GRAVITATION

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The earlier unknown property of right – handed spiral polarization of gravitational waves, determining an essence of gravitational interaction between skew fields is experimentally established now. In the experiment the length of a gravitational wave λ_{gr} is determined, the presence of the moments ΔM_{ver} appearing during gravitational is revealed, the relation of gravitation between systems from their own, natural angular velocity is determined. As a result of the analysis of experimental data the basis properties (weight, sizes etc) of elementary particles (α,β – bricon) radiating gravitational waves and responsible for the presence of gravitation at substance are determined. The new hot cosmological model of the Universe is offered.

The mankind was interested in the gear of gravitational interactions from the time of Aristotle but seriously this problem was put when I.Newton formulated the law of universal gravitation on the basis of his generalization the laws of planets motion by Kepler. The bibliographers of the great scientist assert that the similar problem was set to Newton by the adherents of his famous equations but instead of the answer Newton noted evasively that its quite enough that with the help of the law of universal gravitation, offered by him, it became possible to describe this phenomenon quantitatively. It's known that the mankind is never content with reached and it (especially in the field of science) is never enough. But it's rather strange that after I.Newton the problem about the gear of gravitational interactions wasn't raised by his adherents. Especially it applies to Einstein's GTR where the presence of hypothetical gravitational field there is no physical characteristic of gravitational waves at all. The notion of force is considered excessive in this theory and the motion of all skew fields is determined by the curvature of space aroused by these forces. Thus in Einstein's GTR nothing is said about the gear of gravitational interactions as well as in I.Newton's "Beginnings". To explain the gear of gravitational interaction between two skew fields the author of this work puts forward (as working) hypothesis that gravitational waves should be spirally polarized, because the meeting of such spirally polarized train with an examined object will transmit impulse and a moment of this impulse without fail. Besides, not depending from the direction of the twisting of spirals, polarized train of a gravitational wave spreading in space along the like which connects the centres of interaction systems will penetrate into an examined system (like a screw) and transmit an impulse to it along the line to the side of the system which has radiated this train and the moment of an impulse relatively this line, coinciding with the direction of twisting of a spiral at a radiating train of gravitational waves of the field. Such statement demanded a necessary experimental checking, which the author had to divide into two successive stages. At the first stage (A) the presence of spiral polarization at a gravitational wave was determined, the value of the moment ΔM_{ver} transmitted by a gravitational wave to substance of the receiver (receiving system) was evaluated also the length of a gravitational wave λ_{gr} and the other evaluations relating to the detected property were made. At the second stage (B) the impulse, intrinsic to a gravitational wave was subjected to the qualitative and quantitative analysis and the gear of gravitation as a result of a jet response arising in the substance of the receiver from penetration into it a train of a gravitational wave, moving in space, was determined.

A. The first stage of the experimental checking was carried out on the installation, the main body of which was a torsional pendulum like a disc having hanged at the centre of gravity on a metal thread inside the vacuum chamber ($p=2\cdot10^{-4}$ Torr), having a rotating device varying a position of an equilibrium of a pendulum. The chamber and the pendulum are grounded, the

installation is placed to the passive foam plastic thermostat (λ=0,037 kkal / m· h·degree) and was screened by a magnetic screen. The oscillations of the pendulum were registered accordingly to the movement of an optical spot on a rotated barrel with a film FT-41P.

Experience 1.

If we admit that the waves of a gravitational field are really spirally polarized (elliptical or circular) then trains of similar waves radiated by the Earth will be swallowed up by the body of the pendulum and the impulse and the moment of this impulse, which these waves have, will be transmitted to it. Thus the moment of the impulse immersed by the pendulum (the impulse is perceived though the thread by the body of the installation and "reduced" by it) will impart it a small moment rotation ΔM_{ver} coinciding on a direction with a direction of twisting of spirals which trains of waves are radiated by the Earth. Depending on the coincidence or not coincidence of this moment (ΔM_{ver}) with the direction of torsional oscillations of the pendulum, the oscillation of the latter will be additionally either accelerated or slowed down. Accordingly to this, the oscillations of the pendulum to one side will have different time that the oscillations to the other side. The experience 1 has confirmed this supposition. It was carried out for many times and a half period $\leftarrow S_{0\text{-}1}$ was always more than a half period $S_{1\text{-}2}\rightarrow$. The main correlations and definitions of the theory of torsional oscillations of the pendulum were taken from [11]. With the registration of resistance of residual air and friction in the thread of the amplitude X, relevant to the twisting of the pendulum from point O, equilibrium an angle φ will be $X = (L+\Delta_{0\text{-}2}) / 2$; $tg\varphi = X/ A$; $\varphi_{rad} = \varphi^0 \cdot \pi /180$. From the analysis of *fig 1* follows that the chart of oscillations keeps the full symmetry, because the axis zero of the point of the pendulum, relevant to its condition of rest with completely untwisted thread (0^0- 0^0) is shifted to the right (0-0) on the value of the angle $\Delta\varphi$. It follows from this that the amplitude of oscillations φ for half periods $\leftarrow S_{0\text{-}1}$ and $S_{1\text{-}2}\rightarrow$ is identical, φ = const. The points a_0^0, a_1^0, a_2^0 etc correspond to oscillations of the pendulum "with the absence of moment ΔM_{ver}".

Now we determine the value of the half period $\leftarrow S_{0\text{-}1} = b_{0\text{-}1} / v_{pellicle}$ sec;

We determine the moment of twisting, relevant to the half period $\leftarrow S_{0\text{-}1}$, $M_{0\text{-}1} = I\cdot\varepsilon = I\cdot\varphi_{rad} / (S_{0\text{-}1} /2)^2$ N· m.

We determine the value of the half period $S_{1\text{-}2}\rightarrow = b_{1\text{-}2} / v_{pellicle}$ sec;

We determine the moment of twisting relevant to the half $S_{1\text{-}2}\rightarrow$, $M_{1\text{-}2} = I\cdot\varphi_{rad} /(S_{1\text{-}2} /2)^2$ N·m. Now we calculate the difference of the moments $M_{general}=M_{1\text{-}2}-M_{0\text{-}1}$.

Let's determine the complementary moment of twisting $\Delta M_{ver} = M_{general} /2$.

The value ΔM_{ver} can also be determined (truth with much smaller accuracy) on a position of a light reflection of a light beam on a screen captured at the disc removed and established on an axis, halted pendulum. In the condition of "immobility" of a mechanical oscillator the light reflection of a light beam must stop at a mark of an axis 0^0- 0^0, the position of which is determined for every experience by the theory of the value ($\Delta M_{ver} = 0$) $-\Delta\varphi$. It's know, that any running plane wave not depending from nature, polarized elliptical (circular) necessarily bears with itself (and transfer to the substance of the receiver) not only energy W and impulse P, but the moment of impulse too. Therefore the discovery of the moment of twisting (ΔM_{ver}) in the experience 1 for gravitational interactions is equal to the proof of detection of spiral polarization at gravitational waves. The value of the angle $\Delta\varphi$ is determined from the differential equation of torsional oscillations $\Delta\varphi_{ver} = (\Delta M_{ver}\cdot\ell) / (G\cdot I_p)$ [12]; $I_p = \pi d^4 / 32$ m^4 [8]; $p_{ver} = \Delta M_{ver} / R_{dick\ mid}$; $\Delta\varphi_{ver} = \Delta M_{ver}/ \beta$; $\beta = G\cdot I_p / \ell$ = const (stationary value of torsion of the thread is determined experimentally) [11]. Let's calculate the value p_{ver}, relevant to ΔM_{ver}. The values $S_{0\text{-}1}$, $S_{1\text{-}2}$ are averaged from the analysis of three, in itself an impulse and the moment of impulse simultaneously, it would be reasonable to assume, that arising at interacting systems the moments of twisting are connected between themselves by following one another periods of the chart of torsional oscillations of a pendulum. The data of the experience and calculated values

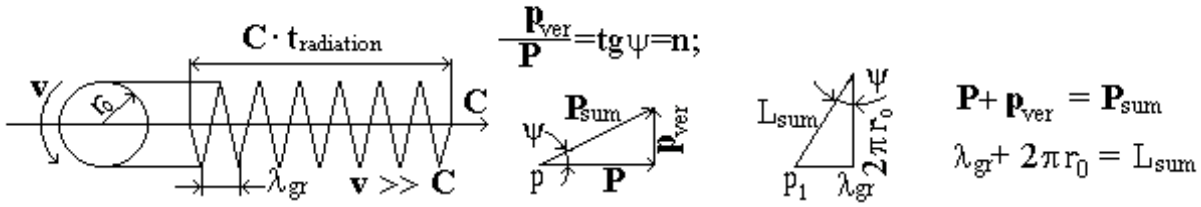
were entered into the table. It's interesting to compare the value of obtained p_{ver}, stipulated by the spiral polarization of gravitational waves with gravity $P = m \cdot g$ (N); $n=p_{ver}/ P = 0{,}4253 \cdot 10^{-8}$. As a running plane spirally polarized gravitational wave bears the same dependence, derived by I.Newton as the law of universal gravitation $P = Gm_1m_2 / R^2$. As the distance between the pendulum and the centre of the Earth is constant, that changing weight of a torsional pendulum in the experience 1 and comparing the obtained values ΔM_{ver} among themselves we can experimentally confirm the fact that the change of the moment of a torque at the interaction is proportional to the values of interacting weights, $M = GnR_{\text{disk mean}}\, m\, m_E /a^2$, where m_E– the weight of the Earth, m – the weight of the pendulum and ″a″- the distance between the centre of the Earth and the pendulum. In generel comparative analysis $\Delta M'_{ver}$ (Fig. 2) with similar M for planets has shown, what always $M \geq \Delta M'_{ver}$, as $\Delta M'_{ver}$ allows (factor ε) outside influence on value of M of gravitational disturbances (presence of satellites for planets, influencing of planets against each other, their form, weight, deleting from the Sun and from each other etc.). As to M, his the equation should look like this: $M_{rot} = \pm Gn \cdot (m_s m_p r_{equat} / R^2) \cdot \varepsilon$ (N·m); where m_s, m_p – the weight of the Sun and the planet accordingly; $r_{equat} = R_{equat} \cdot I$; $I \approx 0{,}4 \div 0{,}2$ [7] and characterizes density change of a planet with depth. The direction of rotation of the planet M_{rot} corresponds to the sign at cos θ; the angle θ determines the slope of the equator to the orbit plane of the planet.[7] That's why the calculation of dynamics of space objects is rather difficult and approximate even in view of reduced above. The definition of the value p_{ver} will allow to define the angle ψ, ψ' (tgψ = n) of lifting of a circular line at a spirally polarized (from the analysis of the charts like *fig.1* – these are waves with right – handed spiral polarization) gravitational wave (similarity to the angle of lifting of the circular helix of a screw with a right – handed thread) and to determine the length of the gravitational wave λ_{gr}.

I. In conformity with the similarity of triangles with poles p and p_1 we have:

1). Let 's define the linear speed of rotation of the train **v**. Let's allow, that $\mathbf{V}_{gr} = \mathbf{C}$. Then $v = 2\pi r_0 / t_{rot}$; $t_{rot} = 2\pi r_o / v$; $t_{rot} = \lambda_{gr} / C$; $2\pi r_0 / v = \lambda_{gr} / C$; $2\pi r_0 / v\lambda_{gr} = 1/ C$; $\lambda_{gr} / 2\pi r_0 = n$; $r_0 / \lambda_{gr} = 1 / 2\pi n$; $2\pi/ v2\pi n = 1 /C$; $v = C / n$. Now we define the number of gravitational waves in a train N (number of spirals). $L_{spiral} \approx 2\pi r_0 N$; $L_{train} = \lambda_{gr} N$; $N = 2\pi r_0 / \lambda_{gr}$. Similarly, $N = v/C$, but $v/ C = 1/n$. Finally $N = 1/ n$. Let's define the length of a gravitational wave λ_{gr}. $N = L_{train} /\lambda_{gr}$; $L_{train}/ \lambda_{gr} = 1/ n$; $L_{train} = C\, t_{radiation}$; $n = 0{,}4253 \cdot 10^{-8}$; $\lambda_{gr} = L_{train}\, n = C\, t_{radiation}$. Let's define the radius of a spiral with a train r_0. The gravitational interaction between m_1 and m_2 will be ensured at $r_0 \leq 0{,}5 \cdot 10^{-15}$ m, - commensurable with radius of fundamental particles. Then $\lambda_{gr} = 2\pi r_0 n = 1{,}33 \cdot 10^{-23}$m. Accordingly $t_{radiation} = \lambda_{gr} / Cn = 1{,}04 \cdot 10^{-23}$ sec. $\nu_{train} = v / 2\pi r_0 = 2{,}25 \cdot 10^{31}$ sec^{-1} $L_{spiral} \approx 7{,}4 \cdot 10^{-7}$ m. ($h\nu = 0{,}5mV^2 + 0{,}5I_z\omega^2$, at $r_0 = 0{,}5 \cdot 10^{-15}$ m , $0{,}5mV^2 \ll 0{,}5I_z\omega^2$ and $m_{train} = 2h\nu / r_0^2\, \omega^2 = 6 \cdot 10^{-36}$ κg. The gravitation is provided at $\rho_{matter} \leq \rho_{train}$. Then we take $\rho_{train} \approx 1{,}0 \cdot 10^{16}$ g · cm$^{-3} \approx \rho_{of\ black\ hole}$ and we obtain $d_{L\ spiral} = 0{,}1\lambda_{gr} \approx 1 \cdot 10^{-24}$m, $y_{spiral\ train} \approx 5{,}8 \cdot 10^{-55}$ m^3).

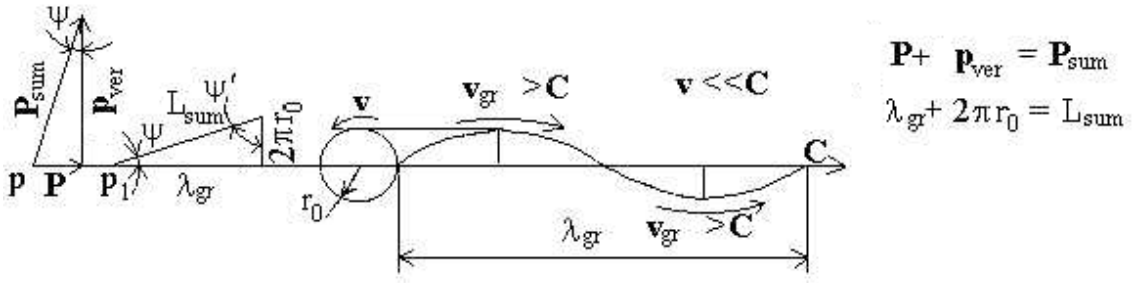
As **v** >> **C** (model submission of a spin [12]), a gravitational wave should be radiated by a spin of a particle (At transition from an excited level $r = \lambda_{gr} /2\pi$ in a ground state r =0,ℓ =0), because phase velocity can be somehow high in comparison with **C** [3], but the orbital velocity of a particle (if certainly STR is fair) must be always less than the velocity of light. (Resonance 1:1)

2). Let 's define the characteristics of the particle, radiating this wave λ_{gr}. It's obvious that this particle must be completely stable and really elementary and as this particle wasn't known till now, let's call it α -bricon (b_α). For a balanced radiation of gravitational waves by material, spin α - bricon must be ½ħ, because in this case, accordingly to Pauli's principle of prohibition there can be not more than two α – bricons (2 degenerate levels) in different quantum conditions on one energy level and their simultaneous radiation isn't conveyed by any jet response. (↑↓)_ Let 's define the radius r_α- bricon. The radius should be equal to the spiral of a train, (on conditions of radiation $\nu_{train} = \nu_\alpha$, $\mathbf{v} = \mathbf{v}_\alpha$), and the radiation along a diameter of a particle less difficult ($\mathbf{v} \rightarrow$max.). Let's take $r_\alpha = r_0 = 0{,}5 \cdot 10^{-15}$ m. Now we define the mass m_α - bricon. From the equation $L_S =$



(½) ħ = $m_0$vr [13] m_α = ħ/ 2vr_α = 1,5 · 10^{-36} кg (0,84143 e.v). Now we'll define density ρ_α and frequency of rotation ν_α. $\rho_p = m_p/l_p^3$ [4]; $\rho_\alpha = m_\alpha / r_\alpha^3 = 1, 2\cdot10^7$ g · cm^{-3}. $\nu_\alpha = \nu_{train} = 2, 25\cdot10^{31}$ sec^{-1}. From this we can see, that b_α has smaller weight than any elementary (known) particle so it can be a constituent (further not separable) part of any elementary particle, providing it with gravitational and gravitation-strong interaction with all adjacent particles by means of a radiated train of a gravitational wave. In this sense b_α reminds a position of quarks (partons) inside hadrons.[9] Quarks are fundamental particles with a spin ½ħ and their (hadrons) ground state corresponds to the orbital moment ℓ=0. It is possible with a sufficient confidence figure to assume, as basic energy state b_α at a spin J= ½ħ also there corresponds the orbital moment ℓ=0, as the sole energy level, which b_α (b_β-look 2) can occupy in an excited state, not contradicting STR(2 b_α ↑↓, $\sum J$=0), (if certainly STR is fair), corresponds $2\pi r = \lambda_{gr}$, ($V_{gr} \approx 2,992 \cdot 10^8$ m·sec^{-1}). It is possible also to suspect, that b_α - beaming gravity waves, at $\rho_\alpha << 10^{14}$ g · cm^{-3}- the nuclear densities, are arranged in high layers of a stratosphere of a fundamental particle. It's known, that for example, "a dark halo" of a galaxy (Galaxy of galaxies) contains weight in 10 times more that sidereal component and basically consists of neutrino. Neutrino has an ability to attract so it must comprise α - bricons in it.

II. However, accordingly to the modern notions in cosmology in a hot model of the Universe before its expansion there could exist superdense skew bodies with completely different than at



α - bricons properties. Let's analyze this possibility. Accordingly to the similarity of triangles with poles in p and p_1 we have: P / p_{ver} = $2\pi r_0$ / λ_{gr} = tgψ =n ; ψ′- the angle of lifting.

1). Let 's define the linear velocity of the rotation of a train **v**. Let's allow, that $\mathbf{V}_{gr}$ = **C**. Then T_{rot} = $2\pi r_0$ / v; t_{rot} = λ_{gr} /C; $2\pi r_0$ / v= λ_{gr} / C; $2\pi r_0$ / λ_{gr} = v /C. Let's substitute $2\pi r_0$ / λ_{gr}=n ; n = v / C; v = n C. Now we define the number of gravitational waves in a train N (the number of spirals). Apparently, that λ_{gr}N and $2\pi r_0$N will pass simultaneously (for $t_{radiation}$). N = λ_{gr} / $2\pi r_0$ = C / v = 1 / n; N = ctg ψ. v_{gr}= C/ cos ψ ≈C. Let's define the length of a gravitational wave λ_{gr}. L_{train} / λ_{gr} = N; N = 1 / n; L_{train} / λ_{gr} = 1 / n; L_{train} = C $t_{radiation}$; λ_{gr} = L_{train} n = C $t_{radiation}$ n. Let's define the radius of a spiral of a train r_0. $2\pi r_0$ / λ_{gr} = n; r_0 = λ_{gr} n /2π = $9\cdot10^{-33}$ m. As C = λ·ν =const λ = $1,33\cdot10^{-23}$ m , $t_{radiation}$ =λ_{gr} /C n=$1,04\cdot10^{-23}$ sec, ν_{train} = v / $2\pi r_0$ = $2,25\cdot10^{31}$ sec^{-1}, $L_{spiral\ train} \approx \lambda_{gr} \cdot N \approx L_{train}$, $L_{train} \approx 3,127\cdot10^{-15}$ m. As the particles b_α , b_β have one energy level $2\pi r = \lambda_{gr}$ ($V_{gr} \approx 2,992 \cdot 10^8$ m · sec^{-1}),that $t_{radiation}$= const, λ_{gr} = const, ν = const, N = const. (hν=$0,5mV^2+0,5I_z\omega^2$, at r_0 =$9\cdot10^{-33}$ m, $0,5mV^2 \gg 0,5I_z\omega^2$ and $m_{train} = 2h\nu_{цуга} / V^2 = 3,31\cdot10^{-19}$ кg, let's accept $d_{Lspiral\ train} \leq 0,1\lambda_{gr} \leq 1\cdot$

10^{-24}m, $y_{spiral\ train} \approx 2{,}45\cdot10^{-63}$ m ^{3}, $\rho_{train} \approx m_{train} / y_{spiral\ train} \approx 1{,}35\cdot10^{41}$g ·cm^{-3}). The gravitation is provided at $\rho_{matter} \leq \rho_{train}$.

2). Let's define the characteristic of the particle, radiating this wave λ_{gr}. It's possible to suppose that these particles are formed and exist in material, being in a condition close to a density $\rho \leq \rho_{critical} \approx 1{,}35\cdot10^{41}$ g·cm^{-3}, let's call these particles β - bricons (b_β). It's obvious that spin β of bricon must be ½ħ (similarly for b_α) to exclude a jet response while they radiate gravitational waves (λ_{gr}). According to [9] the density of substance b_β must be rather great and sizes must be $\approx 10^{-33}$ cm, so gravitational gravity can be a factor which determines a steady existence of these material formations!? Let's define the radius β - bricons r_β. Logically the radius r_β must be equal to the r_0 of a spiral of a train because the radiation along a diameter of a particle must be less difficult (max. velocity of rotation etc). Let's take $r_\beta = r_0 \approx 9\cdot10^{-33}$ m, $\mathbf{v}_\beta = \mathbf{v}$. We'll define weight of β - bricon m_β. $m_\beta = \hbar / 2vr_\beta = \hbar / 2Cnr_\beta = 4{,}6\cdot10^{-3}$ кg. Let's define the density and frequency of rotation β - bricon. $\rho_\beta = m_\beta / r_\beta^3 = 6{,}3\cdot10^{90}$ g·cm^{-3}; $\nu_\beta = v / 2\pi r_0 = 2{,}25\cdot10^{31}$ sec^{-1}. From the result of the analysis of the carried out experiments α and β bricons it's possible to conclude: $h\nu = 0{,}5I_z\omega^2 + 0{,}5mC^2$ and at contraction of the Universe $r_{\alpha\ train} = 0{,}5\cdot10^{-15}$ m, $\rightarrow r_{\beta\ train} = 9\cdot10^{-33}$ m and $m_{\alpha 0\ train} = 2h\nu / r_0^2\omega^2 = 6\cdot10^{-36}$ кg $\rightarrow m_{\beta 0\ train} = 2\ h\nu / C^2 = 3{,}33\cdot10^{-19}$ кg. Let's define $r_{train\ critic}$ for density $\rho_{train\ critic} \approx 1{,}35\cdot10^{44}$ кg ·m^{-3}. At $0{,}5mC^2 >> 0{,}5I_z\omega^2$ $m_{train} = 2\ h\nu / C^2 = 3{,}33\cdot10^{-19}$ кg = const, $L_{train} \approx L_{spiral\ train} \approx \lambda_{gr} \cdot N \approx 3{,}127\cdot10^{-15}$ m = const, $\rho_{train\ critic} \approx 1{,}35\cdot10^{44}$ кg ·m^{-3}= const, $r_{train\ critic} = L_{spiral\ train} / 2\pi N = 2{,}1\cdot10^{-24}$ m. Accordingly to the offered by the author interpretation of the gear of gravitation, it (gravitation) can't be realized at $R\rightarrow0$, because at $R<<\lambda_{gr}$ a practical throw spiral of a train of the material doesn't happen. That's why the density of the Universe $\rho_{critical} \approx 1{,}35\cdot10^{41}$ g · cm^{-3} is provided not by a gravitation in center, and contraction by gravitation of a core by its outer layers, having less density and containing particles with $R > \lambda_{gr}$.

The stage of inflation of the Universe till time 10^{-35}sec from "the beginning" which has been offered recently by the theory is some "inflationary period" during which the pressure was negative [4], confirms the absence of gravitation close of density $1{,}35\cdot10^{41}$ g·cm^{-3}. The repulsive forces in caused by the fact that having been radiated in the centre of a gravitational wave, without creating gravitation, couldn't "squeeze" outside [3] because of the terrible density in the centre so they created pressure, directional from the centre and have caused an explosion of the Universe. The offered by the author interpretation of the gear in gravitation "saves" Newton's theory from appearing of infinitely large forces of gravitation at $R\rightarrow0$, i.e. at Planck's values of the length ($l_p \approx 1{,}6\cdot10^{-33}$cm) and weight ($m_p \approx 2{,}2\cdot10^{-5}$ g). In this case the Newton's law of gravitation should also be written in the form $P=(G\cdot m_1 \cdot m_2 / R^2) \cdot (1-\sqrt{\rho_{m1} \cdot \rho_{m2} / \rho_p^2}\ )$, where $\rho_{Critical}$, $tg\psi' = \lambda_{gr} / 2\pi \cdot l_p = 1.3236\cdot10^{11}$, $\psi' \approx 90°$, $P \approx 0$. In view of above-stated, in β - bricon with $r_\beta \approx 9\cdot10^{-33}$ m does not arise, pursuant to the proposals of the theory about v.e.p, keeping it is stable in any conditions, monstrous gravity and it at the extension of the Universe for 0,01 sec from "the beginning" is intensively disintegrated ($P \approx 0$, $\Delta M_{ver} \rightarrow \infty$, $P_i = m_\beta \cdot \omega_\beta^2 \cdot r_\beta$ N), giving "life" to any following elementary particles and the evolution of the Universe in" time". In view of the fact that hypothetical graviton has a spin 2ħ [9], the detection in the experience 1 at gravitational interactions of this moment is equal to the detection of gravitational waves. As is known, the detection of gravitational radiations with the help of gravitational antennas hasn't succeeded yet, because it is necessary to fix a relative lengthening of an extended skew field with accuracy $10^{-19} \div 10^{-21}$ but gravitational interaction with substance is too little. To be sure in the reliability of the experience 1 it is necessary to establish what other forces could act on a torsional pendulum with the purpose of its displacement.

1. The resistance of the rest air and friction in a thread were taken into consideration by the introduction of value $\Delta_{0\text{-}2}$. The influence of directional motion of the rest air inside the chamber in connection with the presence of a lapse rate of temperature at opposite walls must be comparatively little, because a surface of the disc is symmetric and pressure on it at both sides of the thread creates an identical moment on value, $\Delta S \approx 0$, then $\Delta\varphi_{rad.metr.} = 0$. [2]

2. The most important reason, permitting to doubt in the reliability of the experience 1 is that in all earlier experiments with a torsional pendulum ΔM_{ver} weren't registered. Let's fix on more precise of them "The checking of equivalence of the inert and gravitational weights" [2]. Accordingly to the described technique of the realization of the experiments [2] the successive values of natural oscillations of a pendulum were averaged and then the changes of the amplitude of the pendulum were registered for harmonicses with the period of 24 hours. As it follows from the analysis of the figure 1 that oscillations keep a full symmetry concerning an axis 0 – 0, no changes of the amplitude (the angle $\Delta\varphi$ of displacement of axis 0^0-0^0 zero of point) can be revealed on the chart. Certainly it would be possible to measure (on duration) the value of half periods $\leftarrow S_{0\text{-}1}$ and $S_{1\text{-}2}\rightarrow$, how it was done in the offered work, but such measurements weren't taken place in [2]. These measurements weren't taken place in other cases of the usage of a torsional pendulum and extremely for this reason they weren't fixed.

3. The influence of a magnetic field of the Earth was reduced to a minimum, because a pendulum was under a magnetic screen and both were properly grounded, all mobile details (except for a thread) were produced from non – magnetic materials (copper, aluminum), that's why $\Delta\varphi_{mag\ 3} \approx 0{,}165\cdot10^{-8}$ rad. (see designation [2]).

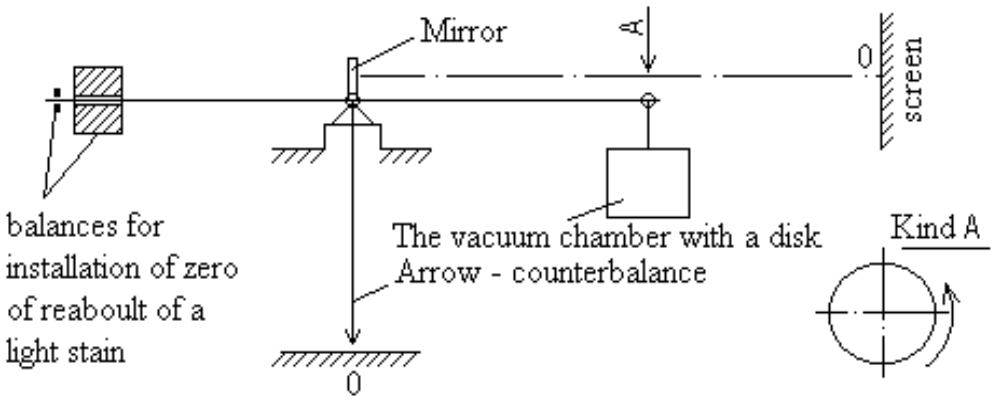
4. The influence of the light pressure on the twisting of a thread of a pendulum can be neglected, because $\Delta\varphi_{\ lig\ 2} = 0{,}15\times10^{-16}$ rad $<<\Delta\varphi_{\ ver\ 2}$ rad, see [2].

5. The influence of gravitational effects on a pendulum can't have an expressed direction and it's very little because a pendulum is a thin symmetrical disc of a homogeneous structure. During these experiments nobody approached the pendulum. So it is possible to neglect an indirect gravitational effect. $\Delta\varphi_{grav} \approx 0{,}53\times10^{-11}$ rad; $M = 5\cdot10^5$ gr ; $\Delta\ell = 0{,}005$ cm ; $\ell = 2\times10^2$ cm; (see des.[2]).

B. For the unequivocal interpretation of the gear of gravitational response (impulse) from " screwing" transmitted material (like the moment of the impulse) diving through it by the train of a gravitational wave the second phase of an experimental checking was carried out on the installation where a quick rotated disc of a homogeneous structure was the main part. The disc was carefully balanced and settled on the vertical (in relation to the Earth) rotation axis inside of the vacuum chamber, pressure was $2\cdot10^{-4}$ Torr in it. The vacuum chamber was screened by a magnetic screen and hung on analytical balance furnished for increasing of accuracy of a scale reading at small angles of deviation of a rocker arm with a projection dial. For counteraction to vibrations there are hinges of ball-bearings.

Experience 2.

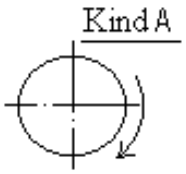
The essence of the second experience (like the third one) was following. If we admit that the gravity of the disc to the Earth is the result of a gravitational response from the infiltration into substance of a disc of gravitational waves of spiral polarization, radiating by the Earth, in this case the weight of the disc must depend on the direction of its rotation with regard to the Earth. In the case of coincidence of the direction of the disc rotation with the direction of twisting of a spiral at waves, radiating by the Earth its weight must decrease, because the linear velocity of a spin of a spiral of a train concerning the substance of the disc at " screwing " decreases (the value of a response decreases) but at rotation of the disc in the direction opposite to the direction of twisting of spirals of trains, radiated by the Earth of gravitational waves its weight must increase, because the velocity of a slip of a train with regard to the substance of the disc increases, increasing a jet response. If the supposition about a gear of gravitational interactions, expressed by the author are true, the change of weight of a disc in this or that side must be proportionally to the change of linear or angle velocity of disc rotation and according to the absolute value it must be (at different equal conditions) proportional to the value of weight of a disc, its change. To prove the expressed suppositions about gravitational nature of a phenomenon of a change of the weight of a disc when it rotated the experience 2 was carried out with the step change of the weight of a disc m (in the party of increase from m_1 up to m_3) and a step change of angle velocity



of disc rotation ω for every value m. To realize this experience the zero state of an optical spot the projection dial was settled with the help of balances (vertical state of an arrow – counterbalance) then the angle velocity of the disc rotation was stepped changed (but rather smoothly) to the side of increase from ω_1 to ω_3, further decreasing from ω_3 up to ω_1, with the indication of the position of a light spot on a projection dial and average of outcomes. The mass of the arrow was chosen so that to supply with the active counterbalance to any turn of a beam of scales with an attached vacuum chamber in the whole range of expected values ΔP_{ver}.

Experience 3.

Experience 3 differs from experience 2 only by the direction of a disc concerning the Earth and by a mark at values ΔP_{ver} (+). It's necessary to note the change of a direction of a disc rotation in experience 3 was carried out not with the help of reversing of the electromotor of the drive but a simple inverting of a vacuum chamber and its suspension to a beam of scales at the opposite ends of a longitudinal axis. The data necessary for the realization of experiences 2 and 3 (m, ω) as well as relevant to them values ΔP_{ver} were put into a table. The values ΔP_{ver} are averaged. It's necessary to remind that the experiments similar to experience 2,3 were carried out by professor N.A. Kozirev, A.N. Veinik - corresponding of Academy of Science of Byelorussia, Laytuate - english physicist, H. Hisaco and S. Taheychi - japanese investigators at different time but with the same result. Has confirmed change of gravitation at an alteration of speed of rotation (on an example of the Earth) experimentally the corresponding of Academy of Science of USSR N. Pariysky. But frankly speaking, their interpretation of this phenomenon was different: consequence of a change of time; the disturbance of chronal field of rotation of the gyro; the difference of nature of translational and rotary accelerations; the opposition of time and sense of rotation of the gyro. So the analysis of obtained data gives an opportunity to define the factor of proportionality μ, permitting to take into account a change of gravity at gravitational interactions owing to the presence of natural angle velocity relevant to any axis at an examined gravitational system and to correct according to the above – mentioned the law of universal gravitation I. Newton $P=(Gm_1m_2/R^2)$ N. Accordingly to the results of experiences 2 and 3 the average of ratio $\Delta P_{ver} / P\omega$ gave a meaning of value $\mu \approx 1{,}318 \cdot 10^{-7}$ sec, and Newton's equation of gravitation with the registration of a change of the value of gravitation owing to the presence of natural angle velocities at interacting skew fields concerning their axis of rotation will be $P_{ver} \approx (Gm_1m_2/R^2) \cdot (1+ \mu\omega_{sum})$ N ; where $\omega_{sum} = (\omega_1\cos\delta_1+\omega_2\cos\delta_2)$ sec $^{-1}$; δ - the angle between the direction of gravitation to the examined system and an axis of its rotation with the angle velocity ω. It's obvious that the usage of gravitation of angle velocity of different marks in the equation will cause the increase or decrease ($\pm \Delta P_{ver}$) of gravity. Thus for the given equation for positive value of angular rate ω the rotation of an investigated system is accepted counter-clockwise at a view at a system on the part of the "train", operational at this system, helically of polarized gravity waves. To be assured of veracities of experience 2,3 it is necessary to establish influencing on achievable outcome of cloning effects having a place at realization of experiments.



1. The influence of twenty – four – hour rotation of the Earth.

$\Delta = \Delta P_{1\ ver} \cdot [\ 1- (\ \omega_{disc\ min} - \omega_з\ ) / \omega_{disc\ min}\ ] = 9{,}41\times 10^{-11} << \Delta_{weigh} = \pm 1{,}96\cdot 10^{-4}$ N.

2. The influence of magnetic field of the Earth. During the realization of the experiment the rotated disc was under a magnetic screen and to exclude the accumulation of electric charges by the disc the vacuum chamber was grounded. Besides the influence of magnetic field is completely compensated, because at an equilibrium condition of scales it acts equally to the both its arms in a vertical direction.

3. The influence of light pressure. $\Delta\varphi_{lig} = 0{,}5\cdot10^{-10}$ rad (see des. [2]) and as the accuracy of the experience is $\Delta\varphi_{exp}$= arctg (0,001/6,0)· (π/180) = $1{,}7\cdot10^{-4}$ rad, in this case the influence of light pressure on the mirror of scales can be neglected.

4. The influence of gravitational disturbances. As $\Delta P_{gr}= Gm_{dick}m_{creat} / R^2 \approx 2\cdot10^{-10}$ H<<Δ_{weigh}, then the action of ΔP_{gr} can be neglected.

5. Estimation of processional – nutation disturbances. Accordingly to the cooperative processional – nutation disturbances of the Earth in 50, 371" in a year, the influence of these fluctuations to the accuracy of weighing (the slope of a vertical axis with a hinge for scales) will be $\Delta\varphi_{preces}$ =(50,371" · 30 sec) /(366 · 24 · 3600) = 0,000048" << $\Delta\varphi_{weigh}$ = arctg 1,0 / 6000 = 34,4".

So with the help of experiences 1 – 3 the validity of scientific rules expressed by the author is experimentally proved and this allowed to define quantitatively the gravity and appearing moments of rotation of these systems at their gravitational interactions with the help of above – mentioned formulae and to calculate the length of a gravitational wave and to confirm its right spiral polarization. The essence of the gear of gravitation offered by the author, demands some additional explanations (p.p. a – d) because of the following. As is known, a spirally polarized train of a gravitational wave turning around the axis at the angle 2π shift simultaneously forward at the value of a step (λ_{gr}), i.e. it pierces the material m by the spiral of a train without a slip concerning it and so it must not throw the material off for it self. Bat the experiments showed that a train of a gravitational wave transmits a moment of impulse (ex.1) and force of gravity in an axial direction, opposite to the direction of a train (ex – s 2,3) to the substance of a receiver and it happens, in the author opinion, in view of following reasons.

a). The material isn't immobile. As the motion is a way of existence of material, all particles of a skew field move (orbital rotation, spin, oscillating notion of quanta and particles etc). In this case a train of a gravitational wave can't penetrate through the material without a slip concerning the components of its particles (there an interaction appears with a train – impact, friction, etc.),so it will throw it (material) off along its shifting to the opposite side.

b). Trains are spread radially and connected by a field in one elastic structure bound with a skew field, radiating them. Being radiated from the centre of masses and rotating at an angle to each other, being bound in a field trains can't penetrate into the same hard skew field (particle, field- essence rigid bodies) concordantly. As trains cover different on an expansion distances while penetrating a skew field there is a slip and material will be rejected off in the opposite direction for a moving train. (field) which

c). In experiences 2,3 critical angular rate of rotation of a skew field under which the gravity to the skew field can vanish (the directions of a rotation of a skew field and a train of a gravitational wave coincide) incomparably it is less than angular rate of a gravitational wave being radiated by α,β bricons. ($1/\mu$ = $7{,}59\cdot10^{6}\text{sec}^{1}$ << $1{,}48\cdot10^{32}\text{sec}^{-1}$) This discordance is stipulated by extremely small intensity of action gravitational wave on a substance, as train penetrates her without slide and the embodying of gravitation is defined by insignificant contortions of this slide indicated in items a,b.

d). Accordingly to the offered gear of gravitation it's possible to assume that the realization of gravitation is more effective (gravitation - strong coupling) at distances L between material points m_1 and m_2 commensurable with the length of a train of a gravitational wave. (L_{train}=3,12 $\cdot10^{-15}$ м) In these conditions of a particles m_1 and m_2 strong bound among themselves by train and are retained by during interplay ($\approx1{,}04\cdot10^{-23}$ sec) at distance $\approx 2{,}2\cdot10^{-15}$ m. In customary substance it is possible only for hadrons with $r_\alpha \geq 0{,}5\cdot10^{-15}$ m in an atomic nucleus, and

generally at $\rho \geq 10^{14}$ g·cm $^{-3}$ (nuclear matter). For leptons with $r_{lep} < 0{,}5\cdot10^{-18}$ m [9] at $r_{lep} << r_0 \approx 0{,}5\cdot10^{-15}$ m gravitation are possible only as gravitational. (by field) As soon as spacing interval L between m_1 and m_2 becomes more L_{train}, gravitation it is sharply (on the sequences) decreases and implements a field pursuant to a Newton's law. With the distances L less than λ_{gr} (Planck's stationary value of length $\ell_0 \approx 10^{-33}$ cm $<<\lambda_{gr} \approx 1{,}3\cdot10^{-21}$ cm) realization of gravitation for material points m_1 and m_2 , becomes more than problematic.

Till now all authorities considered a gravitational interaction very weak, because it's in 10^{38} times less than nuclear and in 10^{24} times less than weak interaction that's why there was a unanimous opinion about impossibility (at present time) to indicate this interaction in a straight experiment to reveal the length of a gravitational wave λ_{gr} and its polarization. But there was a great qualitative and quantitative error connecting with the fact that in practice the role of gravitational interaction is more noticeable than nuclear as well as weak interactions. It's connected with the fact that a gravitational interaction as well as electromagnetic (completely compensated on the level of atom interaction) has practically indefinitely large radius of action and consequently above ground acts on a body located a gravitational attraction on the part of all particles from which one the Earth consists. In the total the resultant general values of gravitational interactions can be not only are detected in experiment, but also are determined (with definite confidence figure certainly) characteristic of single component these interplays, - gravity waves, their length and polarization. Weak interaction has a radius of action $\approx 2\cdot10^{-16}$cm, strong $\approx 10^{-13}$cm, that's why these both interactions are too small between the cores of neighbouring atom (10^{-8}cm) and can not be taken into consideration. [9]

In view of weakness of a gravitational interaction by all authorities it was accepted a unanimous solution to search for gravitational waves in a feebly energy gamut of radiations, in a frequency band $10 \div 300$ sec^{-1}, with a wave length $\lambda_{gr} \approx 1\cdot10^{6} \div 3\cdot10^{7}$m and amplitude $r_0 \approx 1\cdot10^{-20}$ m, and them affirmed, that the similar wave by all substance is radiated at her the speeded up driving. [1] [4] On my view the forecast of gravitational radiation with similar performances for an actual world is not successful in view of the following.

a). The incompetence of a gravitational interaction is explained vice-versa by large energy of gravity waves ($\nu_{train} = v / 2\pi r_0 = 2{,}25\cdot10^{31}$ sec^{-1}), calling a high penetrating power of these surges, their capacity to drive through matter without noticeable easing, practically not interacting, is similar γ – quanta of high energies ($\nu=10^{20}$-10^{25} sec^{-1}), but also electrical neutrality and insignificant weight of a "train" cargo extraction λ_{gr} even in matching with a neutrino $m_{train} = 3{,}37$ e v $< m_{ve} = 14 \div 46$ e v. [9] [13]

b). Factor $n = p_{ver} / P = 0{,}4253\times10^{-8} \neq$ const (obtained it is experimentally) is base value at definition of the characteristics of a surge λ_{gr}. For matching we shall define him (n") on the basis already of data, available about planets. The planet Uranus approaches for this purpose more remaining (rotation axis of a pendulum and the planet pass through center of a body creating gravitation). $\Delta M"_{ver} = 0{,}212\cdot I_z\cdot\omega/t_{sus} = 0{,}212\cdot8{,}73\cdot10^{25}\cdot(2.54\cdot10^{7})^2\cdot1{,}61\cdot10^{-4}/\ 1{,}448\cdot10^{17} = 1{,}33\cdot10^{19}$ Nm; $P_{grUranus} = 1{,}401\cdot10^{21}$N; $R_{mean\ Uranus} = 0.212R_{equator} = 5{,}385\cdot10^{6}$ m; [4] [7] [8]; $p"_{ver} = \Delta M"_{ver} / (R_{mean\ Uranus}\cdot 0.5) = 4{,}94\cdot10^{12}$N; $n" = p"_{ver} / P_{grUranus} \approx 0{,}353\cdot10^{-8}$. (Without the registration total factor ε conformity good enough). From proximity of values n" and n becomes demonstrated, what the gravitation implements gravity waves with a angle of rise of a circular helix equal ψ. ($tg\psi = n$) By the forecast scientists a gravity wave with frequency $10 \div 300$ Hz and amplitude $r_0 \approx 1\cdot10^{-20}$m, [$\psi_{\lambda\pi} \approx 90^{\circ}$, $tg\psi = (1{,}19 \div 4{,}77)\cdot10^{25} >> n$, P=0.] to execute attraction pursuant to detected in experience by 2,3 gear be not capable (in particular for fundamental particles) and forecast her is incorrect.

c). As the gravitational waves are spirally polarized, (the experience 1) it is uneasy to define a mass m_0 of a particle radiating this wave,- $m_0 \approx \hbar / (2\ v\cdot r_0) \approx 559{,}5$ kg ($v = 2\pi r_0\cdot C / \lambda_{gr}$ m$\cdot$ sec^{-1}). The particles of a so huge mass would be easily detected in practice, however them" existence" till now it is not revealed ("it is forbidden" by a quantum theory).

d). The experiences 2,3 were intentionally carried out in a gamut of similar frequencies (60 ÷ 420 sec^{-1} and gravitational waves (10 ÷ 300 sec^{-1}) should cause or complete vanishing of gravitation (experience 2, P ≈ 0 N), or his doubling (experience 3, P ≈ 2 mg N). The experiments 2,3 have not confirmed existence of waves with frequency 10 ÷ 300 sec^{-1}, as the modification of an attraction in 2,3 was ± $(1\cdot 10^{-3} \div 5{,}5 \cdot 10^{-4})$ N.

e). The assertion what is beamed a gravity wave "… by all substance at her accelerated motion" [1] [4] not correctly, contradicts of classic and quantum the theories, and wave-corpuscle (dualism) submissions about a substance.

Many scientific discoveries and inventions were replicated for the nature by the method of analogy. The discovery of a property of spiral polarization at a gravitational wave will permit to transfer a gear of their interaction to many phenomena of the world. As is known, there are no planets and satellites at a solar system which have no their own moment of rotation around an axis. Not many times ago these rotations were explained by initial moments of momentum, having got during the formation of these systems. From [6] follows that till now it is known "… because of what processes, happening during the formation of the Earth our planet got a directional axis and a rotation around this axis", but it's mentioned in [7] that simultaneously with the deceleration of rotation of the Earth bosses about $3{,}5\cdot 10^{-3}$ sec for a century, acceleration of rotation of the Earth happens approximately at $1{,}5\cdot 10^{-3}$ sec for a century, the reasons of which are not clear. However from the point of view of set up here, questions which have been risen in [6] and [7] can be solved because the presence of a right – handed spiral polarization at a gravitational wave explains easily the beginning and action of initial moment of rotation of the Earth $\Delta M'_{ver}$, "guilty" in the constantly increasing moment of an impulse K_z for the Earth. Let's have this simple calculation.

1).Let's define the moment of rotation $\Delta M'_{ver}$, transmitted to the Earth by gravity of the Sun. $\Delta M'_{ver} = 0{,}332\cdot I_z\cdot\omega/t_{sus}$; where $0{,}332\cdot I_z = I_{z\ земли} = 8{,}08\cdot 10^{37}$ kg·m^2 – polar moment of inertia, $t_{sys}=4{,}6\cdot 10^9$ years = $1{,}448\cdot 10^{17}$ sec – time of existence of a solar system. [7] $\omega = 2\pi / 86160{,}4$ rad / sec – the angle velocity of the rotation of the Earth;

2).The moment of impulse for 100 years will be $\Delta K_{100y} = \Delta M'_{ver}\cdot 100\cdot(31469498\text{sec})$ кg·m^2·sec^{-1};

3).The moment of impulse of the Earth $K_{z\,e} = I_{z\,e}\cdot\omega$ кg·m^2·sec^{-1};

4).The moment of impulse of the Earth in 100 years will increase and will be $K_{z\,e\,t+100} = I_{z\,e}\cdot\omega_{t+100}$ кg·m^2·sec^{-1}; $\omega_{t+100} = 2\pi / (86160{,}4 - 0{,}0015)$ sec^{-1};

5).The increace of the moment of impulse for 100 years for the Earth will be

$\Delta' K_z = K_{z\,e\,t+100} - K_{z\,e}$ кг·$м^2$·sec^{-1}.

If my supposition about the presence of the moment of the impulse at gravity waves of the Sun are true, then the equality $\Delta K_{100y} = \Delta' K_z$ must exist $\Delta' K_z = 2\pi\cdot 8{,}08\cdot 10^{37}\,[1/(86160{,}4 - 0{,}0015) - 1/86160{,}4] \approx 1{,}018\cdot 10^{26}$ кg · m^2 · sec^{-1}.

$\Delta K_{100\,y} = 2\pi\cdot 8{,}08\cdot 10^{30} / 4{,}6\cdot 86160{,}4 \approx 1{,}28\cdot 10^{26}$ кg · m^2· sec^{-1}.

The error of discordance will be $\Delta = [\,(1{,}28\text{-}1{,}018) / 1{,}28)\,]\cdot 100 = 20$ %. So the existence of the relict moment of the impulse $\Delta M'_{ver}$ = const, having defined only by gravitation, by comparison $\Delta K_{100\,y} = \Delta' K_z$ is confirmed as well as the presence of right – handed spiral polarization at gravitational waves.

But as it follows from the above – mentioned calculation one can't notice any deceleration of the rotation of the Earth from bosses at $3{,}5\cdot 10^{-3}$ sec for a century in the history of the Earth, there is only acceleration of rotation of the Earth at $1{,}5\cdot 10^{-3}$ sec in a century. It's obvious, that the absence of tidal friction at the period of rotation of the Earth at presence of an effect of inhibition at $3{,}5\times 10^{-3}$ sec, is possible at a cyclic change of the value of this moment of friction, i.e. at the periodical change of inhibition of the Earth to it's acceleration or rotation around the axis. The above offered calculation substantiate $\Delta M'_{ver}$ for all the rest planets and the notion of dependency $\Delta M'_{ver} = f(m_{pl})$ graphically (see *fig 2*).

The obtained chart of a straight line y = kx + b (in coordinates lgm and $lg\Delta M'_{ver}$) reflects the true value of $\Delta M'_{ver}$ in view of all gravitational disturbances and confirms the validity of the statement about the presence and origin of an initial (relict) moment of rotation of planets.

It's possible to explain a direction of rotation and the rotation of the Sun itself, planets and their satellites, slope of their rotation axes to orbital plane (The unbalance of a planet should be on an axis of its rotation) and capability therefore of reverse rotations (the turning direction of rotation axis of a planet should coincide a direction of her rotation around of the Sun), to explain correctly the existence of positive correlation between velocity of rotation of the planet with its weight, to explain differential rotation of gas casing off the Sun and gigantic planets, the direction of the rotation and the rotation itself BRS (helium ice – floe creating a vortex) of Jove, the rotation of the Galaxy and similar formations by a presence of the moment of impulse at a gravitational wave. With this phenomenon it's possible to explain the change of gravity on repulsions inside tornadoes (depending on the direction of twisting of a vortex) and similar phenomena where as a result of considerable angular rate the changes are made in the efficiency of the action of spirally polarized gravitational waves on material. It's necessary to pay attention to the discovery which was made in 1956 y. By , Ambler, Hayword, Hops and Hatson. The main thought of this discovery was that a cobalt core radiates more electrons in the direction of the spin, coinciding with the direction of an impulse than in an opposite direction. This phenomenon can be explained if we admit that "space – time" which is right – handed polarized. In this case inside a unit mass of cobalt there will be forces of gravity strengthening a bit the radiation of electrons in weak couplings of disintegration. Relying on the obtained results we can try to explain the reasons of a great explosion of a hot cosmological model of the Universe. It's known that waves carry in themselves not only energy but also an impulse, realizing as pressure on the skew field by which they are swallowed. If the impulse at a gravitational wave could realize like pressure the stability of macro skew fields would be difficult to explain, because under the action of an impulse (repulsion) from inside into outside these skew fields would definitely destroy (blow up) and dissipate in space. Apparently, because of the special geometry of this wave, its extreme smallness even in comparison with particles, components of atom ($\lambda_{gr}\approx 1{,}33\cdot 10^{-23}$ m), great frequency rotational ($\nu=2{,}25\cdot 10^{31}$ sec^{-1}), neutrality and spiral polarization, the resistance of its (wave) penetration into material (pressure) is much less than gravitational " recoil" – impulse from "screwing" ($d^2_{Lspiral\ train} << (2r_0 + d_{Lspiral\ train})^2$, transmitted by material (as well as the moment of impulse) piercing it by a train of a gravitational wave. In this case (at action) a gravitational wave can be compared with a propeller of a plane, because both these objects, rotating with velocities $v_{rot} = \omega R$ more than the velocities of their linear shifting throw the material off in the opposite direction. Such, but up to definite (critical) density also was initial contraction of the Universe. [$\rho_{train} \approx \rho_{Univ} \approx \rho_{critic} \approx 1{,}35\cdot 10^{44}$ $kg\cdot m^{-3}$] At achievement of this density by a core ($M_{min\ nucl} \approx 0{,}5\ M_{Univ}$), the gravity waves have ceased through him to be beamed [3], the impulse of the waves became to realize like pressure σ ($N\cdot m^{-2}$), directional from the centre. As the density of outside layers was less than critical, they went on squeezing.(gravitational and gravitation - strong coupling) Thereof the amount of compressions decreased (the statement, that at contraction in a black hole of force $P_{contractions} > > P_{resiliencies}$ contradicts 3 law of mechanics), and resultant impulse of repulsion was increasing and at further contraction it has resulted in large detonating. [$r_{min\ nucl} = \sqrt[3]{(3\cdot 0{,}5 M_{Univ} / 4\pi\rho_{train\ critic})} \approx 561{,}4$ m] ($P\leq 0$, $p_{ver}\rightarrow Max$, $\Delta M_{ver} \rightarrow Max$, $\sigma\rightarrow Max$, $T>10^{13}$ K) The outside shell of pressing was dropped (the shells of supernew stars are also dropped during the explosions) and the Universe began expanding. If not to adhere to a position of idealism in the origin (unique) formation of the Universe (the original pressing was possible only at $\rho>\rho_{cr}=3c^2H^2/G$ [9]) and to reject antropocentrizm, we can assume self – contained model of the Universe with boundaries and repetition ($T\cdot dS = dU + \delta A$; $dS = \delta Q / T$) [12] of pulsating in the past and future with the average density of pressing comparatively less than planck's (ρ_p) and gradual "updating" of the components of its particles (quarks, protons etc). The following suppositions can be the basis for this "contempt to the forecasts of thermal death", foretold by the second beginning of thermodynamics.1). "The Universe which we observe isn't

the only one, there can exist a lot of strictly isolated Universes and each of them has its own constants of interactions and fundamental numbers." [4] 2). The installation of communication between the second start of a thermodynamics and probability theory (L. Boltsman) is indicated on an inconsistency of a hypothesis about ″thermal mors″ of the Universe. 3). Similar conclusions. Look VINITI, №5317 – V 87, Didyk U.K. 4). As the process of increase entropy is finite, but our Universe would be infinite" time ", "thermal death", if it was possible, already would happen. If we admit that the world is formed so, some conclusions inevitably arise: 1. In a World (objective reality) there is nothing, except for a driving matter and absolute blankness. 2. Each Universe of a World - essence a driving matter and for exception of their confluence, and preservation of individuality they should be in ″sectioning″ to their absolute blankness. 3. Space and time is objective - substantial forms of existence of a driving matter and outside of matter do not exist. (Space, creates and limits by physical fields - gravitational, electromagnetic, etc.) 4. Our Universe (Galaxy of galaxies) never had "the Beginning ($t_{beg} = 0$)" and always was, is and will be pulsing because of its closure and isolation (independence from everything, located from outside) like all remaining Galaxies of galaxies. That's why we have to accept contrary to "prediction" for the Universe (like for the World) the flow of the processes (in the whole) pursuant to an equation $T \cdot dS = dU+\delta A$.

REFERENCES

[1]. Albert Einstein and Theory of Gravitation (Moscow, Mir), 1979 -288,557-575 p.

[2]. Magazine ЖЭТФ, tome-61, 1971-873-878 p.

[3]. V.L. Ginzburg, About a relativity theory (Moscow, Nauka), 1979-94, 101-103, 212 p.

[4]. I.A.Klimchin, Contemporary Astronomy (Nauka), 1986-259-265,315,323,520,522 p.

[5]. P.G. Kulikovski, A manual of the astronomer of the amateur (Moscow), 1954-22-64,301-320 p.

[6]. K.A.Kulikov, Rotation of the Earth (Moscow, Nedra), 1985-55-61 p.

[7]. M.Ya.Marov, Planets of a solar system (Moscow, Nauka), 1986-27-60 p.

[8]. Yu.A. Ryabov, *Motion of Heavenly Bodies* (Moscow, Nauka) 1988-150 p.

[9]. Encyclopaedia on Physics (Moscow, Sovetskaya Entsiklopedia), 1983-138, 259, 279, 315-316, 452, 522-523, 627-628, 631, 692-696, 772-775, 826, 896, 899, 901-902 p.

[10]. J.H. Mulvey (editor), The Nature of Matter (Clarendon Press Oxford), 1984-26 , 29-31 , 140 p.

[11]. P. F.Shokin, A gravimetry (Moscow), 1960-18-27, 283-298 p.

[12]. B.M. Yavorski and A.A. Detlaf, Hand– book on Physics (Moscow, Vyschaya Shkola), 1979-166, 175-180, 286 p.

[13] B.M. Yavorski and A.A.Pinski, A fundamentals of physic tome -2 (Moscow, Nauka), 1972 - 396-400, 437, 473, 606, 640, 651, 663, 723 p.

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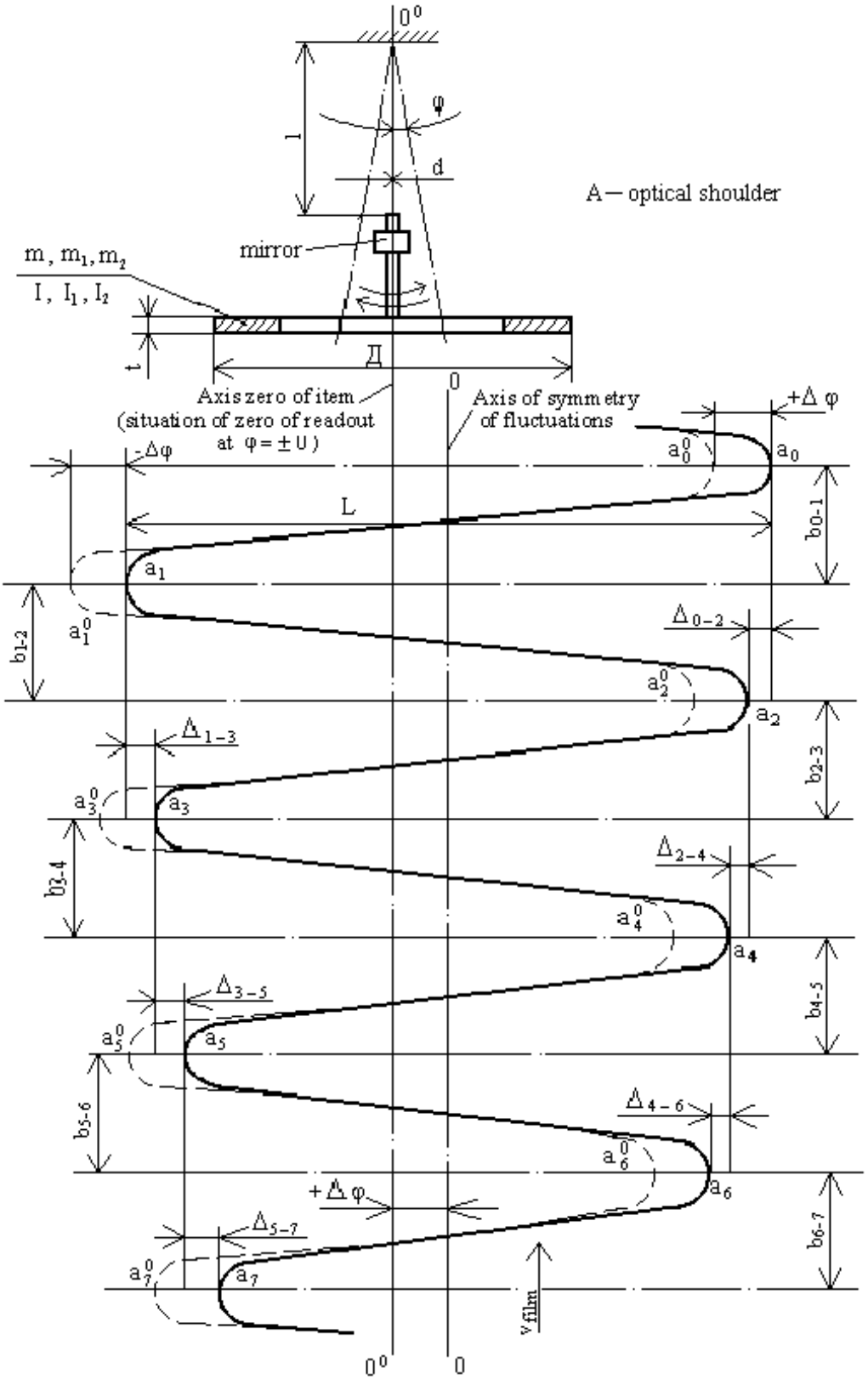
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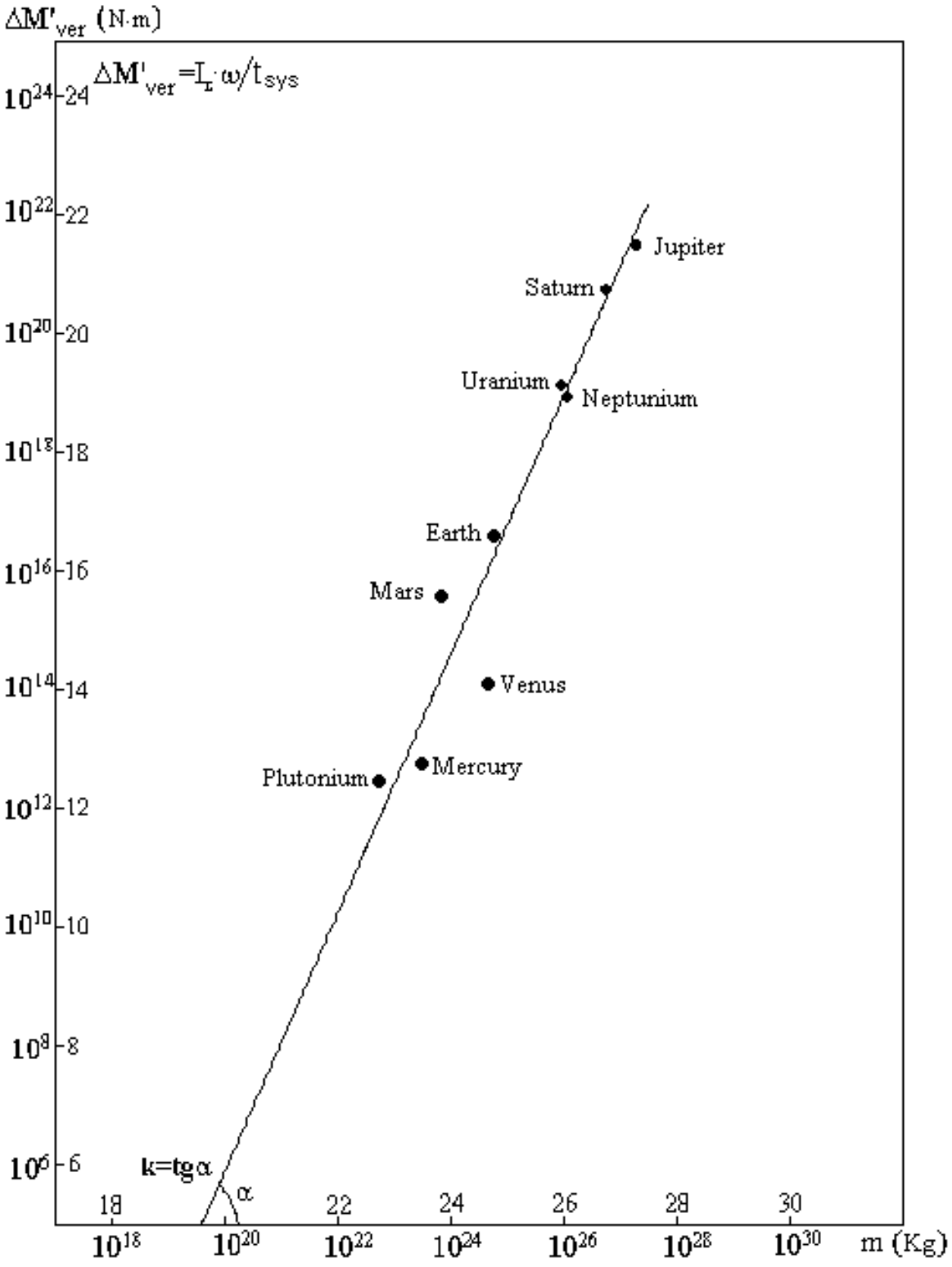
Fig. 1


ΔM'ver (N·m)
ΔM'ver=Iz·ω/tsys
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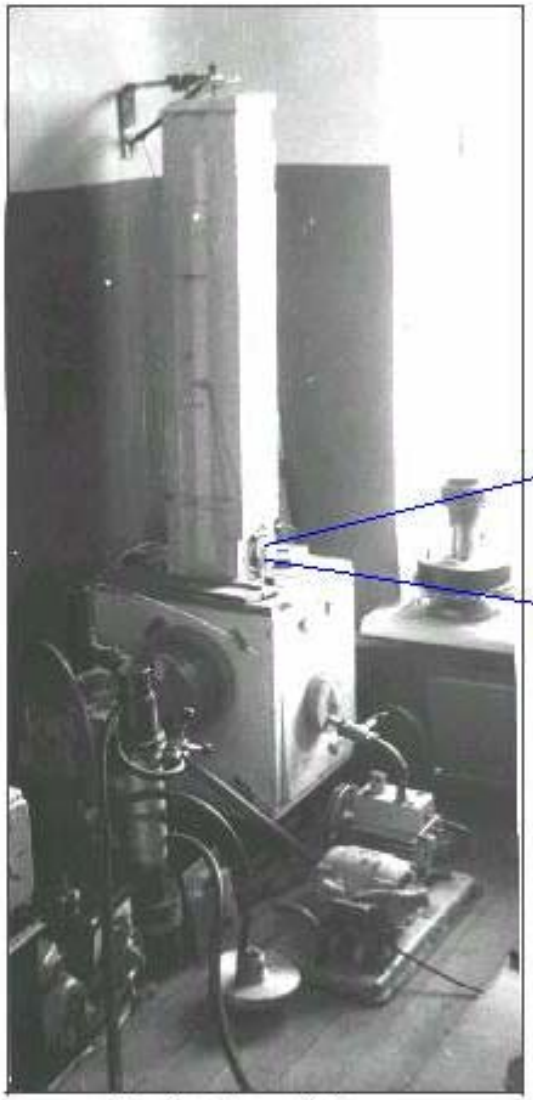
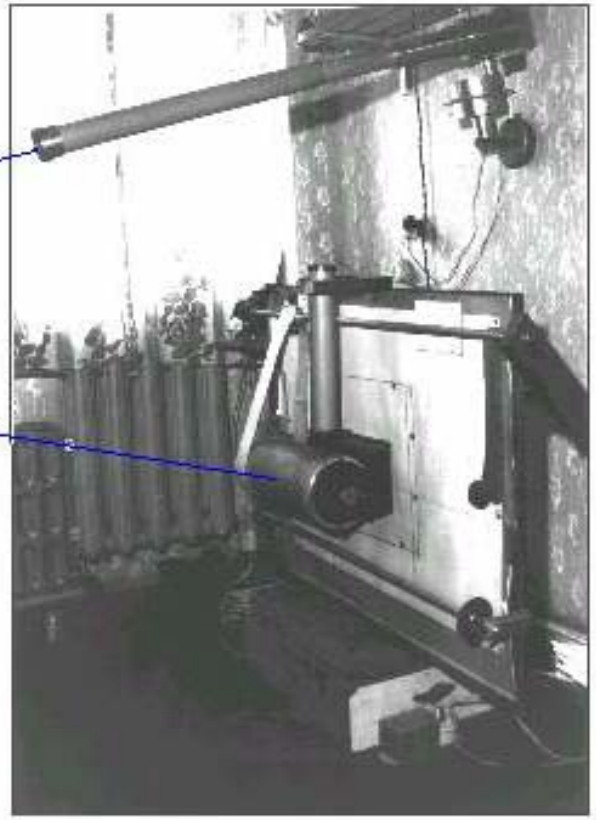
Jupiter
Saturn
Uranium
Neptunium
Earth
Mars
Venus
Plutonium
Mercury
k=tgα
α
18 22 24 26 28 30
10^18 10^20 10^22 10^24 10^26 10^28 10^30
m (Kg)

Fig. 2

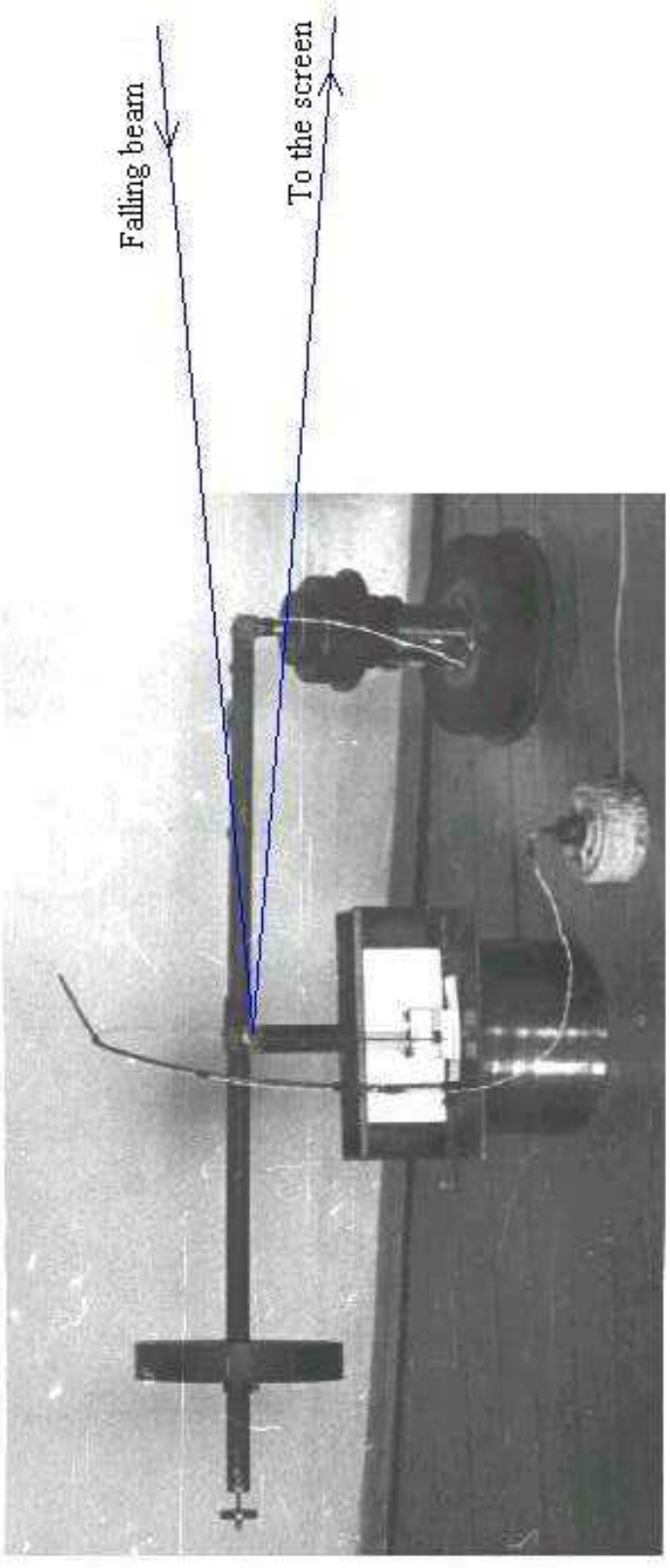


Torsional pendulum



System of indication

Experience 1.



Experience 2,3.