

The Essence of Free Energy as Application of Transverse Vortices, According the new Axioms and Laws

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***Corresponding Author:** Valentina Markova, Bulgarian Academy of Sciences.**Received date:** November 27, 2023; **Accepted date:** December 26, 2023; **Published date:** January 03, 2024**Citation:** Valentina Markova, (2024), The Essence of Free Energy as Application of transverse vortices, according the new Axioms and Laws, *J. General Medicine and Clinical Practice*, 7(1); DOI:10.31579/2639-4162/129**Copyright:** © 2024, Valentina Markova. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

The article describes brand new field in Phisycs through the Theory of new axioms and laws. It includes 2 new axioms and 8 new laws. It was described by the same author in previous articles and reports. It expands the Classic Field Theory which describes parametric processes to a much more general theory which describes nonparametric processes. It consists new type of field (accelerating and decelerating) and new tipos of movement (cross and longitudinal). The expanding includes Gravity field, Free Energy and even live structures. In present report are used 2 Axiom and 6 Laws only. It is known that Maxwell's laws (1864) are based on a single base axiom [1]. It states that the movement in a closed loop leads to evenly movement (with constant speed) of a vector E : $\text{div rot } E = 0$. The author change this axiom with a new one (Axiom1), according which the movement in an open loop ($\text{div rot } E \neq 0$) or vortex ($\text{div } \text{Vor } E \neq 0$) leads to unevenly movement (with variable speed) of a vector E [2]. The subsequent results are: the evenly movement is replaced with unevenly movement which can be decelerating or accelerating; in 2D is defined a cross vortex and in 3D is defined a longitudinal vortex. For example: the cross vortex in 2D is transformed to a longitudinal vortex in 3D through a transformation $\Delta 1$ (Law1); the longitudinal vortex in 3D is transformed to a cross vortex in 2D through transformation $\Delta 2$ (Law2); decelerating vortex emits free cross vortices to the environment that are called "free energy" (Law5); accelerating vortex sucks the same one's free cross vortices (Law6) and so on. The electron is an field particle that contains a decelerating cross vortex. It pulsates in time and this is the reason in contraction phase to emit Free transverse vortices into the environment.

These free cross vortices then self-organize into something like dipoles. These imaginary and invisible dipoles don't react to the amplitude of an applied Electromagnetic Field at all. These primary dipoles react instantly and orient themselves only at high acceleration of the Electromagnetic Field. The acceleration and not the amplitude is the reason for the movement of the imaginary dipoles (as free energy) to the poles of an outside Electromagnetic Field. In this report the author describes the essence of the phenomenon free energy as moving primary decelerating and accelerating dipoles. The free energy is as result of the structure and the dynamic of the transverse vortices from theory of new Axioms and Laws. For now the ultimate goal is to create a device that sucks in and separates with high acceleration (between two different poles) these decelerating and accelerating dipoles. And finally in this way, an Electrical Voltage to be created between these two poles. The acceleration approach was used by Nikola Tesla (1931) in the creation of "free energy" generator that was installed in "Pierce -Arrow Corporation" car instead of previous gasoline engine.

Kew Words: sickle cell disease; sickle cell pain management clinic; vaso-occlusive crisis; concept analysis; sickle cell pain

Introduction

a) The Classic Axiom

The Classic Axiom in the Theory of the Electromagnetic Field certifies Maxwell's laws (1864). It postulates that the movement of an electric vector E in a closed loop is evenly:

$$\text{div } (\text{rot } E) = 0, \quad 1.$$

where $(\text{rot } E)$ is the movement of the vector E in a closed loop; $\text{div } (\text{rot } E)$ is the divergence (the variation in increase or decrease is zero) of the vector E during its movement in a closed loop $(\text{rot } E)$; the movement of the vector E

in a closed loop (rot E) with zero divergence (variation) of the vector E is equivalent to evenly movement or to movement with constant velocity(V)[1].

The defect of the classic axiom (1) is that it does not describe movement in an open loop or a vortex and movement with a variable velocity V. Now is the time to break the restriction of Maxwell's axiom (1) and to expand the space explained by the theory. The main motivation for altering the classic axiom (1) follows after the need to describe the cause for an uneven movement in open systems. It turns out that open vortices are the cause of closed vortices, which means that open vortices are more fundamental than closed ones [2]. So, it is the necessity to change the existing axiom of the Classic Field Theory for closed loop to axioms of Expanded Field Theory for open loops [2]. So the new axiom describes an open loop movement.

$$\text{div}(\text{rot } E) \neq 0.$$

2.

For motion of vector E (rot E) along open loop with monotone-decreasing or monotone-increasing velocity is equivalent to vortex (Vor E).

b) The New Axioms

Axiom 1. The motion of vector with monotone-decreasing or monotone-increasing velocity becomes along an open vortices: $\text{div}(\text{Vor}E) \neq 0$ for vector E in 2D or $\text{div}(\text{Vor}H) \neq 0$ for vector H in 3D.

$$\text{div}(\text{Vor } E) > 0 \text{ or } \text{div}(\text{Vor } E) < 0 \text{ in 2D,} \tag{2a}$$

$$\text{div}(\text{Vor } H) > 0 \text{ or } \text{div}(\text{Vor } H) < 0 \text{ for 3D.} \tag{2b}$$

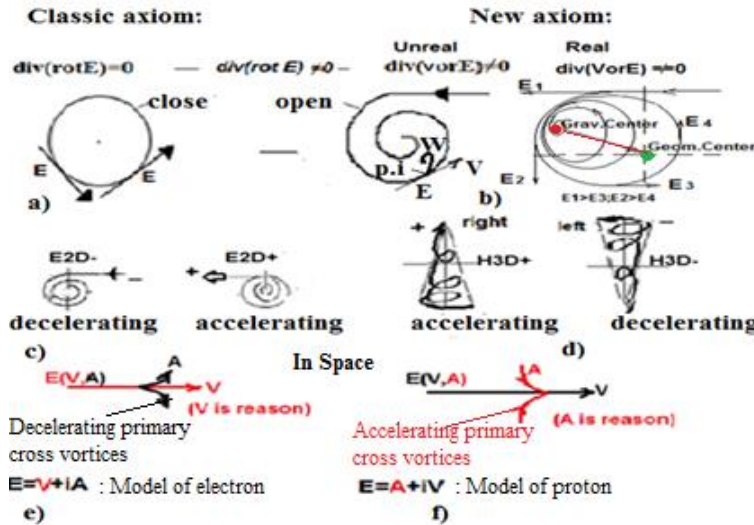


Figure 1: The Classical Axiom is replaced by a New Axiom 1

Axiom 2. Two vortices of one complementary pair in one direction in 2D: $E = +A + iV$; $E = +V + iA$, or two vortices of complementary pair in opposite direction in 2D: $E = -A - iV$; $E = -V - iA$, exist simultaneously in the same time in 3D.

b) New Laws

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

$$\Delta 1 \tag{3}$$

$$\text{Vor}(E \text{ 2D}) \Rightarrow -- \text{Vor}(H \text{ 3D}),$$

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) (Figure2a).

Definitions:

A decelerating transverse (cross) vortex (E 2D-) is a cross open vortex (E 2D) for which $\text{div}(\text{Vor } E \text{ 2D}) < 0$. A decelerating longitudinal vortex (H 3D-) is a longitudinal open vortex (H 3D) for which $\text{div}(\text{Vor } H \text{ 3D}) < 0$. 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 $\text{div}(\text{Vor } E \text{ 2D}) > 0$. An accelerating longitudinal vortex (H3D+) is a longitudinal open vortex (H 3D) for which $\text{div}(\text{Vor } H \text{ 3D}) > 0$.

Options in two complementary complex objects.

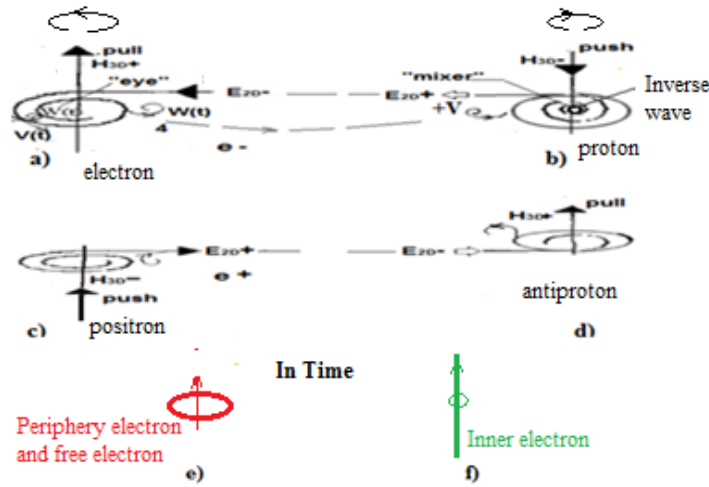


Figure 2: Two Transformation Laws.

Law 2: The open longitudinal vortex (H 3D) (inward or outward) generates an open cross vortex (E 2D) in its center through a longitudinal-cross transformation $\Delta 2$:

$$\Delta 2$$

$$\text{Vor (H 3D)} \Rightarrow -- \text{Vor (E 2D)} \quad 4.$$

Law 3: Accelerating and decelerating of the main vortex are nonparametric processes and are going by internal logic through Positive Feedback.

Law 4: For an uneven (accelerating or decelerating) vortex the product between current velocity (V_i) of longitudinal movement on one and the same current line and current amplitude (W_i) of its perpendicular cross vortices is a constant in every (i) step

$$(V_i) \cdot (W_i) = \text{const.} \quad 5.$$

where $i = 0 \div \infty$ is current point from step to step.

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

$$I V(t) = V_0 (V_0 - V(t)), \quad 6.$$

$$I W(t) = W_0 (W_0 + W(t)),$$

where v_n, w_n are periodic roots with period n ; v_n, w_n are mutual orthogonal that fulfill the requirement for orthogonality: $v_n \cdot w_n = V_0 \cdot w_0$, $v_n \cdot \omega_n = V_0 \cdot W_0$; $n = 0 \div \infty$; the roots v_n, w_n are expressed as: $v_n = (1/\psi n) \cdot V_0$, $\omega_n = \psi n \cdot W_0$; 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 3e).

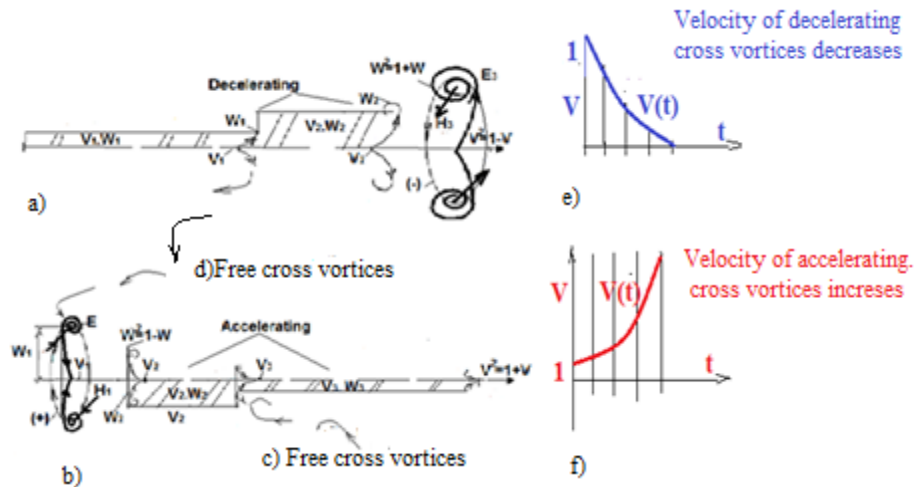


Figure 3: Decelerating-accelerating vortices

Law 6: The acceleration vortex in 2D is described with a system of 2 equations in which: longitudinal velocity (V) increases in (n) portions (ψn) times; the amplitude (W) decreases in (n) portions (ψn) times:

$$I V(t) = V_0 (V_0 + V(t)), \quad 7.$$

$$I W(t) = W_0 (W_0 - W(t)),$$

where v_n, w_n are n periodic roots with period n ; v_n, w_n are mutual orthogonal that fulfill the requirement for orthogonality: $v_n \cdot w_n = V_0 \cdot w_0$, $v_n \cdot \omega_n = V_0 \cdot W_0$; $n = 0 \div \infty$; the roots v_n, w_n are expressed as: $v_n = (\psi n) \cdot V_0$, $\omega_n = (1/\psi n) \cdot W_0$; 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 (accelerated) and $V(t)$ are nonlinear (Figure 3f).

2. Origin of free energy

According Axiom1:

Result (4 types of vortices): The main result of Axiom 1 is that there has 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 -) (Figure 1c,d) [2].

Result (Eccentric spiral): We are accustomed to the wrong image of a spiral with a constant distance between the coils. But it is “unreal” spiral (Figure 1a). Because if it is a spiral, it must have acceleration (accelerating or decelerating). If there is no acceleration, then it is not a spiral but it is closed loop. The reason is in the acceleration of velocity. The real spiral is eccentric spiral with variable distance between the coils (Figure 1b).

Result (Decelerating spiral of electron carries up and left): In “real” decelerating vortex $E_1 > E_3$ and the Geometric Center will aim to move to the larger vector E_1 (up). In the same vortex $E_2 > E_4$ and at the same time the Geometric Center will aim to move to the larger vector E_2 (to the left). Therefore, in decelerating spiral the Geometric Center will move from center to a second quadrant or to a new place called Gravity Center (Figure 1b) [3].

Result (It exists two simultaneous movements): 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) (Figure 1b). The two simultaneous movements (V and W) also exist at all points of the vortex. Therefore V and W exist simultaneously in time and in space.

According Axiom2:

Let us replace the amplitude of cross vortex (W) with (A). Then if velocity (V) is real magnitude the amplitude (A) must be imaginary magnitude or it must be inversely- if amplitude (A) is real magnitude, then the velocity (V) must be imaginary magnitude.

Result (Two pairs of complementary objects): It exists one complementary pair: $E = +A + iV$; $E = +V + iA$ and this is another complementary pair (Figure 2a,b): $E = -A - iV$; $E = -V - iA$. Both of them must exist simultaneously (Figure 2c,d)

Result (The generator and consumer form one pair of complementary objects): Because one object is a generator (as a proton) and the other object is consumer (as an electron) then both of them form a pair of complementary objects. Proton generates accelerating cross vortices, but consumes decelerating longitudinal vortex. Electron consumes decelerating transverse vortices, but generates accelerating longitudinal vortex (Figure 2a, b).

Result (The proton and the electron form a resonant system): Because the proton and the electron form a pair of complementary objects then they exchange energy and matter between them. Proton sends Potential energy in portions (quanta) to electron and electron sends Kinetic energy to proton in equal portions. Therefore, both of them form some kind very special resonant system [4].

According Law1:

Results (The cross vortex in 2D continues as a longitudinal vortex in 3D):

The Maxwell's Law states that rotor generates a vector H: $\text{rot } E = H$ [1]. But the present Law1 postulates that vortex generates a vortex. More detailed - the cross vortex Vor (E 2D) of E in 2D generates a longitudinal vortex Vor (H 3D) of H in 3D. The sign (-) for Vor (H 3D) in 3D means that E2D and H3D have opposite dynamics. For example, when $\text{div}(\text{Vor } E 2D) < 0$ (is decelerated), $\text{div}(\text{Vor } H 3D) > 0$ (is accelerated) (Figure 2e).

Consequence: The open decelerating cross vortex (E 2D-) inward generates an open accelerating longitudinal vortex (H 3D+) outward. This action (H 3D+) takes place from the center of decelerating cross vortex (E 2D-) through a particular cross-longitudinal transformation $\Delta 1-$:

$$\text{Vor (E 2D-)} \Rightarrow \text{Vor (H 3D +)} . \quad 3a.$$

The Consequence (3a) of Law1 corresponds only to inside Gravity center (Figure 2a).

Results (The model of electron): This Consequence (3a) describes in 2D the model of electron as the decelerating inward vortex (dec(e-)) (Figure 2e) in the chain of proton-electron (Figure 2b - Figure 2a). Every electron (dec(e-)) of this type is “expanded cross vortex” that pulsates in time in 3D in two modes of - in and out. Surely this type of electron rotates at outside orbits (orbitals).

Consequence: The open accelerating cross vortex (E 2D +) inward generates an open decelerating longitudinal vortex (H 3D-) outward. This action (H 3D-) takes place from the Gravity center of accelerating cross vortex (E 2D +) through a particular cross-longitudinal transformation $\Delta 1+$:

$$\Delta 1+ \\ \text{Vor (E 2D +)} \Rightarrow \text{Vor (H 3D-)} . \quad 3b.$$

Results (The 4 types of electrons (e-)): According the Consequences (3a) and (3b) we immediately obtain the models of 4 types of electrons(e-): (dec(e-)) and (acc(e-))” electrons. Each of them pulsates in two modes:” expanded cross vortex (Figure 2e)” and a “contracted cross vortex (Figure 2f)” and each of them pulsate in time in 3D - in and out “.

Results (An electron in inner orbits): The first type of electron (acc(e-)): when the electron is inside a proton-electron system (connected in the atom) has accelerating cross vortex (E 2D+) inward with less radius. In 3D electron generates a decelerating longitudinal vortex (H 3D-) upward with longer amplitude (Figure 2f). Therefore, the Consequence (3b) of Law1 describes in 3D the model of electron (e-) as the accelerating inward vortex (acc(e)) and decelerating upward vortex in the chain of proton-electron. Every electron (acc(e-)) of this type: ” contracted cross vortex “pulsates in 3D in two modes of : “in and out”. Because of accelerating inward cross vortex this type of electron rotates in inner orbits [4].

Conclusion (The “free” electron is outside of atom): The second type of electron (dec(e-)) is when the electron is in outer orbits or it is a “free” electron. In 3D this electron has decelerating cross vortex (E 2D-) inward with bigger radius, which generates an accelerating longitudinal vortex upward (H 3D+) with less amplitude (Figure 2e).

Conclusion (The “free” electron breaks off cross link to proton): When electron is “free” (second 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.

Result (Difference between the mass of free and bounded electrons): There is a significant difference in mass 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-). Actually, the mass of a” free” electron is more than of a bound electron.

Results (4 types of positrons and antiprotons): It exists another chain positron (Figure 2c) -antiproton (Figure 2d). There are also the 2 type of positrons: (dec(e+), Figure 2e) and (acc(e+), Figure 2f) positrons. Therefore we immediately obtain the models of 4 type of positrons : (dec(e+)) and (acc(e+)) that each of them pulsates in two modes: ” expanded cross vortex “vortex and “contracted cross vortex “, each of them pulsate in 3D : ” in and out “. Orthogonal is the description of 4 types of positrons [5].

According Law2: For the opposite transformation a new operator $\Delta 2$ is introduced to transform a longitudinal (H 3D) into a cross (E 2D) vortex. The physical nature of this $\Delta 2$ transformation is quite different in comparison with $\Delta 1$. However the transformations $\Delta 1$ and $\Delta 2$ are mutual orthogonal, rather than symmetrical to each other.

Consequence: The open decelerating longitudinal vortex (H3D -) downward generates an open accelerating cross vortex (E 2D +) outward. This action takes place in the center of accelerating cross vortex (E 2D +) through a particular longitudinal-cross transformation $\Delta 2$:

$$\text{Vor (H 3D -)} \Rightarrow \text{Vor (E 2D +).} \quad 4a.$$

Results (The model of proton) : This Consequence (4a) describes in 3D the model of proton in 2D or decelerating longitudinal vortex in 3D generates accelerating cross vortex in 2D (Figure2b) in the chain of proton-electron (Figure 2b - Figure 2a) .

Consequence: The open accelerating longitudinal vortex (H3D+) downward generates an open decelerating cross vortex (E2D-) outward in its center through a special longitudinal-cross transformation $\Delta 2+$:

$$\text{Vor (H 3D+)} \Rightarrow \text{Vor (E 2D-).} \quad 4b.$$

Result (4 types of proton p+): According Consequence (4a) and (4b) we immediately obtain the models of 4 types of protons: (acc (p+) and dec(p+)). Each of them pulsates in two modes: “shrunk cross vortex “and an” expanded cross vortex”. Each of them pulsates in 3D:” in and out “. The Consequence (4a) of Law2 in 3D refers to the pushing part (Figure2b) of the pair of complementary objects in pair proton-electron (Figure2b – Figure2a).

Result (Reason and result): The transformation $\Delta 2$ - emphasizes that the movement of the longitudinal vortex (H3D) downward is the reason, but the movement of the cross vortex(E2D) outward is the result (Figure 2b) [4].

Result (Necessary and sufficient condition for generating elementary particles): A necessary condition for generating of elementary particle is the presence of free cross vortices called “free energy”. The sufficient condition is existing the longitudinal vortex to work (from out to in) as a mixer (Figure 2b).

Results (The $\Delta 1$ (Law1) and $\Delta 2$ (Law2) generate complementary objects): The new extended meaning of the term” Complementarity” is when the two parts are generating and they act anti-phase - one push and the other pulls. The two transformations $\Delta 1$ (Law1) and $\Delta 2$ (Law2) are not symmetrical but rather form pairs of objects that complement each other in their action. So they form a pairs of complementary objects which are mutually orthogonal. For example: electron is orthogonal to proton. Thus electron and proton form pair of complementary objects.

Result (The chain of complementary objects has not energy losses) The two vortices in the described above vortex pairs (Figure 2a - Figure 2b) play the role of generators –one(proton) push (Figure 2b) the other(electron) – pulls (Figure 2a). For example: electron consumes potential energy as cross vortex but it generates kinetic energy as longitudinal vortex, proton consumes kinetic energy as longitudinal vortex but generates potential energy as cross vortex. Obviously in described above chain there are not consumers. Therefore, this chain has not energy losses.

Result (Electromagnetic chain has energy losses) : For difference to the chain of complementary objects where both of objects are generators , in every Electromagnetic chain has one generator and many consumers with big resistances .That's why Electromagnetic chain has energy losses.

According Law3:

Results (A redistribution in portions - quanta): The Law 3 shows that velocity (V_i) increases by redistribution with decreasing of amplitude (A_i) of cross vortices. There is also redistribution of masses. The mass of the cross vortices (A_i) is added in portions (quanta) with acceleration to the initial mass of the longitudinal vortex. Thus, the longitudinal vortex with velocity (V_i) will accelerate more and more. The accelerating longitudinal vortex sucks in more and more cross vortices from outside that accelerate further the longitudinal vortex with velocity V_i and so on. Thus, the longitudinal vortex at output V_i increases its velocity, acceleration and mass which returns at input. The reason is that it sucks in more cross vortices and increases of the acceleration and mass to the entrance.

Results (The process runs as avalanche to saturation level): This process runs as avalanche until it reaches a saturation level where the acceleration becomes maximum (A_{max}) for a time slice Δt . When, for example, an accelerating vortex sucks in with acceleration the cross vortex, then in start moment ($t=0$) its first derivative is minimum: $a=0$. However the accelerated absorption of the cross vortex increase and when in the end moment ($t=t_n$) the positive acceleration of the cross vortex becomes maximum: $a_{max} \gg 0$. The mass of this cross vortex is added by avalanche way to the initial longitudinal vortex accelerating it further and further (Figure 3b). It is an example of the avalanche process. In the next cycle the accelerated longitudinal vortex again sucks in a portion (quantum) of the cross vortex and so on. Through Positive Feedback the level of saturation constantly increases, the time interval needed for saturation becomes longer, etc.

Results (The Positive Feedback): The Positive Feedback in a longitudinal vortex turns the process of amplification to a process of generation. The Positive Feedback can be a base for constructing an energy generator. As we saw above there are two qualitatively different movements at each (i) point p (i) of the decelerating vortex with vector E: longitudinal vector velocity (V) and cross vortex with amplitude (W) (Figure 1, b). The reason of that is the vector E is not a simple vector but it is a complex vector (Figure 1, e.g).

Results (The simultaneous operation of two mutual orthogonal vectors): According to the Classical Mechanics, the operation of two independent vectors is equal to the Sum of these vectors. But it is sequential action, not simultaneously. But according to the New Axiom and Law3 there is simultaneous action of two mutual dependent vectors, called orthogonal. The operation of two mutual dependent orthogonal vectors is equal to the Multiplication of this vectors.

Result (The nonparametric process): The transforming one vector (V) into a vortex (W) and vice versa is a nonparametric process (Law3). Transformation is done by internal Laws but not by outside setting. Both transformations, $\Delta 1$ (Law1) and $\Delta 2$ (Law2), are not regulated by internal regulator or internal parameters. They are regulated only by internal Laws but not are determined by outside parameters. Obviously, the processes of acceleration and deceleration of the longitudinal vortex is a nonparametric process [5]. For comparison- parametric system is managed by outer Laws and outer parameters. For example, an Electromagnetic chain is calculated by Laws of Ohm of Kirchhoff and others. In these laws the engineer (which is outside the system) puts wanted parameters and rules them to obtain wanted results [1].

According Law4:

Result (The result of multiplication $V(t) \cdot W(t)$ is constant): The nonparametric transformation of two variables $V(t)$ and $W(t)$ is mathematically described by the product $V(t) \cdot W(t)$ of these variables. We have seen that at each (i) point of the vortex with vector E there is simultaneously a vector velocity (V) in 1D and vortex pressure (W) in 2D. In every point (i) and time (ti) the product $V(t_i) \cdot W(t_i)$ is a constant (Figure1b). For example: In the case of the decelerating longitudinal vortex the velocity decreases ($V-$), while the amplitude of the cross vortices increases ($W+$) in such a way that their product ($V-$) \cdot ($W+$) remains constant all along the longitudinal vortex.

Result (The multiplication of V (ti) .W (ti) is equal to the power P): In the case of decelerating vortex the product (V-).(W+) is proportional to the power (Pdec.) of the decelerating longitudinal vortex (Figure 3a) .In the case of the accelerating longitudinal vortex the velocity increases (V+), while the amplitude of the cross vortices decreases (W-) in such a way that their product (V+).(W-) remains constant all along the longitudinal vortex ,where the product (V+).(W-) is proportional to the power (Pacc) of the accelerating longitudinal vortex(Figure 3b).

According Law 5:

Consequence: The deceleration vortex in 3D is described with a system of 4 equations in which: longitudinal velocity (V) decreases in (n) portions (ψn) times; the angular velocity (w) , the amplitude (W) and the number (N) of cross vortices increase in (n) portions (ψ n) times:

$$\begin{aligned}
 \mathbf{I} \mathbf{V}(t)2 &= \mathbf{V0} (\mathbf{V0} - \mathbf{V}(t)), \\
 \mathbf{I} \mathbf{W}(t)2 &= \mathbf{W0}(\mathbf{W0} + \mathbf{W}(t)), \\
 \mathbf{I} \mathbf{w}(t)2 &= \mathbf{w0} (\mathbf{w0} + \mathbf{w}(t)) \\
 \mathbf{I} \mathbf{N}2 &= \mathbf{N0} (\mathbf{N0} + \mathbf{N}) ,
 \end{aligned}
 \tag{6a.}$$

where the roots v_n , w_n and ω_n and n_n are expressed as: $v_n = (1/\psi n) .V0$, $\omega_n = \psi n .W0$; $w_n = \psi n .W0$, $[n_n] = \psi n .N0$; linear velocity $V0$ is the starting value of V_n , amplitude of cross vortex $W0$ is the starting value of ω_n , angular velocity $w0$ is starting value of w_n , number $N0$ is starting value of n_n , $[n_n]$ is the closest integer ; ψ is a proportional that fulfills the requirement: $\psi - 1/ \psi = 1$) : v_n , w_n are periodic roots with period n ; v_n , w_n are mutual orthogonal that fulfill the requirement for orthogonality : $v_n .w_n = V0 .w0$, $v_n .\omega_n = V0 .W0$; $n = 0 \div \infty$; the roots v_n , w_n and ω_n and n_n are expressed as: $v_n = (1/\psi n) .V0$, $\omega_n = \psi n .W0$; $w_n = \psi n .W0$, $[n_n] = \psi n .N0$; linear velocity $V0$ is the starting value of V_n , amplitude of cross vortex $W0$ is the starting value of ω_n , angular velocity $w0$ is starting value of w_n , number $N0$ is starting value of n_n , $[n_n]$ is the closest integer ; ψ is a Golden proportional that fulfills the requirement: $\psi - 1/ \psi = 1$.

It is noteworthy that: When starting number $N0 = 1$ the number n_n is calculated with the row: 1;1.62; 2.62;4.25; 6.88, 11. 15,18.07; 29.28;47. 43, The closest integer $[n_n]$ form row::1,2,3,4,7,11,18,29,47,...For comparison. Fibonacci's order is: 0,1,1,2,3,5,8,13,18,21, 34, Obviously there is a similarity between the two rows at the beginning. But finally (after 18th) the number $[n_n]$ rises sharply (29>21, 47>34,...) compared to the order of Fibonacci. -A decelerating vortex (E2D-) with a velocity vector (V) emits to the environment decelerating vortices with increasing amplitude (W) (because of positive sign +in second equation of system 6 6b) The amplitude (W) increases in perpendicular direction to the velocity vector (V). In decelerating longitudinal vortex, the amplitude (W) increases only if it is directed from the inside to the outside, ie. if the decelerating vortex emits outward cross vortices with increasing amplitude (W)(Figure 3b). -We saw that at a decelerating vortex vector velocity (V) is transformed according to internal Law into the amplitude of the cross vortex (W) (Figure 3b).

Result (The internal Law is Law5 according the Golden proportion ψn): At a decelerating vortex vector velocity (V) is transformed according to internal Law 5 ($v_n = (1/\psi n) .V0$, $\omega_n = \psi n .W0$) into the amplitude of the cross vortex (W) (Figure 3b) .

Results: (Left rotating wheels): The emitting of decelerating cross vortices to environment in perpendicular direction forms so called “ quanta “ and this process is called “quantum”. According to the Law 1 and Rule of the Right Hand, the decelerating cross vortex (E) generates at the center to outside (to left) a longitudinal vortex (H). So at every n_i point forms left rotating wheel perpendicular to the velocity (V). Therefore, the decelerating longitudinal vortex in 3D forms left rotating spiral (left- counterclockwise when observer watches against the movement) .Decelerating longitudinal vortices rotate counterclockwise (-),watched against the movement (Figure 3b). Because of increasing of the amplitude (W) the angular velocity (w) and

the number of cross vortices (N) it forms decelerating, thickening and expanding left rotating Funnel in which : $W \max$; $w \max$; $N \max$.

Result (Right rotating decelerating spiral): The increasing the angular velocity (w) and the number of cross vortices (N) are in every next wheel. When the observer looks against the direction of moving, he will percept the whole spiral as rotating to right spiral. Two or more decelerating longitudinal vortices repel each other. The reason is due to the emission of cross vortices from center to outside.

Conclusion (In Mode of pulsating in time electron emit primary free cross vortices): In expanded type (outer orbits) and in contracted types (in inner orbits) of electrons during their pulsation emit free cross vortices .

Conclusion (Bounded electrons are generated in Space as decelerating cross vortices and emit primary cross vortices): According Law1 the electrons in the Space of the electron shell are generated as decelerating cross vortices. According Law5 they will emit the primary decelerating cross vortices in the Space. Therefore, the Space around the electrons is full of primary decelerating cross vortices.

Conclusion (Bounded electrons pulsate in Time and emit primary cross vortices): In the phase of contraction according Law5 electrons emit primary decelerating cross vortices. Therefore, all electrons in the Space inside the atom (between electron shell and the atomic nucleus) emit primary cross vortices in Time. Thus, the Space around the electrons is full of primary decelerating cross vortices

Conclusion (Free electrons contracts in Time and emit decelerating vortices): The free electron looks like an eccentric inflated decelerating transverse vortex. It emits many primary decelerating eccentric transverse vortices. These emitted transverse eccentric vortices package in the eccentric dipole in type of a passive dipole.

Result (Necessary and sufficient condition for generating elementary particles): A necessary condition for generating of elementary particle as proton (p+) is the presence of free primary cross vortices called “free energy”, and a sufficient condition is the longitudinal vortex to work (from out to in) as a mixer (Figure 2b).We will obtain the models of 4 types of proton : (dec(p+)) and (acc(p+)) that each of them pulsates in two modes:” expanded cross vortex” and “shrunken cross vortex and “in-out” .For generating an electron a necessary condition is the presence of cross vortex from proton and the sufficient condition is free primary cross vortices in Space between proton and electron.

According Law6:

Consequence: The acceleration vortex (accelerating Funnel in center) in 3D is described with a system of 4 equations in which: longitudinal velocity (V) increases in (n) portions (ψn) times, the angular velocity (w) , the amplitude (W) and the number (Nn) of cross vortices decrease to zero in (n) portions (ψ n) times:

$$\begin{aligned}
 \mathbf{I} \mathbf{V}(t)2 &= \mathbf{V0} (\mathbf{V0} + \mathbf{V}(t)), \\
 \mathbf{I} \mathbf{W}(t)2 &= \mathbf{W0}(\mathbf{W0} - \mathbf{W}(t)), \\
 \mathbf{I} \mathbf{w}(t)2 &= \mathbf{w0} (\mathbf{w0} - \mathbf{w}(t)) \\
 \mathbf{I} \mathbf{N}2 &= \mathbf{N0} (\mathbf{N0} - \mathbf{Nn}) ,
 \end{aligned}
 \tag{7a.}$$

where the roots v_n , w_n and ω_n and n_n are expressed as: $v_n = (\psi n) .V0$, $\omega_n = (1/\psi n) .W0$, $w_n = (1/\psi n) .W0$, $n_n = (1/\psi n) .N0$; linear velocity $V0$ is the starting value of V_n , amplitude of cross vortex $W0$ is the starting value of ω_n , angular velocity $w0$ is starting value of w_n , number $N0$ is starting value of n_n ; ψ is a Golden proportion that fulfills the requirement: $\psi - 1/ \psi = 1$: v_n , w_n are periodic roots with period n ; v_n , w_n are mutual orthogonal that fulfill the requirement for orthogonality : $v_n .w_n = V0 .w0$, $v_n .\omega_n = V0 .W0$; $n = 0 \div \infty$; the roots v_n , w_n and ω_n and n_n are expressed as: $v_n = (\psi n) .V0$, $\omega_n = (1/\psi n) .W0$, $w_n = (1/\psi n) .W0$,

$n_n = (1/\psi n) \cdot N_0$; The first positive root of the first equation is: $v_1 = \psi \cdot V_0 = 1,62 \cdot V_0$. The periodic roots of the first equation are obtained from the expression: $v_n = V_0 \cdot (v_{n-1} + v_{n-2})$. The first positive root of the second equation is: $w_1 = (1/\psi) \cdot W_0 = 0,62 \cdot W_0$. The periodic roots of the second equation are obtained from the expression: $w_{n-2} = W_0 \cdot (w_n - w_{n-1})$. Therefore when velocity (V) increases, the amplitude (W) decreases so that at each step (ni) (according to Consequence of Law 4) the product (Vi) (Wi) is a constant (Figure 4a). For an accelerating longitudinal vortex, the amplitude (W) decreases only if it is directed from the outside to inside, i.e. if the accelerating vortex sucks in cross vortices with decreasing amplitude (W) (Figure 4c)

Result (The internal Law is Law6 according Golden proportion (1/ψn): At an accelerating vortex vector velocity (V) (first equation of 7a) is transformed according to internal Law6 into the amplitude of the cross vortex (W) (second equation of 7a) (Figure 3a). For comparison- in the previous point we saw that at a decelerating vortex vector velocity (V) is transformed according to internal Law5 into the amplitude of the cross vortex (W.) More precisely- the increasing in speed (V) (in V0) is transformed into an decrease in the amplitude (W) (1/ψn · W0) of cross vortices (Figure 3a).

Results (The accelerating vortex suck in free primary cross vortices): When an outer accelerating vortex passes through this passive dipoles composed of free cross vortices, according Law5 it will suck in them. As a result the accelerating vortex will increase its positive acceleration, mass and Power because it will add the mass and energy of the passive dipoles. Said more detailed- an accelerating vortex (E2D+) with a velocity vector (V) suck in accelerating vortices with decreasing amplitude (W) in perpendicular direction (because of sign - in second equation of system 7a). The sucking of accelerating cross vortices from environment in perpendicular direction forms so called “quanta” and this process is called “quantum”.

Result (Accelerating vortex form right rotating wheels): According to the Law1 the accelerated cross vortex (E2D+) generates (sucking) inward to its Gravity center a longitudinal vortex (H3D-) from the outside to inside. At each point (i) a right rotating wheel is formed. But in time the spiral in 3D is formed as a left rotating spiral in Funnel. Therefore, the wheel of accelerating vortex will twist to the right (clockwise (+), viewed against the movement (Figure 3c).

Result (The accelerating vortices form stretching narrowing and left rotating Funnel): Because of the amplitude (W), angular velocity (ω) and the number of cross vortices (N) decreases it forms accelerating, stretching, narrowing, left rotating Funnel of spirals in which: W_{min} , w_{min} , N_{min} (Figure 3b). The reason is that two or several accelerating longitudinal vortices, due to the suction of cross vortices, attract each other, insert one in another and form a accelerating Funnel. The reason for attraction is increasing the positive acceleration and decreasing the amplitude of cross vortices.

Conclusion (Bounded protons are generated in Space as accelerating cross vortices and suck primary cross vortices): According Law 2 the protons in the Space of the atomic nucleus are generated as accelerating cross vortices. According Law 6 they will suck in primary cross vortices. Therefore, the Space around the protons is full of primary cross vortices.

Conclusion (Bounded protons contract in Time and suck primary cross vortices): The protons in the Space of the atomic nucleus suck in primary cross vortices. This Space around the protons is full of primary cross vortices.

Conclusion (The proton-electron Space is full of free cross vortices): The entire space (so called vacuum) inside and outside of the electron-proton pair is filled with free cross vortices. The Space between electrons and protons is full of moving primary cross vortices.

Conclusion (The outer accelerating vortex can suck in the free primary vortices): If an accelerating movement passes through this Space that is full with free cross vortices, it would suck in the free cross vortices. When it exists an accelerating process with very high acceleration near by the free cross vortices, this accelerating process will suck in also the Passive dipoles of the free cross vortices. It will add their mass and will generate energy

Conclusion (Imitation of accelerating vortex by an Electromagnetic impulse with steep acceleration): An Electromagnetic field with steep acceleration can play role (can imitates) of accelerating movement which will suck in the free cross vortices and will generate energy.

Attention: The acceleration approach was used by Nikola Tesla (1931) in the creation of “free energy” generator that was installed in “Pierce –Arrow Corporation” car instead of previous gasoline engine.

3. How to create the Dynamic dipoles using Static dipoles.

a) Nicola Tesla has used the term “free energy” in the sense of environment’s energy. In the current article, this term is expanded as the free primary cross vortices which fill the Space between electron and proton. This term includes also the free primary vortices outside of atom which are emitted from pulsating in Time free electrons. We know that Electromagnetic field in vacuum moves in constant velocity (light speed c). But if it moves through the tube of Electrical field in limited Space with resistance boundaries (a vacuum or an electric Conductor), then the it forms the tube of the Electric field. The Electric flow stratifies in velocity according to the magnitude of the resistance inward to the central longitudinal axis of the tube. Therefore the outer Space of this tube is full of free cross vortices. We saw that if an acceleration movement vortex passes through this Space that is full with free cross vortices, it would suck in the free cross vortices. The free cross vortices would add their masses and energy to the original acceleration movement vortex and it would accelerate itself much more. Tesla has observed this phenomena in nature. We can also observe this. For example we can observe a river that spills slowly along the plain then it emits water flows from the inside out forming sediments, shallows and islands. If a river descends on a steep slope, it sucks small water streams from outside to inside, undermines the shores of the slope and it forms canyons. We can observe the lightning passing through the atmosphere between a cloud and the surface of the Earth. It sucks in free vortices and cross Passive dipoles from the atmosphere and gains tremendous speed and energy. Scientists and engineers still cannot explain why the actual Electric current of lightning is much greater than the Electric current that should be (according to Ohm’s Law) between the potentials of the cloud and the ground.

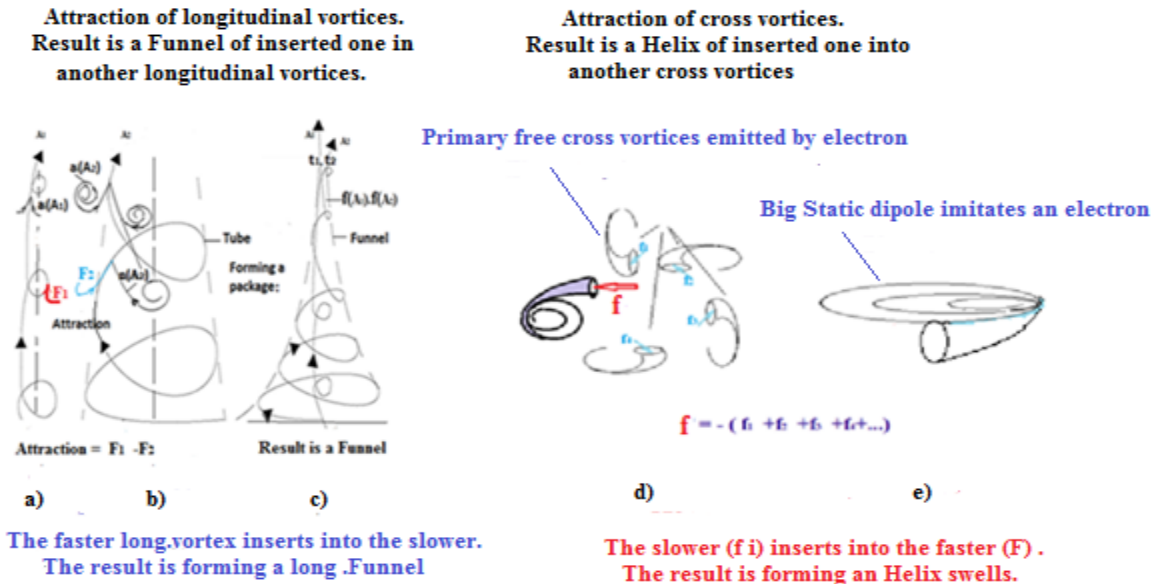


Figure 4: Self- organization of longitudinal vortices in comparison with transverse vortices

b) Self- organization of free transverse vortices to bigger tubes, dipoles or Helix (Figure 4).

According to the New Axioms and Laws the free cross vortices are created by decelerating main cross vortex in generation process of the matter and exist around every matter particle. Every matter generation process is

decelerating process. The reason is that the matter is created by decelerating cross vortices and decelerating cross wave is spreading crosswise with energy loss. Therefore free cross vortices exist around every matter in our space-time that is spreading crosswise and where time is constant ($t=const.$) [7].

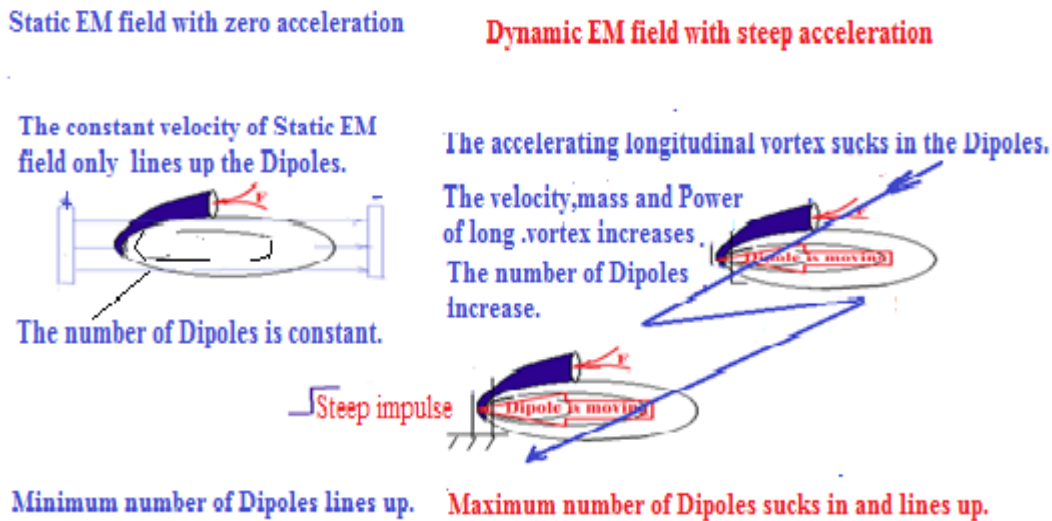


Figure 5: Dipole in Static and Dynamic Electromagnetic field

c) Transformation of Static dipoles into Dynamic dipoles by an accelerating vortex (Figure5).

Usually free cross vortices exist as the eccentric vortices. The closed eccentric vortices look like to " static dipoles". But when accelerating motion passes near them, they become to " dynamic dipoles". The static dipole seems as closed dipole without any acceleration in entrance. The static dipole becomes to the dynamic dipole as it opens its vortex from inside to outside. They are opened and are moved towards the accelerating motion that sucks them. We know that so called " free energy " are manifestation of free

primary cross vortices that exist in environment. They exist around every Electromagnetic devices, including around of Electromagnetic antennas. If we apply a pulse with a very steep front we can imitate **an accelerating vortex which will suck and arrange the Static dipoles and turn them into Dynamic ones** [3].

4. Conclusions

a) There are free vortices around every electron and each proton According to Law 1, each electron is generated in Space 2D by a decelerating transverse vortex. According to Law 2, each proton is generated in Space 2D by a

decelerating longitudinal vortex. According to the Consequence of Law 1, every electron generates in Time a contracted form and an inflated form. Pulsating in time, the electron emits decelerating primary free vortices in the inflation phase. According to Law 2, each proton pulsating in Time has a contracted form and an inflated form. Pulsating in Time, the proton rapidly sucks in these same primary free vortices (in the contraction phase) which are emitted in before time by his proper electron (in its expanded phase).

Result: Around each electron (including free or bounded electron) and proton there exist free primary transverse vortices generating Space and pulsating in Time.

b) The closed Space between the bounded electron and the bounded proton is full of free primary cross vortices as well.

According to Axiom 2 when the proton generates at its exit in the 2D Space an accelerating transverse vortex, then the electron is generated in the 2D Space at its entrance by a decelerating transverse vortex. The electron during pulsation generates free vortices in Time, and the proton during pulsation absorbs in time the same free vortices to themselves.

Result: The space between the bounded electron and the bounded proton is full of free primary vortices.

c) Two opposite directions form closed loop of exchanging the energy and mass between electron and proton. From electron to proton is formed inverse direction in 2D of moving of free vortices. For comparison- the straight direction of moving is from proton to electron. During this inverse moving from electron to proton is formed so called Back wave in opposite direction. Therefore the straight and inverse directions form closed loop of exchanging the energy and mass between electron and proton. Proton send energy to electron as a powerful main transverse vortex, but electron send mass to proton as free primary cross vortices.

Result: The straight and inverse directions form closed loop in 2D of exchanging the energy and mass between electron and proton.

d) The open Space between free electron and bounded proton is full of free primary vortices.

According to Axiom 2, Law 1 and Law 2, it becomes clear that in order for an electron to break away and fly out of the atom and to be in the state of a free electron, it must break only the transverse connection to his personal proton. Just after this the electron flies out of the atom. Consequently, the free electron will be controlled only by the longitudinal accelerating vortex. The direction is from the electron to the proton in 3D. This connection comes out in 3D as accelerating longitudinal vortex perpendicularly from the Gravitational center of the transverse decelerating vortex of the same electron and goes in as decelerating longitudinal vortex perpendicularly to accelerating transverse vortex of its personal proton. The longitudinal vortex has the properties of an energy, the transverse vortex carries the properties of a matter. So –in 3D the free electron breaks the material connection with proton and no longer receives material quanta from it. But it retains the energy connection as longitudinal vortex with the personal proton. Because of that this energy connection is a longitudinal vortex it works at a very long distance.

Result: Moving in 3D Space the free electron breaks the transverse material link but it retains only the energy link to personal proton.

The author has researched that the transverse bond propagates at a maximum speed equal to the speed of light ($v=c$) in Space -time with constant time ($T=cons.$). But the longitudinal bond propagates at a speed greater than the

speed of light ($v > c$) in Space- time with constant path ($S=const.$) [6,7]. Due to the super velocity accelerating longitudinal Feedback from the electron to the proton, the free electron will pulsate in Time as well. The electron that floats far outside the atom will pulsate in a phase (simultaneously) with the pulsation of his personal proton which stays in core of atom. Thus, free electrons scattered over a great distance also will emit primary vortices just like free electrons located in the immediate closeness to the atom.

Result: Pulsating in Time the free electrons fill 3D Space around every matter (material body, Planets and Stars) with free primary transverse vortices known as Free Energy.

5. Proposal

It became clear that the Space described above is full of free decelerating primary vortices, which (over time and under conditions of high concentration of free vortices) are packed and grouped into Static dipoles. Inside the Space of atmosphere, the free vortices pack into Static dipoles only under condition of their high concentration. Outside the Space of atmosphere, the free vortices pack into Static dipoles only over long Time under. The Static dipoles contain packets of decelerating outside-in vortices. They make packages on base of similar accelerations. The Static dipoles mimic electrons to a large extent the author proposes to launch a very accelerating longitudinal vortex (Funnel) through such a Space, which has to play **the role of the sucker** of primary vortices and Static dipoles. This accelerating vortex will necessarily suck the Static **dipoles. Thus, the Static dipoles will turn into Dynamic dipoles** (Figure 5b). The essence of this act is that the Static dipoles simultaneously are fed and lined up by energy of the accelerating longitudinal vortex (Funnel). The reason is that the longitudinal acceleration vortex feed the passive dipoles with accelerating energy and arrange them in accelerating way in the direction of the longitudinal vortex.

This alignment in a certain direction imitates the generation an Electric Current and creation an Electric Voltage between the beginning and the end of the accelerating longitudinal vortex.

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