Mr.GUNASEKARAN S,
ASSISTANT PROFESSOR,
DEPARTMENT OF MECHANICAL ENGG,
SNS COLLEGE OF ENGINNERING.

The nature of gravitation. Gravity control

Annotation

Gravity is a manifestation of the energy of the world environment of the electromagnetic field. The pressure gradient of this environment creates a gravitational force. It is possible to change the force of gravity in a given direction by creating transverse flows of an electromagnetic field (Bernoulli Effect). This is the first step towards the technology of using environmental energy.

Key words: gravitation, electromagnetic field, Bernoulli Effect, gravity control.

Terms and Definitions

An electromagnetic field is a phase state of matter in the form of an invisible dispersed medium that fills all space. The smallest particles of the environment of the electromagnetic field - *gravitons* - continuously move at the speed of light. One should distinguish between the concepts of the field medium as a whole and the specific manifestations of this medium in the form of flows and disturbances. The rotational flows of gravitons is *a magnetic field*. The translational flow of the electromagnetic field we consider *an electric field*. Divergent vortex flows we know as *transverse radio waves*. The white noise of the field medium we record as *microwave background radiation*. Longitudinal waves in the medium arising from accelerations and shock perturbations of space objects, we now call *gravitational waves*. We are convinced of the existence of an electromagnetic field as a global environment whenever we bring a mobile phone to our ear.

Gravitational field is the vortex layer of the electromagnetic field attached to the material body. We call the mass of the gravitational field (i.e. the mass of the gravitons of the vortex shell of the body) *the electromagnetic (relativistic) mass* of the body. The gravitational field does not do work.

Gravity is the force created by the pressure gradient of the environment of the electromagnetic field.

Bernoulli Effect is the relationship between the dynamic pressure of the intrinsic vortex tangential flow of the field near the body $\rho v^2/2$ and the normal pressure p of the external environment: $\rho v^2/2 + p = \text{constant}$.

1. The nature of gravity

Since the time of Ptolemy, we have been finding out the nature of gravity. However, we cannot solve the problem at the same level at which it arose. The ultimate goal of scientific knowledge is to find the causes of phenomena.

Only pressure or impact provides an external action on the body. Mass does not have the innate ability to attract. The intrinsic vortex of the field around the mass creates a pressure gradient in the external environment in accordance with Bernoulli's law [1]. The passive mass does not have direct contact with the active mass. The passive mass "feels" only the surrounding external environment of the electromagnetic field.

The nature of gravitation is the same for micro particles (we call it "strong interaction") and for space objects. An invisible vortex shell of the magnetic field surrounds the Earth (Figure 2 on the left). The density of the medium is very low. Therefore, flows in opposite directions easily pass through each other.

In the near-surface layer of the Earth, the trajectories of graviton fluxes are strongly curved (Figure 1 on the left). Without much loss of generality, we represent the closed elementary fluxes of gravitons, emanating from the Earth and entering it, in the form of U-shaped broken lines, as shown in Figure 1 in the center.

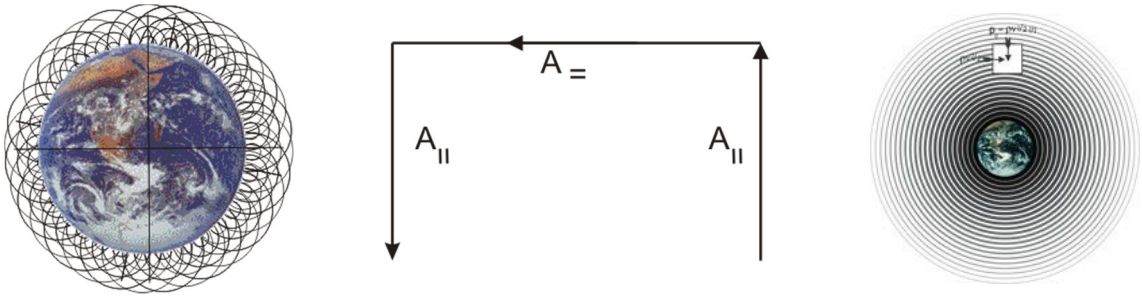

Figure 1. Trajectories of graviton fluxes of the Earth's gravitational field

The effects of the incoming vertical flows $A_{||}$ compensate outgoing vertical flows $A_{||}$. Therefore, the action will produce only the horizontal components $A_{=}$. Horizontal components of flow at a given point of the spherical surface have all directions, i.e. have a spherical symmetry of the azimuthal flows. Near-Earth space is a sphere, through every point on the surface of which stationary flows of gravitons occur in all directions (Figure 1 on the right).

We distinguish unit volume in flows. In the absence of flow, pressure at the volume on all sides would be the same and equal p_o. In the presence of towards azimuthal flows, the total pressure

consists of static (normal radial) and dynamic pressure (horizontal, tangential) pressure. According to Bernoulli's law at a horizontal flow, pressure on the upper face of the unit volume will exceed the pressure on the lower bound on the value of the dynamic pressure on the side faces. Dynamic pressure is the energy density of the flow. These vortex flows cannot attract or repel.

Figure 2 shows graphically the dependence of the radial pressure on the height above the Earth's surface. Static pressure p will be determined by the formula: $p = p_0 - \frac{\rho \vec{v}^2}{2}$.

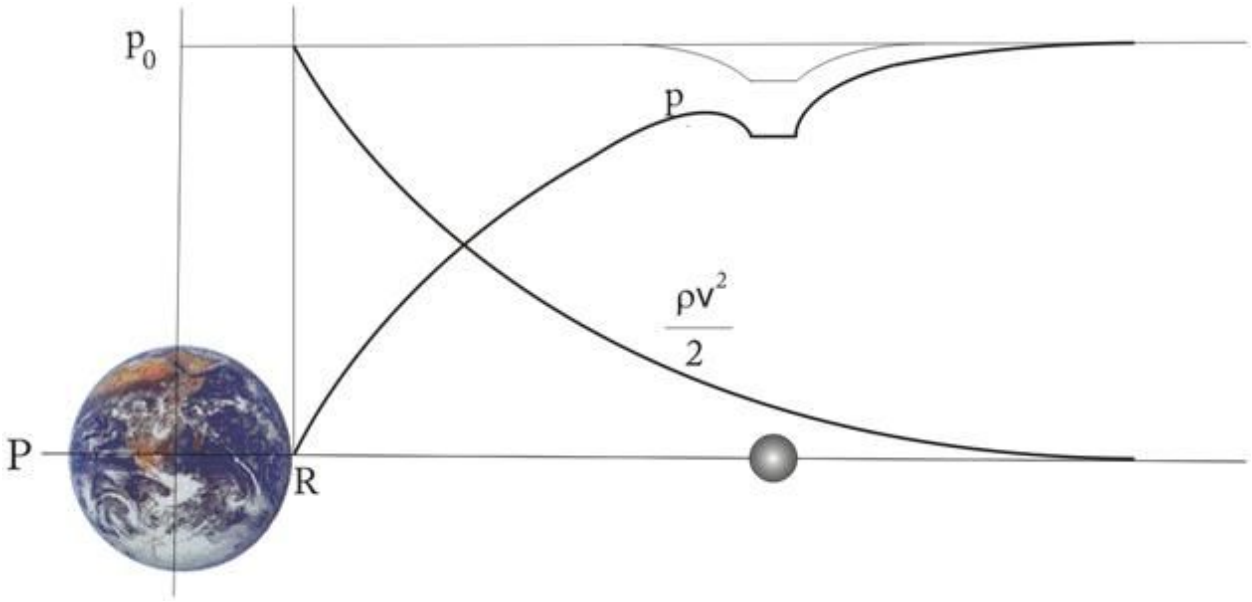

Figure 2. Graviton pressure in the surface layer of the Earth

The right figure shows the second body (e.g. the Moon). If the moon would be far from other bodies, the top figure at the graph would represent the pressure in the surrounding area. Overlay fields of the Earth and the Moon leads to a "pit" in the resulting curve p. Force is the pressure gradient: f = dp/dr. The force of gravity on both sides of the Moon is the same and does not depend on whether or not it is a satellite of the Earth.

Gravity is repulsion, not attraction. The Earth does not "pull" the Moon. The pressure of the external environment pushes the Moon towards the Earth. The Bernoulli Effect provides a gradient of the normal pressure of the external environment of the electromagnetic field, i.e. the force of gravity. The gravitational field of the body only creates conditions for the manifestation of the latent energy of the environment. The body's own vortex flow does not do work, it acts as a trigger. Galactic vortices (halo) of the electromagnetic field create a gravitational force at the edges of the vortex funnel due to the pressure gradient of the medium in the vortex. We call the phenomenon of gravitation without active mass "the effect of Dark Matter" [2]. Similarly, to this phenomenon, we can simulate the active mass by the source of the vortex field, i.e. electric current.

2. Vertical gravity change

To confirm this idea, an experiment was set up to correct the vertical force of gravity. If we add horizontal field fluxes in a certain volume, then the dynamic pressure $\rho v^2/2$ will increase. A hump will appear on the graph (Figure 3 on the left). Then, according to Bernoulli's law, a "pit" will appear on the normal pressure graph. In the lower part of the "pit", the slope of the dp/dh curve will decrease — the body in this volume will become lighter. At very high fluxes of the magnetic field, the pressure gradient dp/dh in the "pit" should change its sign, i.e. "antigravity" repulsion of bodies will arise.

Figure 3 (on the right) is a schematic diagram of the installation. A vertical electric current creates fluxes of a magnetic field horizontally. The wooden rod 1 runs along the axis of the squirrel wheel 2. The rod 1 hangs on the rod 3 of the torsion balance with a suspension 4. The stop 5 under the other end of the rod has a gap. There is a counterweight 6 at the end of the rod. The spokes of the squirrel wheel are in contact with the power supply 7.

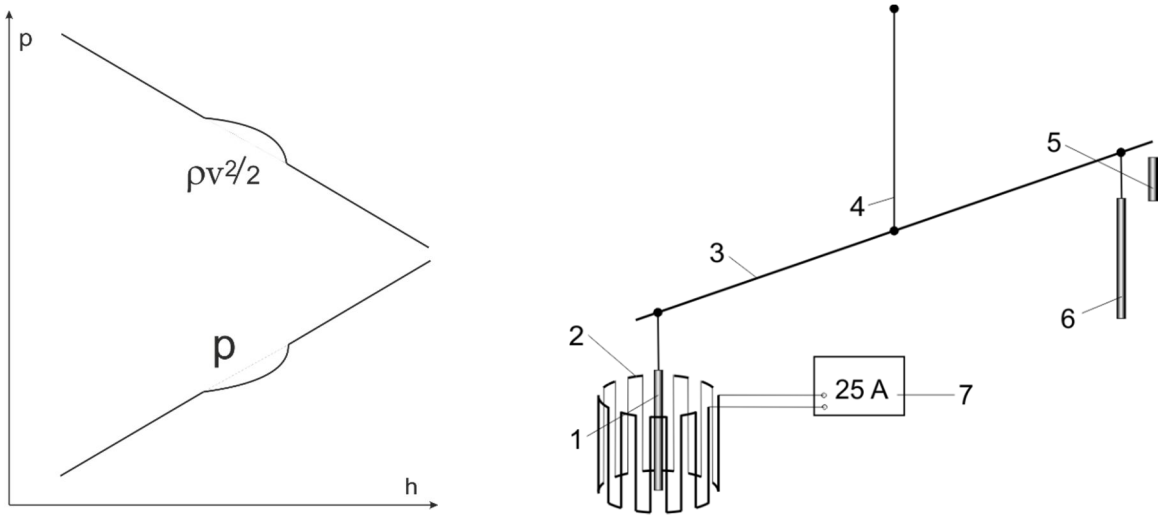

Figure 3. Scheme of the experiment on changing the gravitational field vertically

A round rod 1 made of dry wood, 300 mm long, had a diameter of 5.5 mm. Squirrel wheel 2 with a diameter of 200 mm and a height of 400 mm had 100 spokes made of copper wire with a diameter of 2.5 mm. The rod 3 of the torsion balance was a round rod made of dry wood with a diameter of 8 mm and a length of 1500 mm. As a suspension 4, we used a copper wire with a diameter of 0.3 mm and a length of 1200 mm. The gap between the rod 3 and the stop 5 was 5 mm. Counterweight 6 was a copy of rod 1. The output current of power supply 7 reached 25 A at 6.5 V.

We carried out the experiment in the following way. First, we waited for the complete damping of all vibrations of the rod 1 and rod 3. Next, we turned on the power supply. When a

current of 25 A was passed through the squirrel wheel 2, the right end of the bar 3 began to slowly descend until it rested against the stop 5. The movement time was ~ 5 minutes. When we turned off the power source, the rod 3 returned to its original position..

3. Horizontal gravity change

In the horizontal plane, the dynamic pressure and the pressure of the external environment on the body is the same from all sides. However, if in this plane we create an inhomogeneous magnetic field, then the body will begin to move from the region of higher pressure of the medium to the region of lower pressure. Work [3] describes a modification of the Cavendish experiment with electromagnetic mass simulators.

There is experience that is interesting from the point of view of possible applications. The body creates non-uniform vertical fluxes of the magnetic field around itself. If we create a “hump” on the $\rho v^2/2$ graph, then a “pit” will appear on the p graph (Figure 4 on the left). In the region $dp/dL < 0$, all bodies will move to the right, including the source of the magnetic field itself.

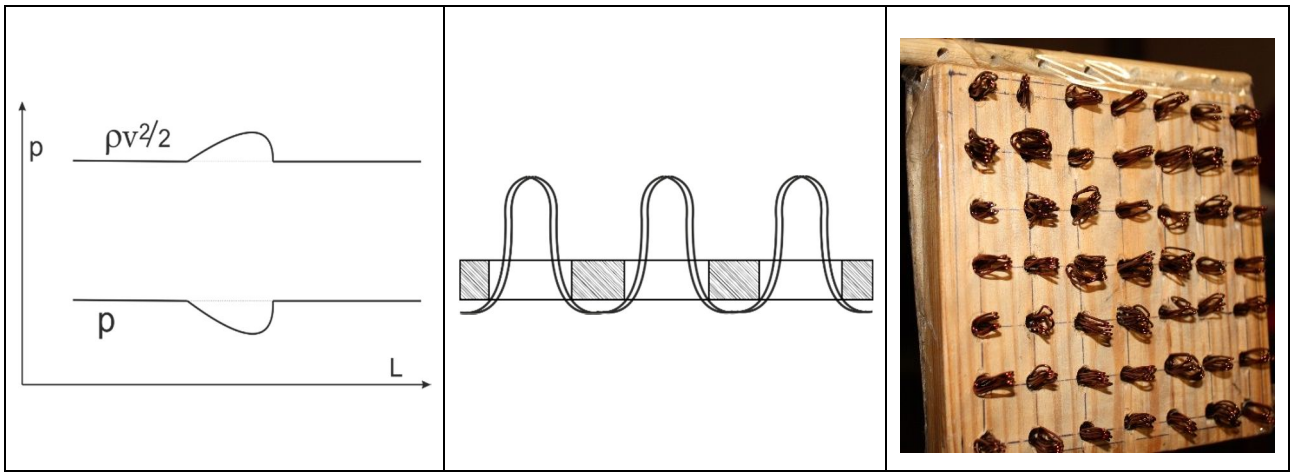

Figure 4. Field pressures, wire shape and view of magnetic field source

Note that there is no effect on the body of its own vortex magnetic field. The field of the external environment has a forceful effect. The body's own field only creates conditions for the manifestation of the energy of the environment, the formation of a pressure gradient.

Figure 4 on the right shows the appearance of the field source. We drilled 49 holes with a diameter of 5 mm in a wooden square board measuring 150x150 mm and 10 mm thick. An insulated copper wire with a diameter of 0.5 mm was twisted and bent in the shape shown in Figure 4 in the center. We ran the protrusions of the wire into the holes and bent them. We fixed the board to the torsion balance rod. The ends of the wire were in contact with the power source through the

suspension of the torsion balance. A casing with a transparent cover protected the balance from the influence of air currents.

After attenuation of all oscillations through the wire, we passed a direct or alternating current with a force of 16-20 A. The board with a rocker began to rotate towards the protrusions of the wire. The earth's magnetic field did not affect this effect.

Conclusion

1. Gravity is a force created by the pressure gradient of the external environment of the electromagnetic field.
2. Changing gravity in a given direction is possible by creating transverse magnetic field fluxes.

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