Review Article

Gravity Field (Low Frequency) of Planet Earth Described by Theory of New Axioms and Laws

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Abstract

The theory of new axioms and laws is published by the same author. It describes nonparametric and nonlinear processes and contains 2 new axioms and 8 new laws. Unlike Classical field theory, it describes longitudinal or transverse non-uniform motions which are accelerating or decelerating.

According to the Axiom 1 every unevenly rotation of one vector forms open vortex which can be transverse or longitudinal and accelerating or decelerating. From the planetary model of Rutherford it is known that there is analogy between the electrons and an planets including the planet Earth. By analogy - the electrons and the internal planets are similar Gravitational bodies.

According the Law 1 the model of the electron or the Earth represents a decelerating transverse vortex rolled into a plane (2D) and generating in its center accelerating longitudinal Gravity Funnel in (3D), perpendicular to the same plane.

Inside- the primary accelerating longitudinal Gravity vectors are with decreasing dimensions and forms the decelerating Magnetic Field as a Back wave passing through the center of Earth. Outside- because of resistance of environment in periphery, is formed Back wave or decelerating Gravity vortex that passes outside the body of Earth.

According Axiom 2 the reason for the creation of the electron is the generation by the corresponding proton. By analogy- the reason for the creation of internal planets, including the planet Earth is in the generation of a specific vortex inside the corresponding for Earth resonator in the volume of the Sun. It is Low Frequency vortex which is formed in the third cylindrical resonator that corresponds to Earth.

According Law 2 the proton or the resonator inside Sun is generated by a decelerating longitudinal vortex with direction from outside to inside which creates an accelerating transverse vortex from inside to outside in the perpendicular plane. As it is strongly accelerated this vortex from inside to outside it shoots itself into space in direction to the Earth. Due to the friction it decelerates and according to the previous Law 1 it winds into as a decelerating transverse vortex generating the body of Earth.

According Law 5 decelerating vortex emits decelerating cross vortices from itself to outside. This decelerating vortices in periphery of the Earth emit energy and warm the center of the Earth. That is why the periphery of Earth is cool ,but the center of Earth is hot .

According Law 6 the accelerating cross vortex sucks accelerating cross vortices to itself .
This accelerating cross vortex at center of the Sun sucks energy and warm from center and emits them to periphery of Sun. That is why the center of Sun is cool but the periphery is extremely accelerated and hot.

The described generating mechanism only applies to the inner planets. For the outer planets, the generation algorithm is orthogonal and will be described further.

Introduction

From the planetary model of Rutherford it is known that there is analogy between the structure of the solar system and the atom. By analogy - the electrons and the internal planets are similar Gravitational bodies for example to Earth and the protons are similar the corresponding resonators inside the Sun. Part of this phenomena will be described in the current report.

The Classic Axiom. The Axiom 1 and Axiom 2

The Classic Axiom in the Theory of the Electromagnetic Field certifies Maxwell's laws (1864) [1]. It postulates that the movement of an electric vector E in a closed loop is evenly:

$$div\ (rot\ E) = 0,$$

where (rot E) is the movement of the vector E in a closed loop; div (rot E) is the divergence (the variation in increase or decrease) of the vector E during its moving in a closed loop (rot E)

It is obviously that 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 Classic Axiom (1) does not describe movements in an open loop (or a vortex) or movements with a non-constant or variable velocity V.

The New Axiom1 for rotor and for vortex (vor)

The New Axiom1 describes the movements in an open loop or in a vortex with a non-constant or variable velocity V of vector E [1,6].

$$div\ (rot\ E) \neq 0,$$

Definition: An unevenly cross vortex (E_{2D}) is an unevenly vortex (E) spinning transversally in a *2D* plain. The cross open vortex in 2D is designated as V or E_{2D} (Figure 1c).
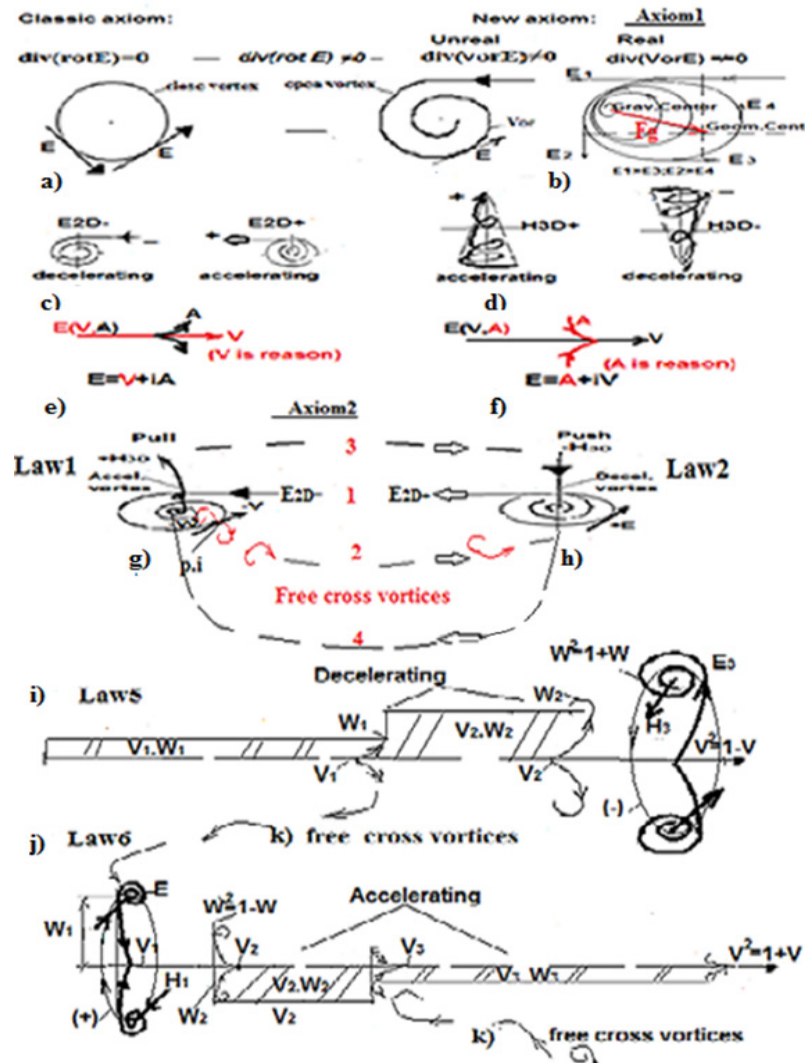

Figure 1: The new Axiom 1, Axiom 2 and Law 1, Law 2, Law 5, Law 6

Definition: An unevenly longitudinal vortex (H_{3D}) is an unevenly vortex (H) spinning in the volume of 3D. The longitudinal open vortex in 3D is designated as Vor H_{3D} (Figure 1d).

The definitions for natural unevenly vortices ignore the thickness of the vortex itself (cross in 2D or longitudinal in 3D).

It exists a vortex div (VotE) ≠ 0 as an open loop (div (rotE) ≠ 0) in 2D. It exists a vortex div (VotH) ≠ 0 as an open loop (div (rotH) ≠ 0) in 3D or:

$$\text{div (VorE}_{2D}) \neq 0, \text{ div (VorH}_{3D}) \neq 0.$$

The existence of an open loop means that it can exists a decelerating or an accelerating vortex in 2D or in 3D:

$$\text{div (VorE}_{2D}) < 0; \text{ div (VorE}_{2D}) > 0;$$
$$\text{div (VorH}_{3D}) < 0; \text{ div (VorH}_{3D}) > 0.$$

Axiom 1
The moving of a vector with monotone-decreasing or monotone-increasing velocity becomes along an open vortex.

Definition: div (VorE) ≠ 0 for vector E in 2D (in plane) that was named *cross vortex*.
div (VorH) ≠ 0 for vector H in 3D (in volume) that was named *longitudinal vortex*.

Consequence: (of variation of moving):
We immediately received 4 types of movements – cross (4a), which can be accelerated or decelerating and longitudinal (4b), which can also be accelerated or decelerating.

Therefore, there are 4 types of vortices: a cross vortex in 2D (E_{2D}) that can be accelerated (E_{2D+}) or decelerated (E_{2D-}) (Figure1c) and a longitudinal vortex in 3D (H_{3D}) that can also be accelerated (H_{3D+}) or decelerated (H_{3D-}) (Figure1d) [1].

Consequence: (of visual perception)
It is known that light is spreading crosswise and the cross vortex will reflect the light rays, and an external observer will perceive the image of the cross vortex. *Therefore, the cross vortex is well visible for an external observer.* But the thread of the longitudinal vortex does not reflect the light. The light crosses the thread of longitudinal vortex, surrounds the thread, and continue its path without reflecting the longitudinal vortex. So it forms diffraction. *Therefore, the longitudinal vortex is invisible to an external observer* [6].

Consequence: (eccentric vortex, vortex turns to a dipole).
The open vortex turns from concentric to eccentric vortex or to dipole. The reason is in the acceleration of velocity. For example, in decelerating vortex: $E_1 > E_3$ and the Geometric Center will aim to move to the larger vector E1 (to up). At the same time: $E_2 > E_4$ and the Geometric Center will aim to move to the larger vector E2 (to the left). *Therefore, the Geometric Center will move to a second quadrant to the new Gravity Center* (Figure1b) [7].

Consequence: (of complex vector)
The vector E is not a simple but complex vector. When $E_2 = V + iA$, the velocity V is reason, the amplitude A is result (Figure1e). When $E_1 = A + iV$, the amplitude A is reason, the velocity V is

result (Figure1f) [8].

Definition: The objects with this vectors are called complementary vortices or complementary pairs.

Axiom 2
A Pair of Complementary Vortices Forms a Resonance System.
Because one object pushes ($E_1 = A + iV$) (Figure1h), the other should be pulls ($E_2 = V + iA$) (Figure1j) (or inversely). So they form a pair of complementary objects. Something more, because of one object pushes and the other pulls, *the both of them are active generators* [7].

Consequence: *There is no energy losses in the pair of open complementary vortices. The reason is that the both of them are active.*

For comparison in the Electromagnetic Field, the electrical circuit contains one generator element and one or several passive consumers that *only transform energy from one view (kinetic) to the other view (potential).*

Consequence: Pair of complementary objects ($E_1 = A + iV$, $E_2 = V + iA$) *exists at the same time.*

Consequence: Pair of complementary objects ($E_1 = A + iV$, $E_2 = V + iA$) *is connected by a links* (1,2) in one direction (Figure 1g, h).

The link 1 transports energy by longitudinal vortex from accelerating object (Proton-Sun) (Figure1h)) to decelerating object (Electron-Earth) (Figure1g)). The link 2 is Back link and it transports many cross vortices that emit from transverse vortex of decelerating object (Electron-Earth), which is strongly decelerating in center, towards the accelerating transverse vortex (proton -Sun) which sucks them (Figure1g, h).

Consequence: *There are two opposite directions of impact of complementary pair:*
($E_1 = A + iV$, $E_2 = V + iA$) and ($-E_1 = -A - iV$, $-E_2 = -V - iA$).

In straight direction: ($E_1 = A + iV$) amplitude (A) is the reason (Figure1h) but the speed (V) is the result. Or the velocity (V) ($E_2 = V + iA$) is the reason but the amplitude (A) is the result (Figure1g). An example of such *straight direction* is the proton-electron and resonator inside the Sun-Earth.

In the opposite direction: ($-E_1 = -A - iV$) amplitude (-A) can be the reason but the speed (-V) is the result. Or the velocity (-V) ($-E_2 = -V - iA$) can be the cause and the amplitude (A) is the result [9]. This *situation is not depicted in the figure and is not described in this report.*

Law 1 forms the electron and the planet Earth outside,
Law 2 forms the proton and the star Sun outside

Law 1: The open cross vortex (E_{2D}) generates (inward or outward) an open longitudinal vortex (H_{3D}) in its center through a cross-longitudinal transformation Δ1:
$$\Delta 1$$
$$\text{Vor (E}_{2D}) => - \text{Vor (H}_{3D}),$$

where Vor (for Vortex, meaning an unevenly vortex) which replaces rot (for rotor, meaning closed loop) [7].

Therefore, the cross vortex in 2D (E_{2D}) continues its development in 3D as a longitudinal vortex (H_{3D}) (Figure1g). While Maxwell's Law states that vector *E* generates vector *H,* the present law (6) 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 E2D and H_{3D} have opposite dynamics. For example, when div (Vor E_{2D}) < 0 (is decelerated), div (Vor H_{3D}) > 0 (is accelerated).

Consequence: The open *decelerating cross vortex (E_{2D}) generates inward ($\Delta1_{in}$)* 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 $\Delta1_{in}$:

$$\text{Vor (E}_{2D}\text{)} \overset{\Delta1_{in}}{=>} \text{Vor (H}_{3D+}\text{)}.$$

The Consequence (6a) of Law 1 describes in 2D the model of electron (e-) as the decelerating inward vortex (dec (e-) (Figure 1g) in the chain of proton-electron (Figure 1h - Figure 1g). Every electron (dec (e-) of this type look likes to:" expanded cross vortex and a shortened longitudinal vortex".

Result: The generation of a maximally inflated transverse vortex in electron is due to maximum negative deceleration ($-a_{max}$) of the input vortex in electron from the outside to the inside (div Vor E < 0) = ($-a_{max}$) (Axiom1).

Result: The greater the negative acceleration ($- a_{max}$) of the one orthogonal element (electron) is due to the greater the positive acceleration ($+ a_{max}$) of the second orthogonal element (proton) (Axiom 2). Therefore, between this two orthogonal elements (electron-proton) forms some kind of parabola with a greater distance (D). It follows that the repulsive force: ($F_{repuls\ e} \sim a_{max}. m_{fluid}$) is greater, and the distance (D) between the two orthogonal elements is greater ($D_{max} \sim F_{max}$. T), where the sign (~) means right proportionally.

Result: The greater the negative acceleration of the transverse vortex ($-a_{max}$), the larger the diameter (d_{max}) of this vortex in 2D and the smaller the perpendicular vector (h_{min}) in 3D (Law 1).

Result: This type of electrons (dec(e-):" expanded cross vortex and a shortened longitudinal vortex" are located in outer orbits.

Result by Analogy: By analogy with the planets: *the expanded planets with shorten perpendicular longitudinal vortex are located in outer orbits.*

For example: The planet *Earth is an example* of an expanded planet.
The planet Earth is generated by an expanded transverse vortex (dec(e-) in 2D and has as a result a shortened longitudinal vortex in 3D. This decelerating transverse vortex (dec(e-)is generated in cylindrical resonator inside the Sun as an accelerating transverse vortex (acc(p+).

Due to the bigger radius of the third cylindrical resonator, the transverse vortex has a bigger transverse acceleration (acc(p+) that keeps the planet Earth at a longer distance (D).

Something more – the planet Earth has the *most privileged position of all the inner planets*. Because of the Earth is the third planet in a row, it corresponds to the third cylindrical resonator inside the Sun. But the third cylindrical resonator has the maximum volume. That is why the Earth *has the maximum volume* (including satellite Moon) and maximum density in comparison with other planets.

The maximum volume of the third resonator inside the Sun means the maximum power of transverse vortex (acc(p+). The maximum power cause the *maximum eccentricity* in first quadrant for proton (instead of second quadrant for electron) in cylindrical resonator (Fg) inside the Sun.

According to Axiom 2, the planet Earth is an orthogonal object of the Sun. Therefore, in the third resonator inside the Sun, the maximum expanded and inflated a transverse vortex is generated which is shot to the resonator of the Earth. This fact leads to maximum eccentricity and maximum vector of eccentricity ($F g,_{max}$) inside the Earth (Figure1b).

As a result of maximum vector of eccentricity ($Fg,_{max}$) inside the resonator of the Earth, the maximum component of the $Fg,_{max}$ on the x-axis is obtained. This x-axis component keeps the Earth's mass at the possible *maximum distance* (D) to the Sun (Figure g,h).

Due to the decomposition of the eccentricity vector along the x axis, the maximum component of the F_{gmax} on the y-axisrotates the planet Earth with *maximum orbital speed*.

According to the Law5 the decelerating transverse vortex with maximum deceleration ($-a_{max}$) emits to inside the cross vortices with maximum amplitude ($+W_{max}$). Since these emitted vortices are delayed, they are curved from right to left. So they rotate the Earth *around its axis from right to left with maximum speed*. The direction of rotation is determined by an independent observer *looking against the direction of the longitudinal vortex - from top to bottom* [3,9].

Consequence
The open accelerating cross vortex (E_{2D+}) generates inward ($\Delta1_{in}$) an open decelerating longitudinal vortex (H_{3D}) outward. This action takes place from the center of accelerating cross vortex (E_{2D+}) through a cross-longitudinal transformation $\Delta1+$:

$$\text{Vor (E}_{2D+}\text{)} \overset{\Delta1_{in}}{=>} \text{Vor (H}_{3D-}\text{)}.$$

The Consequence (6b) of Law1 describes in 2D the model of electron (e-) as the accelerating inward vortex (acc(e-) (Figure 1g) in the chain of proton-electron (Figure 1h - Figure 1g).

Result: The Consequence (6a) and (6b) describe decelerating or accelerating cross vortex to inwards. We immediately obtain *2 types of electrons: (dec(e-)) and (acc(e-))* that look likes to" expanded cross vortex and a shortened longitudinal vortex" and "shrunken cross vortex and extended longitudinal vortex.

Result: The less the negative acceleration of the transverse vortex ($-a_{min}$) the less the diameter (d_{min}) of this vortex in 2D and the longer perpendicular vector (h_{max}) in 3D (Law 1).

Result: The second type of electron (acc(e-) look likes to: "shrunken cross vortex and extended longitudinal vortex ". This type of shrunken electrons is located *in inner orbits* (D_{min}).

Result by Analogy: By analogy with the planets - *the shrunken planets with extended longitudinal vortex are located in inner orbits.*

For example: The planet *Mercury is an example* of a shrunken planet generated by a shrunken transverse vortex and an elongated longitudinal vortex in the innermost cylindrical resonator in the Sun. *Due to the minimal radius (d_{min}) of the cylindrical resonator, the transverse vortex has a minimum transverse acceleration($-a_{min}$) that keeps the planet Mercury at a minimum distance (D_{min}).*

Law 2: The open longitudinal vortex (H3D) generates (inward or outward) an open cross vortex (E2D) in its center through a longitudinal-cross transformation Δ2:

$$\Delta2$$
$$\text{Vor } (H_{3D}) => -- \text{ Vor } (E_{2D})$$

The Law 2 in 3D refers to the active part (Figure 1h) of the pair of complementary objects (Figure 1h – Figure 1g). The transfor-

mation (Δ2-) 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 1h) [9].

Consequence

The open *decelerating longitudinal vortex (H_{3D}) inward ($\Delta2_{in}$) 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 Δ2in:

$$\Delta2_{in}$$
$$\text{Vor } (H_{3D}) => \text{Vor } (E_{2D+}).$$

The Consequence (9a) of Law2 describes in 2D the model of proton(p+) as the *accelerating outward vortex (acc(p+)* (Figure 1h) in the chain of proton-electron (Figure 1h - Figure 1g).
Result: Every proton of this type look likes to:" *shrunken cross vortex(acc(p+))* and an extended longitudinal vortex". It is located to the center of nucleus and rule the closer electrons.

Result by Analogy: By analogy with the Sun:" **shrunken** cross vortex and an extended longitudinal vortex" is an analogue to the *narrower resonator inside in the Sun that rule the closer planets.*

Result by Analogy: As analogy to the shrunken proton (acc(p-) is a first resonator inside the Sun which is the narrowest resonator and it rules the closer planet *Mercury* (Figure 2d).
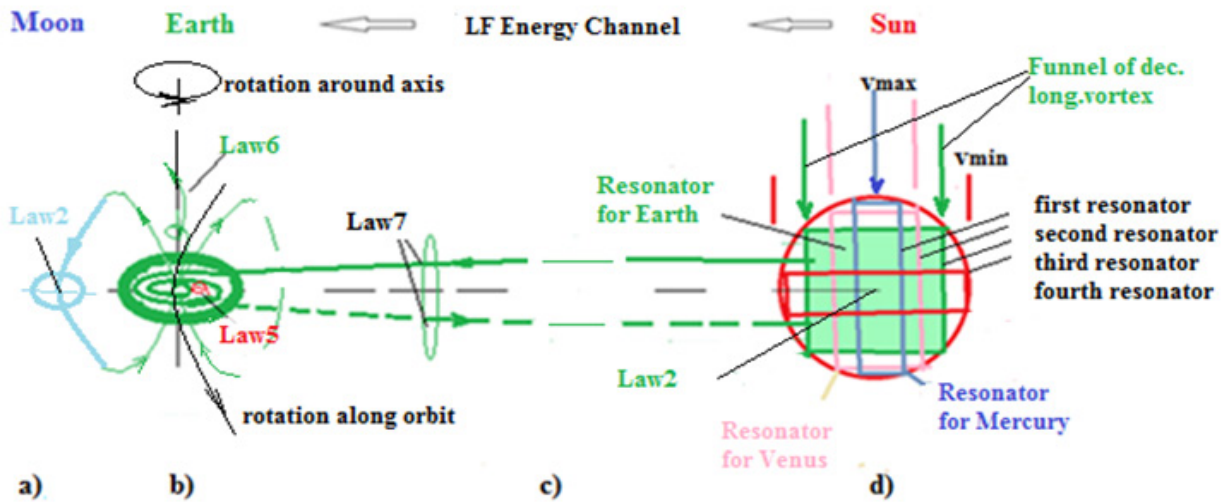

Figure 2: Two complementary pairs: Sun- Earth and Earth-Moon

Result by Analogy: By analogy to the shrunken proton (acc(p-) is *Moon* - a single satellite of planet Earth (Figure 2a).

According to the Law 1 in a one cylindrical resonator in the planet Earth is generated accelerating (shrunken) transverse vortex with decelerating longitudinal vortex which is emitted outwards. According to the Law 2 the same this decelerating vortex which is emitted outwards of Earth enters the Moon and generates accelerating (shrunken) transverse vortex from inside to outside which returns to Earth again.

Law 5 forms the electron and the internal planets (Earth) *inside*, Law 6 forms the proton and the star Sun *inside*

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:

$$I \; V(t)^2 = V_0 \, (V_0 - V(t)),$$
$$I \; W(t)^2 = W_0 (W_0 + W(t)),$$

where v_n, w_n n are periodic roots with period n; v_n, w_n are **mutual orthogonal** that fulfill the requirement for orthogonality: $v_n \cdot w_n = V_0 \cdot w_0$, $v_n \cdot \omega_n = V_0 \cdot W_0$; $n = 0 \div \infty$; 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 ωn, ψ is a proportional that fulfills the requirement: ψ-1/ ψ =1; t is continual and even, Vn are uneven(decelerated) and V(t) is nonlinear (Figure 3e) [8].
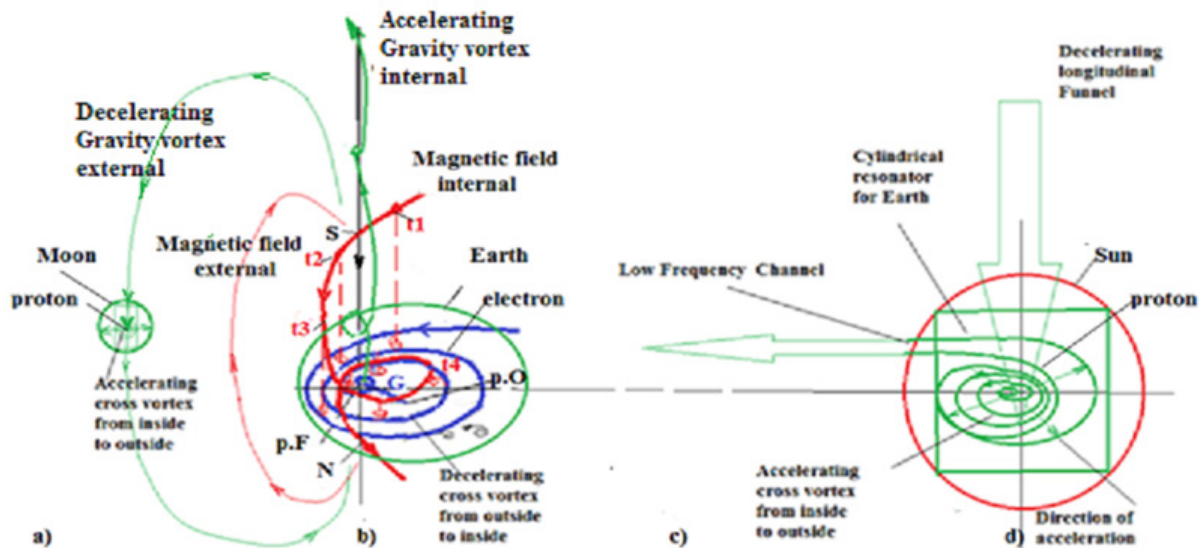

Figure 3: More details for System of planet Earth and star Sun

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 angular velocity (w), the amplitude (W) and the number (N) of cross vortices increase in (n) portions (ψ^n) times:

$$I\ V(t)^2 = V_0 (V_0 - V(t)),$$
$$I\ W(t)^2 = W_0 (W_0 + W(t)),$$
$$I\ w(t)^2 = w_0 (w_0 + w(t))$$
$$I\ N^2 = N_0 (N_0 + N)$$

where the roots v_n, w_n and ω_n and nn 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: ψ-1/ ψ =1 [9].

Therefore, a decelerating vortex(E_{2D}) with a velocity vector (V) emits to the environment decelerating vortices with increasing amplitude (W) (because of sign + in second equation of system 10a) (Figure 3b).

Result: The decelerating transverse vortex of electron emits to (outside) environment decelerating transverse primary vortices.

Result: Two or more decelerating longitudinal vortices repel each other and form Decelerating Gravity Funnel.

The Result by Analogy: On the one hand the primary decelerating vortices are sucked inwards to center of planet Earth and on the other hand the same primary decelerating vortices are emitted outwards to the surrounding space in direction to Sun. Thus is formed

close loop (Law 7).

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 (ψ n) times:

$$I\ V(t)^2 = V_0 (V_0 + V(t)),$$
$$I\ W(t)^2 = W_0 (W_0 - W(t)),$$

where v_n, wn 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 vn, wn 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: ψ-1/ ψ =1; t is continual and even, V_n are uneven (accelerated) and V(t) are nonlinear [7].

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 angular velocity (w), the amplitude (W) and the number (N_n) of cross vortices decrease in (n) portions (ψ^n) times:

$$I\ V(t)^2 = V_0 (V_0 + V(t)),$$
$$I\ W(t)^2 = W_0 (W_0 - W(t)),$$
$$I\ w(t)^2 = w_0 (w_0 + w(t))$$
$$I\ N^2 = N_0 (N_0 + Nn)$$

where the roots v_n, w_n and ωn and nn 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_n; ψ is a proportional that fulfills the requirement: $\psi-1/\psi=1$ [8].

The first positive root of the first equation is: $v_1= \psi$. $V_0 = 1,62$. 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: $w_1=(1/\psi.)$ $W_0 = 0,62$. W_0. The periodic roots of the second equation are obtained from the expression: $w^{n-2}= W_0 \cdot (w^n-w^{n-1})$.

Result: The accelerating vortex suck in from environment accelerating cross vortices.

Result: Two or more accelerating longitudinal vortices *attract* each other and form Accelerating Gravity Funnel. The reason is due to the suction of accelerating cross vortices from environment to inside.

The Result by Analogy: On the one hand the accelerating vortices are sucked outwards from center of Sun towards the surrounding space by the transverse vortex of the Sun and on the other hand the accelerating vortices are sucked by the Sun from internal planets Earth. Thus is formed close loop (Law 7).

Law 7: A pair of open cross objects in 2D forms a closed loop in 2D by feedback in 2D of primary cross vortices.

It exists an inverse movement in the space between internal planets (Earth) to the Sun that forms the Close loop with the right movement between the Sun to internal planets (Earth) (Figure 3c).

Structure of the Sun
For the Protons
It is well known that the protons are arranged in layers inside the nucleus. The author's new research has shown that the *outermost layers consist of inflated protons* (dec (p+)). They control the outermost electrons, which are also *inflated electrons* (dec (e-)), they are also extremely eccentric and highly polarized. *The innermost layers of the nucleus consist of shrunken protons* (acc (p+)). They control electrons from the innermost orbits (acc (e-) that are contracted and not polarized [9].

Such a structure of protons is possible because it takes place in all directions of the generating vector from the outside to the inside. In central protons the longitudinal velocity is maximum (v_{amp}) but the transverse (or angular velocity ω) tends to zero (ω_{min}). Or in center the mode is: (v_{max}, ω_{min}).

In periphery protons the longitudinal velocity is minimum (v_{min}) but the transverse (or angular velocity ω) is maximum (ω_{max}). or in *periphery the mode is*: (v_{min}, ω_{max}).

For the Sun
Towards the Sun the generating vector comes from *only one direction from space*. And besides, it is not a single vector but a powerful *bundle of many vortices inserted* into each other. They form a *Funnel* of longitudinal vortices which are *nested* into each other according to their velocities. Thus, in the center of this package is

found a longitudinal vortex with maximum longitudinal velocity (v_{max}) and minimum transverse rotation speed (ω_{min}). Or *in center is found the vortex:* (v_{max}, ω_{min}). But a longitudinal vortex with minimum longitudinal speed (v_{min}) and maximum transverse rotation speed (ω_{max}) is wound in the periphery. Or *in periphery is wound the vortex: (v_{min}, ω_{max})*.

The Third Resonator Corresponding to The Planet Earth
It is known that the Earth is the third planet after Mercury and Venus. The author's new view shows that *the third is cylindrical resonator* in which the beam of longitudinal vortices coming from outside generates transverse vortex which corresponds to Earth. Outside the resonator of Earth follows another - the resonator on Mars. Before the resonator of Earth are resonators of Mercury and Venus (Figure 2d) [3].

Obviously the third cylindrical resonator on Earth *has maximum volume* compared to the other 4 resonators (Figure 2d). The reason is that the third resonator is located *in the middle of the sphere* and the dimensions along the x- axis and along the y-axis are almost are the same. This problem has been solved long ago. It has been proven that this kind of cylinder has a *maximum volume inside orb*.

The System of 2 complementary pairs: Sun- Earth and Earth-Moon
The first pair is Sun-Earth The connection between them is transverse. At the exit of the Sun this connection is an accelerating vortex, and at the entrance of the Earth this connection turns into a delayed vortex. The reason for this transformation is the natural resistance of the medium. According to the Law 2 the coming from the outside space Funnel from decelerating longitudinal vortices generates in the third resonator of Sun accelerating transverse vortices from center to outside (Figure3d). This accelerating transverse vortex generates part of Sun' s body as proton. According to the Law6 the direction of generating (from center to periphery) and the positive acceleration are the reason to suck in free cross vortices from center of Sun. This phenomenon cools down the central interior of the Sun. So the central part of Sun is cooler and therefore is denser then the surface. At the transverse exit the accelerating vortex is shot out to Earth. Due to resistance of the medium the accelerating vortex becomes decelerating vortex to the surface of Earth (Figure 3c).

The second pair is Earth-Moon The connection between them is longitudinal. At the exit of the Earth along y-axes this connection is a less decelerating longitudinal vortex, and at the entrance to the Moon this connection turns into a more decelerating vortex. The reason for this transformation is the natural resistance of the medium. According to the Law2 in body of Moon this less decelerating vortex enters longitudinally along y-axes from outside to inside in a volume 3D. In the center of Moon is generated an accelerating longitudinal vortex in 2D plane. Thus the accelerating transverse vortex generates the Moon's body as proton. According to the Law6 the accelerating vortex sucks in toward periphery a primary transverse vortex whose action cools down the Moon's center. The namely direction of generating from center to periphery and the negative acceleration which sucks accelerating primary transverse vortices from the center to periphery cools down the central volume of the Moon (Figure 3a).

Results

For Sun: It has already become clear that inside the third cylindrical resonator of the Sun, the longitudinal delay vortices coming from outside are selected by frequency, amplitude and acceleration. Thus, a nonparametric resonance occurs in the third cylinder. As a result, is generated a rotation of plasma matter with frontal pressure.

Result: The third resonator in Sun is corresponded to the Earth. In him is generated the transverse vortex which is shooting out to Earth

This dependence is described by Law 2 with the help of operator Δ2 [10]. But the technology of this transformation is described by the phenomenon called "Back wave". The reason for the *Back wave is the lag* of each subsequent rotating layer. The reason is that the *viscosity* of the medium of Sun has a finite value (not infinite). It depends on many parameters, including the fact that the third resonator is closer to the periphery of orb of Sun.

The third resonator, corresponds to Earth is a middle resonator of Sun. In this resonator the plasma is warmer and rarer then in internal resonators. Therefore, in resonator corresponds the Earth, the *lag between two adjacent layers* is less and the acceleration of the Back wave is less in comparison with the more internal cylindrical resonators, for example with resonators of Mercury and Venus (Figure 3d).

But due to the fact that the third resonator has a maximum volume, it also has a *maximum power*. Therefore, the less acceleration of Back wave is accompanied by more *frontal power* of transverse vortex that generates Earth.

Result: The transverse vortex that generates Earth has less acceleration but more frontal power in comparison with more internal planets (Mercury and Venus).

We saw that internal electrons (acc (e-) are shrunk in transverse vortex and they have longer longitudinal vortex (6b). By analogy - the internal planets (for example Mercury) should be shrunk in radius with less acceleration of transverse vortex and less eccentricity and should have longer central Gravity Funnel.

In comparison, the external electrons (dec (e-) are expanded in transverse vortex and they have shorter longitudinal vortex (6a). By analogy - the Earth, as a more external planet, should be expanded in radius with more acceleration of transverse vortex with bigger eccentricity and should have shorter central Gravity Funnel.

Result: The transverse vortex that generates Earth has more acceleration but less frontal power in comparison with more an external planet (Mars).

We have already seen that the third in line and very special in parameters decelerating longitudinal vortex that enters into the Sun from outside, resonates the third cylindrical resonator which corresponds to the third in a row planet Earth (Figure3d).

According to the Law 2 this accelerating transverse vortex generates from the center outwards the *body of the Sun as the proton particle.*

Result: The Sun is generated as a proton particle.

The generation takes place with the help of an accelerating transverse vortex with a direction from the inside- out. According to the Law6, due to the presence of the positive acceleration, energy and matter of Sun's plasma are sucked in from the inside-out. This action cools the central part and makes it denser. Therefore, the center of the Sun should be expected to be colder and denser than its surface.

Result: The center of the Sun is colder and denser than its surface.

In internal of the Sun the acceleration from inside to periphery is so huge that the rays export and emit a lot of matter in the form of transversely swirling decelerating vortices of plasma. These decelerating transverse vortices are visible as solar protuberances.

In researching the properties of Electromagnetic waves, it is established that the emitted delayed transverse vortices carry a huge heat. Such heat in form of transversely swirling delayed vortices of plasma is launched out of the Sun with great speed. This phenomenon is perceived by the inhabitants of the Earth as a radiance of heat from Sun.

Result: The Sun emits a lot of matter in the form of transversely decelerating vortices of plasma which carry and export a lot of heat.

Because the solar plasma is shot as transverse wave, it is obviously that the speed of the matter as solar plasma is less than the speed of light.

Result: The speed of the solar plasma is less than the speed of light.

But it is very curiously what is the final velocity of solar energy beams. Let we be stop in more detail on the question of *what is the final velocity* (v_n) of the vortices at the periphery (on the n th step) of the solar plasma sphere. According to Law 6 the velocity (v_n) at the peripheral point (n) is equal to the initial velocity (V_0) multiplied by (φ^n). Or according to the equation (9a): $v_n = V_0 \cdot (\varphi)n$, where φ is the golden ratio ($\varphi = 1.62$), n is number of steps. Assuming that each step lasts 1 second, then the accelerating motion of the vortex inside the plasma of the sun lasts n steps or t=n.

Thus the velocity at the final (peripheral) point is proportional to the time at this acceleration. If the initial speed (V_0) is 1 m/sec, t= n= 41sec, then $v_n = V_0 (\varphi)^{41} = 1. (1.62)^{41}$ is equals to 389148.7 km/sec, or:

$$V_n = V_0 (\varphi)^{41} = 1. (1.62)^{41} = 389148.7 \text{ km/ sec.,}$$

It is obviously that 389148km/sec > 300000km/sec = c (the speed of light). The result is that the speed of the vortices emanating from the Sun is commensurate with or greater than the speed of light if the initial speed (V_0) is 1 m/sec and the steps are more than 41.

Therefore, the *speed of the energy* vortex at the output of the solar

disk can be greater than the speed of light after steps more than 41. So it is very likely that the speed of the beams of longitudinal vortices at the output of the Sun to be commensurate to the speed of light [4].

Result: It is very likely the speed of the energy beam of longitudinal vortex at the output of the solar disk to be commensurate to the speed of light.

In this line of thought it is very possible namely the acceleration of the longitudinal vortices to be the cause of the ignition of the thermonuclear reaction. Or the acceleration is the cause and the thermonuclear reaction is only one of the results.

Result: It is very likely that *the reason* for the ignition a thermonuclear process inside the Sun to be the enormous acceleration of internal accelerating vortex while the thermonuclear reaction is only one of results.

When in theory the places of cause and effect are exchanged, a wrong result is reached. This is also the case with thermonuclear ignition of the Solar plasma. It is very logical to consider that the cause of thermonuclear ignition is the presence of a huge internal vortex acceleration.

After this conclusion, there is no need for a powerful Magnetic field in the huge and complex Russian device named "Tokamak "to hold the hot plasma in a tight ball.

There is a need to create an internal transverse accelerating vortex as a cause and the acceleration generated after some time (41sec.) will reach such a value that it will cause a thermonuclear reaction as a result.

For the link between Sun and Earth:

According to Law 2, the Sun sends an accelerating frontal vortex to its output. Outside of Sun this accelerating vortex becomes delayed due to the natural resistance of the environment. Between Sun and Earth exists a longitudinal accelerating-decelerating vortex in 3D [8,9].

Result: The connection between the Sun and the Earth is an accelerating-decelerating vortex twisted in 3 D.
These positive acceleration and negative acceleration form some kind of parabola with spacing between start and final points equal to distance (D).

Result: The reason for the distance (D) between the Sun and the Earth is in the magnitude of positive and negative acceleration of the connecting vortex.

According Axiom1 because the generating internal transverse vortex of Sun is accelerated then it causes eccentricity of Sun's sphere. The displacement of a geometric center to the *first* quadrant forms a vector of eccentricity (Fg) who's along x-axis component repels the Earth from the Sun.

Result: The magnitude of positive acceleration causes an eccentricity of Sun's sphere with an eccentric center in the first quadrant and an eccentric vector who's along x-axis component repels the

Sun from the Earth.

According the Axiom 1 because the input vortex to Earth is delayed then it causes eccentricity of the toroid of the Earth. According to the Axiom2 the planet Earth is orthogonal object to the Sun and they form resonance system. Therefore, both of them should have the opposite eccentricity.

The Earth has a new position of eccentricity point in second quadrant and a significant eccentricity vector (Fg) (Figure 1b). The eccentricity vector has decomposition along the x-axis which determines the distance of the Earth from the Sun (Figure 2c).

Result: The magnitude of negative acceleration causes an eccentricity of Earth's toroid with an eccentric center in *second* quadrant and an eccentric vector whose x-axis component repels the Earth from the Sun.

The transverse Solar waves are diffracted by the described longitudinal vortex which are perpendicular to the direction of its movement. Or the transverse solar waves go around the described longitudinal vortex perpendicular to the direction of their movement. Therefore, the Sun's rays are not reflected by the longitudinal vortex. In previous developments it was well explained that an external observer can't see and observe longitudinal vortices [4]. An external observer cannot see and observe the connection between the Sun and the Earth vortices.

Result: The accelerating-decelerating longitudinal vortex as connection between the Sun and the Earth is invisible to an outside observer.

For comparison – it was well described that the external observer can see and watch only transverse vortices. The reason is that they reflect the Sun's rays [9].

Result: The decelerating *transverse* vortex which generates the internal planets and accelerating transverse vortex which generates external planets (outside the meteorite belt) are visible to an outside observer.

There is a very debatable issue about what is seen and what is not seen by an objective observer. It is very vulnerable from the materialistic approach, which firmly states that what cannot be seen does not exist. Obviously, much of the matter that does not reflect the sun's rays is invisible.

For example, all forms of longitudinal vortices are invisible, as well as all forms of primary transverse vortices. All forms of longitudinal vortices and primary transverse vortices determine the phenomenon of dark energy and dark matter.

Result: The phenomenon of *dark energy and dark matter* includes all forms of longitudinal vortices and primary transverse vortices, which are invisible.

The reason is the same - when Sun's rays meet the forms described above, they diffract in them and are not reflected [9].

For the Earth:

According the Law1 in the input to Earth the decelerating transverse vortex winds from outside to inside and generates the body of the Earth as a body of electron (Figure 3c).

Result: The body of the Earth is generated as an electron particle.

According the Law5 the same decelerating transverse vortex reduces its speed by emitting of the primary decelerating transverse vortices from itself. These primary transverse vortices are shot from the periphery to the center of Earth's body and they bring heat because they are decelerated. Therefore, the heat is concentrated in the center of the Earth's body and melts the matter in the magma core. This is the reason for the fact that the Earth's core is hot and melted (Figure 2b).

Result: The center of the Earth is hot and melted. The core of Earth is warmer and less dense than the surface.

At the output of Earth along y-axes in the packing over the time of the accelerating longitudinal vortices, they accelerate each other again and again. They form the Accelerating Gravity Funnel which passes through the center of Earth (Figure 3b).

Result: The *Accelerating Gravity Funnel* which passes through the center of Earth's body along the y-axes is emitted perpendicularly straight up

This Gravitational Funnel is accelerating only through the center of the Earth. In the periphery, due to disruption of the phasing of the primary transverse vortices, this Funnel becomes delayed and the vortices do not radiate upwards but begin to bend and return to the entrance. Thus they form a return wave called Back wave. Therefore, the Accelerating Gravity Funnel in the central part becomes the Decelerating Gravity Funnel to the periphery part. We have already seen that from the exit of the Earth a gravitational tube breaks into two parts: One flies straight up because it is accelerating. The others bend and wraps the Earth from the outside and returns to the entrance because they late.

Result: The *Decelerating Gravity Funnel* which passes outside and envelops the body of Earth is returned to the entrance as a Back wave.

This Decelerating Gravity Funnel also has eccentricity. This means that the longitudinal vortices in the same magnitude of acceleration and power are concentrated in one beam around one point. The beam with greatest power can enter, rotate and concentrate the matter remaining around the Earth that moves synchronously with it. Thus the body of the Moon is generated.

For the Moon: (Figure 3a).
The satellite Moon should be an orthogonal body to body of Earth.
We have already described that the perpendicular exit of the Earth passing through its center represent a strongly accelerated longitudinal vortices which form the Accelerating Gravity Funnel. This central longitudinal vortex is accelerating due to the fact that at any given moment the vortex receives one positive impulse each from the bottom up. Thus is formed *Accelerating Gravity Funnel.*

Due to the friction of the medium, the more peripheral vortices turn from accelerating to decelerating and do not shoot up, but they bend and return to the input as a Back wave. Thus is formed Decelerating Gravity Funnel. The nearest to Earth and most powerful part of the Decelerating Gravity Funnel generates a body of satellite Moon.

Result: The nearest and most powerful vortex from the *Decelerating Gravity Funnel* which passes outside the body of Earth generates the body of Moon.

The Moon is ruled by Earth as the closest and innermost shrunken proton, so it moves synchronously with the Earth. The reason for synchronous rotation of Moon is that the it is generated as a shrunken proton (acc(p+) by the nearest vertical beam.

Result: The Moon rotates synchronously with the Earth showing only one side.

According the Law 2 the decelerating longitudinal vortex enters from the outside inwards and generates the transverse vortex from center to outwards. Therefore, the Moon is generated as shrunken proton from the nearest and powerful vertical longitudinal beam which take part in an eccentric Decelerating Gravity Funnel. Let's remember that the shrunken proton has a shrunken cross vortex (acc (p+)) and an extended longitudinal vortex.

Result: The body of the Moon is generated as a proton particle.

The generation takes place with the help of an accelerating transverse vortex with a direction from the inside to out. According the Law6, due to the presence of the positive acceleration, energy and matter are sucked in from the inside to out. This action cools the central part and makes it denser. Therefore, the center of the Moon should be expected to be colder and denser than its surface. The Moon has a typical proton body with cold and dense center and warmer and rarer surface.

Result: The center of the Moon is colder and denser than its surface.

Hurrying forward in the information, the author can share that all the outer planets (the planets farther from the meteorite belt) have a similar device, i.e. a device of the protons.

Result: The outer planets have are similar to the proton particles.

Let's summarize that the inner planets are similar to electrons and their satellites are similar to protons. Therefore, the outer planets should be similar to protons and their satellites are similar to electrons. So the row from Sun will be: proton (Sun), electrons (internal planets) with satellite protons and protons (external planets) with satellites electrons.

Result: The satellites of outer planets are similar to electron particles.

Therefore, we can expect that one of the satellites of the outer planets may look like Earth. So the row from Sun will be: proton (Sun), electrons (internal planets) with satellite protons and protons (external planets) with satellites electron.

Result: It is very likely that one of the satellites of the outer planets to look like the planet Earth.

Most likely, one of outer planet to have a satellite which is similar to the Earth. The outer planet Jupiter which is generated as a proton behaves like a little Sun. It is very likely one of its satellite which is generated as an electron to be similar to the Earth.

For Magnetic Field as Back wave of Gravity Field: (Figure 3b).

According to the Law5 when velocity of decelerating vortices decreases the amplitude of emitted primary transverse vortices increases and the radius of curvature increases as well.

According to the Law1 each of these primary transverse vortices with increasing radii generate the accelerating longitudinal vortices in their centers with decreasing lengths perpendicular to the plane (2D) of primary transverse vortices. Therefore, when the transverse vortex is delayed and winds like a spiral in 2D from the periphery - inwards (E_{2D}), then in the center of the spiral an accelerating longitudinal vortex (H_{3D+}) is generated perpendicular to the plane of the spiral in 3D.

The generation in the center is done by the mechanism of multiplication of the primary longitudinal vectors h_1, h_2, h_3, ..., h_n, so that $N = h1 \cdot h2 \cdot h3 \ldots hn$. Thus the transverse vortex in plane (2D) naturally continues in volume(3D) in direction from bottom (N) to up (S).

Result: The direction of *Internal Accelerating Gravity Funnel* is from bottom (North-N) to up (South-S) and it passes through the center of planet Earth.

Because of that the direction of accelerating vortex of Gravity field is from bottom (North-N) to up (South-S) it turns out that the north (N) Geographic Pole coincides with the south (S) Gravitational pole.

Outside the planet Earth, the Gravity Funnel is delayed. Because of resistance of environment the Accelerating Gravity Funnel through the center of Earth becomes Decelerating Gravity Funnel outside of the Earth. It bends enveloping the planet Earth and returns to the starting point to input.

Result: The direction of *External Decelerating Gravity Funnel* is from up (South-S) to bottom (North-N) and it passes *outside* the planet Earth.

The algorithm of generation of Magnetic Field is very interesting and complex. Therefore, it needs from more details. According to the Law1 (Figure 3b):

At first time (t_1) the first primary transverse vortex (e_1), with maximum deceleration and minimum radius (r_1), generates the maximum primary longitudinal vortex ($h_1 = h_{max}$) which has a maximum time (Δt_{max}) and maximum length ($L_1 = L_{max}$).

At second time (t_2) the second primary transverse vortex (e_2), with less deceleration and more radius ($r_2 > r_1$), generates the less second primary longitudinal vortex ($h_2 < h_1$) and it has a less time (Δt_2

$< \Delta t_{max}$) and less length ($L_2 < L_1$) and so on.

At last time (t_n) the primary transverse vortex (e_n), with minimum deceleration and maximum radius (r_{max}), generates a minimum primary longitudinal vortex ($h_n = h_{min}$) and has minimum time (Δt_{min}) and minimum length ($L_n = L_{min}$)

When we connect in time: t_1 with t_2, with t_3, with t_i, and with t_n the decreasing length: $L_1 < L_2 < \ldots < L_i < \ldots < L_n$, a Back wave as a reverse wave is obtained in the opposite direction - from up (South-S) to bottom (North-N). Because of decreasing length (L_i) the resulting wave is a decelerating Back wave.

Result: The direction of *Internal Decelerating Magnetic Field* is from up (South-S) to bottom (North-N) and it passes through the center the planet Earth.

The Back wave forms so called an Internal Magnetic Field which passes through the center of Earth and it is a Decelerating Magnetic Field. The reason of the Back wave as an internal Magnetic Field is the integration in time (t_i) of resulting accelerating longitudinal vectors (h_i) with decreasing lengths (L_i). For comparison: the reason of Back wave of the external Decelerating Gravity Funnel which in reality passes outside the Earth's body is friction with the environment.

Result: The reason for the *Internal Decelerating Magnetic Field* is the integration in time of the primary accelerating longitudinal vectors with decreasing lengths.

While Gravity Field through the center of Earth is accelerating the Magnetic field through the center is decelerating. While the direction of Gravity Field is from down to up, the direction of Magnetic Field is opposite -from up to down.

Result: The direction of *External Decelerating Magnetic Field* is from bottom (North-N) to up (South-S) and it passes through the center of planet Earth.

In summary, we can say that:
An Internal Acceleration Gravity Funnel passes through the center of the Earth in a bottom-up direction. An External Decelerating Gravity Field passes outside and envelops the outside of the Earth's body in the opposite direction or from top to bottom and returns to the entrance.

The Internal Decelerating Magnetic Field passes internally through the center of the Earth in the opposite direction from top (S-south) to down (N-north) in the form of a Back wave. At the same time, an External Decelerating Magnetic Field envelops the body of the Earth from the outside in the opposite direction or from down (N-north) to top (S-south).

Conclusions
The system of Sun, Earth and Moon splits into 2 mutually orthogonal pairs: Sun-Earth and Earth- Moon.

The Sun is similar to proton: the center of the Sun is colder and denser than its surface.

The speed of the internal Solar material (plasma) part is less than the speed of light. But according new law for the accelerating moving, it is very likely the speed of the energy part of Sun's composition to be commensurate to the speed of light.

It is very likely, the reason for the ignition a thermonuclear process inside the Sun to be the enormous acceleration of internal accelerating vortex while the itself thermonuclear conversion is only one of result.

The Moon is similar to proton: the center of the Moon is colder and denser than its surface.

The Earth is similar to electron: the center of the Earth is warmer and rarer than its surface.

While the Internal Gravity Funnel is accelerated through the center of Earth with direction from down (N) to up (S), the Internal Magnetic Field due to so called Back wave is decelerated in the opposite direction – from up (S) to down (N).

The reason for the Internal Decelerating Magnetic Funnel passing through the center of the Earth, is the integration of the primary accelerating longitudinal vectors with the decreasing lengths while a reason for External Decelerating Magnetic Funnel is friction of environment.

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