

Application of cross vortices, according the new Axioms and Laws

Valentina Markova

Bulgarian Academy of Sciences, Sofia, Bulgaria

*Corresponding author

Dr. Valentina Markova, Bulgarian Academy of Sciences, Sofia, Bulgaria.

Submitted: 02 Apr 2021; Accepted: 12 Apr 2021; Published: 17 Apr 2021

Citation: Valentina Markova (2021) The Gravity Funnels, formed by the longitudinal vortices, according to the new Axioms and Laws. *Adv Theo Comp Phy* 4(2): 105-112.

Abstract

This article reveals of an application of a theory of nonparametric and nonlinear processes. This theory is described by new axioms and laws which include 2 new axioms and 8 new laws. They were explained in previous reports by the same author. This new theory expands the Classic Field Theory which is about parametric and linear processes. The theory of new axiom and laws is a more general theory because it consists new philosophy as nonparametric decoding, new objects as an accelerating or a decelerating field and new forms of movement as transverse and longitudinal motion. In present report are used 2 axioms and 5 laws only.

It is known that Maxwell's laws (1864) are based on a single 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 changes this classic axiom with a new Axiom 1.

According to the new Axiom1 the movement in an open loop ($\text{div rot } E \neq 0$) or vortex ($\text{div Vor } E \neq 0$) 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. According to subsequent laws: the cross vortex in 2D is transformed to a longitudinal vortex in 3D (transformation $\Delta 1$) and inversely (transformation $\Delta 2$); decelerating vortex emits free cross vortices to the environment; accelerating vortex sucks the same ones and so on. The electron is a model that contains a decelerating cross vortex from outside to inside and emits free cross vortices into the environment. The proton is a model that is generated by an accelerating cross vortex from inside to outside and sucks these the same free cross vortices from the environment.

According to the Axiom 2 the decelerating (electron) and accelerating (proton) vortices form a resonant circle. In this circle they exchange their energy (accelerating and decelerating) along the real connection and exchange the mass of free vortices (emitted and sucked) along feedback.

These free cross vortices then self-organize into something like primary dipoles which resemble electrons but in very smaller scale. The passive primary dipoles resemble electrons from the inner orbits of the atom which are contracted balls with a minimal polarization. This is the reason that these primary dipoles do not react to the amplitude of an applied external Electromagnetic Field. But they react instantly at high acceleration of the EM field. The reason is that the high acceleration strongly polarizes the passive primary dipole (ball), turns it to an active dipole (toroid) and directs it to the active pole of the EM field.

In this article is described Nikola Tesla's approach about using of free cross vortices called "free energy".

Introduction

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 of the vector E (the variation in increase or decrease) is zero during its movement in a closed loop

$(\text{rot } E)$; the movement of the vector E in a closed loop $(\text{rot } E)$ 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 does not disclose the 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 his 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 uneven vortices are the cause of closed vortices, which means that open uneven vortices are more fundamental than closed ones. 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 unevenly loop movement:

$$\text{div}(\text{rot } E) \neq 0. \quad 2.$$

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

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.

$$\begin{aligned} \text{div}(\text{Vor } E) > 0 \text{ or } \text{div}(\text{Vor } E) < 0 \text{ in 2D,} & \quad 2a. \\ \text{div}(\text{Vor } H) > 0 \text{ or } \text{div}(\text{Vor } H) < 0 \text{ for 3D.} & \quad 2b. \end{aligned}$$

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) [3].

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. 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 acceleration of velocity. The real spiral is eccentric spiral (Figure 1b).

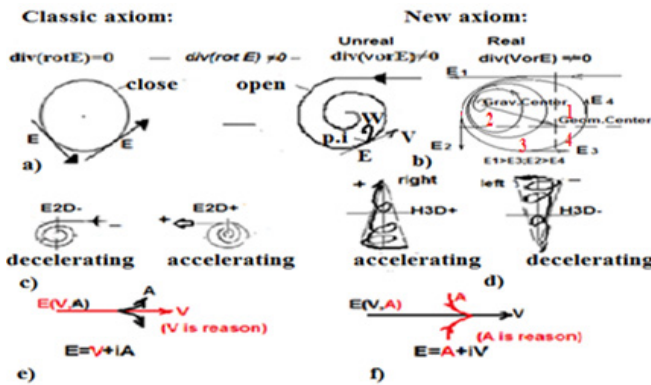


Figure 1: The classical axiom is replaced by a new axiom

For example, 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, the Geometric Center will move to a second (2) quadrant or to the Gravity Center (Figure 1b) [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) (Figure 1b). The two simultaneous movements (V and W) also exist at all points of the vortex. 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. Therefore, it exists one complementary pair $E = +A + iV$; $E = +V + iA$, and another complementary pair $E = -A - iV$; $E = -V - iA$. Both of them must exist simultaneously [4].

Definition: The **complementary pair** is named a system of two objects, in which one object is a generator and the other object plays role of consumer and the two objects form a resonant.

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.

New Laws

Law 1: The open cross vortex (E_{2D}) generates an open longitudinal vortex (H_{3D}) in its center through a cross-longitudinal transformation $\Delta 1$:

$$\text{Vor}(E_{2D}) \Rightarrow -\text{Vor}(H_{3D}), \quad 3.$$

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}) (Figure 2a) [4].

Results: (the cross vortex of E in 2D continues as a longitudinal vortex of H in 3D)

The Maxwell's law states that rotor of vector E generates in center vector H: $\text{rot } E = H$ [1]. But the present Law 1 postulates that 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}) 3D means that E_{2D} and H_{3D} have opposite dynamics. For example, when $\text{div}(\text{Vor } E_{2D}) < 0$ (is decelerated), $\text{div}(\text{Vor } H_{3D}) > 0$ (is accelerated) [2].

Definitions:

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

A decelerating longitudinal vortex (H_{3D-}) is a longitudinal open vortex (H_{3D}) for which $\text{div}(\text{Vor } H_{3D}) < 0$. 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 $\text{div}(\text{Vor } E_{2D}) > 0$.

An accelerating longitudinal vortex (H_{3D+}) is a longitudinal open vortex (H_{3D}) for which $\text{div}(\text{Vor } H_{3D}) > 0$. Figure 2a shows an accelerating longitudinal vortex (H_{3D+}) outward.

Consequence: An open decelerating cross vortex (E_{2D-}) inward generates 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 $\Delta 1$:

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

The physical transformation ($\Delta 1$ -) is achieved through a phenomenon called Full resonance which is resonance in amplitude, fre-

quency and phase. This type of resonance was described in detail in previous reports [4]. The Consequence (3a) corresponds only to the pulling part (H_{3D+}) from inside center (Figure 2a) of the cross vortex pair of objects in 2D (Figure 2b - Figure 2a).

Results: (the model of electron in external orbit) This Consequence (3a) describes **the model of electron** as the decelerating inward vortex (dec (e-)) (Figure2a) in the chain of proton-electron (Figure 2b - Figure 2a). Every electron (dec(e-)) of this type is similar to an “expanded cross vortex”. The reason is that the open cross vortex slowly shrinks from outside inwards and forms some kind of a slow and swollen toroid with maximum radius and maximum polarization (Figure2e). And something more – this electron (dec(e-)) pulsates in time in two modes of: in and out.

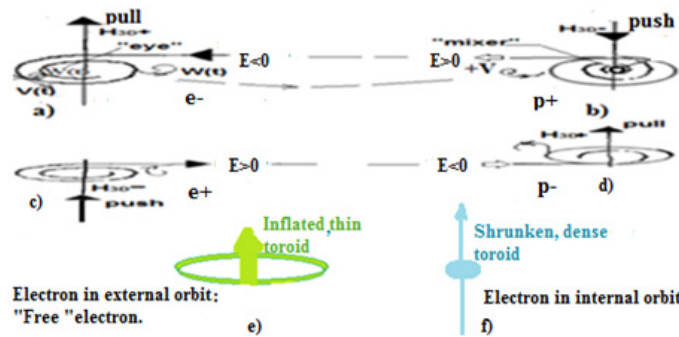


Figure 2: Two Transformation Laws. Options in two complementary complex objects.

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

$$\text{Vor} (E_{2D+}) \Rightarrow \text{Vor} (H_{3D+}). \quad 3b.$$

Result: (electron rotates in internal orbit) This type of electron (acc(e-)) corresponds to the electron which is in the most internal of atom orbits. The Consequence (3b) describes the model of electron (e-) as an accelerating cross vortex (E_{2D+}) inward that generates a decelerating longitudinal vortex (H_{3D+}) upward [4,5]. This electron is similar to a ‘shrunken cross vortex’ and to a small ball with minimum radius and minimum polarization (Figure2f). Therefore, the Consequence (3b) describes a shrunken electron (acc(e)) (Figure2a) in the chain of proton-electron (Figure 2b - Figure 2a). Every electron (acc(e-)) of this type rotates in internal orbits (orbitals) and is also pulsates in time in two modes of: inward and out [9].

Result: (4 types of electrons (e-)) We immediately obtain the models of 4 types of electrons(e-): (dec(e-)) and (acc(e-)) electrons named ” expanded cross vortex” and “shrunken cross vortex “ whereby each of them pulsate in time : inward and outward [5,9].

Result: (electrons play role of generator) The family of electrons play role of generator.

In case of electron (dec(e-)) it is an expanded toroid and it pulls with less negative acceleration (Figure2e). In case of electron (acc

(e -) it is shrunken toroid (ball) and it pulls with big negative acceleration (Figure2f).

Law 1 describes the generation of the family from different electrons. According to Axiom 2, two complementary and orthogonal transverse vortices form a system of exchanging matter and energy in resonant mode (Figure2b- Figure2a).

This means that one should expect a description of an object orthogonal to the electron - and it is the proton. The generation of a family of protons is described by Law 2(Figure2b, d).

Law 2: The open longitudinal vortex (H_{3D+}) generates an open cross vortex (E_{2D+}) in its center through a longitudinal-cross transformation $\Delta 2$:

$$\text{Vor} (H_{3D+}) \Rightarrow - \text{Vor} (E_{2D+}). \quad 4.$$

Consequence: The open decelerating longitudinal vortex (H_{3D+}) inward 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 $\Delta 2-$:

$$\text{Vor} (H_{3D+}) \Rightarrow \text{Vor} (E_{2D+}). \quad 4a.$$

The Consequence (4a) of Law2 in 3D refers to the **pushing part** (Figure2b) of a pair of complementary objects as proton-electron (Figure2b – Figure2a). The transformation ($\Delta 2-$) emphasizes that the movement of the longitudinal vortex (H_{3D+}) inward is the cause, but the movement of the cross vortex (E_{2D+}) outward is the result (Figure 2b).

Consequence: The open accelerating longitudinal vortex (H_{3D+}) inward generates an open decelerating cross vortex (E_{2D+}) 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+) From transformation Consequence (4a) and Consequence (4b) we immediately obtain the models of 4 types of protons: dec(p+) and acc (p+). They correspond to “expanded cross vortex” and to “shrunken cross vortex “and each of them pulsates in time: inward and outward.

Result: (protons play role of generator) The family of protons play role of generator. In case of proton (dec (p+)) it is similar to an expanded, big ball. According to the Axiom2 it pushes the corresponding electron (dec (e-)) with big acceleration in long distance (long orbit). In case of proton (acc(p+)) it is similar to a shrunken, little ball. According to the Axiom2 it pushes the corresponding electron (acc(e-)) as well, but with less acceleration to the close distance (close orbit) (Figure2b - Figure 2a).

Result: (2 pair of anti-phase generators) Both of vortices in the described above pair (Figure 2a - Figure 2b) play the role of generators -one push (Figure 2b), the other –pulls (Figure 2a). For the same reason both of vortices in the described above pair (Figure 2c - Figure 2d) play the role of generators -one push (Figure 2c), the other –pulls (Figure 2d). Obviously in described above chains

there are not consumers. Therefore, in these chains ha not energy losses.

Result: (without energy losses) There are no energy losses in chain electron-proton

It is well known that in every Electromagnetic chain has a generator and one or more consumers. That's why Electromagnetic chain there are energy losses.

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. The new extended meaning of the term "Complementarity" is when the two parts are generating and they act anti-phase: one pushes and the other pulls. So they form a pairs of complementary objects or they are mutually orthogonal.

Law 5: 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:

$$\begin{aligned} I V(t)^2 &= V_0 (V_0 - V(t)), \\ I W(t)^2 &= W_0 (W_0 + W(t)), \end{aligned} \quad 6.$$

where v_n, w_n are periodic roots with period n ($n = 0, 1, 2, \dots, \infty$); v_n, w_n are **mutual orthogonal** that fulfill the requirement for orthogonality: $v_n \cdot w_n = V_0 \cdot W_0$; the roots v_n, w_n are expressed as: $v_n = (1/\psi^n) \cdot V_0, w_n = \psi^n \cdot W_0$; the linear velocity V_0 is the starting value of v_n ; amplitude of cross vortex W_0 is the starting value of w_n ; ψ is called Golden ratio and it fulfills the requirement: $\psi - 1/\psi = 1$; t is continual, v_n, w_n are discretas.

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

$$\begin{aligned} I V(t)^2 &= V_0 (V_0 - V(t)), \\ I W(t)^2 &= W_0 (W_0 + W(t)), \\ I \omega(t)^2 &= \omega_0 (\omega_0 + \omega(t)), \\ I N_n^2 &= N_0 (N_0 + N_n) \end{aligned} \quad 6a.$$

where v_n, w_n, ω_n, n_n are periodic roots with period n ($n = 0, 1, 2, \dots, \infty$); v_n, w_n, ω_n are **mutual orthogonal** that fulfill the requirement for orthogonality: $v_n \cdot w_n = V_0 \cdot W_0, v_n \cdot \omega_n = V_0 \cdot \omega_0$; the roots v_n, w_n and ω_n and n_n are expressed as: $v_n = (1/\psi^n) \cdot V_0, w_n = \psi^n \cdot W_0, \omega_n = \psi^n \cdot \omega_0, [n_n] = \psi^n \cdot N_0$; linear velocity V_0 is the starting value of v_n , amplitude of cross vortex W_0 is the starting value of w_n , (for 3D) **angular velocity ω_0 is starting value of ω_n , number N_0 is starting value of n_n or $[n_n]$ is the closest integer**; ψ is called Golden ratio and it fulfills the requirement: $\psi - 1/\psi = 1$; t is continual, v_n, w_n, ω_n, n_n are discretas and $V(t)$ is nonlinear decelerating spiral.

Result: (energy conservation) According to the orthogonality rule ($v_n \cdot w_n = V_0 \cdot W_0$), when velocity (V) increases, the amplitude (W) decreases so that at each step (ni) the energy power (P_i) to be a constant: $P_i = V_i \cdot W_i = v_n \cdot \omega_n = V_0 \cdot W_0 = \text{const.}$ (Figure 3a).

Result: (emitting of primary free cross vortices) Because of

positive sign (+) in second equation of system (6a) the decelerating vortex (Figure3a) emits free cross vortices to outside (Figure3c).

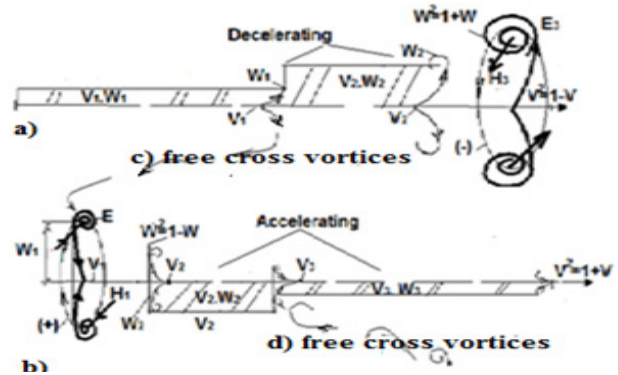


Figure 3: Decelerating-accelerating vortices

Result: (emitting in quanta) The emitting of decelerating cross vortices from inside to environment is in (n) portions or impulses (Figure 3a). This portions are called "quanta" and this process is called "quantization".

Result: (perpendicular direction in-outside) The amplitude (W) increases only if it is from the inside to outside in perpendicular direction, ie. if the decelerating vortex emits cross vortices with increasing amplitude (W) to environment (Figure 3a).

Result: (attraction of cross vortices) Two or more decelerating cross vortices in 2D repel each other. But the decelerating cross vortices in 3D tend to be absorbed to each other. The smaller ones pour into the larger ones, just as the smaller drops pour into the larger drops.

Result: (the electron in internal orbit emits primary cross vortices to proton-electron space) During the pulsation this type of electron as "shrunked cross vortex" ("ball") it emits in quanta the primary free cross vortices to the direction of proton in space between the proton and the electron. According to Axiom2 this shrunked type of electron rotates at inside orbits (orbitals) in close distance to the core [9].

Results: (the electron in external orbit emits primary free cross vortices to environment) During the pulsation the electron as "expanded cross vortex" (toroid) it emits in quanta the primary free cross vortices to environment. According to Axiom2 this expanded type of electron rotates at outside orbits (orbitals) in long distance to the core [9].

Conclusion: During the pulsation the free electron emits primary free cross vortices to environment which is outside of the atom. The all external free electrons pulsate during the time including and the free electrons in the metal grid of one wire in Electromagnetic field. For comparison - during the pulsation in time of internal electrons they emit primary free cross vortices only to space which is between the electron and the core (inside of the atom).

Conclusion: Because the free electron is an external electron it resembles to a very inflated cross vortex. That is why it has the shape of a toroid or of a very eccentric dipole with maximum radius and

maximum polarization. For comparison - the internal electron looks like to a very shrunken and little ball with minimum radius, eccentricity and minimum polarization.

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

$$I V(t)^2 = V_0 (V_0 + V(t)), \quad 7$$

$$I W(t)^2 = W_0 (W_0 - W(t)),$$

where v_n, w_n are periodic roots with period n ($n = 0, 1, 2, \dots, \infty$); v_n, w_n are **mutual orthogonal** that fulfill the requirement for orthogonality: $v_n \cdot w_n = V_0 \cdot W_0$ the roots v_n, w_n are expressed as: $v_n = (\psi^n) \cdot V_0, w_n = (1/\psi^n) \cdot W_0$; linear velocity V_0 is the starting value of v_n , amplitude of cross vortex W_0 is the starting value of w_n ; ψ is called Golden ratio, it fulfills the requirement: $\psi - 1/\psi = 1$; t is continual, v_n, w_n are discretized.

Consequence: The acceleration vortex in 3D is described with a system of 4 equations in which: longitudinal velocity (V) increases in (n) portions (ψ^n) times, the amplitude (W), the angular velocity (ω), and the number (N) of cross vortices decrease in (n) portions (ψ^n) times:

$$\begin{aligned} I V(t)^2 &= V_0 (V_0 + V(t)), \\ I W(t)^2 &= W_0 (W_0 - W(t)), \\ I \omega(t)^2 &= \omega_0 (\omega_0 - \omega(t)), \\ I N_n^2 &= N_0 (N_0 - N_n) \end{aligned} \quad 7a.$$

where v_n, w_n are periodic roots with period n ($n = 0, 1, 2, \dots, \infty$); 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, ω_n are **mutual orthogonal** that fulfill the requirement for orthogonality: $v_n \cdot \omega_n = V_0 \cdot \omega_0$; the roots of velocity v_n , amplitude w_n , angular velocity ω_n and number of cross vortices in current wheel n are expressed as: $v_n = (\psi^n) \cdot V_0, w_n = (1/\psi^n) \cdot W_0, \omega_n = (1/\psi^n) \cdot \omega_0, n_n = (1/\psi^n) \cdot N_0$; linear velocity V_0 is the starting value of v_n ; amplitude of cross vortex W_0 is the starting value of w_n , (for 3D) **angular velocity ω_0 is starting value of ω_n , number N_0 is starting value of n_n** ; ψ is called Golden ratio and it fulfills the requirement: $\psi - 1/\psi = 1$; t is continual, v_n, w_n, ω_n, n_n are discretized and $V(t)$ is nonlinear accelerating spiral.

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: $v^n = V_0 \cdot (\psi^{n-1} + \psi^{n-2})$.

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: $w_n^{-2} = W_0 \cdot (w^{n-1} - w^{n-2})$.

Result: (energy conservation) According to the orthogonality rule ($v_n \cdot w_n = V_0 \cdot W_0$), when velocity (V) increases, the amplitude (W) decreases so that at each step (ni) the energy power (P_i) to be a constant: $P_i = V_i \cdot W_i = v_n \cdot \omega_n = V_0 \cdot W_0 = \text{const.}$ (Figure 3b).

Result: (suck in free cross vortices) Because of negative sign (-) in second equation of system (7a), the accelerating vortex (E_{2D+}) with a velocity vector (V) (Figure 3b) sucks in accelerating vortices

with decreasing amplitude (W) (Figure 3d).

Result: (perpendicular direction outside -in) For an accelerating vortex, the amplitude (W) decreases only if it is from the outside to inside in perpendicular direction, ie. if the accelerating vortex sucks in cross vortices with decreasing amplitude (W) (Figure 3b).

Result: (suction in quanta) The sucking of accelerating cross vortices from environment in perpendicular direction is in portions. This portions are called "quanta" and this process is called "quantization".

Result: (attraction of longitudinal vortices) Two or more accelerating longitudinal vortices attract each other. The reason is due to the suction of free cross vortices from outside to inside.

Result: (material medium) We have already seen that (6a) the primary free cross vortices called "free energy" "play role of the material medium in which a longitudinal vortex generates the cross vortex of matter (Law 2).

Result: (analogy between internal electrons and passive dipoles) The inner electron is a shrunken and small ball with a minimum eccentricity and a minimum polarity. The passive dipole is also a shrunken sphere with almost zero eccentricity and polarity.

Result: (analogy between external electrons and active dipoles) The outer or free electron is an expanded toroid with a maximum of eccentricity and a maximum of polarity. The active dipole is also an expanded sphere which is similar to a toroid with maximum eccentricity and polarity.

Result: (generation effect of an accelerating vortex) If an accelerating vortex passes through the active dipoles which are very eccentric and very polarized, it will attract them. The reason is suction of the mass and energy of dipoles and increasing the mass and energy of accelerating vortex [7].

In order to fulfill the fundamental law of continuity the pair of orthogonal objects (electron-proton) needs of the Positive feedback. According to Law 7 the Positive feedback must pass through empty space in direction from electron to proton. The Positive feedback contains elementary primary cross vortices generated and emitted by the decelerating cross vortex of electron (Figure 2a) and consumed and sucked in by the main accelerating cross vortex of proton (Figure 2b).

Law 7: A pair of open cross objects forms a closed loop in 2D by Positive feedback of primary cross vortices. This pair conducts energy through the real connection of accelerating-decelerating longitudinal link. This pair conducts matter through the Positive feedback 2D as back link.

According to Law 7 this Positive feedback is closed through the so called "empty space" "This feedback is in inverse direction (electron to proton) to the direction of the main cross vortices (proton to electron).

Therefore, in order to satisfy the fundamental law of continuity in physics, apparently this space cannot be "empty", as we often call it. This space is filled with primary cross vortices. The pri-

primary cross vortices are little copies of the main cross vortices but at a much smaller scale. The reason for the emission of primary elementary cross vortices is the deceleration of the main vortex of electron (E_{2D-}) (Figure 2a). Their movement through the space between electron-proton is due to the sucking action of the accelerating vortex of proton (E_{2D+}) (Figure 2b). The feedback is called Positive because it fulfilled the rule: the more, so much the more. This means that if the electron emits more primary cross vortices, then the proton sucks up them more. This avalanche-like process tends to saturate and then it follows a reverse dynamic.

Conclusion: There is analogy between *internal electrons* and primary passive dipoles which look like minimum eccentricity and almost zero polarity balls. The primary passive dipoles are similar to internal electrons but in very smaller scale. Because of minimum polarization a Static Electromagnetic field (DC) with high amplitude and zero acceleration can't move these primary passive dipoles (Law1).

Conclusion: There is analogy between external electrons (free electrons) and primary active dipoles which look like maximum eccentricity and maximum polarity toroid. The primary active dipoles are similar to external electrons but in very smaller scale. Because of maximum polarization a Dynamic Electromagnetic field (AC) with maximum acceleration can move these primary active dipoles (Law1).

For comparison: the external or free electrons, including those conductive electrons that are in the metal lattice look like maximum eccentricity and maximum polarity toroid. That is why a Static Electromagnetic field (DC) with high amplitude can move these free electrons to one of active poles (Law1).

Conclusion: The primary free cross vortices called "free energy" play role of the *material medium* in which incoming longitudinal vortex generates as a "mixer" the cross vortex of matter (Law2).

Conclusion: A necessary condition for generating of the elementary particles is the presence of free cross vortices called "free energy" but a sufficient condition is the incoming longitudinal vortex to work as a mixer(Law2).

Conclusion: If an accelerating movement (of Dynamic Electromagnetic field, AC) passes through the space that is full with free cross vortices, this accelerating movement would suck in the free cross vortices to itself (Law6).

Conclusion: The real reason is that the steep acceleration (of Dynamic Electromagnetic field, AC) polarizes the primary passive dipole (ball) so much that it become active dipole (toroid) with maximum eccentricity and maximum polarity (Law1). The acceleration of Dynamic EM field will suck up this polarized and active dipole (toroid) and will generate energy at one of EM poles (Law6).

For comparison: the polarization of internal electrons (balls) with the help of acceleration of EM field is similar to polarization of internal electrons with the help of light quanta arriving from the outside to the atom called photoelectron effect.

The acceleration approach of Electromagnetic field 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.

The term of "free energy"

Nicola Tesla was the first to use the term "free energy" in a sense of environment 's energy. In the current report this term is expanded as the free cross vortices, which fill the environment. For example, they exist around every electron- proton chain in connection with their pulsation. And something more- they exist the *both: inside and outside* of every atom.

Therefore, if an accelerating vortex passes through this space that is full with free cross vortices, this accelerating vortex would suck in these 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. Therefore, it would generate energy.

Nicola Tesla has observed this phenomenon in nature.

We can also observe this Phenomena: If we observe a river that spills slowly along the plain, it emits water flows from inside to out forming sediments, shallows and islands. If a river descends on a steep slope it sucks up the small water streams from outside to inside, undermines the shores of the slope and it forms canyons. The main thing in this description is that natural processes are non-parametric. They are not subject to external control - the calculations of specialists and the selection of parameters that must be performed with the strict regulation of Negative feedback. Movements in nature are non-parametric because they are not subject to external control, but self-propelled and self-organize under a basic measure, the so-called golden section and with basic regulation - Positive feedback

Result: According to the New Axioms and Laws the primary free cross vortices are created in generation process of the matter and exist around every matter particle [3].

Result: Every matter generation process is decelerating process. The reason is that the matter is created only by decelerating cross vortices. That is why every cross wave is spreading crosswise by decelerating way with maximum energy loss. For comparison - every longitudinal vortex is spreading longwise with minimum energy loss [9,10].

Result: The free cross vortices exist in our space-time. The matter represents transversely wound vortices. In pulsation the transverse vortices generate transverse waves that propagate transversely in space (S) with constant time ($t = \text{const.}$) [3].

The essence of dynamic dipoles

From the previous description it became clear that the passive dipoles resemble the internal electrons but on a smaller scale. That is why they are invisible. Therefore, the passive dipoles look like balls with minimal eccentricity and almost zero polarization. The active dynamic dipoles resemble external and free electrons, but on a smaller scale. So they are invisible as well. Therefore, active dynamic dipoles resemble toroid very stretched, with maximum

eccentricity and maximum polarization.

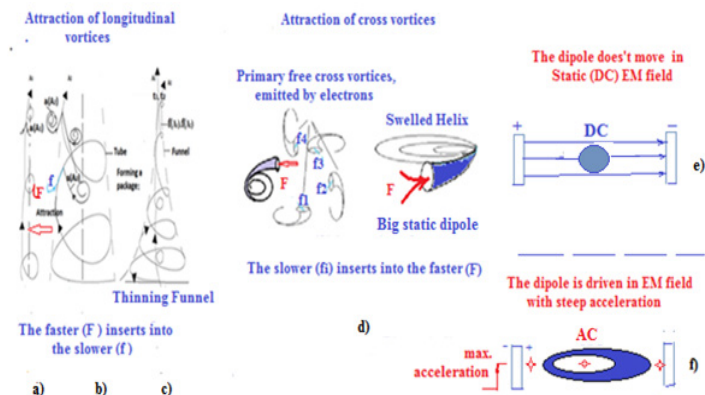


Figure 4: Self- organization of longitudinal vortices in comparison with Self- organization of free cross vortices

Result: (attraction of longitudinal vortices) From previous report it is understood that two or several longitudinal accelerating vortices attract each other [10]. It was also shown that the longitudinal vortices are invisible because the sun's waves are not reflected in them but surround them, i.e. sun's waves diffract. The reason is that their diameter is commensurate with the wavelength of sunlight. The result is a thinning Funnel (Figure 4c).

The sequence is as follows: the fastest vortex (Figure 4a) with big sucking force (F) slip and insert into the center, the slower vortex (Figure 4b) with less sucking force (f) is winding outside and the slowest vortex (Figure 4c) is winding on the periphery. The attraction takes place through the primary accelerating cross vortices because of their direction (7a) is from outside to inside.

Result: (attraction of cross vortices) From previous reports it was shown that primary cross vortices are also invisible because the sun's waves do not reflect in them but surround them, i.e. sun's waves diffract [3]. The reason is that the primary cross vortices are commensurate in size with the wavelength of the solar wave. For comparison |: the main cross vortices form electrons and protons and they are visible by the latest technical means (electronic microscope).

About cross vortices the attraction is performed in an orthogonal way of attraction in longitudinal vortices. The attraction isn't from the primary cross vortices but from the central longitudinal vortex. The snail's Funnel sucks outside - inside as : the funnel with maximum power and diameter (F) sucks the funnels with less power and diameters ($f_1, f_2, f_3, f_4, \dots, f_{min}$) (Figure 4c). The sequence is as follows: the Funnel with minimum force (f_{min}) insert into the center because it has minimum diameter ,the Funnel with bigger force (f) absorbs the smaller one (f_{i-1}) because it has a larger diameter and etc., as finally the Funnel with maximum force (F) absorbs the all because it has maximum diameter. Thus it is obtained one big inflated snail or helix. Like the primary cross vortices, this snail is still invisible. The reason is that its density and diameter are insufficient to reflect sunlight, and the sunlight passes through the snail or surrounds it (Figure 4c) [9].

Result: (shape of static, passive and primary dipoles) The static dipole is similar to an internal electron with the form of shrunken

cross vortex. The static dipoles have the same shape as internal electrons but with a much smaller scale. These dipoles from cross vortices are named passive. They are shrunken balls and have almost zero eccentricity and minimal polarization.

This is the reason they do not react to a Static Electromagnetic field (DC) with high but constant level of amplitude. Therefore, the passive, static dipole does not move under the action of a big static amplitude of EM field. The reason is that the primary vortices are not eccentric they look like to static and passive little balls without poles. And because the passive EM field can't polarize them they stand motionless (Figure 4e).

Result: (shape of active and dynamic dipoles) The dynamic dipole looks like external or free electron or as expanded cross vortex. It has similar shape but on a much smaller scale. That is why the dynamic dipole is invisible as well as the passive dipole. It is inflated and have maximum eccentricity and maximum polarization.

This is the reason that dynamic dipole reacts to an external Dynamic Electromagnetic field with steep acceleration. In fact, the real reason is that the steep acceleration of external EM field can polarize the passive dipole or it can turn it from a ball into a toroid with split loads in both halves, i.e. it can turn the passive dipole into a dynamic dipole (Figure 4f).

General Conclusion: When an accelerating motion passes through primary (shrunken and with zero eccentricity and polarity) dipoles they become to dynamic (inflated and with maximum eccentricity and polarity) dipoles. The steep acceleration is a reason the passive dipole (ball) to turn to active dynamic dipole (toroid) .This is the reason also the dynamic dipoles to direct along the acceleration and to move along the accelerating lines which sucks them up to one of EM poles[10].

The static primary (shrunken and with minimum polarization) dipole becomes to dynamic (inflated and with maximum polarization) dipole. This phenomenon looks like the phenomenon in which under the external impulse, the ball of the internal electron turns to a strongly eccentric toroid of the external or the free electron. The reason is that the internal electron consumes and absorbs this external impulse with steep acceleration, open its vortex and turns to strongly drawn and polarized dipole. Then it moves along the accelerating field which sucks it up and directs it to one of the poles of the EM field and there accumulates energy (Figure is missing) [10].

Summary

- According to Axiom 1, elementary particles are formed by an uneven transversely coiled vortex.
- According to Consequence of Law 1, the electron is generated by a decelerating cross vortex from outside to inside.
- According to Consequence of Law 2, the proton is generated by an accelerating transversely coiled vortex with an inside-out direction.
- According to Axiom 2, the two described vortices (electron-proton) are connected in a resonant system. The real link is directed from proton to electron.
- According to Law 5, each longitudinal or transverse decel-

erating vortex emits decelerating primary vortices with an inward-outward direction. The electron appears as a decelerating transverse vortex with direction from outward to inward direction and it emits free primary vortices from inside to outside.

- According to Law 6, each longitudinal or transverse accelerating vortex sucks accelerating vortices from the outside to the inside. The proton is an accelerating transverse vortex in direction from the inside to the outside and it sucks exactly these same vortices from the outside to the inside.
- According to Law 7, the electron emits and the proton sucks these primary transverse vortices and they form resonant by feedback. The real connection from proton to electron (Axiom 2) transmits energy and feedback from electron to proton (Law7) transfers primary matter as primary free cross vortices. This described feedback fills the space between the electron and the proton with primary free cross vortices. That is the reason the space inside the atom not to be empty, but to be fulfilled with primary free cross vortices. The electron in periphery orbit is similar to the electron outside the atom or it looks like to the free electron (toroid). In pulsation this free electron emits primary free cross vortices. That is the reason the space outside the atom also to be fulfilled with primary free cross vortices.
- The structure of the electron and proton, their pulsation (by emission and absorption) and their exchange (by feedback) of primary free vortices prove that the space inside the atom is not empty. It is full of invisible primary transverse vortices, which are exact copies of the visible main vortices (electrons and protons) but on a much smaller scale.
- The primary cross vortices are Self-organizing in passive dipoles which have almost zero eccentricity and polarity. If through the passive dipoles a steep accelerating moving (vortex) of Electromagnetic field passes, the passive dipoles become polarized and become active dipoles.
- Therefore, a steep acceleration of EM field turns passive dipoles (zero polarized balls) to active dipoles (maximum polarized dipoles). As a result, the active dipoles direct to one of the

poles of EM field and they generate energy.

This method of polarization by steep acceleration of EM field was used by Nikola Tesla (1931) in the creation of “free energy” generator that was installed in car of “Pierce –Arrow Corporation” instead of previous gasoline engine.

References

1. Landau LD, EM Lifshitz (1975) The Classical Theory of Fields, 4 Edition., Butterworth-Heinemann.
2. Markova V (2005) The other axioms (Monograph, Book 2), Nautilus, Sofia.
3. Markova V (2016) Three space times obtained by combined vortex movements, Intern. Jour. of Current Research 8: 37826-37832.
4. Markova V (2018) About the new axioms and laws, 5th International Conference on Theoretical and Applied Physics, Vienna, Austria.
5. Markova V (2018) An attempt to find out the major elements of matter and energy using the knowledge of new axioms and laws, 4th International Conference on High Energy & Particle Physics, Valencia Spain.
6. Markova V (2019) Expanded Field Theory. New Axioms, Laws and Consequences. Advances in Theoretical & Computational Physics, Adv. Theo. Comp. Phy 2: 1-10.
7. Markova V (2019) Generator of “free energy” according to the explanation of the phenomenon based on new axioms and laws, 2th European Physics Congress, Berlin, Germany.
8. Markova V (2019) Extended Field Theory, New Axioms, Laws and Consequences, 2th International Conference on Quantum Mechanics & Nuclear Engineering, Paris, France.
9. Markova V (2021) System of electron-proton. Movement, rotation, pulsation and Gravity Forces. Adv Theo Comp Phy 4: 14-22.
10. Markova V (2021) The Gravity Funnels, formed by the longitudinal vortices, according to the new Axioms and Laws., Adv. Theo. Comp. Phy 4: 60-69.

Copyright: ©2021 Dr. 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.