Gravitation - Flat Power Field

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Abstract

A new principle of origin and the nature of the action of gravity forces are proposed. Forces of universal attraction have plane-symmetrical directions. On this basis, it becomes possible to reconsider certain regularities in natural science. The new principle of gravitation will allow to explain physical paradoxes, to improve methods of scientific research and some technological processes.

Keywords: Theory vortex gravitation, cosmology and cosmogony. Celestial mechanics

1. INTRODUCTION

As is known, the founder of the theory of world gravitation I. Newton [1] pointed the source of attraction forces to material bodies.

In 1915, 1916 the year of A. Einstein proposed a general theory of relativity [2]. In this theory, gravitational effects are caused not by force interaction of bodies and fields, but by deformation of space-time itself. Deformation is associated with the presence of mass-energy.

These theories have one general condition - the forces of attraction are created by masses of bodies. On the basis of this condition, the conclusion follows: the forces of gravity act centrally symmetrically. That is, they decrease when moving away from the body in the same way, in all directions.

In the author's theory of vortex gravitation[3] it is asserted that the forces of attraction act flat-symmetrically with respect to any cosmic object.

The next chapter describes the basic principle of the theory of vortex gravity.

2. THE THEORY OF VORTEX GRAVITATION

The theory of vortex gravity, cosmology and cosmogony is based on the assumption that gravity, all celestial bodies and elementary particles are created by etheric vortices (torsions). The size of bodies (systems of bodies) and corresponding vortices can differ by an infinite value. The largest etheric vortex that a person can observe is the universal whirlwind, the smallest - the atomic whirlwind.

The orbital velocities of the ether in each vortex decrease in the direction from the center to the periphery, according to the inverse square law. In accordance with the Bernoulli principle, the change in orbital velocities causes an inversely proportional change (increase) in pressure in the ether. The pressure gradient creates the forces of vortex gravity and pushes the substance (body) into the zones with the least pressure, that is, in the center of the torsion bar. This pattern operates in the same way in ethereal vortices of any size.

The vortex can rotate only in one plane. Consequently, the decrease in the pressure of the ether occurs in the plane of rotation of the ether. Based on Archimedes' law, all bodies are pushed into the plane in which the least pressure occurs. Therefore, the forces of gravity act plane-symmetrically and it is necessary to abandon the classical model of the central-symmetric action of the forces of gravity.

The ether is an excessively little dense gas that permeates all bodies (substances), except for superdense ones. Therefore, the ether can only push these superdense bodies. These superdense bodies are the nucleons of atoms.

In the theory of vortex gravity, the Navier-Stokes equation for the motion of a viscous fluid (gas) was used to determine the pressure gradient in an ether vortex.

$$\rho\left[\frac{\partial}{\partial t}+\vec{v}\cdot \mathrm{grad}\right]\vec{v}=\vec{F}-\mathrm{grad}\,P+\eta\Delta\vec{v} \qquad (1)$$

$\vec{V}$ - velocity vector of the ether,

P - ether pressure,

η - viscosity.

in cylindrical coordinates, taking into account the radial symmetry $v_r=v_z=0$, $v_\varphi=v\ (r)$, P=P (r) the equation can be written in the form of a system

$$\begin{cases} -\dfrac{v(r)^2}{r}=-\dfrac{1}{\rho}\dfrac{dP}{dr} \\ \eta\cdot\left(\dfrac{\partial^2 v(r)}{\partial r^2}+\dfrac{\partial v(r)}{r\,\partial r}-\dfrac{v(r)}{r^2}\right)=0 \end{cases} \qquad (2)$$

After the transformations, an equation is obtained for determining the gravitational forces in the ether vortex:

$$F = V_n \times \rho \times \frac{\mathbf{v_e}^2}{\mathbf{r}} \qquad (3),$$

with the following dependence $v_e \sim \frac{1}{\sqrt{r}}$ where

V_n - the volume of nucleons in the body that is in the orbit of a torsion with a radius of – r

$\rho = 8.85 \times 10^{-12}$ kg / m^3 - ether density [4]

v_e -- the speed of the ether in the orbit r

r - the radius of the considered orbit of the ether vortex

Let us replace the volume of nucleons in equation (3) by their mass, using the well-known dependence:

$$V_n = m/\rho_n, \quad (4) \qquad \text{where}$$

ρ_n ~ 1017 kg / m3 - density, constant for all nucleons.

m - the mass of nucleons in the body

Substituting (4) into (3), we obtain

$$F_g = \frac{m}{\rho_n} \times \rho \times \frac{\mathbf{v_r^2}}{\mathbf{r}} = 10^{-28} \times m \times \frac{\mathbf{v_r^2}}{\mathbf{r}} \qquad (5)$$

Note 1. With the help of vortex gravity equations (3) and (5), gravitational forces can be calculated that act only in the plane of the vortex (torsion). To determine the attractive forces at any point below, additional studies are presented.

3. DETERMINATION OF FORCES OF GRAVITATION IN SPACE

As you know, the planets revolve around the sun in an ellipse with a small eccentricity.

This fact can be explained from the position of vortex gravity. In addition, the elliptical trajectory of the planets will allow us to calculate the gravitational force in a three-dimensional model.

The reason for the appearance of "contraction" of planetary orbits is the inclination of the plane of these orbits to the plane of the solar, gravitational torsion, which is proved by the following conditions.

As is known, the planes of orbital motions of all planets are located with small deviations from each other. Consequently, the planes of the orbits of the planets have an inclination to the plane of the solar gravitational torsion, where the greatest gravitational force acts on each orbit, and they (planets), in their orbital motion, must cross the solar torsion at two points. These points of intersection are the centers of perihelion and aphelion.

In aphelion and perihelion, the force of solar gravity acts on the planets with the largest value in this orbit and, consequently, the orbit of the planet has the maximum curvature. When the planet exits (deflects) from the plane of the solar torsion, the gravitational forces decrease, and the trajectory of the planets "straightens". A similar cycle of variation of gravitational forces and trajectory of motion is repeated for each planet in each revolution around the Sun. The more the trajectory of revolution of the planet deviates from the central plane of the solar torsion, the more the gravitational forces in these areas decrease. Consequently, the orbit must be more "compressed". A constant, cyclic variation of these forces makes the trajectory of the circulation elliptical.

With significant inclinations and high velocities, the satellite's orbit (meteorite, comet) acquires the trajectory of a hyperbola or parabola. Therefore, the celestial body, once circling the Sun, leaves the gravitational field of the solar torsion forever.

In the theory of vortex gravity [3] it is proved that the squareness of the planet's orbit depends on the angle of inclination of the orbital plane of the considered planet to the plane of the gravitational solar torsion. This dependence has the form:

$$\mathrm{K} = \frac{b}{a} = cos\beta \qquad (6), \text{ where}$$

K - coefficient of compression of the orbit of the celestial body

a - the length of the semimajor axis of the planet's orbit

b - the length of the minor semiaxis of the planet's orbit

β - the angle of inclination of the planet's orbital plane to the gravitational plane of the solar, etheric vortex (Fig. 1).

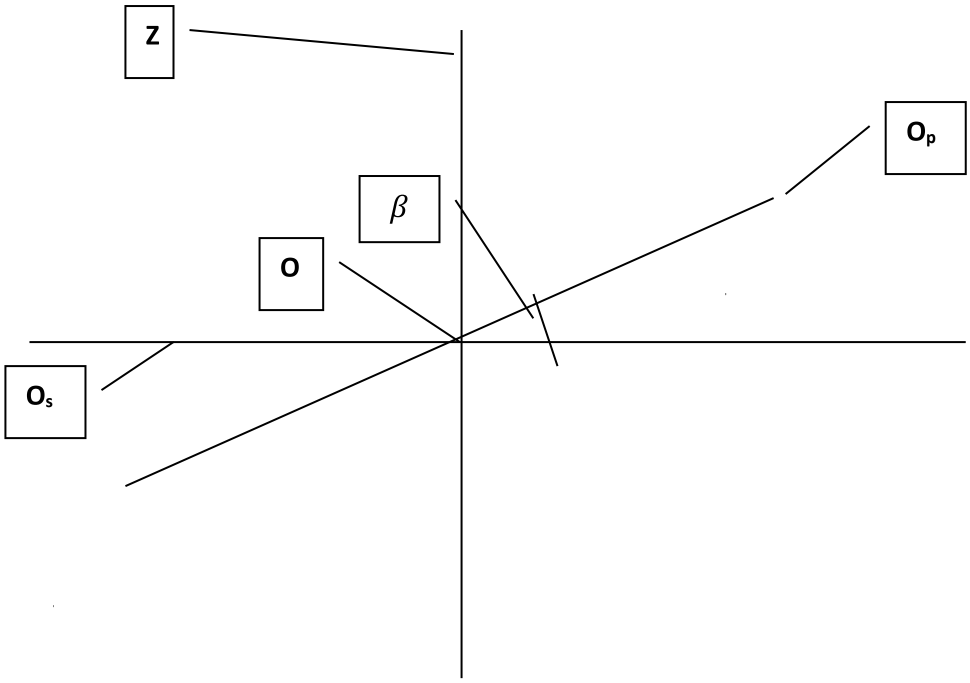


Fig. 1 Cross section of the solar system.

O_s - lateral projection of the orbit of the etheric solar torsion

O_p - lateral projection of the planet's orbit

Z - axis of rotation of the torsion bar

O - projection of the line of intersection of the orbit of planets with a gravitational orbit

Calculations [3] found that the forces of vortex gravity decrease as the distance (s) from the plane of the torsion (in the direction of the torsion axis) is inversely proportional to the cube of this removal - $1/s^3$.

In an arbitrary arrangement of the point under study, the force of the vortex gravity is determined (taking into account Equation 3) as:

$$F_{gv} = F_{gn} \, Cos^3\beta = V_n \times \rho \times \frac{v_e^2}{r} \times \cos^3\beta \quad (7)$$ where

$\cos^3 \beta = Kg$ - the gravitational coefficient

F_{gv} - the force of gravity at an arbitrary point

F_{gn} - gravitational force in the plane of the torsion

The location of the plane of the gravitational torsion in space can be determined by the coordinates of the perihelion and aphelion of all celestial bodies that turn in this plane.

4. PROOF OF PLANE GRAVITATION

In the author's article [3] , the calculation of the gravitational forces acting on the planet Mercury and Pluto was made during their location in the orbit at the apex of the small semi-axes. At these points, the orbits of the planet deviate as much as possible from the plane of the solar gravitational torsion. The calculation was made based on the equation of universal gravitation of Newton and the equation of vortex gravitation (equation 7). The results obtained were compared with centrifugal forces at these points

Note 1. Centrifugal forces can be calculated as accurately as possible and they are always equal to gravitational forces. Therefore, centrifugal forces can be used as an indicator of the accuracy of the results in determining the gravitational forces.

The distances and velocities of celestial bodies are taken on the basis of the astronomical calendar [4]

1. Pluto

The length of the semimajor axis of the Pluto orbit a = 5906.375 x 10^6 km

The length of the semi-minor axis is = 5720.32 x 10^6 km

The gravitational coefficient kg = $b^3 / a^3 = \cos^3 β$ = 0.9084

The distance from the Sun to the summit of the minor semiaxis of Pluto's orbit is d = 5907,963 x 10^6 km

The radius of curvature at the apex of the small semiaxis is Rb = a^2 / b = 6098.48 x 10^6 km

The orbital velocity of Pluto at the apex of the small semiaxis is V_b = 4.581 km / s

Centrifugal forces at the apex of the small semiaxis on the basis of the above characteristics:

F_c = 0.00344 M_p, where M_p is the mass of Pluto

The forces of solar gravity at the same point (according to Newton's classical model)

F_{gn} = 0.00382 M_p (deviation from centrifugal forces + 11.1%)

The forces of vortex gravity taking into account the gravitational coefficient (equation 7)

$F_{gv} = F_{gn} \times K_g$ = 0.00382 x 0.9084 = 0.00347 M_p (discrepancy + 0.87%)

2. Mercury

The length of the semimajor axis of the orbit of Mercury a = 57.91x 10^6 km

The length of the semi-minor axis b = 56.67x10^6 km

The gravitational coefficient $k_g = b^3 / a^3 = \cos^3 β$ = 0.9372

The distance from the Sun to the summit of the minor semiaxis of the orbit of Mercury

d = 58,395x10^6 km

The radius of curvature at the apex of the small semi-axis is Rb = a^2 / b = 59,177x10^6 km

The orbital velocity of Mercury at the apex of the small semiaxis is Vb = 46.4775 km / s

Centrifugal forces

F_c = 36.503 M_m, where Mm is the mass of Mercury

Gravitational forces:

According to Newton, F_{gn} = 39.09 Mm, (discrepancy + 7.1%)

According to the theory of vortex gravity, F_{gv} = 39.09 x 0.9372 x M_m = 36.63 M_m (discrepancy + 0.35%)

Obviously, the calculation of the theory of vortex gravity is an order of magnitude more accurate than the classical method and in accuracy correspond to the accuracy of astronomical measurements.

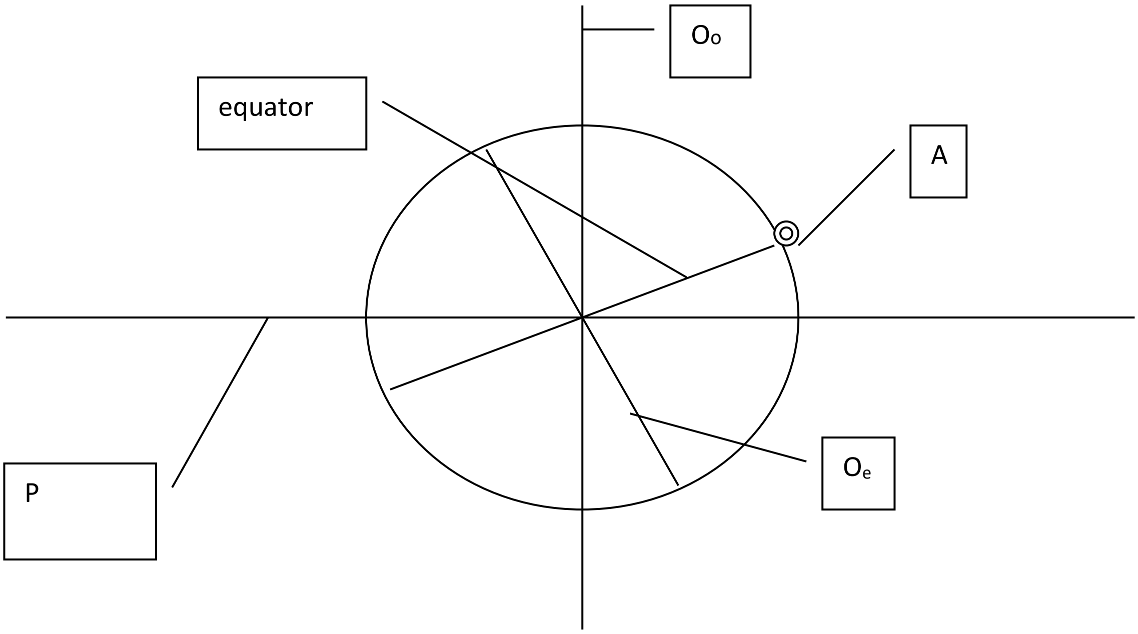
5. CONCLUSION

Recognition of the vortex, disk-like nature of gravity will make it possible to explain many paradoxes in natural science, to develop new research in science and technology. Below are presented an insignificant part of the conclusions of vortex gravity, cosmology and cosmogony.

Only the flat-symmetric action of the forces of gravitation proves the structures of the celestial systems. Planetary systems around any star, satellites around planets, galaxies, all these heavenly systems are flat, disk-like. If the forces of gravity acted in all directions equally (according to Newton's theory), then these heavenly systems would have a spherical shape. Critics can say that gravitation is the same everywhere on the Earth's surface. They should answer that any celestial body is located in the center of the cosmic torsion. The dimensions of celestial bodies are several orders of magnitude smaller than the dimensions of the torsion bars. Therefore, in the center of the torsion, lateral eddies of the ether create a pressure gradient in the axial direction almost the same as in the longitudinal one. Consequently, the forces of gravity almost ascend at the poles, as well as at the equator. It should be noted that accurate measurements have determined: at the poles, the actual gravitational force is less than calculated by the Newton equation. In particular, according to Newton's equation, the force of gravity at the poles of the Earth must be F = 9.86m. Based on geodetic gravimetry, the actual gravity is determined by Fp = 9.83m. This value is 0.3% less than the calculated value, but at the equator theoretical and experimental results are equal.

The unevenness of the decrease in the forces of gravity in the longitudinal and axial directions explains the origin of the tides.

As is known, the terrestrial equatorial plane has an inclination to the ecliptic plane at an angle of 23.5 degrees. The plane of the earth, etheric torsion is located with a slight deviation from the ecliptic. Consequently, each terrestrial point (p. A, Figure 2) crosses the equator twice a day twice the plane of the vortex rotation of the ether, in which the maximum force of terrestrial gravity acts. Consequently, gravitation at any point of the earth changes its strength twice. This fact causes two times the appearance of tides. The explanation of these tides by the gravitational action of the Moon or the Sun is absurd, since any point of the earth's surface is drawn only once per day relative to these celestial bodies. But there are **tides twice**!



Pic.2. Flow chart of tides.

P - lateral projection of the plane of the earth torsion.

O_O is the axis of rotation of the Earht's torsion bar.

O_e is the axis of Earth's rotation.

Point A crosses the plane of the earth torsion twice a day.

In the author's article, 5 calculations of physical work have been made, which must be done in a space flight from Earth to the Moon in two versions. The first is a straight, ordinary path inside the Earth's gravitational torsion, the route AS in Fig. 3. The second - bypassing the earth torsion, the ABC route.

The physical work expended by the spacecraft bypassing the earth torsion along the ABC route is 26% less than the work spent on the direct route - the route of the AC.

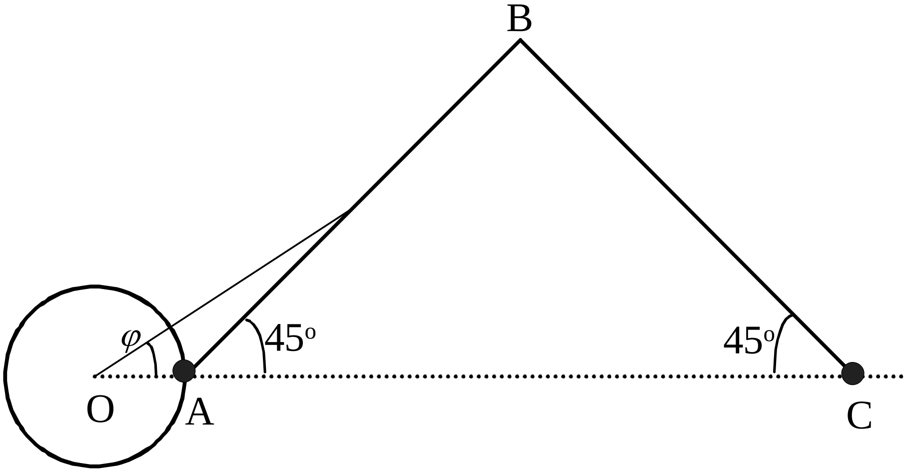


Fig. 3 Scheme of the flight to the moon T. O - Earth, t. C – Moon

Note 2. The aforementioned flat-symmetric action of the forces of gravity can be observed only at a large distance from the center of the torsion, since in the center there are axial vortices of the ether. Therefore, it is impossible to apply equation 7 to determine the forces of gravity on the surface of celestial bodies.

This article offers a very small part of the changes in the scientific understanding of physical phenomena. The theory of vortex gravitation makes it possible to explain many regularities in geophysics, in astronomy, in atomic physics, and in other branches of natural science without contradictions.

REFERENCES

1. *.Newton, Sir Isaac (1729). The Mathematical Principles of Natural Philosophy, Volume II*
2. Albert Einstein. «Die Feldgleichungen der Gravitation». *Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin*: 844—847.
3. S. Orlov. Foundation of vortex gravitation, cosmology and cosmogony. Global journal of science Frontier V A V. A. Atsurovskiy. General ether-dynamics. Energoatomizdat. Moscow, Russia. 1990. Page 278.
4. A P Gulyaev. *Astronomy calendar*. Cosmosinform. Moscow, Russia. 1993. Page 285.
5. Sergey Orlov On Optimal Trajectory in Space Flight. American Journal of Aerospace Engineering
6. Volume 3, Issue 2, April 2016, Pages: 6-12