

## Why Global Glaciations Happened

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### Introduction

Ice Age (ancient glaciation) is a phenomenon in the geological history of the Earth, during which there was a general relative cooling of the climate and the emergence of a significant expansion of continental ice sheets.

Ice Age is a collection of ice ages. Ice ages alternate with relative warming-epochs of reduced glaciation (interglacials). The interglacial, which began 12 thousand years ago, the Holocene is part of the Quaternary period, which in turn enters the Cenozoic era that came 66 million years ago [1].

Among the reasons for the emergence of ice ages M. Milankovich pointed out-90-100 thousand-year cycles of climate change as a result of changes in the eccentricity of the earth's orbit [2].

Changes in the eccentricity of the earth's orbit are explained by the influence of the gravitational field of other planets. A group of American geologists from Rutgers University came to a similar conclusion. K. Kraik argues that this orbital shift is the result of a complex interaction with the gravitational influences of Venus and Jupiter [3], together with other bodies in the Solar System, when they all revolve around the Sun, like a set of rotating hula-hoops, sometimes closer to each other, sometimes further.

This article proposes an explanation of the change in the eccentricity of the earth's orbit on the basis of the author's theory of vortex gravity [4].

The next section summarizes the basic principles of this theory.

### The theory of vortex gravity

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

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 Bernoulli's principle, a change in orbital velocities causes an inversely proportional change (increase) in the pressure in the ether. The pressure gradient creates the forces of vortex gravity and pushes the substance (bodies) into the zones with the lowest pressure, that is, to the center of the torsion. This regularity acts in the same way in ether vortices of any size.

The vortex can only rotate in one plane. Consequently, a decrease in the ether pressure occurs in the ether rotation plane. On the basis of Archimedes' law, all bodies are pushed out into the plane, as well as into the center of this plane, in which the least pressure arises. Therefore, the forces of gravity act plane symmetrically and it is necessary to abandon the classical model of the centrally symmetric action of the forces of gravity.

Ether is a super low-density gas that permeates all bodies (substances), except superdense ones. Therefore, the ether can only push out these superdense bodies. These superdense bodies include atomic nucleons.

In the theory of vortex gravity [4] the Navier-Stokes equation for the motion of a viscous liquid (gas) was used to determine the pressure gradient in the ether vortex.

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

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

P - ether pressure,

$\eta$  - viscosity

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

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

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

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

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

$V_n$ =volume of nucleons in the body that is in the orbit of a torsion with a radius of r

$\rho=8.85 \times 10^{-12} \text{ kg / m}^3$  - ether density [5]

$v_e$ =speed of the ether in the orbit r

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

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

$$V_n = m / r_n \quad (4)$$

$r_n \sim 10^{17} \text{ kg / m}^3$  -density, constant for all nucleons.

M=mass of nucleons in the body

Substituting (4) into (3), we obtain

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

**Note.** 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.

### Determination of the Forces of Gravitation in Space

As you know, the planets revolve around the Sun in an ellipse with a slight eccentricity. This fact can be explained in terms of vortex gravity. In addition, the elliptical trajectory of the planets will allow you to calculate the forces of gravity in a three-dimensional model.

The reason for the appearance of "compression" of the orbits of the planets is the inclination of the planes of these orbits to the

plane of the solar, gravitational torsion, which is proved by the following conditions. As you know, the planes of orbital motions of all planets are located with small deviations from each other. Consequently, the planes of the planets' orbits are inclined 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 intersection points are the centers of perihelion and aphelion. At aphelion and at perihelion, the force of solar gravity acts on the planets with the greatest magnitude in this orbit and, therefore, the planet's orbit has the maximum curvature. When the planet leaves the plane of the solar torsion (deviation), the forces of gravity decrease, and the trajectory of the planets "straightens out". A similar cycle of changes in gravitational forces and trajectory is repeated for each planet in each revolution around the Sun. The more the trajectory of the planet's revolution deviates from the central plane of the solar torsion, the more the gravitational forces in these regions decrease. Consequently, the orbit should "shrink" more. The constant, cyclical variation of these forces gives the trajectory of revolution an elliptical appearance.

At significant inclinations and high velocities, the orbit of the satellite (meteorite, comet) acquires the trajectory of a hyperbola or parabola. Therefore, a celestial body, once circling the Sun, leaves the gravitational field of the solar torsion forever. In the theory of vortex gravity it is proved that the coefficient of compression 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 [4]:

$$K = b / a = \cos\beta \quad (6)$$

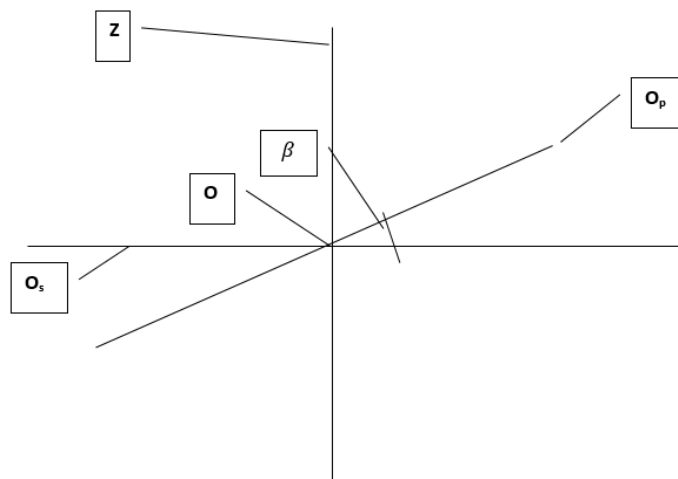
where,

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

a - the length of the semi-major axis of the planet's orbit

b - the length of the semi-minor axis of the planet's orbit

$\beta$  - the angle of inclination of the orbital plane of the planet to the gravitational plane of the solar, etheric vortex **FIG. 1.**



**FIG. 1.** Cross section of the solar system.

O<sub>s</sub> - lateral projection of the orbit of the etheric solar torsion

O<sub>p</sub> - lateral projection of the planet's orbit

Z - axis of rotation of the torsion

O - projection of the line of intersection of the orbits of planets with gravitational orbits

Calculations found that the forces of vortex gravity decrease with distance (s) from the torsion plane (in the direction of the torsion axis) in inverse proportion to the cube of this distance-1/s<sup>3</sup>.

In an arbitrary location of the investigated point, the vortex gravity force is determined (taking into account equation 3) as:

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

$\cos^3 \beta = K_g$  - gravitational coefficient

$F_{gn}$  - force of gravity at an arbitrary point

$F_{gn}$  - force of gravity 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 revolve in this torsion.

In article, the calculation of the forces of solar vortex gravity acting on Mercury and Pluto is made according to the proposed equation (7). This calculation showed the accuracy of these calculations with an error of an order of magnitude less than the error when calculating according to the classical equations (Newton, Einstein). This proves the validity of the proposed theory of vortex gravity with plane-symmetric action of gravitational forces and the inconsistency of the classical theory of universal gravity [6].

### Output

Based on the above calculations, the conclusion follows that the eccentricity of the earth's orbit depends on the angle of inclination of the Earth's orbital plane to the central plane of the solar, etheric torsion. Throughout its existence, the plane of the earth's orbit constantly fluctuated near the central plane of the solar, etheric torsion.

When the angle of inclination of the Earth's orbit plane to the plane of the solar torsion changes, both the trajectory and the radius of the Earth's orbit change. The more the Earth's orbit deviates from the gravitational plane, the more the compression of its orbit increases, that is, it takes the shape of an ellipse. When the orbital, terrestrial plane approaches the plane of the solar torsion, the terrestrial orbit turns into a circle. Consequently, a change in the orbital radius (distance to the Sun) must be accompanied by a decrease or increase in the solar flux to the earth's surface. In addition, the author's article [7] provides evidence that the planets or satellites reversing near the central plane of the gravitational torsion should approach the center of their revolution (toward the Sun), like the Earth. When celestial bodies turn in a plane that has deviations from the plane of the gravitational torsion, these bodies must move away from the center of the torsion (Earth), as is the case with the Moon.

A change in the magnitude of the solar flux to the Earth causes a change in the climate on the planet (Earth), that is, ice ages or warmings occur in the long-term history of our planet. Venus approaches the Earth as close as possible every 584 days, with Jupiter this approach occurs after 13 months. Therefore, the statement that long-term, thousand-year changes in the earth's orbit are due to the gravitational influence of these planets should be considered absurd.

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