Principle of Free Motion of Atoms, Bodies and Gravibodies

Anatoli Bedritsky

Abstract.

In given article is open, that the free (inertial) motion of bodies and gravibodies has free (inertial) acceleration, similarly to the elementary particles. The gravibidies consist of elementary particles forming plasma, and of a congestion (cluster) of supermats, being in plasma in the central part of gravibody. Since the elementary particles of plasma have a different direction of motion relatively to each other, and since the supermats in plasma nearly do not move relatively to each other inside the gravibody then basically the congestion of supermats define a character of motion of the gravibody as a whole. As the supermats have the free acceleration, then the gravibody also move with free acceleration. But when the ethereal deceleration becomes equal to the free acceleration, then the velocity of the free motion of gravibody in a uniform space ether becomes uniform i.e. is having a limit, similarly to the elementary particles.

The limit of the velocity of the free motion of bodies is less than of the gravibodies, because the bodies consist only of elementary particles, but the gravibodies consist except for it of supermats which have a greater limit velocity of free motion than the elementary particles.

In article also is open the principle of formation of gravitational acceleration of bodies and gravibodies at a level of elementary particles and supermats.

Given article is a part of "Real theoretical physics on the basis of existence of the ether" which I have opened on the basis of definition of properties of initial particles - mats. All known elementary particles and the ether consist of the mats. And a nucleus of each gravibody are formed on the basis of supermats, which appeared after Big Bang. In the new theoretical physics is opened the interaction of the ether with the elementary particles and bodies. Herewith the essence of all physical phenomena is reveals.

1 Accelerated Free Motion of Atoms of Gas

In the center of multielectronic atoms there is an nucleus, which consists of neutrons which are attracted to each other. Around the nucleus moves on orbits an protons. Above each proton there is one orbital electron which is attracted to the proton and to the nucleus. The orbital proton and the orbital electron together have a synchronous orbital motion around the nucleus.

In atoms of hydrogen the nucleus consists of one nucleon, and in atoms of helium the nucleus consists of two nucleons. As the nucleuses of atoms consist of nucleons which at free motion have free acceleration, accordingly the nucleus and all atom also move with acceleration.

Gas consist of atoms or molecules which move by relatively each other in the structure of the gas. The atoms of gas have an accelerated free motion in the case when the free acceleration of the nucleus of atom more than the ethereal deceleration of this nucleus. As the atoms of gas at normal atmospheric pressure have frequent collisions with each other at which they reduce the velocity of their motion, then the velocity of atoms of gas in this case less of the limit velocity and therefore the atoms of gas are moving with acceleration. The free motion of atoms is defined by the free motion of their nucleuses.

If to let out an gas in space, this gas will disperse, and the separate atoms of gas will increase the velocity of their motion. But the nucleons and the electrons cannot have the orbital motion around of the nucleus which has increased the velocity till the velocity close to limiting, and due to that the atoms will disintegrate up to the separate elementary particles (nucleons and electrons). When the free acceleration of these elementary particles will become equal to their ethereal deceleration, then the elementary particles will has a limit velocity of motion. (See article "Free motion of elementary particles").

2 Principle of Free Motion of Bodies in Uniform Space Ether

The atoms of bodies do not have motion inwardly of the body. Therefore character of motion of a body is defined mainly by motion of the nucleuses of the atoms. As the nucleuses consist of nucleons, then the free motion of the nucleuses and the atoms as a whole has acceleration. But, the limit

velocity of motion of the nucleons of the nucleuses in structure of the atoms and the atoms as a whole of the body is less than the limit velocity of motion of separate nucleons outside of body. This is explained so, that the orbital electrons of each atom collide with the orbital protons of the nearby atoms. Since between the nucleus and the orbital protons is a dense ether, then at pushing of the proton there is also a pushing the nucleus.

The nucleuses of the nearby atoms attract to each other, due to this the nucleuses move to each other. Thus, atoms are periodically attract to each other and are pushed from each other, i.e. they make back and forth motion.

But, if the body has received an acceleration in the certain direction, then occurs an displacement of the dense ether around the nucleuses of atoms of the body, due to this occurs an parallax of the orbital electrons. The orbital electrons lag behind from the nucleuses of atoms of a body, and due to that the atoms of a body have a pushing from the orbital electrons only in a direction opposite to the motion of the body, but in the direction of motion of the body the atoms do not have a pushing.

Thus at motion of a body, the nucleuses of atoms of the body have not only the ether deceleration but also the deceleration from the orbital electrons, which is called *orbital deceleration* and is denoted be ΔV_{od}. Consequently the bodies have a smaller limit of free velocity than the separate nucleons outside of atoms.

The velocity of free motion of bodies in uniform ether in given time t is defined as:

$$V_t = V_{\text{t}-1} + \Delta V_{\text{free}} - \Delta V_{\text{ed}} - \Delta V_{\text{od}}$$

Where $V_{\text{t}-1}$ is the velocity of motion of body, ΔV_{free} the free acceleration of motion of body, ΔV_{ed} the etereal deceleration. ΔV_{od} the orbital deceleration. The velocity of free motion of bodies becomes uniform when:

$$\Delta V_{\text{free}} = \Delta V_{\text{ed}} + \Delta V_{\text{od}} = Const$$

The ethereal deceleration of an body is equal to the ethereal deceleration of elementary particles:

$$\Delta V_{ed} = \frac{V^2}{K_d}$$

Where V is the velocity of motion of body, K_d is the constanst of deceleration of elementary papticles.

3 Principle of Free Motion of Gravibodies

The matter of gravibodies mainly represents plasma (magma) consisting of nucleons, electrons, nucleuses, ions and separate mats. In plasma of the central part of gravibody there are an supermats, which are large mats. Different gravibodies have a different mass of all supermats relatively to all mass of the gravibody. (See article "Structure of gravibodies"). Because of the big density of the plasma, the supermats do not move almost in it and because of the big force of attraction to each other the supermats form a congestion (cluster), which presents itself the kernel of the gravibody. The elementary particles forming the plasma, move in different directions inside of the gravibody. Since the supermats are moving mainly in one direction with the gravibody and as the supermats have the free motion with free acceleration, then the gravibody as a whole also has the free motion with free acceleration. Because of the acceleration of the motion of the gravibodies, their ethereal deceleration is increasing. When the ethereal deceleration becomes equal to the free acceleration the velocity of free motion of bodies will not increase, i.e. this velocity will be uniform and will be a limit of velocity of motion of these data gravibodies in the uniform ether. The gravibodies which have a greater mass of all supermats, have greater free acceleration, because in this case there will be a smaller ethereal deceleration. Usually the gravibody, which have the greater density, have the greater mass of all supermats. As the supergravibodies (black holes), being in the center of the Calaxies, have a greater density than others gravibodies, then the galaxies have a greater free velocity and acceleration than the gravibodies inside of a Galaxy.

The gravibodies have a smaller limit free velocity of motion than the elementary particles at motion in space, because the structure of the gravibodies have the supermats through which the ethermats do not pass, why the motion of the supermats have a strong deceleration. But through the elementary particles the ethermars are passing.

The gravibodies have greater limit free velocity of motion than the bodies as the character of motion of the gravibodies are forming the supermats, but the character of motion of the bodies form the nucleuses of the atoms. The supermats of gravibodies have only ethereal deceleration, but the nucleuses of the bodies have not only the ethereal deceleration, but have also the deceleration from the collisions of nucleuses with the orbital electrons.

As galaxies and supergalaxies (a congestion of galaxies) are being on such big distance from each other, that between them there are no attraction,

then these galaxies are moving rectilinearly to all sides from the center of the Universe (from the center of the Big Bang). On the end of the Universe the density of the ether is less and consequently there the Galaxies have a greater velocity of motion than the galaxies less removed from the center of the Universe. On the end of the Universe the Galaxies can have the velocity close by the velocity of light and even more.

The velocity of the free motion of a gravibody in the uniform cosmic ether in given time t is defined:

$$V_t = V_{\mathrm{t}-1} + \Delta V_{\mathrm{free}} - \Delta V_{\mathrm{ed}}$$

Where $V_{\mathrm{t}-1}$ is the velocity of motion of gravibody, ΔV_{free} the free acceleration of motion of gravibody, ΔV_{ed} the etereal deceleration.

The etereal deceleration of gravibody is defined be the deceleration of the supermats, being included in bodies:

$$\Delta V_{ed} = \frac{V^2 \cdot \Pi}{M}$$

Whwre V is the velocity of motion of the gravibody, Π is the density of the gravibody, M is the mass of all supermats of the gravibody.

Since the density of the cosmic ether equal to 1, as:

$$\Delta V_{ed} = \frac{V^2}{M}$$

4 Gravitational Acceleration of Bodies

If the body is in a gravitational field of a gravibody, then on each elementary particle of this body is acting almost identical force of the gravitational field, because the gravimats at passage through the elementary particles though reduce considerably the velocity of the motion and the impulse, but in the intervals between these collisions the gravimats increase the velocity in such measure, that the average velocity of these gravimats decreases slightly.

The gravitational acceleration of elementary particles inversely to mobility (sphericity) of mats, which components the of elementary particles. As protons consist of longmats, they have the greatest gravitational acceleration. And as the photons consist of fast ovalmats, they have the least gravitational acceleration.

Thus, the gravitational acceleration of bodies define with taking into consideration that the average momentum of gravimats at their motion through

a body does not change almost and that the gravitational acceleration of bodies is defined through the gravitational acceleration of the nucleons of nucleus of atoms of a body. As the bodies have a nuclear structure, these bodies move only from action of gravimats on nuclons of nucleus of atoms, as the orbital nucleons and the orbital electrons does not influence on motion of body.

Gravitational acceleration of bodies is defined:

$$\Delta V_g = E_g \cdot K_n$$

where E_g is the force of the gravitational field, acting on a body, K_n is a constant of gravitational acceleration of nuclons of atoms of bodies.

The gravitational field free falling of bodies near to a surface of the Earth:

$$g = 9,8m/s^2$$

The gravitational momentum of the body is

$$P_g = \Delta V_g \cdot M = E_g \cdot M \cdot K_n$$

where M is the mass of the body.

The gravitattional momentum of a body is the force of attraction of the body to a gravibody, or the weight of the body.

5 Gravitational Acceleration of Gravibodies

If a given gravibody is in a gravitational field of another gravibody, then on the supermats and on the elementary particles of the given gravibody, is acting the gravitational field. But, on a part of the matter which closer to the another gravibody is acting a smaller strength of gravitational field than on a part of matter which further from the another gravibody. It can be explained so, that at passage the gravimats through the gravibody the momentum of the gravimats is decreasing and accordingly the strength of the gravitational field is decreasing. The gravibodies can be such big sizes at which the gravimats pass only through a part of a matter of the gravibody and further the gravitational field weakens up to zero. The more the density of gravibody, in greater measure weakens the gravitational field at passing through this gravibody. Therefore, the gravitational acceleration, which have the gravibody from the action of the gravitational field, straight pro

rata to force of the gravitational field and back pro rata to the mass of the gravibody.

$$\Delta V_g = \frac{E_g}{M} \cdot K_s$$

where ΔV_g is the the gravitational acceleration, E_g is the strength of the outer gravitational field acting on the given gravibody, M its mass, and K_s is the constant of the gravitational acceleration of supermats of gravibodies.

As the superficial layer of plasma of supergravibody is condensed almost to the initial matter, then the gravmats are pushing the surface of the supergravibody and do not get through the supergravibody. Considering it, the gravitational acceleration of supergravibodies is defined:

$$\Delta V_g = E_g \cdot S \cdot K,$$

where E_g is the strength of the gravitational field acting on the surface of the gravibody, S the area of the projection of the gravibody, and K coefficient of proportionality.

Apparently that the gravitational acceleration of supergravibodies is less than the gravitational acceleration of the gravibodies.

6 Gravitational Momentum of Gravibodies

The gravitational momentum of a gravibody that is located in the gravitational field of another gravibody is:

$$P_g = \Delta V_g \cdot M = \frac{E_g \cdot M}{M} \cdot K_s = E_g \cdot K_s$$

The strength of the gravitational field formed by another gravibody is defined by the formula :

$$E_g = \frac{M_2}{L^2} \cdot K_g$$

where M is the mass of the gravibody¡ which formed the gravitational field, K_g is the force constant of the gravitational field of a gravibody,

Then:

$$P_g = \frac{M_2}{L^2} \cdot K_g \cdot K_s = \frac{M_2}{L^2} \cdot G_g,$$

where M is the mass of the given gravibody, M_2 is the mass of another gravibody, L the distance between these two gravibodies, E_g the strength of

the gravitational field of the other gravibody, and G_g is the force constant of gravitational attraction of gravibodies, which equals $6.67 \cdot 10^{11}$.

The gravitational momentum formed in the given gravibody due to the action of the gravitational field of another gravibody is the force of attraction of the given gravibody to the other gravibody.

Conclusion

1. The free motion of the gravibodies has a free acceleration, because in the central part of the gravibodies having an supermats, which nearly do not moves relatively to each other inside of the gravibody, but which have a free acceleration which is transferred to all gravibody. When the free acceleration more than the ethereal deceleration, then the motion of the gravibody is accelerated, but when the ethereal deceleration becomes equal to the free acceleration, then the velocity of the free motion of the gravibodies becomes limit, i.e. becomes uniform, similarly as the elementary particles.

2. Free motion of bodies has free acceleration, as bodies consist of the atoms pressed to each other and these atoms consists of nucleuses, which consist of nucleons having free acceleration, which is transferred to all body.

3. Free motion of bodies has not only an free acceleration and ethereal deceleration, but has also an orbital deceleration, due to that the bodies have a smaller limit velocity of free motion than the gravibodies and the separate elementary particles. The orbital deceleration of nucleuses of atoms of a body occurs because of displacement of the body‘s ether at moving the body.

4. The gravibodies have a smaller limit free velocity of motion than the elementary particles, because the structure of the gravibodies have the supermats through which the ethermats do not pass, why the motion of the supermats have a strong deceleration. But through the elementary particles the ethermars are passing.

5. All bodies have a equally gravitational acceleration, as the gravitational acceleration of bodies is defined only by gravitational acceleration of nucleons of atoms of a body, and does not depend on the nuclear structure and the mass of bodies.

6. Gravibodies, having greater mass of supermats, have greater the gravitational acceleration.

7. Apparently, the formula of the gravitational momentum of a gravibody, deduced on the basis of action of gravitational field on supermats of

a gravibodiy, coincides in principle with the formula of Newton.