

Nature of Gravity

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ABSTRACT

The century-long era of formalism in physics has ended. The concept of space-time without matter is a thing of the past. Today we are reviving the simple, clear and distinct ideas of A. Einstein and T. Kaluza about the ether, set out in General Relativity. Masses themselves do not have the innate property of “curving space,” and galaxies do not fly in the void. The invisible dispersed medium of ether fills the Universe. Within the vortex disturbances of this medium, pressure gradients arise, which create gravitational forces.

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Terms and definitions

A system is a set of interconnected and interacting elements that form a single whole and have a certain common goal or perform certain common functions.

Emergence is the appearance of new properties in a system that do not exist in its individual elements and which cannot be reduced to a simple sum of the properties of these elements. New properties arise from the interaction of elements.

Ether is a phase state of matter in the form of an invisible dispersed medium that fills all space. The smallest particles of the medium - gravitons - continuously move at the speed of light. It is necessary to distinguish between the idea of the field environment as a whole and specific manifestations of this environment in the form of flows and disturbances. We consider the forward flow of gravitons in the medium as a vector potential. Vortex flows of gravitons form a magnetic field. We call the flow of a medium in the form of rotating fibers an electric field. The diverging eddy currents are known as transverse radio waves. We register the white noise of the field environment as microwave background radiation. We call longitudinal waves in the medium resulting from accelerations and shock disturbances of space objects gravitational waves. We are convinced of the existence of a global ethereal environment every time we bring a mobile phone to our ear.

The gravitational field is its own vortex shell of the ether attached to the material body - the de Broglie wave.

Electromagnetic (relativistic) mass of a body is the mass of gravitons of the gravitational field (de Broglie waves), equivalent to the energy of the body.

Gravity is a force created by the ether pressure gradient in vortex disturbances of the environment both in gravitational fields near massive bodies (“gravity”) and in galactic vortices (“Dark Matter” effect—gravity without active mass). GTR is the general theory of relativity.

Ether as a complex system

The system of ether with the matter embedded in it is the largest and most complex system; emergent properties determine all natural phenomena. The concept of the ether is one of the oldest ideas in physics. However, over the past hundred years, the ether has been recognized only partially and at the same time appeared under other names.

The ability of the ether to create particles of matter - neutrinos and antineutrinos, as well as to carry out numerous reactions with short-lived neutrino compounds were attributed to the physical vacuum.

The ability of ethereal gas to transmit mechanical disturbances led to the formation of the concept of an electromagnetic field as an independent entity, as a special type of matter. The ether is globally motionless, but locally consists of flows and vortices of gravitons. Flows of ether gravitons are associated with electric and magnetic fields. These concepts were also isolated into independent entities.

The ether creates gravity — gravitational forces arise as a pressure gradient of the ether in vortex disturbances both near massive bodies and in galactic vortices. However, this property of the ether in the interpretation of the general theory of relativity was replaced by the incomprehensible property of masses to bend the space-time continuum. Galactic vortexes of the ether create the effect of “Dark Matter” - gravity without mass. And for many years now, Dark matter as a separate substance has been sought in all corners of the Universe.

The chaotic thermal motion of gravitons creates the effect of microwave cosmic radiation, which fills all space in the observable Universe as a background. This “noise” of the ether is identified as a separate phenomenon - the “relict background”.

Rotating particles entrain the adjacent layer of the medium, forming de Broglie waves. The ether endows every particle or body with electromagnetic (relativistic) mass. This property of the ether was explained by the introduction of the virtual Higgs field.

We see a similar picture in quantum mechanics. The ether forms all particles from vortex neutrinos and antineutrinos. De Broglie waves determine the electromagnetic mass, spin, charge and magnetic moment of particles. It is not the innate properties of particles that determine the interactions between quantum objects, but the force created by the pressure gradient of the ether surrounding them.

Ether as an all-pervasive medium is a striking example of a multicomponent system. The basis of the ether is a rarefied, superfluid, turbulent, compressible gas of vortex gravitons, continuously moving at the speed of light. Ether has enormous energy and entropy. The state of the ether corresponds to very large Reynolds numbers. High turbulence is maintained by the high thermal velocity of gravitons and low gas viscosity. Turbulence manifests itself in the fact that the ether exists in the form of vortices of various sizes - from galactic to material vortices of neutrinos and antineutrinos. Taking this circumstance into account eliminates the “vacuum catastrophe.”

The purpose of the ether as a system is to maintain the eternity of the meter through its cyclic self-renewal. The ether system carries out self-organization of matter, which occurs with a decrease in entropy, using two tools: rotation and pressure. Rotation creates de Broglie waves. Pressure creates gravity. The combined action of tools leads to the emergence of increasingly complex systems and phenomena.

Revival of the Kaluza-Einstein ether in general relativity and string theory

The interpretation of the physical model of gravity as the curvature of space-time by massive bodies does not correspond to the essence of the general theory of relativity, since general relativity itself proves the existence of a material ether.

In the article “Ether and the Theory of Relativity” (1920), A. Einstein noted that to deny the ether means to accept that empty space has no physical properties, and the basic facts of mechanics are not consistent with such a view [1].

In 1919, Theodore Kaluza revealed a description of the real ether through a more in-depth examination of the formulas of general relativity. Kaluza's idea was to move from 4-dimensional Riemannian geometry to 5-dimensional geometry, when the square of the interval is represented as:

$$ds^2 = G_{AB} dx^A dx^B (A, B = 0, 1, 2, 3, 5).$$

The components of the 5-dimensional metric tensor G_{AB} form a quadratic matrix having 15 different components:

$$G_{AB} = \begin{bmatrix} G_{00} & G_{01} & G_{02} & G_{03} & G_{05} \\ G_{10} & G_{11} & G_{12} & G_{13} & G_{15} \\ G_{20} & G_{21} & G_{22} & G_{23} & G_{25} \\ G_{30} & G_{31} & G_{32} & G_{33} & G_{35} \\ G_{50} & G_{51} & G_{52} & G_{53} & G_{55} \end{bmatrix} = \begin{bmatrix} G_{\mu\nu} & G_{\mu 5} \\ G_{5\nu} & G_{55} \end{bmatrix} \Rightarrow \begin{bmatrix} g_{\mu\nu} & A_\mu \\ A_\nu & G_{55} \end{bmatrix}$$

It is postulated that the components of G_{AB} do not depend on the 5th coordinate (*cylindricity condition*). Then ten components with 4-dimensional indices correspond to the metric tensor $g_{\mu\nu}$ of Einstein's theory of gravity. The diagonal element G_{55} describes a *scalar electromagnetic field*, i.e. a globally stationary medium characterized only by density. Kaluza proposed to identify the four additional components of G_{5a} with the components of the *electromagnetic vector potential*, i.e. with scalar field flows. Hidden Dimensions of Kaluza is a look into the depths of matter. It immediately follows from General Relativity that matter is immersed in the ether — the all-pervading medium of gravitons - invisible finely dispersed quanta of a scalar electromagnetic field with angular rotation. These vortices are present at every point in space (Figure 1 on the left).

The additional cylindrical (angular) dimension is distinguished by the very small size of the spatial loops and is therefore unobservable. Klein extended Kaluza's calculations to quantum mechanical objects. According to his calculations, the sizes of Kaluza vortices are $\sim 10^{-30}$ m.

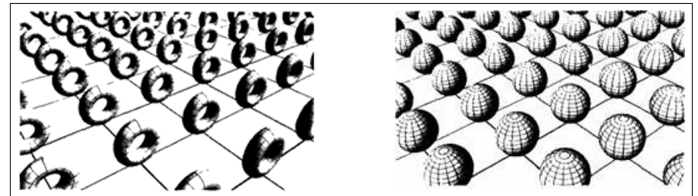


Figure 1: Kaluza's cylindrical measurements and spherical branes

The smallest vortex particles of the ether medium - *gravitons* - with mass m_{gr} are distributed in space with an average density ϵ_0 [kg/m³]. The average thermal speed of gravitons is equal to the speed of light c . Their continuous movement creates pressure in the environment. It is known from experiments that the average temperature of the medium is $T = 2.7$ [K]. Then the pressure of the electromagnetic field medium p_0 can be estimated from the relations for an ideal gas:

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$$\frac{m_{gr} c^2}{2} = \frac{3}{2} kT; \quad m_{gr} = \frac{3kT}{c^2} = \frac{3 \cdot 1,38 \cdot 10^{-23} \cdot 2.7}{9 \cdot 10^{16}} = 1.25 \cdot 10^{-39} [kg];$$

$$p_0 = nkT = \frac{\epsilon_0}{m_{gr}} kT = \frac{\epsilon_0 \cdot c^2}{3kT} kT = \frac{\epsilon_0 \cdot c^2}{3} = \frac{8.85 \cdot 10^{-12} \cdot 9 \cdot 10^{16}}{3} = 2.65 \cdot 10^5 \left[\frac{N}{m^2} \right] \approx 2.65 [atm].$$

Continuing Kaluza's ideas, String Theory states that there are seven additional folded dimensions in the world, showing the shape of the movement of matter at deeper levels. In addition to Kaluza toroidal vortices, string theory has revealed quanta in the form of spherical branes (Figure 1 on the right). We believe that particles of Pramatter have this form at the deepest hierarchical level of organization of our Universe [2].

Galactic Vortexes create the “Dark Matter” effect

The ether exists in a turbulent mode, i.e. in the form of vortexes. Large-scale vortexes are known as *halos* — galactic vortexes in which galaxies and clusters of galaxies are located. Galactic vortexes determine the cellular structure of the Universe.

Galactic ether vortexes are primary in relation to galaxies. Vortexes serve as sinks for gas and dust during the formation of galaxies. Vortexes hold stars in galaxies, ensure their rotation around the center of galaxies, and form spiral arms due to auto phasing. We observe these vortexes as halos and coronas around galaxies and galaxy clusters.

Figure 2 (left) shows the linear velocities of stars in the center and periphery of the Milky Way Galaxy. The solid curve shows the actual orbital velocities of stars and gas orbiting the center of the Galaxy. At the periphery of the Galaxy, the velocities of stars increase slightly with increasing orbital radius. The dotted line shows the expected speeds without the influence of “Dark Matter”. Figure 2 (right) shows a diagram of the halo (vortex corona) of the Milky Way galaxy. The corona is filled with hot gas and dust.

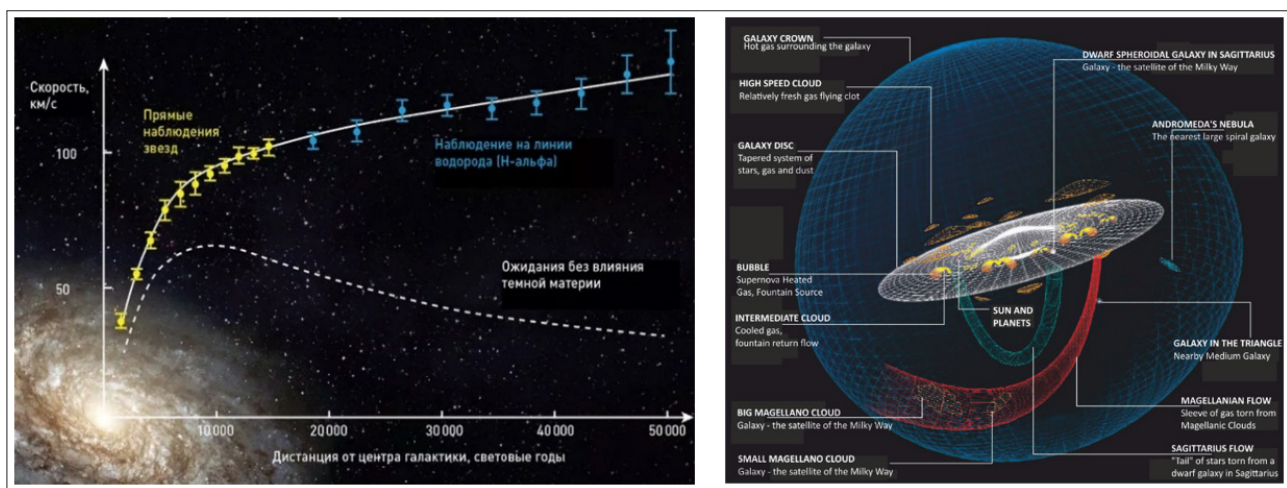


Figure 2: Linear velocities of stars and diagram of the crown of the Milky Way galaxy

The pressure at the center of the vortex is always less than at the periphery. The radial pressure gradient creates a centripetal gravitational force within the entire volume of the galactic vortex of the medium. In large vortexes, the gravitational force exists far beyond the bulk of the stellar matter. The effect of the vortex on space objects is equivalent to the presence of additional stellar matter in the galactic core. The effect of gravity without active mass is called “Dark Matter”.

To illustrate the “Dark Matter” effect, we assume that the rotation of the medium creates a dynamic pressure $\rho v^2/2$ inside the vortex, which decreases with radius according to the logarithmic law. The formula expresses the radial pressure of the external environment in accordance with Bernoulli's law:

$$p = p_0 - \frac{\rho v^2}{2} = p_0 - \frac{\rho V^2}{2} \frac{1}{\ln \frac{R_0}{r_0}} \ln \frac{R_0}{r}.$$

Here r_0 – internal vortex radius, R_0 – outer radius of the vortex, p_0 – pressure of the medium outside the vortex, V – velocity per unit mass at the inner edge of the vortex, so $\rho V^2/2 = p_0$.

The centripetal force F will act on a unit mass moving with tangential speed v

$$F = -\frac{\nabla p}{\rho} = -V^2 \frac{1}{2 \cdot \ln \frac{R_0}{r_0}} \frac{1}{r} = \frac{v^2}{r}.$$

If the force is proportional to $1/r$, the linear speed of stars v when moving in a vortex in a circle will not depend on the radius.

Toroidal galactic vortexes can have a large inner radius and form ring galaxies. Figure 3 on the left shows a photograph of the object NGG 6028 (Arthur A. Hoag object). This is a ring galaxy in the constellation Serpens with a diameter of ~100 thousand light years, located at a distance of 600 million light years from Earth. The space between the core and the ring galaxy is so transparent that

another ring galaxy is visible in the photo. Figure 3 on the right shows Arp 147, a blue ring of massive stars. What is interesting here is the retention of the ether of galaxies by the vortex, which are located not in the center, but at the edges of the vortex. Then it really appears that the galaxies are revolving around a completely empty place.



Figure 3: Hubble satellite image of ring galaxies

Consideration of the “galaxy in the ether” system makes the concept of “Dark Matter” unnecessary.

Ether gives birth to particles of matter - neutrinos and antineutrinos

Small-scale stable vortices with moment $\hbar/2$ represent the main elementary particles of matter - *neutrinos and antineutrinos*. Neutrinos (spin $-1/2$) and antineutrinos (spin $1/2$) are vortices of the ether medium. Neutrino rotation can be conditionally divided into ring and toroidal (Figure 4 on the left).

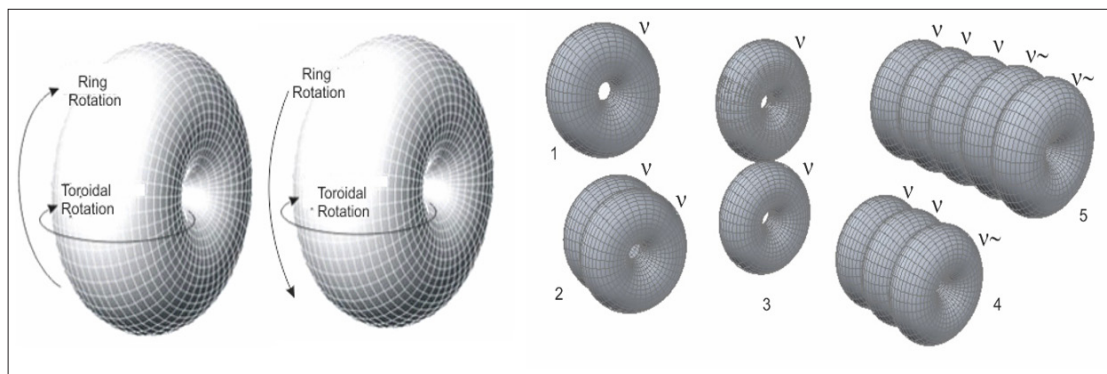


Figure 4: Neutrino and antineutrino ring vortices (left) and the neutrino family:
1 - e-neutrino, 2 - photon, 3 - electron, 4 - μ -neutrino, 5 - τ -neutrino (right)

Ring rotation determines the angular momentum and energy of the neutrino. The angular momentum of toroidal rotation is closed on itself. This hidden internal energy cannot be wasted during interactions with other objects. Toroidal rotation maintains constant translational motion of a free ring vortex of neutrinos at the speed of light in the environment of field gravitons. Rotational motion is fundamental. Only through rotation can large amounts of energy be stored in a small volume. Vortex movement is the main type of movement of elements of the micro and mega world.

Neutrinos and antineutrinos are the only elementary particles. All other particles are composite. They are composed of neutrinos and antineutrinos, which tend to combine into stable pairs - photons (antiphotons) and electrons (positrons) (Figure 3 on the right). Neutrinos also form unstable combinations of three and five rings. We call these particles muon neutrinos and tau neutrinos [3].

The pressure of the ether medium pushes the particles towards each other and keeps the constituent particles from disintegrating. Gravity forms particles, atoms, molecules, planets and stars. During the formation of particles, fragments and bodies, the electromagnetic (relativistic) mass of de Broglie waves is forced out. Therefore, each material body is surrounded by a vortex shell of its “own” field.

The electromagnetic mass of the Earth is equal to the electromagnetic mass from all the neutrinos that make up the Earth. We can estimate the minimum radius of the Grav sphere of the Earth's own field if we set the electromagnetic mass of the Earth equal to $M=6 \cdot 10^{24}$ kg, and the density of the ether medium is equal $\epsilon_0=8.85 \cdot 10^{-12}$ kg/m³:

$$M=(4/3)\cdot\pi\cdot R^3=4.2 R^3,$$

$$R \approx 1.12\cdot 10^8 \text{ km}$$

The Earth's vortex field shell reaches the orbits of Venus and Mars.

Gravity is a push, not a pull

Particles push each other as they move. Repulsive forces are primary. Gravity is an ordinary mechanical force created by the pressure gradient of the ether medium in the vortices that exist around stars, planets and all other bodies. Repulsive forces, not attractive ones, create gravity. The Earth does not "pull" the Moon. The pressure of the external environment pushes the Moon towards the Earth (Figure 5 on the left).

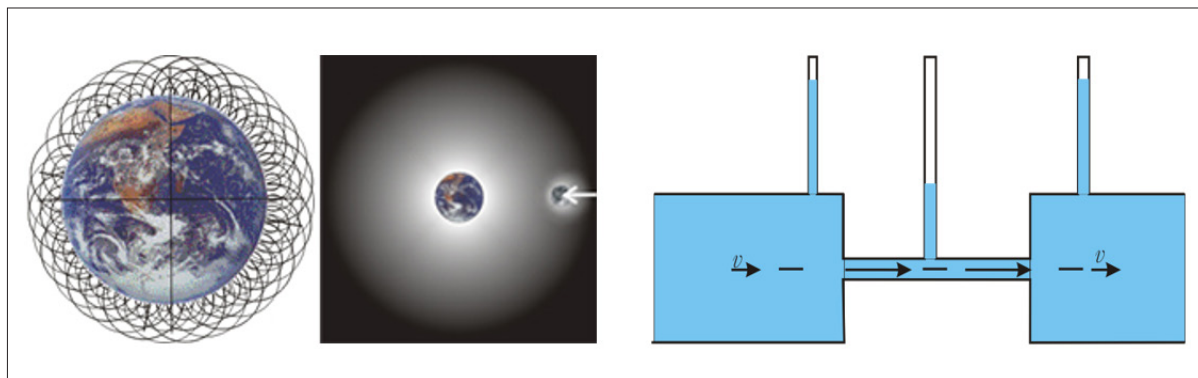


Figure 5: Earth and Moon (left) and Bernoulli's experiment (right)

Normal pressure gradients of the medium arise in zones of vortex disturbances in accordance with Bernoulli's law (Figure 5, right). In Bernoulli's experiment, the pressure in the middle tube is less by the value of the dynamic pressure of the cross-flow.

Figure 6 graphically shows the dependence of normal pressure on the height above the Earth's surface. According to Bernoulli's law, the field pressure p_0 near a body will be the sum of the normal pressure p_n and the tangential pressure of the dynamic flow pressure p_d . The formula: $p_n = p_0 - p_d$ determines the normal pressure. The dynamic pressure of a vortex decreases with height as $1/r$. The gravitational force $f = dp_n/dr$ is directed toward the Earth.

The figure shows a second body (for example, the Moon). If the Moon were far from the other bodies, the upper curve in the figure would represent the pressure in the surrounding region. The superposition of the fields of the Earth and the Moon results in a "dimple" in the resulting p_n curve. The force of gravity on both sides of the Moon is the same and does not depend on whether it is a satellite of the Earth or not.

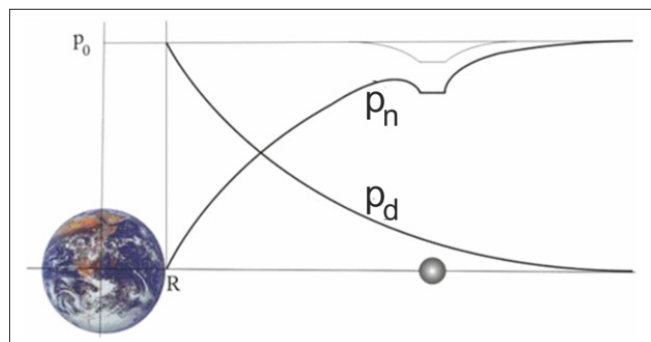


Figure 6: Normal (p_n) and dynamic (p_d) pressures of the environment in the surface layer

During a solar eclipse, the Sun exerts twice the force of gravity on the Moon as the Earth does. However, the Moon does not fly away from the Earth. This paradox would be insoluble if the Moon were floating in a vacuum.

Ether expends energy to attract the Moon

If a rock of mass m falls from a height h , the external environment performs mgh of work. The environment accelerates the meteorite before hitting Earth. The Moon is also continuously "falling" toward Earth. Therefore, the environment expends energy accelerating the Moon. Let's illustrate this with the diagram in Figure 6 on the left. If the Moon were not subject to gravitational forces, it would move tangentially from point A to point B. Imagine that we placed a jet engine on the far side of the Moon, pushing the Moon toward Earth, directing it to point C. The engine's energy is the work of gravitational forces.

Masses m do not interact directly with each other. Instead, electromagnetic (relativistic) masses γm interact, i.e., their field shells (Figure 6, right). An active gravitational mass 1 creates its own vortex flows of field 2 (gravitational field) around itself. The intensity of the flows decreases with radius. A negative radial pressure gradient of the external environment (the Bernoulli effect) arises in the gravitational field.

Passive gravitational mass 4 is also surrounded by a cloud 5 of vortex flows of field 6. The entire volume 5, containing the self-field of passive mass 4, is "pushed" by the external environment toward lower pressures, i.e., toward active mass 1. The buoyant force 7 acts from the external environment—similar to how air bubbles are pushed upward from water by the Archimedes force.

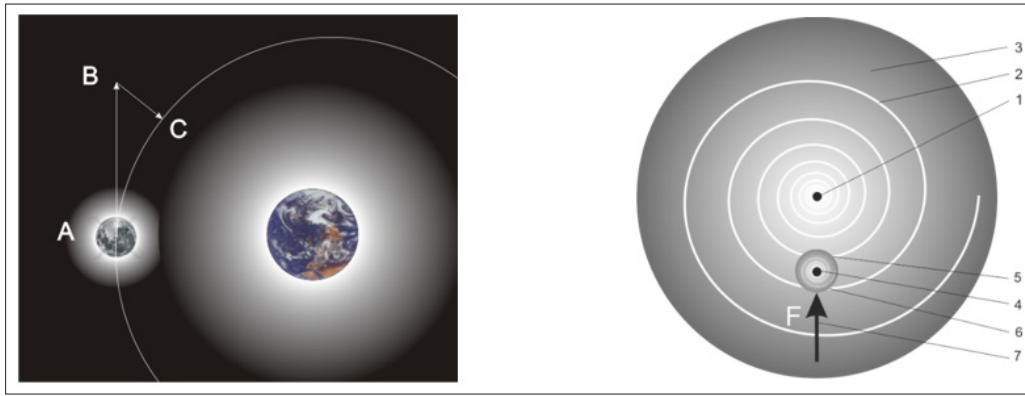


Figure 6: The rotation diagram of the Moon and the interaction of active and passive masses

Mass is not the source of gravity. Masses create vortex flows of their own field flowing around them, the density of which decreases with radius. Therefore, a pressure gradient of the external etheric environment—gravitational force—emerges within these flows. The environment expends energy to attract bodies. The masses themselves do not expend energy to attract.

The Law of Universal Gravitation is a solution to Maxwell's Equations

The emergence of systems manifests itself in the appearance of new properties not possessed by individual elements. De Broglie waves, in the form of vortex magnetic fluxes around massive bodies, create pressure gradients in the etheric medium. In this sense, gravity is an electromagnetic phenomenon. It is currently believed that in electricity we deal with charges, and in gravity, with masses. But this is not entirely true. In electrical and magnetic phenomena, it is not charges that actually move, but rather the masses of gravitons. It is precisely this simple idea that allows us to connect electricity and gravity, reducing electromagnetic phenomena to the mechanical action of a medium with mass [4].

The magnetic flux surrounding the body is an analogue of Newton's gravitational potential. The universal law of gravity must be described by Maxwell's equations. Let us express the gravitational constant G through the solution of Maxwell's equation for a stationary magnetic vortex process:

Here Δ - Laplace operator, c [m/s] - the speed of light, ϵ_0 [F/m] - electric constant, J [A/m²] - streaming vector of electric current density.

Vector potential A at the point (1) outside the body is a standard Newtonian potential of current $J \cdot dV$ at point (2) inside the body:

$$A(1) = -\frac{1}{4\pi\epsilon_0 c^2} \int \frac{J(2)dV(2)}{r_{12}} \left[\frac{J \cdot s^2}{kg \cdot m} \right], \quad (1)$$

where r_{12} — distance between points (1) and (2).

Here we use the system MKS, in which the dimension of charge is [kg/s], and the dimension of the current is [kg/s²]. From this representation, it is clear that all static (to us) processes occur in time, and gravity is a dynamic process. The vector potential is a linear density of momentum on one coulomb or linear density of energy of flow field at one ampere of current in the body.

We take into account the action of electrical and magnetic quantities in one second, i.e. for $1.76 \cdot 10^{11}$ revolutions of a neutrino in an electron (to gain a charge e) and for one more second of the passage of particles (to gain a charge of one pendant). But the gravitational vector potential A_{gr} is the linear density of the angular momentum of the field flow per one revolution of the neutrino in the body. Therefore, to obtain the gravitational vector potential, we must divide the value of the electric vector potential by $(1s \cdot 1s)$.

The rotor of a linear vector A constitutes the stream vector of the magnetic induction B . Forceful action renders only the flow of the magnetic induction B , which moves almost the speed of light. The flow speed of the vector potential A is in the tens of thousands of times smaller. Formula (1) reflects the existence of flow of the electromagnetic field around the charge. Circulation linear vector A in a closed circuit determines the magnetic flux Φ through the loop:

$$\oint_C A \cdot dl = \oint_{S_C} B \cdot dS = \Phi. \quad (2)$$

The usual magnetic field B is a directed flow of gravitons. But the gravitational magnetic field B_{gr} and the gravitational magnetic flux Φ_{gr} at a given point are directed in all directions. At a low density, the actions of counter flows of gravitons add up.

There is the principle of superposition for weak fields. Vector potential of the body mass M is a sum of vector potentials of all neutrino in body, considering neutrino as magnetic dipoles with angular momentum $\hbar/2$. In this case, we again divide the result by 1 [s], taking into account the moment not per second, but per one revolution of the neutrino. Number of neutrinos is $M/(m_e/2)$. We accept mass of neutrino approximately equal to half the electron mass. Recall that the neutrino mass (as well as the photon) expresses itself in energy and transverse inertia. We consider the entire mass of the body concentrated at one point. Then the value r_{12} we can take out from under the integral sign. Then the expression for the linear density of the vector potential (1) we can represent in the form

$$A_{gr} = -\frac{k}{4\pi\epsilon_0 c^2} \cdot \frac{\hbar \times e_r}{r^2} \cdot \frac{M}{m_e} \cdot \gamma \left[\frac{J}{kg \cdot m} \right], \quad (3)$$

Here $k=1$ [s⁻³] and γ is the dimensionless form factor. We will assume that not all neutrino motion is entirely transferred to the field. A certain (intrinsic) part of the motion always remains in the fragment of matter and cannot be transferred outside the fragment. Self-energy can be estimated by comparison with experiment.

The gravitational potential is the value of the magnetic flux. We find it from formula (2) as the circulation of a linear gravitational vector potential (3):

$$\Phi_{gr} = 2\pi r A_{gr} = -\frac{2\pi k}{4\pi\epsilon_0 c^2} \cdot \frac{h}{r} \cdot \frac{M}{m_e} \cdot \gamma = -G \cdot \frac{M}{r} \left[\frac{J}{kg} \right].$$

$$G = \frac{2\pi h k}{4\pi\epsilon_0 c^2 m_e} \cdot \gamma \text{ — gravitational constant,}$$

The vortex gravitational potential (4) is the sum of the M/m_e quanta of the electromagnetic field. The gradient of the gravitational potential will determine the force acting on the unit mass. The mass m will act m times greater force:

$$F = -m \cdot \nabla \Phi_{gr} = -G \cdot \frac{m \cdot M}{r^2} \left[\frac{N \cdot m^2}{kg^2} \frac{kg^2}{m^2} \right].$$

This force acts on the part of the external environment, which does work in the gravitational field. Gravitational constant is not a fundamental constant. The gravitational constant G depends on both the parameters of the electromagnetic field (ϵ_0 , c) and the parameters of the substance (h , m_e):

$$G = \frac{1}{4\pi\epsilon_0 c^2} \cdot \frac{2\pi h k}{m_e} \cdot \gamma = \frac{10^{-7} \cdot 6.6261 \cdot 10^{-34}}{9.1094 \cdot 10^{-31}} \cdot \gamma = 7.274 \cdot 10^{-11} \cdot \gamma \left[\frac{N \cdot m^2}{kg^2} \right].$$

The experimental value of the gravitational constant is $G=6.6738 \cdot 10^{-11} [N \cdot m^2/kg^2]$, so that $\gamma=0.92$. Each neutrino during the formation of fragments gives 92% of its vortex field to the outside of the fragment. The remaining 8% of the flow provide neutrino adhesion inside the body.

Thus, Newton's law of universal gravitation is a solution of Maxwell's equation, as are the laws of Coulomb, Faraday, Ampere and Bio-Savart. The invisible outer shell of the body, filled with vortex flows of the magnetic field, is a gravitational field. This conclusion completes the work of Faraday and Maxwell, Einstein and Kaluza. The "ether-electromagnetic field-matter" system is responsible not only for electricity but also for gravity.

Note also that in Newton's equation, the gravitational potential: $grad \varphi=4\pi\rho$ depends on the mass of the body. In contrast, in Einstein's equation for the metric tensor, the right-hand side contains the stress-energy tensor not of "mass," but of "relativistic mass," i.e., the gravitational field:

$$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}.$$

The gravitational field is created by neutrino de Broglie waves—a quantum phenomenon. Therefore, general relativity is a much more quantum theory than we ever thought. General relativity is connected to quantum mechanics by de Broglie waves. Neutrinos are the agents that cause gravity. Figure 7 shows a diagram of the interaction between the field and matter.

The figure shows the following processes:

1. The formation of neutrino vortices in the etheric medium.
2. The formation of de Broglie waves—attached etheric vortices.
3. The creation of composite particles and bodies with the expulsion of de Broglie waves outward.
4. The formation of the Earth's gravitational field as a sum of de Broglie neutrino waves.
5. The formation of a pressure gradient in the etheric environment around the Earth.

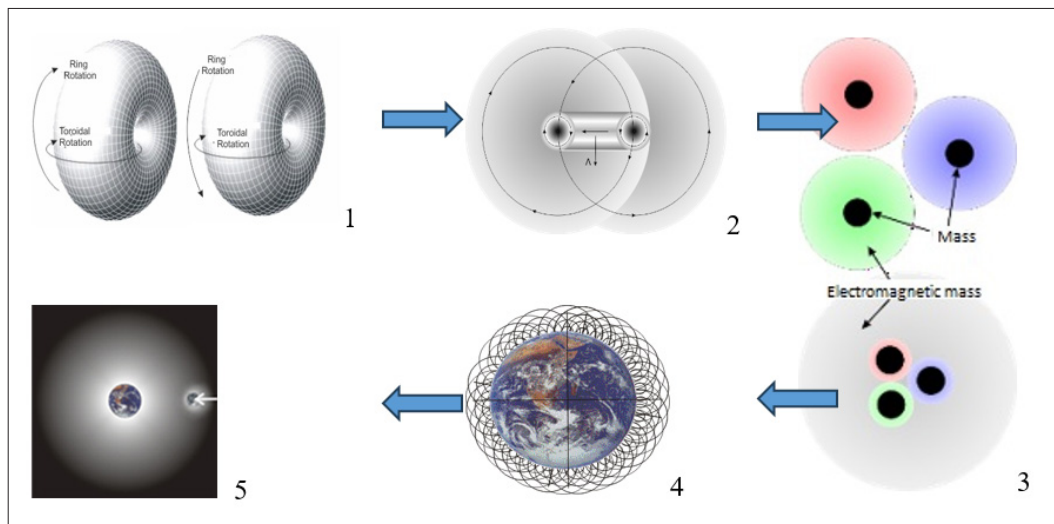


Figure 7: Diagram of the origin of gravity in the ether medium

The micro, macro, and mega worlds are interconnected elements of a complex system. The interaction of these elements gives rise to all the phenomena of the world around us.

Modification of the Cavendish experiment

Explaining gravity as a "curvature of space" precludes even the possibility of gravity control. Understanding the nature of gravity as an electromagnetic phenomenon makes it possible to outline new technologies. Figure 8 on the left shows a diagram of the Cavendish device. The intrinsic field of a passive mass "senses" only the surrounding external field. Consequently, bodies will be pushed by the pressure of the external environment ("attracted") toward any source of a vortex field simulating an active mass.

To confirm this idea of "electromagnetic gravity," experiments were conducted to observe the effect of attraction between bodies using electromagnetic mass simulators. A diagram of the setup is shown in Figure 8 on the right.

The torsion balance comprises a vertical suspension 1 in the form of a thread of 0.25 mm steel wire, 170 cm long, and a horizontal rod 2, 34 cm long. Three rod variants were tested: a 6 mm rod made of dry wood, a 2 mm magnetic steel rod, and a 10 mm copper rod. The balance was housed in a transparent casing 3, mounted on a base 4. A mass simulator 5 was placed inside the casing. It was also tested in two variants: in the form of a mesh and in the form of a ball.

The "Grid" simulator, measuring 150 x 150 mm, simulated conditions in a local region of near-Earth space. It was constructed as a grid of woven twin-strand plastic-insulated wire, shorted at one end. The wires at the other end were connected to a power supply. The "Ball" simulator, 150 mm in diameter, simulated the conditions of vortex field generation by the Earth. It was also constructed from twin-strand plastic-insulated wire, shorted at one end. The wires at the other end were connected to a power supply. The 25-meter-long wire was randomly wound into a ball, like a ball of wool. The experiments were conducted with the simulators powered by 50 Hz alternating voltage, as well as with single- and full-wave rectification. The current through the simulators was 2.5–3 A.

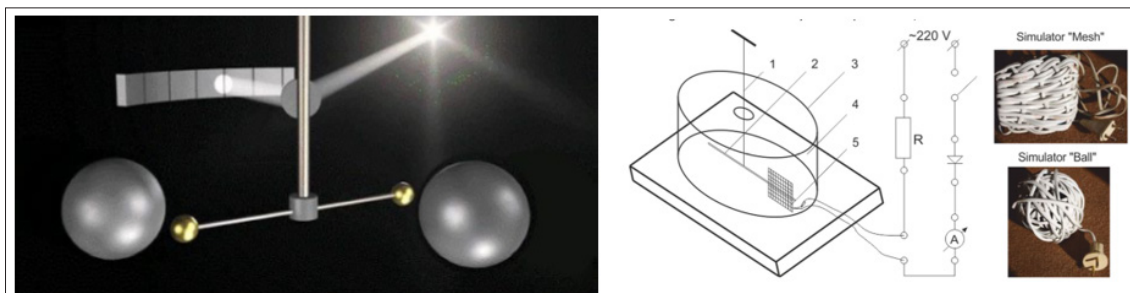


Figure 8: Schematic diagram of the Cavendish setup and experiment with mass simulators

The experimental procedure consisted of the following steps. After the natural vibrations of the rod 2 had damped, the simulator 5 approached one of its ends at a distance of 2–4 mm by rotating the base 4. The plane of rotation of the rod passed at half the height of the simulator. When the simulator was turned on, rod 2 began to rotate until it rested against the simulator. After the power was turned off, the rod moved away from the simulator and began to oscillate.

Additionally, an attraction effect was obtained by simulating a gravitational field with high-frequency currents. The simulator was an electrode in the form of a piece of copper wire 2 mm, 15 cm long, connected through a matching cable to the output of the high-frequency generator. A stable effect of attraction of all variants of rods to the electrode was observed at a generator output voltage of 1 V in the frequency range 30 kHz - 10 MHz.

Conclusion

In the 19th century, Michael Faraday and James Maxwell proposed the idea that it is not particles and bodies themselves, but the space between them, filled with ether, that organizes and sustains all physical phenomena. In the last century, Theodor Kaluza demonstrated that in the five-dimensional Riemannian geometry of General Relativity, a scalar electromagnetic field organizes gravity. Albert Einstein was a staunch proponent of ether throughout his life.

Louis de Broglie further developed the idea of a universal medium by proposing the concept of wave-particle duality. All particles rotate in the ether. Rotation entrains the boundary layer of ether into a stationary de Broglie wave with the same phase and frequency. The "electromagnetic mass" of the de Broglie ether wave acts as the "mass" of the body in all interactions. When particles combine into bodies, de Broglie waves are forced outward and merge into a vortex-like gravitational field. The intensity of the vortices decreases with radius. According to the Bernoulli effect,

a pressure gradient arises in the gravitational field, creating the external etheric environment—gravitational force.

The perfection of nature is revealed in the simplicity of its solutions. Rotation and pressure are the two tools with which the ether-matter system organizes the world. Gravity is an emergent property of the system, the result of the interaction between ether and matter. This triggers the mechanism of action. Material bodies merely create the conditions for the manifestation of etheric forces. The bodies themselves do not expend their energy on attraction.

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