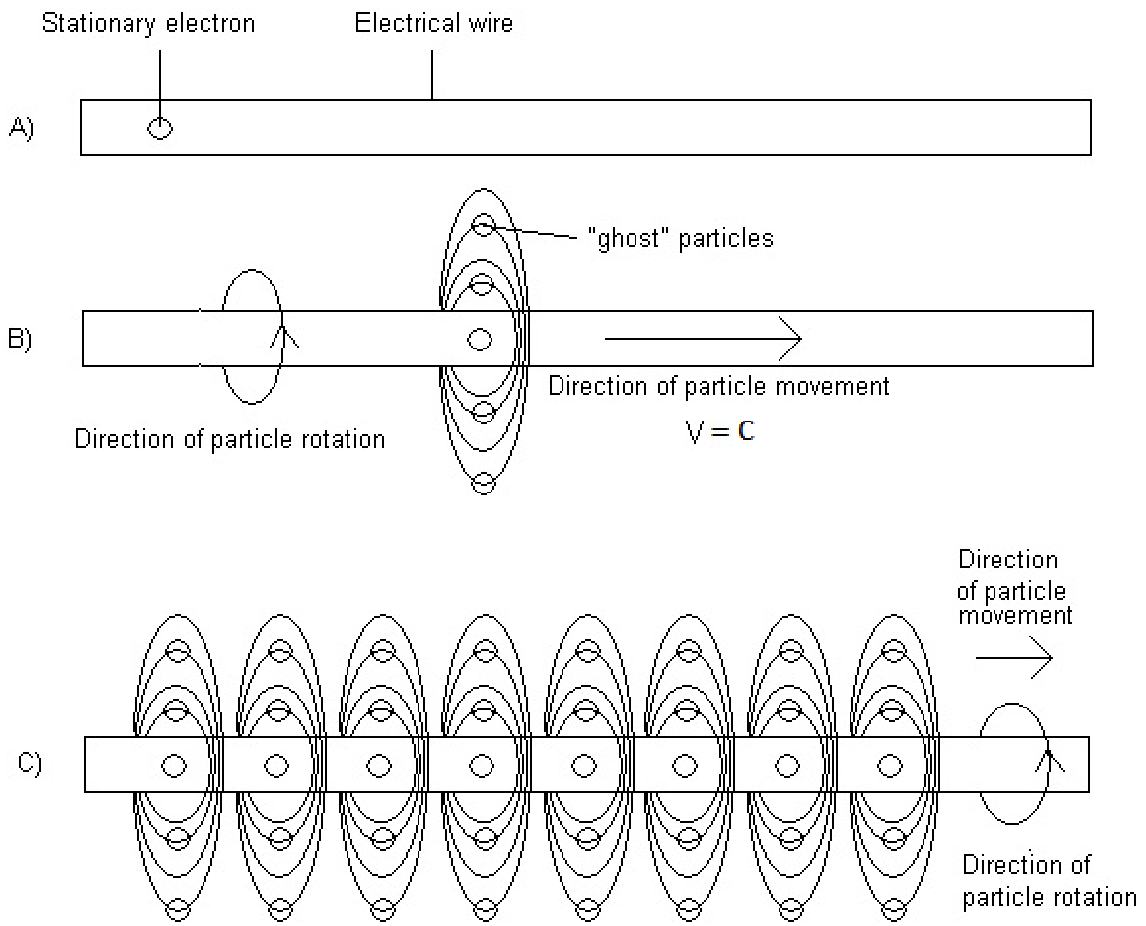


Figure 5: In A), we see a stationary electron in a wire. If this electron moves through the wire at speeds far below c, then the particle simply moves in a straight line through the wire, and no magnetic field is observed.
In B), our electron is now moving at c, so space dilation is occurring, causing 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.

Since time dilation allows an electron to be in more than one place at the same time, and length contraction compresses the straight line path of particles into coils, we observe magnetic fields around wires carrying electrons (electricity). These "ghost particles" which are just 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.
I will provide another example of how "ghost particles" appear, to ensure readers understand the theory. As you can see from figure 5, image B, we see that a single electron moving at high speed (as electricity in a wire) has ghost or flux particles orbiting around it as it moves. This indicates that magnetic flux not only moves from north to south in a magnet, but also rotates around the entire magnet itself. See figures 6 and 8.

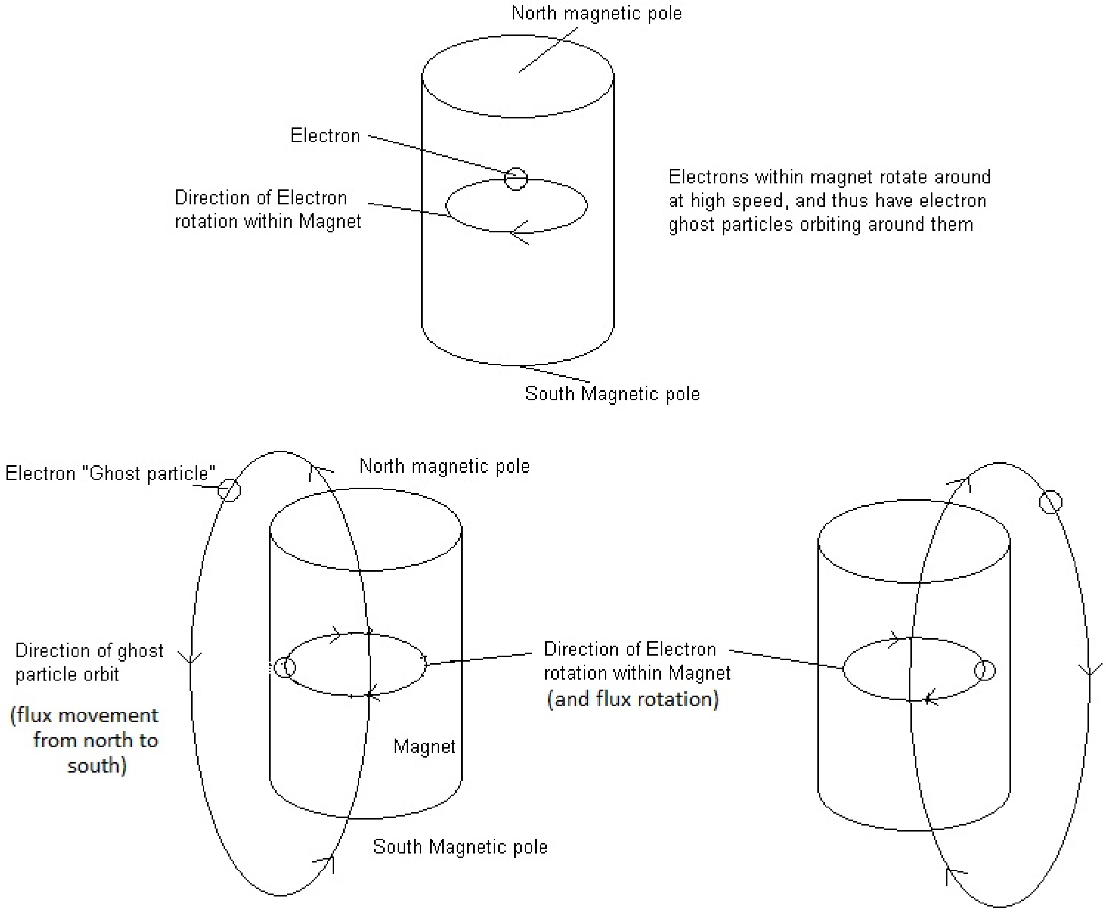
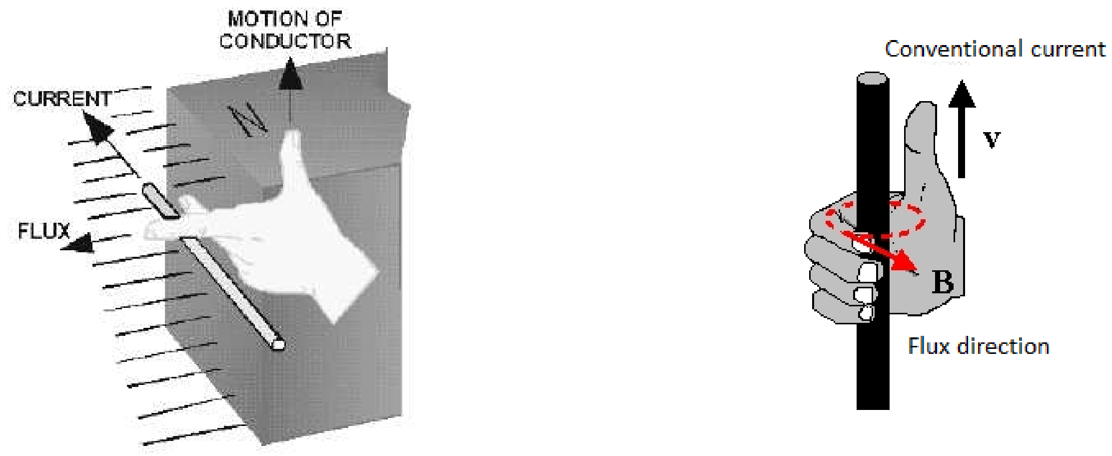


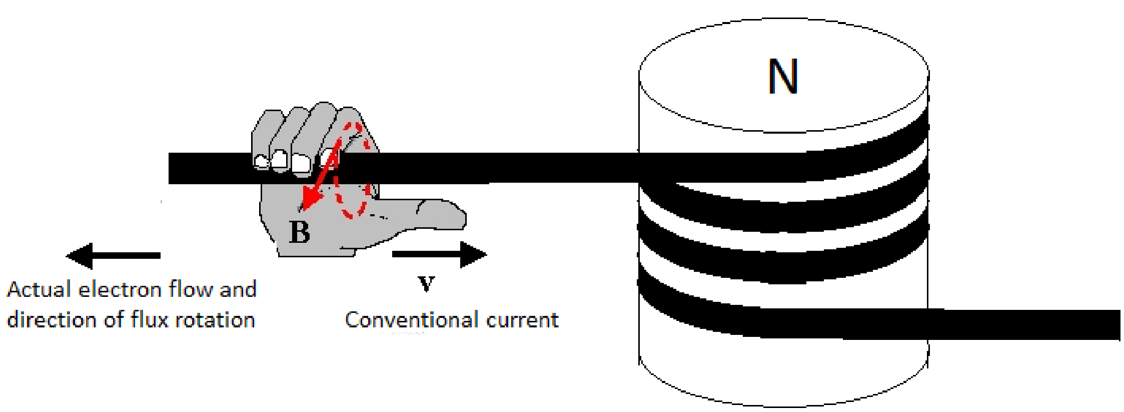
Figure 6 (modified from McMahon field theory (2010): High-speed electrons rotating in a magnet have ghost particles orbiting around them, and as the electron moves within the magnet, the orbiting ghost particles move also (because electrons in the magnet move as full primary coils). Thus, we can see that not only does magnetic flux move from the north to the south magnetic pole, but the flux (ghost particle orbit) rotates around the entire magnet also.

Figure 7 below presents left and right hand rules, which can be used to determine properties such as direction of conventional current and flux direction. However, based on the McMahon field theory (2010) which indicates the existence of flux rotation, I have created a third rule, presented in figure 8.



Left hand rule Right hand rule

Figure 7, modified from: http://electriciantraining.tpub.com/14177/css/14177_38.htm
and http://physicsed.buffalostate.edu/SeatExpts/resource/rhr/rhr.htm:
Left-Hand Rule determines the directions of conductor movement, conventional current and the magnetic field. Given any two of these parameters, the third can be found. Using your left-hand: point your middle finger in the direction of the conventional current, *I*, (recall conventional current). Point your index finger in the direction of the magnetic field, B. Your thumb now points in the direction of the magnetic force (conductor movement), $F_{magnetic}$.
Right-Hand Rule determines the direction of the magnetic field around a current-carrying wire and vice-versa. Using your right-hand: Curl your fingers into a half-circle around the wire, they point in the direction of the magnetic field, B. Your thumb points in the direction of the conventional current (V). The right hand rule is a summary of figure 5c, which is ghost particle or flux behaviour. **Note: conventional current occurs in the opposite direction to actual electron flow.**



Right hand rule #2

Figure 8, image modified from: http://physicsed.buffalostate.edu/SeatExpts/resource/rhr/rhr.htm:
Right-Hand Rule #2 determines the direction of the generated magnetic field around a current-carrying wire wrapped around an iron bar (forming an electromagnet or simply a magnet if the wire is removed later) and the direction of flux rotation. Using your right-hand: Curl your fingers into a half-circle around the wire, they point in the direction of the magnetic field, B. Your thumb points in the direction of the conventional current (V). Since actual electron flow occurs

in the opposite direction to conventional current flow, flux rotation occurs in the opposite direction that your thumb is pointing. This is because flux moves with the moving electron. Hence, when looking down at the top of the north pole of the magnet in figure 8, the flux rotates clockwise because electrons move clockwise through the coil, carrying their ghost particles (flux) with them.

From figures 6 and 8, we see that flux rotation- the magnetic field rotation around magnets and electromagnets, occurs in the direction of electron flow, which is in the opposite direction to conventional current flow. We also see from this paper that magnetic flux occurs at an angle of 90 degrees or perpendicular to electron flow, because of Einsteins relativity effects of length contraction and time dilation. So, we must ask, when length contraction occurs to form coils, combined with the effect of time dilation to allow the particle to appear along side itself as a magnetic field, why does the right hand rule hold true? In other words, why is it that length contraction compresses the straight line path of moving electrons in metal conductors into coils that always rotate in the same direction? This is because of the nature of the atomic bonds of the atoms in the wire that carries the electrical current. As the electron jumps between the atomic orbitals in the conductor which allows the electron to move, and because of the nature of the direction of these orbitals, the right hand rule holds true when metal conductors are used. To explain how induction actually occurs in a conductor as with the left hand rule, please see figure 9.

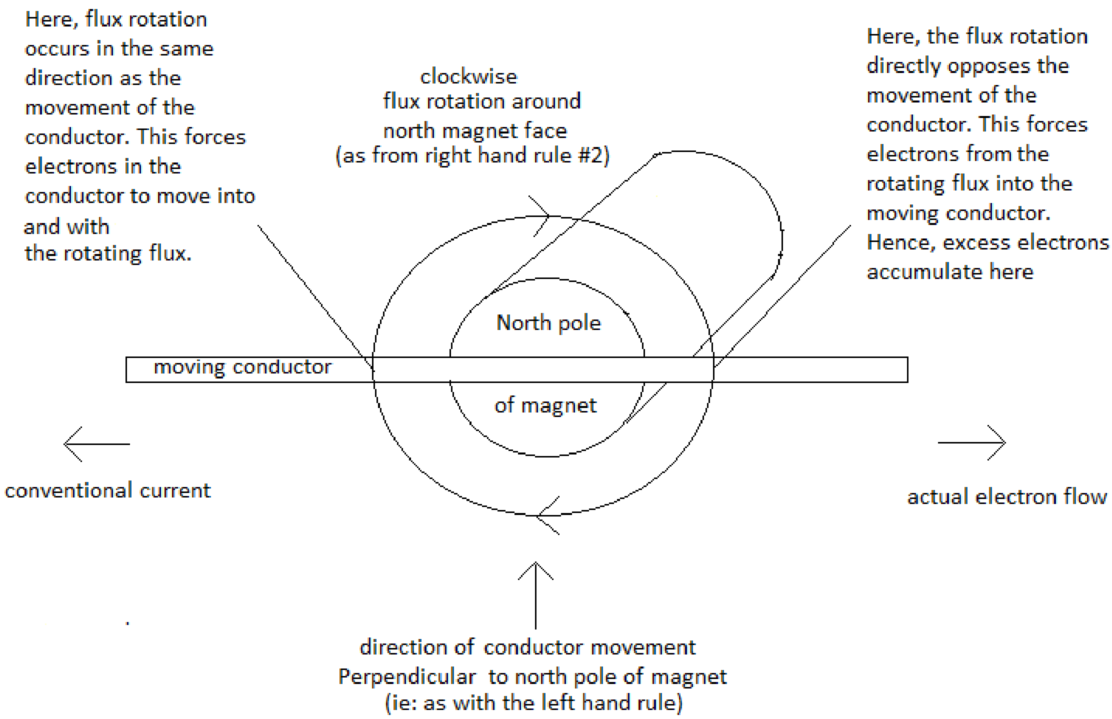


Figure 9, how induction occurs in a moving conductor.
Here, induction is explained. The end of the conductor that moves with flux rotation (same direction as flux rotation, left hand side in figure 9), the electrons in the conductor are forced out of the conductor to move with the rotating flux. The end of the conductor that moves against the rotating flux (right hand side of figure 9) forces electrons out of the

rotating flux and into the moving conductor- hence net electron flow is left to right in the above figure. This is why figures 7 and 8 hold true.
Hence we see that induction is actually electron entanglement- flux (ghost particles) are being transferred to the electrical conductor while at the same time remaining inside the magnet to generate flux rotation in the first place (because of Einsteins time dilation effect due to relativity). Thus, the electron exists in more than one place at the same time. So, whatever you do to one particle at one location you will instantly do to the same particle if it also exists at another location, regardless of the distance between particles. This is the very essence of entanglement, which opens up the possibility for instant data transmission.

Internet References:

http://electriciantraining.tpub.com/14177/css/14177_38.htm
http://physicsed.buffalostate.edu/SeatExpts/resource/rhr/rhr.htm:

References:

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. (2013) *"Fine structure constant solved and new relativity equations– Based on McMahon field theory".* The general science journal.
McMahon, C.R. (2015) *"Electron velocity through a conductor*". The general science journal.