Action of Gravitational Field on Bodies and Gravibodies

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Abstract. In given article is opentd the principle of action of an gravitational field on bodies and gravibodies, by taking into considering the action of this field on the elementary particles of these bodies. Herewith, are deduced the formulas for definition of gravitational acceleration of bodies and gravibodies from action on them a gravitational field.

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 the central part of gravibodies are formed on the basis of supermats, which appeared after the 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. "The real theoretical physics" is strictly materialistic.

1 Attraction of Gravibodies to Each Other

If two gravibodies are located at such a distance that each of them is acted by the gravitational field of the second one, both of them are pushed towards one another by the gravimats of the gravitational fields. Indeed, the cosmic intensity of momenta on each gravibody from the other gravibody is less than the cosmic intensity of momenta from the opposite side. The motion of two gravibodies towards one another due to their gravitational fields is called the *attraction* of two gravibody one to another and is shown in Fig. 1.

The acceleration of a gravibody or a body appearing due to the influence of a gravitational field on a gravibody (body) located inside it is called the *gravitational acceleration* and is denoted by ΔV_g. The momentum of a gravibody or a body appearing due to the influence of a gravitational field on a gravibody (body) located inside it is called the *gravitational momentum*

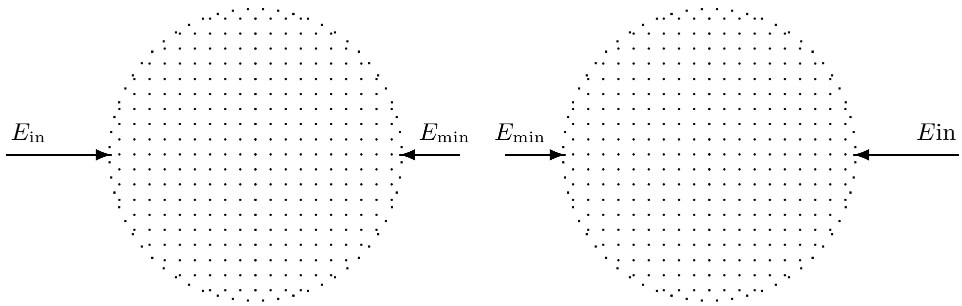

Figure 1: Attraction of two gravibodies.

or the *force of attraction* of this gravibody (body) to the other gravibody and is denoted by P_g.

When gravimats move through gravibodies or bodies they are decelerated due to the collisions with elementary particles and single mats of a gravibody and increase their velocity in the intervals between collisions. But since the average density of gravibodies is higher than that of bodies, and since supermats are present in the central part of the body through which garvimats could not pass, so when passing through gravibodies gravimats are decelerated more than when they pass through bodies. Therefore, a body has either an insignificant field, or none at all.

2 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 con-

sideration 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.

3 Gravitational Acceleration of Gravibodies

If a given gravibody is in a gravitational field of another gravibody, then on the supermats of the given gravibody is acting this gravifield, and due to that the supermats together with all gravibody receive gravitational acceleration. At more massive gravibody not all supermats are under action of gravifield, as they can be covered by others supermats, being more close to the source of the gravifield. The gravifield is acting also on the elementary particles of plasma and atom-molecular matter of the gravibody. On a part of a matter of gravibody, which is located more close to the source of gravifield, is acting a smaller force the gravifield than on a part of matter which is located further to the source of gravifield. 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 gravifield is decreasing. 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 to force of general surface of supermats, on which is acting the gravitational field, but back pro rata to the mass of the gravibody.

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

where E_g is the force of gravitational field, which is acting on the gravibody, E_g is the strength of the outer gravitational field acting on the given gravibody, S_s is the general surface of supermats of gravibody, on which is acting the gravitational field, M is the mass of the gravibody.

Minigravibodies (planets) have no big congestion of supermats and consequently the majority of supermats do not block each other and are under action of gravifield, due to that $S_s/M = Const$. Therefore the gravitational acceleration of minigravibodies is defined:

$$\Delta V_g = E_g \cdot K_f$$

where K_f is the constant of gravitational acceleration of supermats of gravibodies under action under action of units of force of gravitational field.

As the superficial layer of supergravibody (blak gravibody) 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 more massive gravibodies is less than at minigravibodies. The gravitational acceleration formed at given gravibody from action on him gravitational field another gravibody, represents the force of an attraction of given gravibody to another gravibody.

4 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. 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.

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

3. 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.