

Sub-Particles Fill Electron-Proton Space. Description and Hypotheses, According New Axioms and Laws

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Citation: Markova, V. (2024). Sub-Particles Fill Electron-Proton Space. Description and Hypotheses, According New Axioms and Laws. *Adv Theo Comp Phy*, 7(4), 01-10.**Abstract**

It is known that the Classical Theory of the Field is based on the equations of Maxwell (1864). The single Axiom claims that these equations are true only for a closed vortex. It asserts that the truth of Maxwell's equations is in a closed field: $\text{div}(\text{rot } E) = 0$, with movement the vector E in a uniform velocity: $V = \text{const.}$ [1].

The author extends this Axiom to the new Axiom1. It asserts that is obtained only an open vortex when vector E has monotonically non-uniform (accelerating or decelerating) speed (V) [2,3]. On this basis, a second Axiom2 for a pair of mutually orthogonal vortex objects follows. A pair by an accelerating and a decelerating vortex object is formed that work as resonance system [4,5]. In addition they exist both - in Space (through structures) and in Time (through pulsations) [6,7].

For example, an open transverse decelerating vortex from the outside-in forms the model of the body (like a toroid) of the electron particle (Law 1). And an open transverse accelerating vortex from the inside-out forms the model of body (like a sphere) of the proton particle (Law 2) [5,6]. In reality, the electron is structured in Space as a ring of the main transverse decelerating vortex that is faintly visible. This ring appears empty inside because it contains very thin primary transverse vortices which are invisible to sunlight. Thus, the electron has a lot of free space to pulsate in time as well. In reality, the proton is structured in the Space as a very dense sphere that is well visible. Thus, the proton does not have any space to pulsate in time in comparison the electron [4-6].

The input pulse coming to the pair electron-proton pulsates in Time (T). It is the main reason to change the orbit electron from circle to ellipse. In addition the input pulse has two phases - steep quantum and sloping part. In mode of pulsating in Time during the steep phase, the electron reacts by sharp contracting.

It contracts much more than the proton (because of big internal empty place) and emitting much more transverse sub particles than the proton absorbs [7-9]. This is the main reason to fill the Space between the electron and the proton with sub particles. Even more, it is the reason to transfer emitted sub particles from the pulsating in Time electron through a feedback loop (Back link) to the sucking proton [10-12].

1. Description the Electron and Proton Structure and System of Pair Formation

It is known that the Classical Theory of the Field is based on the equations of Maxwell (1864) Its single Axiom is about closed field: $\text{div}(\text{rot } E) = 0$ with constant velocity $V = \text{const.}$ [1].

The present report uses the Theory of new Axioms and Laws (in short new Field Theory) invented by the same author. This theory contains 2 new axioms and 8 laws and expands and complements the knowledge and perceptions of the classical Field Theory. It complements also the wave-corpuscular theory about the structure of elementary particles. Also it explains their quantum-probabilistic nature.

a) The New Axioms

According Axiom1: A field in which the vector E moves with a monotonically non-uniform speed (decelerating or accelerating) becomes an open vortex field structure: $\text{div}(\text{rot } E)$ is not equal to zero (0), (Figure 1a, Figure1b) [2,3].

Axiom1 claims that there are 2 type open vortices - transverse (in plane 2D) and longitudinal (in volume 3D) and each of them can be accelerating or decelerating. Therefore we receive 4 type of open vortices.

According Axiom2: There are mutually orthogonal spiral structures that form a resonant system by exchanging energy and matter with each other (Figure 1a,b).

Axiom2 claims that the mutual orthogonal pairs form pairs of particles (connected in the right direction) and pairs of antiparticles (connected in the opposite direction). The main pair of particles is electron - proton. The generating direction is from proton to electron [4-6].

b) Design in Space (S) and Pulsating in Time (T) of Electron and Proton

According Law1: A decelerating transverse vortex in plane 2D generates in its center perpendicular accelerating longitudinal vortex in volume 3D.

According Law 5 for Design in Space (S): A decelerating vortex radiates primary decelerating vortices to environment.

Law 5 for 2D: The main transverse decelerating vortex (in 2D) has decreasing velocity (V) and emits outward primary decelerating vortices with increasing amplitudes (W), where at every n-th step the variable is changed by a degree of the parameter ψ or variable is changed by ψ^n and ψ is equal to the Golden proportion (Figure 1d) [5,6].

Law 5 for 3D: The decelerating vortex in 3D is described with a system of 4 equations in which: the velocity (V) decreases in (n) portions (ψ^n) times; the angular velocity (w), the amplitude (W) and the number (N) of cross vortices increase in (n) portions (ψ^n) times:

$$\begin{aligned} \mathbf{I} V^2 &= V_0 (1 - V), \\ \mathbf{I} W^2 &= W_0 (1 + W), \\ \mathbf{I} w^2 &= w_0 (1 + w), \\ \mathbf{I} N^2 &= N_0 (1 + N). \end{aligned}$$

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 and ω_n and n are expressed as: $v_n = (1/\psi^n) \cdot V_0, \omega_n = \psi^n \cdot W_0; w_n = \psi^n \cdot W_0, [nn] = \psi^n \cdot N_0$; linear velocity V_0 is the starting value of V_n , amplitude of cross vortex W_0 is the starting value of ω_n , angular velocity w_0 is starting value of w_n , **number N_0 is starting value of n_n , $[n_n]$ is the closest integer**; ψ is a proportional that fulfills the requirement: $\psi - 1/\psi = 1, \psi$ is known as Golden ratio.

According Law 5 for Pulsating in Time (T)

In the first phase of pulsating in Time (T) of electron (when the electron shrinks) it decreases in volume. The reason is that the velocity at the entrance of the transverse vortex is high because the acceleration is positive. This means that the velocity of the entrance of the transverse vortex of the electron, is accelerated. According to Law 6 the accelerating vortex **sucks** accelerating primary vortices from the environment. This contraction of the electron volume causes a more suction during time (T) of free sub vortices from the medium around the electron. In the next phase the electron expands and it inflates by volume. The reason is that the speed becomes smaller because the acceleration becomes negative. This means in short that the velocity of the entrance of the transverse vortex of the electron decreases. According to Law 5 the decelerating vortex emits decelerating primary vortices to the environment. This increase in the volume of the electron therefore causes the emission at time (T) of free decelerating vortices to the medium around the electron [6-8].

c) Emitted Sub Particles from Electron Are More than Absorbed Sub Particles

Emitted sub particles are expected to be equal in number to absorbed sub particles. But this is not true: The first reason is that the initial impulse of speed and positive acceleration comes to the entrance of the electron as a quantum - sharp and steep (Figure 1g). As a result the electron sharply and violently shrinks and emits sub-particles a lot (Figure 1a).

Result: The sub particles emitted by the electron are the result of a steep quantum with high positive acceleration at the entrance of its transverse vortex.

Therefore, the sub particles emitted by the electron are a significant more amount. The front of second phase is long and very sloping and slowly (Figure 1g).

Result: The sub particles sucked in by the electron are the result of a sloping front with a small negative acceleration at the entrance of the electron transverse vortex.

Therefore the sucked sub particles are less. The velocity and acceleration in the entrance of the electron, decreasing gradually and very slowly. Therefore, the suction of sub particles from the outside becomes very slow and quite small.

Result: In first steep phase of input impulse the emitted sub particles by the electron are more than the absorbed sub particles in second sloping phase of the same impulse.

The second reason is in the non-symmetry of the electron and proton particles the electron and proton are not symmetrical particles and do not have symmetrical structures. The electron is orthogonal to the proton, and it is not symmetrical. The electron has the appearance of a toroid, or more precisely an empty ring, and the proton has the appearance of a very dense and large sphere. That is why the electron is generated by Law 1, and the proton is generated by its orthogonal law - Law 2. This means that the electron is almost empty and the proton is packed. Due to the presence of sufficient Space, the electron has a greater opportunity to pulsate and therefore has a **greater amplitude of pulsation**. Due to lack of Space, the proton does not have much opportunity to pulsate and therefore has a **smaller amplitude of pulsation**.

Result: The emitted from pulsation of electron sub particles are much more than sucked sub particles from pulsation of proton

As a result the excess emitted sub particles from electron is concentrated in the Space around the electron and will tend to the proton.

d) The Back Link

As a result the proton sucks through so called **Back link** these excess sub particles that the electron has emitted before. These sub particles are needed by the proton for an additional positive acceleration of its transverse vortex that is why the proton has about 2000 times more the mass of the electron. Or, in order to exist, each proton needs the sub particles of its paired electron.

Result: In order to exist, proton needs the sub-particles of the electron cloud and it suck up the superfluous more sub particles from the electron cloud by Back link.

Therefore the protons from the nucleus suck up part of the cloud of sub particles from the electron cloud.

Result: The Space between nucleus and electron cloud is full of moving sub particles.

Thus the Space between nucleus and electron cloud is full of free moving (decelerating or accelerating) primary transverse vortices or sub particles.

e) Generation of electron

The generation of the electron is according to Law1 (adapted to electron). The Law1 claims that a decelerating from out to in transverse vortex generates in the center of the 2D plane a perpendicular longitudinal accelerating vortex in a 3D volume. According to Law 5, each decelerating vortex emits many primary decelerating vortices to the surrounding Space. Electron is generated by main decelerating vortex in direction from outside (from periphery) to inside (to center). The main transverse vortex is coiled at the periphery or the windings of the main transverse vortex are wound tightly together at the periphery. According Law5, the main transverse vortex emits primary transverse vortices from itself to inward or from periphery to the center of the body of electron. While coiled transverse vortices are visible, the primary vortices are invisible. Thus the invisible primary vortices form the internal Space of electron. (The cause of invisibility will explain further in report in point 2b) [3,4].

Because of visibility of main transverse vortices tightly coiled in periphery and invisibility of thin primary transverse vortices (emitted perpendicular from periphery to center), the electron resembles a toroid. In the outer part the visible decelerating transverse vortex is wound in a spiral. In the center, radially, there are invisible primary transverse decelerating vortices emitted from the main decelerating vortex [5,7].

Result: The electron has the appearance of a toroid - a dense coil and an empty core.

The reason for Law1 is a process of generation in the center of electron. It is a complex resonance from the superposition and multiplication of transverse vortices in amplitude, velocity and phase. This resonance represents a complex and complete resonance in place (S) and in time (T). That is why it is called Full Resonance. The Law 1 explains the final part of phenomenon of Full resonance in place (S) and time (T). The primary transverse decelerating vortices, which fill the inner circle of the toroid, generates in the center of the toroid an accelerating longitudinal vortex in 3D, perpendicular to the plane of the toroid in 2D. Full resonance means that the primary decelerating transverse vortices **superimpose** at the center of the toroid in place (S) and act simultaneously in time (T).

If the resonance was only in place (S) or only in phase (T) the effect would add up. But when multiple hits hit the same place(S) at the same time (T) the effect multiplies [7].

Result: The result of Full Resonance is a multiplication of effect of hits because the multiple hits hit on the same place at the same time.

For comparison: the result of common Resonance (only on place

or only in time) is summing of effect of hits.

A longitudinal funnel of longitudinal accelerating vortices is generated in the center of electron toroid. Accelerating longitudinal vortex actually is contained in is accelerating longitudinal funnel. The *accelerating longitudinal vortices* form accelerating part of funnel and contain of several (not just one) longitudinal accelerating vortex. In the center is the fastest vortex, and the slower vortices wind around it in periphery. Due to friction these slower peripheral vortices lag behind and decelerate more and more to the point in space (S) of the funnel where the positive acceleration becomes zero. After this point these peripheral vortices fold up and shed and they travel in the opposite direction. They form a reverse funnel wave from *decelerating longitudinal vortices* called back funnel.

Result: In Gravity center of electron is generated longitudinal funnel. It contains accelerating longitudinal vortices in its center and decelerating longitudinal vortices called Back funnel in its periphery.

This Back funnel like wave returns to the electron, enveloping the electron from the outside as a shell. This shell of backward-returning longitudinal vortices pulsates in time (T) and acts as a Gravity field around the electron.

Pulsating in time (T), the main transverse vortices emits to environment many primary transverse vortices. They form a cloud of transverse decelerating vortices or so called sub particles. These sub particles form a cloud above and outside the electron (Figure 1a). They fill the Space around the electron (Figure 1a) and the proton (Figure 1b). Sub particles fill the Space between electron and proton as well (Figure 1a, b).

Result: Radial beyond the Space of each electron moves a cloud of transverse primary vortices or sub particles.

Pulsating in time (T), the central longitudinal vortex breaks up and forms a cloud of longitudinal acceleration vortices or sub particles. These sub particles form a cloud above and outside the electron, filling the Space outside the electron-proton pair.

Result: Perpendicular above the Space of each electron moves a cloud of longitudinal vortices or sub particles

The electron has one particle orthogonal to itself - the proton. The generation of this pair is by the main transverse link from proton to electron (Figure 1c).

e) Generation of the Proton

According Law 2: A perpendicular decelerating longitudinal vortex in volume (3D) generates accelerating transverse vortex in center of plane (2 D) from center to periphery.

According Law 6 for Space (S): An accelerating vortex sucks from environment to itself accelerating primary vortices.

Law 6 for 2D: The main accelerating vortex in plane (2D) has increasing longitudinal velocity(V) and sucks inward many primary accelerating vortices with decreasing amplitudes, (W), where at every i-th step the variable is changed by a degree of the parameter (ψ^i). and ψ is equal to the Golden proportion, (Figure 1e) [6,7].

Law 6 for 3D: The *accelerating* vortex in volume (3D) is described with a system of 4 equations in which: longitudinal velocity (V) increases in (n) portions (ψ^n) times, the angular velocity (w), the amplitude (W) and the number (N) of cross vortices decrease in (n) portions (ψ^n) times: $I V^2 = V_0 (1 + V)$,

$$I W^2 = W_0 (1 - W),$$

$$I w^2 = w_0 (1 + w),$$

$$I N^2 = N_0 (1 + N).$$

where v_n, w_n, n are periodic roots with period n ; v_n, w_n are **mutual orthogonal** that fulfill the requirement for orthogonality: $v_n \cdot w_n = V_0 \cdot w_0, v_n \cdot \omega_n = V_0 \cdot W_0$; $n = 0 \div \infty$; the roots v_n, w_n and ω_n and n are expressed as: $v_n = (\psi^n) \cdot V_0, \omega_n = (1/\psi^n) \cdot W_0, w_n = (1/\psi^n) \cdot W_0, n_n = (1/\psi^n) \cdot N_0$; linear velocity V_0 is the starting value of V_n , amplitude of cross vortex W_0 is the starting value of ω_n , angular velocity w_0 is starting value of w_n , **number N_0 is starting value of n** ; ψ is a proportional that fulfills the requirement: $\psi - 1/\psi = 1$, where ψ is Golden ratio.

The proton is formed in the following way: According to Law 2 (adapted to the proton) a decelerating longitudinal vortex comes from up to down in 3D volume. It generates in center of volume of body sphere an accelerating transverse vortex in the plane 2D. According to Law 6, each accelerating vortex sucks in many primary accelerating vortices from the surrounding space to itself. The proton is generated denser in center and is rarer to periphery. It resembles complementing the electron. Actually proton is orthogonal to electron (Figure 1a, b) [2,3,5].

Result: The proton has the appearance of a sphere - a dense coil in center and a less often- in periphery of ball.

The real reason for generation in the center of main transverse accelerating vortex is the existence of the very unique phenomenon *-transverse Back wave* in center of the proton (there is not Figure) The transverse Back wave is generated in following way: The from longitudinal funnel longitudinal vortex coming from up to down rotates from left to right (if observer see in opposite direction). Indeed this longitudinal decelerating funnel will generate transverse vortex in the same direction -from left to right .But because of friction an every next layer will delay compared to the previous for delta T. First delays is in delta T1, the second delays is in delta T2, third delays is in

delta T3 and so on. If we connect these times along time points T1,T2,T3,...,we receive an reverse secondary wave or Back wave in inverse direction- from right to left (as in Law 2) [3-5].

Result: The transverse Back wave in center of proton is obtained by sequentially connecting the points of delaying according the time of delay.

But why this transverse Back wave is obtained as an accelerating wave? The reason is that the main transverse vortex delays in space (S) more and much more in every next layer.

The distance between previous layer and current layer (d) increases even more and it accelerating ($d1 < d2 < d3 < \dots$) (There is not a Figure). Because this backlog is growing from layer to layer in Space, when we connect these points in Space (S) in inverse direction we receive an accelerating transverse vortex. That is why the Back wave is accelerating only in space (S), not in time (T). It causes an accelerating transverse vortex to be generated from the center of the proton to the periphery of its body of ball.

Result: The straight transverse vortices delays in space (S) more and much more (due to the friction) so that the distance between previous wave and current next wave is increasing even more and much more.

Thus the transverse Back wave in inverse direction looks like self -accelerating in space (S), despite of that the real straight transverse wave in time (T), is self - decelerating.

Result: The transverse Back wave is accelerating in space (S) but not in time (T).

The design in Space (S) of proton generates the main accelerating transverse vortex (Figure1c). The electron accept this main vortex. But because of friction this vortex becomes decelerating along path (between proton and electron) in point closed to electron (Figure1a) [6-8].

But the pulsating in **Time (T)** of proton the main transverse vortex (Figure1c) causes changing of the distance between electron and proton .This means that the orbit of electron turns from circle to ellipse [9].

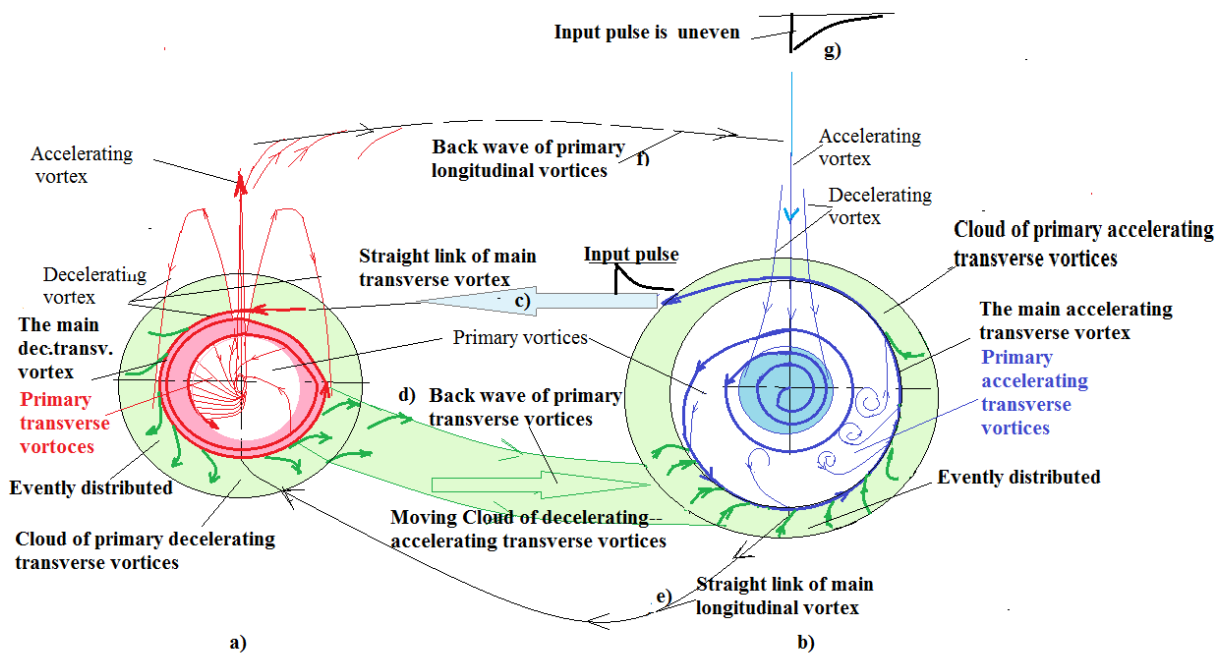


Figure 1: Very Simplified Form of Electron-Proton Pair

Figure 1a) Structure of electron, Figure 1b) Structure of proton, Figure 1c) Straight direction (proton-electron) of main transverse vortex, Figure 1d) Back wave in inverse direction (electron-proton) of primary transverse (decelerating –accelerating) vortices, Figure 1e) Straight direction (proton –electron) of main longitudinal vortex, Figure 1f) Back direction (electron-proton) of primary longitudinal vortices. Figure 1g) The form of Input pulse.

Result: Pulsating in time (T) of main transverse vortex between electron and proton makes orbit of electron from circle in to ellipse.

When proton pulsates in Time (T) the length of distance between proton and electron pulsates as well (Figure 1c). Thus the orbit of electron changes from circle to ellipse.

e) Summary for Results of relation between proton, electron and their sub particles

Pulsating in Time (T) of electron, we need to repeat once again the results of previous paragraphs (from the previous point (1c), It became clear that when the electron pulses in Time (T) (due to the unevenness of the input pulse) the electron emits many more sub particles than it absorbs. Thus the reason is that the input pulse is a quantum pulse- a steep first front and many lie rear front. Let we recall what was action of electron in corresponding 2 phases. In first steeply phase of input impulse electron emits more than in second inclined phase. Thus around electron the decelerating sub particles more remain or there is an excess.

Pulsating in Time (T) of proton causes sucking accelerating sub particles in impulse way.

These sub particles had been emitted in previous time by its paired pulsating electron. The reason is that pulsating of the proton has 2 un event phases. In the first phase proton sharply contracted. It is maximally contracted, the velocity and acceleration of main

transverse vortex becomes negative. Thus the proton maximally absorbs the delayed transverse free vortices (sub-particles) emitted by the electron. In the second phase proton slowly inflates. The velocity and her acceleration of main transverse vortex is small. Thus the proton minimally absorbs the lagging transverse free vortices (sub-particles) emitted by the electron. Therefore proton sucks more in first phase than sucks - in second phase. Thus proton sucks more accelerating sub particles or there is a hunger for sub particles.

Result: The Space around each electron has a cloud of free excess decelerating transverse vortices or sub- particles, but the Space around each proton there is a lack of free sub particles. This is the reason to transport excess particles from electron to proton through Back link.

From the previous point (1b) about the electron –proton, it was also clear that:

The proton (due to its large volume and dense body) sucks up all the excess sub particles left around the pulsing in Time (T) electron.

In order to exist, proton needs the sub-particles of the electron cloud and it sucks up the superfluous in more sub particles from the electron cloud.

This is the reason that a Back link is formed for the transfer of sub particles from the electron to the proton.

Emitted from electron cloud superfluous sub particles are equal to the sucked by the protons in atomic nucleus.

Thus the Space between nucleus and electron cloud is full of free (decelerating or accelerating) primary transverse vortices or sub particles.

The internal Space between electron and proton (called vacuum) also is full of transverse sub-particles.

The external Space of atom (called vacuum) is full of transverse or longitudinal sub particles as well.

2. Summary

a) Explanation

The new Axioms describe the elementary particles (proton, electron, neutron) as uneven non-uniform open vortices. This is the reason that these vortices in a 2D plane form **transverse vortices**, and in a 3D volume they to form **longitudinal vortices**. Each type of transverse and longitudinal them can be **accelerating or decelerating**. Thus, from the new Theory, 4 types of open non-uniform and uneven vortices are obtained, instead of 1 closed uniform vortex from Classical electrodynamics.

According new Theory the electron and the proton are created by uneven transverse vortices. The more detail in 2D: the proton is generated by accelerating transverse vortex (inside -out) but electron is generated by decelerating transverse vortex (outside-in). The electron is mutual orthogonal to proton in 2D. The neutron is a combination of an accelerating open transverse vortex in the center and a decelerating closed vortex in the periphery so it sucks in and compacts the protons in the nucleus and acts like a paper clip.

The electron generates in its center perpendicular longitudinal vortex in 3D and proton is generated in its center by perpendicular vortex in 3D .That is why proton and electron form a system pair both by pairing along transverse vortices (in 2D) and by pairing along longitudinal vortices (in 3D).

On one side: The electron consists of a main decelerating open transverse vortex in Space(S), and the proton consists of a main accelerating open transverse vortex in Space(S). The electron in space (S) sucks the main accelerating vortex by the proton towards itself and in this way connects to proton. Thus, the main transverse vortex becomes continuous and the direction in construction in Space (S) of the transverse vortex is from the proton to the electron.

On other side: The electron consists of a main decelerating open transverse vortex, which pulsates in Time (T). It radiates decelerating free transverse vortices or sub particles at a constant interval and in constant distance between them, perpendicular to the main direction .Thus electron emits a big clouds of decelerating free vortices or sub particles. The proton consists of a main accelerating open transverse vortex (from inside-out), that also pulsates in time (T). It sucks towards itself in a direction perpendicular to the main movement these free sub particles that were emitted in previous point of time from the electron. Thus, the direction of pulsation in time (T) (called Back link) is the opposite - from the electron of the proton.

This direction (from electron to proton) is called back link in mode of pulsating in Time (T). The straight direction (proton-electron) of the main transverse vortex and the reverse direction of Back link (electron-proton) of the cloud of free sub particles

form a transverse closed loop (Law 6).

Longitudinal vortices in 3D form also a main longitudinal connection (proton-electron). In the opposite direction as Back link (electron - proton) moves a cloud of free longitudinal vortices or sub-particles. In mode pulsating in Time (T) the straight direction of the longitudinal vortices (from proton to electron) and the opposite direction (from electron to proton) of the cloud of free longitudinal vortices or sub-particles form a longitudinal closed loop (Law 7).

As a final, the transverse closed loop turns out to be perpendicular to the longitudinal closed loop. Therefore transverse closed loop is perpendicular to longitudinal closed loop (Law 8). Thus, the electron and the proton form a system of two mutually orthogonal loops.

b) Visible or Invisible

The transverse vortices in plane (2D) form visible transverse dense structures play role as material particles. The reason is that transverse vortices (accelerating or decelerating) reflect the light waves. The light waves are also transverse waves and they reflect into transverse vortices of the elementary particles. This means that any outside observer can perceive reflected light waves and to accept the object as a matter or mass.

Result: The transverse vortex is visible by external observer as particle with mass.

The longitudinal vortices in volume (3D) form invisible field structures and play role as energy or field .The reason is that longitudinal vortices (accelerating or decelerating) do not reflect the light waves. The light waves are transverse waves and they do not reflect into longitudinal vortices. The reason is that the light waves make diffraction around any longitudinal vortex. This means that light waves surround the thread of longitudinal vortex and continue ahead with the same velocity and to the same direction or the light waves do not reflect on longitudinal vortex because they make diffraction. Therefore one outside observer cannot perceive reflected light waves and to accept the object as a matter. The longitudinal vortices are invisible to the external objective observer. The reason the longitudinal vortices to be invisible is that they make diffraction by light waves .The result is that they do not carry matter or mass, but only a field or energy.

Result: The longitudinal vortex is invisible by external observer because it carries only field energy.

Sub-particles are transverse vortices and have dimensions commensurate with the dimensions of light waves, which are also transverse. Therefore, the light diffract, bypasses, around the sub-particle and continues its movement in the previous direction and with the previous speed. So, it is indisputable that the sub particles are also invisible. Although the sub particles are invisible, probably the main filling of the universe is these clouds of sub particles.

Result: The sub particles are invisible by external observer because they make diffraction by light waves.

There is a high probability and modern scientists believe that

clouds of sub particles represent the main filling in the volume of the Universe.

c) Clouds of Sub Particles around Electron and Proton

In pulsation in time (T) in phase of collapse and shrinkage the electron emits free transverse sub particles. The reason is that in the construction of electron take part a decelerating transverse vortex and when electron shrinks the negative acceleration increases. According of the Law 5 of new Theory each decelerating transverse (or longitudinal) vortex (because of that increases the deceleration of velocity) it radiates toward environment many decelerating transverse (or longitudinal) vortices. This vortices in view of as sub particles have the same shape (decelerating transverse vortices) as the main vortex but have in very number orders less sizes.

Result: Around electron is formed a large cloud from very micro decelerating transverse vortices or sub particles with the same shape (decelerating transverse vortices) as the main vortex but they have in very number orders less sizes.

In pulsation in time (T) in phase of expansion and distension the proton more sucks in free transverse sub particles, emitted before from its paired electron. The reason is that in the construction of proton take part and main accelerating transverse vortex and when proton expands the positive acceleration increases. According of the Law 6 of new Theory each accelerating transverse (or longitudinal) vortex through increasing acceleration in velocity sucks from environment the accelerating transverse (or longitudinal) vortices or sub particles. These sub particles have the same shape (accelerating transverse vortices) as the main vortex but have in very number orders less sizes.

Result: Around proton is formed a large cloud from very micro accelerating transverse vortices or sub particles with the same shape (accelerating transverse vortices) as the main vortex but they have in very number orders less sizes.

d) The Internal Space (Inside Atom) and External Space (Between Atoms)

Due to pulsation of Time (T) between electron and proton (in direction from electron to proton) is formed a big cloud of sub particles called Back link. The Back link has inverse direction than the main direction—from proton to electron. In start (around electron) these sub particles are decelerating transverse vortices but after the middle of distance between electron and proton (around proton) they turn to accelerating transverse vortices.

Result: In the direction of Back link (from electron to proton) is formed long and large cloud of micro transverse vortices called sub particles.

Therefore the Space inside the pair electron- proton (called vacuum) is not empty, but it is full of sub particles.

Result: The internal Space of an atom (due to pulsation in time (T) is full of sub particles.

It is known that atoms create molecules by exchanging electrons and creating electron pairs from the peripheral or inner layers. During this exchange of electrons, the atoms exchange and the clouds of sub-particles that unite structure and strengthen

them. This means that the Space between atoms in the molecule (called vacuum) is also filled by sub particles the both around the atoms, and around the molecules the free clouds of decelerating transverse sub particles are observed. At the same time, the nuclei of atoms are immersed in clouds of accelerating transverse sub vortices or sub particles

Result: The external Space of atoms (due to pulsation in time (T) is also filled with decelerating- accelerating cloud of transverse sub particles.

This clouds are invisible and only the tightly coiled transverse vortices are visible and can be measured as mass. The phenomenon of visibility and invisibility explains why scientists can only observe 90 percent of the Universe's filling.

3. Why the Electron Revolves Around the Proton and Around Itself

a) The Electron as Eccentric: The New Center of Electron is a Gravity Center F1.

In fact, Figure1 does not show the true construction of the electron-proton pair. It can be seen that the two elementary particles are mutually orthogonal, but it is not seen why exactly the electron rotates around the proton.

According to Law 5, the electron is generated by a decelerating vortex with an outside-in direction. This means that at the initial entry point the speed is greater and the amplitude of the emitted vortices is less than the speed. In this section, the spirals are closer to each other. In the opposite point on the y, the speed decreases and the emitted primary vortices have a greater amplitude. In this section, the spirals are further apart from each other.

This asymmetry at the points opposite in y causes the whole helix to shift up to the higher velocity above the x-coordinate.

Result: The asymmetry at the opposite points along the y causes the whole helix of electron to shift up above the x-coordinate.

Result: The geometric center O1 of electron moves to up, above x coordinate.

In a similar way, the spiral is shifted and the leftmost point along the x coordinate, the speed is greater and the amplitude of the emitted vortices is smaller. At the opposite point on the x, the speed decreases and the emitted primary vortices have a greater amplitude.

This asymmetry at the opposite x points causes the entire helix to shift to the left to the greater leftward velocity relative the y-coordinate.

Result: The asymmetry at the opposite points along the x causes the whole helix of electron to shift left relative the y-coordinate.

Result: The geometric center O1 of electron moves to left, left relative the y coordinate.

Because the geometric center O1 moves simultaneously up and to the left, it settles at a point F1 called the center of Gravity. If

we number 4 quadrants in Figure 1 in direction opposite to the clock wise the gravity center F1 is in first quadrant (I).

Result: The geometric center O1 of electron is moved to the second (II) quadrant at point F1 where the electron's Gravitational center is.

In the electron-proton system pair, the proton is orthogonal to the electron, it is logical that the proton is also eccentric but in the opposite direction than electron

b) The Proton as Eccentric: The New Center of Proton is a Gravity Center F2.

To save details, the author will only mark the behavior of the O2 geometrical center of the electron-orthogonal particle-the proton.

Result: The Geometric center O2 of proton moves to first quadrant (I) –in Gravity center F2.

The geometric center of proton O2 shifts to the first quadrant (I)

or to the new center - the so-called Gravitational center F2 of the proton.

Result: The new Gravity center (F2) of proton is in opposite direction than the Gravity center (F1) of electron.

The new Gravity center (F2) of proton is in first quadrant (I). It is in opposite direction than the Gravity center (F1) of electron – in second quadrant (I).

c) Short for Forces that Rotate Electron around Proton: OF1, y> OF2, y.

Vector O1F1 is called the Eccentricity vector of the electron. The projection of this vector on the x coordinate points to OF1x, it is in the direction from the proton to the electron. The projection of O1F1 on the ordinate y is OF1y (Figure 2a).

Vector O2F2 is called the Eccentricity vector of the proton. The projection of this vector on the x coordinate is OF2x. The projection of O2F2 on the ordinate y is OF2y (Figure 2b).

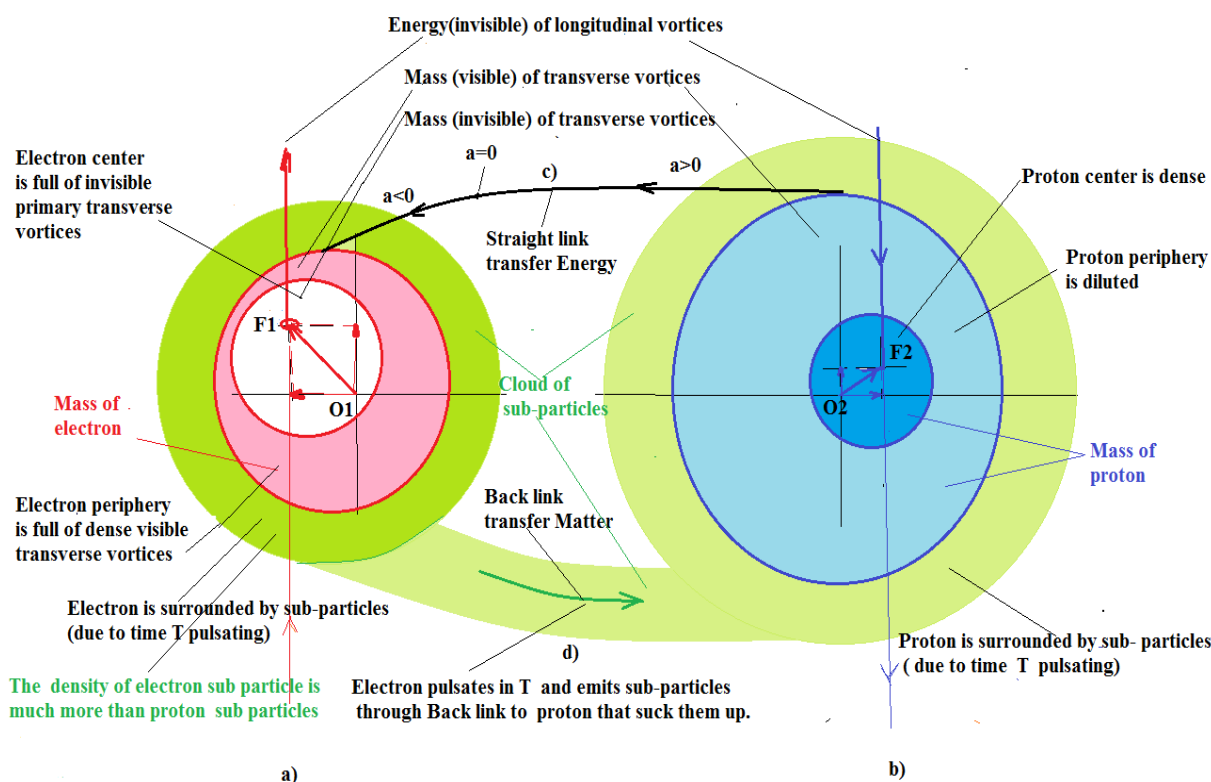


Figure 2: Real Construction of Electron-Proton Pair

Figure 1a) The real form of electron, Figure 1b) The real form of proton, Figure 1c) Straight link of Energy (by transverse vortex), Figure 1d) Back link of Mass (by sub-particles)

Because the electron is empty in the middle, the Gravity center is more displaced. Therefore the electron is more eccentric. Because the proton is dense in the middle, it is less displaced and less eccentric. Therefore, OF1x is larger and opposite to OF2x): $OF1,x > OF2,x$.

And vector OF1y is greater and unidirectional on OF2y) (Figure

2a, b): $OF1,y > OF2,y$.

Thus, the vector OF1x will *repel* the electron from the proton's OF2x vector. Or the electron and proton will repel each other) (Figure 2c).

Result: Electron and Proton Repel Each Other Along Transverse Link.

The vector OF1y will *rotate* the electron around the proton, which has a unidirectional but significantly smaller vector OF2y (compared to OF1y) Electron rotates around proton from left

to right, if the observer is looking against the direction of the electron's longitudinal vortex (Figure2a).

Result: Electron rotates around proton from left to right.

It is pure mechanics, the movement is objective and there is no mysticism.

d) The Force That Rotate Electron around Itself: Curve of the Rainbow of internal primary transverse vortices has direction from left to right.

According to Law 5 (adapted for the electron) a transverse decelerating vortex with an outside-in direction emits transverse primary decelerating vortices towards the center of the plane 2D. It can be seen that the direction of the primary transverse vortices which are located in the central empty space of the toroid of the electron is from left to right (if we observe against the direction of the perpendicular longitudinal vector of electron in 3D) (Figure1a).

These multiple right-to-left twisted primary transverse vortices slowly rotate the body of the entire toroid (of electron) to the left. The speed is greatly reduced because the toroid is a large inert body. Also the radius of the inner volume of the toroid (or the momentum of the primary vortices inside the empty Space) is smaller than the mean radius of the toroid.

Result: The toroid body of the electron rotates to the left as the primary vortices emitted by the main transverse vortex to internal Space of toroid are twisted to left.

The present description demonstrates the most classical causal relationships between the electron and the proton.

4. Conclusions

According to the Theory of new Axioms and Laws, the structure of the electron and the proton is quite complex. They exist both in Space and in Time. They are mutually orthogonal and work as a resonant system.

a) The Mass

The proton in its entire volume contains mass because it is a dense sphere. The electron in its entire volume is almost empty, there is mass only in the thin ring at the periphery of the toroid.

b) The Clouds of Sub Particles

Exactly because its structure the electron has a greater possibility of contracting during pulsation in Time. Because the input pulse has a first steep phase, the empty electron, during its sharp contraction, emits more sub particles than it absorbs the stuffed and dense proton. Thus, a denser cloud of sub particles is formed around the electron than around the proton. This is why a feedback loop is formed for the transfer of sub particles from the electron to the proton. The cloud and the feedback loop are invisible to light waves. The reason is that sub vortices have thin thread they form diffraction by the light waves.

c) The Energy

The energy is contained in the longitudinal vortices that structure

longitudinal funnels (decelerating and accelerating). Due to diffraction the longitudinal vortices and funnels are invisible to the solar transverse vortices. The straight link of longitudinal vortices and funnels appears as a flow of energy, the reverse connection (Back transverse link) appears as a flow of sub-particles. Both streams are invisible to solar waves.

5. Hypotheses

a) Quark and Anti –Quark

There is a great similarity between the accelerating sub particles absorbed by the proton and the quarks. The energy levels, saturation and completeness of the spiral structure of the sucked and the absorbed accelerating sub particles are different. Naturally they can be denoted differently. For example they can be denoted as the "color charge" of anti - quarks: anti-red, anti-green and anti-blue.

There is a great similarity between the decelerating sub particles emitted by the electron and the anti-quarks. The energy levels, saturation and completeness of the spiral structure of the emitted decelerating sub particles are different. Naturally they can be denoted differently. For example, they can be denoted as the "color charge" of quarks: red, green and blue.

b) Free Energy

It is striking the similarity between the so-called Free energy and those sub-particles that fill the Space (inside the atom and outside the atoms and molecules) called Vacuum. Perhaps that is why Nikola Tesla said that Free energy is all around us. From this it logically follows that we must learn to use this infinite Energy resource.

Summary: Sub particles are prototype of the quarks (anti quarks) and the Free energy.

This report shows that sub particles generate, enter the composition and sustain the life of both the electron and the proton. The electron emits decelerating sub- particles and the proton sucks them as to add speed and mass to its initial central body. The proton sucks of sub-particles in transverse direction emitted from electron. The longitudinal vortex coming from Space includes (involve, mess up and mix) inwards this sub-particles to body of proton that are entrained by the rotating longitudinal vortex. It is very likely that the number of these main sub particles included in center of sphere of proton is three. But they must carry a different quality as a Level of the Completion of spiral.

For example the proton is made by accelerating sub particles. The Level of the Completion of sub particles can be described by so called "color charge" of quarks: red, green and blue. This quality indicates length, density, velocity and especially acceleration of the sub-vortex of the sub -particle.

Thus the less length of spiral requires the bigger positive acceleration and inversely – the bigger length of spiral corresponds to less positive acceleration. This type of classification is fully proportional to the classification of quarks that create the nuclei of protons. Similar but orthogonal is the construction of the electron.

For example the electron is made by decelerating sub particles. The Level of the Completion of sub particles can be described by so called "color charge" of anti -quarks: anti- red, anti-green and anti -blue. Thus the less length of spiral requires less negative acceleration and inversely – the bigger length of spiral corresponds to bigger negative acceleration.

Therefore, the accelerating sub-particles are the prototype of so-called quarks and the decelerating sub particles are prototype of so called anti-quarks. Accelerating and decelerating sub-particles that mimic quarks and anti-quarks have positive or negative acceleration and carry energy called Free energy.

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