**Particulate antigravity force - Black holes and Higgs boson**

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**Abstract**

On site [http://viXra.org/abs/1410.0040](http://viXra.org/abs/1410.0040) (see chapter A, paragraph 7) it is described the Universal antigravity force as the first Nature force. Additionally, there are the particulate antigravity force and the nuclear antigravity force. The particulate antigravity force will be developed below, while the nuclear one, important for the nuclei structure, we will be developed on a new site.

On the above site (see chapter B, paragraphs 1 and 3) the Genesis of the space hole (bubble of empty space) in the area close to the Universe center creates the gravity pressure, as a new form of pressure in the region of the particle gravitational field. This pressure causes condensation of the electrically opposite elementary units (in short: units) of space and reduction of the space cohesive pressure. Therefore, the gravity pressure replaces part of the space cohesive pressure. It converts the cohesive forces of space to gravitational ones, due to the presence of the space hole (local deformation).

This change of the cohesive pressure in the region of the particle creates particulate antigravity pressure gradient and therefore repulsive antigravity force opposite to the gravity traction between two particles.

The fact that the rate of the particulate antigravity force declines rapidly with the distance from the particle attributes to this phenomenon a theoretical significance concerning the structure of black holes. The reason is that only at the small scale of the particle core vacuum the particulate antigravity pressure gradient has a calculable rate.

It is noted that the Theory of Dynamic Space describes the black holes as a form of grid space matter, consisting of polyhedral cells, like bubbles in a foamed liquid.
1. Particulate antigravity pressure gradient $\Delta P/\Delta x$ and force $F_{pa}$

Black holes

Paragraph 7 of chapter A (site http://viXra.org/abs/1410.0040) studies the Universal antigravity force and finds $F_a = V \cdot \Delta P/\Delta x$, as buoyancy force of space, where $V$ is the volume of the particle core vacuum (hole-bubble of empty space) and $\Delta P/\Delta x$ the pressure gradient of the Universal antigravity. Additionally, there is the particulate antigravity force $F_{pa}$, as opposite to the particles gravity force $F_g$ (Figure 1).

![Diagram of antigravity forces](image)

Figure 1: The inequality of gravity pressures $P_{g2} < P_{g1}$ of the left particle implies the inequality of cohesive pressures $P_1 < P_2$ in the near area, causing repulsive antigravity force $F_{pa}$ opposite to the gravity force $F_g$.

The remaining space cohesive pressure $P$ in the area close to a particle (see above site, chapter B, paragraph 4) is $P = P_{0x} - P_g$, where $P_{0x}$ is the space cohesive pressure far from gravitational field, $P_g = P_{0x} r^2 / R^2$ the gravity pressure of the particle, $r$ its core vacuum radius and $R$ the distance from the particle. At the distances $R = x_1$ and $R = x_2$ from the particle, where $x_1 < x_2$, the above cohesive pressure $P$ is $P_1 = P_{0x} - P_{g1}$ and $P_2 = P_{0x} - P_{g2}$ and for $P_{g2} < P_{g1}$ it is $P_1 < P_2$, i.e. it is created a difference of cohesive pressure $\Delta P = P_2 - P_1$. This difference of space cohesive pressure creates buoyancy conditions, with antigravity repulsive force $F_{pa}$ opposite to the gravity force $F_g$ and it acts on a second particle, which is
found immersed in the proximal dynamic area of the first particle. This repulsive force is the particulate antigravity force and, of course, is mutual for the two particles, since each one is forming its own gravitational field, created against of the space cohesive pressure.

The remaining cohesive pressure $P$ at the distance $R=x$ from the particle is $P=P_0x/P_0x^2/x^2$ and its derivative as of $x$ is the particulate antigravity pressure gradient $\Delta P/\Delta x=2P_0x^2/x^3$, while the corresponding Universal pressure gradient (see above site, chapter A, paragraph 7) is $\Delta P/\Delta x=2xP_0x/R_0^2$.

It is reminded that $x$ of the Universal pressure gradient is the distance from the Universe center of radius $R_0$, while $x$ of the particulate antigravity pressure gradient is the distance from the particle with radius $r$ and $P_0x$ the cohesive pressure at the Universe periphery. From the above formulas it is concluded that the particulate pressure gradient decreases inversely to the cube of distance $x$ from the particle and therefore it is very strong in small distances and declines rapidly as distance increases. Instead, the Universal pressure gradient is proportional to the distance $x$ from the Universe center and grows, causing an accelerated centrifugal motion upon the matter. It is, therefore, once more again reassured the opposition of the local deformation (gravity pressure) to the Universal one (cohesive pressure), i.e. the opposition between Matter and Universe (principle of antithesis).

The fact that the rate of the particulate antigravity force declines so rapidly with the distance from the particle attributes to this phenomenon a theoretical significance concerning the structure of the black holes. The reason is that only at the small scale of the particle core vacuum the particulate antigravity pressure gradient has a calculable rate, while beyond the small scale there exists the particle cortex of radius $r_c=10^{20}r$ (will developed in next site). It is noted that the number $10^{20}$ is the constant magnitude scale of the five space deformations, the two of which have been described, i.e. the Universal deformation (first space deformation) and the local one (second space deformation), while the other three deformations (cortical, nuclear and electrical) are described in the book of Professor Physicist N.Gosdas (see bibliography: Theory of Dynamic Space - The Universal Truth).

The Theory of Dynamic Space describes the black holes as a form of grid space matter, consisting of polyhedral cells, like bubbles in a foamed liquid.

The particulate pressure gradient causes antigravity repulsive force on a same particle (neutron) of bubble volume $V=4\pi r^3/3$ (Figure 1), the so called particulate antigravity force, equal to $F_{pa}=V\Delta P/\Delta x \Rightarrow F_{pa}=(4\pi r^3/3)2P_0x^2/x^3 \Rightarrow F_{pa}=8\pi P_0x^5 / 3x^3$.

It is noted that the gravity traction force (see above site, ch. B, par. 4) between these two particles for $r_1=r_2=r$ is $F_g=\pi P_0x r_1^3 r_2^3/\lambda^2 \Rightarrow F_g=\pi P_0x r^3/\lambda^2$, whereby the resultant force of the tractive $F_g$ and repulsive $F_{pa}$ is $F=F_g+F_{pa}=(8\pi P_0x^5 / 3x^3$ and the corrected Gosdas’s Law of gravity is $F=-(1-8\pi r/3x)Gm^2/\lambda^2$. If $\kappa=1-8\pi r/3x$ is the gravity reduction factor, then for $x=2r$ (the minimum distance between two identical particles-neutrons), it is $\kappa<0$. 


A negative gravity reduction factor means resultant $F<0$. Therefore, the particles at the distance $x=2r$ (i.e. «in contact») are repelled, because the particulate antigravity force prevails.

For $\kappa=1-8r/3x=0 \Rightarrow x=8r/3$, the resultant is $F=0$. Therefore, for $2r<x<8r/3$, the particulate antigravity force prevails and the particles are repelled, while for $8r/3<x$, the gravity force prevails and they are attracted. These latter conditions apply in black holes, which are constructed from the bubble vacuum of neutrons. The particulate antigravity force developed prevents the further collapse and destruction of these bubbles. So, the black holes are «sustainable» matter forms of the dynamic space that cannot disappear.

Therefore, it is proven that the extent or dimension or length $L=L_{0x}$ (see above site chapter A, paragraphs 2 and 3) reserves the role of the first space structural element, as a physical entity that cannot become zero and contributes in maintaining of matter, even if this matter has, in this case, the form of a black hole.

2. The experiment at CERN - Black holes and Higgs boson

In the area close to the Universe center bubbles of empty space are formed (see above site chapter B, paragraph 1), which are the beginning of Genesis of the particle-neutron, the primary form of matter. These bubbles are brought together and create a grid space similar to that of a black hole, as it was described in the above paragraph. The difference is that at the Universe center the weak cohesive pressure of space prevails, which tows (sucks) the bubble (does not compress as it happens with the gravity pressure in the cores of stars), allowing the bubble to progressively develop a protective cortex (will developed in next site) and build the primary form of neutron.

Let us remind here the rumors about black holes being created during the experiment for the detection of the Higgs boson at CERN in Geneva. The Theory of Dynamic Space clearly describes the unique phenomena of the Universe, matter and motion, as dynamic formations of space. The motion, however, derives the accumulated forces of its formation from the space cohesive pressure $P_0$ (will developed in next site). Therefore, in the experiment of CERN, where the particles are accelerated at the vicinity of light speed $C_0$, there will be created conditions for the reduction of the cohesive pressure, similar to the conditions at the regions close to the Universe center. So, the creation of empty space bubbles is favored, they are similar to black holes, but they break at their birth, due to the powerful suction of the chaotic space cohesive pressure.

Simultaneously, of course, during the collisions of the oppositely moving protons in the accelerator it is plausible that a destruction of their cortex takes place and their remaining core vacuum (bubbles) are detected as Higgs bosons. Therefore, the Higgs field is identical with the dynamic space, where the primary form of matter begins close to the Universe center with the creation of empty space bubbles and ends with the destruction of these bubbles at the Universe periphery!
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