

Modeling of Antigravity Force on the base of Expanded Field Theory

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Abstract: In the modeling of Antigravity Force is used a new theoretical basis. It represents Expanded Field Theory that consists 2 new axioms, 8 new laws and many consequences. They are described on the previous reports. This current report is based on one axiom and four laws only.

It is well known the Maxwell's Axiom of Classic Field Theory. It claims that the movement of a vector E along a close loop is always evenly (velocity is a constant): $\text{div}(\text{rot } E) = 0$.

First of the new axioms claims that the movement of the vector E in the open loop or open monotone vortex is always unevenly (velocity is monotone variable): $\text{div}(\text{rot } E) \neq 0$. When the vortex is in a plane (2D) is obtained a cross vortex. If $\text{div}(\text{rot } E) > 0$, the cross vortex is accelerated. If $\text{div}(\text{rot } E) < 0$, the cross vortex is decelerated. When the vortex is in volume (3D), a longitudinal vortex is obtained. If $\text{div}(\text{rot } H) > 0$ the longitudinal vortex accelerates. If the $\text{div}(\text{rot } H) < 0$, the longitudinal vortex decelerates. The decelerating cross vortex in 2D is transformed into an accelerating longitudinal vortex in 3D. The mechanism of transformation is as follows: when the main cross vortex is decelerated in 2D, many primary decelerating cross vortices are emitted to the center of the main vortex in 2D. If sufficient quantitative primary cross vortices are accumulated a longitudinal vortex in 3D (perpendicular to a 2D) is occurred. The longitudinal vortex in 3D sucks from below - up and out - inward. In this way it accelerates more and more in time. This transformation is the basis of generating the antigravity thrust and antigravity pulling to up force. The successful experiment shows the validity of this theory.

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1. What is the sense of Expanded Field Theory in form of New Axioms and Laws?

1a. Essence

It is known that Maxwell's laws (1864) are based on a single classic axiom (Landau L.D., E.M. Lifshitz, *The Classical Theory of Fields*, Volume 2 of *A Course of Theoretical Physics*, 4 Edition., Butterworth-Heinemann, 1975). It states that:

div rot E = 0. 1.

The previous studies attempt to expand the Classic Field Theory to a more general Theory of the Field that also includes the gravitational field [1,2,9,11]. The author changes a little this axiom as the movement of a vector E in an open loop ($\text{div rot } E \neq 0$) or an open vortex ($\text{div Vor } E \neq 0$) is unevenly (velocity is variable) [1]:

div rot E \neq 0.2.

div Vor E \neq 0.3.

The more general Theory of the Field is represented by the Extended Field Theory. It consists of two axioms and eight laws and lead to the following results: evenly movement is replaced with unevenly movement (decelerating or accelerating); movement in a closed loop is replaced with movement in an open loop or vortex; during its movement decelerating vortex emits primary free cross vortices, while accelerating vortex sucks in this primary free cross vortices; movement in 2D is transformed into the movement in 3D as a cross vortices in 2D generates a longitudinal vortex in 3D through a special transformation and vice versa - longitudinal vortex in 3D through another special transformation generates the cross vortices [2,3,4].

1b. New Axiom

The motivation for altering the classic axiom (1) follows after the need to describe the causal links in uneven movements in open systems, i.e. the necessity to expand the existing laws of the Classic Field Theory [2]. This

can be achieved by enriching the knowledge on the classic Electromagnetic Field and describing a new, open and unevenly field with far more diverse and complex dynamics that also includes the Gravity Field [7,8,9].

As we mentioned Extended Field Theory consist two new axioms and eight new laws .But in this report is used one new axiom and four new laws only.In order to expand the concepts, the notion (1) of movement of vector E in a closed loop ($\text{div}(\text{rot} E) = 0$) in 2D (Figure 1a) is replaced by the notion (3) of movement in an open loop ($\text{div}(\text{rot} E) \neq 0$) in 2D (Figure 1b).

Axioma 1. The motion of vector E with monotonously changing velocity in the form of an open loop ($\text{div}(\text{rot} E) \neq 0$) or a vortex ($\text{div}(\text{Vor} E) \neq 0$):

Consequence: Vector E in 2D forms cross vortex :

$$\text{div}(\text{Vor} E) \neq 0 ; \text{div}(\text{Vor} E) < 0, \text{div}(\text{Vor} E) > 0; \text{4a.}$$

Consequence: Vector H in 3D forms longitudinal vortex:

$$\text{div}(\text{Vor} H) \neq 0 ; \text{div}(\text{Vor} H) < 0, \text{div}(\text{Vor} H) > 0; \text{4b.}$$

We immediately received 4 types of movements - cross, which can be accelerated or decelerated and longitudinal, which can also be accelerated or decelerated.

1c. Four of new Laws in Expanded Field Theory

(In this report the numbering of Laws does not match numbering in an report "About the new axioms and laws"[11])

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

$\Delta 1$

$$\text{Vor}(E_{2D}) \Rightarrow -\text{Vor}(H_{3D}), \quad \text{5.}$$

where Vor (for Vortex, meaning an unevenly vortex) replaces rot (for rotor, meaning closed loop) and the cross vortices in 2D (E_{2D}) (Figure 1c) continues its development in 3D as a longitudinal vortex (H_{3D}) (Figure 1d).

The first classic Maxwell's law claims :

$\text{rot} E = -\mu \partial H / \partial t$ or $\text{rot} E \sim H$, where ($\text{rot} E$) is the evenly movement of the electric vector E in a closed loop, μ is the coefficient of magnetic permeability, $\partial H / \partial t$ is the variation of the magnetic vector H in time t, and (\sim) is the proportionality between the electric (E) and the magnetic (H) vector [1].

Remark: The Classic Law claims that rotation of vector E generates vector H ($\text{rot} E \sim H$). But the new law (5) postulates that the vortex $\text{Vor}(E_{2D})$ of E in 2D generates a vortex $\text{Vor}(H_{3D})$ of H in 3D. The sign (-) for Vor (H_{3D}) 3D means that E_{2D} and H_{3D} have opposite dynamics.

Law 2*: The velocity of a decelerating vortex decreases in (n) portions ψ times [i.e. $(1/\psi)^n$], while the amplitude (W) of cross vortices increases reciprocally in (n) portions ψ times [i.e. $(\psi)^n$]:

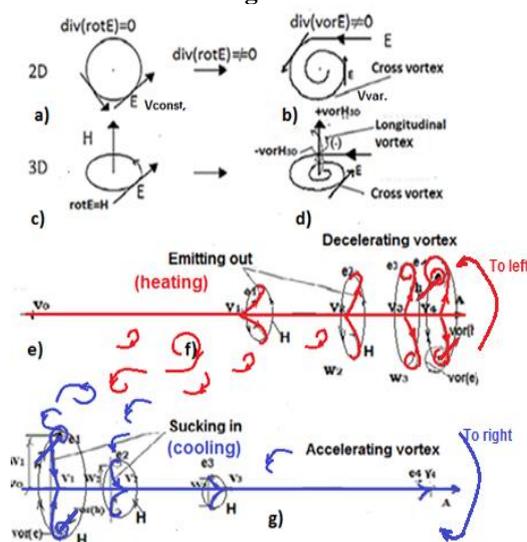
$$|V(t)|^2 = V_0(V_0 - V(t)), \quad \text{6a.}$$

$$|W(t)|^2 = W_0(W_0 + W(t)). \quad \text{6b.}$$

Where v_n and ω_n are periodic roots with period n that fulfill the requirement for orthogonality: $v_n \cdot \omega_n = V_0 \cdot W_0$; $n = 0 \div \infty$; the roots v_n and ω_n are expressed as: $v_n = (1/\psi)^n \cdot V_0$; $\omega_n = (\psi)^n \cdot W_0$; V_0 is the starting value of V_n , W_0 is the starting value of w_n and ψ is a number that fulfills the requirement: $\psi - 1/\psi = 1$.

Consequence: The time(t) is continuous but the roots are discrete that forms quanta.

Figure 1.



Consequence: A decelerating longitudinal vortex with a decreasing velocity (V) vector (Figure 1e) emits to the outside decelerating cross vortices with increasing amplitude (W) in perpendicular direction (Figure 1f).

Consequence: Decelerating longitudinal vortices wind counterclockwise (-), when the observer stands against the movement.

Remark: According to the Rule of the Right Hand and Law 2 the decelerating vortex emits from its center longitudinal vortex. The decelerating vortex continues like a longitudinal vortex of to the left. Therefore, the entire decelerating longitudinal vortex twists left-counterclockwise (watched against the movement) (Figure 1e).

Remark: Although the wheel of the decelerating vortex rotates to the left, due to an increase in the speed of rotation, it will appear that the whole decelerating spiral rotates to the right (watched against the movement).

Law 3*: The velocity (V) of an accelerating vortex increases in (n) portions (ψ) times [i.e. ψⁿ] while the amplitude (W) of cross vortices decreases reciprocally in (n) portions (1/ψ) times [i.e. (1/ψ)ⁿ]:

$$IV(t)^2 = V_0(V_0 + V(t)), \quad 7a.$$

$$IW(t)^2 = W_0(W_0 - W(t)), \quad 7b.$$

where v_n and ω_n are periodic roots with period n that fulfill the requirement for orthogonality: v_n·ω_n = V₀·W₀; n = 0 ÷ ∞; the roots v_n and ω_n are expressed as:

v_n = ψⁿ·V₀ ; w_n = (1/ψ)ⁿ·W₀ ; V₀ is the starting value of v_n, W₀ is the starting value of w_n and ψ is a number that fulfills the requirement: ψ - 1/ψ = 1.

Consequence: The time (t) is continuous but the roots are discrete that forms quanta.

Consequence: An accelerating longitudinal vortex with an increasing velocity (V) vector (Figure 1g) sucks in accelerating free cross vortices with decreasing amplitude in perpendicular direction (Figure 1f).

Consequence: Accelerating longitudinal vortices wind clockwise (+) (watched against the movement). The direction of the resultant vortex caused by an accelerating cross vortex is to the right (Law 3). Therefore, the entire acceleration vortex will twist to the right or clockwise (+), (viewed against the movement) (Figure 1g).

Remark: Although the wheel of the accelerating vortex rotates to the right, due to a decrease in the speed of rotation, it will appear that the whole accelerating spiral rotates to the left (watched against the movement).

Law 4*: The current power (P_i) for unevenly vortex is constant in every (i) portions of cross vortices:

$$P_i = V_i \cdot W_i = \text{const.}, \quad 8.$$

Consequence: It is description of nonparametric process.

Consequence: The redistribution of energy and mass is a reason for constant current power.

Consequence: The algorithm of the redistribution includes so called Positive Feedback.

2. Imitation of a decelerating vortex through a snail and generating an accelerating Gravity Funnel

2a. What imitate?

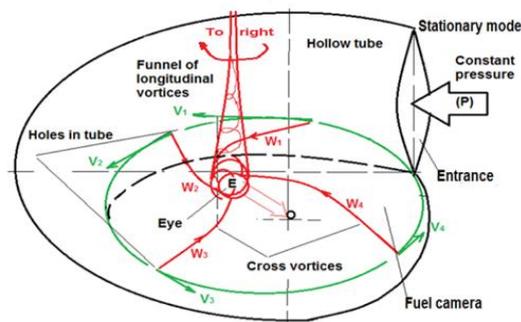
Law 1. An open cross vortex generates in its center open longitudinal vortex.

Law 2. For an decelerating vortex V decreases ψ times, but amplitude W increases ψ times in n portions.

Law 3. For an accelerating vortex V increases ψ times, but amplitude W decreases ψ times in n portions.

Law 4. When velocity V increases amplitude W decreases and inverse.

Figure 2.



2b. Technical imitation tools (Figure 2.)

- When a longitudinal decelerating vortex emits the cross vortices on one side only, the longitudinal vortex will roll secondary in the form of a snail.
- This snail is imitated using a hollow tube with a decreasing radius. It has holes as nozzles at inner edge only.
- The cross vortices are emitted from these nozzles and coincide and accumulate in so-called fuel camera.
- The accelerating vortices will continue to upwards and will form an accelerating perpendicular funnel.

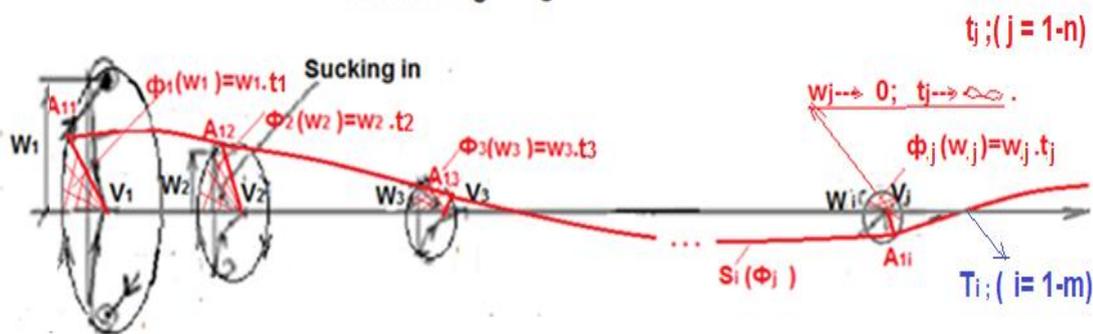
3. Mathematical description

3a. In Polar Coordinates (Figure 3).

-There is the outside time T_i ($i=1-m$) along the longitudinal velocity V_i . There is the local time t_j ($j=1-n$) along the angular velocity w_j .

The first disk ($i = 1$): Phase is $\phi_1(w_1) = w_1 \cdot t_1$ or in Polar Coordinates : $\phi_1(w_1) = W_1 \cdot e^{\phi_1}$, where (w_1) is the maximum angular velocity, (W_1) is the maximum radius, $\phi_1(w_1)$ is a maximum phase.

Figure 3.
Accelerating longitudinal vortex



The second disk ($i = 2$): $\phi_2(w_2) = w_2 \cdot t_2 = (w_1 / \Psi) \cdot t_2 = \phi_1(w_1) / \Psi$ or in Polar Coordinates : $\phi_2(w_2) = W_2 \cdot e^{\phi_2} = (W_1 / \Psi) \cdot e^{\phi_2}$, where ($w_2 = w_1 / \Psi$) is the less speed, ($W_2 = W_1 / \Psi$) is the less radius; $\phi_2(w_2) = (\phi_1(w_1) / \Psi)$ is a less phase and so on.

The third disk ($i = 3$): $\phi_3(w_3) = w_3 \cdot t_3 = (w_2 / \Psi) \cdot t_3 = \phi_2(w_2) / \Psi$ or in Polar Coordinates : $\phi_3(w_3) = W_3 \cdot e^{\phi_3} = (W_2 / \Psi) \cdot e^{\phi_3}$, where ($w_3 = w_2 / \Psi$) is even less speed, ($W_3 = W_2 / \Psi$) is even less radius; $\phi_3(w_3) = ((\phi_2(w_2) / \Psi))$ is even less phase and so on...

The late disk ($i = m$): $\phi_n(w_n) = w_n \cdot t_n = (w_1 / \Psi^m) \cdot T_m$, or in Polar Coordinates : $\phi_n(w_n) = W_m \cdot e^{\phi_n} = W_1 / \Psi^m \cdot e^{\phi_n}$, where $w_1 > w_2 > \dots > w_n$ (w_n is min speed); $W_1 > W_2 > \dots > W_m$ (W_m is min radius); $\phi_1(T_1) > \phi_2(T_2) > \dots > \phi_n(T_m)$, ($\phi_n(T_m)$ is min phase in T_m); $\phi_1(w_1) > \phi_2(w_2) > \dots > \phi_n(w_n)$, ($\phi_n(w_n)$ is min phase in t_n).

Consequence: The single spiral $S_i(\phi_j)$ forms by the all points ($i=1-m$) for all phases ($j=1-n$), where $\phi_j(w_j) = w_j \cdot t_j$; $w_j = w_{j-1} / \Psi$; $\phi_j(w_j) = (w_{j-1} / \Psi) \cdot T_i$ or $\phi_j(w_j) = \phi_{j-1}(w_{j-1}) / \Psi$; $\phi_j(w_j) = \phi_1(w_1) / \Psi^j$ at $T_i = T_1 - T_m$; $t_i = t_1 - t_n$

Consequence: For the accelerating single spiral phase ϕ_j decrease to zero ($w_j=0$) but t_i increases to infinity. In final part the accelerating spiral does not rotate or the phase limited to zero.

3b. The expressions of single spiral $\{S_j\}$ by three Cartesian coordinates (x, y, z).

-For an uniform spiral in three coordinates (x, y, z) are known: $x = D/2 \cdot \cos 2\pi n \cdot t$; $y = D/2 \cdot \sin 2\pi n \cdot t$; $z = s \cdot n \cdot t$, where D is the diameter of the uniform spiral, n is the sequence number of the spiral, s is the step of the spiral and t is the current time.

-For an accelerating spiral the expressions in three co-ordinates (x, y, z) follow from Law 3. We introduce: $\phi_j(w_j) = \phi_{j-1}(w_{j-1}) / \Psi$, decreasing radius (D / 2) and an increasing step (s) between them, where x, y are on wheel in local time t_j ($j=1-n$) along the angular velocity w_j , but z is along outside time T_i ($i=1-m$). According to Law 3 for accelerating longitudinal vortex follows that:

$S_i(\Phi_k) = I \sum_{j=1}^n \sum_{k=1}^m V_j \cdot W_k(\phi_j + \Phi_k) I$ for each (i) moment of objective time (T), where: $i \neq j$.

-All of (k) spirals of all phases (Φ_k ; $k=1 \div K$) of rotation :

$I \sum_{j=1}^n \sum_{k=1}^K V_j \cdot W_k(\phi_j + \Phi_k) I = I \sum_{k=1}^K [S_i(\Phi_k)]$, where, $k=1 \div K$; $i=1-m$; $j=1-n$; $m \neq n$.

-This family $\sum [S_i(\Phi_k)]$ of (n) spiral vortices for all possible starting phases (k) and all current phases (ϕ_m) is mathematical expression of Gravity Funnel (Figure 4).

4. Consequences of Law 3 for one accelerating vortex (Figure 5).

4a. Longitudinal acceleration A_i is right proportional (-) to the cross acceleration a_i : $A_i \sim a_i$

4b. Longitudinal acceleration A_i is inverse proportional to the amplitude W_i of its cross vortices : $A_i \sim 1/W_i$.

4c. The gravity force F_i is inverse proportional to the current radius r_i of the tube in which the vortex winds: $F_i \sim 1/r_i$.

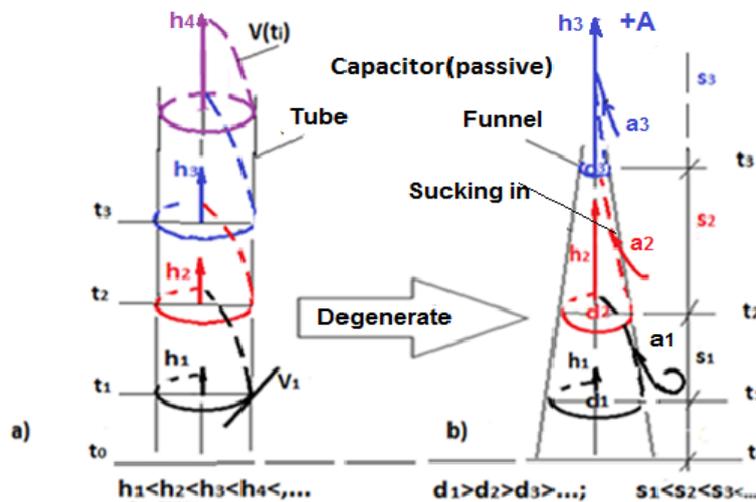
4d. For longitudinal vortices the distance S_j along the spiral is inverse proportional to the velocity V_j of the vortex: $S_j \sim 1/V_j$.

4e. For cross vortices the distance S_j between cross waves is right proportional to the velocity V_j of vortex (as much is velocity V_j as much is the distance S_j): $S_j \sim V_j$.

4f. The space-times of cross waves and of longitudinal vortex are inverse one to another. We know that the space-time, where we live in now, the sunlight is spreading crosswise with constant velocity V_j . So as much is velocity V_j as much is the distance S_j : $S_j \sim V_j$. But for longitudinal vortices with variable velocity (accelerating or decelerating) as much is velocity V_j as less is the distance S_j : $S_j \sim 1/V_j$.

4j. Conductivity of a dielectric such as air. Electromagnetic Field, that is cross waves, passes through the dielectric of air as forming dipoles. Similarly the Field of longitudinal vortex passes through the dielectric of air as a decelerating longitudinal vortex emits free cross vortices and an accelerating longitudinal vortex sucks free cross vortices. May be the same process is in effect and for vacuum.

Figure 5.



5. Consequences of Law 3 for a few accelerating vortices (Figure 6.)

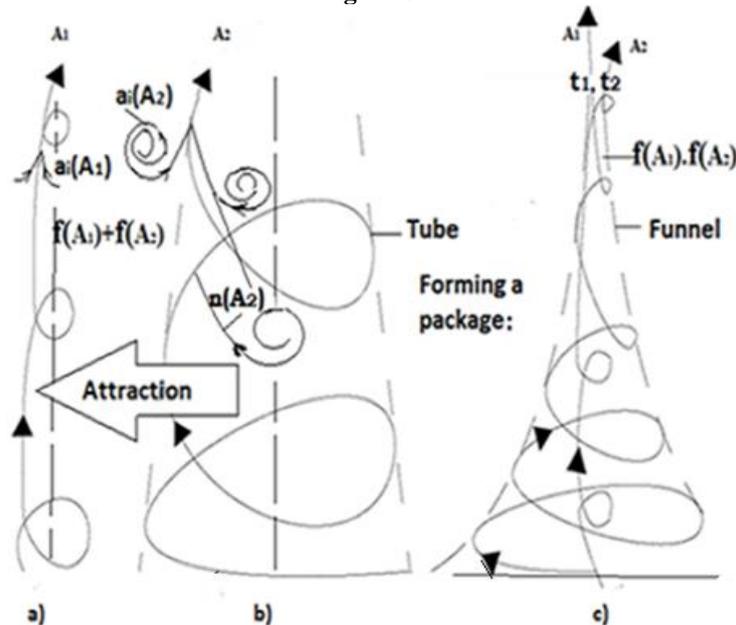
5a. Two accelerating longitudinal vortices (j and j+1) are attracted towards and force of attraction $[jF_i - (j+1)F_i]$ between them is right proportional to the margin between their momentary cross accelerations $[ja_i - (j+1)a_i]$:

$[jF_i - (j+1)F_i] \sim [ja_i - (j+1)a_i]$.

5b. The faster longitudinal vortex is wound in a narrower tube and sucks to itself the slower one which is wound in a wider tube. So the faster vortex inserts into the slower one.

5c. The slowest vortex is located in the periphery and accelerates itself as sucking free cross vortices from environment. But every inner and faster vortex accelerates itself as sucking all cross vortices of the slower adjacent outer vortex.

Figure 6.



6. Model of Gravity field

6a. Gravity Funnel

-We saw that accelerating longitudinal vortices aim to nest inside each other and form a Gravity Funnel. The fastest vortex with max V inserts in the center.

-The slower vortex with less V rotates outside of it. The slowest vortex with minimum V rotates at the periphery (Figure 6c). In the periphery vortex accelerates itself by sucking free cross vortices from the environment. But inside any inner long. vortex sucks the all cross vortices of his adjacent outer vortex.

6b. Results of the Gravity attraction .

1. The reason of Gravity attraction are the cross acceleration (Figure 6a,b) and the unique design (Figure 6c) of nested accelerating longitudinal vortices.

2. The space distortion and accretion discs are only some of results.

3. The other result is that space-time into Gravity Funnel is inverse to the space-time where we live in now (point 4f).

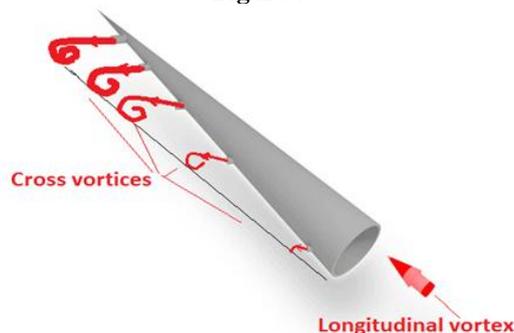
7. Practical implementation.

One conical tube.

7a. Modelling of a one-sided decelerating vortex (Figure 7).

Let use a $\frac{1}{2}$ conical tube with open nozzles on one side only. The entrance is powered by a fluid under stationary or pulsing pressure. According to the Law 2, the velocity V of longitudinal vortex decreases ψ times in each step, but amplitude W of cross vortices increases ψ times in each step. Therefore the cross vortices with increasing amplitudes W is emitted from the nozzles to the environment.

Figure 7.

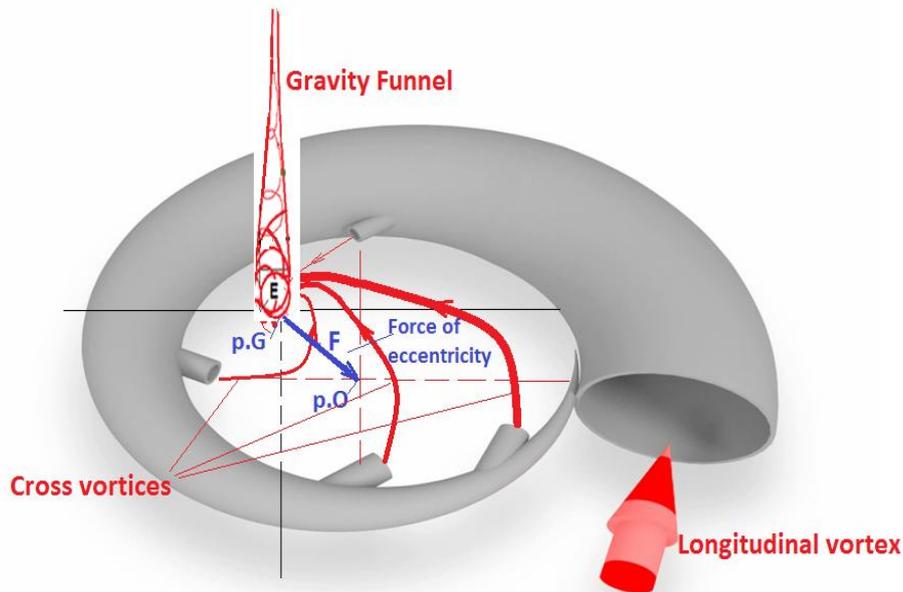


One-sided restricted longitudinal vortex

where $i=1-m$. According to the Law 4, the power (P_i) of cross vortices (not only the amplitude W_i) increases in each (i) step.

7b. Modelling of the Law1.

Figure 8.



One pipe Antigravity Device in Stationary mode

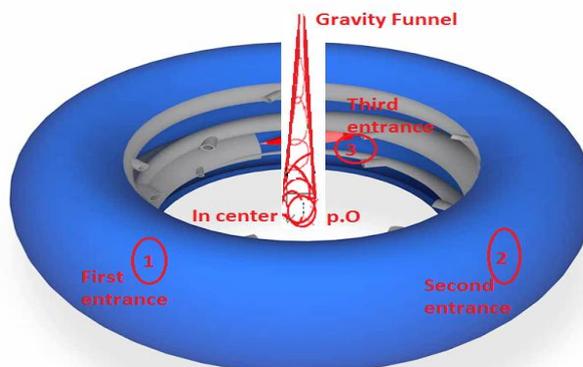
-If this one conical tube (Figure 7) is bended to a *snail* so that the holes with the nozzles will stay on the inside (Figure 8), it will imitates the Law1, i.e. cross vortices in 2D are continuing to the longitudinal vortex in 3D.

-The cross vortices are emitted that coincide in gravity center (p.G). It is replaced to the geometric center (p.O) to an vector (F), which represents Force of eccentricity. So, the body will spin around gravity center (p.G), that is a big disadvantage (Figure 8), [4].

-In the *stationary mode* it's supplied flow of constant pressure and it's obtained constant gravity pulling force, that compensates the weight of the body and moves it above the surface (Figure 8), [8].

-In *pulse mode* it's supplied flow of steep accelerating front and obtained a steep gravity pulling force. The body will disappear up right away (Not figure) [9].

Figure 9.



Three- pipe Antigravity Device in Stationary mode

Remark: The defect of one pipe device, because of Force of eccentricity (F) is that it will rotate around its axis (p.G)(Figure 8).

8. Three conical tubes

to avoid the defect of the device of one pipe (Figure 9).

- If it's used 3 conical tubes rolled as a snail with inputs displaced in 120 degrees, it will be received gravity device with very stable movement and higher parameters.

- If one pipe creates 10 units of gravity pulling force, the three pipes create gravity pulling force at 3 order of magnitude greater: 10^3 , or 1000 times [6].

9. Conclusions

- If the velocity of periphery (v) is close to velocity of light (c), the velocity in center (V) will be N order more (Figure 6). So the velocity in center (V) can be much more than velocity of light ($V > c$) [5]. So, theoretically, this device can reach a velocity (V) greater than the velocity of light (c): ($V > c$) [6,7,10].

- Device of 3 conical tubes has a fundamentally new technology (Figure 9). It is fast, reliable, sure and potentially

- This apparatus is built on the basis of a brand new Theory of Gravity [6,7,8,12] It is worth the effort to understand, develop and use this theory to build a brand new type of antigravity device.

- Design of the device is very simple. There are problems and secrets in the technology- for example in the input fluid [12].

- *With such a device, Mr. Musk will be able to reach the planet Mars without a doubt. Mr. Musk could fly to Mars and will return safer and with guaranteed success.*

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