Review Article

Inteligent Behaviour of Electrons, According New Axioms and Laws

Valentina Markova*

Bulgarian Academy of Sciences, Bulgaria

***Corresponding Author:** Valentina Markova, Bulgarian Academy of Sciences, Bulgaria.

Abstract

The Theory of new Axioms and Laws contains 2 new Axioms and 8 Laws and it is invented by the same author. The classical axiom (Maxuell 1864) states that the uniform vortex is closed and verifies the Classical Field Theory. In contrast, the first new axiom (Axiom 1) asserts that the ununiform vortex is always open and verifies a new Theory of Open vortices. The second new axiom (Axiom 2) shows that open vortices in nature are mutually orthogonal. On this basis, the electron is defined as orthogonal to the proton. The Law 1, applied to the electron, affirms that a decelerating transverse open vortex generates an accelerating longitudinal vortex in its center. As one of result of the nonuniform (decelerating) transverse vortex, the electron becomes a strong eccentric. The center of body moves from Geometric center to a new point center, which is the center of Gravity. This means that during its pulsation, this eccentric body emits a transverse electric wave with a greater amplitude from the convex side of eccentric spiral than from its flattened side. As other of result is that the eccentric electron has an open active end of its decelerating transverse vortex. The arrangement of electrons with their open ends (tails) towards one end of a conductor and their predominant radiation towards that end is the cause of the movement of Electric wave to the marked end or Electric current flowing (in the opposite direction). This means that only 1 axis (coordinate)phasing and ordering is required. But the phenomenon induction of Electric current is connected with phasing of the electrons along the 3 axes. The manifestation of Lorentz Force also requires phasing along the 3 axes. The two phenomena are not mutually symmetrical, but they are mutually orthogonal.

The phenomena of Induction and the Lorentz Force would not be possible if the electron was not an eccentric from a opened nonuniform, transverse vortex with a perpendicular longitudinal vortex from its center. What's more- the existence of these phenomena are direct evidence of exactly this structure of the electron. The inner structure of the electron is what causes it to react of the external impact from lines of force of external Magnetic field, as a particle possessing some internal intelligence.

Finally the author proposes to create an Electric current by introducing the lines of force of the Magnetic field inside the conductor in the form of a magnetic grid. The natural pulsation of the electrons hits them in the lines of force of the Magnetic field. The electrons as eccentrics move and rotate until they point their active tails to one end of the conductor. This means that in order for an Electric Current to flow along the conductor, there is no need to turn on an Electric Voltage at the ends of the conductor.

Keywords: Axioms; Electron; Proton

Introduction

The article uses the conclusions from the new Axioms and Laws developed by the same author. With their help and as a result of many years of research, the author has established the approximate shape of the elementary particles and in particular of the electron.

- It is formed by an open transverse vortex (Axiom 1) (Figure 1b).
- The transverse vortex, delayed from the outside-in, generates an accelerating longitudinal vortex from the center-out (Law 1) (Figure 1c).

The Classic Axiom:

It is known that Maxwell's laws (1864) are based on a single classic axiom (Figure 1a) [1].

It states that:

div rot E = 0. ----------1

The previous studies attempt to expand the Classic Field Theory to a more general Theory of the Field. The author change a little this axiom as the movement of a vector E in an open loop (div rot E ≠ 0) or an open vortex (div Vor E ≠ 0) is unevenly (velocity is variable (Figure 1b, c, e).

The more general Theory of the Field is represented by the Extended Field Theory. It consists of two axioms and eight laws and lead to the following results: evenly movement is replaced with unevenly movement (decelerating or accelerating); movement in a closed loop is replaced with movement in an open loop or vortex; during its movement decelerating vortex emits primary free cross vortices, while accelerating vortices suck in sucs of this primary free cross vortices; movement in 2D is transformed into the movement in 3D as a cross vortices in 2D generates a longitudinal vortex in 3D through a special transformation and vice versa-longitudinal vortex in 3D through another special transformation generates the cross vortices [2-4].

New Axiom 1: The motion of vector with monotone-decreasing or monotone-increasing velocity becomes along an open vortices:div (VotE) ≠ 0 for vector E in 2D or div (VotH) ≠ 0 for vector H in 3D.

div (Vor E)> 0 or div (Vor E) <0 in 2D, ---------2

div (Vor H)> 0 or div (Vor H) <0 for 3D.

The main result of Axiom 1 is that there have been 4 types of vortices: a cross vortex in 2D (E_{2D}) that can be accelerated (E_{2D} +) or decelerated (E_{2D} -) and a longitudinal vortex in 3D (H_{3D}) that can also be accelerated (H_{3D} +) or decelerated (H_{3D} -) [3].

We are accustomed to the wrong image of a spiral with a constant distance between the turns. But it is "unreal" spiral. Because if it is a spiral, it must be opened. If there is no opened, then it is not a spiral, but it is a closed loop The reason is in the acceleration of velocity. For example, in " real" decelerating vortex E1> E3 and the Geometric Center will aim to move to the larger vector E1 (up). In

the same vortex E3> E4 and at the same time the Geometric Center will aim to move to the larger vector E3 (to the left). Therefore, the Geometric Center will move to a second quadrant or to the Gravity Center (Figure 1e) [3].

At every (i) point p (i) of a decelerating cross vortex E there are two simultaneous movements: velocity vector (-V) and amplitude of the cross vortex (-W). The two simultaneous movements (V and W) also exist at all points of the vortex. The cross vortex (E_{2D} -) is transformed into a longitudinal vortex (H_{3D}+). This is accomplished through a specific operator (Δ1) for cross-longitudinal transformation (Figure 1c).

The transformation Δ1 connects two spaces with different qualities.

Law 1: The open cross vortex (E_{2D}) generates (inward or outward) an open longitudinal vortex (H_{3D}) in its center through a cross-longitudinal transformation **Δ1:**

$$\overset{\Delta 1}{\text{Vor (E}_{2D})} => -- \text{Vor (H}_{3D}),$$

Where Vor (means an unevenly vortex) replaces rot (means a closed loop).

The cross vortex in 2D (E_{2D}) continues its development in 3D as a longitudinal vortex (H_{3D}), where the sign (-) for Vor (H_{3D}) 3D means that E_{2D} and H_{3D} have opposite dynamics. For example when div (Vor E_{2D}) < 0 (is decelerated), div (Vor H_{3D}) > 0 (is accelerated) (Figure 1c).

Maxwell's Law states that rotor of vector E generates vector H in center: rot E = H [1] Unlike Maxwell, the Law1 states that the cross vortex generates a longitudinal vortex.

Result

The cross vortex Vor (E_{2D}) of vector E in 2D continues as a longitudinal vortex Vor (H_{3D}) of vector H in 3D.

Definitions

- A decelerating cross vortex (E_{2D}^-) is a cross open vortex (E_{2D}) for which div (Vor E_{2D}) < 0.

- A decelerating longitudinal vortex (H_{3D}^-) is a longitudinal open vortex (H_{3D}) for which div (Vor H_{3D}) < 0. Figure 2b shows a decelerating longitudinal vortex (H_{3D}^-) inward.

- An accelerating cross vortex (E_{2D}^+) is a cross open vortex (E_{2D}) for which div (Vor E_{2D}) > 0.

- An accelerating longitudinal vortex (H3D+) is a longitudinal open vortex (H3D) for which div (Vor H3D) > 0.

- The decelerating cross vortex (E2D-) inward generates an accelerating longitudinal vortex (H3D+) outward in its center through a physical transformation (Δ1-) (Figure 1c).This transformation (Δ1-) is achieved through a phenomenon called Full resonance (resonance in amplitude, frequency and phase).

Law 1 for electron: The open decelerating cross vortex (E_{2D} -) generates inward an open accelerating longitudinal vortex (H_{3D} +) outward. This action takes place from the center of decelerating cross vortex (E_{2D} -) through a particular cross-longitudinal transformation Δ1-:

$$\text{Vor (E}_{2D}\text{ -)} \overset{\Delta 1-}{=>} \text{Vor (H}_{3D}\text{ +)} \qquad \text{----------3}$$

Actually it describes in 2D the model of electron as the decelerating inward vortex (dec (e-)) (Figure 1c).

Every electron (dec (e-)) of this type: "expanded cross vortex" pulsates in 3D in two modes of: in and out. Surely this type of electron or rotates at outside orbits (orbitals) or exists outside of the atom as free electron.

This type of electron (dec (e-)): when the electron is free (outside of the atom) has decelerating cross vortex (E_{2D}-) inward, which generates an accelerating longitudinal vortex upward (H_{3D+}). When electron is free (type (dec (e-)), the decelerating cross vortex (E_{2D}-) is broken. But accelerating longitudinal vortex (H_{3D+}) radiates a fast ingredient that connects to the decelerating longitudinal vortex (H_{3D}^-) at input of the proton.

There is a significant difference in the states of a bound electron and a free electron. For example scientists measure the mass of a free electron with a decelerating cross vortex (E_{2D}-) But the mass of bound electron is less than the mass of free electron.

Law 5 for electron: The deceleration vortex in 2D is described with a system of 2 equations in which: longitudinal velocity (V) decreases in (n) portions (ψ^n) times; the amplitude (W) increases in (n) portions (ψ^n) times:

$$\text{I V (t)}^2 = V_0 (Vo – V (t)), \qquad \text{----------4}$$
$$\text{I W (t)}^{2=} W_0 (Wo + W (t))$$

Where v_n, w_n n are periodic roots with period n; v_n, w_n are mutual orthogonal that fulfill the requirement for orthogonality: $v_n w_n$ = $V_0 . w_0$, $v_n \omega_n = V_0 . W_0$; n = 0 ÷ ∞; the roots v_n, w_n are expressed as: $v_n = (1/\psi^n) . V_0$, $\omega_n = \psi^n . W_0$; linear velocity V_0 is the starting value of V_n, amplitude of cross vortex W_0 is the starting value of ω_n; ψ is a proportional that fulfills the requirement: $\psi-1/ \psi = 1$; t is continual and even, V_n are uneven (decelerated) and V (t) is nonlinear (Figure 1d).

Structure of electron according new Axioms and Laws

According to Axiom 1 every nonuniform vortex with variously velocity appears an open vortex. In the case of an electron the vortex is decelerating from outside to inside so it is an open vortex. The velocity vector at the entrance E1 is greater than the velocity vector E2 of the opposite point. Therefore the spiral will move up to the bigger vector E1 or to higher speed. And the next velocity vector E3 is greater than the velocity vector E4 of the opposite point from the left. Therefore the spiral will shift to the left to the higher speed. Thus, the whole spiral shifts up and to the left, and the spiral of the electron changes from centric to eccentric (Figure 1b).

Result
The whole spiral shifts up and to the left.

This means that the center of the spiral from the position of the Geometric center (O) moves up and to the left towards a new center in second quadrant, called the Gravity center (F). The distance between the Geometric center and the Gravity center determines the magnitude of the Eccentricity vector (OF) (Figure 1b).

Result
The Eccentricity vector determinates the distance between the Geometric center and the Gravity center.

It turns the spiral of the electron from centric to eccentric. Meanwhile a fundamental role of this Eccentricity vector (OF) is that its projection along the x-axis repels the electron from its personal proton, and its projection to the y-axis rotates the electron around its personal proton. But in this article we will not describe these movements.

Result

The transverse spiral of the electron becomes eccentric spiral.

According to Law1 each transverse vortex generates in its Gravitational center a longitudinal vortex, perpendicular to the plane of the transverse vortex. In the case of the electron, the decelerating transverse vortex from outside-in generates in the Gravitational center a longitudinal accelerating vortex, perpendicular to the plane of the transverse vortex (Figure 1c).

Result

The decelerating transverse vortex of electron generates a perpendicular accelerating longitudinal vortex.

According to Law 5, each main decelerating vortex radiates outward from itself decelerating primary vortices. In the case of the electron, the main decelerating vortex emits primary decelerating transverse vortices (Figure 1d). These primary transverse vortices are concentrated at the Gravitational center. In this center are phased the primary transverse vortices. They generate a longitudinal accelerating vortex through full resonance (in time and space). These primary transverse vortices represent radiated heat energy and fill the body of the electron with heat (Figure 1e).

Result

The transverse vortex of electron is not empty, but it is full of primary decelerating transverse vortices that concentrate in the Gravity center and fill the body of electron with heat.

According to the Axiom1,transverse and longitudinal vortices are obtained. The transverse vortices in the face of the electron and proton reflect the transverse waves of the Sun's rays, and any outside observer can see these particles. The result is that electrons and protons are visible to an external observer.
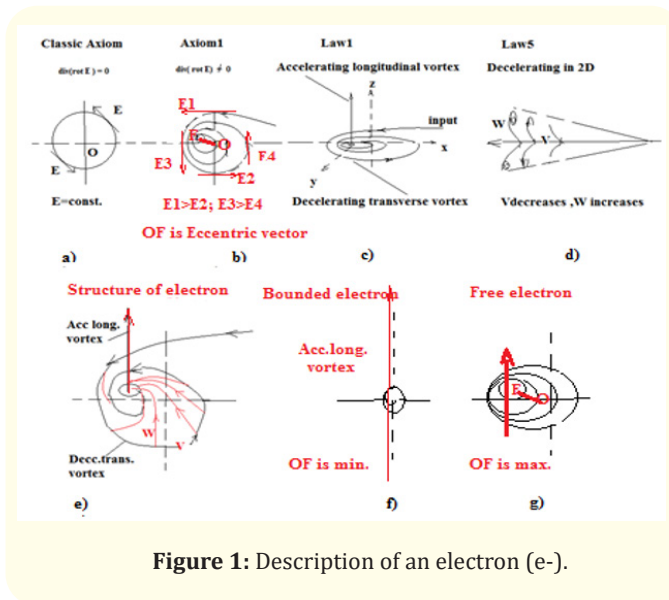

Figure 1: Description of an electron (e-).

But unlike the transverse ones, the longitudinal vortices do not reflect the transverse waves of the Sun's rays. Reaching the thin thread of the longitudinal vortex, the transverse waves diffract. This means that transverse wave bypass the longitudinal vortex and continue in their previous direction and with their previous speed. According to Axiom 2, the electron and proton are connected as mutually orthogonal vortices by bond of longitudinal vortex and they operate in master-slave mode.

Result

The bond between the electron and the proton is invisible to an outside observer.

According to Law 1, an accelerating longitudinal vortex perpendicular to the plane of the transverse vortex is generated at the Gravitational Center of the decelerating transverse outside-in electron vortex. This longitudinal accelerating vortex in Gravity center is also invisible to an external observer because it reacts with diffraction of the transverse wave of Sun light.

Result

The longitudinal vortex generated by the Gravitational Center of the electron is also invisible to an external observer.

That's why the electron and the proton are visible but the connection between them is not visible. And the longitudinal vortex generated by the electron's Gravity center is also not visible.

The Electromagnetic field in a conductor
Electrons have 2 phases of existence in Space [5]:

The first phase corresponds to a very narrow transverse vortex and an longest longitudinal vortex. In this phase, the electron is shrunk in radius and elongated in a perpendicular component and looks like a spindle.It has minimal mass, it is almost invisible and is located in the inner orbit of the atom (Figure 1f).

Result

The inner electron has less radius and long perpendicular component. It has minimal mass, it is almost invisible and is located in the inner orbit of the atom and looks like a spindle.

The second phase corresponds to a very inflated transverse vortex and a shortened longitudinal vortex. In this phase, the electron is wide in radius and short in the perpendicular component. That is why this electron looks like a ball. It has a maximum mass,it is clearly visible and is located in the outer orbit of the atom. Similar is the type of free electrons that are outside the atom (Figure 1g).

Result

The Free electron has a wider radius of transverse vortex and a shorter longitudinal vector. It has a maximum mass, it is clearly visible and looks like a ball.

Classical physics and Electrodynamics have so far only measured the mass and properties of the free electrons that are outside the atom. Obviously, the mass,the dimensions and properties of the bound electrons are very different and cause scientific interest.

Electrons have 2 phases of existence in Time [6]:

The certain orbits are are marked by distance between electron and proton. On private orbit an electron pulsates in Time. This is the reason why the circular orbit turns into an elliptical orbit.

When the electron has minimum transverse vortex,it is coiled like a spindle: its linear velocity is maximum, and the angular velocity is minimum. Because the transverse component is minimum, electron passes at a minimum distance from the nucleus. In this phase, it passes the straight parts of the spiral.

When the electron has maximum transverse vortex,it is inflated like a ball: its linear velocity is minimum, and the angular velocity is maximum. Because the transverse component is maximum, it passes the maximum distance from the nucleus. In this phase, it makes the two sharp turns of the ellipse.

Result

Because of that every electron pulsates in Time,the circular orbit turns into an elliptical orbit.

The reason an electron pulsates in Time is because its individual proton pulsates and controls it as its supervisor.

Free electrons: [5]

If the electron receives a sufficient dose of external energy (for example from light quanta) this electron increases the radius and swells up.It increases the radius so much that the transverse bond with its personal proton is broken and the electron flies out of the atom or lattice of atoms and becomes a free electron.

Result

Free electron disconnects the transverse link with his personal proton,because electron maximum swells up and maximum repells by the proton.

However, the free electron keeps the longitudinal connection with its personal proton. The free electron repeats the pulsations of the personal proton. Consequently, flying out of the atom or from the lattice, the free electron continues to pulsate with the pulse of its proton.

Result

The free electron keeps the longitudinal connection with its personal proton.

There are metals with metal grids with a maximum of free electrons (conductors).These electrons are of second type as inflated electrons in the form of balls: they move chaotically in space and pulsate chaotically in time.

Movement of free electrons along the conductor

When the conductor is not connected to an Electric Voltage the electrons move randomly and pulsate randomly. When the conduc-

tor is connected to any source of Electrical Voltage, an electrical network or an electrical battery, then the electrons are directed to the positive pole. The movement from chaotic becomes directed, but the pulsation remains chaotic. Thus, the conductor is filled with ordered electrons directed to the positive pole. The positive pole gives energy to the transverse vortices of these ordered electrons.

These electrons are ordered, but they are in different phases of pulsation in time. But because of eccentricity, the pulsation to the right direction has a larger amplitude, than to the left direction where the amplitude is smaller. Therefore, more and bigger (in amplitude)transverse waves are emitted to the right of the plus source than to the left.

Result
The amplitude of pulsation to one pole has a larger amplitude, than to the opposite pole of conductor.

The reason is that the electron is eccentric: to right emmits more than to left (Figure1e). Thus, the conductor is filled with a wide range of waves, more directed towards the positive than towards the negative pole.

Let's specify the positioning of the free electrons in the conductor. They are directed with their active tails (ends) towards the positive pole.

Result
The active ends of electrons are directed to only one direction - to the single positive pole.

In this way the toroidal body of free active electrons are located in all planes intersecting the length of the conductor along its corresponding diameter. Thus, countless sections are formed, on which lie down the bodies of the electrons, but all their active ends point only to the positive pole to the right.

Result
All free active electrons like transverse coils (windings) lie in different planes perpendicular to the cross-section of the conductor.

The reason of this arrangement is that the electron is eccentric: It radiates towards the positive pole more than towards the nega-

tive pole, its active end is directed towards the positive pole and its body is located in different planes perpendicular to each section of the conductor along its diameter (Figure 1e).

Conclusion
The reason for arrangement in Space and its directing to only one pole is eccentricity of electron.

The transverse waves are Electomagnetic waves. They propagate at the speed of light (3.10^5 km/sec), although the electrons move much slower at a speed (cm/sec). So we saw that pulsating free electrons slowly (cm/sec) move along the conductor. Because of that electrons are eccentric they pulsate and emit transverse Electromagnetic waves with a greater amplitude to the positive pole than to the negative pole. But these Electromagnetic waves propagate with the speed of light (3.10^5 km/sec). Thus, an Electric wave is located along the conductor moving towards the positive pole.

But (attention!) the speed of the Electric waves is different. In the center along the length of the conductor, the speed is maximum for the respective metal. Going to the periphery, due to the friction of the metal, the speed of the wave decreases. At the very boundary of the conductor, the speed of Electric wave is minimal.

Result
Inside the conductor the speed of Electric wave in the center is maximum, towards the periphery the speed decreases and at the very boundary of the conductor, the wave speed is minimal.

So we saw that pulsating bodies of free electrons slowly move along the conductor. While bodies move slowly the transverse Electric waves move in light speed. Because of eccentricity the electrons emit a greater amplitude to the positive pole than to the negative pole. Thus, an Electric wave is located inside the conductor moving towards the positive pole.

According to Law 5, each decelerating open vortex emits at certain decreasing intervals decelerating open vortices outward with increasing amplitudes. According to Law 1, each transverse decelerating vortex with an outward-inward direction generates in its Gravitational center (displaced from its Geometrical center as an eccentric) an accelerating longitudinal vortex (h_i) perpendicular to

the plane of the transverse vortex. These accelerating longitudinal vortices outside and around the conductor form the Magnetic field lines (H) (Figure 2).

Result

Outside the conductor the accelerating longitudinal vortices (h_i) form the magnetic field lines (H_i)

The necessary condition for moving the electrons is the active ends of the electrons in the conductor to be aimed at one (positive) potential.

Result

For the body of electrons to move, the necessary condition is the active ends of the electrons in the conductor to be aimed at the positive potential.

Except the necessarily there is also a sufficient condition. The necessary condition refers to the motion of the electrons, and the sufficient condition -to the motion of the Electric field.
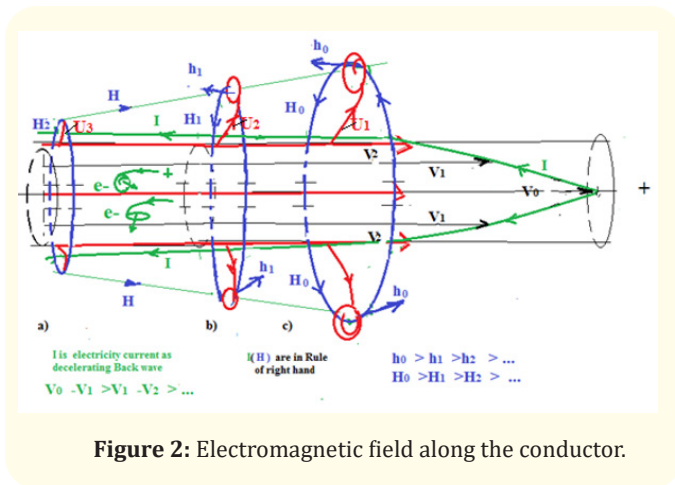

Figure 2: Electromagnetic field along the conductor.

Result

For the Electric field to move the sufficient condition is these eccentric electrons to pulsate asymmetrically.

Thus, the Electric field inside the conductor moves in the direction towards the positive pole, which coincides with the direction of movement of the electrons.

Result

Inside the conductor the Electric field moves in the same direction that the direction of electrons.

We saw above that inside the conductor the velocities of the Electric currents are different. In the center of conductor the velocity ($V0$) of Electricity field is maximum, while going towards the periphery the velocity ($V1$) decreases, and exactly at the boundary surface, the velocity ($V2$) is minimum (Figure 2). The reason for this is different resistance. In the center of conductor the resisistance is minimum, while going towards the periphery the resistance grows, and exactly at the boundary surface, the resistance is maximum.

Thus, first in time (to) the central vortex arrives, then the outer one (t1) adjacent to the central one, then all the outer ones, and finally the peripheral vortex arrives (t2) last in time. Therefore, a wave opposite to the original electric flow is obtained. Its direction is from the center to the periphery. It is named electricity current (I) (Figure 2).

Result

Inside the conductor the Back wave is obtained with direction from the center to the periphery of conductor and it is named Electricity current (I).

Inside the conductor Back wave moves decelerated (Figure 2): (V0-V1) is more than (V1-V2).

Result

Inside the conductor Back wave moves decelerating.

The outer Back wave moves decelerated because it is a continuation of the inner one Back wave. The reason is that the difference betweem central electricity vortex (V0) and the neighboring one (V1) is more then the differense between the adjacent and next outer (V2) (Figure2): Vo -V1 > V1-V2.

Result

Outside the conductor the Back wave moves decelerating as well and it coinsides to the Electricity current (I) outside.

The Electricity current (I) along outer surface of conductor has opposite direction to the Electricity wave inside the conductor and respectively to the movement of electrons.

A very significant phenomenon is obtained from the most peripheral Electricity wave that moves in the boundary surface of the conductor. It moves with a minimum speed. Due to strong friction the most peripheral flow moves decelerating. According Law 5 it emits the transverse open decelerating vortices outside the conductor with amplitude increasing in the direction of movement.

Result

Inside the conductor the most peripheral Electricity wave moves with a minimum speed and emits transverse open decelerating vortices outside the conductor with amplitude increasing in the direction of movement.

But in emitting the decelerating transverse vortices they emit heat. Therefore these vortices towards environment carry out heat outside the conductor (Figure 2).

Result

Outside the conductor the transverse open decelerating vortices (emitted towards environment of the conductor) export heat energy to environment.

These decelerating vortices (in red color) has increasing amplitude to direction of movement (Law5) (Figure 2).

Result

The reason for emitting the heat from conductor to enveronment is that the Electricity wave in periphery of conductor is decelerating and it emits decelerating transverse thermal vortices.

Therefore for heat radiation is necessary to exist an Electric wave with minimal speed on the periphery of the conductor. But for emitting the heat to environment this condition is not enough. It is enough if this peripheral Electric wave to be decelerating [6].

Conclusion

The necessary condition for heat radiation to environment is that an Electric wave exists on the periphery of the conductor, and the sufficient condition is that this peripheral Electric wave is delayed.

If the Electric wave with the minimum speed is not on the periphery but it is in center. Then even though it is decelerating, no energy will be emitted outside. Therefore, if the Electric wave with the minimum speed is in the center of the conductor and even though it is decelerating, it will radiate heat energy inward and not outward from the conductor.

Conclusion

The necessary condition the conductor does not radiate heat energy to the outside is that an Electric wave exists in center of the conductor and sufficient condition is that this peripheral Electric wave may be is decelerating.

If the Electric wave is accelerating, it will not radiate energy inwards, but will absorb energy from within.

Conclusion

The necessary condition to store energy within the conductor is that an Electric wave exists in center of the conductor and sufficient condition is that this peripheral Electric wave is accelerating.

The amplitudes of those described above emitted transverse vortices coincides with the direction of the Electric potential. The maximum potential (U_o) is at the end of the conductor,where the amplitude of the decelerating (heat) vortices (directed outwards) is maximum. The minimum potential (U_i) is on the start of the conductor, where the amplitude of the decelerating vortices (directed outwards) is minimum (Figure 2) [7].

Result

The maximum potential is at the end of the conductor, the minimum potential is on the start of the conductor.

The difference between the maximum (U_o) and minimum amplitudes (U_i) (potentials) of the outwardly radiated decelerating vortices is equal to the Voltage (V) between the end and the beginning of the conductor (Figure 2): $V= (U_o) - (U_i)$.

Result

The difference between the maximum and minimum potentials of the outwardly radiated decelerating vortices is equal to the Voltage of Electric current.

Review

The movement of electrons along conductor happens as follows:The active tails of electrons (Ein) must point to one and the same end of conductor (positive). The planes of bodies can be different, but always perpendicular to the cross section of conductor.

Induction of electrons (e-) and Electricity current (I)
Induction according classical theory

The proposed structure of the electron and the proton fully satisfies the previously classical knowledge of Electromagnetic induction. The electron as an open eccentric outward-inward decelerating vortex fully obeys the of Right Hand Rule. The Right Hand Rule for direction of inducted electrons (e-) states: If the outer magnetic lines of force (Ho) pierce from up to down the palm of the right hand and the thumb points to the direction of movement of the conductor, then the fingers point to the direction of the induced electrons (e-).

Result

The direction of inducted electron (e-) as an open eccentric outward-inward decelerating vortex fully obeys the of Right Hand Rule.

The direction of the Electric current or the direction of the positive particles is determined by the Left Hand Rule. The Left Hand Rule for direction of inducted Electric current states: If the magnetic lines of force (Ho) pierce from up to down the palm of the left hand and the thumb points to the direction of movement of the conductor, then the fingers point to the direction of the induced Electric current (I) or direction of positive particles.

Result

The direction of inducted electric current (I) or the direction of positive charges fully obeys the of Left Hand Rule.

Therefore, the phenomenon of induction actually carries out a separation of negative charges (electrons e-), which are directed to one end of the conductor, and conditionally positive charges (Electric current I), which are directed to the opposite end of the conductor.

Now we can make a summary and a retrospection of the described phenomenon - movement of electrons along a conductor to which a positive potential is applied at one end.

Result

The essence of Left Hand Rule is that if the magnetic lines of force (Ho) pierce from above - downwards the palm of the left hand and the thumb points to the direction of movement of the conductor, then the fingers point to the direction of the induced current (I), the direction of conditionally positive loads or positive particles (p +).

Induction of an electrons (e-) according to the Electromagnetic theory occurs when a conductor moves in an outer constant magnetic field (Ho), which crosses the magnetic lines of force perpendicularly. The direction of the induced electrons is determined by the Right Hand Rule (Figure 3a).

Result

The essence of Right Hand Rule is that if the magnetic lines of force (Ho) pierce from above - downwards the palm of the right hand and the thumb points to the direction of movement of the conductor, then the fingers point to the direction of the induced electrons (e-).

Induction according new theory of new axioms and laws

Let's recall and summarize that the electrons exist in the metal lattice as free electrons.Because electrons are in free mode they are bulging along a transverse component and shrunk along a longitudinal component (Figure 1e).

According Axiom 1 the decelerating transverse vortex is the reason the electron to be a strong eccentric. This means that during its pulsation, this eccentric body emits a transverse wave with a greater amplitude from its convex side than from its flattened side. We saw that the electron is an eccentric, and the new center called the center of Gravity is located in the second quadrant. The distance between the Gravity center and the Geometric center determines the Eccentricity Vector (Figure 1b). The magnitude of this Eccentricity vector is maximum for free electrons. (Figure 1g). For bound electrons, the eccentricity vector decreases with decreasing distance to the nucleus and limites to minimum (Figure 1f).

According to Law 1, for free electron a perpendicular longitudinal vector (which has a small height) is generated in the center of the transverse vortex (which has a large radius) from the place of the Gravitational center. This is how the body of the free electron is formed as an inflated toroid (Figure 1e).

According to Law 5, for free electron the decelerating vortex from outside to inside emits transverse primary decelerating vortices in direction from outside to inside. They fill the body of the toroid with heat vortices (Figure 1e).

This very specific structure of the electron defines the very specific explanation of the nature of induction.Such explanation of the phenomenon of induction will be made in the following points of this report.

The phenomenological approach
Esence [3]

The described phenomenon of Electromagnetic induction does not explain the nature and mechanism, driving forces and reasons for this phenomenon. The phenomenon is described in descriptive (in horizontal) way: how long, how wide, how much it weighs, what color and so on. For example the phenomenon of Electromagnetic induction is described how big is the induced current, where does it point, what does it depend on, etc. But the phenomenon is not described in in essence (in vertical) way: internal structure, driving forceses and so on. The descriptive (in horizontal) aproach is known as Phenomenoligical Approach. The Phenomenological Approach is a descriptive method of studying physical phenomena.

Result

The Phenomenological Approach describes external features as the result (how it looks outside) and does not examine the internal structure and driving forces as causes (how it works inside)

This descriptive approach is typical for the Phenomenological Approach created at the beginning of the 19th century. This approach does not describe the essence and the driving forces, because it does not know what they are.

Result

The Phenomenological Approach (begins of 19th century) is a fundamental approach up to the present time (21st century).

It is obviously that the external description of the phenomenon using the Phenomenological Approach conceals the ignorance of the object we are describing.

Result

The Phenomenological Approach for Classical Electromagnetic induction masks the ignorance of the essence of this phenomenon.

The essence of the phenomenon of Electromagnetic induction is contained in the very structure of the electron (e-) or proton (p+). It was named the Essence Approach.

Conclusion

The Essence Approach for Modern Electromagnetic induction the description of internal structure and driving forces of the electron and proton leads to discovery of internal driving forces.

The modern description of contemporary Modern Electromagnetic induction does not mask the ignorance but vice versa – reveals the fundamental reason for this phenomena.

Newton's third law

Everyone has observed a peg-top that rotates rapidly to the left. But if during its rotation it touches any surface at its outer end, this peg-top jumps sharply upwards. In fact, upon impact from the outside, a decelerating primary transverse vortex appears in the body of the peg-top from the outside to the inside (Law 5). It generates in its center a perpendicular longitudinal component of the reaction (Law 1). As a result, this perpendicular reaction lifts the peg-top up. We ask what happens to Newton's Third Law for rotating bodies!

Result

For rotating body every hit from outside-in causes reaction as moving in perpendicular direction, but not reaction as Newton's Third Law.

Since the peg-top is a centric (not eccentric) body and is oriented in 3D, this perpendicular longitudinal reaction component is in the same direction as the peg-top axis - up or down.

Result

If the body rotates to the left when hit from the outside it will bounce up, if the body rotates to the right when hit from the outside the body will bounce down.

Something similar also happens with the electron. In a stationary conductor, the electrons are directed in different directions and move randomly or chaotically. When the conductor moves in a constant Magnetic field (Ho) and crosses perpendicularly the lines of force, these electrons experience shocks from the outside (shoch

from Ho) and quickly arrange their active ends (tails) to one and the same end of the conductor (positive end) according Right Hand Rule [8].

Conclusion

Newton's Third Law for rotating bodiees is modified as: If rotating body is struck from outside and depending on the direction of rotation the body bounces on its axis (up or down) according to Right Hand Rule.

Therefore the modified Newton's Third Law for rotating electrons appears very changed then the classical Newton's Third Law.

The electron behaves as intelligent particle.

If rotating body is struck from outside and depending on the direction of rotation the body bounces on its axis (up or down) according to Right Hand Rule [8].

In phenomenon of induction the secret is that the randomly moving electron in 3D becomes ordered and directed as in Figure 3a, b, c. When conductor crosses the line of force of the permanent Magnetic field (Ho) it receives a shock which cause a primary decelerating transverse vortex (Law 5) from outside-in towards its center of Gravity.

Result

Magnetic field (Ho) hits the electron from outside-in and cause perphendicular primary transverse vortex in toroid body of electron.

This primary decelerating transverse vortices will generate at Gravity center of the electron,a perpendicular primary accelerating longitudinal reaction vortex (Hre) upward (Law 1). And the reaction vector (Hre) of this new accelerating longitudinal vortex turns out to be at any angle (in 3D) relative to the internal eigenvector of the main (Hin) accelerating longitudinal vortex of the electron itself (Figure 3d).

Result

The reaction vector (Hre) forms any angle (in 3D) relative to the internal eigenvector (Hin) of the electron.

The geometric sum of the two vectors (Hre + Hin) gives a vector (Hsum) which rotates the electron. The electron is twisted so that the impact to be from the most compressed spring of the spiral or at the point of hit of its minimum potential energy (Figure 3d).

Result

The electron seeks to occupy a maximally stable position relative to the external impact of Magnetic field (Ho).

Thus the divergence angle between main electron vector (Hin) and reaction vector (Hre) is zero (in 3D). Therefore the reaction vector (Hre) to be unidirectional with electron vector (Hin).

Result

The angle between main electron vector (Hin) and reaction vector (Hre) becomes zero (in 3D), or reaction vector (Hre) to be unidirectional with electron vector (Hin).

This means that the electron rotates in 3D (Figure 3a, b, c) or in 2D (Figure 3f), until it finds the point where the turns of the eccentric spiral are maximally closely spaced.

Result

As a result - the rotating electron find the place of most compressed spring of the eccentric spiral where the potential energy is minimum.

After this rotation the electron cannot stand in any other way than with its opened tail end to the right, according to the Right Hand Law (Figure 3d). The electrons are twisted so that their active tails to point to one and the same end of conductor.

Result

As a result - the rotating electrons point their active tails (Ein) to one and the same end of conductor (with positive potential).

But planes of body must be perpendicular only to the cross section of conductor.

Result

As a result - the planes of rotating bodies of electrons are always perpendicular to cross section of conductor.

Review

For the phenomenon of induction of electrons, the necessary condition is to have a Magnetic field (reason 1), and the sufficient condition (reason 2) is that there is movement and the conductor crosses perpendicularly the lines of force of the Magnetic field (Ho) (Figure 3e).

The result is that an impact occurs at the outer point which abruptly stops the body of electron (Law 5). According to Law 5, this abrupt stop generates a primary transverse decelerating vortex in direction from out to in. According to Law 1, this primary decelerating vortex generates a longitudinal acceleration reaction vortex (Hre) from its center outwards perpendicular to the plane of the transverse decelerating vortex.Therefore this smaller acceleration longitudinal vortex (Hre) is a reaction of body to outer impact. It will make an angle in 3D space relative to the electron's own longitudinal vortex (Hin). As a result Hre and Hin tend to become parallel to each other or the angle between them tends to zero. At the same time they aim to become parallel to the external magnetic line (Ho). As a result, the electron body will rotate so that the two vectors (Hin, Hre) to become parallel (in phase) with each other and also parallel (in phase) with the external magnetic field (Ho). Therefore three vectors will be parallel or in phase (Ho, Hin, Hre). As a result, large percentage of the electrons will be phased and directed with their active tails to one end of conductor and their body will be pherpendicular to outer Magnetic field (Ho) (Figure 3a, b, c).

Conclusion

In phenomena of induction electron finds the maximum stable position in 3D by phasing the three longitudinal axes Ho (outer Magnetic field), Hin (inside longitudinal vortex of electron, Law 1) and Hre (reaction of local longitudinal vortex of local transverse vortex, Law 1).

The reason the electron to react in this way is that it represents an open eccentric vortex with decelerating transverce vortex moving from out to inside. Electrons react to the external shocks of the external Magnetic field (Ho) by searching the most stable position in Space with lowest Potential Energy. Electron finds the stable position in 2D by rotating its body to this place where Point of hit (Ph) is closest to Gravity center where the coils of spiral are closest to each other. Thus Point of hit (Ph) coincides with the point of mini-
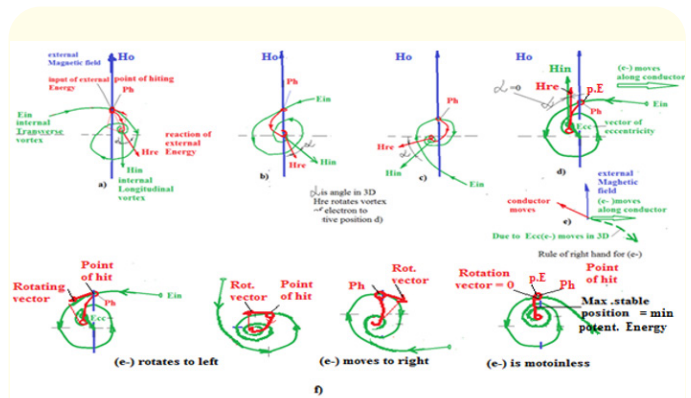

Figure 3: Induction of electricity current (separation of the electrons and targeting of electrons along one direction of the conductor).

mum potential energy (p.E) and the Rotation vector (Rv) becomes zero.

Conclusion

This reaction of electrons get closer to reaction of the the living thing. Maybe the rational behavior and the rational reaction of larger and more complex structures starts from the electrons.

Lorentz force

For the phenomenon of Electricity current along the conductor [9].

- **Review:** As it was clear from previous point 5 the reason for movement of electrons along conductor is that the active tails of electrons (Ein) point to one and the same end of conductor (positive). But the planes of bodies can be different, but always perpendicular to the cross section of conductor.

- **Conclusion:** Electrons when moving along a conductor by an Electric current (I) are phased by only 1 coordinate. Electrons are phased only on their active open ends (tails) which point the positive pole towards.

For the phenomenon of induction of electrons [10]
Review

As it was clear from previous point 5, the necessary condition is to have a Magnetic field Ho (reason 1), and the sufficient condition (reason 2) is that the conductor crosses perpendicularly the Magnetic lines. The result is that an impact occurs at the outer point (p.E) which abruptly stops the transverse vortex of the electron. (Figure 4a).
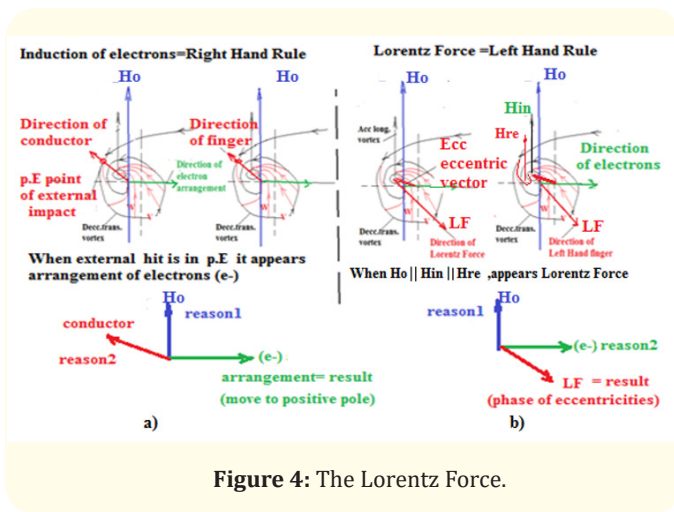
Figure 4: The Lorentz Force.

According to Law 5, this abrupt stop generates a primary transverse decelerating vortex. According to Law 1, this primary decelerating vortex generates a longitudinal acceleration vortex as reaction (Hre) from its center outwards perpendicular to the plane of the transverse decelerating vortex. This smaller acceleration longitudinal vortex (Hre) will make an angle in 3D space with the electron's own longitudinal vortex (Hin). As a result they tend to become parallel to each other or angle between them becoms zero. At the same time they aim to become parallel to the external magnetic line (Ho). The result is that the electron body will rotate so that the two vectors (Hre, Hin) to become parallel (in phase) with each other and also parallel (in phase) with the external magnetic field (Ho).

Finally the three vectors will be parallel (Hre,Hin,Ho) or in phase. As a result a large percentage of the electrons will be phased and directed with their active tails to one and the same end of conductor and their body will be pherpendicular to outer Magnetic field (Ho) (Figure 3a, b, c). Electrons react to the external hit (Ph) of the external magnetic field (Ho) by searching the most stable position in Space with lowest Potential Energy (p.E) (Figure 3d).

Conclusion

Electron finds the most stable position by phasing the 3 longitudinal axes: Ho (outer Magnetic field), Hin (electron longitudinal vortex, Law1) and Hre (reaction as a local longitudinal vortex of local transverse vortex, Law 1, Law 5).

For the phenomenon of Lorentz Force [10]

According to the Classical Theory, the Lorentz force manifests itself when a conductor, through which a Electricity current is already flowing (electrons move in one direction), crosses perpendicular external permanent Magnetic field (Ho). Then a force appears, called of his discoverer Lorentz, simultaneously perpendicular to the Magnetic field (Ho) and to the direction of movement of the electrons (e-) (Figure 4b).

Result

The essence of the Lorentz force is manifested when through a conductor flows an Electric current (I) flows in an environment with an external Magnetic field (Ho).

The direction of this Lorentz Force for electrons is determined by the Left Hand Rule. The Left Hand Rule states: If the palm is pierced from the bottom-up by the magnetic force lines (Ho) and the fingers point in the direction of the electrons (e-), then the thumb points in the direction of the Lorentz force (LF).

Result

The direction of Lorentz Force for electrons is determined by the Left HandRule.

The reason for the appearance of the Lorentz Force is that the electrons are aligned and phased along the three coordinate axes in the 3D space. Then the vectors of the internal eccentricities of all the electrons become parallel to each other and sum geometrically in the same direction-this is the direction that the thumb shows on the left hand by Left Hand Rule.

Result

The reason for Lorentz Force is that the electrons are aligned and phased along the three coordinate axes in the 3D space.

The Lorentz force accurately demonstrates the presence of a strong eccentricity in the active electrons. At the same time, the presence of the Lorentz force is a precise and fundamental proof of the presence of this eccentricity (Ecc) (Figure 4b).

Result

The presence of the Lorentz Force is a fundamental proof of the existing of eccentricity in electrons.

If the electrons were not eccentric, then such a Force of Lorentz, would never have formed, which to this day rotates the rotor of the electric motors.

Conclusion

Electron stay at the most stable position, phasing the 3 longitudinal axes: Ho, Hin, Hre. Therefore all vectors of eccentricities (Ecc) are parallel to each other and the eccentricities of all electrons add up and form a force called the Lorentz Force [10].

Conclusion and a Proposal

- **Let's repeat again:** The movement of electrons along a conductor included between 2 electric potentials requires phasing only along 1 axis (x-axis). Electron induction in a passive conductor crossing a perpendicular constant Magnetic field requires 3 axes phasing. Manifestation of the Lorentz force of electrons moving in an active conductor placed in a Magnetic field perpendicular to the Electric one also requires phasing along 3 axes.
- **Let's note:** A simple directional movement of pulsating eccentrics requires phasing on only 1 axis and does not require phasing on 3 axes.
- **Necessity and the sufficiency:** It is necessary that the electrons pulsate and are ordered with their tails towards one end of the conductor. Such construction means that the bulging part of the eccentric will always be turned towards one positive end and during pulsation will emit a greater amplitude to the plus end than to the minus end of the conductor. It is enough that the plains of electrons to be oriented perpendicular to the conductor section [8].
- **Conclusion**: In order for an Electric Current to flow along a conductor it is not necessary and it is necessary:
- It is not necessary firstly - that an Electric Voltage has been applied to both ends of the conductor, and secondly - it is not necessary for the electrons to move along the wire,
- It is necessary, firstly - that the electrons should pulsate in Time, and due to the eccentricity of their bodies, the electrons should radiate in one direction with a greater amplitude than in the opposite direction, and secondly - that (thanks to shocks in the lines of force of an external or internal Magnetic Field) the tails of the electrons should be phased along the axis of the conductor, and the planes of their bodies of transverse vortices should be always perpendicular to the wire section [9].

- **Proposal for invention:** The scientists can construct a device such as an electric battery or superconductor. They can do this as they imitate the phenomenon of the of flowing the Electricity Field (in 1D) using the phenomenon of induction (in 3D). That is why they should construct a Modified conductor according new Axioms and Laws. It should be a conductor with very specially installed dense grid of internal lines of a permanent Magnetic field. As a result the pulsating electrons (due to the fact that they are connected with their respective pulsating protons, Axiom 2) will hit these lines from inside. Thus the electrons (due to the fact that their bodies are eccentric, Axiom 1) will emit Electricity wave to one direction with bigger amplitude than to the opposite direction and at the same time electrons will phase along 3 coordinates (in 3D) [10]. This will be more than enough to get an Electricity Voltage between the two ends of the Modified conductor.

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