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Review Article

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The Gravity Funnels, formed by the longitudinal vortices, according to the new Axioms and Laws

Valentina Markova

Bulgarian Academy of Sciences, Sofia, Bulgaria

*Corresponding author
Dr. Valentina Markova, Bulgarian Academy of Sciences, Sofia, Bulgaria.

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Abstract

In the age of information, it is no secret that the modern science is in a very difficult position. On the one hand, it has high hopes for solving the problems of modern humanity and very practical tasks. On the other hand, science shows limited potential and difficulty in carrying out the tasks. Beyond scientific theory remain such phenomena as gravity and gravitational waves and other unexplored and very useful phenomena.

Obviously, the reason for these limited capabilities of modern science is its limited foundation. The foundation of science is determined by its basic axioms. If we expand the foundation of science, we will be able to build a more comprehensive, perfect and voluminous theory.

In two monographs and a series of articles the author offers a system of extended axioms (with two new axioms) and a more extended theory (with eight new laws). To the great surprise of even the author, this new theory turned out to be extensive enough to cover and explain and the gravity. Moreover, the extended axioms and theory directly and naturally outlined the algorithm in the explanation of the so-called Gravity Funnels.

According to the new axioms and laws, Gravity Funnels are both for suction (accelerating) and for expansion (decelerating). Expansion Gravity Funnel decelerates along its longitudinal direction as emits the matter in the transverse direction. In this way it consumes energy and generates matter. Suction Gravity Funnel accelerates along its longitudinal direction as sucks the matter in transverse direction. In this way it consumes matter and generates energy. The both of Funnels are situated in a new Space-time. The Space-time of decelerating and accelerating Funnels is packed by longitudinal vortices, in which the Space (S) is constant. It is radically different of the Space-Time where we live now. The Space-time where we live now is packed by cross vortices, where the time (T) is constant. According the new Axioms and Laws the two described Space- times are mutually orthogonal.

Introduction

Description of the classical Axiom

It is known that the Classic Field Theory is described by Maxwell's Laws. The Maxwell's Laws are true only if the basic classical axiom is fulfilled (Figure 1a) [1]:

div (rotE) = 0.

This classical Axiom states that Maxwell's Laws refers only for evenly motion. In this motion the increasing (div) of the vector (E) or the change in the size of the vector in rotation along a closed curve (rot E) is equal to zero (0). This means that the moving is uniform and evenly.

Therefore, the Maxwell's Laws and Classic Field Theory are true only for evenly motions.

Even more, one of Maxwell's laws has the following form (Figure 1a) [1]:

rot E = H.

This law states that with uniform motion of vector (E) on a closed loop, in the center of the loop, in the direction perpendicular to contour plane, a vector (H) reappears or rotation of vector (E) again generates vector (H).

The new Axiom1

The new axiom states that if the motion is unevenly, it is performed in an open loop [1]:

div (rot E) ≠ 0.

It is obviously that the rotation (rot) in open loop turns to a vortex. This rotation (rot) have to replace to vortex (Vor) which means main vortex. The vortex (Vor) with capital letter means main vortex, as opposed to vortex (vor) with little letter, which means a

composite elementary vortex. This view of the new axiom (div (rot E) ≠ 0) is updated in [2]:
div (Vor E) ≠ 0.
In more detail and more precisely the axiom looks like this:
Axiom 1. The motion of vector with monotone-decreasing or monotone-increasing velocity becomes along an open vortices: div (VotE) ≠ 0 for vector E in 2D or div (VotH) ≠ 0 for vector H in 3D.
Therefore: div (rot E) ≠ 0, or div (Vor E) ≠ 0, where the motion of the vectors E in 2D, or H in 3D with monotonically- accelerated or monotonically - decelerated motion occurs in the form of an open vortex (Vor), in which:
div (Vor E)> 0 or div (Vor E) <0 in 2D, **1.**
div (Vor H)> 0 or div (Vor H) <0 for 3D.

Axiom1

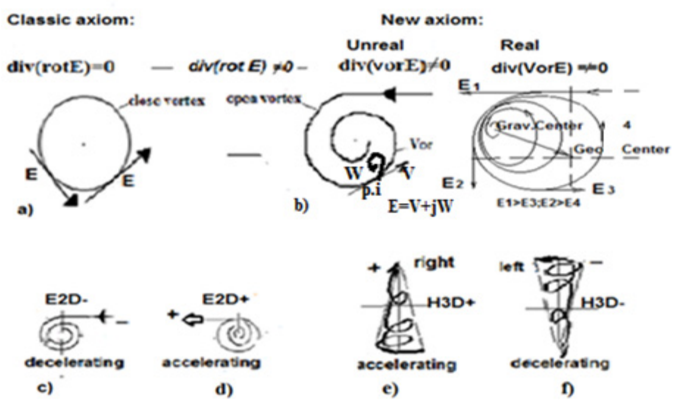

Figure 1: The classic Axiom is replaced by a new Axiom1

We immediately received 4 types of movements – cross vortices, which can be accelerated (Figure1d) or decelerating (Figure 1c) and longitudinal vortices ,which can also be accelerated (Figure 1e) or decelerating (Figure 1f).

The new Axiom1 open the opportunity of both cross movement and longitudinal movement. Cross movement is in 2D surface (Figure1c, d) and longitudinal movement is in 3D space (Figure1e,f). Longitudinal vortices can be accelerating (Figure 1e) or decelerating (Figure 1f). The longitudinal vortices are generated by Law1.

The generation of the longitudinal vortices
Law 1

With the help of Law1 we can describe and explain the transformation of the cross vortex into a longitudinal vortex. And more precisely - the transition from 2D to 3D or transforming a plane into a volume.
Law 1: The open cross vortex (E_{2D}) generates (inward or outward) an open longitudinal vortex (H_{3D}) (inward or outward) in its center through a cross-longitudinal transformation Δ1:

$$\mathbf{Vor}\ (E_{2D}) \overset{\Delta 1}{\Longrightarrow} -\mathbf{Vor}\ (H_{3D}), \qquad \mathbf{2.}$$

where Vor (for Vortex, meaning an unevenly main vortex) replaces rot (for rotor, meaning an opened loop) ; the cross vortex in 2D (E_{2D}) continues its development in 3D as a longitudinal vortex (H_{3D}) in perpendicular direction .

Law1 describes how cross vortex in 2D generates longitudinal vortex in 3D. The accelerating longitudinal vortex is emitted (Figure2a) from the center of cross vortex in perpendicular direction. The decelerating longitudinal vortex is sucked (Figure2b) to the center of cross vortex and in perpendicular direction. This phenomenon is described through a special transformation by help of operator delta one (Δ1).

The mechanism of action of the delta1 operator (Δ1) contains all variations of full resonance. *Full resonance* is resonance in amplitude, frequency and phase, i.e. resonance in space and time. It was described in detail in the previous articles.

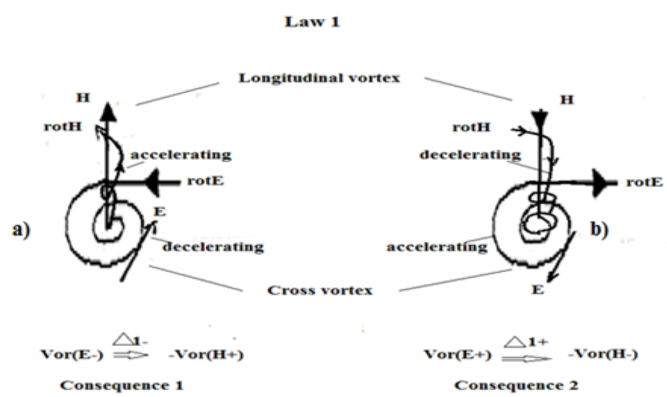

Figure 2: The new Law1 and Consequences

Consequences

Consequence 1: The open *decelerating cross vortex* (E_{2D}-) generates inward an open accelerating longitudinal vortex (H_{3D+}) outward through particular cross-longitudinal transformation (Δ1-):

$$\mathbf{Vor}\ (E_{2D-}) \overset{\Delta 1-}{\Longrightarrow} -\mathbf{Vor}\ (H_{3D+}). \qquad \mathbf{3.}$$

This action takes place *from the center* of decelerating cross vortex (E_{2D-}) through a particular cross-longitudinal transformation (Δ1-). Therefore, the decelerating cross vortex (E_{2D-}) in 2D surface continues its development in 3D volume as an accelerating longitudinal vortex (H_{3D+}) in perpendicular direction (Figure2a) (3).

Consequence 2: The *open accelerating cross vortex* (E_{2D+}) generates outward an open decelerating longitudinal vortex (H_{3D-}) inward through particular cross-longitudinal transformation (Δ1+):

$$\mathbf{Vor}\ (E_{2D+}) \overset{\Delta 1+}{\Longrightarrow} -\mathbf{Vor}\ (H_{3D-}). \qquad \mathbf{4.}$$

This action takes place *from the center* of accelerating cross vortex (E_{2D+}) through a particular cross-longitudinal transformation (Δ1+). Therefore, the accelerating cross vortex(E_{2D+}) in 2D continues its development in 3D as a decelerating longitudinal vortex (H_{3D-}) in perpendicular direction (Figure1f) (4).

The decelerating longitudinal vortex

Law 5 for 2D

Law5 is for the velocity of the longitudinal vortex (V) and the amplitude of the cross vortices (W). According to the Law5 for decelerating longitudinal vortex velocity(V) decreases and at the same time the amplitude(W) increases.

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:

$$\mathbf{I\ V^2 = V_0\,(1 - V),} \qquad \mathbf{5.}$$
$$\mathbf{I\ W^2 = W_0(1 + W),}$$

where v_n, w_n are periodic roots with period n; v_n, w_n are mutual orthogonal that fulfill the requirement for orthogonality: $v_n.w_n = V_0.W_0$; $n = 0 \div \infty$; the roots vn, wn are expressed as: vn= (1/ψn). V_0 , $w_n = \psi^n.W_0$; the velocity V_0 is the starting value of v_n, the amplitude of cross vortex W_0 is the starting value of w_n ; ψ is a proportional that fulfills the equirement: ψ-1/ ψ =1.

Consequenses for 3D

Consequence 1: *The Funnel of the decelerating vortices in 3D is described by a system of* 4 equations in which: longitudinal velocity (V) decreases in (n) portions (ψ^n) times; the angular velocity (R), the amplitude (W) and the number (N) of cross vortices increase in (n) portions (ψ^n) times:

$$\mathbf{I\ V^2 = V_0\,(1 - V),} \qquad \mathbf{6.}$$
$$\mathbf{I\ W^2 = W_0(1 + W),}$$
$$\mathbf{I\ R^2 = R_0\,(1 + R),}$$
$$\mathbf{I\ N^2 = N_0\,(1 + N),}$$

where v_n, w_n are periodic roots with period n; v_n, w_n are mutual orthogonal that fulfill the requirement for orthogonality; $v_n.w_n = V_0.W_0$; $n = 0 \div \infty$; the roots vn, wn are expressed as: $v_n = (1/\psi^n)$. V_0, $w_n = \psi^n$. W_0; the linear velocity V_0 is the starting value of v_n, the amplitude of cross vortex W_0 is the starting value of wn; ψ is a proportional that fulfills the requirement: ψ-1/ ψ =1.

Additionally, it is introduced angular rotation speed R and number of emitted vortices N, where r_n and n_n are periodic roots with period n; v_n and r_n are mutual orthogonal that fulfill the requirement for orthogonal $v_n.r_n = V_0.R_0$,where $r_n = \psi^n$. R_0 , and the angular velocity R_0 is starting value of r_n ; v_n and nn are mutual orthogonal that fulfill the requirement for orthogonal: $v_n.n_n = V_0.N_0$ where nn = ψ^n. N_0, and the number N_0 is starting value of n_n ; [n_n] is the closest integer Nlim.

It is noteworthy that: When starting number N_0 =1 the number n_n is calculated with the row: 1; 1.62; 2.62; 4.25; 6.88; 11.15; 18.07; 29.28; 47.43, …

The closest integer N_{lim} = [n_n] forms the following row: 1, 2, 3, 4, 7, 11, 18, 29, 47....

For comparison, Fibonacci's order is: 0, 1, 1, 2, 3, 5, 8, 13, 18, 21, 34, …

Obviously there is a similarity between the two rows at the beginning. But finally, after N_{lim}= 18, the number [n_n] rises sharply: 29>21, 47>34…, compared to the order of Fibonacci.

Because of positive sign (+) in second equation of system (6), the decelerating vortex (E_{2D-}) with a velocity vector (V) *emits* (+) to the environment decelerating vortices with increasing amplitude (W).

Consequence 2: For decelerating vortices there are 3 mutual orthogonality's at the same time:

$$\mathbf{v_n.\ w_n = V_0.W_0,} \qquad \mathbf{6a.}$$
$$\mathbf{v_n.\ r_n = V_0.R_0,} \qquad \mathbf{6b.}$$
$$\mathbf{v_n.\ n_n = V_0.N_0.} \qquad \mathbf{6c.}$$

Consequence 3: A decelerating vortex (E_{2D-}) with a velocity vector (V) emits to the environment decelerating vortices with increasing amplitude (W).

According to Law1 (2) the amplitude (W) increases in perpendicular direction to the linear velocity vector (V). In decelerating longitudinal vortex, the amplitude (W) increases only if it is directed from the inside to the outside, ie. if the decelerating vortex emits (+) outward cross vortices with increasing amplitude (W) (Figure 3a).

According to the Law5 (5) *the rotation of wheel of amplitudes (W) in the decelerating vortex is to left when the observer stands against the direction of movement (Figure 3a).* So at every ni point *forms left rotating wheel* perpendicular to the velocity (V).

Consequence 4: *The rotation of wheel of amplitudes (W) in the decelerating vortex is to left when the observer stands against the direction of movement.*

If the last wheel (in time t_n) rotates at an angular velocity ($r_n = (\psi^n)$. R_0), then the previous wheel (in time t_{n-1}) will rotate at a lower speed ($r_{n-1} = (\psi^{n-1})$. R_0) and will lag behind, and the even earlier one in time (in time t_{n-2}) will rotate at an even lower speed ($r_{n-2} = (\psi^{n-2})$. R_0) and will lag even further more and (r_{n-3} =. (ψ^{n-3}). R_0), etc. This means that each previous wheel (rotating to the left in tn, t_{n-1}, t_{n-2}, t_{n-3}, …) lags behind in angular velocity (rn > r_{n-1} > r_{n-2} > r_{n-3}> ….).

Therefore, if an independent observer watches the total rotation of the Funnel in 3D against the movement, he will note that the whole Funnel rotates to the right.

The decelerating longitudinal vortex in 3D forms *right (clockwise) rotating spiral when the observer watches against the movement (Figure 3a).*

Consequence 5: The Funnel of decelerating longitudinal vortices rotates to right (clockwise) when the observer stands *against the direction of movement.*

Because of increasing of the amplitude (W) the angular velocity (R) and the number of cross vortices (N) it forms decelerating, thickening and expanding right rotating Funnel (w_{max}; r_{max}; n_{max}).

Consequence 6: The decelerating longitudinal vortices forms decelerating, thickening and expanding right rotating Funnel in which: w_{max}; r_{max}; n_{max}.

Because of Consequence 2 of Law5, two or more decelerating longitudinal vortices repel each other because of emitting of cross vortices. Therefore, the reason is due to the emission of cross vortices from center to outside and pushing the neighbors decelerating vortices.

Consequence 7: Two or more decelerating longitudinal vortices *repel each other.*

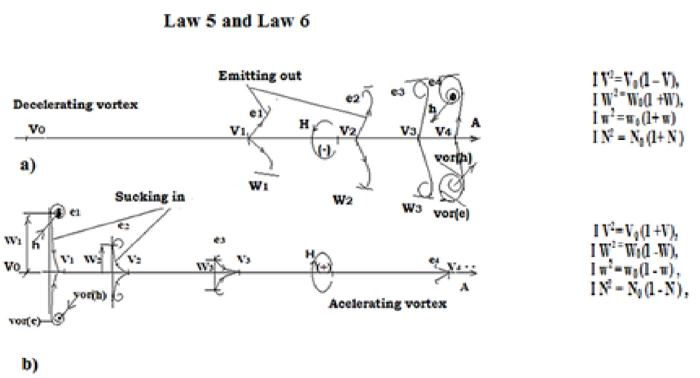

Figure 3: Law 5 for decelerating vortex and Law6 for accelerating vortex

The accelerating longitudinal vortex
Law 6 for 2D

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

$$\mathbf{I}\ V^2 = V_0\,(1+V), \qquad 7.$$
$$\mathbf{I}\ W^2 = W_0(1-W),$$

where v_n, w_n are n periodic roots with period n; v_n, w_n are **mutual orthogonal** that fulfill the requirement for orthogonality: $v_n.w_n = V_0.W_0$; $n = 0 \div \infty$; the roots vn , wn are expressed as: $v_n = (\psi^n).V_0$, $w_n = (1/\psi_n).W_0$; linear velocity V_0 is the starting value of v_n ; amplitude of cross vortex W_0 is the starting value of wn ,; ψ is a proportional that fulfills the requirement: ψ-1/ ψ =1.

Consequences for 3D

Consequence 1: The 3D Funnel of the accelerating vortices is described by a *system of 4 equations* in which: longitudinal velocity (V) increases in (n) portions (ψ^n) times, the angular velocity (R) , the amplitude (W) and the number (N) of cross vortices decrease in (n) portions (ψ^n) times:

$$\mathbf{I}\ V^2 = V_0\,(1+V), \qquad 8.$$
$$\mathbf{I}\ W^2 = W_0(1-W),$$
$$\mathbf{I}\ R^2 = R_0\,(1-R),$$
$$\mathbf{I}\ N^2 = N_0\,(1-N),$$

where v_n, w_n are periodic roots with period n; v_n, w_n are mutual orthogonal that fulfill the requirement for orthogonality: vn.wn = $V_0.W_0$; $n = 0 \div \infty$;
Result: The roots vn, wn and rn, nn are expressed as: $v_n = (\psi_n).V_0$, $w_n = (1/\psi^n).W_0$, $r^n = (1/\psi^n)R_0$, $n_n = (1/\psi^n).N_0$
where linear velocity V0 is the starting value of vn, amplitude of cross vortex W0 is the starting value of wn, angular velocity R0 is starting value of rn; number N0 is starting value of nn; ψ is a proportional that fulfills the requirement: **ψ-1/ ψ =1.**

Result: The first positive root of the first equation (8) is: v1= ψ. V_0 = 1,62. V_0. The periodic roots of the first equation (8) are obtained from the expression: $\mathbf{v^n = V^0.(v^{n-1}+v^{n-2})}$.

Result: The first root of the second equation (8) is: $\mathbf{w1=(1/\psi.)\,W_0 = 0{,}62.\,W_0}$. The periodic roots of the second equation (8) are obtained from the expression: $\mathbf{w^{n-2}=W_0.(w^n- w^{n-1})}$.

Aaccording to Law 4 when velocity (V) increases, the amplitude (W) decreases so that at each step (n_i) the product (V_i). (W_i) in 2D is a constant (Figure 3b).

Result: Because of negative sign (-) in second equation in system (8), for an accelerating longitudinal vortex with velocity (V), the amplitude (W) decreases.

The Consequence 1 is possible *only if* it is directed from the outside to inside ie. if the accelerating vortex sucks in cross vortices with decreasing amplitude (W)(Figure 3b).

Consequence 2: For accelerating vorties there are 3 mutual orthogonalities at the same time:

$$\mathbf{v_n.\,w_n = V_0.W_0,} \qquad \mathbf{8a.}$$
$$\mathbf{v_n.\,r_n = V_0.\,R_0,} \qquad \mathbf{8b.}$$
$$\mathbf{v_n.\,n_n = V_0.\,N_0.} \qquad \mathbf{8c.}$$

In combined longitudinal-transverse motion, the product between the current speed (v_n) of the longitudinal motion and the current speed of rotation (r_n) of the transverse motion is equal the constant: $v_n.\,r_n$ =const. =$V_0.\,R_0$. If we express vn = $V_0.\,R_0 / r_n$ from Consequence 3 and reply in the orthogonality: $v_n.\,n_n = V_0.\,N_0$ from Consequence1, we will receive: [$V_0.\,R_0 / r_n$]. $n_n = V_0.\,N_0$, or: nn= $N_0 / R_0.\,r_n$.

Consequence 3: In longitudinal 3D vortex angular velocity (r_n) is right proportional to the number of coils (n_n): $n_n = N_0 / R_0.r_n$.

Instead of the square of one uniform velocity of longitudinal motion, in the case of combined longitudinal-transverse motion, multiplication of heterogeneous velocities is applied. In combined motion, we must multiply the speed of the longitudinal motion (v_n) by the speed of rotation (r_n) of the transverse motion.

Consequence 4: Instead of the square (v^2) of one uniform velocity of longitudinal motion (v) in combined longitudinal-transverse motion, we multiply the current speed (v_n) of the longitudinal motion by the current speed of rotation (r_n) of the transverse motion or: $v_n.\,r_n$.

The equation: $v_n.\,r_n$ =const. =$V_0.\,R_0$ from Consequence 2 means that the surface of the section ($v_n.\,r_n$) of the 3D cylinder is proportional to a constant ($V_0.\,R_0$). If we multiply to 2. π we will receive: 2 π. $v_n.\,r_n$ = const. = Q, where Q is surrounding surface of 3D cylinder.
Consequence 5: The surrounding surface (Q) of cylinder formed

between two current wheels (two adjacent cross vortices) is a constant: **Q =const.**

Let we remark that in second equation of system (6) it exists a negative sign (-) before the amplitude (W). This means that when in accelerating vortex the velocity (V) increases, the amplitude (W) decreases. The reason is that the accelerating vortex sucks (-) cross vortices from environment to inwards.

Consequence 6: An accelerating vortex (E_{2D+}) with a velocity vector (V) *sucks* from the environment accelerating vortices with decreasing amplitude (W).

According to Law6 the rotation of every one wheel in the *accelerating* longitudinal vortex is to *right* (clockwise) when the observer stands against the direction of movement (Figure 3b). But the whole 3D Funnel of accelerating vortices have to rotate to *left*. The reason is the *overtaking the phase of every* earlier wheel.

Consequence 7: The 3D Funnel of accelerating longitudinal vortices rotates to *left* (counterclockwise).

Because of decreasing of the amplitude (W), angular velocity (R) and the number of cross vortices (N) it is formed accelerating, stretching, narrowing, left rotating Funnel.

Consequence 8: The 3D Funnel of accelerating longitudinal vortices forms accelerating, stretching, narrowing, left rotating Funnel in which: wmin ,rmin , nmin

Because of sign minus (-) in second equation of the Law6, two or more accelerating longitudinal vortices *attract each other.* The reason is due to the suction (-) of cross vortices from outside to center. This suction from outside to inward *pulls* the neighbors accelerating cross vortices close to each other.

Consequence 9: Two or more accelerating longitudinal vortices attract each other.

Accelerating longitudinal vortices are self-organizing into accelerating Funnel. For comparison the decelerating longitudinal vortices don't form any Funnel. They disperse each other because they repel each other.

The Positive Feedback in Nonparametric process

Law3

Let us consider a decelerating longitudinal vortex with decreasing velocity: V_1, V_2…, V_n and increasing amplitude of the cross vortices W_1, W_2…W_n (Figure 3a). Also let us consider an accelerating longitudinal vortex with increasing velocity: V_1, V_2…, V_n and decreasing amplitude of the cross vortices W_1, W_2…W_n (Figure 3b, Figure 4a). At the same time, we can notice that there is an increase and the positive acceleration a_1, a_2, ..., a_n and of sucked cross vortices (Figure 4b).

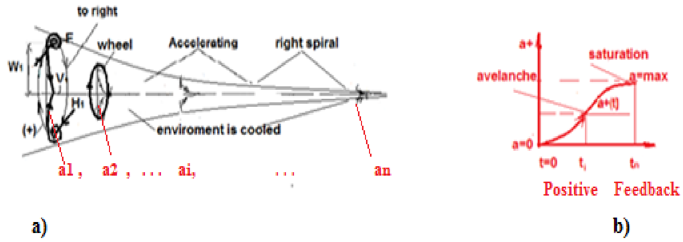

Figure 4: Nonparametric process using Positive Feedback

It should be emphasized that in case of uneven movements the changes are not arbitrary and are not regulated from the outside. The system that is not regulated by outside but it is regulated by inside only is called nonparametric system. For example, in an accelerating vortex, the internal increase in longitudinal velocity as a proportion is as much as the internal reducing the size and increasing the acceleration of the amplitude of sucking cross vortices. This mechanism takes place with what is called Positive Feedback.

Law 3: The accelerating longitudinal vortex is accelerated and the decelerating longitudinal vortices is decelerated by internal logic as a nonparametric process through Positive Feedback.

The accelerating vortex becomes to a generator

The essence of nonparametric process includes special internal logic includes the logic:

When, for example, an accelerating longitudinal vortex sucks in with acceleration the cross vortex, then in start moment(t=0) its first derivative is minimum: a=0. However, the accelerated absorption of the cross vortex increase and when *in the end moment ($t=t_n$)* the positive acceleration of the cross vortex becomes maximum: amax >>0 (Figure 4b). The mass of this cross vortex is added to the longitudinal vortex accelerating it further.

Therefore, the internal logic is that: the more relatively (in the proportion ψ) of speed (V) increases, the relative increase (in ψ)) the suction (A) of cross vortex. This is done without external intervention without setting any parameters from the outside. So, the more the speed increases, the more the acceleration increases and this continues until saturation, i.e. until the number is exhausted and the amplitude of the external transverse vortices is reset (Figure 4b). Therefore, this logic of Positive Feedback is: the more, the more.

Result: When velocity increases the sucked mass increases as well.

It is well known that the Kinetic Energy depends on velocity, the Potential Energy depends on pressure. The pressure is directed both perpendicular of movement and along the movement.

Result: When Kinetic Energy increases the Potential Energy increases as well.

Result: The product between the Kinetic Energy and the Potential Energy increases as well.

Consequence 1: The accelerating vortex becomes to a generator. According to the Consequence 2 of Law 6 instead of v^2 we must use the product:(v_n. r_n).
The mass ($m = m_1 . m_2$) consists of a first part (m_1), which is the current mass of longitudinal flow and a second part (m_2), which is the mass of sucking or emitting wheel of cross vortices. Therefore, the Kinetic Energy will calculate as: ($m_1 v_n^2$) /2. ($m_2 r_n^2$)/2.

Consequence 2: The Kinetic Energy is equal to: ($m_1 . m_2 . v_n . r_n$) /4, where v_n is current longitudinal velocity and r_n is current velocity of rotation (angular velocity), m is mass of fluid in current segment of volume between two adjacent vortex wheels, m_1 is the current mass of longitudinal flow and m_2 is the current mass of sucking or emitting wheel of cross vortices.

It is well known that in accelerating process the energy and mass of cross vortices is sucked to inward and the temperature in outside decreases. For comparison: in decelerating process the energy and mass of cross vortices is emitting to outwards and the temperature in outside increases.

Consequence 3: Around accelerating vortex the temperature decreases and the environment becomes cool.

Positive Feedback:
This logic (the more, the more) is known in cybernetics as Positive Feedback. The Positive Feedback refers to the nonparametric process. *This logic is named as a Nonparametric internal logic through Positive Feedback (Figure 4b).*

For comparison: in Electromagnetic circuits the human (engineer) intervenes from the outside and sets parameters for example of the coil and the capacitor. To get the necessary frequency of resonance from a series-connected coil and capacitor an external link must be provided. Therefore, the higher the electric current (analog of the velocity V) at the output of the resonator circuit, the lower the current at the input must be.

This logic (the more, the less) is known in cybernetics as Negative Feedback. This process is known as a parametric process. *This logic is known as a Parametric external logic through Negative Feedback.*

The constant Power in nonparametric process
As we saw in previous article, there are two qualitatively different movements at each current point of the decelerating vortex : longitudinal vector with velocity (V) and cross vortex with amplitude (W) .The reason of that is the vector of fluid (E) is not a simple vector but it is a complex vector : E= V+j.W , E= W+j.V ; E= -V-j.W; E= -W- j.V (7).
It is well known that in the Classic Mechanic the simultaneous operation of two independent vectors is equal *to the sum of these vector.*

But according to Law 3, the transforming one vector (V) into a vortex (W) and vice versa is a nonparametric process. Transformation is done by internal laws but not by setting parameters from outside .The nonparametric transformation of two variables V (t) and W (t) is mathematically described by the product of these current variables. **V (t) .W (t).**

We have seen that in every (i) point P(i) it exists simultaneously a vector velocity (V) in 1D and vortex pressure (W) in 2D (Figure1b). The both of them form vortex in 2D and 3D (Figure 1c,d,e,f)). In the case of the accelerating longitudinal vortex the velocity increases (V+), while the amplitude of the cross vortices decreases (W-) in such a way that their product (V+). (W-) remains constant all along the longitudinal vortex. The product (V+). (W-) is proportional to the power (P+) of the accelerating longitudinal vortex (Figure 5a).

In the case of the decelerating longitudinal vortex the velocity decreases (V-), while the amplitude of the cross vortices increases (W+) in such a way that their product (V-). (W+) remains constant all along the longitudinal vortex. The product (V-). (W+) is proportional to the power(P-) of the decelerating longitudinal vortex (Figure 5b).

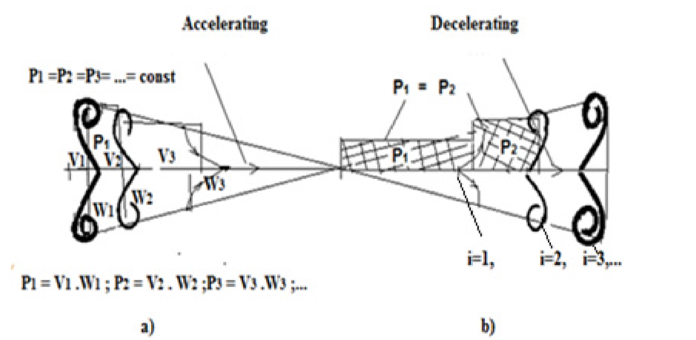

Figure 5: Law 4 for constant Power in 2D vortex

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

$$(V_i). (W_i)= const., \qquad 9.$$

where i= 0 ÷ ∞ is current point from step to step; the product (V_i). (W_i) is proportional to the current power (P_i) of the uneven vortex.

Result: The product (V_i). (W_i) is proportional to the current power (P_i) of the uneven vortex in current (i) step.

Result: The current power (Pi) of the uneven vortex is a constant in every (i) step.

Result: At an accelerating vortex vector velocity (V) is transformed according to *internal logic* (Positive Feedback) into the amplitude of the cross vortex (W) (Figure 5a).

Result: At a decelerating vortex vector velocity (V) is transformed according to *internal logic* (Positive Feedback) into the amplitude of the cross vortex (W) (Figure 5b).
Consequence 1: The simultaneous operation of two *mutually -*

dependent vectors is equal to the product of these variables (in Expanded Field Theory). For comparison: the simultaneous operation of two *independent vectors* is equal to the summation of these variables (in Classic Mechanic).

According to Law6 and Conclusions every two accelerating vortices will attract each other with Force equal to difference of Force of faster vortex and Force of slower vortex. This attraction is *spontaneous, elemental and primary.*

The self-organizing of accelerating vortices

The self-organizing is a very constructively phenomenon. Self-organization is a characteristic principle of living systems. But a system that is made up of uneven movements has a behavior resembling a living system. A clear example of this is the behavior of the free electron in a magnetic field (5,6). The system of accelerating longitudinal vortices forms so called Funnel.

In the case of the Funnel as a system of accelerating longitudinal vortices, the algorithm is as follows: The fastest vortex (v max, r min) inserts in center of Funnel, around him is rolled up the slower vortex and so on to the periphery vortex which has minimum linear velocity (v min) and maximum angular velocity of rotation (r max) and will roll up at the outside of the same Funnel (Figure6a, b, c.).

This kind of Funnel is named Gravity Funnel. It attracts in direction perpendicular to the movement. In starting linear velocity is minimum and angular velocity is maximum (v_{min}, r_{max}). At the end linear velocity is maximum and angular velocity is minimum (v_{max}, r_{min}). Or at the end, the wheel of sucked vortices doesn't rotate because of that the amplitude of sucked vortices is zero. Therefore, the *last wheel will state motionless* and the accelerating vortex from twisted has become upright.

Result: The self-organizing of the Gravity Funnel is phenomenon for inserting of accelerating vortices each other *or nesting one into another.*

Result: The last wheel will state motionless and the accelerating vortex from twisted has become *upright.*

Result: The accelerating Funnel has the *shape of a cone* whose peak is the place of the final and fastest longitudinal vortex.

Result: This cone is conditionally divided into several *rotating cylinders* whose angular velocities increase from the center to the periphery.

Result: The rotation of the cone is the following: the *peripheral cylinder* of cone rotates in maximum angular velocity (v_{min}, r_{max}) and the *central cylinder* of the cone does not rotate, there the longitudinal vortex is a fastest, it has a minimum angular velocity and a maximum linear velocity (v_{max}, r_{min}).

Self-organization to attracting Funnel

According to Law6 and Conclusions the faster vortex attract the slower vortex. However, it will not glue on the outside but the faster vortex will insert into the slower vortex inside because the faster is thinner than the slower.

If we have more than two vortices, for example three vortices, the faster vortex (Figure 6a) which has minimum radius (ρ1) insert into the slower which has larger radius (ρ2) (Figure 6b) and both of them will insert into the slowest which has the largest radius (ρ3) (Figure 6c).

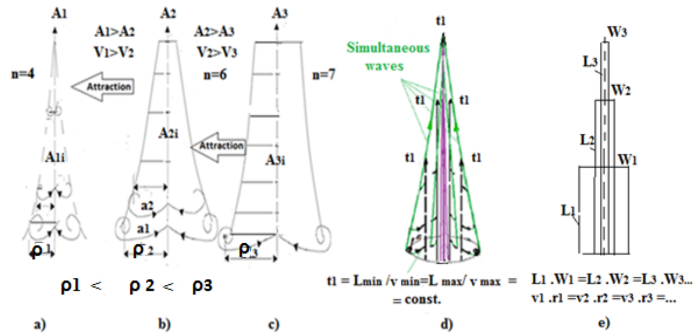

Figure 6: Self-organization of accelerating vortices to attracting Funnel

Result: As much is the current acceleration of longitudinal vortex (A i) as much is the current acceleration if sucking cross vortices (a i): $\mathbf{A_i \sim a_i}$ (sigh for proportionality)

Result: As much is the velocity (Vi) and acceleration (A i)) of longitudinal vortex as less is the amplitude (Wi) of sucking cross vortices: $\mathbf{V_i \sim 1/W_i; A_i \sim 1/W_i}$.

Result: As much is the velocity (Vi) and acceleration (A i)) of longitudinal vortex as smaller is the current radius (ρ i) of the tube: $\mathbf{V_i \sim 1/\rho_i; A_i \sim 1/\rho_i}$.

Self-organization to a generator

The accelerating vortices insert one into another as the faster inserts into the slower because the faster has the less radius than the slower.

The accelerating vortices nest inside each other along the one and the same axis. They form a few tubes with different length and radius which are nested each other.

Consequence 1: Every inner tube of faster accelerating vortex sucks the *additional primary accelerating vortices* from every adjacent outer tube of slower accelerating longitudinal vortex (except the primary accelerating cross vortices which is sucked along accelerating movement).

Therefore, in periphery the accelerating longitudinal vortex sucks cross vortices from environment. But inside every inner accelerating longitudinal vortex will add the additional cross vortices from every adjacent outer vortex.

Consequence 2: In center of the accelerating Funnel the velocity of inserted accelerating vortex will *increase much more (with gain)* then in periphery accelerating vortex and even more that in ordinary accelerating vortex which is alone outside of Funnel.

Consequence 3: Accelerating Funnel generates velocity or it turns *to a generator.*

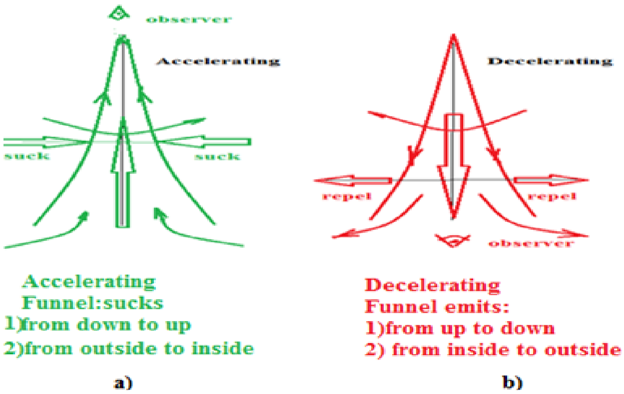

Figure 7: Attracting Funnel and repulsing Funnel

A new Space-time

A Space-time packed by cross vortices with constant Time

It is well known that in the space-time in which man lives, the time (T) is constant. The reason is that the transverse waves of light propagate at a constant time. We know that the waves of light are spreading with constant velocity (V). This means that the higher the speed (V), the higher the path (S), so that their ratio is constant: S/V=T=const.

Inside the Funnel, the organization of time and space is radically different and very specific. More precisely, the organization is such that space is a constant (S=const.). The organization in which space is a constant (S=const.) means that the volume in which the longitudinal vortex is wound or the volume of its cylinder is a constant. This means that if the current radius (ρi) of the cylinder increases, then the current length (Li) decreases.

A Space-time packed by longitudinal vortices with constant Space

Before we begin to prove it is good to see what has been proven so far by the New Theory of longitudinal vortices.

According to Consequence of Law 6 (8b), the current linear velocity (vi) is inversely proportional to the current angular velocity (ri), or they (v_i and r_i) are mutual orthogonal:

$$\mathbf{v_i.\ r_i = V_0.\ R_0 = const.,}$$

According to equation 8 it follows equation 8a:

$$\mathbf{v_i = V_0.\ R_0 / r_i = C_1 / r_i\ .} \qquad \mathbf{8d.}$$

According to the Law 4 (9) the product between current velocity (V_i) of longitudinal movement on one and the same current line and current amplitude (W_i) of its perpendicular cross vortices is a constant in every (i) step. Or linear velocity (V_i) and the current amplitude (W_i) are mutual orthogonal: (V_i). (W_i)= const.

According Consequence of Law 4 this constant is equal to the starting Power ($P_0 = V_0.\ W_0$) or: (V_i). (W_i)= $P_0 = V_0.\ W_0$ = const. We can use the current root of variables (v_i, w_i) and we receive the following equation: $v_i.\ w_i = V_0.\ W_0 = C_2$. And finally we can express the current longitudinal velocity vi (10):

$$\mathbf{v_i = V_0.\ W_0 / w_i = C_2 / w_i} \qquad \mathbf{10.}$$

Now we can equate equation 8d to equation 10 and will receive equation: $C_1 / r_i = C_2 / w_i$.
Whence we will express the current amplitude (w_i) in equation 11:

$$\mathbf{w_i = (C_2 / C_1).\ r_i} \qquad \mathbf{11.}$$

This equation means that as much is the current amplitude (w_i) as much is the angular velocity (r_i).

Consequence 1: In 3D longitudinal vortex the current amplitude (wi) is right proportional to the angular velocity (r_i) (11).

Result: In 3D accelerating vortex the smallest radius of wheel (w_{min}) the slowest rotation of wheel, or the smallest angular velocity (r_{min}). Actually the last wheel of the accelerating vortex does not rotate (11): r_{min} =0.

Result: In 3D decelerating vortex the largest radius of wheel (w_{max}) the fastest rotation of wheel (r_{max}). Actually the last wheel of the decelerating vortex rotates has the maximum angular velocity (11): $r_{max.}$

We can express the surrounding surface of cylinder (Q) as rotating (2π) of a rectangle with length (L) which is proportional to the longitudinal velocity (v_i) and width proportional to the amplitude of current cross vortices (w_i).

According to equation 8a: $v_i.w_i = C_2$ it follows that: Q = 2π. ρ... v_i = 2π. (w_i .v_i) =C0 . (w_i. v_i) =C_0 .C_2 =const., where ρ is radius of cylinder. Or:

$$\mathbf{Q = 2\pi.\ w_i.\ v_i = C_0 .C_2 = const.,} \qquad \mathbf{12.}$$

Consequence 2: The surrounding surface of cylinder (Q), in which the 3D longitudinal vortex is coiled is constant (12).

This means that the surrounding surface of cylinder (Q) is equal to the starting Power (P_0) which is a constant: Q = V_0. W_0 = P_0 = const.

Two orthogonal Space- times

On the one hand the Space-time in cross vortices, or the Space-time in which man lives, time (T) is constant. It is because the cross waves of light propagate at a constant time (T) and waves of light is spreading crosswise with constant velocity (V). This means that the higher the speed (V), the higher the path (S), so that their ratio is constant: S/V=T=const. This statement refers only to Space-time of cross vortices.

Consequence 1: The Space-time in which man lives (cross vortices), time (T) is constant: T=const.

On the other hand, the Space-time in longitudinal vortices, located in a specific cylinder is so that the path (S) along the coils around the outer surface of a cylinder with variable length and width to be a constant: S=const. This means that as much is the longitudinal velocity (V) as less is the time (T) so that: S=V.T= const.

Consequence 2: The space-time in longitudinal vortex located along surrounding surface of cylinder, the path (S) along the outer surface of cylinder with variable length and width is a constant: S=const.

Therefore, two Space –times: Space-time of cross vortices (T= const.) and Space-time of longitudinal vortices along the outer surface of cylinder with variable length and width (S = const.) are orthogonal. This means that as much is the longitudinal velocity (V) as less is the time (T) so that: S=V.T= const. Therefore, this statement refers to the longitudinal velocity (V) only. For angular velocity this statement is the opposite.

Consequence 3: The Space-time in cross vortex, where man lives (T= S/V=const.) and the Space-time in longitudinal vortex (S=V.T =const.) are mutual orthogonal.

For inserted cylinders of the attracting Gravity Funnel.

According to the Law4 when current linear velocity (V_i) decreases, the current amplitude (W_i) increases ,so that the product between them to stay a constant (V_i .W_i =const.).

-*For the shortest cylinder the length is minimum* (L_{min}) and the current linear velocity (v_{min}) is minimum as well. According to equation (11) for the shortest cylinder (L_{min}) the radius should to be a maximum (ϱ_{max}) so that the surrounding surface of cylinder ($Q = L_{min} .2\ \pi.\varrho_{max}$) stands a constant .The current amplitude (w_{max}) should to be maximum as well.

According to the equation (10) the current amplitude (w_i) is right proportional to the angular velocity (r_i). According to Consequence4 of Law6 (8) the current angular velocity (r_i) is right proportional to the current number of windings (ni).

This means that for the shortest cylinder (L_{min}) linear velocity is minimum (v_{min}), angular velocity is maximum (r_{max}) and number of windings is maximum (n_{max}) as well.

This cylinder must be located on the peripheral side of Funnel.

Consequence 1: At periphery of Gravity Funnel is located the shortest cylinder (L_{min}) with the lowest velocity (v_{min}) and the largest diameter (2. ϱ_{max}), the largest angular speed (r_{max}) and the maximum number of coils (n_{ma}): v_{min}, r_{max}, w_{max}, n_{max}.

According to the Law4 when current linear velocity (V_i) is maximum the current amplitude (W_i) is minimum, so that the product between them stands a constant (V_i.W_i =const.).

For the longest cylinder the length is maximum (L_{max}) and the current linear velocity (v_{max}) is maximum as well. According to equation (11) for the longest cylinder (L_{max}) the diameter should to be a minimum (2. ϱ_{min}), so that the surrounding surface of cylinder ($Q = L_{max} .2\ \pi.\ \varrho_{min}$) to stay a constant. The current amplitude (w_{min}) should to be minimum as well.

According to the equation (10) the current amplitude (w_i) is right proportional to the angular velocity (r_i). According to Consequence4 of Law6 (8) the current angular velocity (r_i) is right proportional to the current number of windings (n_i).

This means that for the longest cylinder the linear velocity is maximum (v_{max}), angular velocity is minimum (r_{min}) and number of windings is minimum (n_{min}) as well.

This cylinder must be located along the central axis of the Funnel.

Consequence 2: Along the central axis of the Gravity Funnel is located the longest cylinder (L_{max})with the biggest velocity (v_{max}) and the smallest diameter (2. ϱ_{min}), the smallest angular speed (r_{min}) and the minimum number of coils (n_{min}): $\mathbf{v_{max}, r_{min}, w_{min}, n_{min}}$.

Conclusions

- Longitudinal vortices are generated by transforming cross vortices into longitudinal vortices by a special operator, Law1(2).
- Generation of accelerating longitudinal vortices is done by transforming decelerating cross vortices into longitudinal ones by a special operator, Consequence of Law1 (3).
- Decelerating and accelerating 3D vortex is described by a system of equations (6 ,8) by 4 parameters: linear velocity, amplitude, angular velocity, and number of turns.
- Three pieces of mutual orthogonality are obtained (8a, 8b, 8c): linear velocity and amplitude of cross vortices, linear velocity and angular velocity, linear velocity and number of windings of vortex.
- The accelerating vortices attract each other as the faster inserts into the slower, Conclusions of Law6 (Figure 7).
- The self-organizing of accelerating vortices into accelerating Gravity Funnel: At periphery of Gravity Funnel is located the shortest cylinder with a minimum linear velocity, maximum angular velocity and maximum number of windings. Along the central axis of the Gravity Funnel is located the longest cylinder with a maximum linear velocity, minimum angular velocity and minimum number of windings.
- The Space-time in cross vortex, where man lives have a constant time (T=const.)
- The Space-time in longitudinal vortex located along the surrounding surface of the cylinder, the path (S) along the outer surface of the cylinder with variable length and width is a constant S = const.
- The Space-time in cross vortex, where man lives (T=S/V=-const.) and the space-time in longitudinal vortex (S = V.T = const.) are mutual orthogonal.
- The Accelerating Gravity Funnel can be used in a special device to generate gravitational thrust perpendicularly from bottom to top. With precise design and settings, this device can easily overcome the Earth's Gravity.

References

1. Landau LD, EM Lifshitz (1975) The Classical Theory of Fields (Volume 2 of A Course of Theoretical Physics), 4 Edition, Butterworth-Heinemann.
2. Ting L (1991) Viscous Vortical Flows, Lecture notes in physics, Springer-Verlag.
3. Markova V (2003) The other axioms (Monograph, Book 1) Nautilus, Sofia.
4. Markova V (2017) Extended Field Theory. New Axioms, Laws and consequences., IOSR-JAP, Journal of Applied Physics. Volume 9.
5. Markova V (2005) The other axioms (Monograph, Book 2). Nautilus, Sofia.

6. Markova V (2015) New axioms and structures, Fundamental Journal of Modern Physics 8: 15-24.
7. Markova V (2021) System of electron-proton. Movement, rotation, pulsation and Gravity Forces. Adv Theo Comp Phy 4: 14-22.