

Rice. 4. High-frequency fluctuations in the angular velocity of loads.

On the charts, in addition to “noise,” you can notice “punctures” that are caused by errors in sensor responses (bouncing, false alarms). They’re like As a rule, they stand out sharply from unsmoothed velocity graphs and with good data quality practically do not interfere with the analysis of graphs.

The error in determining the angular velocity, at first glance, is significantly greater if you look at the “noisiness” of the graph at high angular velocities (Fig. 2). However, a detailed analysis of the graph shows high-frequency angular fluctuations speed - with a frequency of approximately 120 Hz and an amplitude of up to 100 degrees per second (Fig. 4). The frequency of speed fluctuations is practically independent of the speed value itself. This leads us to assume that this component is not caused by errors measurements, but by resonance phenomena in the drive kinematics or features servomotor. This oscillatory component is especially evident at large angular velocities (400-800 degrees/sec) – up to 12%. At low speeds (approx. 200 degrees/sec), the amplitude of the high-frequency component is about 10%. IN within these limits, we accept an upper estimate of the error in angular velocity measurements.

Checking for false alarms of sensors

One of the most labor-intensive aspects of this work was quality control. data, taking into account possible false alarms of sensors. In a small part series due to the bounce of operations on the angular coordinate could be incorrect determine the angle of the loads. Fortunately, this can be monitored using a sensor zero coordinates (if 360 sensor responses do not occur between zero marks).

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Since the program for reading and processing data in this work was written "with zero"¹, appropriate logic was added to it to correct chatter, and such an error was eliminated. At the same time, in some graphs in the works of G.I. Shipov, such an error in determining the angular coordinate is visible in the form a slight delay in the phase of the graph of the speed of the center of mass versus the speed of the cart, although it does not turn out to be significant for data analysis.

Analysis of interaction forces with support

Data from the experiment

Analysis of graphs of free movement of an inertiod with fixed loads allows you to evaluate the friction forces that act on the inertiod during movement. The author had access to 4 series of free movement, in two of which inertial moved in one direction, and two in the other. In the future, instead of absolute values of the friction forces, which are directly proportional to the weight of the inertiod, we will use the values of the deceleration of motion, which does not depend on the weight. The inertial deceleration shown in Fig. 3, is 60 mm/sec². Another one series in which the motion of the inertiod goes in the same direction gives the average deceleration value 63 mm/sec². In the other two series, where the inertiod moved in the opposite direction, deceleration is 42 and 43 mm/sec². So significant the difference between the decelerations in the two directions (46%) may be due to tilt of the support. Let us estimate the possible angle of inclination of the support, taking additional acceleration/deceleration of movement $10 \text{ mm/sec}^2 \arcsin(10/9810) = 0.058^\circ$. As we see, the support surface is almost strictly horizontal.

The average deceleration due to friction forces over the four series is thus 52.2 mm/sec².

Calculation data

Let's try, based on the description of the structure of the axles and wheels of the inertial motion, as well as the support, to estimate the calculated friction forces based on the calculation methods accepted in technology. The trolley stands on four aluminum wheels with a diameter spin on axles on ball bearings with an internal axle diameter of 3 mm (Fig. 5). Support – steel guides. Let us take the value of the rolling friction coefficient equal to $k = 5 \times 10^{-5} \text{ m}$ – value for rolling mild steel on mild steel². Then the deceleration of movement due to rolling friction of the wheel surface will be:

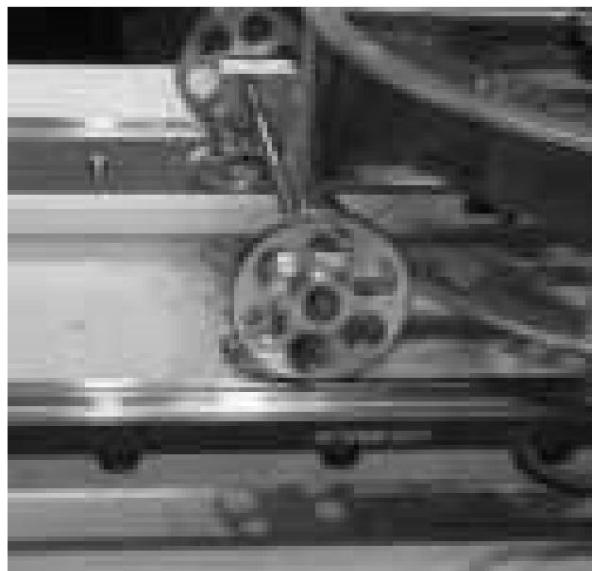
$$a = \frac{gk}{R}$$

where g is the acceleration of gravity, R is the radius of the wheel.

The result is 25 mm/sec². For alloy wheels this value should be apparently a little more.

¹ When writing a program in VBA, algorithms from the source code of the original program were used in Pascal, developed by Evgeny Ulyanov in 2000, with kind consultations from Evgeny himself.

² Value taken from <http://fiz.1september.ru/articlef.php?ID=200502312>.



Rice. 5. Inertiod wheels in motion along the support.

Now let's estimate the deceleration due to the friction moment in ball bearings. Slowdown from ball bearing is determined by the formula:

$$a = \frac{gfd}{2R}$$

where d is the diameter of the bearing along the inner ring, R is the radius of the wheel, f is the dimensionless coefficient.

Taking $d = 5$ mm, $f = 0.003$, we obtain the value $a = 3.7$ mm/sec².

Let's estimate aerodynamic friction using the drag force formula:

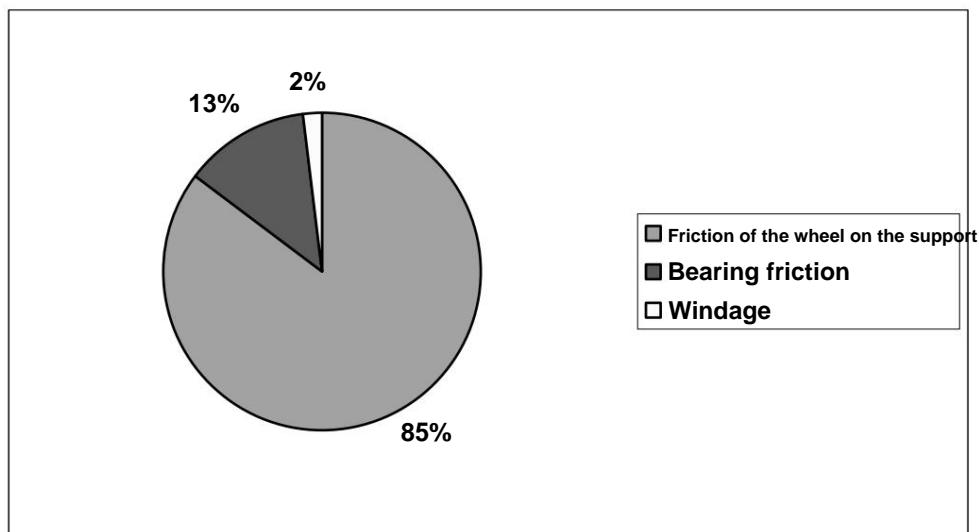
$$F = \frac{1}{2} \bar{\rho} v^2 S C_d$$

where $\bar{\rho}$ = air density, v = velocity, S = cross-sectional area, C_d = drag coefficient.

Taking the cross section, based on the dimensions of the inertiod, equal to 10*20 cm², speed 0.3 m/sec, and drag coefficient equal to 1, we get force resistance is about 0.001 N, and deceleration is about 0.6 mm/sec².

So, the total external friction forces calculated based on the device inertiod, give a deceleration of about 30 mm/sec². This estimate is consistent with experimentally obtained values taking into account the assumptions made. The relationship between various external friction forces is shown in Fig. 6.

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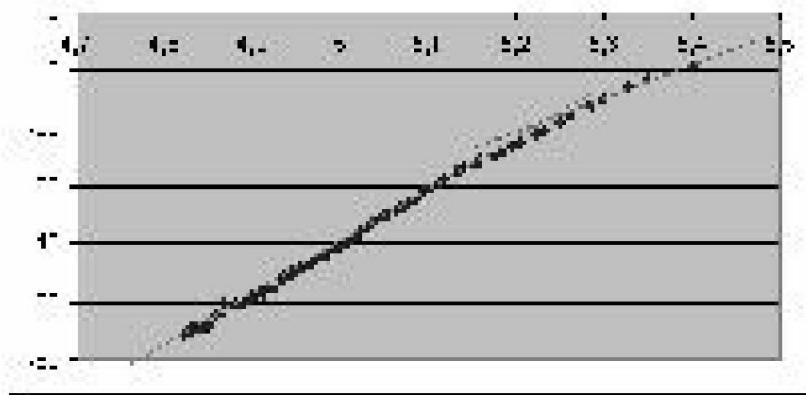


Rice. 6. Calculated ratio of external friction forces acting on the inertiod
Shipova.

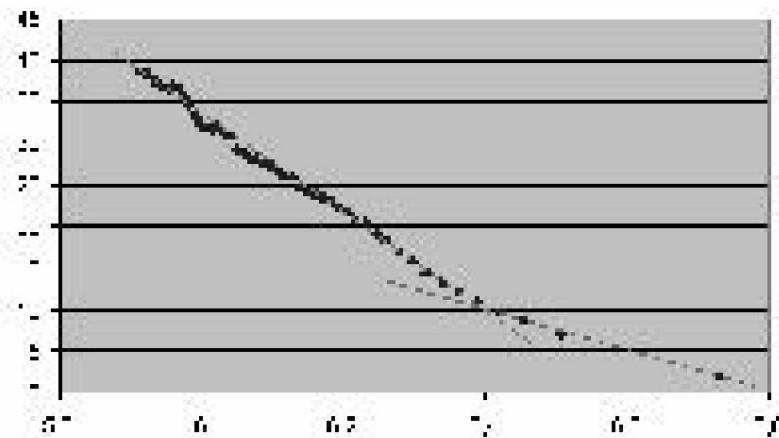
About static friction forces

The only argument that opponents put forward when criticizing supporters hypotheses of unsupported motion of inertiods - the friction force depends on the speed, and the inertiod moves using this difference: in one direction it moves slower than in the other, the friction forces are different, and as a result it moves in the direction of fast movement. This effect should indeed manifest itself. However, in the results in the presence of sliding friction¹ considered, the author does not found manifestations of this effect.

Firstly, since rolling friction forces are practically independent of speed in considered speed range (this is shown by free runs inertiod along the support with fixed loads), and when the external one moves there is no sliding - only rolling, then such a dependence cannot occur during movement be. Secondly, analysis of the motion of the inertial motion at low speeds, before stop, even showed the opposite effect: the graphs show that the slowdown by at low speeds (up to 20 mm/sec) it even decreases slightly (Fig. 7).



¹ Tolchin's original inertiods used wheels mounted on an axle without rolling bearings.



Rice. 7. Graphs of speed (mm/sec) when stopping the inertoid.

An explanation for this effect was proposed by Evgeniy Ulyanov: when the inertoid stops the forces of inertia that deform the prefabricated body cease to act, and the energy of elastic deformations is converted into an addition to kinetic energy, which slightly increases the speed when stopping.

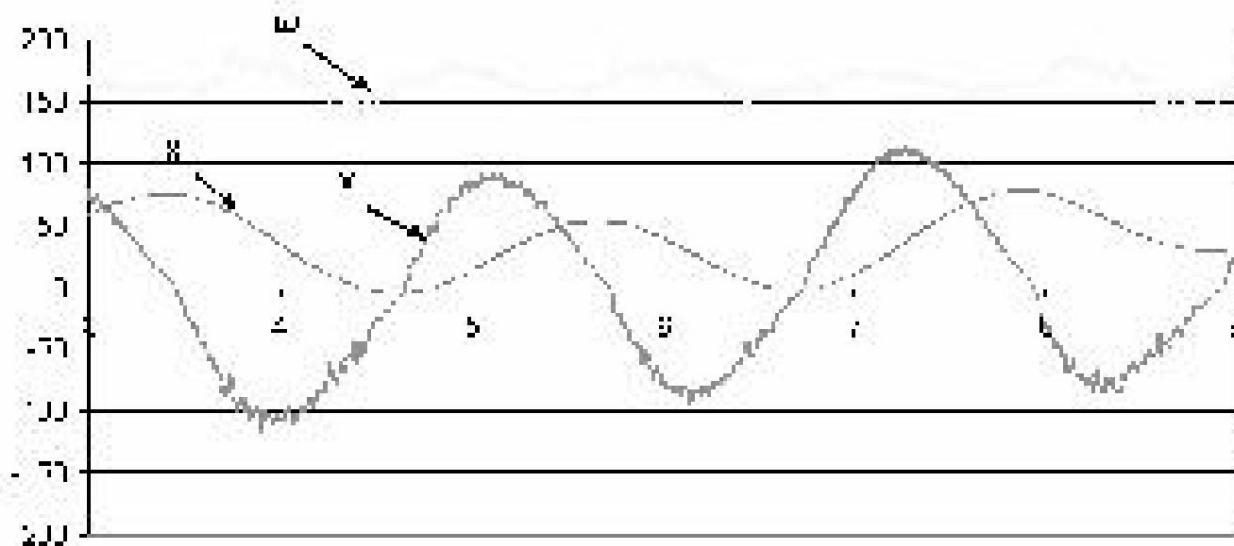
But the question remains about the force of static friction: it cannot be measured in motion, but Linear coordinate sensors only work when the cart is moving.

The work [2] presents the measured friction forces for an inertoid on a glass surface used for short impact studies: 3.8 grams for friction rolling and 5 grams for static friction with a total inertial mass of 1170 g. Such the value of static friction forces corresponds to a deceleration of movement equal to 42 mm/sec^2 which agrees well with the deceleration values obtained above for friction when moving.

Perhaps the question of whether there are significantly large static friction forces will help answer motion graphs, where the inertoid periodically changes direction, staying for some time in a zone of very low speeds. Then, if the friction forces rest are significant, the effect of “sticking” of the inertoid to zero should be observed speed. In this case, a horizontal “shelf” of speed should be formed carts at zero. It is convenient to consider the presence or absence of such an effect in modes where the cart passes through zero speed with an approximately constant force applied by rotating loads.

In Fig. Figure 8 shows such a vibrator mode. From the graph it is clear that the horizontal there is no speed plateau at zero, and, apparently, in this case the same the effect is the same as in Fig. 7 - some change in acceleration due to deformation inertoid body when stopping and changing direction of movement. This effect manifests itself in the kink in the cart speed graph at zero.

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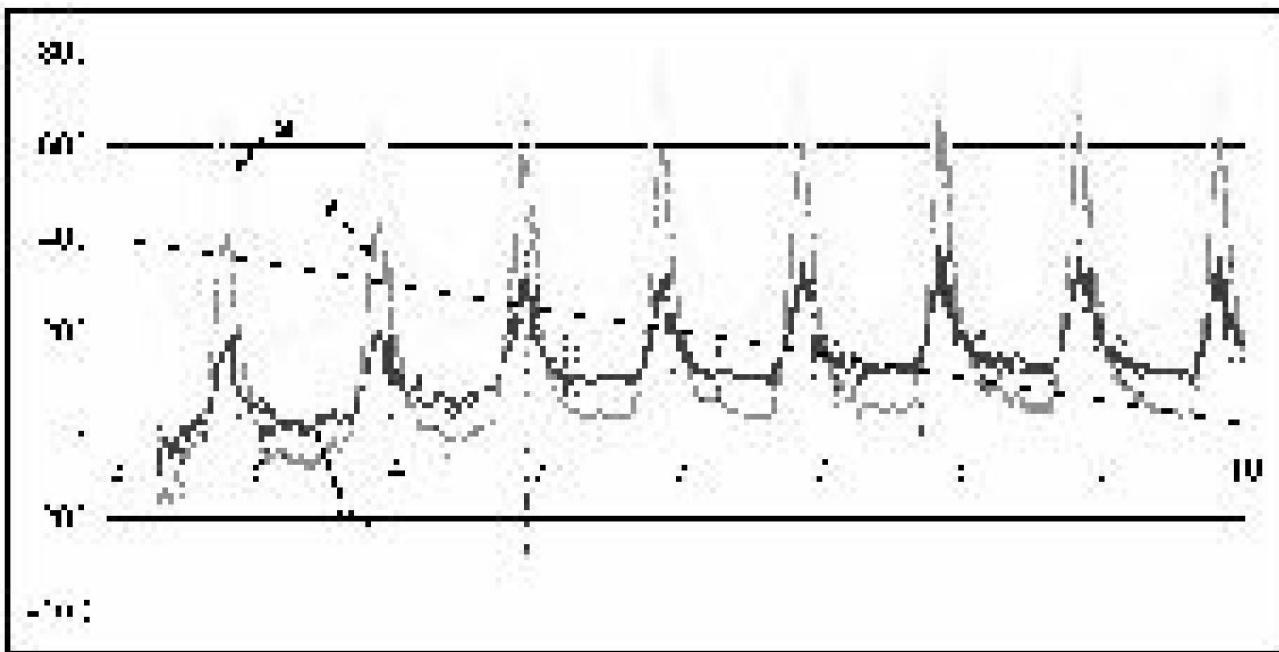


Rice. 8. Vibrator mode.

Thus, the external friction forces acting on the inertoid under consideration are practically independent of speed. The effect of static friction forces exceeding rolling friction forces, which could significantly influence the movement inertoid, not detected.

Contradictions of inertial motion with Newtonian mechanics

So, let's return to the graphs of the inertial motion, from which it is clear that the center of mass (cm) periodically changes its speed (Fig. 9). The acceleration that has a c.m. system, is at some time intervals a value of the order of 1000 mm/sec^2 , which is approximately 20 times higher than possible accelerations under the influence of frictional forces, and are 100 times higher than the acceleration from a possible tilt of the support. Besides the same, since in this series at the interval shown the inertia is about 5 seconds moves without rolling back, friction forces can only be directed against the movement, and can only impede movement (in the figure with an inclined line shows the "normal" deceleration of the inertoid under the influence of established forces friction). And, even if we assume that in the initial period, when the inertoid walked forward and backward, there was a dependence of the friction force on the direction or speed, then, having "accelerated" in this way, it could then only slow down. But this is not occurs, moreover, the average speed of the center of mass increases when moving in one direction. Thus, by friction forces such a movement of the c.m. not at all explained.



Rice. 9. Graphs of inertiod speeds. The inclined line is the change in speed that must be under the influence of friction forces.

Finally, there is one last opportunity to try to explain this and similar graphs, without leaving the framework of Newtonian mechanics (and, of course, in assumption that the inertiod is not periodically pulled sharply by the cable and push with hands). What if there is an error in calculating the center speed? Formula for

calculating the speed of the centrifugal machine:

$$V_{cm} = V - B \ddot{\gamma} \sin(\dot{\gamma})$$

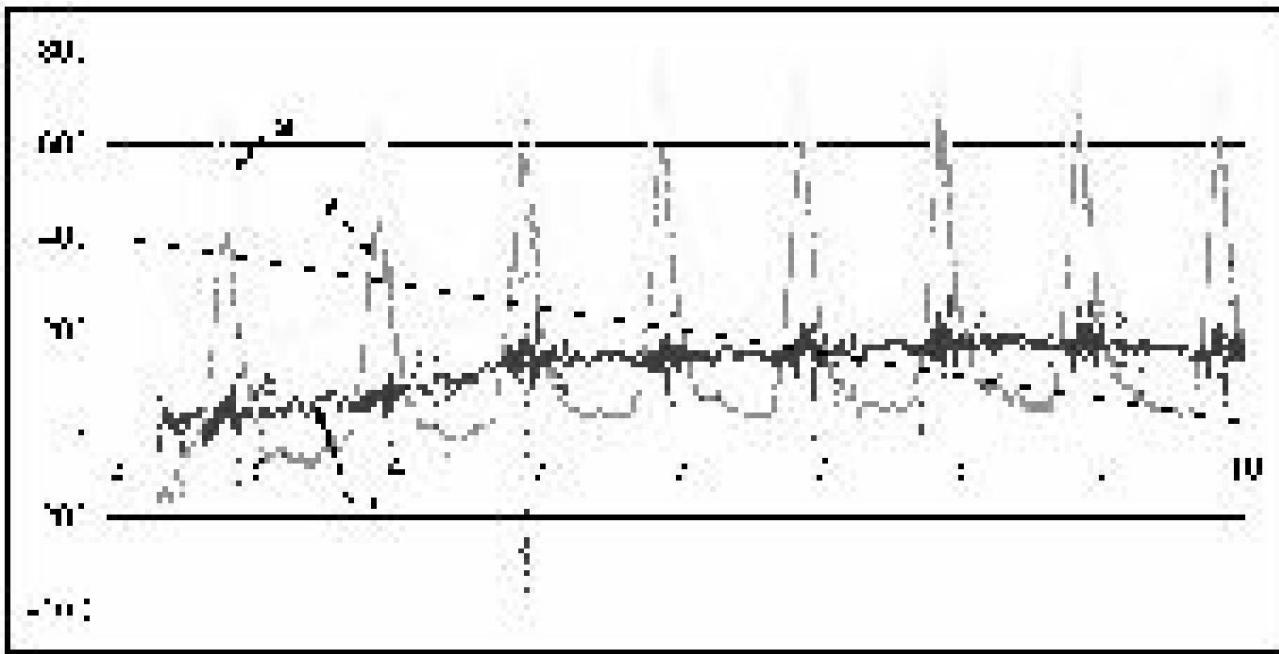
The value of parameter B is specified in the data files for each series. In the given in the graph, parameter B is equal to 0.022 m (which corresponds to a load mass of 170 g). Let's try select this parameter in such a way as to remove c.m. velocity peaks. In Fig. 10 shows that the same series, but with the selected parameter B = 0.034 m (then the mass of one load would be 310 g). Although the first-order peaks are gone, it still remains the behavior of the speed trend of the central mass is incomprehensible: something accelerates the inertiod against the forces friction and does not allow him to stop. In addition, a mass accounting error is unlikely cargo 2 times.

In other series, it is completely impossible to smooth out the c.m. velocity peaks. by varying parameter B (Fig. 11). Moreover, it can be noted that abnormally sharp changes speed of the trolley and c.m. occur simultaneously with sudden changes in angular load speeds. This effect manifests itself especially well at large values. angular velocity, as well as in the angles of location of loads in the region of 90° and 270°. Wherein changes in angular velocity are disproportionate to changes in the speed of the cart, for example, a sharp change in angular velocity by 40% is accompanied by a change the speed of the cart by 70% - hence the change in the speed of the center of mass.

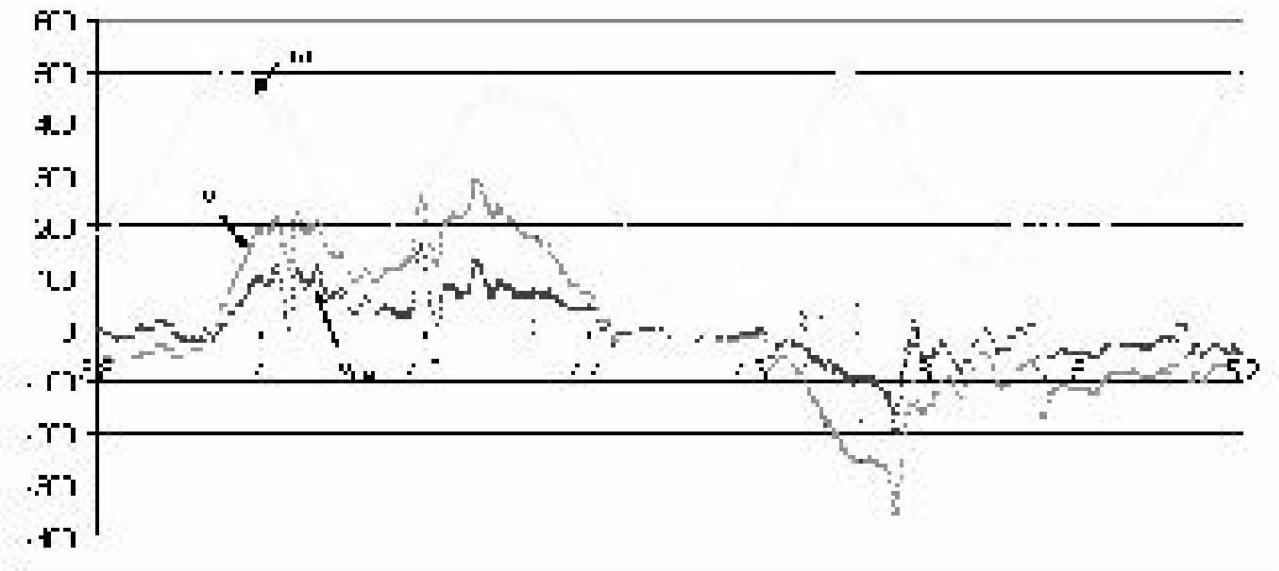
These peaks cannot be explained either by errors in measuring velocities or sensor response errors: over many cycles, from series to series, the speed of the center of mass of the inertiod anomalously responds to changes

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angular velocity of rotation of the loads, and practically does not change if the speed rotation of the loads is constant.



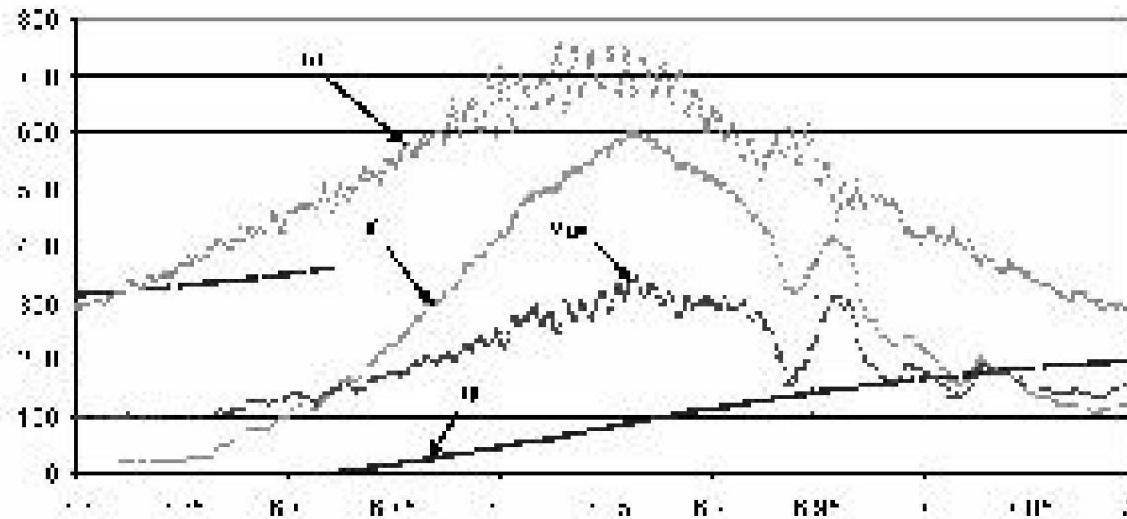
Rice. 10. Velocity graph for parameter $B = 0.034$ m.



Rice. 11. Peaks of the centrifugal velocity that cannot be eliminated by selecting parameter B.

In Fig. 12 shows graphs of speed changes in an interval of 0.5 seconds, during maximum values of speeds and their derivatives. It is clear that, in addition to positive correlation between the angular velocity of the loads and the speed of the trolley in the trend, there are areas with a negative correlation, characterized by a large value of accelerations, which can be characterized as internal impacts. Those. against the background of a positive dependence of linear velocity on angular velocity, there are short sections of negative dependence, when the angular velocity of the loads changes sharply (see the behavior of the graph around 6.95 seconds in Fig. 12). It is noteworthy that this behavior directly contradicts the law of conservation of momentum: at these ang-

an increase in the angular velocity of the loads must be accompanied by a proportional increasing the speed of the cart rather than decreasing it.



Rice. 12. Graphs of inertial motion.

Another “strange” feature of the graphs of changes in the speed of the c.m. - its increase in the trend does not begin at the moment the angular velocity of rotation begins to increase loads, and not from a certain angle of rotation of the loads, but only starting from a certain threshold angular velocity close to 400 °/sec. This feature inherent in almost all available series with a range of angular changes speeds from 100-200 to 600-1000 °/sec. At the same time, the negative correlation in “shock” sections are also observed at lower angular velocities.

Application of Shipov's formula to experimental data

In work [2] G.I. Shipov derived the formula from vacuum equations uncompensated inertial forces acting on the center of mass of the inertiaid at uneven rotation of loads. The acceleration that the c.m. receives, in accordance with with this formula:

$$a_{c.m.} = 2B\ddot{y} \sqrt{\frac{\sin \cos \ddot{y}}{1 - A \sin^2 \ddot{y}}} + \frac{\ddot{y}}{A\ddot{y}} \quad (1)$$

where constants $A = 2m/(2m + M)$; $B = rA$.

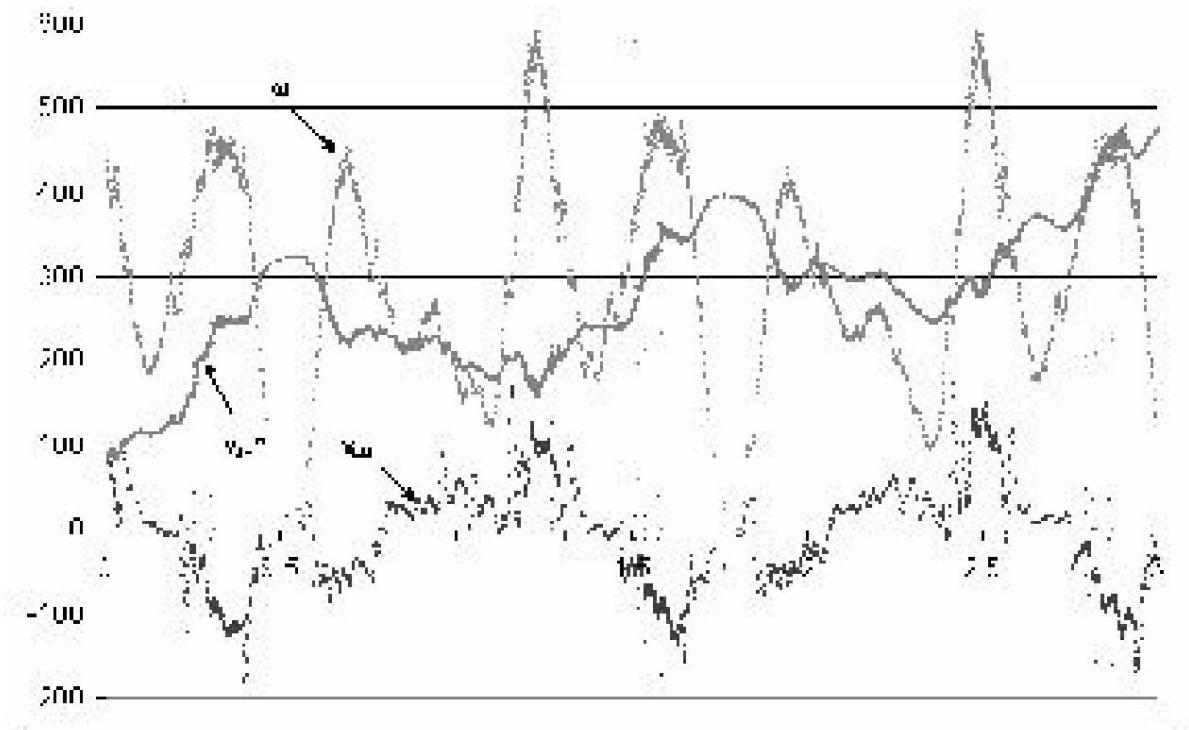
This formula describes the dependence of the acceleration of the center of motion. inertia from the angle of the loads and its first three derivatives. Analysis of the formula shows that it contains problems that make her doubt her loyalty. First, the graphics speed c.m. show that the acceleration of the c.m. can be of both signs, and the formula only allows positive values. Secondly, the radical expression may also have a sign, and then it is not clear what to do with the root.

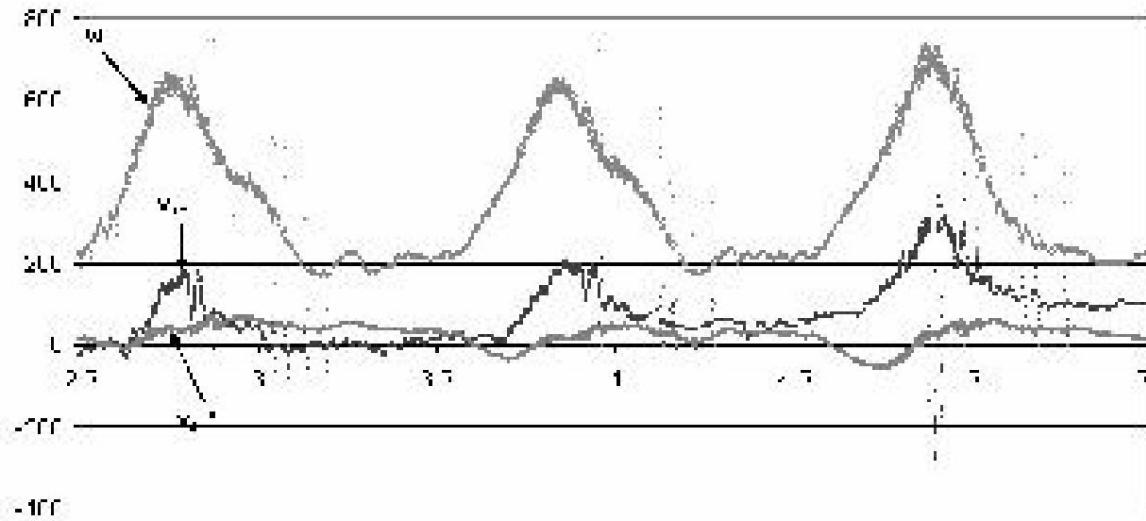
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Unfortunately, you can directly check the compliance of this formula (even without taking into account sign) is impossible with the available experimental data, since the accuracy measuring angular velocity does not allow calculating its second derivative (the first derivative can be approximately calculated by smoothing the graph). However, the following features of the experimental data can be noted:

- 1) Acceleration of c.m. depends in trend on the angular acceleration, as well as on the angular speeds with a positive sign; 2) In “shock” areas, i.e. where the value of the second derivative is large angular velocity, dependence of acceleration c.m. from angular acceleration becomes reverse.

In Fig. Figure 13 shows a comparison of experimental data on the c.m. velocity. (v_{cm}) s theoretical (v_{cm}^*), obtained from the modified formula (1), from which the term with the second derivative was excluded, the sign of the first term was taken out from under root, and friction forces were added to the accelerations from the formula. Visible in places some correlation with a positive sign, sometimes with a negative one; order accelerations correspond to the experimental ones - but nothing more. Modified Thus, the formula does not explain the phenomenon of the above-mentioned “critical angular velocity”, above which the trend of the c.m. velocity correlates with trend angular speed, and in general in its current form cannot be used for modeling experimental data.



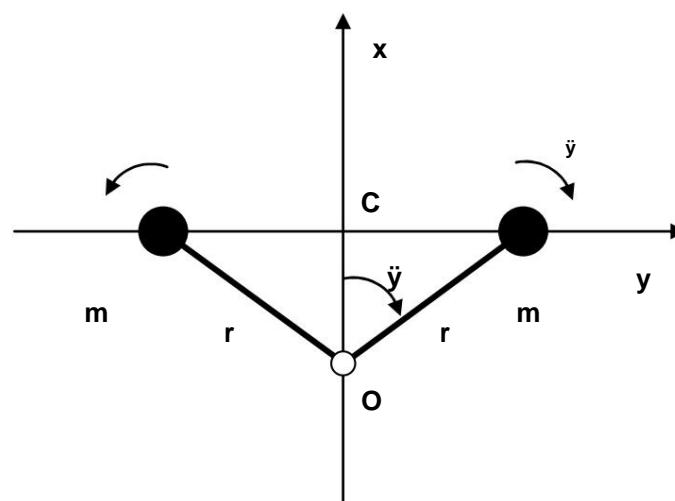


Rice. 13. Examples of comparisons of experimental data with theoretical data modeling using formula (1).

Problems of theoretical modeling of inertiod Tolchina

Analysis of works in which theoretical modeling of the inertiod was performed Tolchin, revealed one significant drawback inherent in all theoretical models, regardless of whether Newtonian mechanics is used or Mechanics Shipov. This drawback is that the models neglected own moment of inertia of the loads, taking the loads as material points with some mass.

The importance of taking into account the load's own moment of inertia is illustrated by the following example. Let us consider an inertiod with zero central mass. Loads of mass m rotate freely without friction at a certain speed $\ddot{\gamma}$ around a weightless hinge $\ddot{\gamma}$ on weightless absolutely rigid levers of length r (Fig. 14):

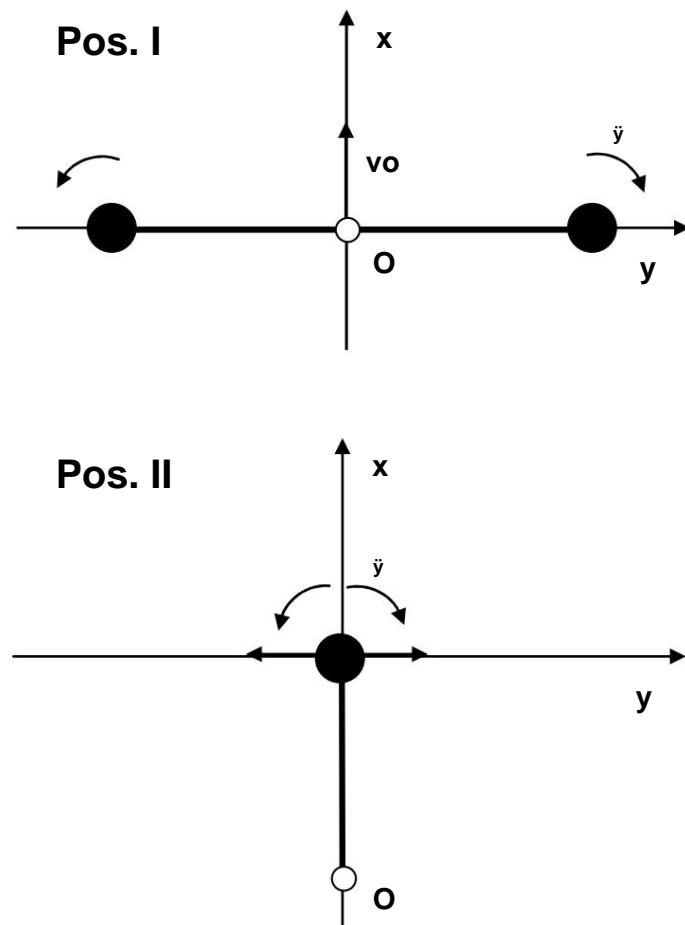


Rice. 14. Diagram of an inertiod with zero central mass.

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Let's look at this simplest construction within the framework of Newtonian mechanics. Let us apply the laws of conservation of momentum and energy. Since the center of mass C of the system, located in the middle of the segment connecting the loads, must be at rest (at inertial reference system chosen by us), then the loads, rotating around of the movable hinge O will move translationally along the y-axis, and the hinge O will move along x-axis.

At the two extreme points of their movement, diverging to a maximum distance, the loads will have zero translational speed, and point O at this moment moves at its maximum speed, passing through the center of mass. systems (Fig. 15, position I). Passing towards each other through the center of mass C, the loads will have maximum forward speed (Fig. 15, position II). At this moment the point O, on the contrary, stands still, having zero instantaneous speed.



Rice. 15. Diagram of an inertiod in two positions.

Let us consider the kinetic energy of the system in position I. Since the loads have zero instantaneous translational velocity, then the entire energy of the system must be lies in their rotation. But, if the load's own moment of inertia J_0 - relative to its own center of mass - is equal to zero (as is assumed theoretical models considered), then the energy is also zero, and the internal cyclic movement of such a structure is simply impossible!

By introducing the own moment of inertia of each load J_0 , we save this system from "paralysis". It can be shown that in this case the angular velocity of rotation of the loads will oscillate:

$$\ddot{\gamma} = \dot{\gamma}_0 \sqrt{\frac{J_0}{J_0 + Mr^2} \cos \dot{\gamma}} \quad (2)$$

In this case, the energy of each of the loads is redistributed from translational to rotational and back: in position II internal translational the energy of the system is maximum, in position I it is minimum (in this case it is equal to zero).

For an inertiod with a non-zero central mass, the formula takes the following view:

$$\ddot{\gamma} = \dot{\gamma}_0 \sqrt{\frac{J_0 J + A \cdot (1 - \sin^2 \dot{\gamma})}{J_0 J + A \cdot (1 + \sin^2 \dot{\gamma})}} \quad (3)$$

Where $J \cdot mr = 2m$,

$$A = \frac{2m}{2m+M}$$

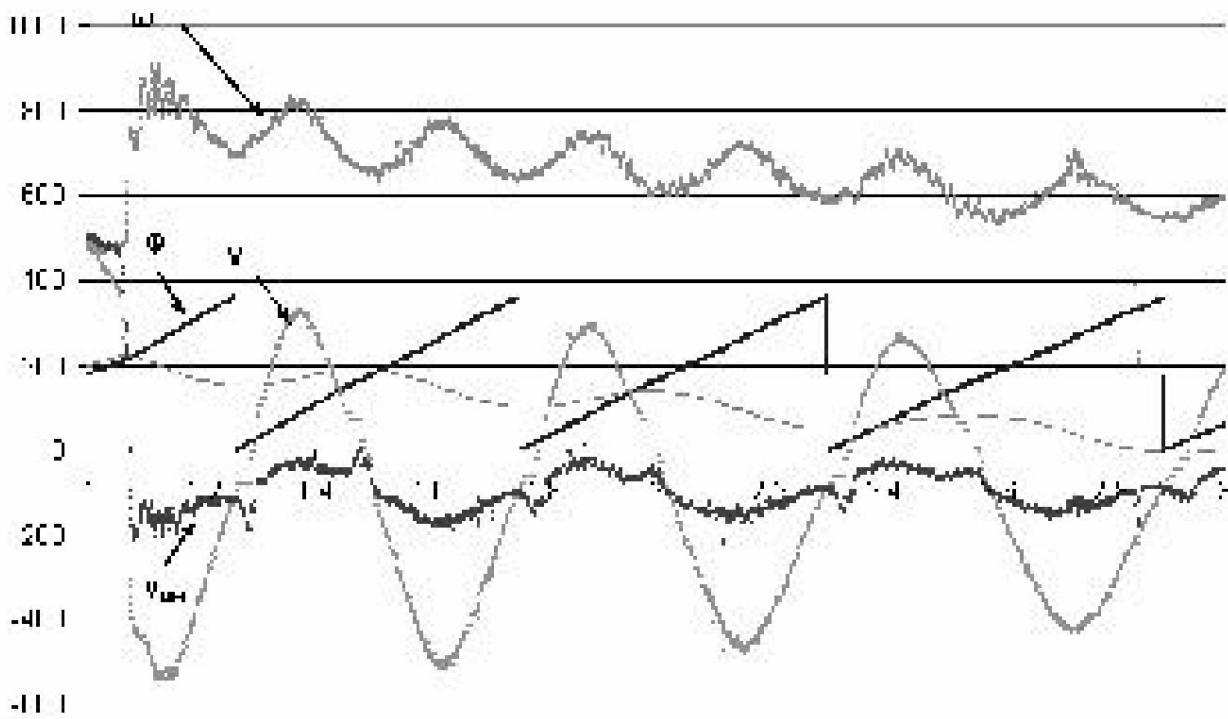
Obviously, taking into account the load's own moment of inertia is more important the higher translational speed of point O around which the loads rotate: for

In the considered case of zero central mass ($A = 1$), this speed is maximum, and for a stationary point O ($A = 0$), the own moment of inertia of the loads, indeed, can be ignored separately, and simply added to J .

In accordance with formula (3), the frequency of angular velocity oscillations is twice as high Frequency of rotation of loads.

Oscillation of the angular velocity of rotation of the loads is clearly visible on the motion graphs inertiod in series in which an absolutely elastic impact with free rotating weights (Fig. 16). Amplitude of oscillations at $A=0.27$ and J_0 equal 10% of J will be 13% of maximum angular velocity, and about 15% if J_0 is not consider.

It is also clear from the graphs that the actual speed of the center of mass is free moving inertiod oscillates significantly (with an amplitude of about 17% of the cart speed amplitude), which contradicts the classical mechanics, but is qualitatively consistent with the mechanics of G.I. Shipov [2].



Rice. 16. Oscillation of the angular velocity of loads (\ddot{y}) and the velocity of the center of mass (vcm) at free movement of the inertiod after an absolutely elastic impact.

conclusions

1. Analysis of experimental data obtained by G.I. Shipov in Thailand shows an anomalous movement of the inertiod that does not obey classical mechanics. The speed of the center of mass of the system is periodic changes over time; the nature of such a change cannot be explained by the forces of interaction of the inertiod with the support and other external forces. 2. Experimental data confirm the possibility of support-free movement, which follows from the mechanics of G.I. Shipov, and qualitatively correspond to its main conclusions. However, the formula for uncompensated inertial forces in [2] does not correspond to the experimental results data. At the same time, the experimental data shows some dependence of the acceleration of the c.m. on the angular speed of rotation of the loads and its derivatives.
3. Further continuation of both experiments and theoretical research is necessary work on inertiods. Further experiments should provide sufficient accuracy in measuring angular velocity to take into account its first and second derivatives. It will also be useful to install acceleration sensors, as well as directly measure the torque developed by the brake motor. 4. Perhaps taking into account the load's own moment of inertia will make it possible to clarify theoretical models describing the motion of Tolchin's inertialoid.

Acknowledgments

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TECHNOLOGIES. MEDICINE. RESULTS

Using LED grain processing in production grain bread

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Whole grain wheat bread is currently enjoying great popularity among the population of industrialized countries. In our country and beyond Abroad, the range of bakery products has recently expanded, including the recipe of which includes sprouted grain.

In the production of bread from sprouted grains, a special place is occupied by the stages soaking and germination of grain. This process is characterized by interaction grains with excess water and takes a long time. Therefore, a very pressing problem is to reduce the duration of soaking.
grains

In order to reduce the germination process of wheat grains, at room temperature, studied the possibility of using the information impact.

Dry wheat grain was exposed to a pulsed emitter with green (wavelength 530 nm), yellow (wavelength 400 nm) and red LEDs (wavelength 680 nm) with exposure durations of 30, 60 and 120 s. Soaking was carried out at a temperature of 20°C, the grain was germinated until seedlings 1 mm long.

It was established that the information impact on grains before soaking, with application of yellow LEDs for 60 s in pulse mode with a frequency repetition of pulses of 3 kHz with a pulse duration of 0.25 µs and further germination of grain at room temperature (20°C) water, at a ratio grain and water 1:1, allows you to reduce the germination time to 18 hours. The use of red and green LEDs is not advisable.

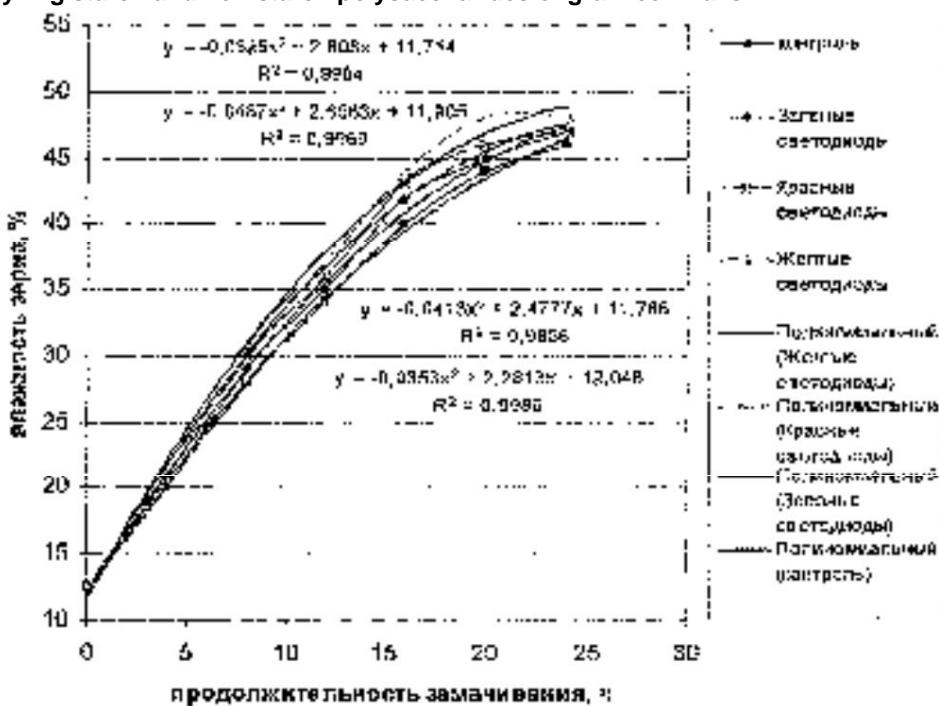
The obtained data were processed mathematically using the least squares method, and regression equations were obtained (see results in Fig. 1). Received regression equations take into account the effect of LED color on speed absorption of moisture by wheat grain during soaking.

When wheat grain germinates, the protein-proteinase and carbohydrate-amylase complexes of wheat grain change, so the influence of complex complexes was studied

enzyme preparations and information impact on the content of dry and protein substances, changes in the “falling number” indicator, starch viscosity gel, reducing sugar content, cellulolytic activity, fiber content and polyphenol oxidase activity.

It was found that the use of enzyme preparations and LED irradiation increases the loss of dry matter and protein in wheat grain by $9.1 \pm 0.3\%$ and $22.9 \pm 2.0\%$, respectively. Since when the grains are soaked they pass into the steeping water. water-soluble protein fractions, water-soluble vitamins and sugars.

When adding enzyme preparations Celloviridin G20x and Pectavamorin G20x to hydrolysis products of non-starch polysaccharides appear in the system, which contribute to a decrease in viscosity and, consequently, a decrease in the number of falling." Use of LED irradiation may increase activity amylolytic enzymes of grain. Accumulation of reducing sugars during soaking grain confirms the effect of enzyme preparations, the information impact of the emitter and the grain's own enzymes, hydrolyzing starch and non-starch polysaccharides of grain cell walls.



Rice. 1 - Change in grain moisture content during soaking, s preliminary irradiation lasting 60 s.

Over 24 hours of soaking, the fiber content in the control sample decreases by 20.6%, when using Celloviridin G20x by 46.9%, Pectavamorin G20x by 31.3%, LED irradiation by 32.8% compared to the original grain. This confirms that enzyme preparations, LED irradiation and proprietary cellulolytic enzymes of grain affect the components of peripheral layers of grains (cellulose and hemicellulose), destroying them, which provides Improving the quality of whole grain bread. In this case, partial hydrolysis of the cell walls of grain shells. Research has shown that in the process germination, the activity of polyphenol oxidase increases.

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Thus, the use of enzyme preparations and information exposure allows you to reduce the process of grain germination from 24 hours to 18 hours. Therefore, they can be recommended for use in the production of grain bread from sprouted wheat grain to speed up the germination process.

Method for intensifying the fermentation microflora of rye starters

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In modern conditions, in addition to achieving high quality indicators finished products, the search for effective technological ways to intensify the production process of these products, which would make it possible to minimize the influence of various properties of the feedstock on quality of products and reduce the technological cycle of their preparation process. This is also important in the production of bread from rye and a mixture of rye and wheat flour, in particular in the preparation of semi-finished products for the production of these varieties, including rye starters.

You can speed up the technological process by using various food additives, and also physical methods of influence. When using the latter, the effects Both individual components of raw materials and the semi-finished products themselves can be exposed.

The purpose of this work was to determine the effect of specially treated (activated) water on the properties of rye starters and the quality of bread from the mixture rye and wheat flour.

The following raw materials were used in the work: peeled rye flour, wheat flour 2 varieties, yeast, salt.

Water was activated by exposure to a non-electromagnetic component of radiation induced by an LED emitter containing 100 LEDs of the type AL336V (green light).

Frequency and time parameters of the signal at the emitter output:
- pulse repetition rate in a burst – 3000 pulses/s; - modulation frequency – 20 imp/s, meander; - exposure – 90 s.

For the study we used liquid rye sourdough without brewing (ZhRZ) with humidity 78-80%. The starter was refreshed after 2.5 hours. Activated water used in the preparation of a nutrient mixture to refresh sourdough in production cycle. To determine the effect of different concentrations activated water on the quality indicators of liquid rye sourdough the treated water when refreshing the starter was used without dilution and in dilution with the usual one in the ratio 1:2, 1:3, 1:4, 1:5, 1:6. When refreshing For the control sample of the starter, untreated water was used.

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Active acidity and rate of gas formation were determined on the device in starter cultures Eletsky, intensity of sugar consumption during fermentation and accumulation yeast microflora using the plate method.

Results of a study of the influence of various concentrations of activated water on The properties of liquid rye sourdough are presented in Fig. 1.

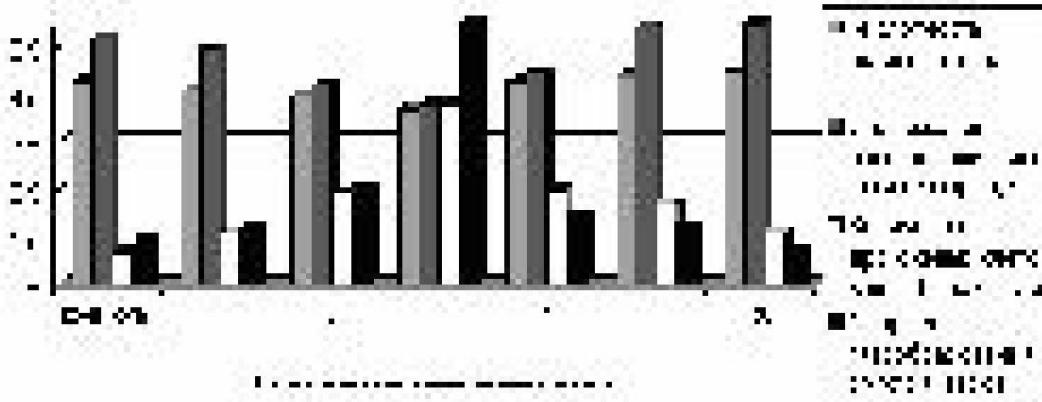


Fig.1 Effect of different concentrations of activated water on the quality of liquid rye sourdough.

Research results show that the addition of activated water in the composition nutrient mixture for cultivating liquid rye starter in production cycle has a beneficial effect on its quality: active acidity, reducing sugar content, number of yeast cells and speed gas formation. The sample with the addition of activated water in a ratio of 1:3 with regular water. At the same time, active acidity decreased by 12.5%, the intensity of fermentation of sugars improved by 24.5%, the amount yeast cells at the end of fermentation increased 3.5 times, the speed gas formation increased 4.5 times compared to the control.

To study the effect of liquid rye sourdough prepared with the addition of activated water on the properties of the dough and the quality of bread using sourdough starters with by adding activated water with a dilution of 1:3 as part of the nutrient mixture, since this starter had the best quality indicators. Control the sample was kneaded into sourdough with refreshed ordinary water.

Using sourdough starters, dough was kneaded from a mixture of rye and wheat flour at a temperature 28-30°C, fermented it to a final acidity of 10-12 degrees, divided into pieces weighing 700 g, placed in greased molds, proofed and baked at temperature 220°C.

The test determined humidity using an accelerated drying method using a PIVI-1 device, acidity using a titrimetric method, fermentation duration and proofing. 16 hours after baking, the finished samples were examined according to organoleptic and physicochemical indicators. Research results The qualities of the finished bread are shown in Table 1.

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As a result of research, it was found that the duration of dough fermentation from using starter culture refreshed with activated water in proportion to the usual 1:3 decreased by 1.5 times, the duration of proofing - by 1.3 times, the porosity of the finished bread improved by 2.4%, the specific volume - by 9.1%, the compressibility of the crumb - by 17.03%, the elasticity of the crumb – by 16.07% compared to control. The products did not differ from each other in organoleptic characteristics.

As a result of the studies, it was established that the use activated water in different concentrations, has a positive effect both on the quality of liquid rye sourdough and on the duration technological process and quality of bread from a mixture of rye and wheat flour treated with a non-electromagnetic component of induced radiation LED emitter. The developed method received patent No. 2226832 "Method for intensifying the fermentation process" dated 04/22/2004, bulletin No. 11.

Table 1 - Qualitative characteristics of dough and bread made from a mixture of rye and wheat flour prepared with liquid rye sourdough with the addition of activated water.

The name of indicators	Dough and bread quality indicators	
	control	experience
Humidity of the dough,	50.0	50.0
% Final acidity of the dough, degrees.	9.0	9.0
Duration of dough fermentation, min. Duration	90	60
of dough proofing, min. Baking duration, min.	60	45
Humidity of finished bread, % Acidity,	35	35
degrees. Porosity, % Specific	46.0	46.0
volume, cm		
	8	8
³/G.	52.4	54.8
ÿÿÿ. units. device		2.03
ÿNpr. units. device	1.86 2.7 5.6	3.16 6.5
Appearance:		
shape	Corresponding to the form in which baked goods were made, without sides swims	
Surface Color	Smooth without large cracks or tears	
	Dark brown	
Crumb condition	Baked without traces of unkneading	
Porosity	Developed, without voids and compactions	
Taste	Characteristic of this species, without foreign taste	
Smell	Characteristic of this species, without foreign odor	

Based on the results of the work, we can draw the following conclusions:

1. Adding activated water in a ratio of 1:3 with regular water to the composition nutrient mixture for the reproduction of liquid rye starter stimulates acid accumulation process, increases the intensity of fermentation of sugars,

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promotes greater accumulation of yeast microflora and improves rate of sourdough gas formation.

- 2. Preparation of dough from a mixture of rye and wheat flour with sourdough adding the optimal ratio of activated water to regular water (1:3) helps reduce the fermentation period of the dough by 1.5 times, proofing by 1.3 times compared to the control.**
- 3. Bread prepared with sourdough with the addition of activated water has higher specific volume, porosity, compressibility and crumb elasticity than the control sample.**

The radionic method in intensification and health care on chicken farm

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The system Quantec restore the balance in subject's Vibrational Energy Fields. Quantec scans the Energy Fields of the subject from digital photograph and then treats the subject remotely, balancing its Energy Fields which, when out of balance, manifests as disease symptoms.

The subject of our research were two chicken houses on the chosen farm. The Quantec system was used in one of the observed houses for 6 weeks. The intake of fodder, body growth rate and also mortality rate were taken into consideration in the whole experiment. The result of the observations shows that the meat production was higher with the usage of Quantec system than in the house of the ordinary breeding. The described method proves that the Quantec system can improve a multi production of ecological meat.

Material and methods

The subjects of observation were 2 chicken houses with number of 44000 chickens each. The broilers breeding has been led for many years as a family business (father and son) and reach a very high level, (lethal cases 1.5% during whole fattening period). The previous breeding with similar number of chicken showed that house nr 3 – which was situated further from the motorway and along the canal, had much better results then the house nr 2 - situated close to the motorway and along the electrical wires/lines

The target of observations

To assume that radionic system Quantec can improve, according to the manufacturer, the results in breeding and fattening chickens and improve the health of observed animals. A decision was taken to choose the program which system Quantec offers. After scanning the energy field of the tested chickens, a Healing Sheet was prepared from an extensive database (incorporated in the software system of the computer). Then this Healing Sheet was broadcasted to the chicken for 12 seconds every 3 hours over 24 hours for 6 weeks.

The program is based on radionics and frequency of white noise diode. The Quantec scans the Energy Field of the subject, which was captured from the digital photograph, and transmits the Heeling Sheet's vibrations in a concentrated format in any distance in the

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whole world. A profitable result of Quantec is regulation of Energy Field required to balance the natural harmony of the target object (human, animal, tree, house, lake).

Observation aspects

1. Intake of food and drinking water during all the fattening period and at the end of it.
2. Body growth rates at time of check-up.
3. Lethal cases counted and weighed everyday during each period of fattening
4. The weight of meat after slaughter.

During the fattening period, the same rules were kept (like in the previous fattening periods). Generally, the results of that period were worse than the previous once. It could happen because of difficult weather conditions lasted for a few days (strong wind which could cause any damage of metal houses).

The analysis of the scan, which was carried out 3 times during the fattening period, is being worked at in details.

The results of observations

The chicken house nr 2 was chosen to be assisted with Quantec. This study was carried out to analyze the production results and fattening performance of the chicken house nr 2 which has always had worse results. The breeder didn't know about our choice and treated both birdhouses equally. After 6 weeks, it was observed that basic production parameters of broiler chickens fattening in the house nr 2 were much better than in the house nr 3. The breeder counted that his profit made on the house nr 2 was hi

The results

	house nr 2 (research)	house nr 3 (control)
The final weight, kg	$2.29 \times 44,000 = 100,760 \text{ kg}$	$2.27 \times 44,000 = 99,880$
Fodder intake: Together:	1.85kg/kg increase 186 406 kg	1.88 kg / kg increase 187,774.4 kg
Lethal cases in kg	614	744

The analysis of expenses and profit

1. The weight higher of 2 g /chicken x 44,000 chickens = 880 kg x 2 zl = 1760 zl.

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- 2. Fodder intake lower of 3 g / kg increase x 44,000 chickens x 2 zj/kg = 3,022.8 kg of fodder less = 6,045 zj**
- 3. Lethal cases lower of 130 kg x 2 zl /kg = 260 zj.**
- 4. Together: 1760 + 6045 + 260 = 8.065.00 zl the positive results of our actions (ca. 2.000 Euro).**

Note: The number 44000 chickens is taken as a reference number.

The researchers further aim is to work out a system of making scans and create the supporting program considering individual conditions on this farm.

Silos for fodder were also tested every 2 weeks. It was observed that there was some kind of pollution. The pollution could have bad influence on chicken health. All the caring procedures were carried out as usual.

Conclusions

- 1. The result of this study have shown that the production of broiler chickens has improved a lot since it was under the influence of the radionic program for biocommunication Quantec.**
- 2. The observations should be repeated with early established algorithms with a correction eg once a week.**
- 3. Described method finds application in animal's multi production.**
- 4. The next research can be carried on in the subject of quality of meat.**
- 5. Quantec program can find application in breeding ecological chickens, ducks, geese and their eggs on the condition that we take them under this program. It can be used by veterinary practitioners to assists pet owners and farmers to stimulate the growth and keep their animals health without using harmful chemical drugs.**

More information about system: www.quantec.ch, www.m-tec.ag We invite all interested breeders of poultry, horses, cattle and pigs, veterinary practitioners, and researchers to cooperate with us.

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Properties of coherent matter

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The phenomenon of coherence has become widespread in the description of physical states of matter united by a common feature - orderliness and consistency behavior of a large number elements substances. Superconductivity, superfluidity, laser beam and other phenomena occur due to coherence on macroscopic scales.

Report from scientists (Deborah Jin, Markus Greiner, Cindy Regal) at JILA, a joint laboratory of the Department of Commerce's National Institute of Standards and Technology (NIST) and the University of Colorado at Boulder (CU-Boulder) about observation of a "Fermi condensate" represents coherent matter as a nova a form of a substance previously inaccessible to humans.

Coherence of collective quantum interactions of physical structure can lead to the emergence of completely new physical properties of the substance, which make it possible to use it in various forms and in "industrial scale."

In coherent modes, one can expect an increase in reaction yields, selectivity processes, self-cleaning of surfaces from catalytic poisons, etc. And these expectations were confirmed, especially in chemical oscillators with forced, forced oscillations [1 - 5]. Awareness that macroscopic coherence is a fundamental property, it came recently and stimulated actively progressing interest in chemical oscillators.

If oscillations of nuclear spins spontaneously become coherent, then in this case, the chemical reaction becomes a radio frequency emitter, a quantum a generator with chemical pumping (similar to chemical lasers). This is new phenomenon - radio emission from a chemical reaction - was first predicted theoretically and then discovered experimentally [6].

1. Macroscopic spin effects

Experimental physics has accumulated quite a lot of observations related to unusual behavior of systems oriented according to the classical spin. To them can be attributed to the scattering of neutrons on a magnetized plate with the orientation spins parallel to the magnetic field [7, 8]. When neutrons pass through spin-polarized target, neutron precession occurs, the magnitude of which several orders of magnitude higher than that which could be caused by a magnetic field [9]. Protons with spin orientations opposite to those of the target pass through

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through the target without interaction with its protons, but with the same orientation spins in the beam and in the target, their scattering occurs in full accordance with theoretical calculations [10]. And in experiments with ${}^3\text{He}$ it was discovered dependence of its thermal conductivity on the state of nuclear spins [11].

JA Spiers [12] theoretically substantiated it, and J.M. Daniels, S.G. Qorter et al. [13, 14] experimentally confirmed the dependence of quantum emission from a radioactive nucleus on the angle between the nuclear spin axis and the direction of radiation. Under normal conditions the total radiation of a radioactive sample is isotropic, since the spins radioactive nuclei are randomly oriented. If the spins of radioactive nuclei are oriented in some preferred direction, researchers observe an anisotropy of radiation, the magnitude of which for ${}^{80}\text{Co}$ it is 1.45 [13].

From the above short review it is clear that considering spin as a deep a quantum property is not sufficient to explain its physical nature.

In this regard, let us turn to the physical nature of spin outlined in the article by N.S. Ohanian [15]. This article makes a very important well-founded conclusion that the existence of electron spin is explained by the presence of a circulating flow energy in the field of its wave. Spin is a wave property, regardless of whether it is a classical wave or a quantum one. The only fundamental difference between them is that the spin of the classical wave is continuous macroscopic appears size, A quantum spin quantum mechanical operator and has a discrete spectrum of values. Wherein one can go from the quantum to the classical limit for a system of many particles with large fill numbers. A circularly polarized light wave is an example of such a transition from a large number of quantum spins to macroscopic back.

It is natural to expect that due to the unidirectional orientation of nuclear spins a collective spin field will be formed. This is consistent with the concept "A-fields" by R. Utiyama [16], according to which, each independent parameter particle a_i , satisfying the conservation law, corresponds to its material field \vec{y}_i , through which the interaction between particles occurs, corresponding to this parameter. Such fields are universal fields, or first-class fields. The concept of R. Utiyama coincides with the theory of VL Diatlov [17]. In accordance with it

spin generates a field that can be interpreted as long-range spin field.

Thus, the spin field can be generated using devices created based on a specially organized ensemble of classical spins, in which the maximum energy of interaction is realized not only between neighboring ones, but also remote spins. The system of interacting spins is then a kind of amplifier of the small effects of each individual spin.

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Figure 1A shows a spin field generator in which an ensemble of classical spins are realized using anisotropic barite plates shaped right triangles with an angle of 50° at the base. The plates are fixed to round rotating platform. The platform rotates by means of a DC electric motor; speed - 6000 rpm, voltage 6 v. In this case, the orientation of the spins in the plates coincides with the direction rotation.

The possibility of emitting a spin field with a generator of this design was determined in an experiment, the ideology of which is as follows. At orientation of the spins of radioactive nuclei in some preferred direction, there is a dependence of the radiation of radioactive nuclei on the angle between nuclear spin axis and radiation direction [13]. That is, researchers radiation anisotropy is observed.

But due to the fact that spin is considered by us as a source of the spin field, then in accordance with the concept of R. Utiyama [16] and the theory of VL Diatlov [17], an object sensitive to the influence of the spin field emitted by the generator should be a spin system of the material environment. Moreover, in terms of the magnitude of the effect, the system of spins has an advantage over the individual spin of a microparticle. Complex nonequilibrium spin structure, has a large reserve states quasi-degenerate in energy. This structure can serve as system in which the action of the spin field will accumulate (spin saturation) and lead to noticeable macroscopic changes.

In connection with the above, the following experiment was carried out. In a 30 km zone Four radioactive soil samples were taken from the Chernobyl nuclear power plant, from which two samples were selected. After mixing, cementation, and weighing of samples measurements of radionuclide activity were carried out. Measurements were carried out with using an Ortec detector, the measurement results were processed spectrometer "Nokia". The activity values of the samples are given in Table 1.

Table 1.

Expo-position, sec	134Cs, Bk/sample	Error, %	137 γ s, Bk/sample	Error, %	144Ce, Bk/sample	Error, %	106Ru, Bk/sample	Error, %
Sample 2								
300	551	7	7067		1088	4	440	8
2 Sample								
500	42	12	685	47	-	-	-	-

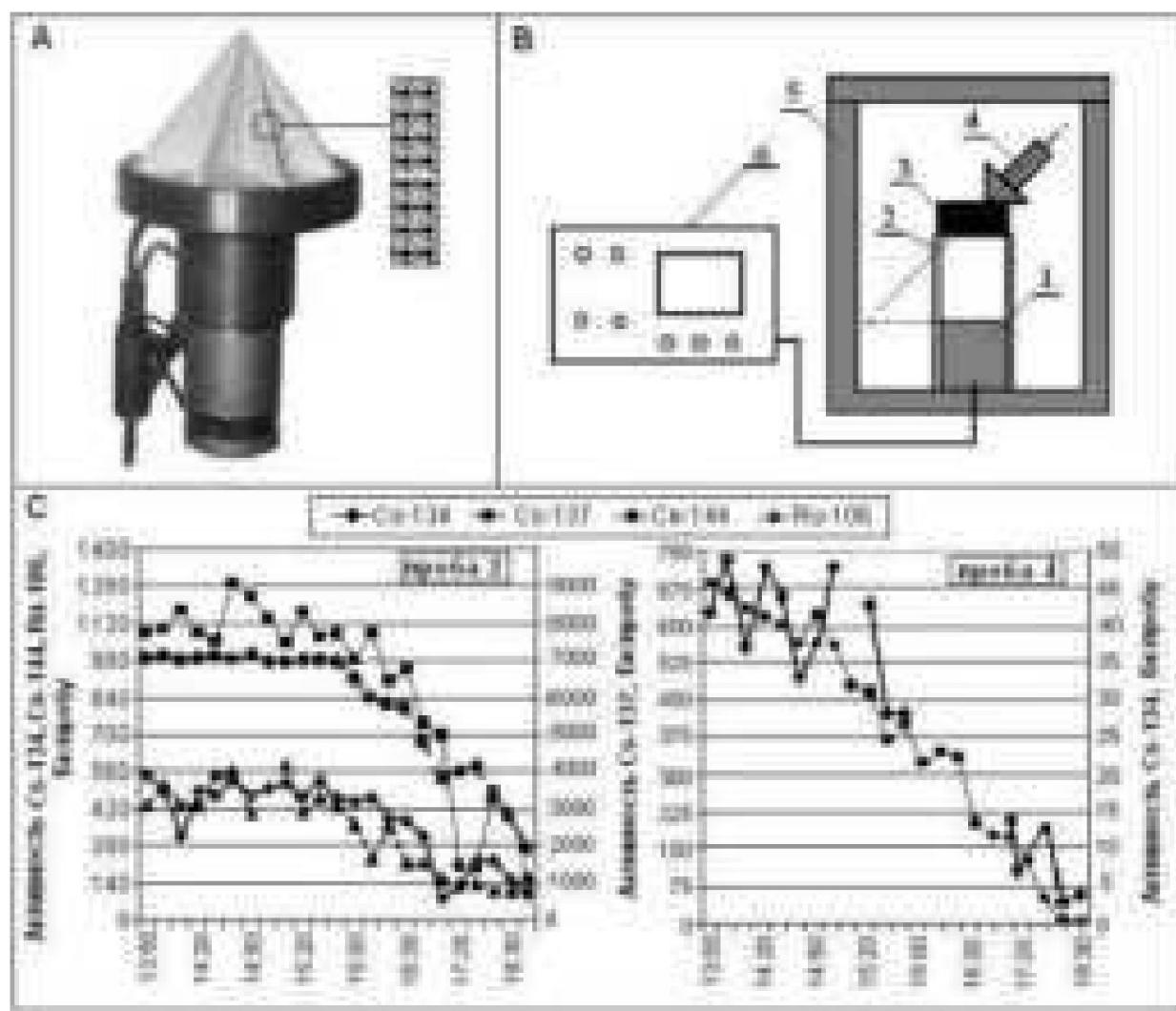
The experiment was carried out according to the scheme shown in Fig. 1B.

Inside the shielded space of the "Ortec" detector 1 there was a limiter 2 is installed, with a radioactive sample 3 attached to it. spin field generator 4 was installed in the sample body in such a way that

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the extension of its axis did not intersect with the detector body. Spectrum analysis and The activity of radionuclides in the samples was carried out with a Nokia 6 spectrometer.

The experiment was carried out simultaneously on two samples using two "Ortec" detectors, similar layouts of samples and generators spin field. The experiment continued continuously for 5 hours. At first experiment, measurements of the activity of radionuclides in samples were carried out, and then the spin field generators are turned on. After that every 30 minutes measurements of the activity of radionuclides in samples were carried out during operating generators. As a result of the experiment, data were obtained, graphical the representation of which is shown in Fig. 1 S.



Rice. 1. The influence of the spin field on the anisotropy of radionuclide radiation: A – spin field generator; B – experimental diagram: 1 – Ortec sensor, 2 – limiter, 3 – radioactive sample, 4 – spin field generator, 5 – screen, 6 – Nokia spectrometer; C – change in radionuclide activity in the direction of the detector when exposed to a spin field.

After the end of the experiment, the generators were removed from the samples, and the samples themselves remained in the same position as during the experiment. After 16 hours, i.e. in the morning

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the next day, measurements of the activity of radionuclides in the samples were carried out. IN As a result, it was revealed that the measured activity of radionuclides was restored to initial level.

2. Thermogravimetric studies of coherent brown coal

As noted above, spin dynamics actively influence the mechanism and kinetics reactions. When moving along the reaction coordinate from initial to final state of the molecular system will pass through a superposition of states, i.e. Coherence in a chemical reaction plays an important role. Let us turn to work [20]. Let at the initial moment of time, $t = 0$, the system is in state 1 s energy E_1 , and let there be state 2 with energy E_2 equal to E_1 , i.e. $E_2 = E_1$. Let us assume that these two states are related by some interaction with transition matrix element equal to V . Let us discuss the probability $p(t)$ of finding the system at any moment in time in state 2. Time dependence of this probability depends very much on coherence. If the transition from the initial state 1 to final state 2 occurs in an incoherent manner, then over time the populations of these states become equalized, and after reaching $p = 1/2$, the populations of these states subsequently retain the value $1/2$. When coherent motion, the desired probability is equal to

$$P = \sin^2(Vt / \ddot{\gamma}). \quad (1)$$

Two things about this result show that:

- a) this probability oscillates, i.e. it does not change monotonically as expected for incoherent motion; b) this probability reaches a value of 1 at certain points in time.

If at $Vt / \ddot{\gamma} = \ddot{\gamma}/4$ this probability becomes equal to $1/2$, both states turn out to be equally populated, the transition from the initial state to the final continues as if by inertia further, until the system completely transitions to state 2 etc. This example shows that quantum coherence can play a very important role an important role in transition processes and in elementary chemical acts.

Thus, the coherent state of the fuel can actively influence the kinetics combustion process. At the same time, energy plays an important role in combustion kinetics activation. Its value can be determined using the “Free Kinetics” model, which allows accurate calculations for complex reactions such as combustion process.

The model is based on the theory of Dr. Sergei Vyazovkin, which states that the function conversion $f(\ddot{\gamma})$ and activation energies are constant for some variable quantities. The calculations of the “Free Kinetics” model require three dynamic curves with different heating rates ($\ddot{\gamma}$).

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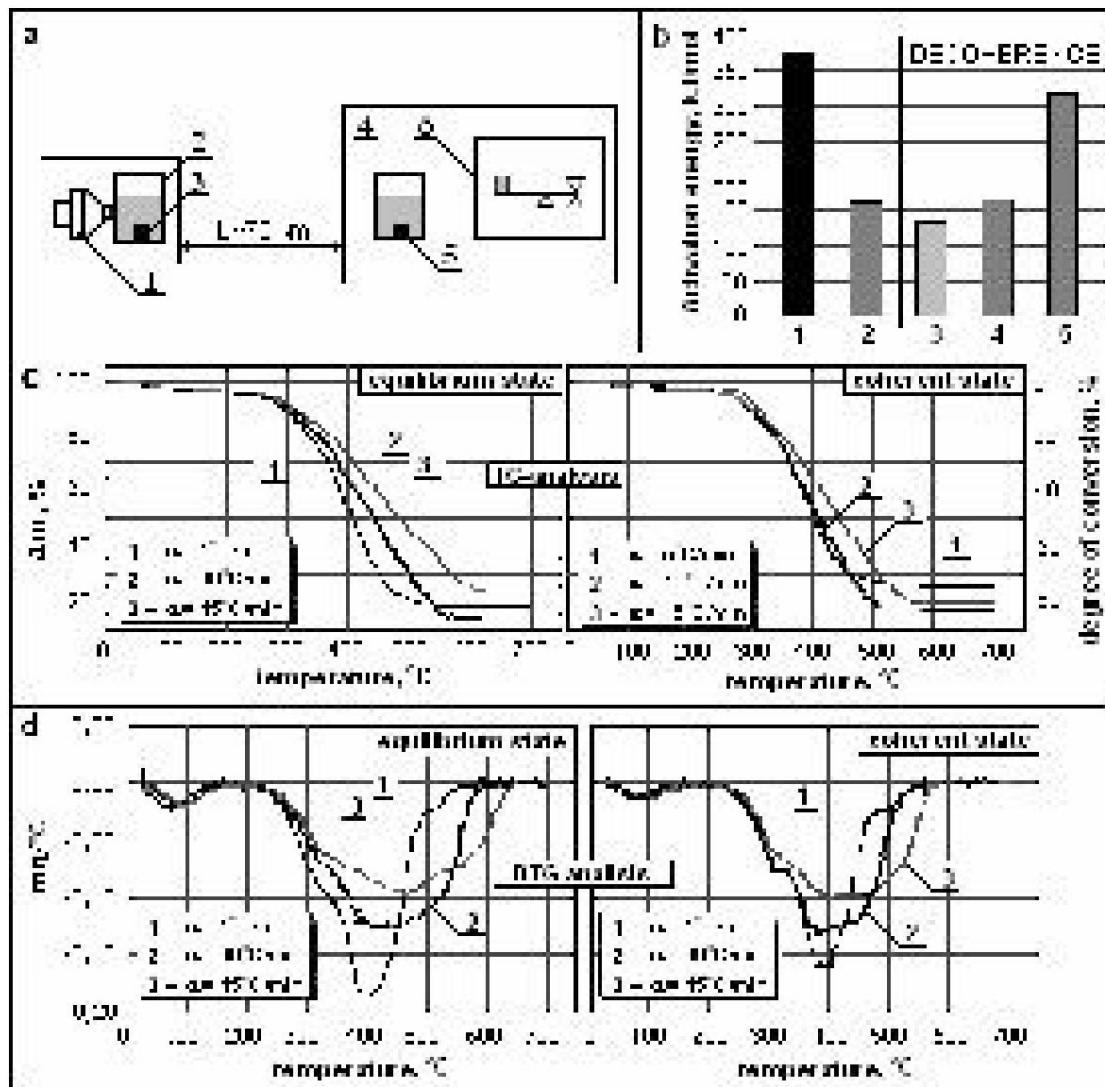
Experiments on the influence of the coherent state of fuel on its energy activation was carried out at the Czestochowa Institute of Technology (Poland). IN Ground brown coal with a size of grains 1 – 1.2 mm. The content of the organic component is 84.4%. Hygroscopic humidity – 4.1%. The activation energy value was determined using thermogravimeter TGA/SDTA/851e from Mettler Toledo. Experimental design shown in Fig. 2A.

In accordance with the experimental design in Kempno (Poland), there was a generator spin field 1, resonator 2 and chip translator 3. In Częstochowa Polytechnic Institute ($L \sim 70$ km), there was an NMR spectrometer 7, a flask with gasoline sample 4 and chip-inductor 5, test tube with the test sample 6.

At the first stage of the experiment, the activation energy of brown coal was determined equilibrium state.

After turning on the spin field generator 1, the spin fields were activated states of coal in resonator 2. Simultaneously with activation of coal in the resonator activation of the spin states of chip-translator 3 occurred, which due to effect of entangled quantum states carried out teleportation of changes spin states to the inductor chip 5. The inductor chip performed spin pumping coal in flask 4 and transferred it to a continuously maintained coherent state. The time for transferring coal to a coherent state is 12 hours.

Results of measurements of the activation energy of brown coal in a coherent state (left side of the graph) and decoherization state (right side of the graph) are presented together in Fig. 2B.



Rice. Thermogravimetric testing of coal: A - experimental diagram; B – change of activation energy of brown coal: 1 - at equilibrium state, 2 – in a coherent state and in a decoherent state: 3 - after 2 days, - after 7 days, 5 - after 10 days, C – degree of coal burning as a function of temperature, D – course of differential thermogravimetric analysis curves (sample weight loss coal as a function of temperature).

The highest activation energy value was determined for coal in the state balance. After introducing coal into a coherent state, there was a decrease activation energy from 377837 kJ/kmol to 163603 kJ/kmol, which is 56.7%. This indicates a decrease in the energy barrier that follows overcome when burning coal in a coherent state. Next measurements were carried out 2 days after the start of the coal decoherization process. Despite the fact that this process lasted 2 days, there was a further decrease in the value activation energy of coal by 16.6% relative to the value of the coherent state. Research results show that this effect is observed within 48 hours without the need to maintain it.

A measurement taken on day 7 of the decoherence process showed for the first time an increase in the activation energy, but its level was close to the value

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corresponding to the coherent state. A significant increase in this parameter was observed only 10 days after the start of the decoherization process. Despite such a long decoherence time, the return to the level the equilibrium state did not occur.

The strange behavior of the activation energy during decoherization may be a consequence the following processes. The coherent state of coal grains determines the formation static solitons, which is necessary for their stable existence. The decoherization process is accompanied not only by scattering, but also by useful energy transformation. The internal work performed in this case determines maintaining temporary order in the system. At the same time, the rate of energy exchange solitons with the medium exceeds the rate of energy dissipation in the medium, which leads to an observed decrease in activation energy. Decoherization process leads to a decrease in the rate of energy exchange of solitons with the medium, their dissipation and increase in activation energy.

In addition to determining the activation energy, an additional analysis was carried out TG (thermogravimetric) curves. These curves represent the magnitude decrease in sample mass (mass ~ 0.3 g) (Y-axis – left), which corresponds to the level coal conversion as a function of temperature increase (Y axis – right). The sequence of the process under study was carried out at three speeds heating 5°C/min (black line), 10°C/min (red line), 15°C/min (green line) both for coal in an equilibrium state and for coal in a coherent state and is shown in Fig. 2C.

From the given dependencies it is clear that the temperatures at which the The coal conversion process is different at variable heating rates. At speed heating $\dot{\gamma} = 5^{\circ}\text{C}/\text{min}$, complete combustion of the coal sample occurs at a temperature of ~ 540°C. Here we can assume the kinetic nature of the process in which the increase in temperature in the TGA combustion chamber is an activation factor combustion reactions.

A higher temperature (~ 580°C) for complete combustion of a coal sample was required heating process $\dot{\gamma} = 10^{\circ}\text{C}/\text{min}$, and for heating rate $\dot{\gamma} = 15^{\circ}\text{C}/\text{min}$ the coal conversion temperature was ~ 630°C. This may indicate the diffusion nature of the combustion process, the rate of which is limited as diffusion of oxygen through gaseous combustion products surrounding burning coal sample into the coal grain matrix, and chemical activity oxygen.

Such patterns were not observed during tests conducted with coal in coherent state. Complete combustion of specified portions of coal occurred here at low temperature, regardless of the specified sample heating rate.

When comparing the burnout curves of coal, both in equilibrium and in coherent state at a heating rate $\dot{\gamma} = 5^{\circ}\text{C}/\text{min}$, they are observed repeatability, and complete combustion of coal samples occurs at the same temperature ~ 540°C.

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At a heating rate $\dot{\gamma} = 10\text{°C/min}$, it is clear that the complete conversion of coal into equilibrium state occurs at a temperature of 580°C , whereas for coal being in a coherent state, the conversion temperature is 40°C lower ($\sim 540\text{°C}$). Increasing the rate of coal burnout at lower temperatures indicates an increase in fuel reactivity in a coherent state and greater chemical activity of coal components relative to oxygen.

A similar dependence can be observed at a heating rate $\dot{\gamma} = 15\text{°C/min}$. The maximum degree of coal burnout in an equilibrium state is achieved at

temperature 630°C , whereas for coal in a coherent state this temperature is 560°C ($\Delta T = 70\text{°C}$). It should be noted that at high speed heating, diffusion of gas reagent and degree of oxygen activity relative to the combustible components of coal determine the rate of chemical reactions in a gas-solid system.

This trend is undoubtedly associated with a decrease in the activation energy of a certain for the coherent state of coal.

In addition to the TG analysis, we will trace the course of the DTG (differential thermogravimetric) curves - the first derivative in the equations describing the loss of mass of coal temperature functions. Temperature values corresponding to successive extrema of the function, determine here the amplitudes in which the speed the physical or chemical changes occurring is the highest. In the accepted system, the X axis corresponds to temperature, and the Y axis corresponds to the speed of the process, which corresponds to the slope of the TG curves.

DTG curves presented in Fig. 2D, directly correspond to the above above the course of TG curves for the coal combustion process in equilibrium and coherent states for three heating rates – 5°C/min (black line), 10°C/min (red line), 15°C/min (green line). The first minima shown in Fig. 2D in the temperature range $67\text{--}96\text{°C}$ corresponds to the process of moisture evaporation (hygroscopic) and will not be taken into account in further analysis, since contribute no significant information about the influence of the coherent state of coal on the process of burning it.

Interesting and at the same time worthy of more discussion is the behavior coke formed during degassing of a coal sample during its combustion.

It should be noted here that for coal in equilibrium the values temperatures corresponding to extremes (corresponding to coke combustion) are contained in a fairly wide range, namely $395\text{--}467\text{°C}$ ($\Delta T=72\text{°C}$), in differences from the narrow range of $380\text{--}397\text{°C}$ ($\Delta T=17\text{°C}$) characterizing coal samples in coherent state.

This indicates an increase in the reactivity of coal, namely at a temperature greater than 300°C . These movements are visible, however, only on the X axis, where the values

ordinates corresponding to the maximums of the curves for the same heating rates in these states are close, i.e. near. $-0.1 \text{ mg}/\text{oC}$ for $\ddot{\gamma} = 15\text{oC}/\text{min}$, $-0.13 \text{ mg}/\text{oC}$ for $\ddot{\gamma} = 10\text{oC}/\text{min}$, $-0.17 \text{ mg}/\text{oC}$ for $\ddot{\gamma}=5\text{oC}/\text{min}$. This follows from the fact that the maximum speeds combustion processes achieved for these two states of coal are comparable, but for coal in a coherent state they are realized at more low temperatures.

As before, when analyzing TG curves for a low heating rate ($\ddot{\gamma} = 5\text{oC}/\text{min}$), practically no temperature difference is observed for the extrema of the curves describing the process of coal combustion in equilibrium and coherent states. IN In this case, the value $\ddot{\gamma}T$ takes the value $\sim 13\text{oC}$ as a temperature difference of $381-394\text{oC}$. The big difference occurs at heating rates $\ddot{\gamma} = 10\text{oC}/\text{min} - 41\text{oC}$ ($424-383\text{oC}$). The greatest difference is observed at $\ddot{\gamma} = 15\text{oC}/\text{min}$, at which $\ddot{\gamma}T$ reaches a value of 70oC ($467-397\text{oC}$).

3. Industrial resource of coherent matter

1. The use of coherent coal in power plants shows a decrease its consumption by 12-16%. Maximum reduction - ~25%. Accordingly, the problem of CO₂ emissions into the atmosphere is solved. Decreases emission of benzo/ÿ/pyrenes (5.7 times), higher aromatic hydrocarbons (in 13.8 times).
2. Recrystallization annealing of steel reduces consumption energy carriers by ~40%.
3. The use of coherent diesel fuel makes it possible to reduce the content in exhaust gases soot by 50-80%, CxHy by 30-40% and particulate matter by 40-50%.

Conclusion

The experiments carried out confirm the possibility of obtaining coherent substances, and maintain this state for an unlimited time. The transfer of coal into a coherent state leads to a decrease in its energy activation by ~57%. A coherent "Industrial Resources" system has been created matter. An important feature of the created system is the reduction of energy consumption and reducing greenhouse gas emissions into the atmosphere. Using coherent matter in a complex of environmental measures can effectively reduce impact of greenhouse gases.

The second important feature of the created system is the ability teleportation of coherent states over unlimited distances. This the possibility of creating new teleportation communications opens up only for industrial purposes, but also in space exploration and medicine.

Literature

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Universal quantum teleportation system

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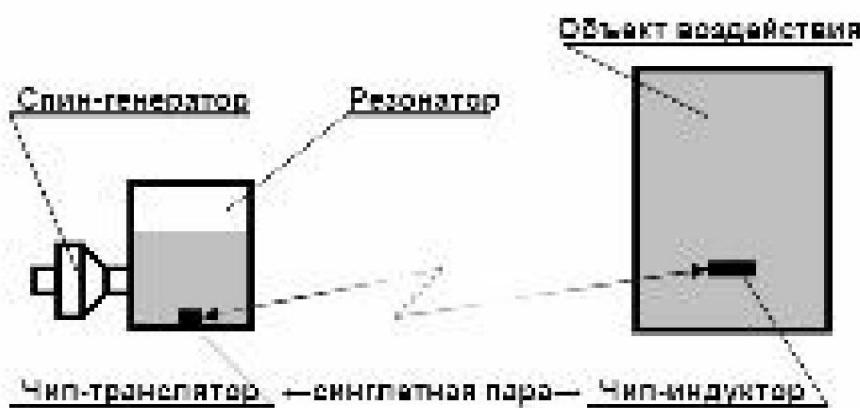
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Nowadays in laboratories of leading countries and computer corporations of the world new practical applications are being actively developed (both theoretically and experimentally) applications of quantum mechanics, grouped under the name of entangled physics entangled quantum states. These applications are developed in three main directions: quantum teleportation; quantum cryptography; quantum computer.

There is a real boom in the field of quantum teleportation and cryptography. IN The development of these problems involves leading mathematicians, theoretical physicists, experimental physicists, specialists in algorithms, cryptography and communications from leading scientific centers and different countries. In the USA, for example, the scientific program quantum information transfer currently consists of 34 projects, in the development of which involves 21 universities, two multi-purpose laboratories and three of the most secret government agencies. A heads and coordinates all work on the Center for Defense Research program.

This new resource of quantum physics became the basis for the development at the Priroda Research and Production Center of technologies that make it possible to implement it in various forms and on an "industrial scale".

The basis for success was the technical solution for the creation and long-term storage (hours, days, etc.) of the coherent spin state of material bodies. IN As a result, a universal teleportation system was created, shown in Fig. 1.



Rice. 1.

Industrial testing of technologies based on the use of universal Spin state teleportation systems have made it possible to achieve the following:

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1. Energy consumption when annealing ball bearing steel is reduced by 36-40%. plants "Dneprospecstal" (Ukraine) and SKF "Poznan" (Poland).
2. In the production of semiconductors, the yield of suitable diode elements increased from 68% to 80%.
3. Reduce the content of NOx, CO, C, CxHy, and PM in diesel exhaust gases engines below Euro II and ECE R-49 regulations without the use catalysts.
4. Double the speed of chemical reactions and, in particular, increase burning rate of wet coals for the needs of thermal power engineering.
5. For the needs of thermal power engineering, reduce the heat capacity of water by 2 times. Which allowed in production conditions (boiler room heating the city population of 10 thousand people) save 1300 tons of coal in one heating season.
6. Teleport the properties of vaccines (from influenza and hepatitis A) and carry out informational vaccination of people and rabbits. Wherein the immune response of organisms is realized in 36 hours instead of 7-10 days.
7. Create a model for implementing teleportation quantum communication.

1. The ideology of creating the system

For a range of phenomena of quantum nonlocality (the paradox of Einstein, Podolsky, Rosen [1], the Aharonov-Bohm effect [2]), which, although they have a quantum mechanical explanation, continue to be the subject of unabated disputes [3, 4], the essential thing is that the objects to which they extend are *objects with spin*. Moreover, the long-range effect extends not only to microscopic objects, but also to macroscopic level [5 - 10].

One of the most interesting works in the development of this direction in quantum physics, physics of entangled states, belongs to Bennett et al. [11]. Speech This is actually about the parallel use of quantum and classical information for the purposes of teleportation. At the same time, in terms of the amount of information consumed, such the process doesn't seem very winning. However, it gives something completely new quality. After all, we are, in fact, talking about teleportation.

The phenomenon of quantum teleportation manifests itself in the existence of instant distance-independent interaction between particles of a single quantum systems. Moreover, entanglement is a special quantum form of correlations of composite systems that have no classical analogue. It occurs in a system consisting of two or more interacting subsystems (or previously interacting, and then separated), and represents a superposition macroscopically various states. For such systems, fluctuations of individual parts interconnected, but not through the usual classical interactions (classical correlations), limited, for example, by the speed of light, and through nonlocal quantum correlations. In this case, changing one part of the system to the same moment in time affects its remaining parts (even separated in space, in the limit and at infinitely large distances). This theory of properties entangled states are confirmed by experiments by A. Aspect [12,13] and numerous subsequent experiments [13-18].

Properties of entangled states and some other characteristic features of quantum mechanics were used to develop new practical applications of quantum mechanics, united under the name of quantum information.

The main results obtained in the field of quantum information are formulated in terms of a qubit, i.e. system, which can be in one of two states, say $|0\rangle$ and $|1\rangle$ or in a superposition of these states. Two or more qubits may be in an entangled state.

The wave function of quantum states of a two-level system - a quantum bit, later called a *qubit* (quantum bit or qubit) [19], can represent a *superposition* of basis states (state vector) of the following form $|\psi\rangle = \hat{\psi}|0\rangle + \hat{\phi}|1\rangle$, where $\hat{\psi}$, $\hat{\phi}$ are the complex amplitudes of states, with this $|\hat{\psi}|^2 + |\hat{\phi}|^2 = 1$. In addition to the probabilities $P(0) = |\hat{\psi}|^2$ and $P(1) = |\hat{\phi}|^2$ filling out the basic states $|0\rangle$ and $|1\rangle$, the state of the qubit is characterized by *coherent* terms in state probability $|\psi\rangle$. They are determined by the products of complex amplitudes $\hat{\psi}^*$ and $\hat{\phi}$. The state of a quantum bit, unlike a classical one, can change not only by changing the probabilities $P(0)$ and $P(1)$, but also more subtly by changing the amplitudes of the $\hat{\psi}$ and $\hat{\phi}$ states.

To carry out quantum teleportation, a “communication line” will first be created, more precisely an “assembly line”, consisting of many EPR pairs (Einstein, Podolsky, Rosen – pairs). Then, using only classical information from system A a set of quantum states $|\psi\rangle$ can be teleported into system B using in which some multiparticle state can be reproduced in the system B as a copy of the original states of system A.

Let system A be in a state

$$|\psi_A\rangle = \hat{\psi}_A|0\rangle_A + \hat{\phi}_A|1\rangle_A, \quad (1)$$

where $\hat{\psi}_A$, $\hat{\phi}_A$ are complex amplitudes of states.

The task is to transfer the state of system B to the same state:

$$|\psi_B\rangle = \hat{\psi}_B|0\rangle_B + \hat{\phi}_B|1\rangle_B, \quad (2)$$

those. implement the superposition of these systems in relation to the macrocosm. It is quite natural that quantum mechanics and the principle of superposition apply to macrocosm. However, at the macro level we do not observe such quantum effects as, for example, tunneling or superposition of macroscopically different states of objects around us.

Analysis of this problem shows that the interactions of a microobject with its environment, which irreversibly destroys the quantum state, lead to the collapse of wave functions, and, consequently, to the destruction of coherent quantum behavior. This effect was called “amplification” transforming the superposition of states microscopic system into a superposition of states of the macroscopic system

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[20]. The amplification mechanism consists of the formation of an entangled state involving a macroscopic number of subsystems (or degrees of freedom). This means that during “amplification” the interaction of the quantum system occurs (in a state of superposition) with other systems (or degrees of freedom), causing entanglement (quantum correlation) with them. Then and the original system, and the systems already entangled with it in turn interact with even more systems, drawing them into a confused state. So occurs until an entangled state is formed, including a huge number of systems, or at least a huge number of degrees of freedom. If such processes cover a sufficient number of degrees of freedom, then the resulting state cannot be interpreted except as a superposition of macroscopically distinguishable states of the macroscopic system.

If the number of systems participating in the interaction is macroscopically large, then thus, the entanglement of the system ψ with the macroscopic system A occurs, and a superposition of two different states of the macroscopic system is formed. The states included in the superposition are “macroscopically distinguishable” in the sense that a huge number of degrees of freedom in them are described by different waveforms functions. Thus, a superposition of macroscopically distinguishable states of a macroscopic system.

Thus, we can conclude that superpositions must exist even for arbitrarily large systems (having arbitrarily many degrees of freedom). The question naturally arises: is it possible to create and observe superpositions? distinguishable states of macroscopic systems.

Based on the above, we can conclude that it is possible to create between two macroscopic systems of maximum entanglement, subject to following conditions:

1. if these systems are represented by particles with spin 1/2 in singlet condition;
2. if these systems are represented by identical particles; 3. The dynamics of these systems should not destroy the connection between spin and statistics.

Let us consider the last condition [21]. The state space of a system of N identical particles is the space of HS symmetric functions or space of antisymmetric Let's define the corresponding functions. To do this, consider the group permutations of N elements of PN. Its elements are permutations

$$\Gamma = \left\{ \begin{pmatrix} 1 & 2 & \dots & N \\ k_1 & k_2 & \dots & k_N \end{pmatrix} : k_i \in T, \quad N \leq k_1 \leq k_2 \right\}. \quad (3)$$

where the identity element is the identity permutation

$$\bar{P} = \begin{pmatrix} 1 & 2 & \dots & N \\ 1 & 2 & \dots & k_1 \end{pmatrix} \quad (4)$$

and the product of permutations $P_2 P_1$ is the result of two consecutive permutations P_1 and P_2 . In the space of wave functions H , the permutation P corresponds to the \bar{P} operator acting as follows:

$$P \psi_{(k_1, k_2, \dots, k_N)} = \psi(k_{\sigma(1)}, k_{\sigma(2)}, \dots, k_{\sigma(N)}). \quad (5)$$

It is obvious that \bar{P} is a unitary operator and a mapping is a representation groups PN in the space H . In H there are two invariant subspace operators of symmetric and antisymmetric functions:

(6)

These functions are the native functions of the permutation operators:

$$\bar{P} \psi_{(k_1, k_2, \dots, k_N)} = \psi(k_1, k_2, \dots, k_N), \quad \bar{P}^* \psi_{(k_1, k_2, \dots, k_N)} = \delta_{\sigma} \psi_{(k_1, k_2, \dots, k_N)} \quad (7)$$

Here we introduce the parity of the permutation $\delta P = (-1)^{nP} = +1(-1)$ for an even (odd) number n_P of successive permutations of two particles to which this given P . permutation.

Obviously, $HA \neq HS$. In the case $N=2$ we have

(8)

Really,

$$\psi(\xi_1, \xi_2) = 1/2[\psi(\xi_1, \xi_2) + \psi(\xi_2, \xi_1)] = 1/2[\psi(\xi_1, \xi_2) - \psi(\xi_1, \xi_2)] = \psi_1 - \psi_2. \quad (9)$$

For $N \geq 3$ there are other, more complex, invariant ones than HA and HS subspaces, but they have no physical applications.

Particles described by the functions $\delta S(\delta A)$ are called *bosons (fermions)* and obey Bose-Einstein (Fermi-Dirac) statistics.

In quantum field theory, this connection between spin and statistics is a theorem proven by W. Pauli (1940) based on the principle of causality and Lorentz invariance. The statistics of composite identical particles (for example, atomic nuclei) is determined by the parity of the number of fermions included in their composition. For example, a deuteron (the nucleus of a deuterium atom $D = 1H = (pn)$), consisting spin 1/2, proton and neutron, is a boson. The Hamiltonian of a system of N identical pairwise interacting particles of mass m in an external field $V(r)$ has the form:

$$H = \sum_{n=1}^N \frac{\hbar^2}{2m} \nabla_{k_n}^2 + \sum_{n=1}^N V(k_n) + \sum_{n=1}^N U(r_n, x_n), \quad (10)$$

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where U is the pair interaction potential. Due to the identical masses of particles and independence of potentials V and U from particle numbers, the permutation operator is \bar{P} the integral of motion:

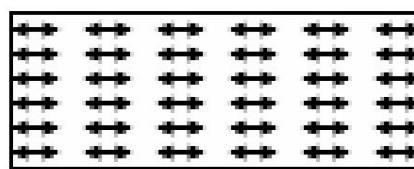
(eleven)

Consequently, in the process of system evolution according to the Schrödinger equation

$$i\hbar \frac{\partial \psi}{\partial t} = \bar{H} \psi \quad (12)$$

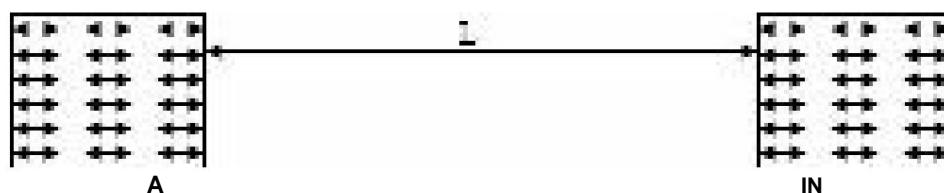
the type of symmetry of the wave function does not change. In other words, the connection between spin and statistics is not destroyed by dynamics, as it should be in a consistent theories.

Implementation of the principle of creating entangled macroscopic systems A and B is as follows. Let's take a metal plate with the following orientation of nuclear spins (nuclei are in the singlet state) (Fig. 2).



Rice. 2

Let's cut the plate into two parts A and B (Fig. 3). At the same time, the dynamics do not destroy connection between nuclear spins and statistics. The backs along the cut edges of the plates are in uncompensated singlet state, and the plates themselves are in confused state.



Rice. 3

Consequently, when the state of the spins of the plate changes. And in plate B there will be the same changes occur. According to its purpose and use, plate A is named chip-translator, and plate B - chip-inductor. In practice, the change in the state of spins in system A is carried out by exposure to electric or electromagnetic fields. However, for goals of creating an “industrial resource” of quantum teleportation, the use these fields are not possible. This is due to the fact that in for technological purposes it is required to change the state of large spin arrays to the level of a coherent state, which led to the development and creation of a spinor field generator for this purpose.

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Any particle is characterized by four basic properties: electrical charge, mass, magnetic moment and spin. The first three characteristics of particles correspond to three well-known fields that these particles and get excited. The fourth field is generated by spin and is called the spin field [22, 23].

In this regard, let us turn to the physical nature of spin [24]. In this article, H. Ohanian makes a very important well-founded conclusion that the existence of spin is explained by the presence of a circulating flow of energy in the field of its wave. Spin is a wave property, regardless of whether it is a classical or quantum wave. The only thing the fundamental difference between them is that the spin of a classical wave is a continuous macroscopic quantity, and the quantum spin is represented by quantum mechanical operator and has a discrete spectrum of values. Wherein one can go from the quantum to the classical limit for a system of many particles with large fill numbers. A circularly polarized light wave is an example of such a transition from a large number of quantum spins to macroscopic back.

Research by G. Shipov and A. Akimov showed that the state of the spin transverse polarization manifests itself as a spin field [25, 26].

The simplest of all spin fields is the field generated by the classical spin 1/2 [27]. Such a spin field is universal because the spin generating it can be represented as a circulating flow energy [28]. The concept of such a field corresponds to the concept of "A-fields" by R. Uchiyama [29], according to which each independent particle parameter \vec{y}_i , satisfying the conservation law, corresponds to its own material field \vec{y}_i , through which the interaction between particles occurs, corresponding this parameter.

An example of spin microobjects is the state of electrons, protons and neutrons. However, such objects are also possible at the macroscopic level [25, 31]. Moreover, the own spin fields of such objects are collective manifestation at the macroscopic level of ordered nuclear and atomic spins To do this, it is necessary that the nuclear and atomic spins be parallel and unidirectional, which is realized in structures with oriented cores [32 - 35]. For example, when a ferromagnet is magnetized, ordering occurs magnetic moments, orientationally rigidly related to nuclear spins [35], which causes the emergence of a collective spin field.

The universal fields generated by classical spin can be interpreted as long-range spin fields [25], which determines their connection with Physical Vacuum, just as it is characteristic of electromagnetic and gravitational fields in the representation [36 - 40]. According to these ideas, the Physical Vacuum, as a single medium, can be located in different polarization states. In a state of charge polarization, the vacuum exhibits itself as an electromagnetic field [36 – 38]. The same Vacuum is in a state of spin longitudinal polarization manifests itself as a gravitational field [26, 38 – 40].

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As we see, all these three fields are generated by independent parameters (charge-q, mass-m and spin-s) and, in accordance with the concept of R. Uchiyama, are universal fields, or first class fields.

Thus, the spin field can be generated using devices created based on a specially organized ensemble of classical spins, in which the maximum energy of interaction is realized not only between neighboring ones, but also remote spins. The system of interacting spins is then a kind of amplifier of the small effects of each individual spin.

The principles of constructing a real spin field generator (Fig. 4) include the following main provisions:

1. Generation of an intense spin field can only be carried out when using a cascade of *elements* in contact with each other with organized by an ensemble of classical spins.
2. Adjacent contacting *elements* must be made of different materials.
3. After installing the first *element*, the second *element* is brought in with it contact after 40 hours. The same requirement applies to all subsequent installed *elements*.

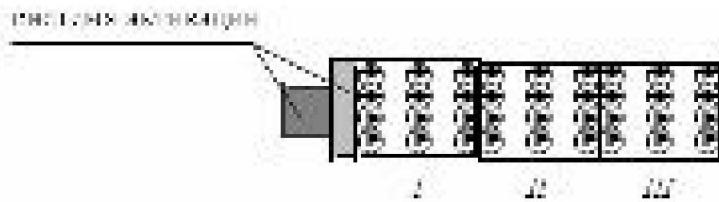


Fig. 4. Installation diagram of elements I, II, III with an organized ensemble of classical spins of the spin field generator.

Since we consider spin as the source of the spin field, then, in accordance with concept of R. Uchiyama, an object sensitive to the effects of emitted the spin field generator must be a spin system of the material environment. Moreover, in terms of the magnitude of the effect, the spin system has an advantage over individual spin of the microparticle. A complex nonequilibrium spin structure, which has a large supply of quasi-degenerate states in energy, can act as a system in which the action of the spin field can accumulate (spin saturation) and lead to noticeable macroscopic changes.

Of particular interest are the spin field-induced nonequilibrium state of the material environment, when at one quantum level, characterizing one of the natural vibrational frequencies of the material environment, is built the maximum possible number of spins. At the same time, it decreases not only spin entropy, but also due to the spin-lattice interaction, entropy material environment [41] and the material environment goes into a coherent state.

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Consequently, when exposed to a spin field on a metal plate A in plate B will also change the spin state, and the distance between these plates it can be anything. As a result, the effect is realized teleportation of spin states between macroscopic systems.

2. Composition and principle of operation of the System

- 1. Spin generator – a device based on a single crystal with a predominant orientation of nuclear spins.**
- 2. Resonator – provides long-term storage of spin coherence. 3. Translator chip and inductor chip – macroscopic singlet pair made of material with translational symmetry.**

Before turning on the System:

- 1. A material similar to the material from which consists of the object of influence. For example, if the object of influence is steel in The resonator is placed in steel, water - water, coal - coal, etc.**
- 2. A chip-inductor is strengthened on the affected object. Translator chip constantly is located in the resonator.**

When the spin generator is turned on, spin saturation of the material occurs environment in the resonator. The maximum saturation level corresponds to the spin coherent state of the material environment. At the same time, spin saturation in the circuit chip-translator - chip-inductor - object of influence. Wherein the object of influence goes into a spin coherent state. As a result coherent entanglement of the resonator and the object of influence occurs. After this procedures, the object of influence can be subjected to the required technological processing.

Below are the results of some studies of the universal System teleportation of spin states.

3. Studies of teleportation of spin states using the NMR spectrometry

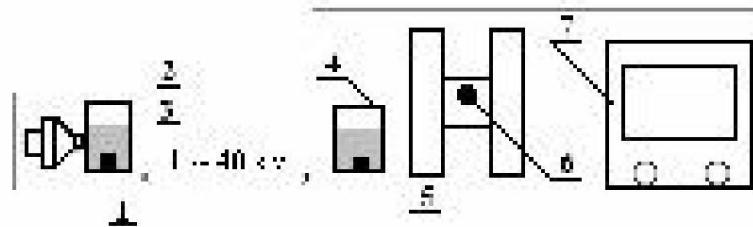
Studies of teleportation of coherent spin states between macroscopic systems were carried out using an NMR spectrometer.

During the research, the relaxation time of the transverse component T1 was measured (spin-lattice relaxation). Hydrogen was taken as the objects under study containing media - coal, diesel fuel and gasoline. Measurement results, in which the T1 time of incoherent trials differed from the T1 time of coherent trials were greater than the systematic measurement error considered positive.

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The research was carried out according to the following scheme (Fig. 5). In Wrzeshny (Poland), there was a spin generator 1, a resonator 2 and a chip-translator 3. At the Institute of Physics Poznan University ($L \sim 40$ km), there was an NMR spectrometer 7, a flask with breakdown (coal, diesel fuel and gasoline) 4 and chip inductor 5, test tube with test sample 6.

At the first stage, measurements of incoherent samples were carried out.



Rice. 5. 1 – spin generator, 2 – resonator, 3 – chip translator, 4 – flask with sample, 5 – chip inductor, 6 – test tube with the test sample, 7 – NMR spectrometer.

Then the spin generator was turned on and after 36 hours the second stage was carried out experiment. During the second stage, the flask with fuel 4 was alternately placed chip inductor 5. The test samples were poured from flask 4 into test tube 6, 5 minutes after placing the chip inductor in the flask. After this there were measurements.

Measurements of the relaxation time of the samples were carried out on a PMS-60 NMR spectrometer; the measurement results were processed using the PEAK-FIT program. The results of the experiments are presented in Table 1.

Table 1.

Study Wednesday	Relaxation time, ms					
	Equilibrium state T11		Coherent state			
	T1	T12	T11	T12	T11	T12
Coal	26.78 ± 3.19	72.54 ± 4.45	805 ± 12	514 ± 22	62.80 ± 1.81	16.40 ± 2.45
Diesel fuel	1410 ± 81	2197 ± 33	-	-	672 ± 7	441 ± 35
Gasoline	-	-	-	-	2946 ± 15	-

The experiment results show:

1. The T1 relaxation times of samples exposed to SP differ from relaxation time of control samples and exceeds the systematic measurement error. 2.
- Teleportation of spin spins has been carried out between two macrosystems states at a distance of 40 km.

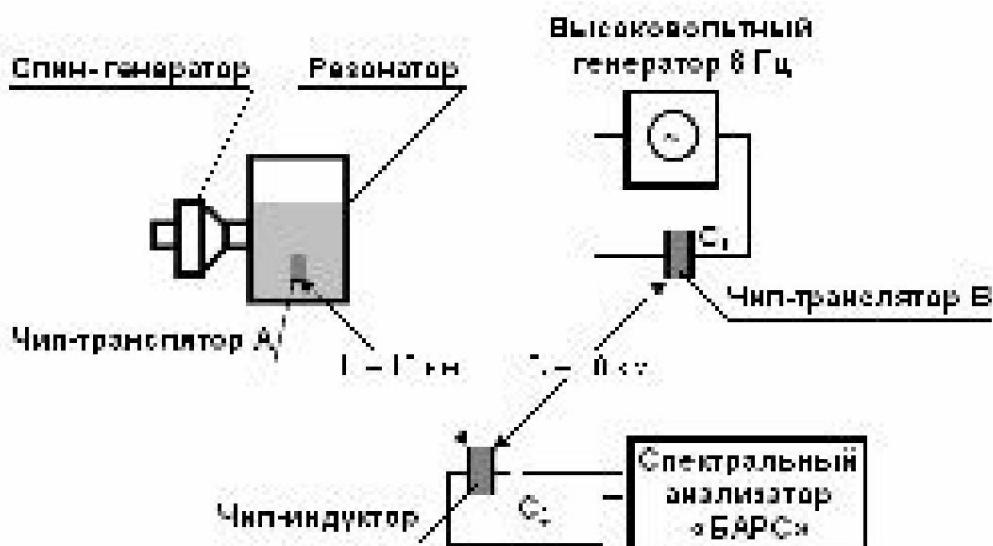
4. Promising areas of research

a) Quantum communication system

In Fig. Figure 6 shows a diagram of the experimental Quantum Communication System. In this The system, as in other technologies, uses a universal system teleportation of spin states.

The Quantum Communication System includes: a spin generator, a resonator, a chip translator A, a capacitor C1, the dielectric of which is a chip translator B, a capacitor C2 , the dielectric of which is a chip inductor, a high-voltage generator with a frequency of 6 Hz and a capacitor C1 connected to it, spectral analyzer "BARS", to the input of which capacitor C2 is connected.

The following dielectric materials were used: a) water, b) textolite.



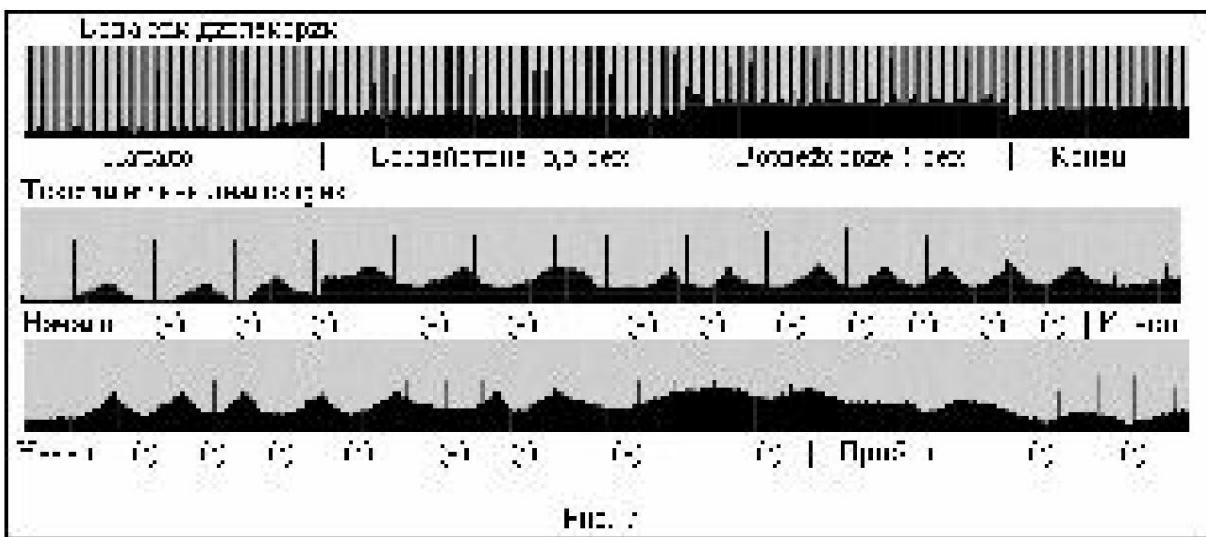
Rice. 6.

Sequence of experiments:

1. Spectrum analyzer "BARS", to the input of which was connected capacitor C2 , located 10 km from the high-voltage generator with capacitor C1 connected to it and a spin generator with resonator.
2. A dielectric material and translator chip A were placed in the resonator.
3. After turning on the spin generator, the resonator, translator chip A, translator chip B and inductor chip were transferred to a coherent state.
4. The order of influence of the high-voltage generator on capacitor C1:
 - a) dielectric material water - the Spectrum Analyzer was turned on "BARS", and after 5 seconds the high-voltage generator turned on. The impact is intermittent, lasting 5 – 5.5 seconds;
 - b) dielectric material textolite - the Spectrum Analyzer was turned on "BARS", and after 5 seconds the high-voltage generator turned on. Type of impact – by type of Morse code "dot - dash".

The experimental results are shown in Fig. 7.

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As can be seen in Fig. 7, when water is used as a dielectric, the signal amplitude changes downward and is about 7 μ V. When using PCB as a dielectric, a decrease in the signal amplitude also occurs, but here the goal was to obtain information transmission using Morse code.

b) Quantum register with stable coherence

In the creation of quantum computers, a number of important problems remain unresolved and, in particular, the problem of stability of qubit states and decoherence.

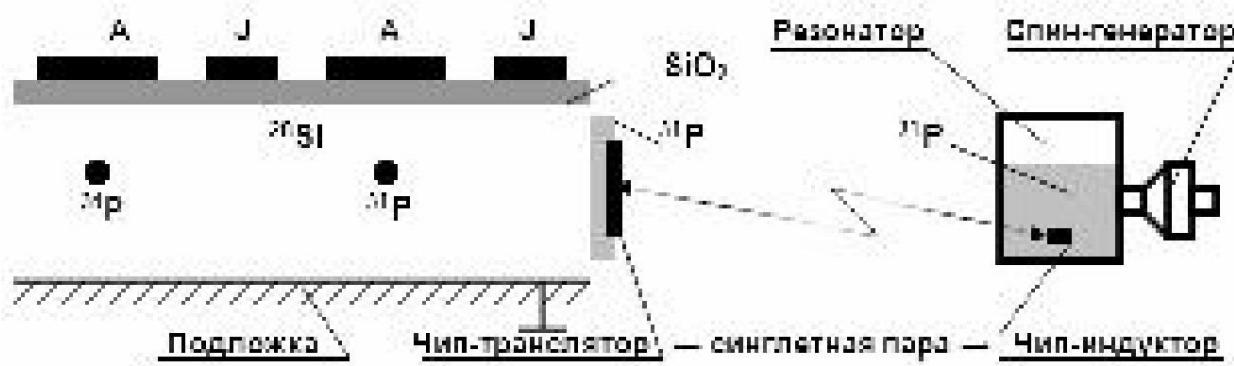
In 1998, Australian physicist B. Kane proposed using donor atoms of the 31P isotope with nuclear spin 1/2 as qubits. These atoms are implanted into the silicon structure. This proposal opens up the potential for creating quantum registers with a virtually unlimited number of qubits.

According to Kane's calculations, the required temperature for operation should be less than 0.1 K. A silicon wafer at this temperature is placed in a constant magnetic field $B_0 \approx 2$ T. Under these conditions, the electrons will be almost completely spin-polarized ($n_e/n_h < 10^{-6}$), and nuclear spins will be ordered as they interact with electrons.

In Fig. Figure 8 shows the design of a quantum register, the basis of which is the V. Kane register. It can ensure the stability of qubits and eliminate decoherence. In this case, the temperature regime does not matter much.

The effectiveness of this register design is as follows. A layer of the 31P isotope is applied to the side surface of the register, and a chip inductor is installed on it. The 31P isotope and a translator chip are placed in the resonator. The spin generator is turned on and the resonator is spin-saturated. Saturation is carried out until a coherent spin state of the 31P isotope is obtained in the cavity. Through an entangled spin translator and chip inductor, the 31P isotope layer on the side surface of the register is transferred to a coherent spin state.

At the same time, spin saturation of the ^{28}Si register occurs with atoms of the ^{31}P isotope implanted into it. This achieves the effect synchronization and the atoms of the ^{31}P isotope go into a coherent state. As a result These actions bring the quantum register into working condition.



Rice. 8.

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Managing the heat capacity of water in thermal power engineering**Krasnobryzhev V.G.****Kyiv, tel. +38 044 4059675, +38 097 5609593****E-mail: vkentron@gmail.com**

Currently, the development of thermal power engineering is mainly aimed at creating highly efficient boilers equipped with automated systems management. New, more efficient heat supply systems are being introduced to achieve maximum savings in thermal and electrical energy. Boilers are being converted from coal to gas fuel.

At the same time, there is no information about work aimed at increasing efficiency of thermodynamic processes in boilers by reducing heat capacity of water.

According to the classical definition, the specific heat capacity of a substance CV is called physical quantity numerically equal to the amount of heat that is needed to change the temperature of 1 kg of substance by 10C. Despite the fact that this the definition is classical, and was brilliantly confirmed in experiments, but in In a number of cases, the behavior of the heat capacity did not coincide with the requirements of the theory. For example, the behavior of the heat capacity of gases (at constant pressures did not correspond to those predicted theoretically, and the atomic the heat capacity of some solids (diamond) was more than 2 times less theoretical. This was due to the existence of quanta.

In 1907, Einstein, using the concept of quantum, gave an explanation mysterious discrepancies between theoretical and experimental predictions measurements of the specific heat capacity of bodies. According to this theory, specific heat capacity is presented in the form [1]:

$$C_V = \frac{3R}{\gamma} \left[(\gamma \hbar \omega)^2 e^{\gamma \hbar \omega T} (e^{\gamma \hbar \omega T} - 1)^{-2} \right]. \quad (1)$$

where R is the universal gas constant (8.3 J/mol K), γ is the oscillator frequency, \hbar – Planck's constant (1.06 10⁻³⁴ J s), k – Boltzmann's constant (1.4 10⁻²³ J/K), T – temperature.

From this equation it follows that in two limiting cases at T → 0 and T → ∞ it agrees with experience:

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Despite the fact that in calculating specific heat capacity there are significantly better Debye's theory gives the results, we will use Einstein's equation. In him $\ddot{y}y/kT = S$ – is entropy. Therefore, equation (1) can be written as:

$$C_V = 3R \left[S^2 e^S (e^S - 1)^{-2} \right]$$



In liquids and solids, along with the kinetic energy of thermal motion atoms or molecules, a significant portion of the internal energy of a substance is potential energy. It is determined by the interaction between atoms or molecules and their mutual arrangement. And potential energy fluctuations determine the heat capacity of the system at constant temperature.

It is also known that the potential energy of interaction between particles depend on the relative orientation of their spins. Energy benefit of the state with a certain mutual orientation of spins explains ferromagnetism and antiferromagnetism predetermines the nature of a number of chemical transformations [2].

The entropy of the system, taking into account the distribution of nuclear spins, can be written in form:

$S = \ln(N_-/N_+)$, where N_- and N_+ are the population of energy levels.

Under conditions of thermodynamic equilibrium $N_+ > N_-$, there is an excess of nuclear spins at the lowest energy level. This difference is very small and for 1,000,000 spins at the N_+ level we have 1,000,007 spins at the N_- level [3] .

Using equation (2) we calculate the heat capacity under thermodynamic conditions equilibrium, taking into account that $S = \ln(N_-/N_+) = \ln(1000007/1000000)$:

$$C_V = 3R \cdot 0.99999 = 24.9 \text{ J/mol K.}$$

In the case of an increase in the difference in the spin "population" of energy levels The heat capacity will also change. So if $S = \ln(1900007/100000)$, heat capacity will decrease and become:

$$C_V = 3R \cdot 0.5013 = 12.48 \text{ J/mol K.}$$

From the above, we can conclude that the decrease in heat capacity with normal (293K or more) temperature can be achieved only by changing "population" of energy quantum levels with nuclear spins. Wherein Of particular interest are such spin states when, on one quantum level characterizing one of the natural vibrational frequencies of the material environment, the maximum possible number of spins is lined up. Spin interactions propagate an ordered orientation of natural moments the amount of motion of one nuclear particle to another, and lead to the establishment uniform (taking into account precession) their orientation [4, 5]. This condition refers to coherent, and due to the spin-lattice interaction the heat capacity the material environment will decrease [6].

Specific spin interactions include spin-spin interactions that manifest themselves in the transfer of ordered orientation to one system of nuclear spins is different and in the spontaneous establishment at the same time a single “weighted average” orientation of differently (including oppositely) directed spins. Due to the directional nature and possibility of accumulation orientational influence (as opposed to chaotic disturbances), it can turn out to be sufficient for ordering not only micro, but also macro systems [5].

The specificity of this interaction is recognized by quantum mechanics, according to which the main role in establishing spin-spin equilibrium is played by some special (field) interaction of identical particles. It is consistent with the concept of “A-fields” by R. Uchiyama [7], according to which each independent particle parameter a_i , which satisfies the conservation law, corresponds to its material field \vec{y}_i , through which the interaction between particles corresponding to this parameter.

This type of field can include a spin field, in relation to which Academician M. Markov said that “from the very beginning of the appearance of spinors in physics The idea of fundamentality of spinor fields, which perhaps structurally determine all other fields, arose and lives on” [8]. At the same time, the spinor fields at the macroscopic level, may be a consequence of the collective manifestation ordered nuclear and atomic spins. This requires that nuclear and atomic spins were parallel and unidirectional, which is realized in structures with oriented nuclei [9-12].

In this regard, the spin field can be generated using devices created based on a specially organized ensemble of classical spins, in which the maximum energy of interaction is realized not only between neighboring ones, but also remote spins.

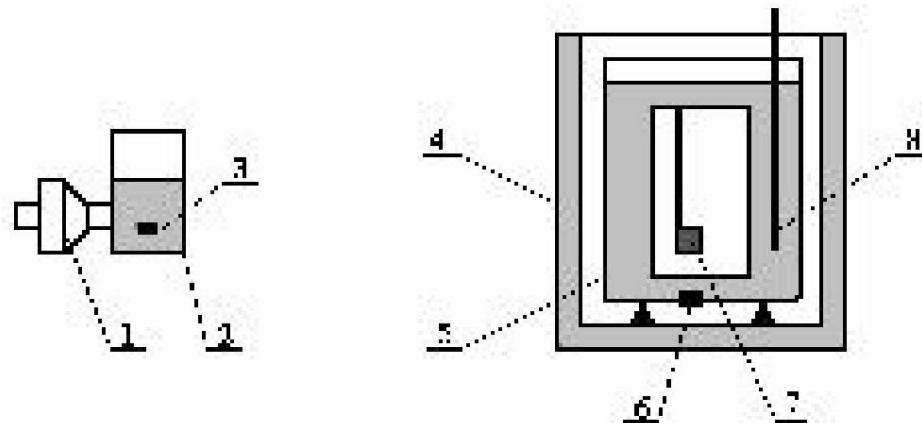
The principles of constructing a real spinor field (SF) generator are described in [13]

Since we consider an oriented spin system as a source of SP, then, in accordance with the concept of R. Uchiyama [7], an object sensitive to influence of the SP emitted by the generator, there must be a spin system material environment. Moreover, in relation to the magnitude of the effect, the spin system has advantage over the individual spin of a microparticle. Complex nonequilibrium ^{spin} structure with a large reserve quasi-degenerate in energy states can play the role of a system in which the effect of SP can accumulate (spin saturation) and lead to noticeable macroscopic changes.

Studies of the influence of the spin coherent state of water on its heat capacity were carried out using a KL-10 calorimeter. Calorimeter characteristics: pressure 28 ati; oxygen – 100%; heated medium – water with forced circulation; temperature sensor – semiconductor thermal resistance; temperature measurement accuracy - $\pm 0.0010\text{ }^\circ\text{C}$.

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The ideology of the research was that due to the decrease heat capacity of water in the calorimeter caused by its spin coherent state, 1 minute after burning coal in a calorimeter bomb water in the calorimeter should heat up faster. In Fig. Figure 1 shows the experimental diagram.



Rice. 1. 1 - spinor field generator, 2 - spin state resonator, 3 - chip translator, 4 - KL-10 calorimeter, 5 - container with heated water, 6 - chip inductor, 7 - sample of coal in a calorimetric bomb, 8 - temperature sensor

In a container with heated water 5, a chip inductor 6 was placed, which through the channel quantum communication created using the physics of entangled quantum states (the physics of entangled quantum states), connected to the translator chip 3. The translator chip was placed in the spin state resonator 2, to which it was connected generator SP 1.

The calorimetric bomb contained samples of coal 7 weighing 1 g and calorific content 5460 ± 20 kcal/kg, fractional composition of coal 0.6 – 0.8 mm.

After turning on the SP 1 generator, the spin resonator was excited states 2 to the required level. Simultaneously with the excitation of the resonator the translator chip 3 was excited, which, due to the effect of entangled quantum states transmitted spin excitation to chip-inductor 6. The chip-inductor performed spin pumping of water in container 5 and transferred it to a continuously held spin coherent state.

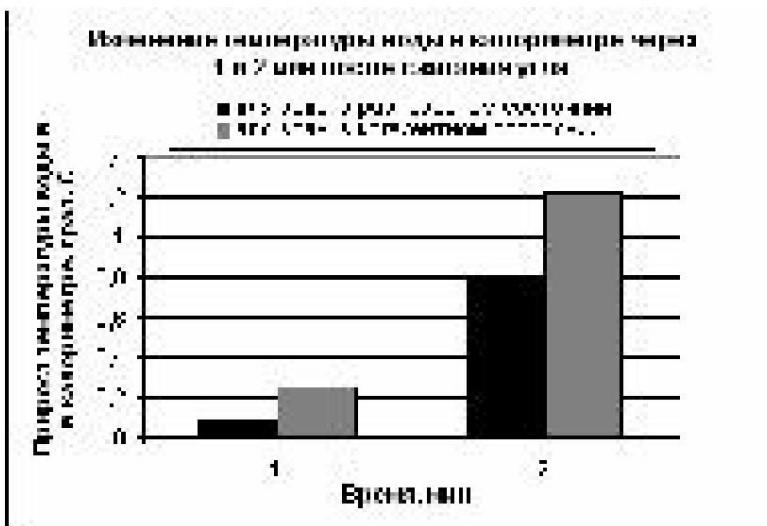
Number of measurements: 5 – for water in an equilibrium state, 5 – for water in a coherent state.

Using statistical data, research results were built graphical dependences of the change in water temperature in the calorimeter 1 and 2 minutes after burning coal (Fig. 2).

From those presented in Fig. 2 dependencies it is clear that in the first minute after burning coal, the heating rate of water in a coherent state is 2 times higher than the heating rate of water in equilibrium. After 2 minutes this effect decreases, which is associated with an increase in intensity thermal dissipation.

**Based on calorimetric studies, we can conclude that the spin
the coherent state of water causes a decrease in its heat capacity by 2 times.**

Approbation of the created system for reducing the heat capacity of water in industrial conditions was carried out during the heating season from October 2000 to April 2001 in a city boiler room equipped with four boilers with a capacity of 12 MJ each. For comparative purposes, we chose heating seasons 1997-1998, 1998-1999 and 1999-2000. Burned in boilers hard coal with an average calorific value of 5215 kcal/kg, ash content 10-15%, humidity 12-18%.



Rice. 2.

As a result of the experiments, the following conclusions can be drawn:

1. The created system makes it possible to reduce the heat capacity of water by ~2 times. 2. Testing of the system in production conditions allowed us to establish that its use increases the total efficiency of boilers from ~74.6% in the comparison seasons to ~85.66% in the experimental season. 3. Reducing the heat capacity of water heated in boilers made it possible to obtain coal savings for the experimental heating season in the amount of ~ 1300 tons.

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Coherent Coal - New Prospect of Power and Problems Solving of Climate Change

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As a result of experiments it is established, that the evolution of coal consumption economy demonstrates it's noticeable decrease being about 16%. The maximum decrease is about 24%.

Stable increase of greenhouse effect gas level in the atmosphere which is considered to be a cause of global climate change, dose not demonstrates the signs of slowing down. In this case, the main and most large-scale sources of atmospheric contamination are power stations, automobile transport and metallurgy.

Understanding the delicacy of ecological problems the UE intends to reduce by 2020 the amount of greenhouse effect gas discharge by 20% as compared with 1990. That is why the introduction of more efficient and ecologically pure technologies into power engineering today is one of the urgent problems . It is connected with the necessity of both the protection of the environment and the saving of power resources because these problems are connected and will become more acute due to the constant price in

In this connection with the use of the phenomenon of coherence the technology has been developed to control activation energy in combustion reactions and diffusion processes. That is the realization of coherent control of these processes kinetics and energetics for real decrease of CO₂ emission into the atmosphere due to the decrease of energy carrier's consumption.

Coal combustion is a phenomenon whose mechanism has still not been fully explained. It is known that chemical energy stored in coal and oxygen molecules released in the combustion equals thermal energy gained during the process of combustion, destructive energy of coal and oxygen molecule bonds and chemical energy of the fumes.

The combustion working process of coal happening I following formulas:

And following process as:

$$\frac{dA}{dt} = \frac{dT}{dt} - \frac{dE}{dt} \quad (2)$$

As results first part of writing of the formula explaining part of the energy which not taking part of the work we are writing following:

$$\frac{dA}{dt} = - \frac{dE}{dt} \quad (3)$$

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In combustion process we are receiving energy:

$$\frac{dU}{dt} = \frac{Q dm}{dt} = Q m k T \exp \left(-\frac{E_a}{kT} \right) \quad (4)$$

Q – calorific value of the coal; m – mass of the combustion of the coal; γ - Planck's constant, $\gamma\gamma$ – energy activation of coal, k - Boltzmann's constant, γ – temperature.

Supplying activation energy is essential to initiate combustion process of coal in order to break energetic barrier. This energy is taken from thermal energy and as a result the ideal heat of combustion is reduced by the quantity of activation energy.

Not only molecular but also spin dynamics playing a double part in elementary chemical acts is of great importance in combustion reactions. On the one hand it affects actively the reaction mechanism and kinetics by activation energy. On the other hand spin dynamics reacts very sensitively to the molecular dynamics of an elementary ch

A coal coherent state can affect actively the kinetics of combustion processes. In the same time activation energy plays an important role in combustion processes. Its value can be determined by means of the “Free Kinetics” model, which makes it possible to carry out exact calculations for complex reactions such as combustion process. The experiments on the action of fuel coherent state on its activation energy have been carried out in Czestochowa Polytechnical Institute (Poland). The determination of activation energy value was carried out by means of the TGA/SDTA/ 851e thermogravimeter of the Mettler Toledo firm.

The results of the measurements of brown coal activation energy in coherent state are given in Table 1 jointly.

Table 1.

State of coal	Activation energy	Decreasing activation energy
Equilibrium state	378 kJ/mol	0%
First coherent state	260 kJ/mol	31.2%
Second coherent state	164 kJ/mol	56.6%

The first experiment has been carried out in Poland with 10 pulverized-coal boilers of 220 MWh. In the course of the experiment of 8 days duration coal was coherent state being kept up by means of the activators located at the store of coal.

Within boilers brown coal is burnt up in amount of 10 mills. tons per year. During the experiment about 220,000 tons of coal has been burnt up. In the course of the experiment the emission of CO₂, NO_x, and SO₂ in the atmosphere was evaluated. They entered computer base of the power station continuously. As a result of the experiment with pulverized-coal boilers the decrease of CO₂ emission for 13%, NO_x emission for 16% and SO₂ emission for 16% has been obtained. The dynamics of boilers operation improved. As an example in Fig. 1 there are graphics dependences of CO₂, NO_x, and SO₂ emission change depending on capacity being generated. There is a direct dependence between the amount of coal being burnt up and CO₂ emission ie by the decrease of CO₂ for 13% the amount of coal being burnt up decrease for 13%.

The following experiment has been carried out on power station in Poland with 8 pulverized-coal boilers burning 4 million tons of coal per year. The experiment was being carried out in April-June and September-October 2007.

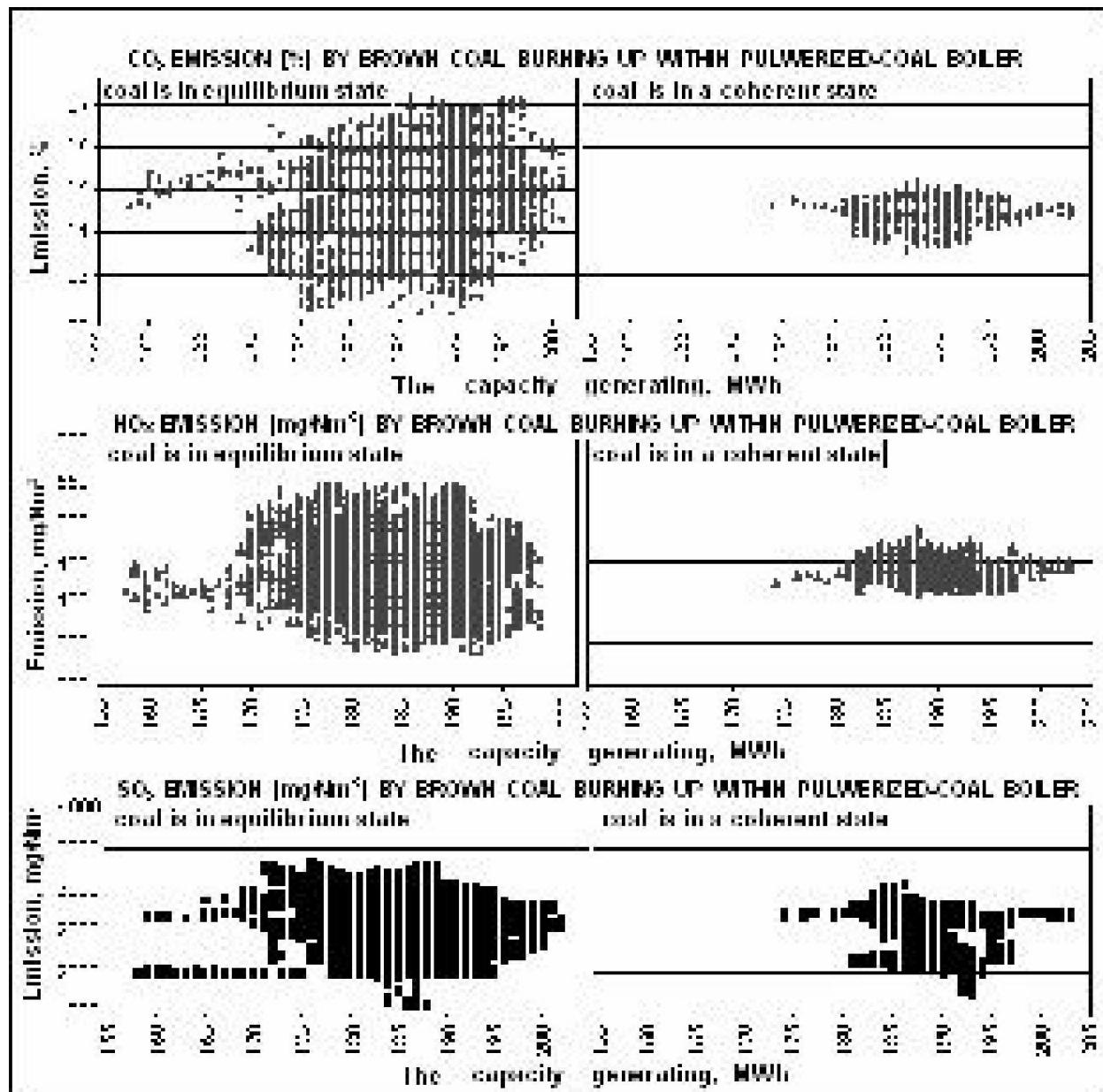


Fig. 1.

Technological features of power station stipulate coal storing of 500000 t. total amount. During the experiment coal coherent state in the stores was being kept up by means of activators located along the stores perimeter at their foot (Fig. 2).

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Fig. 2. The activators location of in stores of coal.

The graphic dependence of the change of coal energy consumption for electric energy generation above 200 MWh is represented in Fig. 3. The evolution of coal consumption economy demonstrates its noticeable decrease being about ~16%. The maximum decrease is about ~25%.

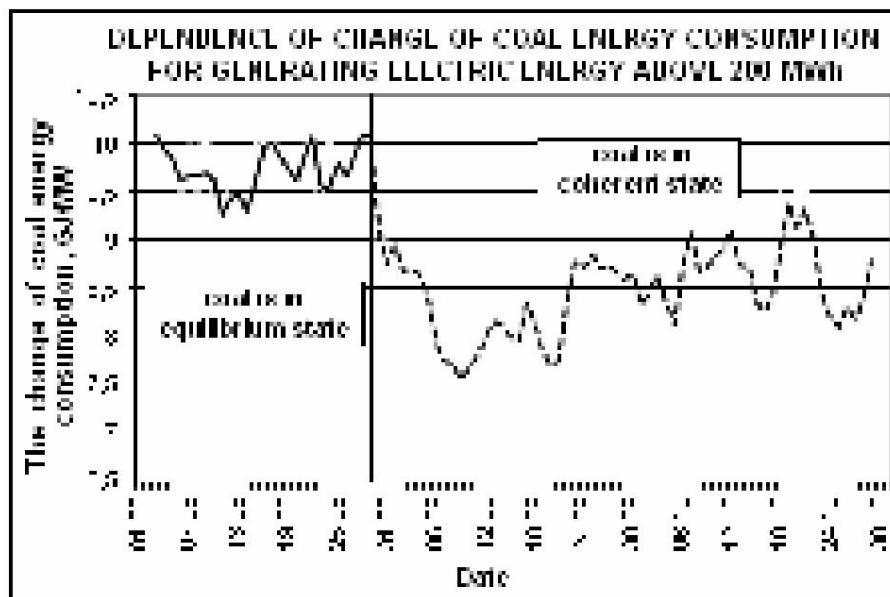


Fig. 3.

Reduction of a power consumption of coal of electric energy production from 09.24.07 is connected to substantial growth of injections of cooling water on a overheater with the purpose of adjustment of temperature superheated pair.

The developed technology is universal and does not demanding technical changes in the production process of power station.

**“Photospin” system for searching for mineral deposits
fossils**

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The system is designed to search for mineral deposits using photographs of the earth's surface using spin effects.

Atoms in all molecules and in all crystals have not only a certain spatial position, but also a strictly defined mutual orientation spins As a result, all material bodies have their own spin field with characteristic spatial-frequency distribution of intensity (spatial-frequency spectrum) [Khutishvili G.R. Oriented nuclei, UFN, 1954, v. 53, no. 3. Jeffries K. Dynamic orientation of nuclei. M., Mir, 1965]. A large amount of homogeneous matter (a mineral deposit, for example) will create a collective characteristic (for a given useful fossil) spin field. Considering that spin fields are not absorbed natural environments and their intensity does not decrease with distance, then locally concentrated homogeneous matter located at an arbitrary depth will be create outside the geological strata the same characteristic spin field as if this substance were on the surface of the Earth. Therefore, when registering spatial-frequency structure of spin fields of geological structures The earth, or parts of its surface, can obtain important information about their internal structure [Akimov A.E., Boychuk V.V., Tarasenko V.Ya. Long-range spin fields. Physical models. Academy of Sciences of the Ukrainian SSR, Institute of Applied Mathematics. – Kyiv, 1989, teacher. No. 4, p. 23].

When photographing any territories (objects) falling on the photographic emulsion together with the electromagnetic (light) flux, the own spin fields of these objects change the orientation of the spins of the emulsion atoms in such a way that the spins emulsions repeat the spatial structure of this external spin field. IN As a result, in any photograph, in addition to the visible image, there is always invisible spin image [Akimov A.E., Boychuk V.V., Tarasenko V.Ya. Long-range spinor fields. Physical models. Academy of Sciences of the Ukrainian SSR, Institute of Applied Mathematics. – Kyiv, 1989, teacher. No. 4, p. 23].

At a fundamental level, the nature of spin fields is associated with the classical spin. The simplest of all spin fields is the field generated classic spin 1/2 [Birrell ND, Davies PCW Quantum Fields in Curved Space. Cambridge University Press. Cambridge, London, New York, New Rochelle, Melbourn, Sydney, 1982, 386 p]. Such a spin field is universal because the spin generating it can be represented as a circulating flow

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energy [Belinfante FJ – Physica, 1939, v. 6, p. 887. Ohanian HC – Amer. J. Phys., June 1986, v. 54, no. 6, p.500]. The concept of such a field corresponds to the concept of “A-fields” by R. Uchiyama[R. Uchiyama. What has physics come to? (From the theory of relativity to the gauge fields). M., Znanie, 1986, 224 pp.], according to which, everyone the independent particle parameter a_i , which satisfies the conservation law, corresponds to its own material field A_i , through which interaction between particles corresponding to this parameter. Example spin microobjects can serve as states of electrons, protons and neutrons. However, spin objects are also possible at the macroscopic level [Aharonov Y., Susskind L. – Phys. Rev., 158, 1237-1238 (1967). Akimov A.E., Tarasenko V.Ya. - News of higher educational institutions, Physics series, 1992, vol. 35, No. 3, p. 13].

Understanding this fact made it possible, by analogy with optical processing, to images, construct a procedure for extracting spin images from photographs and their processing. First, the slide or photograph is illuminated by the generator isotropic broadband spin radiation. In this case, the spin the structure of emulsion atoms can be considered as a two-dimensional spin matrix, acting as a two-dimensional spin modulator.

After isotropic spin radiation passes through the original photograph, the modulated spin radiation will repeat the spin structure spatial spin field, which was perceived by the photoemulsion at photographing. However, this initial spin field is superposition of spin fields from all sources in the thickness of the Earth that can be geological formations or mineral deposits. Since these structural formations have characteristic spatial-frequency spectra, then if the task is to highlight, for example, a concentration zone any substance (mineral resource), then the modulated spin the radiation must be subjected to appropriate filtration. To this end two-dimensional spin filters have been developed - coherent matrices, which pass only those spatial frequencies that correspond characteristic spatial frequencies of spin radiation of the desired mineral.

In photo printing, after passing through the spin filter, the spin radiation will be present only in those places relative to the original image where the desired mineral resource. This is filtered by the useful spin component radiation, falling on a clean photograph, converts the spins of the photographic emulsion into excited state only in the area coinciding with the location Place of Birth.

During the development of a photograph, in areas with excited spin states the chemical reaction will proceed at a faster rate [Zamaraev K.I., Molin Yu.N., Salikhov K.M. Spin exchange. Theory and physical and chemical applications. Novosibirsk, Nauka, 1977] than on the adjacent surface of the image. As a result, the density of darkening of such areas will be higher, which allows us to interpret them as areas related to specific

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geological anomalies. If necessary, these areas can be obtained and undarkened.

As an example, below are the results of processing a photograph of a surface. Earth (photo 1), as a result of which fluorite deposits were discovered (photo 2), copper (photo 3) and tungsten (photo 4). Photo 5 shows the contours of the deposit hydrocarbon raw materials in the Azov region.



Photo 1. Aerial photograph of the Earth's surface, 1946, Cherkasy region, original scale 1:25000.

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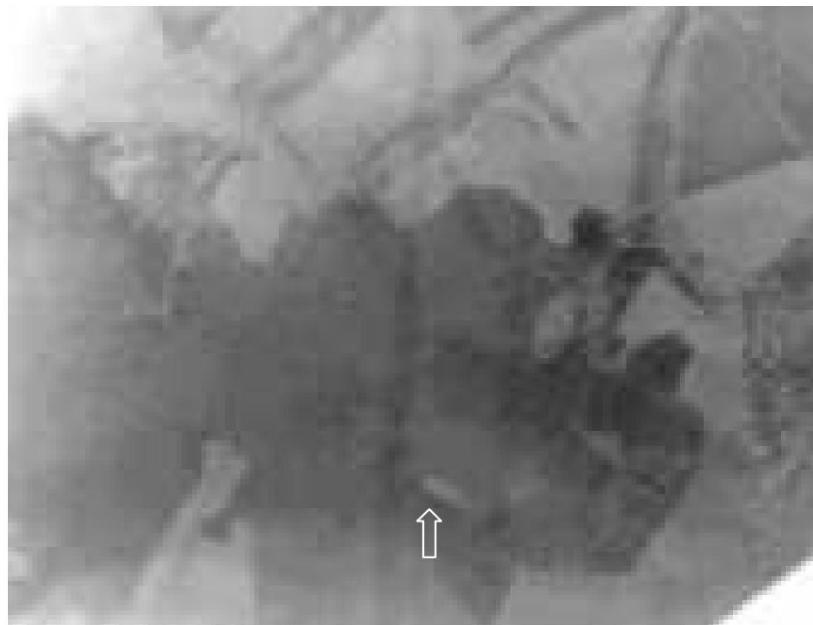


Photo 2. Spin trace of a fluorite deposit (light area).

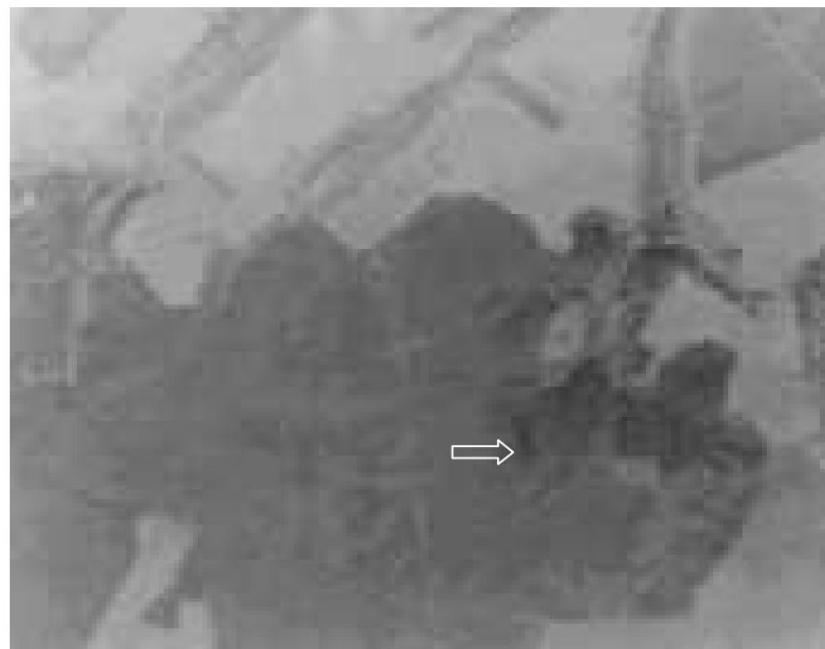


Photo 3. Spin trace of a copper deposit (shaded area).

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Photo 4. Spin trace of a tungsten deposit (shaded area).

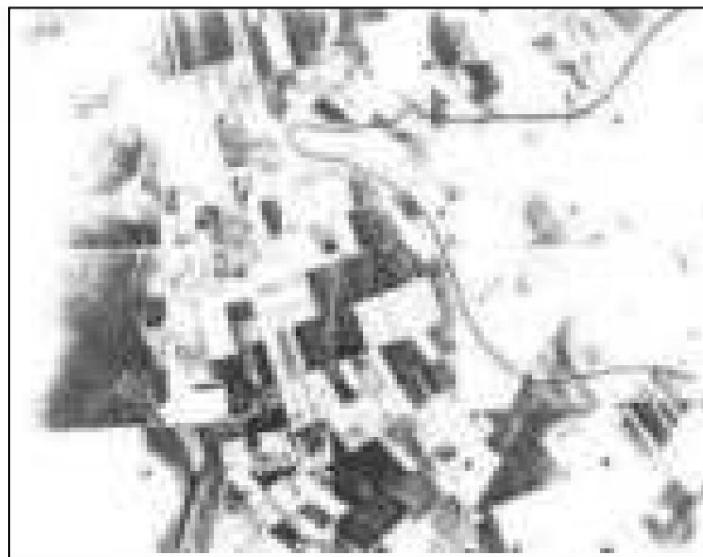


Photo 5. Spin trace of a hydrocarbon deposit (light area).

**Work on localization of oil and other mineral deposits
carried out in accordance with bilateral contractual obligations. The period for
completing the work is 1 month.**

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Study of the inhibitory effectiveness of coherent water (Dipole system)

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1. Purpose of water

Inhibition of the reproduction of HIV, vesicular stomatitis and herpes viruses.

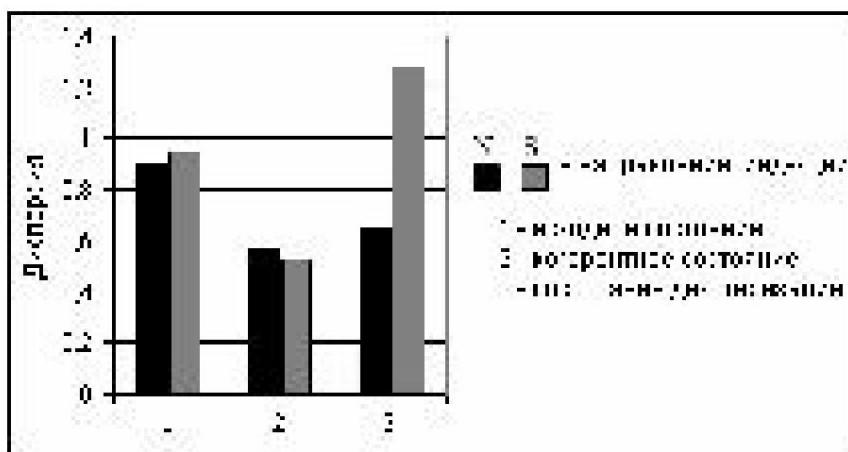
2. Composition of the System and principle of operation of coherent water

The System is based on the achievements of quantum physics of the last decade and in particular the translational effects of the physics of entangled quantum states (entangled states).

The System includes: a spin state translation unit, a translator chip, an inductor chip, and a container with water. The translation unit transmits the spin coherent state of water through a translator chip over a distance. The inductor chip, attached to a container of water (1.5-10 liters), assumes this state and transfers water in containers to the same coherent state. In this case, the frequency coherent state is selected in such a way that it corresponds resonant frequency of water.

After the patient takes such water, the water in his body also turns into spin coherent state (synchronization effect). This is the state held for 2-3 minutes, and then a slow spin begins decoherization.

On the graph in Fig. Figure 1 shows the dispersion of disordering of spin structures of water located in the initial, coherent and decoherent states, with simultaneous exposure to an external magnetic field and a low frequency (up to 8.2 Hz) sound. The measurements were carried out using hardware-software complex "Oberon".



Rice. 1.

As can be seen from the figures shown. 1 graphic ratios, largest the dispersion of disorder of the spin structures of water corresponds to inactivated and decoherent states, which is explained by the conversion spin states from singlet to triplet with a predominance (up to 97%) of triplet.

The basis of the development of viral infections in the cellular structures of the body are biochemical reactions, the speed of which is regulated not only enzymes, but also the spin states of the reactants.

It is known from spin chemistry that if colliding molecules in a chemical reaction have antiparallel spins (singlet state), the formation of a chemical communication occurs. If interacting molecules have parallel spins (triplet state), then the molecule can be formed only in the triplet, excited state. Since such conditions usually lie high in energy, in the vast majority of cases, chemical reactions in the triplet impossible for a couple.

It is also known that chemical reactions are controlled by two fundamental factors - energy and spin. At the same time, the prohibition of chemical reactions on the back irresistible. According to Wigner's rule, the statistical weight of encounters between two molecules in singlet state is 1/4, and the statistical weight of encounters in the triplet state equals 3/4. In the vast majority of cases, the basic condition of the products chemical reaction is a singlet, and therefore it should be expected that only a quarter of the encounters of reacting molecules can yield a reaction product.

Now let's return to the spin decoherence of water in the patient's body. Such decoherization significantly affects spin exchange processes molecules reacting in biochemical reactions. This influence arises from two reasons. Firstly, the reorientation of the spin of one of the molecules changes many times during the collision, therefore, changes in space and the direction of the axis around which the spin of the second precesses molecules. Secondly, performing a z-projection of the total spin of the colliding partners is no longer an integral of motion, and therefore the spin state

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partners in a collision can change arbitrarily. As a result decoherization, singlet pairs recombine into triplet pairs, and the efficiency chemical reaction can be reduced by 10-100 times. This was brilliantly confirmed in laboratory tests, the results of which are given below.

3. Cytological and cytogenetic study of coherent water

Institute of Epidemiology and Infectious Diseases of the Academy of Medical Sciences of Ukraine within the framework of agreement concluded by the Institute with the Research and Production Center "Nature", coherent water was transferred for research created at the Nature Research and Production Center using the Dipole System.

Materials and methods

The drug is presented in the form of coherent water. Cell culture - used primary human embryonic tissue (PHET).

The cell culture was obtained from 8-9 week old human embryos obtained after fresh sterile scraping, according to the generally accepted trypsinization method chopped pieces. Cells were grown in RPMI-1640 nutrient medium + 10% fetal calf serum + antibiotics.

For cytological studies, cells were grown on coverslips in ordinary bacteriological test tubes.

Cytological preparations were prepared according to the method of G.I. Roskina and L.B. Levinson (Microscopic technique, 1957). Cells were treated with Shabadash's fixative, dehydrated, and stained with hematoxylin-eosin (hematoxylin was prepared according to Boehmer's method). The preparations were viewed using an MBI-15 microscope - eyepiece x10, lens x90.

The following indicators were studied: 1 - proliferative activity, index proliferation was expressed in ppm (%); 2 - presence of pathological mitoses method of I.A. Alov (1965). Cytogenetic preparations were prepared according to the method outlined in the WHO publication "Methods for the analysis of chromosomal aberrations in humans," edited by K. Buckton and G. Evans, 1975. The preparations were reviewed microscope MBI-15 - eyepiece x10, lens X90.

When studying metaphases, the number of chromosomes and aberrations in them were calculated. For studying the influence of coherent water on cytological and cytogenetic indicators of the TET cell in the logarithmic growth phase were treated with coherent water and preparations were prepared after 24 hours. Cells served as control, not exposed to any influence.

Results and its discussion

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Cytological study of preparations obtained on PET, processed coherent water, presented in table 1.

Table 1 - Effect of coherent water on the mitotic regime of TET cells.

Impact	Normal mitoses, in Mi (in %)	Abnormal mitoses, in %
Coherent water Cell	21.0	8.6 91.4 93.2 6.8
control	29.0	

As can be seen from Table 1, coherent water did not have any effect significant effect on the mitotic regime of TET cells compared to cells that were not exposed. Table 2 presents the results cytogenetic study of TET cells treated with coherent water.

Table 2 - Cytogenetic parameters of TET cells treated with coherent water.

Impact	Cells with chromosome number (%)	
	45	47
Coherent water Cell	4.0	96.0
control	2.0	96.0 0 2.0

The data presented in Table 2 indicates that the impact coherent water did not have a significant effect on the karyotype of cells and did not caused aberrations (breakages) of chromosomes.

4. Study of the toxicity of coherent water *in vitro*

Coherent water was added to the RPMI-1640 nutrient medium in a ratio of 1:10, 1:100, 1:200, 1:400, 1:800, 1:1600. Diluted nutrient medium (0.1 ml) was added to microplate wells in which continuous cultures of L-41 cells are grown. The results of the study are presented in Table 3.

Table 3. Results of studying the toxicity of coherent water depending on the ratio breeding.

Exposure 1:1 Coherent water	Cell control	1:10	1:100	1:200	1:400	1:800
Note:	"
		-----" - no degeneration				

From the presented table it is clear that coherent water does not have a toxic effect effects on cell culture. The toxicity of coherent water was studied in *in vivo* experiments on white mongrels. mice.

Per os, using a probe, 0.5 ml of coherent water was injected at a dilution of 1:1, 1:10, 1:100. For each breeding, 10 mice were used, observations were carried out in within 10 days.

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As a result of the studies, it was shown that the drug in the studied non-toxic in dilutions. All mice remained alive and active.

5. Study of antiherpetic activity of coherent water

To study the antiherpetic effect of coherent water, we used model of herpetic meningoencephalitis. This model is convenient for assessing severity of symptoms, is 100% reproducible and does not require application of additional controls. Development of clinical symptoms the disease began on days 5-6 from the moment of infection, reached maximum by 13-14 days and then there was a decrease in severity symptoms followed by recovery of surviving animals. Availability acute herpetic infection was confirmed by immunofluorescence. Thus, the most intense glow was observed in brain tissue (especially in the stem sections), which appeared 6-7 days after infection, which corresponds to the moment when clinical signs appear diseases. Less intense luminescence (+ or++) was noted in the spleen and absent in the liver and lungs. Mortality of animals infected with the virus herpes simplex was 100%.

A virus was used to model an experimental herpes infection herpes simplex type 1. The virus went through 28 passages in the laboratory through the brains of whites mice. Before use in the experiment, the virus was stored in a 50% glycerol solution for phosphate buffer solution at a temperature of 10-15°C. White outbred mice weighing 14-16 g were used in the experiments. Virus-containing material was injected into the mice's brains in a volume of 0.03 ml. Magnitude the infectious dose in the experiments was 1-10 ID50 (mouse lethal doses).

Coherent water was administered once 0.2 ml intraperitoneally according to the following regimens: before infection - prophylactic administration regimen; 24 hours after infection with the herpes virus - treatment regimen.

Each experiment included 2 groups of mice: 1 – mice exposed to coherent water + herpes virus, 2 – mice injected with saline + herpes virus.

The activity of coherent water was assessed by comparing lethality mice in the experimental and control groups. This took into account:

- percentage of animal mortality, • multiplicity of protection (CP) – multiplicity of reduction in the number of dead mice in experimental group compared to the control group, • the effectiveness index (IE) of the drug was calculated using the formula:

$$\text{IE} = \frac{\text{protection factor} - 1}{\text{protection factor}} \times 100\%$$

protection ratio

At the first stage of the study, the activity of coherent water was studied. Herpes-infected animals were given coherent water every 24 hours until end of the experience.

Results of studies of the antiherpetic activity of coherent water at preventive effects on mice are given in Table 4.

Table 4. Antiherpetic activity of coherent water. Drug

Number Of them died mice			Multiplicity protection	Index efficiency
	Total	percent		
Coherent water	12	6	50	2.0
Placebo	14	14	100	

As a result of the studies, it was established that coherent water has protective and therapeutic effect against herpes infection.

6. Study of the influence of coherent water on reproduction vesicular stomatitis virus

Study of the influence of coherent water on the reproduction of the vesicular virus stomatitis (VS) was carried out in a continuous culture of L41 cells (lymphoblastoid human cells). Cells were grown in RPMI-1640 + 10% fetal medium serum + antibiotics.

Vesicular stomatitis virus, Indiana strain, obtained from the Virus Museum Institute of Virology named after. D.I. Ivanovsky (RAMS, Moscow). Infectious the titer in L41 cell culture was 4.0-4.5 Ig ID50. A monolayer of L-41 cells was grown in test tubes, then vesicular stomatitis virus was added to the test tubes. dose of 100 ID50 and the cells were treated with coherent water. As a control cultures treated only with VSV and cells not exposed to any influences. After 24 hours of cultivation at 37°C, when in test tubes with control of VSV, complete degeneration of the cell monolayer was observed; in culture The infectious titer of VSV was determined in the experimental and control cultures. Results of studies of the influence of coherent water on VSV reproduction are presented in Table 5.

Table 5. Effect of coherent water on the reproduction of the vesicular stomatitis virus.

A drug	Virus titer in Ig ID50	Virus inhibition in IgID50	R
Coherent water	3.0	3.0	<0.001
Control	5.0	-	

As a result of the studies, it was established that coherent water reliably inhibits the reproduction of the vesicular stomatitis virus by 2 Ig ID50.

Torsion fields and information interactions – 2009**7. Study of interferonogenic activity of coherent water**

The interferonogenic activity of coherent water was studied in experiments *in vitro*. For this purpose, leukocytes from human donors were used. To 3 ml of the last 0.1 ml of coherent water was added and the mixture was incubated at 37°C for 18 hours. Then interferon activity was determined in the supernatant using the method suppression of the cytopathogenic effect of the vesicular stomatitis virus in homologous continuous cell culture L41 (lymphoblastoid cells person). The culture was grown in a growth medium consisting of nutrient medium RPMI-1640 + 10% fetal serum + antibiotics.

Dilutions of culture culture were added to the monolayer of cells grown in plates. liquid containing coherent water (after incubation with leukocytes) and incubated at 37° C for 24 and 72 hours, after which the supernatant the vesicular stomatitis virus (VSV) was removed and added at a dose of 100 TCD50/0.1 ml . IN cell cultures treated with VSV and cells without have undergone no processing. Experimental and control cultures were incubated at 37°C for 24 and 72 hours.

Determination of interferon activity was carried out after 24 and 72 hours, when the dose introduced by VSV caused complete cell degeneration in virus control, with absence of degeneration in intact cell culture. For interferon titer took the reciprocal of the dilution of coherent water at which the culture in 50% of wells was completely protected from the cytopathogenic effect of the virus vesicular stomatitis.

The results of the study of interferonogenic activity of coherent water are presented in table 6.

Table 6 - Interferonogenic activity of coherent water. A

drug	Incubation time, hour	Interferon activity in unit act/ml
Coherent water	24	168
	72	360

Thus, coherent water exhibits a pronounced interferonogenic activity.

8. Study of anti-HIV activity of coherent water

A critical issue in inhibiting resistant viral infections is preventing the attachment and penetration of virions into host cells.

It is known that HIV is not able to penetrate into all types of blood cells, but only those that carry a special receptor protein on their surface - CD4+, to which the virus easily attaches. A viral protein called gp120

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located on its surface, finds the CD4+ receptor protein on the surface cells and binds tightly to it. This interaction is facilitated additional proteins called coreceptors. Name of the main coreceptors for HIV - CCR5 and CXCR-4. In normal cells they serve full-fledged receptors for specific cellular regulatory proteins - chemokines. And for the interaction of cells with HIV, they play the role of a catalyst in polymerization reactions of the gp120 protein with the CD4+ receptor protein. If such a reaction does not happen, the virus cannot penetrate the cell.

Activation of the gp120 protein synthesis reaction with the CD4+ receptor protein may be explained by their transition from one potential energy surface to another. IN as a mediator of this transition is the coreceptor, which plays the role of spin catalyst. The coreceptor causes changes in spin states molecular structure of proteins g $\ddot{\text{y}}$ 120 and CD4+ receptor, which leads to increase in the number of singlet states of reaction pairs and initiation protein polymerization reactions. This reaction usually occurs without activation, i.e. the activation energy of the reaction is close to zero. Emerging the molecule is in the ground electronic state. The reaction proceeds quickly and effective if the molecule has the opportunity to give up the energy released when formation of a bond, other particles, or redistribute it among many vibrational modes.

As already noted, spin relaxation of the human body leads to conversion spin states from singlet to triplet, which provides braking reactions of protein synthesis g $\ddot{\text{y}}$ 120 and CD4+ receptor. This same relaxation leads to relieving cellular stress (energy discharge) and preventing activation viruses.

The study of the effect of coherent water on HIV reproduction was carried out on a new models of HIV infection - in COS cells, which have a universal sensitivity to RNA and DNA viruses, including HIV.

A monolayer of COS cells grown in plates was infected with HIV at a dose of 100 ID50 , cultured for 5-7 days, the culture liquid was collected and p24 was determined using the Virognostica Organon test system. Then 10 times COS cell culture was infected with dilutions to determine the infectious titer. The results are presented in Table 7.

The COS model was used to study the effect of coherent water on reproduction HIV. For this purpose, a monolayer of COS cells was infected with HIV at a dose of 100 ID50 and treated with coherent water according to the same scheme as in the previous research. Incubated at 37°C for 7 days, and then in samples HIV p24 expression and its infectious titer were determined.

Table 7 - Characteristics of HIV infection.

		HIV p24 expression level

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Treatment	Days	p24 , ng/ml	Infectious title in Ig ID50
culture	cultivation		
HIV	5	3.640	5.0
HIV	7	3.666	6.0
Intact culture	-	-	-

The results of the influence of coherent water on HIV reproduction are presented in the table 8.

Table 8. Effect of coherent water on HIV reproduction.

ml Drugs	Expression, pg/	HIV infectious titer in Ig ID50
Coherent water	630	4.0
HIV control	650	5.6

As a result of the studies, it was established that coherent water inhibited HIV reproduction by 1.6 Ig ID50, which was reflected in both inhibition expression of the HIV-1 p24 antigen, and a decrease in the infectious titer by 1.5 Ig ID50.

9. Pilot experiment on *in vivo* inhibition of HIV

The treatment regimen is universal. The patient takes 250 ml daily coherent water in the evening before bed. Drink water in small sips within 5 minutes. In this case, the glass with coherent water should not be released from your hand until the end of her appointment. After the patient has taken coherent water, the aquatic environment The patient's body enters a coherent state (synchronization effect). This the state is maintained for 15 seconds, and then the process continues for 12 hours decoherization.

The duration of treatment can be at least 3 months and depends on both viral load, and from the complications caused by them.

The experiment was carried out in South Africa with patients (volunteers) infected HIV, with different levels of CD4+ T-lymphocytes in the blood. One part of patients took only coherent water, and the other part took coherent water and antiretroviral drugs (ART). The results of the experiment are given in table 9.

Table 9. Effect of coherent water on the content of HIV CD4+ lymphocytes infected patients. Accepted

Patient	drugs		Time reception, days	Content of CD4+ in blood				
	ARVL	water		before experiment		after experiment		
				units/ μ l	%	units/ μ l	%	
Michael Makhoba	+	-	10	20	3.2	207	9.06	
Rachel Ngaiya	+	-	10	90	6.96	154	11.05	
Mercia Dube	+	-	10	419	21.0	597	21.65	
Petrus Tshabalala	+	+	30	101	6.68	156	7.54	
John Moroazwi	+	+	30	271	18.8	453	21.25	
Alfred Zulu	+	+	60	448	20.19	642	20.77	

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Teleportation of vaccine properties

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In the last decade, the topic of teleportation has become firmly established on the pages of purely scientific publications, and this science fiction term became truly scientific. IN At the same time, the reality of teleportation remains one of the most controversial topics in scientific research. world. Actually, this dispute concerns the teleportation of material objects - a convenient way to instantly move in time and space. At the same time, teleportation of the properties of material objects became a reality. Through subtle physical experiments succeeded in transmitting information from one quantum particle to another separated by giant ones, compared to their size, distance.

Today, at least three scientific groups - Austrian, Italian and American researchers report successful teleportation in laboratory conditions of the spin characteristics of the photon, beryllium and calcium atoms.

In this case, the transfer of information from one particle to another occurs without any fields, instantly and does not depend on distance.

In the USA, this scientific program currently consists of 34 projects, including the development of which involves 21 universities, two multi-purpose laboratories and three of the most secret government agencies. A heads and coordinates all work on the Center for Defense Research program.

The interest is understandable. Systems for teleportation of information transmission, which impossible to intercept or decipher, necessary for the military, intelligence services, diplomacy, banks and everyone who understands the value of secret and commercial information and is willing to pay a lot.

Teleportation systems are based on the achievements of quantum physics last decade and relates to the physics of *entangled quantum states* (entangled quantum states). This branch of physics allows for entanglement between macro-objects and the implementation of teleportation communication between them due to quantum amplification effect.

When amplified, the quantum system interacts with other systems, causing entanglement (quantum correlation) with them. Then both the original system and the systems already entangled with it, in turn, interact with even more number of systems, involving them in a confused state. This happens until an entangled state is formed, including a huge number of systems. If

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such processes cover a sufficient number of systems, then the resulting state cannot be interpreted other than as a superposition macroscopically distinguishable states of a macroscopic system.

In this case, the question arises whether it is possible to create a teleportation System through which it would be possible to teleport properties medicines into the animal or human body at any distance. In this case, conditions must be created in the body for reading the received information, its processing and implementation at the level within cellular processes.

In order to solve this problem, it is necessary to turn to cellular structures body. V.P. Yamskov and I.A. Yamskov exploring supramolecular structures cellular microenvironment, came to the conclusion that the cellular system microenvironment (*associates*) is represented by identifiable electronic microscopy of an extracellular matrix (ECM) construct immersed in microheterogeneous gel, which is formed in a certain way molecules of small proteins and water associated with each other - *small matrix*. The small matrix in biological systems is the matrix for reading, distributing and destroying an information signal coming from outside into the tissue. The three-dimensional mesh of the small matrix interacts with structure of the ECM and the plasma membrane due to the binding of individual domains of protein molecules of these structures. Spatial organization of small matrix, the state of which is described in terms of *liquid crystal state of matter*, is constantly modified due to changes in properties and concentrations of its constituent components, including supramolecular ones *water ensembles (associates)*.

So, the state of supramolecular assemblies of water in a small matrix determines its functional ability to induce and maintain a state that ensures constant reading and transmission of incoming information on cellular receptors, as well as carry out its destruction.

Research by V.N. Bingi showed that when a molecule of some substances into water, a change in the spatial spin configuration occurs adjacent aqueous medium, related to the spins of protons (hydrogen nuclei, water molecules), so that the new configuration copies the characteristic structure of the spin configuration of this molecule of a substance. There are experimental there are reasons to believe that due to the small radius of action of spin dynamics molecules of a substance, only a few layers of them are formed around such molecules spin proton copies.

Because of this, at the field level, spin proton copies of substance molecules have the same effect on living objects as the substance itself. At the level In experimental phenomenology in homeopathy, this has been known since the time of S. Hahnemann, then it was studied on extensive biochemical material by G.N. Shangin-Berezovsky and his colleagues, a little later rediscovered by D. Benvenisto, V. Folem and developed by L.N. Lapichev and his staff.

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In the works of E. Klishchenko and E. Burlakova, for example, direct the therapeutic effect of tocopherol and glycoprotein in various concentrations, down to ultra-low. It turned out that this effect is especially strong in the interval up to 10-16 - 10-14 M, although physics and biology prohibit such a solution from treating anything never happened. And it is water that is the matrix that carries out rapid perception of information and its distribution throughout the tissue structure. The function is low molecular weight adhesive glycoproteins that result in self-assembly of a certain supramolecular structure, consists in constant maintaining a specific state of water molecules that ensures perception each new information signal coming from outside.

Of particular interest in the systemic relationships of the above ideas is represent a spin coherent state, defined as phasing, coordination, synchronization - "non-force" interaction between states objects or parts thereof. As experimental practice shows, any a biological object can be brought into a coherent state, frequency which is determined by the characteristic frequency of the molecular structure of water.

Using the technique of experimental studies of the phase structure liquid crystals, it was established that the coherent state of the body corresponds to the water included in its structure, which has a characteristic ordered structure. This result is of fundamental importance, since for such structure, a very small energy impact is enough to excite strong response in the system (organism). At the same time, coherent the properties of matter are fundamentally quantum in nature.

Consequently, by bringing the organism into a coherent state and introducing into it this or that other information can be realized by active biochemical processes such as direct interaction of molecules participating in reactions, and interaction mediated by supramolecular ensembles of water, exhibiting the information properties of molecules participating in reactions.

In turn, the physics of entangled quantum states indicates that teleportation of properties can only be carried out if the object transmission (medicine) and the object of receiving information (organism) will be be in a coherent state with the same characteristic frequency. This condition can be fully satisfied if the transfer object is represented by an aqueous solution, and the characteristic frequency will be determined coherent state of water. This condition also holds for a small matrix cellular structures, since it is mainly composed of water.

Based on the above conditions and in accordance with the Teleportation Program properties of medicines, the "Teleport" system was created with the help of which Successful remote transfer of the properties of such vaccines has been carried out:

- vaccine "Influvac" for the prevention of influenza, produced by "Solvay Pharma" (Netherlands), which contains hemagglutinin and neuraminidase of such viral strains: A10/99(H3N2), A20/99 (H1N1), B379/99;

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- Twinrix vaccine for the prevention of hepatitis A and B, produced by SmithKline Beecham Biologicals SA".

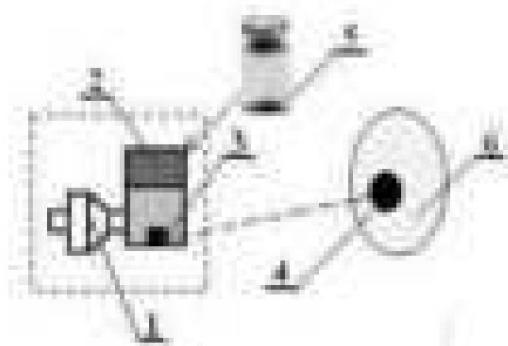
Teleportation was carried out on the body of people (volunteers) and rabbits:

- a) vaccines "Influvac" and "Twinrix" - broadcast for 5 people; b) vaccine "Influvac" broadcast for 5 rabbits.

The time of continuous teleportation influence in all cases was 36 hours.

The Teleport system includes: a unit for broadcasting spin spatial configurations; translator chip; chip inductor that is attached to the body vaccinated object.

The operating principle of the System, as already noted, is based on the use effects of entangled spin coherent states, which allows for teleportation of spin replicas (spatial configurations) of protein fragments of vaccines on the body of the subject of vaccination and cause in it appropriate immune response. The System diagram is shown in Fig. 1.



Rice. 1. 1 – spin field generator, 2 – spin spatial resonator vaccine configurations, 3 – spin state translator chip, 4 – inductor chip spin states, 5 – vaccine, 6 – object of influence – Patient.

After spin field generator 1, spin states are excited water in resonator 2 to the required coherent level. At the same time, chip-translator 3 and chip-inductor 4 are transferred to a coherent spin state according to characteristic frequency of water. Then vaccine 5 is injected into the broadcast unit to obtain a solution of $5@10^{-5}M$ and the inductor chip is fixed on the body of the object vaccinations 6.

The experimental results were assessed based on the presence in biological objects of the corresponding antibodies and according to the rate of formation of the corresponding immune protection (under normal vaccination conditions, the immune response is realized after 7-10 days).

When titrating analyzed blood samples for the presence of specific antibodies The following results were obtained (Table 1):

Torsion fields and information interactions – 2009**Table 1.**

An object vaccinations	Number of antibodies (antibodies/ml)									
	Vaccine "Influvac"						Vaccine "Twinrix"			
	H3N2		H1N1		B		H.A.		HbsAg	
	K	TV	K	TV	K			TV	K	TV
People	14	256	8	32	0	512	negative*	positive	0	0
rabbits	0	1024	0		16	0	1024			

K – control indicators; TV – indicators after teleportation vaccination.

* - in immunological practice, the body's immune response to the NA antigen is determined only in the form of *negative* or *positive*.

The immune response of organisms is realized in 36 hours instead of 7-10 days. Cause the absence of an immune response to the HbsAg protein fragment is not yet known, but vaccination practice has determined that complete immunization of the human body occurs 6 months after 3 injections.

The effect of teleportation vaccination is explained by the fact that in the implementation of the immune all B lymphocytes participate in the response, bypassing the cloning process, and spin replicas that are broadcast to the vaccination object play the role of "master key" intensifying the immunization process.

Another positive aspect of the developed method is seen in the fact that it will allow, on the one hand, to abandon the production of expensive drugs and make pharmaceuticals are extremely cheap, and on the other hand, it will reduce the problem of drug toxicosis, especially in relation to long-term medications and, most importantly, lifelong medications taken by patients (for example, patients with diabetes).

Ecology of coherent motor fuel

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All types of modern transport cause great damage to the biosphere, but the most road transport is dangerous for her. In the global pollution balance atmosphere, the share of motor transport is 13.3%, but in cities it increases to 80%.

Diesel engines are increasingly being used in the automotive industry. Their advantages: higher efficiency (up to 35%), ability to work at higher cheap fuel, however, due to the soot contained in the exhaust gases, complex cyclic and aromatic hydrocarbons classified as carcinogenic substances, diesel engines are more toxic.

American and Swedish scientists have found that diesel exhaust gases disrupt the functioning of the immune system and significantly increase the risk of lung cancer.

Hydrocarbons in exhaust gases consist of original or decayed molecules fuels that did not take part in combustion. Emissions are of particular importance benzene, toluene, polycyclic aromatic hydrocarbons and, first of all, benz(a)pyrene. All of them belong to the group of carcinogenic substances and are not removed from human body, and over time, accumulating in it, contribute to the formation malignant tumors.

Automakers around the world, periodically spurred on by legislators in Europe, America and Asia, have long been fighting to reduce the toxicity of waste gases There are a lot of ideas, but all promising developments come down to three technologies - "fuel cells" (Fuel Cell - see "ABS" N2/1997), electric motors and hybrid engines.

Researchers mostly strive to influence combustion processes changing the chemical nature of the fuel and changing the amount of free radicals and their energy state [2].

Combustion is one of the most complex phenomena known to man. From a scientific point of view In our opinion, combustion is a chain reaction of sequential crushing of fuel particles into increasingly smaller charged radicals, these are physical and chemical processes transformation of chemical energy of intermolecular bonds, these are physical processes of energy conversion at the molecular and atomic levels into heat and light, and many other processes occurring simultaneously.

* Published only in the electronic version of the collection.

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The work performed as a result of the combustion of motor fuel is done in the form

and current work as

$$\frac{dA}{dx} = \frac{TdS}{dt} - \frac{dT}{dx} \quad (2)$$

Since the first term on the right side of equation (2) represents that part of the internal energy that does not turn into work, we write

$$\frac{dA}{dt} = \frac{dT}{dx} \quad (3)$$

When motor fuel is burned, energy is released

$$\frac{dU}{dt} = \frac{Q dm}{dt} = Q m k T \exp\left(-\frac{E_a}{kT}\right) \quad (4)$$

where Q is the calorific value of the fuel, m is the mass of the fuel burned, E_a is the activation energy, k is Boltzmann's constant, T is temperature.

As we can see, the lower the activation energy of the fuel, the higher the current work in an isothermal process.

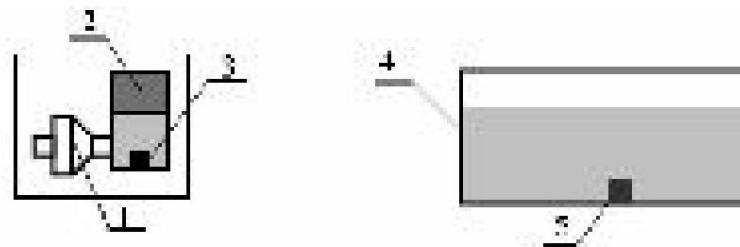
Let us consider the possibility of changing the activation energy of the nomenclature motor fuel. Activation of its molecules can occur as a result of the transition of the atoms included in their composition to increased vibrational levels or as a result excitation of electrons. Activation may be caused by absorption electromagnetic vibrations, in the visible spectrum; electrical discharge; magnetic field; ultrasound; breaking of valence bonds.

Of particular interest are collective nonequilibrium (coherent) states, when at one quantum level, characterizing one of natural frequencies of vibrations of the material environment, is built to the maximum possible number of spins.

At the same time, $\delta\delta/kT$ decreases not only due to an increase in T , but also due to decrease in entropy, since $E_a/kT = S_a$.

One of the methods for achieving a coherent state of motor fuels is based on using the spin field.

The spin field, interacting with the spins of the material environment, transfers it from equilibrium to a nonequilibrium state. However, until now there has not been the issue of maintaining a nonequilibrium state corresponding to natural frequency of vibrations of the material environment. For this purpose it was developed a method that ensures such retention, carried out according to the following scheme (Fig. 1).



Rice. 1. 1 – spin generator, 2 – spin state resonator, 3 – chip translator, 4 – car fuel tank, 5 – chip inductor

An inductor chip 5 is placed in the tank of car 4, which is connected to a translator chip 3 via a quantum communication channel created using the physics of entangled quantum states.

is located in the spin state resonator 2, to which the torsion bar is connected generator (TG) 1. After switching on TG 1, the resonator is excited spin states 2 to the required level. Simultaneously with excitement resonator, the translator chip 3 is excited, which due to the effect entangled quantum states translates spin excitation to chip-inductor 5. The chip-inductor performs spin pumping of fuel in tank 4 and transfers it to a continuously held spin coherent state.

Research on the influence of the spin coherent state of diesel fuel on exhaust gas composition was carried out on the Laboratory test bench internal combustion engines of the Poznań University of Technology. The parameters of the bench engine are given in Table 1.

Table 1. Parameters of the motor used

Engine, type	Andoria 4TC90, turbocharged diesel
Maximum power [kW/KM] Maximum	66/90 at 4100 rpm
torque [Nm] Piston diameter/	195 at 2500 rpm
stroke [mm] Engine	90/95
displacement [cm ³] Compression	2417
ratio Ignition	21.1:1
sequence Direction of	1-3-4-2
revolutions Fuel pump	Left
Speed controller	Private
Engine cooling Fuel	Mechanical
Automatic Room climate	Flow-through
parameters	Diesel according to PN-EN 590:1999 Lotos Diesel API CG-4/SH SAE 15W/40
	T = 26.50C, p = 1004 hPa

Results of studies of the influence of the spin coherent state of diesel fuel on the composition of exhaust gases are given in Table 2.

Table 2. Measurement results

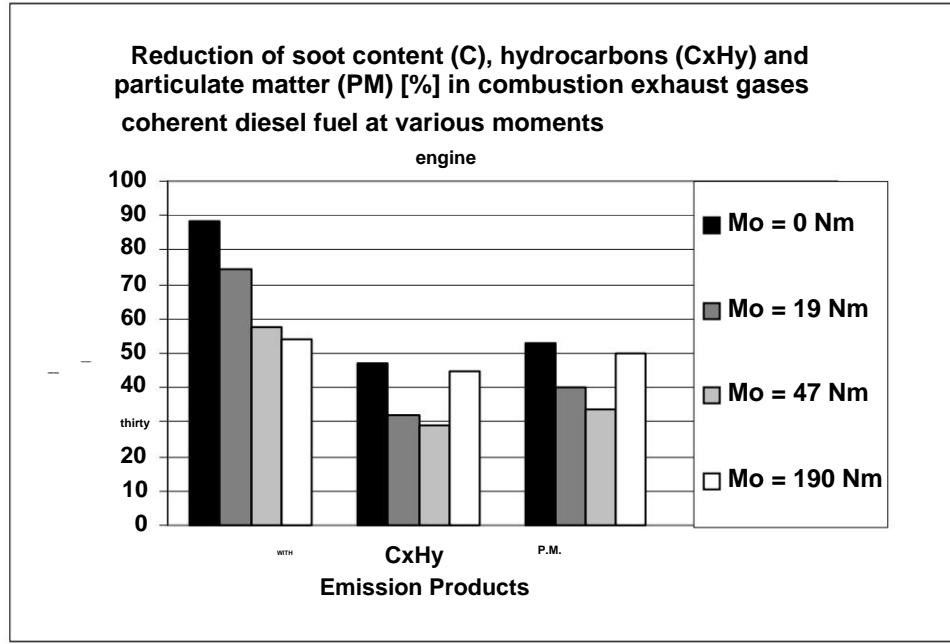
No. p/p	n, l/min	Ne, kW	Mo, Nm	Ge, G/s	G/kWh, mg/m ³	C,	CxHy, mg/m ³	PM, mg/m ³
Equilibrium state of diesel fuel								

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1a	2500	-	-	0.27	2.6	5.18	19.3	0.95	660	3.5	182	72
2a	2500	12.43	47.5	1.33	385	5.4	24.62	195	2.07	302	7.2	Coherent
3a	2500	state of diesel fuel									133	53
4a	2500										60	26
1b	2500	-	-	0.25	0.3	19.0	0.94	653	0.9	47.5	96	34
2b	2500	5.10	1.36	393	2.3	190	2.16	315	3.3	Percentage	70	24
3b	2500	12.43	change*	-7.40	-1.05	2.25	4, 34				94	35
4b	2500	24.62									33	13
1s	-	-	-				-	-88.46	-47.25	-52.77		
2s	-	-	-				-1.06	-74.28	-32.03	-40.00		
3s	-	-	-				2.07	-57.40	-29.32	-33.96		
4s	-	-	-				4.30	-54.16	-45.00	-50.00		

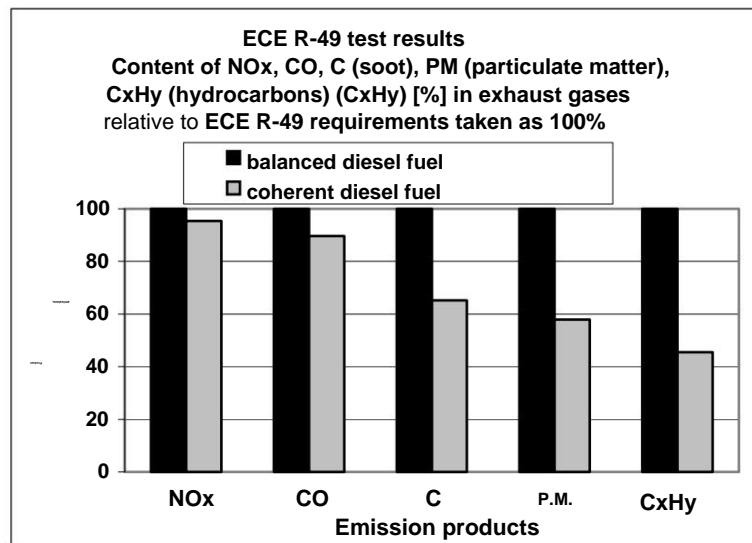
- the minus sign indicates a percentage reduction in emission products

Using the data from Table 2, the graph shown in Fig. 2, reduction of soot content (C), hydrocarbons (CxHy) and particulate matter (PM) [%] in exhaust gases of burned coherent diesel fuel at various engine torques [Nm] in a relatively equilibrium (incoherent) diesel engine fuel.

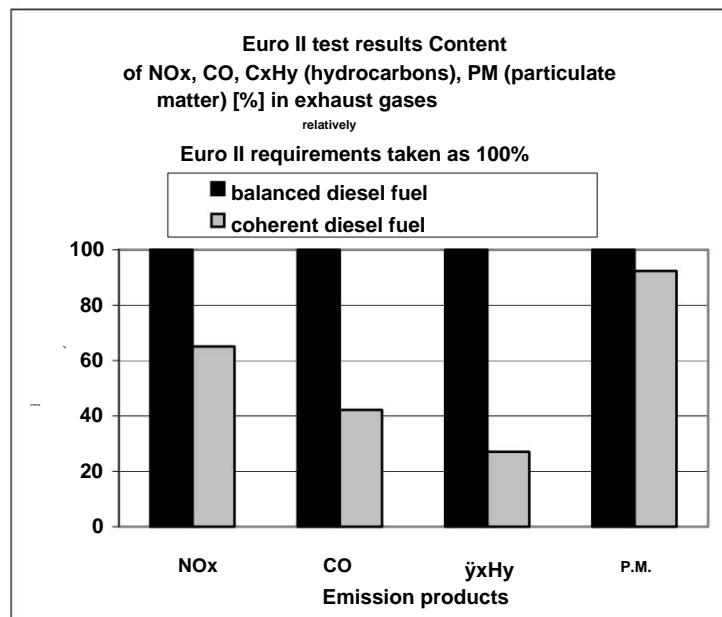


Rice. 2.

At the same stand, studies were carried out on the influence of spin coherent state of diesel fuel for the composition of exhaust gases in accordance with tests ECE R-49 and Euro II. As a result of statistical analysis of this complex research, the graphs presented in Fig. 3 and 4, declines soot content (C), hydrocarbons (CxHy) and particulate matter (PM) [%] in exhaust gases from burned diesel fuel. At the same time, taken as 100% indicators adopted in the ECE R-49 and Euro II tests.



Rice. 3.



Rice. 4.

As a result of the research, the following conclusions can be drawn:

1. The spin coherent state of diesel fuel increases its efficiency combustion, reduces the toxicity of exhaust gases and can improve environmental friendliness diesel engines.
2. The same conclusion follows from studies on the ECE R-49 and Euro II tests.
3. The use of coherent diesel fuel can be recommended for vehicles operated in urban environments, since engines vehicles operate primarily in idle and acceleration modes.
4. Due to the fact that the content of NOx, CO, C, CxHy, and PM in the exhaust gases diesel engine running on coherent fuel below the requirements of ECE R-49 and Euro II, it can be recommended to abandon the engine equipment

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exhaust gas afterburner filters. At the same time, we should expect an increase in engine power and reduced diesel fuel consumption.

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Spin technologies in increasing efficiency agricultural crop production

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One of the cardinal directions of spin technologies is associated with their application in agriculture, in order to increase agricultural productivity crops It is known that the future harvest is laid during the growing season of plants, the activity of which depends on the speed of biochemical reactions, agrochemical background and temperature conditions.

The goal achieved by using spin technologies is to increase speed biochemical reactions during the growing season, and accordingly, acceleration plant development.

The rate of a biochemical reaction can be determined from the following equation [12]

$$K = (kT/2\pi\hbar) \cdot \exp(F^*/T) \cdot \exp(-\Delta H/kT) \quad (1)$$

where k is Boltzmann's constant; T - temperature; \hbar - Planck's constant; F^* – statistical sum of singlet spin states per unit volume; F – statistical sum of triplet spins per unit volume states; ΔH - enthalpy of activation.

Any chemical reaction is associated with the movement of atomic nuclei, of which molecules of reagents consist, and with the restructuring of their electronic environment. The potential energy of a system of atoms is determined by the arrangement of electrons and cores. Since the distribution of electrons is determined by the mutual arrangement of the nuclei, then any such location corresponds to a single potential value energy of the system. Any nuclear configuration will correspond to a point on potential energy surface. And the transition of a molecule from one surface potential energy to another is associated with a change in electron and/or *spin state of the molecule* [3, 4].

In biochemical reactions, not only molecular but also spin dynamics, which plays a dual role in elementary chemical acts. WITH On the one hand, it actively influences the mechanism and kinetics of the reaction. With another On the other hand, spin dynamics reacts very sensitively to molecular dynamics elementary chemical act.

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It is known from spin chemistry [5] that chemical reactions are controlled by two fundamental factors are energy and spin. At the same time, the prohibition of chemical reactions by the back is insurmountable. If in a chemical reaction the colliding molecules have antiparallel spins (singlet state), formation of a chemical bond is happening. If interacting molecules have parallel spins (triplet state), then the molecule can be formed only in the triplet, excited state. Since such conditions usually lie high in energy, in the vast majority of cases, chemical reactions in the triplet impossible for a couple.

According to Wigner's rule, the statistical weight of encounters between two molecules in a singlet state is 1/4, and the statistical weight of encounters in the triplet state is 3/4. In the vast majority of cases, the basic state of chemical products reactions is singlet, and therefore we should expect that only a quarter of the meetings reacting molecules can produce a reaction product. Such processes, as a rule, proceed without activation, i.e. the activation energy of the reaction is close to zero. The resulting molecule is in the ground electronic state. Reaction proceeds quickly and efficiently if the molecule has the ability to transfer the energy released during bond formation to other particles or redistribute it between many vibrational modes.

A feature of spin dynamics is the possibility of coherent control chemical reactions [6, 7, 8]. In coherent modes one can expect an increase reaction yields, selectivity of processes, self-cleaning of surfaces from catalytic poisons, etc. due to an increase in the statistical weight of singlets states of occurring molecules up to 1/2. And these expectations were confirmed, especially in chemical oscillators with forced, forced oscillations.

But before discussing the possibility of such control, let us briefly summarize what it is. coherence in quantum mechanics. Let's consider some molecular system. We denote the energy operator of this system by \hat{H} . Stationary (eigen) k and energy levels of these stationary states E_k are state $\hat{H} \psi_k = E_k \psi_k$ found from solutions to the Schrödinger equation

$$\hat{H}\psi_k = E_k \psi_k$$

(2)

According to quantum mechanics, a system can be in a state of linear superposition of stationary states

$$\Psi = \sum_k c_k \psi_k$$

(3)

The measured quantity is the square of the modulus of the wave function

$$|\Psi|^2 = \sum_i |c_i|^2 |\psi_i|^2 + \sum_{i \neq j} c_i^* c_j \psi_i^* \psi_j$$

(4)

This value consists of two parts. The first term on the right side reflects population $|c_k|^2$ stationary states ψ_k in linear superposition. Very

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The interesting thing is the second term on the right side of this expression. It shows that the contributions of different stationary states to the observed value interfere. This interference term changes with time according to equation

$$|\psi(t)\rangle^2 = \sum_k |\psi_k\rangle^2 |\psi_{k+}\rangle^2 + \sum_{k,n} c_n^* c_k \langle \psi_n^* | \psi_k \rangle \exp[-(E_k - E_n)t/\hbar] \quad (5)$$

It can be seen that it is precisely due to the cross products of stationary states the interference pattern changes over time. Values γ^{*njk} ($n \neq k$) characterize the coherence of the state of a quantum system.

These well-known principles of quantum mechanics are directly projected to responsive systems. Let us denote by ψ_{initial} the initial state of the molecular system (initial state of the reactants) and through ψ_{final} state molecular system (state of reaction products). It should be expected that when movement along the reaction coordinate (from the state of reactants to the state of products reaction) the molecular system will pass through a superposition of states ψ_{initial} and ψ_{con} . And this means that when moving along the reaction coordinate, i.e. during quantum reaction can play an important role in the elementary act of a chemical reaction coherence.

As noted above, spin dynamics actively influence the mechanism and kinetics reactions. When moving along the reaction coordinate from initial to final state of the molecular system will pass through a superposition of states, i.e. Coherence in a chemical reaction plays an important role. Let us turn to work [9]. Let at the initial moment of time, $t = 0$, the system be in a state of 1 s energy E_1 , and let there be state 2 with energy E_2 equal to E_1 , i.e. $E_2 = E_1$. Let us assume that these two states are related by some interaction with transition matrix element equal to V . Let us discuss the probability $p(t)$ of finding the system at any moment in time in state 2. Time dependence of this probability depends very much on coherence. If the transition from the initial state 1 to final state 2 occurs in an incoherent manner, then over time the populations of these states become equalized, and after reaching $p = 1/2$, the populations of these states subsequently retain the value 1/2. When coherent motion, the desired probability is equal to

$$P = \sin^2(Vt/\gamma). \quad (6)$$

Two things about this result are absolutely remarkable:

- a) this probability oscillates, i.e. it doesn't change monotonously like this expected for incoherent motion;
- b) this probability at certain times reaches the value 1. When at $Vt/\gamma = \pi/4$ this probability becomes equal to 1/2, both states turn out to be equally populated. Transition from initial state to final state

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continues as if by inertia further, until the system completely transitions into state 2, etc. This example shows that coherence can play very important role in elementary chemical acts.

How one could implement what is called coherent reaction control in this example? Let us assume that an excited molecule from state 2 can, for example, dissociate. The highest yield of decomposition products will be in the case when, as a result of coherent motion, the system is completely turns out to be in state 2, i.e. at a time that satisfies the condition

$$V_t / \ddot{\gamma} = 1/2 (2n + 1) \ddot{\gamma}, n = 0, 1, 2, \dots \quad (7)$$

From this example it is clear that it is possible to optimize a chemical transformation using the coherent nature of the system's motion along the reaction coordinate.

Let's return to equation (1). It shows that increasing the rate of biochemical reactions are possible by increasing the temperature and decreasing the activation energy. But since these temperature values are standardized, the only activation entropy $S_a / k = F^*/F$ remains available for control.

Let us rewrite equation (1) in the following form.

$$\begin{aligned} K &= A \exp(F^*/F) \\ A &= (kT/2\ddot{\gamma}\ddot{\gamma}) L \exp(-I\ddot{\gamma}/kT) \end{aligned}$$

Let's calculate the rate of a biochemical reaction under thermodynamic conditions equilibrium with the following spin states per unit volume, determined by Wigner's rule - $F^* = 250000$; $F = 750000$:

$$K_1 = A \exp(250000/750000) = 1.39 A.$$

For the coherent state of the reagents, $F^* = 500000$; $F = 500000$

$$K_2 = A \exp(500000/500000) = 2.73 A.$$

As you can see, the speed of the biochemical reaction has doubled, while it is necessary Keep in mind that the example we considered is ideal.

The specificity of spin interactions is manifested in the transfer of ordered orientation of one system of nuclear spins to another and in spontaneous establishment of a single "weighted average" orientation is different (including number of oppositely directed spins. Due to the directional nature and the possibility of accumulating orientational influence (as opposed to chaotic disturbances) it may be sufficient to order not only micro, but also macrosystems.

This interaction is recognized by quantum mechanics, according to which the main A role in establishing spin-spin equilibrium is played by some special (field) interaction of identical particles. It is consistent with the concept of "A-fields" by R.

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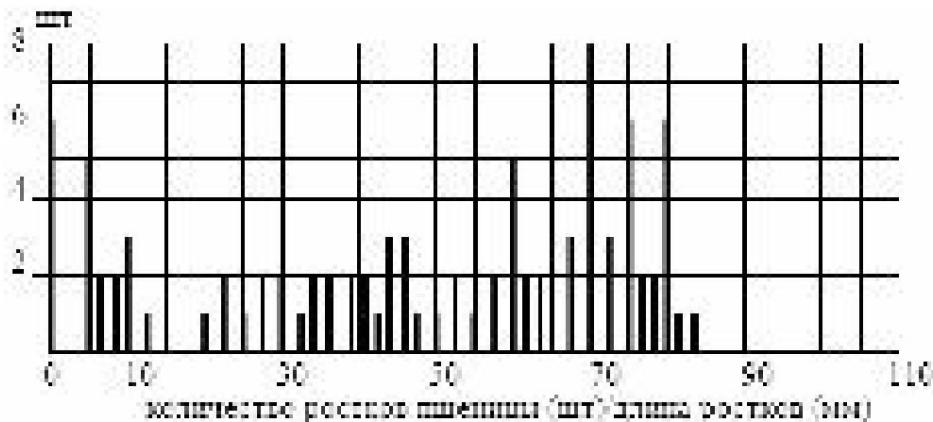
Uchiyama [10], according to which each independent parameter of a particle a_i , satisfying the conservation law, corresponds to its own material field A_i , through which the interaction between particles occurs, corresponding this parameter.

As an example of the influence of the spin field on vegetative plants, there can be:

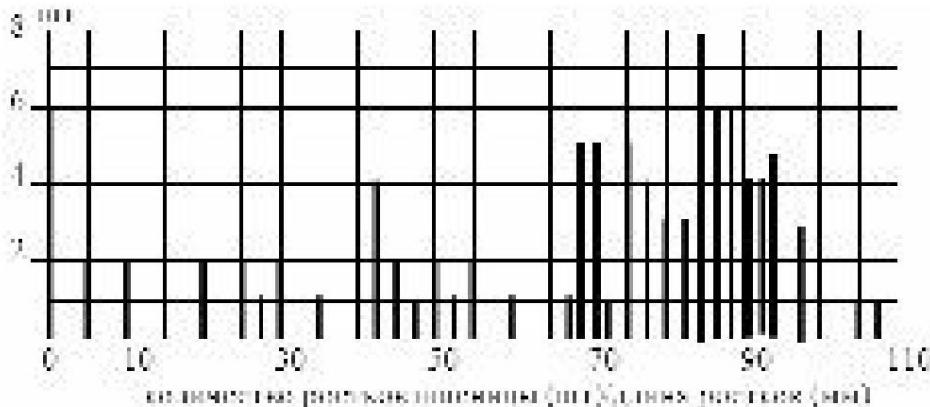
The results of studies on the germination and growth force of wheat grains are presented. The studies were carried out on Donskaya semi-dwarf wheat. Germination was carried out in Petri dishes. Parameters monitored during experiments – temperature, illumination, humidity. Progress of the experiment: – at the control stage, in 100 wheat grains were germinated in Petri dishes for 120 hours. At the expiration of planned period, the length of the sprouts was measured and their quantitative distribution. In subsequent stages (stage 2 and 3) grains wheat were exposed to the spin field, their germination, 100 pieces per experiment, for 120 hours, after which measuring the length of sprouts and determining their quantitative distribution. During The experiment controlled the air temperature - $21.5 \pm 0.50\text{C}$, watering - 20 ml water per day, constant lighting.

Histograms of the germination efficiency of wheat grains are shown in Fig. 1.

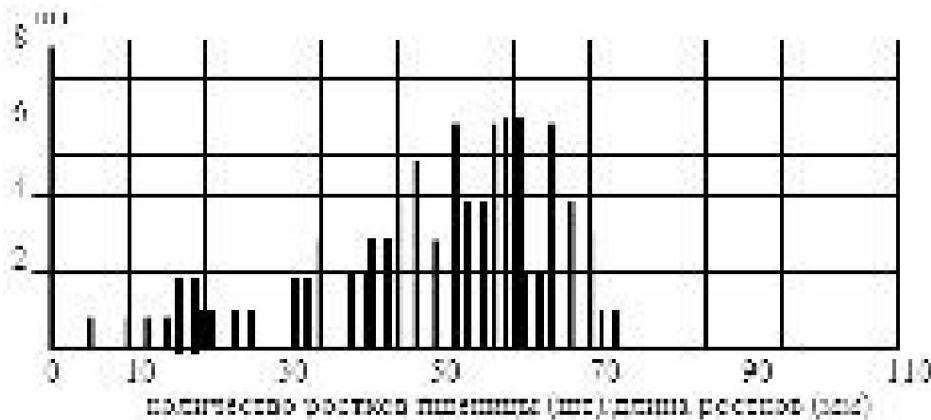
a) control experiment



b) experiment: coherent state of wheat grains



c) experiment: decoherization of the spin state

Torsion fields and information interactions – 2009**Rice. 1. Results of an experiment on wheat germination**

Experiments on the influence of the spin field on germinating wheat grains were carried out through their photonegative image.

Procedure for conducting the experiment.

At the first, control, stage in three Petri dishes for 120 hours 100 grains of wheat were germinated. After 120 hours, it was carried out measuring the length of the sprouts and determining their quantitative distribution over lengths During the experiment, the air temperature was controlled - $21.5 \pm 0.50\text{C}$, watering - 20 ml of water per day, constant lighting.

After the control stage, the Petri dishes were photographed using film developed and cut into slides. Then an experiment was carried out in which slides depicting Petri dishes were exposed to unmodulated (stage 2) and modulated (stage 3) by a static spin field. Scheme experiment is presented in Fig. 2.



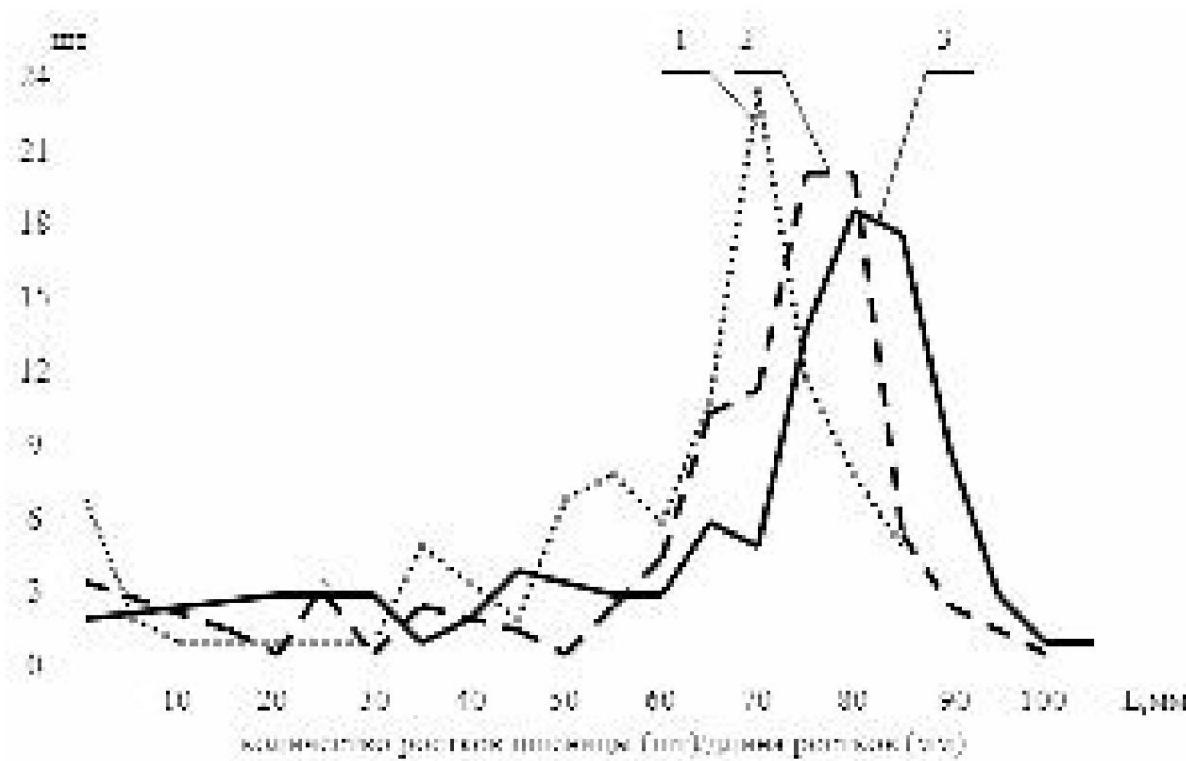
Rice.

2.1 – spin field generator, 2 – resonator, 3 – chip translator, 4 – chip inductor, 5 – modulator, 6 – slides with images of Petri dishes, 7 – Petri dishes with germinated wheat grains

After turning on the spin field generator 1, the resonator is excited spin states 2 to the required level. Simultaneously with excitement resonator, the translator chip 3 is excited, which due to the effect entangled states translates these spin states to the chip

receiver 4, located in modulator 5. In modulator 5, the SP transmitted from chip inductor 4 is modulated and fed to slides 6, located in an entangled state with Petri dishes 7, which causes spin changes in sprouted wheat grains. These changes are manifested in an increase number of singlet states and, accordingly, acceleration of biochemical processes reactions and increasing the germination rate of wheat.

As in the control experiment, germination of grains was carried out in Petri dishes according to 100 grains each, for 120 hours, after which the length was measured sprouts and determination of their quantitative distribution by length. results statistical processing of experimental data is shown in the graphs in Fig. 3.



Rice.

3. 1 - length of wheat sprouts in the control experiment (total length of sprouts - L_1 = 5915 mm);
 3. 2 - length of wheat sprouts in the experiment: unmodulated static spin field (total length of sprouts - L_2 = 6495 mm);
 3. 3 - length of wheat sprouts in the experiment: static modulated spin field (total length of sprouts - L_3 = 7005 mm).

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Technology of spin modification of oil in processes processing*

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The technology is based on a method of converting oil into a coherent state carried out by generating spin waves at the resonant frequency of oil, or the frequency of one of its harmonics, with the same phase or the same phase difference. At In this case, for the purpose of resonant amplification of the technological process, the frequency coherent state of oil synchronous with the frequency of the acting thermal field for oil in the technological process.

Coherence is determined by the emergence of correlations (interrelations and interdependencies) between system elements. The stronger the correlation between events, the higher the degree of order in the system. A huge number of chaotic elements moving at the micro level are detected at the macro level coordinated behavior. The system behaves as if each of its elements was informed about the state of the system. The system acquires new properties, not inherent in the objects included in it (emergence). The system responds to external influence as a whole. Elements of the system begin to operate consistently, revealing properties not inherent to a single particle. For coherent systems are characterized by a nonlinear response to external impact: with a small external signal, the reaction energy is very significant.

It is known that to implement the process of rectification, rupture or formation valence bonds of CH molecules, it is necessary to continuously supply a certain amount of energy to overcome an energy barrier called energy activation.

At the same time, the coherent state of oil causes a decrease in energy activation, resulting in the amount of energy required to implement oil refining processes are reduced and this unused part is sent directly into the process as additional useful energy.

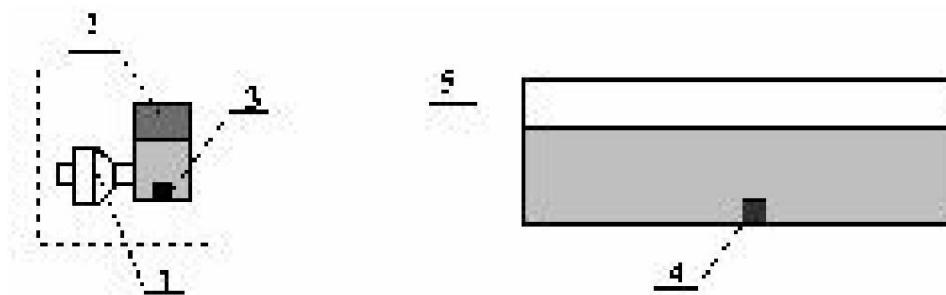
So, for example, for CH molecules, the rate of rupture or formation of valence bonds determined based on the following formula

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where N is the number of valence bonds, t is time, E_a is activation energy, k is Boltzmann's constant, T is temperature.

The device for converting oil into a coherent state (Fig. 1) contains a generator spin field 1, connected to a spin state resonator 2, chip translator 3, which is connected to a chip inductor 4, placed in a container with oil 5.



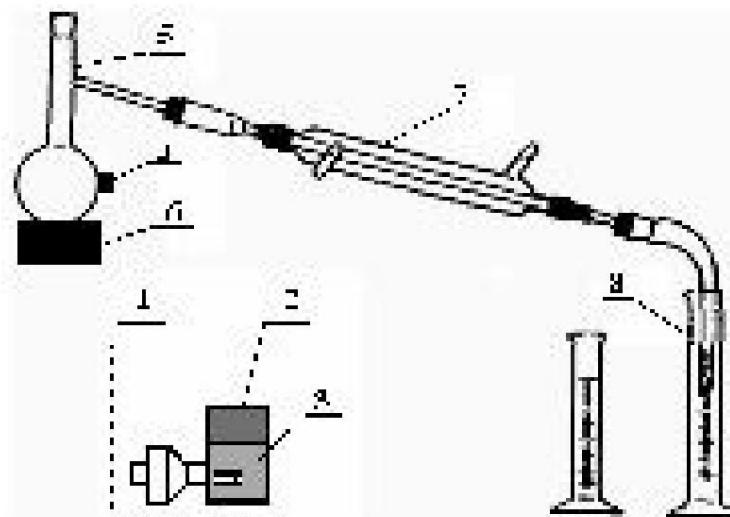
Rice. 1. 1 – spin wave generator, 2 – spin state resonator, 3 – chip translator, 4 – chip inductor, 5 – container with oil.

As an alternative example, studies of energy changes are given activation of brown coal in equilibrium and coherent states, which were carried out at the Czestochowa Institute of Technology (Poland). As a result introducing coal into a coherent state, a decrease in activation energy was obtained by 56.7% relative to the equilibrium state (Table 1). This indicates reducing the energy barrier that must be overcome in the event of burning coal in a coherent state.

Table 1

State coal	Energy activation	Decline activation energy, %
Equilibrium state	378 kJ/mol	0%
Coherent state No. 1	260 kJ/mol	31.2%
Coherent state No. 2	164 kJ/mol	56.6%

Research into the influence of the spin coherent state of oil on its efficiency rectifications were carried out using the Engler apparatus (Fig. 2), according to GOST 2177-82, "Petroleum products. Methods for determining fractional composition."



Rice. 2. Experimental design. 1 – spin field generator, 2 – spin resonator oil states, 3 - translator chip, 4 - inductor chip, 5 - flask with heated oil, 6 - heater, 7 - cooler, 8 - container.

After spin field generator 1 is turned on, spin saturation occurs oil in the spin state resonator 2 to the required coherent level. Simultaneously with the excitation of the resonator, the chip translator 3 was excited, which, due to the effect of entangled quantum states carried out the broadcast of spin excitation to the chip-inductor 4. Chip-inductor produced spin saturation of oil in flask 5.

The experiments were carried out in 2 stages:

Stage 1 – spin saturation of oil, with exposure times of 97 and 127 sec, s subsequent acceleration at temperatures up to 180°C (Appendix 1).

Stage 2 – spin saturation of oil to a coherent state No. 1 and 12, s subsequent acceleration at temperatures of 180 - 300°C (Appendix 2).

The statistically reliable number of experiments is 3.

After cooling the rectification products in the refrigerator, their volume was measured, samples were taken, and their volume was determined on a HEWLETT PACKARD 5890 chromatograph compound.

The results of the experiments are shown in tables 2 and 3.

table 2

No. p/p	Hydrocarbons	Hydrocarbon yield (%) after oil distillation to 180OC depending on the spin exposure time saturation		
		Equilibrium state	97 sec	127 sec
1.	Butane, isopentane, n-pentane, 2-methylpentane, 3-methylpentane, n-hexane – Others –	19.0 2.3	9.2 0.4	10.7 0.2

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2. 2,4-dimethylpentane, benzene, methylhexane, 3-methylhexane, n-heptane, dimethylhexanes – Others –	16.7 2.9	20.0 3.8	19.1 3.8
3. Toluene, methylheptane, n-octane, Others –	17.8 4.4	25.1 5.8	20.7 7.6
4. Trimethylhexane, dimethylheptane, xylene, 3-methyloctane, n-nonane Others –	23.0 3.7	24.0 3.2	26.1 4.2
5. Others below n-nonane –	10.2	11.5	7.6

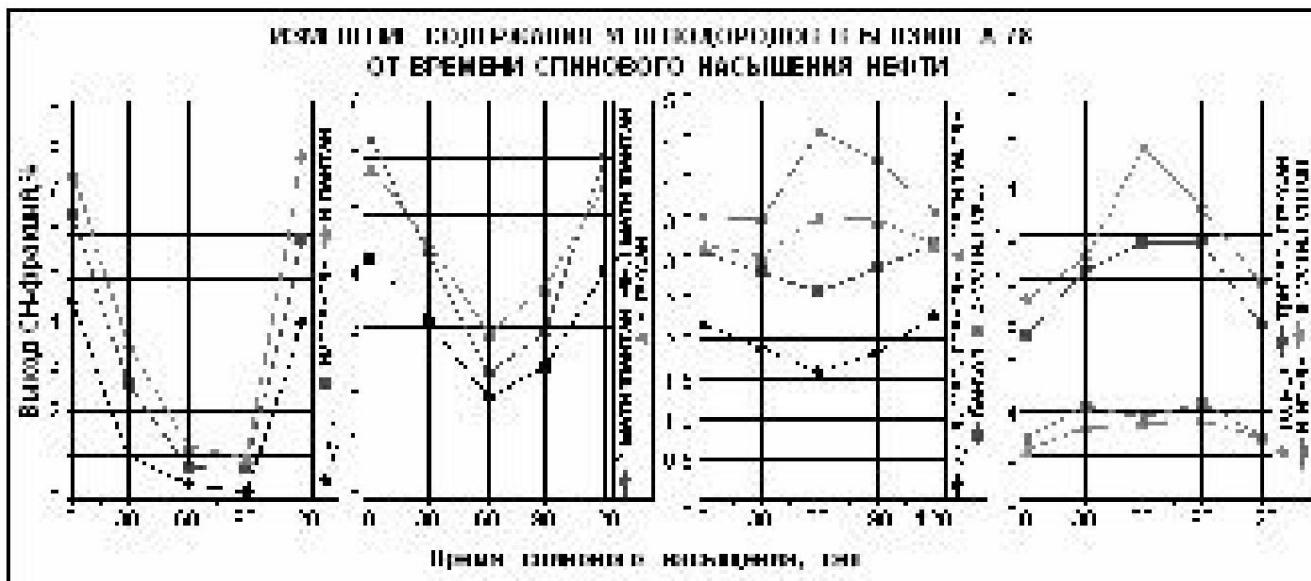
Table 3

No. p/p	Hydrocarbons	Hydrocarbon yield (%) after oil distillation at 180- 3000° depending on its spin state		
		Equilibrium (original) 8.5	Coherent (resonance No. 1)	Coherent (resonance No. 12)
1. $\ddot{\gamma}8 + \ddot{\gamma}9$	2. $\ddot{\gamma}8 +$		11.5	17.8
$\ddot{\gamma}9 + \ddot{\gamma}10$	3. $\ddot{\gamma}8 + 4. \ddot{\gamma}8 +$	18.4	22.7	31.5
... + C _{eleven}		30.6	35.2	44.8
... + C12		43.5	48	57.3
5. From 8+	... + C13	59.1	59.1	70.4
6. From 8+	... + C14	72.8	75.4	78.8
7. From 8+	... + C15	84	86.3	86.3
8. C 8+	... + C16	90.5	92.1	92.1
9. From 8+	... + C17	95	96.4	96.4
10. From 8+	... + C18	96.44	97.5	97.5
11. From 8 +	... + C19	98.1	98.3	98.3

In order to determine the catalytic properties of spin saturation (spin catalysis) an experiment was carried out with A-76 gasoline, in which spin saturation of oil, with exposure times of 60, 97 and 127 sec and a subsequent determination of the carbon composition on a HEWLETT PACKARD 5890 chromatograph.

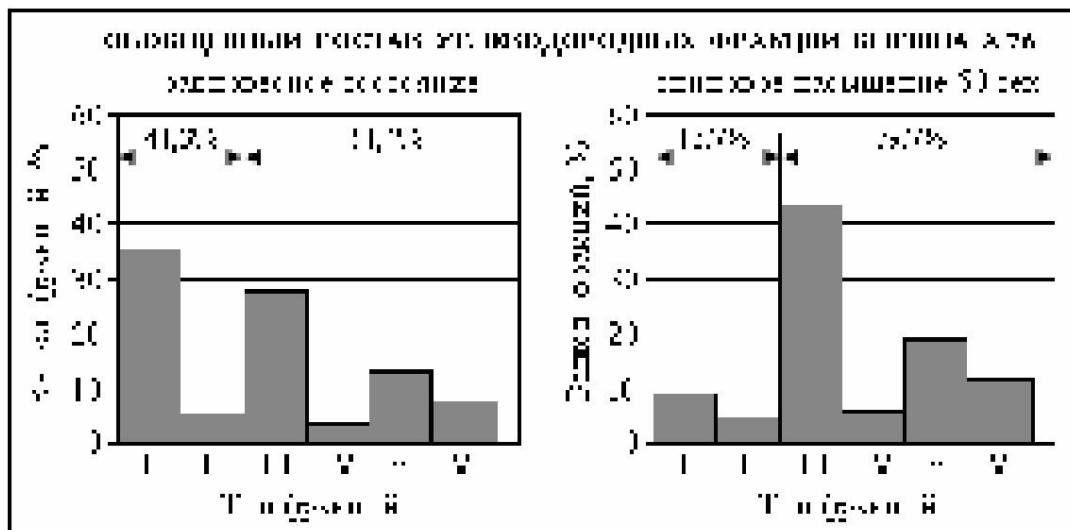
The statistically reliable number of experiments is 3.

In Fig. Figure 3 shows the dependence of the change in the hydrocarbon content in A-76 gasoline depending on the time of spin saturation.



Rice. 3.

In Fig. Figure 4 shows the generalized composition of the hydrocarbon fractions of A-76 gasoline obtained as a result of the experiment at a spin saturation time of 60 - 90 seconds in comparison with gasoline in an equilibrium state.



Rice. 4. Type of fractions: I - butane...n-hexane, II - 2,4-dimethylpentane...benzene, III - methylhexane...methylpentane, IV - below methylheptane...n-octane, V - below n-octane...dimethylheptane, VI - below dimethylheptane...n-nonane

Analysis of the data obtained as a result of experiments shows that the spin saturation and coherent state of oil and its products determine the change their hydrocarbon composition.

In addition, the coherent state of petroleum products reduces energy consumption during their rectification, which can be seen from the laboratory results below research.

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Annex 1.

LABORATORIUM

Baco Lab Sp. z o.o.

Ul. Wągrowiecka 14, 51 - 166 Poznań
Filia: 43-238 Witnazyce, Witnazyce 6A
tel. 061 749-59-32

SPRAWOZDANIE Z BADAŃ NR 480B/06

1. Złotyjedworski Radosław Sp. z o.o., ul. R. Wyszyńskiego 1, 51-171 Poznań
 2. Drukarnia budżetowa: jednostka Pana Hraběckiego
 3. Numer problemu w rejestrze: 554876
 4. Data dostarczenia problemu: 9.01.06

Final hidden

Lp.	Badany parametr	Metoda badawcza	Wynik badania	Jednostka
1.	Ogólne	PN-EN ISO 3072	0,831 ± 20 °C	posta³
2.	Zawartość wody	PN-EN ISO 11399	0,05 - 0,08 ***	%
3.	Zapach	PN-EN ISO 2719	63 - 61 —*	T
4.	Lepkość	PN-EN ISO 3104	1,1861 ± 1,2117 *** - w 40°C	cSt
5.	Zawartość skrobi	PN-EN ISO 10646	300 - 420 ***	mg/kg
6.	Skład polimeru	PN-EN ISO 94012	10% - 124°C Do 250°C 4,1 Do 350°C 266 Kontek. do -164°C 4,9%	% (mm)

Wendy J. Smith (Editor)

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TEMPERATURE °C	PROPYLACRYLATE W%	TEMPERATURE °C	PROPYLACRYLATE W%
245	44	224	44
260	39	225	39
266	36	226	36
238	36	228	36
232	47	248	47
272	58	263	58
282	67	242	67
319	70	250	70
340	82	252	82
296	86	264	86
264	88	262	88

¹² See also *Islands in the Pacific: Colonization and Resistance in the South Pacific* (Honolulu, 1992).

Prvňí během svého vzdělávání pracoval v domácích podnikatelstvích i laboratořích na řešení odpadových záležitostí i na vývoj nových technologií. Spolu s kamarádem Jaroslavem Šimkem a později i s několika dalšími studenty založili společnost Konservativ. Laboratoře na vývoj nových technologií byly umístěny v rodině Jaroslava Šimka.

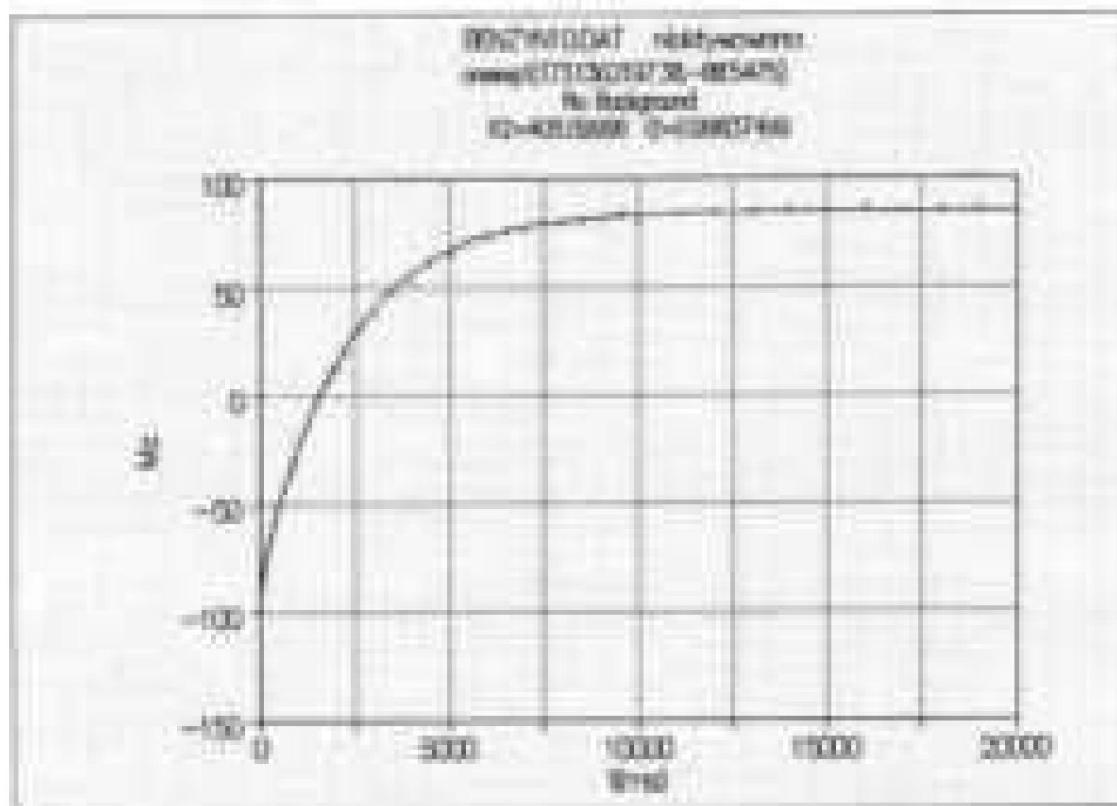
Pedigree marker associations
with allelic expression

Praktische Anwendung (siehe auch [Praktische Anwendung](#))

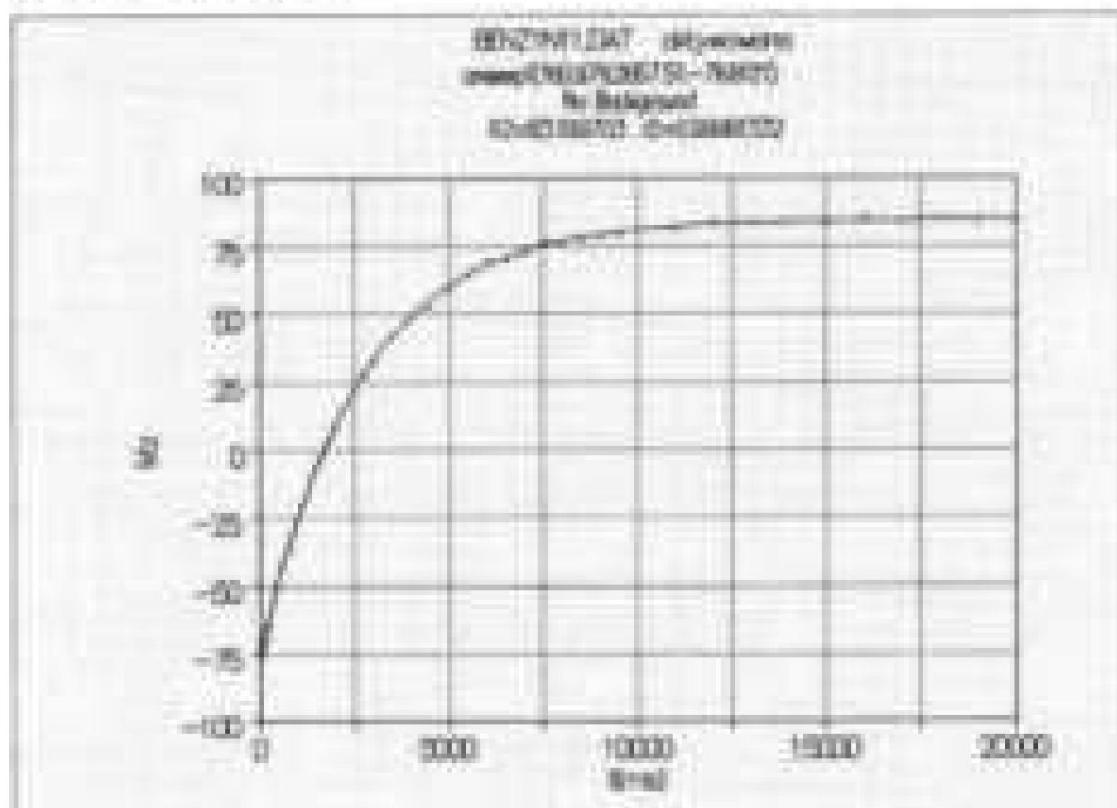
Page 10

Appendix 2.**Nuclear resonance spectrometry of gasoline spin saturation
(spin-lattice relaxation time of non-activated and activated gasoline)**

Biosensitif TR= 1111 ± 37 ms



Biosensitif TR= 2698 ± 37 ms



Torsion fields and information interactions – 2009

Coherent coal - a new energy perspective *

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The results of testing the technology showed a reduction in coal consumption in on average by 16%. The maximum reduction is about 24%.

The author proposes for implementation a coal modification technology that differs the fact that coal is transferred to a coherent state before combustion. In coherent state, the activation energy of coal decreases, as a result of which the amount of energy that must be continuously delivered to the combustion zone decreases, and this the unused part is sent directly to the heating process coolant.

Coherence is the coordinated flow in space and time of several oscillatory or wave processes in which the phase difference between the vibrations of the atoms that make up a specific physical structure remains constant.

Coherence is the emergence of correlations (interrelations and interdependencies) between the elements of the system (represented by coal) and their coordinated behavior on macro level. The system responds to external influences as a whole. At low magnitude of the external signal, the reaction energy of the coherent system is very significant.

Studies of changes in the activation energy of coal in equilibrium and coherent states were carried out at the Czestochowa University of Technology (Poland). As a result of introducing coal into a coherent state, a decrease was obtained activation energy by 56.7% relative to the equilibrium state (Table 1). This indicates a decrease in the energy barrier that is necessary overcome in the case of coal combustion in a coherent state.

Table 1

Status	Energy	Decline
coal	activation	activation energy, % 0%
Equilibrium state	378 kJ/mol 260	
Coherent state No. 1 Coherent state No. 2	kJ/mol 164 kJ/mol	31.2% 56.6%

The work done by burning coal is done in the form

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and current work as

$$\frac{dA}{dx} = T \frac{dS}{dt} - \frac{dT}{dx} \quad (2)$$

Since the first term on the right side of equation (2) represents that part of the internal energy that does not turn into work, we write

$$\frac{dA}{dt} = - \frac{dT}{dx} \quad (3)$$

Burning coal releases energy

$$\frac{dU}{dt} = \frac{Q}{dt} \frac{dm}{dt} = Q \frac{m}{h} k \exp \left(- \frac{E_a}{kT} \right) \quad (4)$$

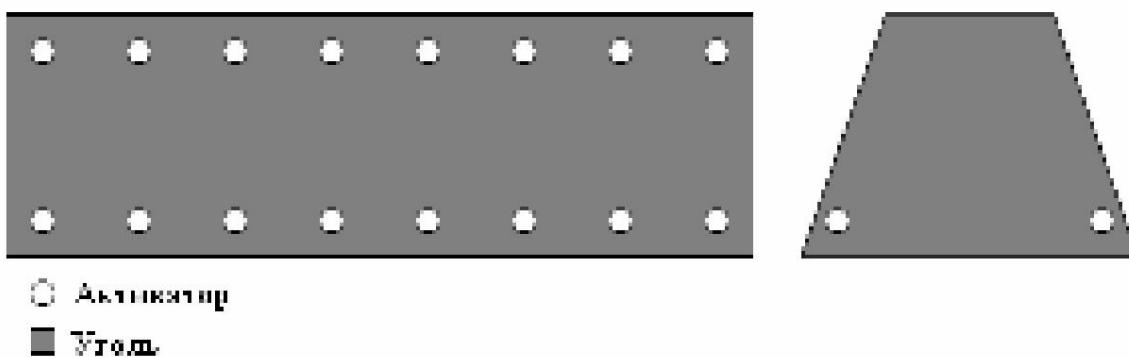
where Q is the calorific value of the fuel, m is the mass of the fuel burned, Ea is the activation energy, k is Boltzmann's constant, T is temperature.

The developed technology consists of a special generator, the modules of which are presented in Fig. 1, broadcast system and receiver-activators, which are buried to a depth of 1 m on the side at the base of the coal warehouse (Fig. 2). Technology does not require any regulatory technical or technological changes.

After turning on the generator, the broadcast system transmits coherent state of coal at its characteristic frequency to activator receivers. Activators, through spin "pumping", transfer coal to a coherent state 36 hours after turning on the generator.



Rice. 1. Generator modules.

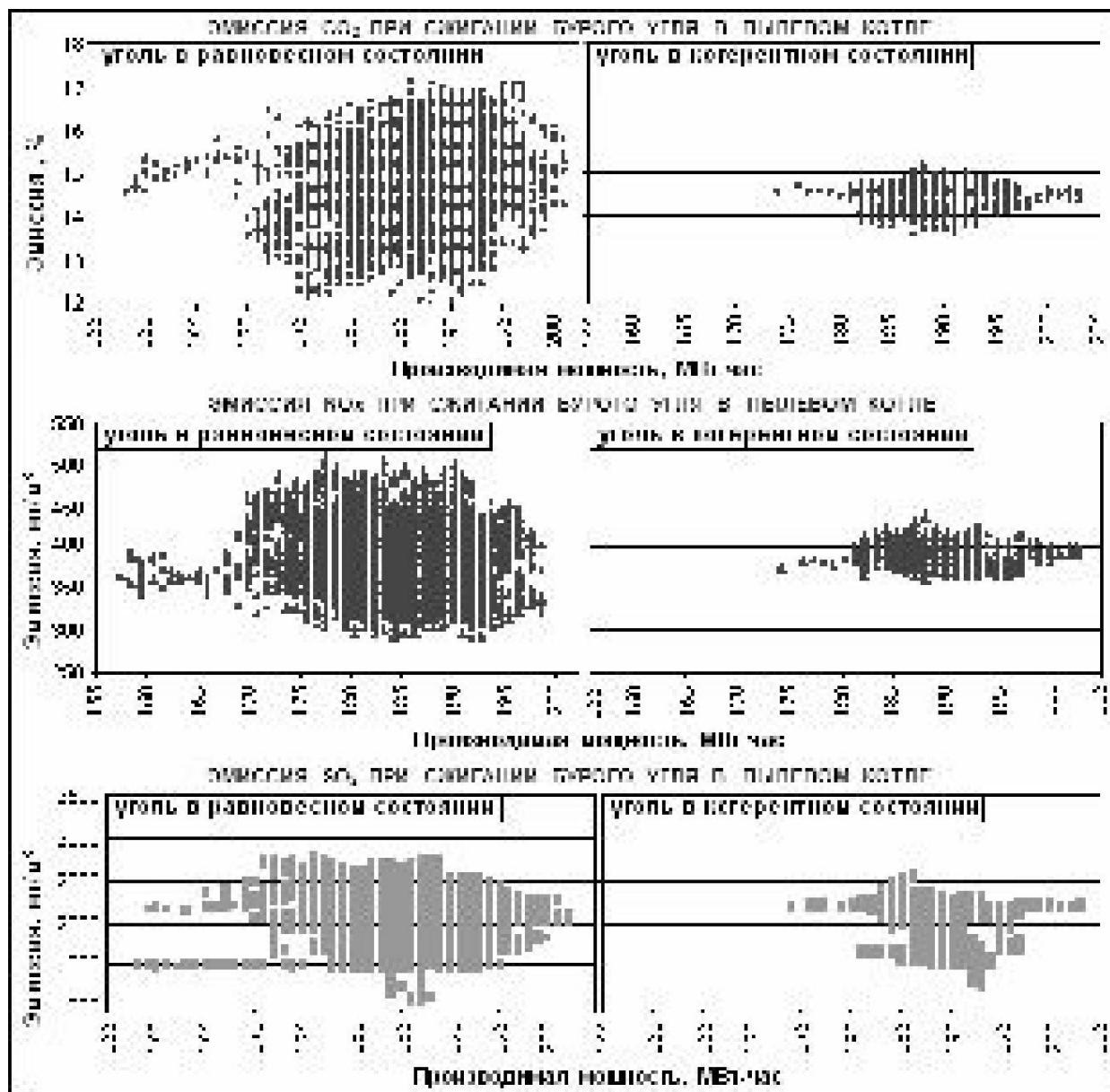


Rice. 2. Placement of receiver-activators in a coal warehouse.

The first experiment was carried out at a power plant burning brown coal in amount of 10 million tons per year in dust boilers with a capacity of up to 220 MWh. IN During the experiment lasting 10 days, the coal was in a coherent state maintained by activators located in the coal warehouse. During the experiment, emissions of CO₂, NOX and SOX (Fig. 3) into the atmosphere were assessed, data on which were continuously fed into the power plant's computer database.

As a result of an experiment on dust boilers, a reduction in CO₂ emissions by 13% NOX at 16% and SOX at 16%. There is a direct relationship between the amount burned coal and CO₂ emissions i.e. with a reduction in CO₂ emissions by 13% the amount burned coal is reduced by 13%.

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Rice. 3.

Experimental testing of the technology was carried out at a power plant in dust boilers which burn about 4 million coal per year. Technological features at the power plant include storage coal with a total volume of about 500 thousand tons. Throughout the experiment, coherent the condition of coal in warehouses was maintained by means of activators placed along the perimeter of the warehouses at their base.

In Fig. Figure 4 shows the graphical dependence of the change in coal energy consumption per generation of electrical energy for a power of more than 200 MWh. Grade savings in coal consumption showed a noticeable decrease, amounting on average to about 16%. The maximum reduction is about 24%.



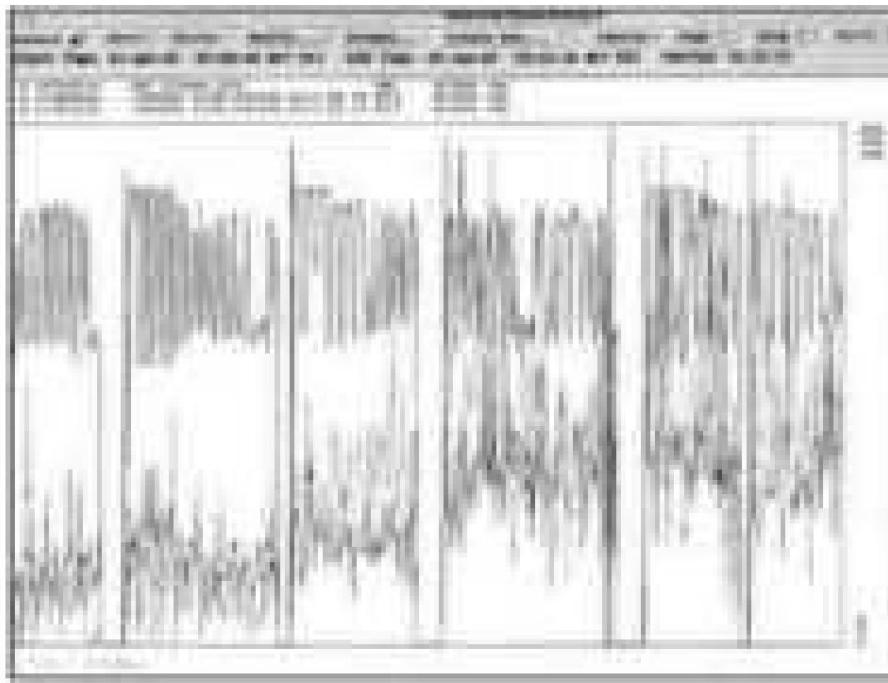
Rice. 4.

A coherent system of atomic nuclei in chemical processes is transformed into a similarity quantum generator. This is a new phenomenon of short-wave radiation from chemical reaction was experimentally discovered in 1983 [A.L. Buchachenko. Chemistry how music. Tambov: Nobelstika, 2004].

The energy of such radiation is always greater than the energy of incoherent electromagnetic radiation radiation (combustion of coal in an equilibrium state). And the less they will be structural differences of coherent coal (type of coal, size of burned particles, ash content of coal...), the greater the coherent radiation energy will be.

This effect is observed when coherent coal is burned in boilers. In this case, the frequency coherent state of coal corresponded to one of the harmonics of the electromagnetic radiation from the combustion process.

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Rice. 5.

In Fig. Figure 5 shows the trend of changes in flame brightness (bottom - blue and green lines) in combustion processes of incoherent (01-24.04.2007) and coherent coal (24.04-06/05/2007). In this case, the generator power (upper red line) changed in within normal limits.

In practical terms, the coherence effect will not only reduce consumption coal and reduce the consumption of gas or fuel oil used in processes “backlight”.

The developed technology is universal and does not require technical changes in technological regulations of the power plant. The technology implementation time is 3 days.

**Coherent technology is a new direction in energy saving in
*
steel annealing processes**

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Recrystallization of steel in annealing processes is related to potential energy crystal lattice, and the rate of its restructuring is associated with changes *in the spin states of atomic nuclei.*

It is known from thermodynamics that acceleration of annealing processes is possible due to increasing the process temperature. But since the temperature is standardized the only value available for control is the activation entropy, depending on the spin state of atomic nuclei.

Controlling this parameter is possible by transferring the working environment into a coherent spin state by using spin effects, one of the implementation methods is based on the use of spin field generators.

The ability of a spin field to impart coherent properties to a material environment and reduce its entropy was used by us in coherent technologies for acceleration of steel annealing processes in order to reduce energy costs for their carrying out.

Analysis of the state of modern technologies in the metallurgical industry allows us to conclude that their development is mainly carried out along the path *structural improvements* aimed at reducing energy consumption, and labor costs for its maintenance. technological equipment,

One of the promising areas of energy saving in metallurgy, in particular in steel annealing processes, associated with the use of coherent technologies, based which lays down the principle of transferring elements of the working environment - metal - into coherent spin state with a given characteristic frequency.

The following basic principles are often used in process calculations:
ratios:

a) rate of the process (recrystallization, diffusion dissolution, etc.)
 $v = A_0 \exp [-E_a/kT] \quad (1)$

b) diffusion transfer

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$$D = A_0 \exp [-E_a/kT] \quad (2)$$

where A_0 is a constant, E_a is activation energy, k is Boltzmann's constant, T is temperature, $E_a/kT = S_a$ is activation entropy.

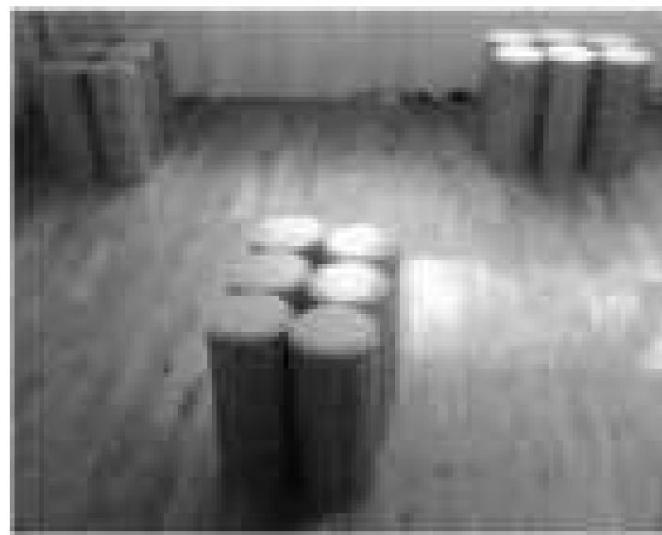
As can be seen from formulas (1) and (2), the acceleration of the thermodynamic process and diffusion perhaps by increasing the process temperature. But since the magnitude temperature is a standardized value, the only one available for control remains the entropy of activation, which in formulas (1) and (2) has the form $E_a/kT = S_a$. Controlling this parameter is possible by translating working environment into a coherent state through the use of spin effects, one of implementation methods of which are based on the use of spinning systems generating a spin field (SP).

The simplest of all spin fields (SP) is the field generated by the classical spin 1/2 [1]. Such a spin field is universal because the spin generating it can be represented as a circulating flow energy [2, 3]. The concept of such a field corresponds to the concept of "A-fields" by R. Uchiyama [4], according to which each independent particle parameter $\dot{\gamma}_i$, satisfying the conservation law, corresponds to its own material field $\dot{\gamma}_i$, through which the interaction between particles occurs, corresponding this parameter.

An example of spin microobjects is the state of electrons, protons and neutrons. However, spin objects are also possible at the macroscopic level [5, 6]. Moreover, the own spin fields of such objects are collective manifestation at the macroscopic level of ordered nuclear and atomic spins To do this, it is necessary that the nuclear and atomic spins be parallel and unidirectional, which is realized in structures with oriented cores [7 - 10]. Thus, when a ferromagnet is magnetized, the magnetic fields are ordered moments that are orientationally rigidly related to nuclear spins [10], which causes the emergence of a collective spin field.

The spin field can be generated using devices based on a specially organized ensemble of classical spins, in which maximum energy of interaction not only between neighboring, but also distant ones backs. The system of interacting spins is a kind of amplifier of small effects of each individual spin.

Generation of an intense spin field can only be achieved when using a cascade of elements with an organized ensemble of classical spins (Fig. 1).

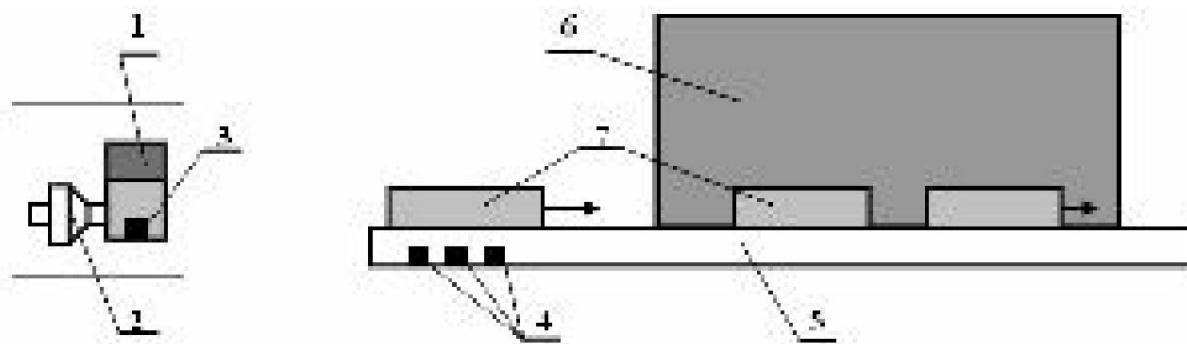


Rice. 1. Elements and modules of a spin field generator.

Since we consider spin as the source of the spin field, then, in accordance with According to the concept of R. Uchiyama [4], the object sensitive to the influence of the spin field should be the spin system of the material environment. Moreover, in relation to the effect, the spin system has an advantage over the individual spin microparticles. A complex nonequilibrium spin structure with a large a stock of states quasi-degenerate in energy, can act as a system in in which the action of the spin field can accumulate (spin saturation) and lead to noticeable macroscopic changes.

Of particular interest are the spin field-induced nonequilibrium states when at one quantum level, characterizing one of characteristic frequencies of the material environment, is built to the maximum possible number of spins. This state is coherent and causes a decrease not only in spin entropy, but also due to spin-lattice interactions, entropy of the material environment [11].

One of the methods for organizing coherent steel annealing technology is being implemented as follows (Fig. 2).



Rice. 2.

1 - resonator, 2 - spin generator, 3 - chip translator, 4 - chip inductor, 5 - furnace frame, 6 - annealing furnace, 7 - steel products

In the resonator 1, with a spin generator 2 connected to it, a translator chip 3 is placed. The inductor chip 4 is placed on the frame 5 of the furnace 6, into which steel products 7 are loaded to be heat treated. Main requirement for chip translator and chip inductor 3 and 4 - they must be made of one material having "long-range order".

After turning on the spin generator 2, the chip activator 3 in the resonator 1 is driven into an excited state, characterized by the fact that its frequency coincides with one from the characteristic vibration frequencies of steel. But since the translator chip 3 and the inductor chip 4 are made of the same material (having "long-range order"), between them they realize the effect of an entangled state [12], and the spin excitation received by the chip inductor 4 is transmitted through spin diffusion through frame 5 for steel products 7.

The effectiveness of coherent technologies in annealing processes was tested at the Dneprospetstal metallurgical plant and the SKF-Poznan bearing plant.

Industrial test results

1. Metallurgical plant "Dneprospetstal".

The tests were carried out during annealing of ShKh-15 steel and 65G steel. The furnaces used are bell and chamber furnaces.

42 experimental annealing processes were carried out, as a result of which the following performance indicators (Fig. 3, 4):

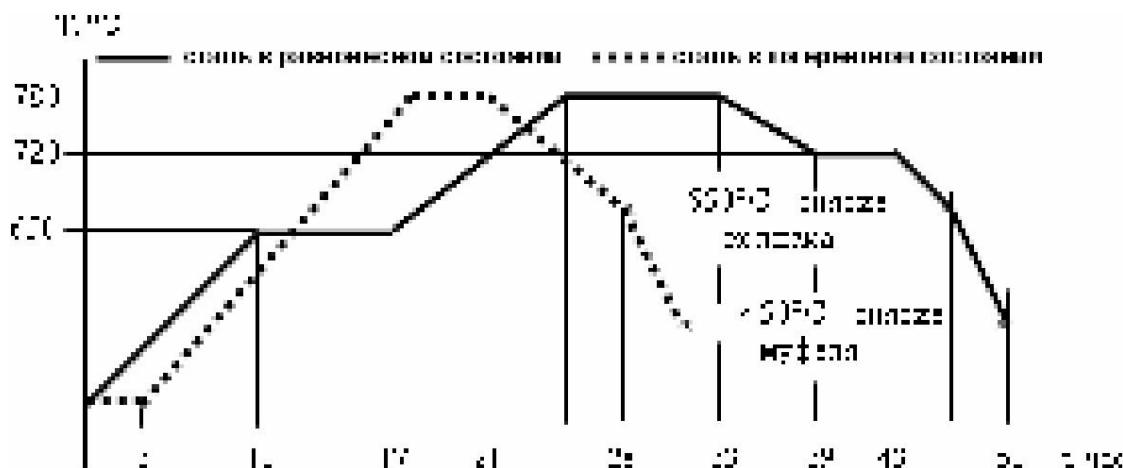
- reduction in combustion gas consumption - 35%,
- reduction in shielding gas consumption - 38% (for steel ShKh-15), - reduction in annealing duration - 32%,
- the quality of the metal meets the requirements of GOST:

steel ShKh-15 – microstructure CG – 2.0-2.1; hardness 200-210 HB;
steel 65G – microstructure CG – 2.1-2.3; hardness 210 HB.

Parameters of typical steel annealing processes and processes with using coherent technology

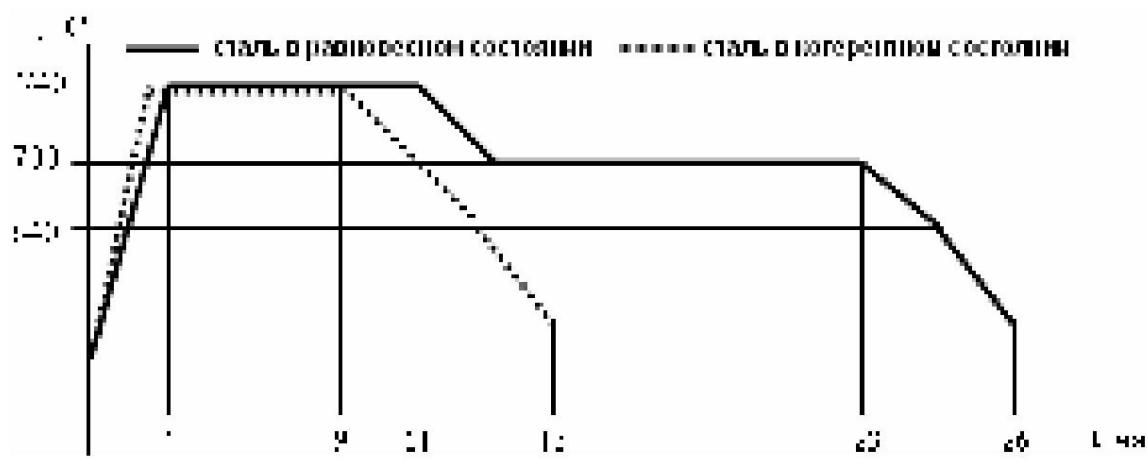
a) processes in bell-type gas furnaces with a protective atmosphere

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Rice. 3.

b) processes in chamber gas furnaces



Rice. 4.

2. Bearing plant SKF-Poznań

The tests were carried out by annealing steel ball bearing rings.

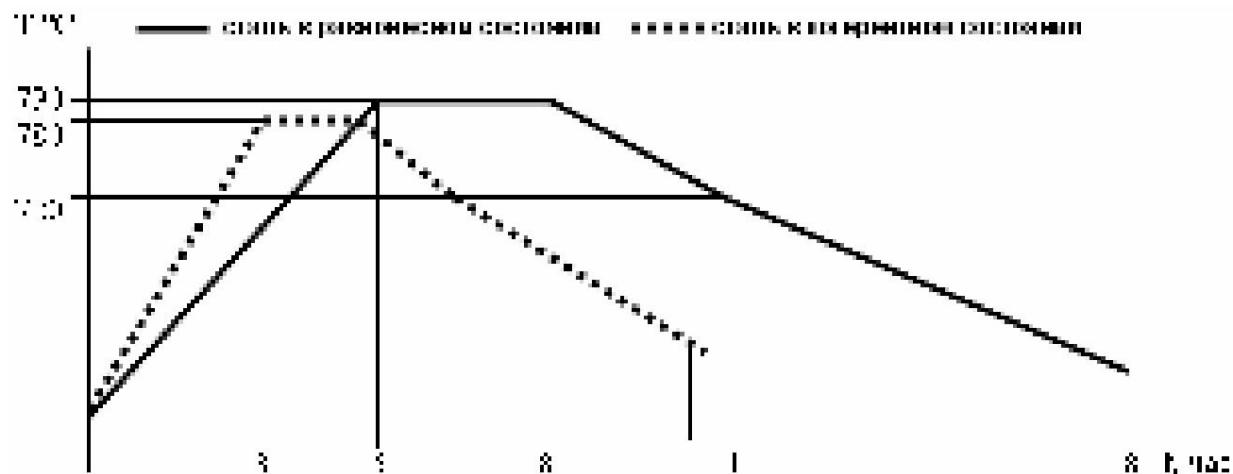
The furnace used is a pass-through electric PP-300. Number of annealing cages – 53. Number of cages in the oven – 18. Frequency of feeding cages into the oven – 1 hour.

Efficiency indicators: •

electrical energy savings – 40%, • metal quality

meets ISO requirements: microstructure – CG – 2.0-2.1;

hardness 193 – 210 HB.

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Rice. 5

Based on the experiments performed, the following conclusions can be drawn:

1. Application of coherent technology in steel annealing processes at the plant Dneprosstal allowed to achieve 36% savings in burned gas. WITH taking into account inert gas savings, expected annual economic effect is ~500 thousand UAH.
2. At the SKF-Poznan plant, energy consumption has been reduced by 40%.
3. Research on the quality of annealed metal and its microstructure characteristics indicate their compliance with regulatory requirements.

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Spinor fields in brain activity

*

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In 1970, Zbigniew Brzezinski wrote in his book “Between Two Epochs”: “It is tempting for strategic policy goals to benefit from research in areas of the brain and human behavior... to develop a system that would seriously influenced in selected regions the brain activity of the largest populations in over a long period.”

In the beginning there was a word...

One of the theorists and participants in the development of psychotronic weapons in the USA is D. Alexander - retired colonel, veteran of special forces appointment, fought in Vietnam. He studied for a long time behavior of people in extreme situations, is the author of a book on methods mind training. In 1980, D. Alexander published an article in the Military Review magazine about the “new intellectual battlefield”, dedicated to the capabilities use in war conditions of psychophysical techniques that violate normal mental function. The “soft killing” technology he proposed attracted the attention of Pentagon representatives, and in 1988, after leaving the army, he began working at the Los Alamos National Laboratory, where he was assigned to the special technology group. American experts believe that this “weapon” is most appropriate to use in those areas a world where American troops carry out “peacekeeping missions.”

Since 1977, according to official government programs in a number of technical developed countries (USA, Germany, France, Italy, Israel, South Africa, USSR) began the development of “technical means of correction and behavior management people based on biophysical management principles and new physical principles of transmitting control signals over long distances - weapons psychophysical control of intelligence (PUI).

Since 1977, there has been a “center for advanced physical research” in the USA, in which more than 20 Nobel Prize laureates “disappeared” (stopped publishing) in the field of physics, medicine, psychologists and biologists who previously worked in the field behavioral genetics (Benzer, Konopka, Luck, Delgado, Livitsky, Brant, Vafengtar and etc.). New areas of science have emerged, legalized by academic circles: neurolinguistic programming, psychotronics, radiation-acoustic effects, psychocoding, etc. All of the above directions, in one way or another

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**otherwise related to the task of remote contactless control
human intellect by technical means. What about the USSR?**

In 1986, within the framework of a closed resolution of the CPSU Central Committee and the USSR Council of Ministers from 01/27/86 No. 137-47, section "Lava-5" and "Ruslo-1", work began on the creation psychotronic weapons capable of shaping public opinion, influencing groups of people on whom important decisions depend, clear the area from potential enemies, suppress dissidents.

After the collapse of the Soviet Union, a large group of specialists who developed psychotronic weapons, among whom was Dr. Igor Smirnov, moved to the USA. In the spring of 1993, a research company was created in the USA to create psychocorrection programs for the purpose of remotely changing the landscape brain waves of human material. Founders of the company: Igor Smirnov and Mr. Morris, Clinton's adviser on global strategy.

After the end of the Gulf War (1991) in secret laboratories US Department of Defense began work on several dozen projects to create fundamentally new types of weapons. They have already received a number of names: from "soft" and "gentle" to "non-lethal" and "immobilizing", although some of its samples, for example, powerful lasers, microwave emitters, and pulsed weapons, cannot be called such. These new species designed to hit people through TV and monitor screens computers, as well as for use in situations where you need to stop actions of specific enemy groups, while minimizing the likelihood death or property damage for both parties.

In Russia, US activities in the field of psychotronics are monitored very closely. The fact is that the "non-lethal weapons" that they are working on at Los Alamos, according to Russian military classification is closely related to the so-called "information weapon", which, according to the former CEO FAPSI Alexander Starovoytova, is able to influence not only soldiers enemy, but for the entire population of the country. According to FAPSI, US expenses for the last 15 years for the development and acquisition of information warfare equipment increased 4 times.

In the last decade, a large amount has been devoted to the issue of psychotronics. articles published in Russian and foreign publications. These articles have special the role is given to spinor methods of influence in order to create a controlled human material, to suppress the human will to resist, counteract, disobey, as well as to reduce protective functions immune system.

At the same time, it is necessary to understand that the most terrible reality is that certain aspects and achievements of ultra-closed developments have come out from under control of government systems and became the property of the corrupt and mafia groups of various political content. It's hard to imagine

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someone who, with greater desire than terrorists, would like to get his hands on such developments.

Irreversible changes in the global situation and awareness of the opportunity psychotronics as a global weapon, requires the creation of technologies and means psychotronic protection of the country's top leadership (as well as persons performing particularly important duties - for example, nuclear reactor operators). Due to This is why a complex of studies was carried out at the Scientific and Production Center "Priroda" to study the possibility of using spinor fields in psychotronic systems, with the ultimate with the aim of creating psychotronic protection means. The research results are given below.

In relation to spinor fields (SF), the concept of which was introduced by theoretical and experimental physics in the last 20 years, academician M. Markov said that "with from the very beginning of the appearance of spinors in physics, the idea arose and lives on the fundamental nature of the joint venture, which perhaps *determines structurally and all other fields*" [1]. The concept of such fields corresponds to the concept of "A-fields" by R. Uchiyama [2], according to which each independent particle parameter \dot{y}_i , satisfying the conservation law, corresponds to its own material field \ddot{y}_i , through which the interaction between particles occurs, corresponding

this parameter. J. Wheeler also insisted on the reality of the existence of such fields [3]. The theory of VL Diatlov [4] coincides with these ideas. IN

According to it, spin generates a field that can be interpreted as long-range spin field.

An example of spinor microobjects are the states of electrons, protons and neutrons. However, spinor objects are also possible at the macroscopic level [5, 6]. At the same time, the own joint ventures of such objects are collective manifestation at the macroscopic level of ordered nuclear and atomic spins To do this, it is necessary that the nuclear and atomic spins be parallel and unidirectional, which is realized in structures with oriented cores [7 - 10]. For example, when a ferromagnet is magnetized, ordering occurs magnetic moments that are orientationally rigidly related to nuclear spins [10], which causes the emergence of a collective SC.

Spin has not only deep quantum properties, but also physical nature. In this regard, let us turn to the physical nature of spin, outlined in article by N.S. Ohanian [11]. This article makes a very important substantiated conclusion that the existence of electron spin is explained by the presence of a circulating flow energy in the field of its wave. Spin is a wave property, regardless of whether it is a classical wave or a quantum one. The only fundamental difference between them is that the spin of the classical wave is continuous macroscopic appears size, A quantum spin quantum mechanical operator and has a discrete spectrum of values. Wherein one can go from the quantum to the classical limit for a system of many particles with large fill numbers. A circularly polarized light wave is an example of such a transition from a large number of quantum spins to macroscopic back.

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Since we consider spin as the source of the spinor field, then, in accordance with with the concept of R. Uchiyama, the object sensitive to the influence of the spinor field should be the spin system of the material environment. Moreover, in relation to the size effect, the spin system has an advantage over the individual spin microparticles. A complex nonequilibrium spin structure with a large a stock of states quasi-degenerate in energy, can act as a system in in which the action of SP can accumulate (spin saturation) and lead to noticeable macroscopic changes.

In 1936, N. Bohr drew attention to the possibility of using quantum physics to solve the problem of consciousness. Later in the works of I.Z. Chavchanidze It has been suggested that consciousness is generated by the emergence coherent quantum state in neural processes based on spin configuration of the electron system. The electron spins are responsible for the emergence in the brain of properties of integrity, due to which this entire system reacts to incoming stimuli as a whole.

Using the example of assessing the spin effect of electrons in the so-called spin glasses [12, 13, 14] it was shown that the orientation of electron spins in space may be chaotic and multidirectional at a certain level of review. With another hand, according to Ramsey's theory, any chaos on a broader scale always has a certain structure and order in space. Moreover, if somewhere in space it is enough to change one of the spin states, it arises (as as if in a kaleidoscope) is already a new configuration of the common joint venture. All these changes occur without energy consumption and instantly.

The theory of physical vacuum allocates a special role to *the field of consciousness*, physical the carrier of which is SP [15]. At the same time, due to their versatility, SP are considered as an independent physical reality along with others long-range fields.

It was noted above that one of the properties of SC is interaction with spin systems of material bodies. Moreover, if the energy intensity of the joint venture is small, then its the information capacity, on the contrary, seems surprisingly large.

It is natural to assume that the mechanism of the biological action of SP is realized through the spin subsystem. The latter, on the one hand, is subject to action of SP, and, on the other hand, affects the elementary acts of biochemical reactions. Moreover, the electron spins most likely have nothing to do with the issues under dis processes. The excited states of electron spins, as a rule, are short-lived. In the ground state, electron spins, participating in covalent chemical bonds of molecules form pairs with zero total spin.

At the same time, it is known that the spin subsystem of the nuclei of some associated liquids, including water, are relatively weakly related to thermal vibrations atoms and molecules. The same is true for some small atomic

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groups within macromolecular globules. Such states of nuclear spins, being quite long-lived, could, on the one hand, be sensitive SP probes, and on the other hand, to influence to some extent the flow biochemical processes.

Thus, it is known from spin chemistry [16] that chemical reactions are controlled by two fundamental factors are energy and spin. At the same time, the prohibition of chemical reactions by the back is insurmountable. If in a chemical reaction the colliding molecules have antiparallel spins (singlet state), formation of a chemical bond is happening. If interacting molecules have parallel spins (triplet state), then the molecule can be formed only in the triplet, excited state. Since such conditions usually lie high in energy, in the vast majority of cases, chemical reactions in the triplet impossible for a couple.

According to Wigner's rule, the statistical weight of encounters between two molecules in a singlet state is 1/4, and the statistical weight of encounters in the triplet state is 3/4. In the vast majority of cases, the basic state of chemical products reactions is singlet, and therefore we should expect that only a quarter of the meetings reacting molecules can produce a reaction product.

When SP influences neural networks (NN), they transition from one potential energy surface to another, which leads to a change spin state of their molecular structure, increasing the number singlet states of radical pairs and initiation of active biochemical processes.

Such processes, as a rule, proceed without activation, i.e. activation energy reaction is close to zero. The resulting molecule is mainly electronic condition. The reaction proceeds quickly and efficiently if the molecule has the ability to give the energy released during bond formation to others particles or redistribute it between many vibrational modes.

The interaction of spin systems with a complex structure through SP leads to changing the state of each system. If for the interaction of simple objects, for example electric charges, the generality of their nature is sufficient, then for effective interaction of complex objects, such as NNs, is necessary community of a higher order - some spatial identity the structure of spin systems or the similar nature of the SP generated by them.

Then, for a connection to occur between two separate NSs through a joint venture, it is necessary, in particular, so that the states of the neural networks are close. In other words, the points representing the states of the NS in the configuration space must be close.

The main aspect of the cerebral cortex is associative thinking in humans. and conditioned and unconditioned reflexes in animals are often considered in terms models of neural networks - sets of a large number of interconnected

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elements arranged by analogy with nerve cells or neurons [17]. State of the simplest neural network of N interacting two-level

elements is described by the position of a point in the N-dimensional configuration

space. The state of each element at a subsequent point in time

due to the presence of a connection, it is determined by the total effect of others on it elements at the current moment in time.

From some initial state the NS evolves into a stable final state

a state determined by the magnitude and distribution of connections between neuron

elements. These connections can be organized in the process of "*training the neural network*" or *memorization* so that the final state of the neural network coincides with the predetermined one condition.

A certain image in the form of a given state of the NS is remembered, recorded in the connections between elements, and then can be reproduced in the form the final state of the evolving NS. It is important that a network of N elements with a reproduction error rate of 0.1% able to "remember" and reproduce about N /10 N-dimensional images!

It is typical that it is enough to have only a *small amount of information*

about the image that needs to be remembered. The point of the configuration space corresponding to the initial state of the NS turns out to be close to the final point, which corresponds to the desired image, and the evolution process ensures the final

the state of the NS at exactly this point. This is approximately how the mechanism works associative memory of the human and animal brain.

It can be assumed that consciousness, as a complex structure of neural networks, interacts with the deformation of the structure induced through the unconscious physical vacuum. However, it is known that the energy of the electromagnetic field capable of causing such vacuum effects must be very large. How can relatively low-energy processes of consciousness change

structure of physical vacuum? Firstly, as already mentioned, the concept of energy is not is, apparently, quite adequate for the joint venture. That is, on the one hand, this

The question is to some extent incorrectly posed. On the other hand, processes

consciousnesses probably do not need an electromagnetic intermediary to communicate with vacuum. A change in the structure of the physical vacuum can occur directly through spin interactions.

Within the framework of the accepted model, one of the functions of the brain is the production of some kind of SP complex spatial configuration. In other words, consciousness and (or) subconsciousness turns out to be capable of purely reflexively, mentally changing internal local structure of the physical vacuum. Thus, the SP corresponding to such changes becomes an ideal object, depending from consciousness.

If there is an external SP with a stable modulated structure, under its

action in the labile spin system – the brain of recipients [18] (represented

in the form of an amorphous medium such as spin quasi-glass, which has freedom in dynamics of spin structures [12, 14, 17]), spin structures arise that

repeat the spatial-frequency structure of the influencing external

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spinor field. These emerging spin structures are reflected as images or sensations at the level of consciousness or as signals to control certain physiological functions. In this case, spin objects are sources SP, and the complex spin structure is the source of SP containing a specific information about the state of the spin system. It is easy to see that such a structure has a memory property due to the metastability of spin degrees freedom.

In order to substantiate the assumptions made, the Teleport System was created, based on the achievements of physics of the last decade - the physics of entangled quantum states (entangled states), with the help of which experiments were carried out on targeted teleportation of spin states of vaccines to biological organisms objects.

It is known that the carriers of control semantics at the tissue and cellular level are aqueous associates or associates in aqueous solutions, cluster and fractal structures [18].

The forms that associates take are very different and are determined not only molecules of impurities contained in water, but also the conditions of their formation. The operating principle, control information, perceived by the cell or cellular organelles is the complex geometric shape of the associates. It is this form that is the link that determines the structure of physical fields inherent in the associate. These same fields, in turn, launch or stop intracellular processes or influence them in one way or another way.

It is known that when a molecule of a certain substance enters water, change in the spatial spin configuration of the adjacent aqueous medium, related to the spins of protons (hydrogen nuclei, water molecules) [19], so that the new configuration copies the characteristic structure of the spin configuration of this molecules of matter. There are experimental reasons to believe that due to small radius of action of the spin dynamics of molecules of matter around such molecules are formed only a few layers of their spin proton copies.

Because of this, at the field level, spin proton copies of substance molecules have the same effect on living objects as the substance itself. At the level experimental phenomenology in homeopathy has been known since the time of Hahnemann [20], then it was studied on extensive biochemical material by G.N. Shangin-Berezovsky and his colleagues [21], a little later rediscovered by Benvenisto [22], Folem [23] and developed by Lapichev and co-workers [24].

In the works of Klishchenko [25] and Burlakova [26], for example, direct the therapeutic effect of tocopherol and glycoprotein in various concentrations, down to ultra-low. It turned out that this effect is especially strong in the interval up to 10-16 - 10-14 M, although physics and biology prohibit such a solution from treating anything neither was it.

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The reality of this situation at the physical level can be explained by the use of regulatory signal mechanisms in the activity of biological objects.

According to [27], the propagation of regulatory signals in biological objects carried out thanks to a small matrix, which is a matrix for reading, distributing and destroying an information signal coming from outside to cellular structures.

As noted above, a change in the spatial configuration of the associate changes the structure of the physical fields inherent in it. These same fields, in turn, trigger a cascade of structural changes that occur upon admission to cellular structures from outside the information signal, and as a trigger a unique, complex spatial spin structure appears small matrix, consisting of low molecular weight glycoproteins and water. AND it is water that is the matrix that carries out rapid perception information and its distribution throughout the cellular structure. The function is low molecular weight adhesive glycoproteins that result in self-assembly of a certain supramolecular structure, consists in constant maintaining a specific state of water molecules that ensures perception each new information signal coming from outside.

The systemic relationships between the above effects and conditions are of particular interest. represent spin coherent states. As the experimental practice, any biological object can be brought into coherence state whose frequency is determined by the characteristic frequency molecular structure of water.

Using the technique of experimental studies of the phase structure liquid crystals, it was established that the coherent state of the body corresponds to the water included in its structure, which has a characteristic ordered structure. This result is of fundamental importance, since for such structure, a very small energy impact is enough to excite strong response in the system (organism) [17].

Consequently, by bringing the organism into a coherent state and introducing into it this or that other information in the structure of spatial configurations of spin states, you can start intracellular biochemical processes in it the desired direction.

Target teleportation of spin state configurations is carried out in a given mode from a base object to a distance using the “Teleport” system, which includes a block for translation of spin spatial configurations; translator chip; a chip inductor attached to the body of the vaccinated object.

As a result of the experiment, a successful translation of the properties of such vaccines:

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- vaccine "Influvac" for the prevention of influenza, produced by "Solvay Pharma" (Netherlands), which contains hemagglutinin and neuraminidase of such viral strains: A10/99(H3N2), A20/99 (H1N1), B379/99; •
- Twinrix vaccine for the prevention of hepatitis A and B, produced by SmithKline Beecham Biologicals SA".

Rabbits and human volunteers were subjected to translational vaccination:

- a) vaccines "Influvac" and "Twinrix" - broadcast for 5 people;
- b) vaccine "Influvac" - broadcast for 5 rabbits.

The cycle of continuous translational exposure in all cases was 36 hours.

The experimental results were assessed based on the presence corresponding antibodies in the blood of objects subject to translational vaccination, as well as the speed of formation of appropriate immune protection (in Under normal vaccination conditions, the immune response is realized within 7-10 days).

When titrating analyzed blood samples for the presence of specific antibodies the following results were obtained (Table 2).

table 2

An object vaccinations	Number of antibodies (antibodies/ml)									
	Vaccine "Influvac"						"Twinrix" vaccine,			
	H3N2		H1N1		B		H.A.		HbsAg	
	K	TV	K	TV	K	K			TV	K
People	14	256	8	32	0	512	negative*	positive	0	0
rabbits	0	1024	0	16	0	1024				

K – control indicators; TV – indicators after translational vaccination.

* - in immunological practice, the body's immune response to the HA antigen is determined only in either negative or positive.

The immune response of organisms is realized in 36 hours instead of 7-10 days. Cause the absence of an immune response to the HbsAg protein fragment is not yet known, but vaccination practice has determined that complete immunization of the human body occurs 6 months after 3 injections.

The effect of translational vaccination is explained by the fact that in the implementation of the immune all B lymphocytes participate in the response, bypassing the cloning process, and spin replicas that are broadcast to the vaccination object play the role of "master key" intensifying the immunization process.

Let's make an analogy. The human brain is 80% water. Therefore, when exposure of a person to modulated SP in the aqueous phase of the brain will be created spin replicas corresponding to the specified modulation, correcting

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appropriate behavioral functions. In this regard, modulations are interesting of an emotional nature.

The results of SP research obtained to date and their technological application indicate the possibility of instrumental building psychotronic systems based on the following principles:

- 1. The territory of a settlement (city), including buildings, is complex material environment with a specific spin orientation creating their own complex joint venture with characteristic spatial configuration distribution frequency intensity [28].**
- 2. When photographing any territories (objects) falling on photographic emulsion together with an electromagnetic (light) flux of its own SPs of a complex material environment change the orientation of atomic spins emulsion in such a way that the spins of the emulsion repeat the spatial structure of this external joint venture. As a result, in any photograph other than visible image there is always an invisible spin image [29].**
- 3. Between the spin systems of territories (objects) and their spin The image in the photograph represents a confused state.**
- 4. When a photograph is exposed to a modulated SP, a change occurs the structure of its spin image, causing the transfer of this state on spin systems of territories (objects).**
- 5. Change in the spin state of territories (objects) induced modulated joint venture, will create a joint venture in this territory with a stable modulated structure.**
- 6. Under the influence of an external SP with a stable modulated structure, in labile spin system - the brain of recipients, spin structures that repeat the spatial configuration and frequency structure of the influencing external modulated SP. These the spin structures that arise will be reflected as mental images at the level subconscious, making the required adjustments to the level of consciousness.**

For the purpose of visualizing invisible spinor images on photo emulsions we conducted an experiment to identify underground deposits of useful fossils in the area shown in the aerial photograph.

Procedure for processing and extracting spin images from photographs was carried out in the following order. Slide or photo first were illuminated by a generator of isotropic broadband spinor radiation. IN In this case, the spin structure of the emulsion atoms can be considered as a two-dimensional spin matrix acting as a two-dimensional spin modulator.

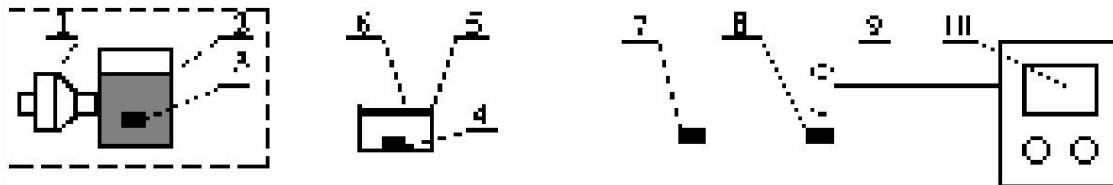
After isotropic spinor radiation passes through the original photograph, the modulated spinor radiation will repeat the spin structure spatial SP, which was perceived by the photoemulsion at photographing.

Therefore, we can expect the appearance of the entangled state effect (entangled states) between the spin states of the photographed object and its spin image on the emulsion of the developed photograph. For this purpose we experiments were conducted in which multifactoriality would be reduced to minimum. Such processes may include the process of radioactive decay, when measured, due to fluctuations, a sequence is obtained discrete quantities [30].

When exposed to a source of ionizing radiation unmodulated and modulated SP should expect a change in the nature of the sequence discrete quantities during radioactive decay. This effect will be fully confirmation of the presence of entangled states between the photographed object and its spin image on the emulsion of the developed photograph.

Procedure for conducting the experiment. The experimental scheme is shown in Fig. 1.

Entangled sources were made for the experiment ionizing radiation (IRR) based on ^{90}Sr . For this purpose, nickel was a plate in the form of Booth's lemniscate was cut out, annealed and cut into two equal parts, after which the ^{90}Sr isotope with approximately equal activity on each part.



Rice. 1.

1 – SP generator, 2 – resonator, 3 – chip-translator, 4 – chip-inductor, 5 – modulator, 6 – slide with image of radiation sources, 7, 8 – entangled radiation sources, 9 – detector, 10 – system registration.

Then IRS 8 was placed on detector 9, and IRS 7 was photographed, photographic film developed and cut into slides, which were placed in modulator 5. After this, An experiment was conducted in which slides with images of radiation sources were exposed to effects of unmodulated and modulated SP.

After turning on the SP 1 generator, the spin resonator is excited states 2 to the required level. Simultaneously with the excitation of the resonator the translator chip 3 is excited, which due to the effect of entangled states transmits these spin states to the receiver chip 4 located in the modulator 5. In the modulator 5, the SP transmitted from the chip inductor 4,

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is modulated and fed to slide 6, which is in an entangled state with IRS 7, which, in turn, is in an entangled state with IRS 8, installed on detector 9. Detector 9 with system 10 perform continuous recording emitted γ -particles with information output on a recording potentiometer. The results of the process recordings are shown in Fig. 2.



Rice. 2.

1 - control section, 2 - exposure to unmodulated SP, 3 - deactivation mode, 4 - exposure to modulated SP, 5 - deactivation mode

Let us analyze the obtained experimental data:

1. As can be seen from the given records of the progress of the radioactive decay of ^{90}Sr , the amplitudes of the curves when exposed to 7 SP radiation on the slides are greater than control and deactivation mode.
2. Decay curves within the areas of exposure to radiation sources unmodulated and modulated SP differs slightly in amplitude, but significantly different in configuration.
3. Between the spin states of the radiation source and its spin image on emulsion of the developed photograph, the effect of entangled states. This experimental system also implements confused state between III 7 and 8.

Our research shows that between the object under study and with its photographic image there is an information connection (effect entangled spin states). In this regard, we conducted experiments to study the influence of external modulated SP on human brain rhythms, through a photographic image of the room in which the object was located research - recipient. At the same time, as noted above, we are interested modulations of an emotional nature that can influence fixation mechanisms information, weakening or strengthening it. Depending on the positive or negative nature of emotional modulation, the Percipient will subsequently, subconsciously, form his purposeful activity. At the same time, the influence of emotionally neutral unconscious stimulation on preference in free choice is very weak, but statistically significant [31-34].

Instrumentally, such an influence can be detected both by changes in spin states of the brain, and by changes in brain rhythms towards them redistribution γ γ γ and vice versa.

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Changes in γ -rhythm and other electromagnetic manifestations of brain activity reflect very complex psychophysical processes in the living brain. Gray Walter [35] put forward a fairly substantiated hypothesis that the γ rhythm characterizes the process of internal "scanning" of mental images during focusing on some mental problem. Clear the severity of the γ -rhythm indicates the ability for abstract thinking. A fast γ -rhythm guarantees greater efficiency in decisions and actions.

D. Lehman develops the hypothesis that fluctuations of the γ rhythm and other components EEGs reflect not just variations in the background state of the brain, but its dynamics microstates that ensure optimal execution of various stages brain activity (Lehmann et al, 1987; Lehmann, 1993).

E. Bashar put forward the hypothesis that the generation of spontaneous rhythmic EEG activity, and primarily γ -activity, has a common nature with generation of evoked activity. Their generation, from his point of view, is associated with resonant properties of nerve networks (Basar, 1972, 1980, 1992; Schurman, Basar, 1994; Basar, Schurmann, 1996).

Data from recent brain thermography studies show that *in the frontal area of the brain*, a comparison is made of the image of the external environment with the real situation.

Dr. Donald Stass, director of the Rotman Research Institute in Toronto, believes that *higher cognitive functions* (for example, the ability guessing the thoughts of others - so to speak, "reading between the lines") are controlled by the area brain, the size of a billiard ball, located precisely *in the frontal areas of the brain*.

Bruce Miller claims that he was able to identify the area of the brain that responsible for the feeling of oneself as a person. This is *the right frontotemporal area of the brain*. It is responsible for the sense of personality, beliefs, and preferences.

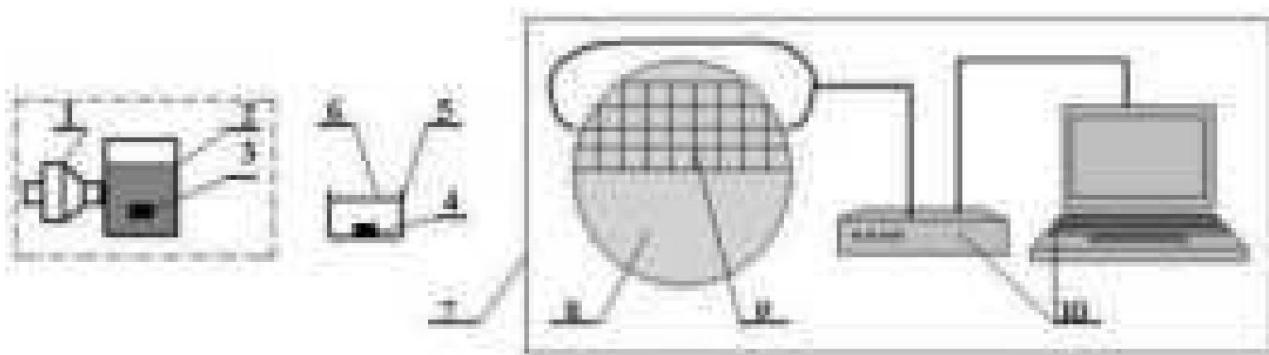
In connection with the above, we can conclude that when affecting the brain The recipient of a modulated SP with a positive emotional component should be expected to increase his ability to abstract thinking, acceptance effective operational decisions and actions. What is causing the change? zonal distribution of the γ -rhythm from *the occipito-parietal* to *the fronto-pretemporal an area that is certainly associated with forms of thinking, with the nature of images arising in the thinking brain*.

In order to determine the influence of emotionally modulated SP on the brain activity of the recipient, an encephalographic experiment was carried out, diagram which is shown in Fig. 3.

Before the experiment began, the room in which it was carried out was photographed, developed slide. Room 7 is located

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electroencephalographic hardware-software complex 11 and is located recipient 8, on whose head a 16-electrode grid 9 is fixed. At the beginning experiment, the initial electroencephalogram (EEG) of δ -rhythms of the brain was taken recipient. Then, a slide with an image of the room was placed in modulator 5 and generator SP 1 was turned on, from which the resonator was excited spin states 2 to the required level. Simultaneously with excitement resonator, the translator chip 3 was excited, which, due to the effect entangled states carried out the translation of these spin states to the receiver chip 4 located in the modulator 5. The modulated SP transmitted from the chip inductor 4 was fed to slide 6, which was in an entangled state with space of the room 7.

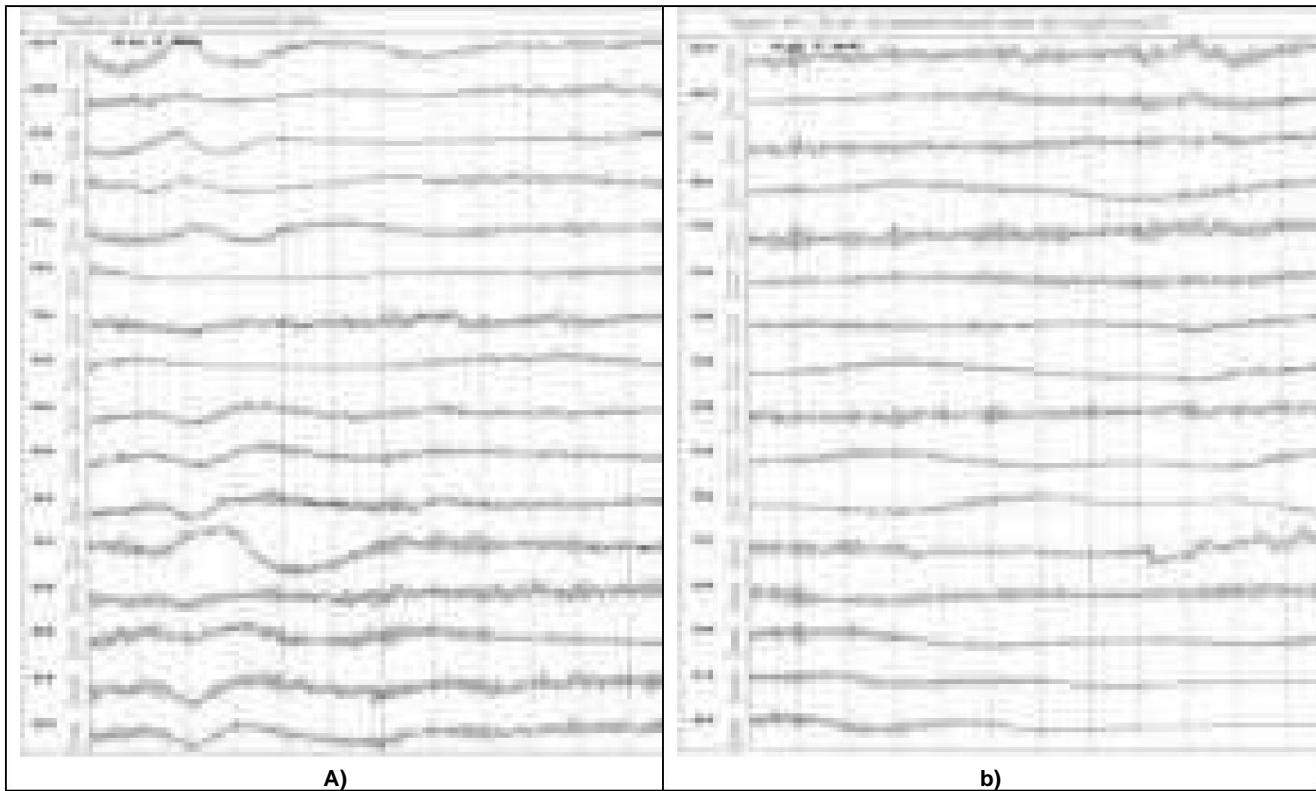


Rice. 3.

1 – SP generator, 2 – resonator, 3 – chip-translator, 4 – chip-inductor, 5 – modulator, 6 – slide with the image of the experiment room, 7 – room, 8 – percipient, 9 – 16-electrode grid, 10 – electroencephalographic hardware-software complex

EEG recording was carried out using a standard 16-electrode lead circuit with reference electrode on the right ear and installation of an additional "trigger" electrode in the right occipital region. Signal from the trigger After amplification, the electrode was introduced into the control computer through an ADC. Threshold stimulation trigger was set at 0.75 of the absolute amplitude maximum EEG in the δ -band. Based on the EEG power spectrum with an accuracy of 0.25 Hz determined the value of the dominant frequency in the δ -range. The computer carried out digital smoothing of the EEG, highlighting δ -range oscillations for further analysis. To record the EEG, we used an AGNIS-16 amplifier, which had notch filter with 10 dB rejection and high-pass filters with constant time 0.3 s and low frequencies 30 Hz with suppression 5 dB.

In Fig. Figure 4 shows δ -rhythms of the recipient's brain in the initial (a) state and at exposure to SP modulated by a positive emotional component (b).



Rice. 4

Encephalographic experiments to study the influence of SP modulated positive emotional component indicate a change in zonal distribution of the γ rhythm with its highest concentration in *the frontal-pretemporal areas* (in the initial state, the localization of the γ -rhythm is *occipital-parietal region*). An increase in the amplitude of the γ rhythm to 50 μ V and an improvement in its modulation, which indicates an increase in the ability for abstract thinking, increased efficiency in making decisions and actions.

**Based on the results of the experiments, the following can be done:
conclusions:**

- 1. Psychotronic systems based on the use of spinor fields are a real fact.
Their use is not limited by distance and
can cause the following consequences: acceptance of erroneous, inadequate
political, economic and military decisions; aggravation of social and
interethnic relations, etc.**
- 2. Psychotronic systems with modulated SP in a positive direction
emotional component, can be used to smooth out
negative psychophysical factors over large areas (decrease
terrorist manifestations and crime, drug addiction).**

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Electrodiffusion stimulation of dislocation splitting in plastically deformable silicon single crystals

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The results of experimental studies of the features structure formation in silicon single crystals while ensuring nonequilibrium conditions for their occurrence. Multiparameter applied (synergetic) method of influencing a plastically deformable crystal by placing it in a constant electric field, ensuring passage through sample of high density electric current. Simultaneously with deformation diffusion and/or electrical transfer of impurity atoms is realized. At certain initial and boundary conditions of the process structure formation, splitting of edge dislocations into partial components that are the source of torsion fields.

1. Introduction

The relevance of the problem of the “structure-composition-properties” relationship is rooted in deep antiquity, defining entire eras of human development [1]. Scientific The search for this problem deepened as technology developed. Just for them solutions at a higher scientific level were created in the country in the seventies academic institutes designed to deal with problems of materials science, microelectronics and studying the structural features of real structures with the aim of understanding the possibility of crystal structure formation in conjunction with predicted properties.

The topic of structure formation is at the intersection of several scientific directions, which required its study to combine several specialties. All natural phenomena are interconnected, proceed in concert, and Synergetics studies this consistency [2]. Universal and The structural direction is considered to be a synergetic approach. History in Synergetics the emergence of more complex structures is the history of the evolution of simple ones, the integration simple elements into more complex ones. How does it arise from many dead molecules? something alive? What laws and rules govern the development of complexity and how determine the structure and function of complex processes and formations? Is it possible build a bridge between living and nonliving physics? Can there be a single law suitable to explain complex structures of physical, chemical, biological and social origin? Application of the principles self-organization and evolution is carried out intensively in various scientific directions through the efforts of the international community of researchers.

Studying the patterns of behavior of nonlinear cooperative processes in the distance from thermodynamic equilibrium, when they are unstable, and most importantly, irreversible in the presence of gradients of pressure, concentration, temperature and when synergistic (multi-parameter) effect on self-excited system (SHS) is of scientific and practical interest. Such an object that satisfies the requirements of synergetics is a plastically deformable solid body (PDTT), especially with the simultaneous implementation of the flow high density electric current through the sample and simultaneous diffusion doping with impurities of different charges, as well as simultaneous influence of other parameters, such as electric field and radiation of various frequencies.

Modern development, despite progress in microelectronics, computing technology, communications, new materials, energy, transport, etc., indicates the beginning of the crisis of the Sum of Technologies of the 20th century. Microelectronics has already reached the frontiers of nanotechnology, where further reduction in size elements of microelectronic devices cannot be implemented, since The sputtered semiconductor cannot be thinner than a monatomic layer. Even in Optical computers cannot operate faster than the speed of light. Matrix computer architecture does not solve the problem fully, since it entails increase in the volume of computing resources.

Hydropower has exhausted its capabilities and has been developing over the past half century. account of damage to arable land from reservoirs and damage to fisheries due to cascade of dams. Huge emissions of carbon dioxide into the atmosphere during combustion fuels from thermal power plants have become a serious environmental factor disasters of the Planet.

The global ecological crisis of the current Civilization is obvious. Despite great successes in reducing material consumption, saving consumption energy resources (oil, gas, coal, etc.), it is predicted that already in the first half In the 21st century, many deposits on Earth will be exhausted; and thermonuclear Energy has not yet left the development stage.

Thus, the crisis of technology of the 20th century is obvious. Considering that the ideological potential of new technologies is drawn from fundamental sciences, it is necessary recognize that, despite the impressive ideas in the basic sciences of recent years, as at the end of the 19th century, now, at the end of the 20th century, there is a crisis in fundamental theoretical and experimental sciences - crisis generally accepted Scientific Paradigm. In addition to this, the scope of phenomenology - unexplained natural phenomena and experimentally observed processes - is not is decreasing, but is constantly growing. This indicates, at least, the incompleteness modern science.

As the technology crisis and the crisis of fundamental knowledge deepen concepts will inevitably appear that will lead to a revision of our scientific ideas, and on the basis of New Physics a sum of technologies will be formed, not

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having roots neither in the modern technological basis nor in traditional science. However, without the advent of the New Physical Paradigm, technologies based on new physical principles would have nowhere to emerge.

In the Middle Ages, the famous Damascus steel was invented, blades from which cut the metal armor of warriors. Nowadays, the problem of strength, wear resistance and reliability of machines and mechanisms is among the top five priorities of scientific and technological progress. Comparison of real strength with values obtained on the basis of theoretical calculations reveals very significant discrepancies: the theoretical tensile strength is tens and even hundreds of times greater than the values obtained experimentally. The process of equilibrium organization of crystal structure does not provide information about their evolution as a whole. The criterion for the transition from organization to self-organization of the structure of crystals is ensuring the occurrence of fluctuation processes in nonequilibrium conditions and the presence of signs of openness, instability and irreversibility of the system. One of the promising and attractive ideas for technologies for structure formation in crystals is the idea of controlling the mechanical behavior of solids and their structure using an electric field [3]. It is known that the unusual structure of nanomaterials leads to the appearance of fundamentally new physical and mechanical properties in them [4]. Structures made from materials obtained under thermodynamically equilibrium conditions are doomed in practice to conflict with non-equilibrium operating conditions of the surrounding space [5]. A characteristic feature of the current stage of development of materials science is the transition to obtaining and controlling the properties of materials using real laws of nature, far from equilibrium, based on the hierarchy and structural ordering of matter and its structural elements in a wide range of scales. In materials science, an important task is to elucidate the various mechanisms of deformation processes, in particular, the mechanisms of energy dissipation and to find new successful ways to influence the structure of crystals, ensuring the non-destructive nature of their structure formation [6].

In recent years, based on experimental material, new approaches to the problem of plasticity and strength have been formed, indicating the temporal and spatial instability of plastic deformation and the emergence of regimes of self-organizing criticality and deterministic chaos. If thermal excitation is mainly received by the entire atomic system of a plastically deformed solid (PDS), and mechanical excitation only by defects, which are plastic components, then the combined effect on the crystal in the presence of a catalyst reveals its unique properties.

Since the PDTT is an open system, the nonlinearity of its behavior on the macroscale is most clearly manifested during the transition to the plastic region. It is in the plastic region that the intermittency of the flow is recorded, the manifestation of which on a macroscale is influenced by the directional flow of the structural elements of the lattice and their intensity of impact. Intermittent fluidity can be considered as a dynamic state of a deformable crystal in the form

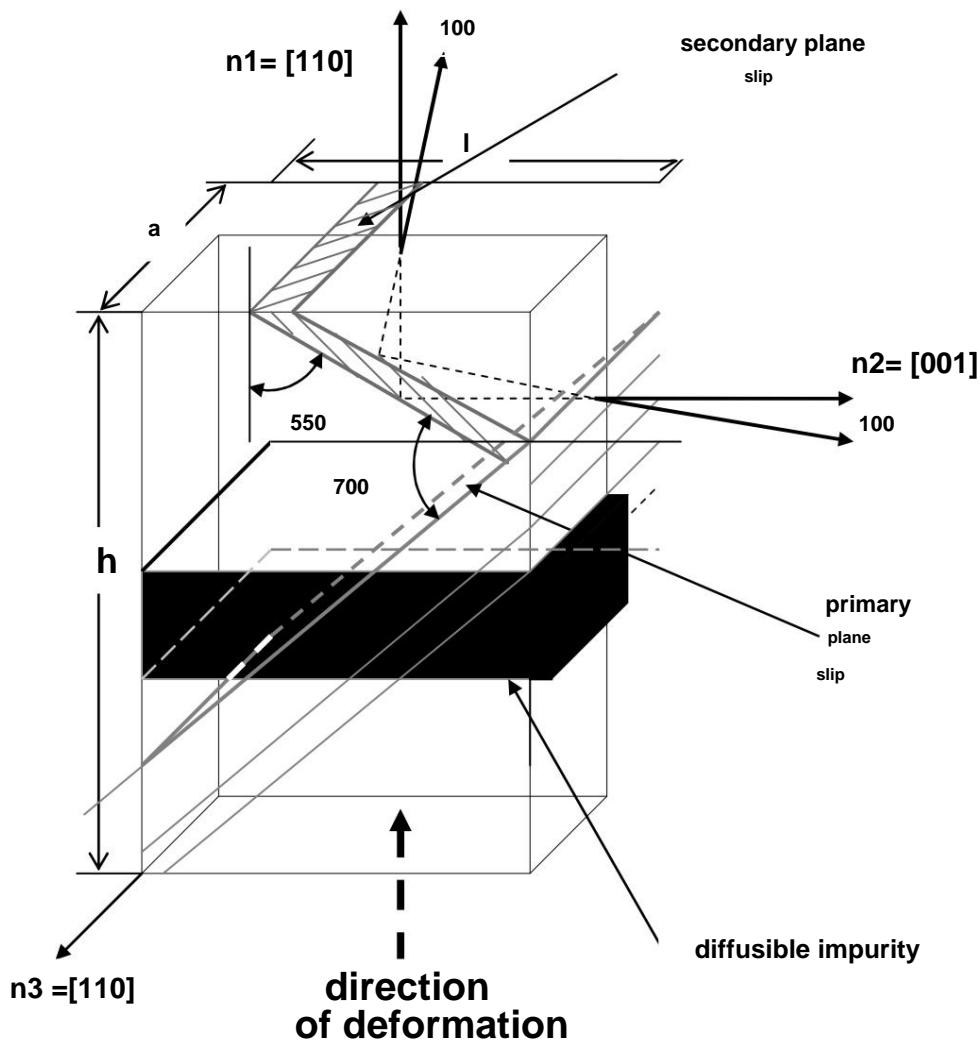
dissipative structure. One of the mechanisms of dissipation of supplied energy consists in converting it into the energy of dislocation formation. Each again the resulting dislocation stores a certain amount of energy. Next the dissipation mechanism is to get rid of part of the energy stored single dislocations due to their movement and association. If on on the scale of individual dislocations they lead to the formation of disclinations, then on On a large scale, collective effects come into play. Feature collective effects is their ability to act as a single whole and form larger and more complex structures. Using a directed electron flow as a control excitation parameter of the dislocation system of the crystal, as shown by our research, allows you to influence orientation, distribution and splitting dislocation structure.

Dislocations generated during electroplastic deformation have more ordered and uniformly oriented structure, in contrast to those obtained other methods. In addition, as experiments have shown, the diffusion of various impurities from the surface of the crystal into its bulk along the dislocation tubes significantly accelerates (by 4 - 6 orders of magnitude), especially during the generation of dislocations by the method of electroplastic deformation, with the simultaneous implementation of the process diffusion. This makes it possible, in addition to controlling the properties of the material by creation of nanostructural elements based on dislocations, additionally influence for various properties by diffusion filling of dislocation tubes various impurities.

2. Experimental technique

In the proposed work, the experiment was carried out in a specially designed deforming machine with sapphire rods and supports, providing "soft" loading mode. This method of "soft" loading, in contrast to "hard", eliminates negative feedback between the machine and sample. With a "hard" loading method, initiated by an external impact, softening leads to a decrease in the load on the sample and suspension of plastic flow, "*masking*" the effect of softening. The main advantage of the methodological and technological technique we used in experimentally, it is possible to study all the structure-sensitive properties of crystals on one sample and from one installation [8].

The objects of the study were p-type silicon single crystals doped with gallium to varying degrees of purity.

Torsion fields and information interactions – 2009**Fig.1. Sample orientation diagram**

Samples in the form of a parallelepiped with dimensions of $15 \times 10 \times 5$ mm are oriented in a certain way as shown in Fig. 1. One face was parallel to the (001) (110), and the other two are deflected by 10° and (011) planes. Deformation was carried out in three ways: under conditions of external heating of the sample (thermoplastic deformation - TPD), under conditions of passage of electric current through the sample (electroplastic deformation - EPD) under conditions of simultaneous implementation of electrical transfer of impurity atoms with deformation (electrotransfer plastic deformation - ETPD). All methods are shown schematically in Fig. 2.

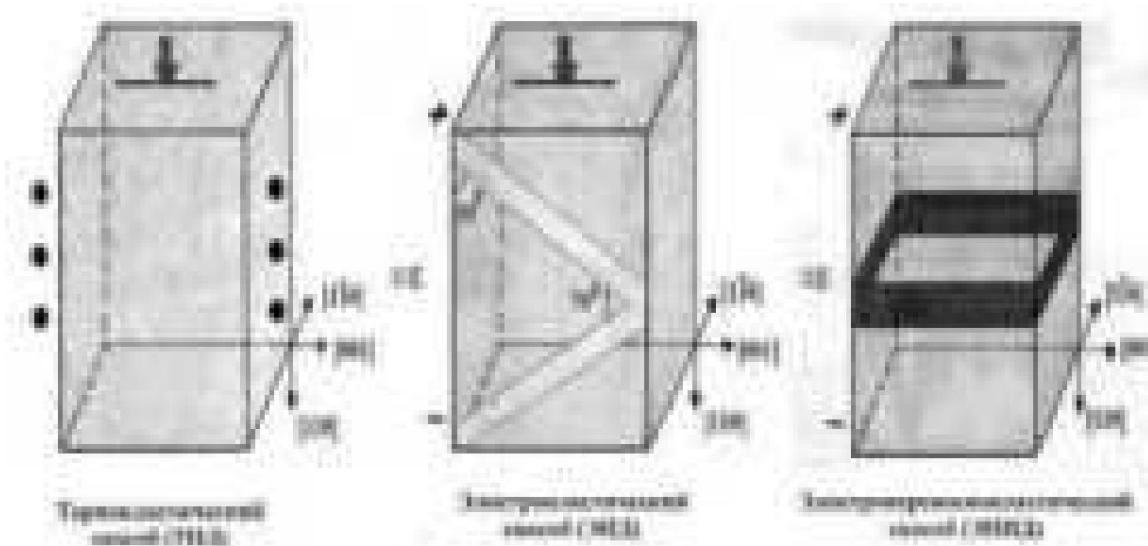


Fig.2. Scheme of deformation of a silicon sample.

Samples after mechanical and chemical polishing were cleaned by ion plasma cleaning. Then wide end surfaces with an applied layer diffusant - carbon are folded in pairs and clamped between the punches press-type deformation installation. Current density passing through the sample depending on the deformation temperature, varied within 1.0 10⁶ - 1.5 10⁶ A/m². The voltage drop across the sample was 1.0 - 0.6 V. The power released on the sample reached 100 W. Our installation made it possible to regulate the magnitude of the current regardless of the deformation temperature due to the flow rate refrigerant (inert gas) through the system.

When studying the mechanical properties of crystals, we determined the deformation parameters using sensors. The sensors used are: for recording force - a strain gauge, for movement - an inductive transducer. Compression was carried out along (011) at various shear stresses, and temperatures, controlled within wide limits for a certain time. IN dynamic mode, compression lasted no more than 20 minutes, and sometimes with a transition to static mode lasting up to 30 minutes. and in vacuum about 10⁻⁴ Pa. By At the end of the test, the anode and cathode parts of the samples were mechanically separated and strips of appropriate sizes were cut from them to measure electrical and diffusion characteristics. Mechanical properties determined by deformation parameters (deformation value $\dot{\gamma}$, coefficient

$$\text{hardening } \dot{\gamma} = \frac{d\dot{\gamma}}{dy} d, \text{ strain rate } \dot{\gamma} = \frac{\dot{\gamma}}{dt}) \text{ were measured and recorded on recorder during the experiment.}$$

Hall coefficient and electrical conductivity measurements were carried out compensation method using direct current in a magnetic field of 6000 G metal cryostat with automatic adjustment within 4.2-300 K and temperature maintenance accuracy ± 1 K. Control of impurity distribution over penetration depth was carried out by sequential removal of layers and measuring the concentration of diffused atoms using Auger spectroscopy.

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Significant progress has been made in studying the structure of dislocations in semiconductor single crystals thanks to the development and application of the method weak beams, which made it possible to significantly increase the resolution images. For electron microscopy, deformed samples were cut parallel to the plane of preferential slip (111). The resulting foils were examined in a JEM 200 yy microscope. The splitting was studied using low-beam type 220 imaging. Quantities splitting was determined from images in the corresponding weak beam, in which the condition $qb=2$ (q-diffraction factor).

research

When studying the mechanical properties, we used the equation describing the relationship between the amount of shear strain applied to the crystal and kinetic structural components, which has the form:

$$\frac{U_0 k T}{\ddot{\gamma} \ddot{\gamma}} \ln \frac{1}{\ddot{\gamma} \ddot{\gamma}} = \frac{U_0}{\ddot{\gamma} \ddot{\gamma}} - \frac{\ddot{\gamma} \ddot{\gamma}}{\ddot{\gamma} \ddot{\gamma}} \quad (1), \text{ where}$$

$\ddot{\gamma}_0$ - period of interatomic vibrations, U_0 - energy of mechanical bonds,

$\ddot{\gamma}$ - activation volume coefficient. Here

$\frac{U_0}{\ddot{\gamma}}$ - upper limit of strength -

athermal mechanofluctuation part, and

$\frac{\ddot{\gamma}}{\ddot{\gamma}} \ln \frac{kT}{U_0} - \frac{\ddot{\gamma} \ddot{\gamma}}{\ddot{\gamma} \ddot{\gamma}}$ thermofluctuation

part When setting

$U_0 = \frac{C_0}{\ddot{\gamma}}$, where C_0 is the heat capacity, $\ddot{\gamma}$ is the linear coefficient

extensions, $\ddot{\gamma}$ -

structural proportionality coefficient.

$$\frac{1}{3} \ln \frac{T}{\ddot{\gamma} \ddot{\gamma} \ddot{\gamma}} = \frac{C_0}{\ddot{\gamma} \ddot{\gamma} \ddot{\gamma}} \quad (\text{thermofluctuation part}). \text{ At } \ddot{\gamma} = \ddot{\gamma}_0$$

$\ddot{\gamma}$ disappears. Our main emphasis in the experiment was not on thermofluctuation

component of this equation, but on its mechanofluctuation component. also in

In our experiments, there was a case when $\ddot{\gamma} \ddot{\gamma} \ddot{\gamma} = 0$, and $\ddot{\gamma} = 0$ with the corresponding

reinforcement, emphasized that the electrically stimulated mechanism of PD of semiconductor

What

crystals led to a change

almost all structure-sensitive parameters and they differ sharply from

parameters obtained using the TPD method. Thus, by changing the structure

crystals by plastic deformation with simultaneous use and

electrical stimulation, and to change the composition, and electrodiffusion, were able

obtain a wide range of properties, up to the splitting of dislocations having

many applications. Indium was used as an impurity

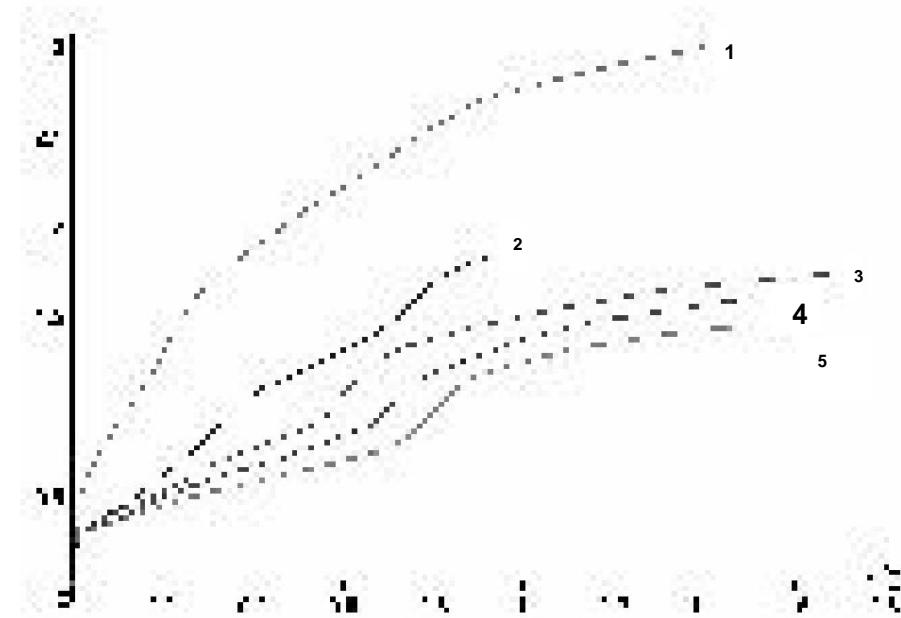
having a large atomic radius and low ionization potential.

3 Experiment results

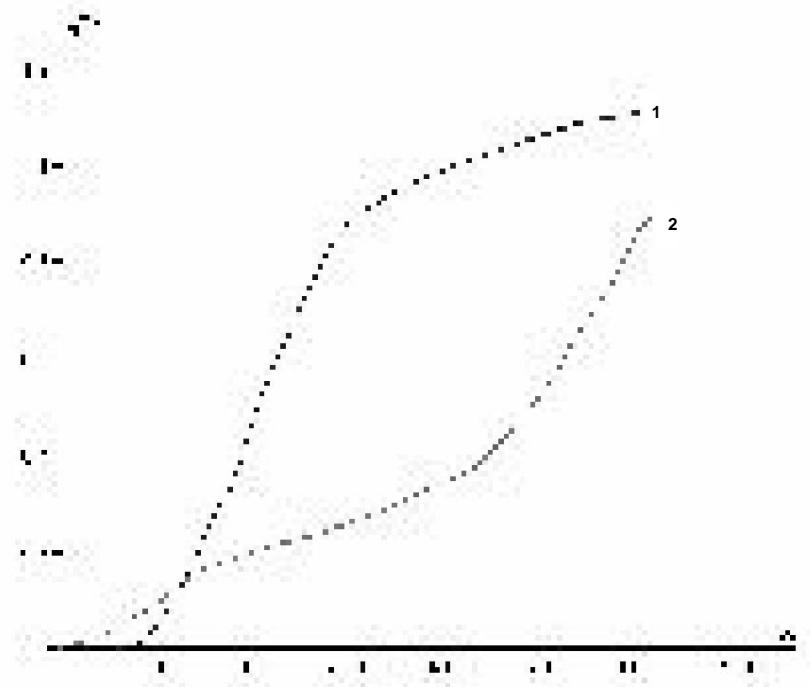
3.1 Mechanical properties

In Fig. 3 (cr. 1-5) shows the curves of the dependence of the magnitude of deformation on shear stress $\dot{\gamma}(\dot{\gamma})$ for silicon single crystals of p-type conductivity, obtained using the EPD method in dynamic loading mode for two samples. For the TPD method, the dependence curves $\dot{\gamma}(\dot{\gamma})$ are not shown in the figure due to the absence of deformation values noticeable for analysis ($\dot{\gamma} = 0.2\%$) at similar deformation conditions. For the thermal method you need significantly higher load values, temperature and deformation time. As can be seen from Fig. 3, the characteristic features of the behavior of all curves is the appearance of stage-by-stage gradation in their course. Noteworthy is the fact that in In such a small force interval, three sections appeared, and it is observed constancy of the hardening coefficient over a considerable distance. On the cr. 1 pic. 3 dependence $\dot{\gamma}(\dot{\gamma})$ it is clear that the difference between the first and last sections reaches up to $\dot{\gamma}_1/\dot{\gamma}_2=6.3$ times ($\dot{\gamma}_1 = 4.1$ and $\dot{\gamma}_2 = 0.65$, respectively). This is typical for crystals processed without diffusion. In contrast to curve 1 of Fig. 3, on curves 2-5 of Fig. 3, reflecting simultaneous diffusion-deformation process, hardening coefficients significantly less, and differ only by a factor of 3 ($\dot{\gamma}_1 = 2.5$ and $\dot{\gamma}_2 = 0.8$, respectively). At the same time, on all curves a stage-by-stage nature of the progression is observed. process. The greatest effect of plasticization is observed on samples deformed by the EPPD method, and on the anode part the effect is more pronounced than at the cathode.

As a rule, hardening in the initial sections $\dot{\gamma}(\dot{\gamma})$ moves stepwise to softening in subsequent ones. As can be seen from Fig. 4 (curves 1, 2) dependences $\dot{\gamma}(t)$, the rate of plastic deformation on a sample with diffusion (curve 1) is significantly more than on the sample without diffusion (curve 2). We notice that cr. 1 and 2 fig. 4 ($\dot{\gamma}(t)$) also has a stepwise behavior. A characteristic feature of the course of these curves is that there is a change in the sequence of speed changes deformation. In the case of deformation without diffusion, the speed is lower at the initial section than on the final one ($\dot{\gamma}_1/\dot{\gamma}_2= 4.5$), while on the sample with diffusion it's the other way around ($\dot{\gamma}_2/\dot{\gamma}_1 = 4.5$). All calculated parameters from the curves in Fig. 3, 4 dependencies $\dot{\gamma}(\dot{\gamma})$ and $\dot{\gamma}(t)$ are presented in Table No. 1.

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Rice. 3. Dependence of shear stress - strain for samples monocrystalline silicon deformed in the following modes: 1. EPD without diffusion; 2. EPD with indium diffusion; 3. EPD with indium electrical transfer (cathode); 4. EPD with electrical transfer of indium (general); 5. EPD with indium electrical transfer (anode).



Rice. 4. Dependence of the magnitude of deformation on time in modes 1. EPD with diffusion India; 2. EPD without diffusion.

3.2 Electrical properties

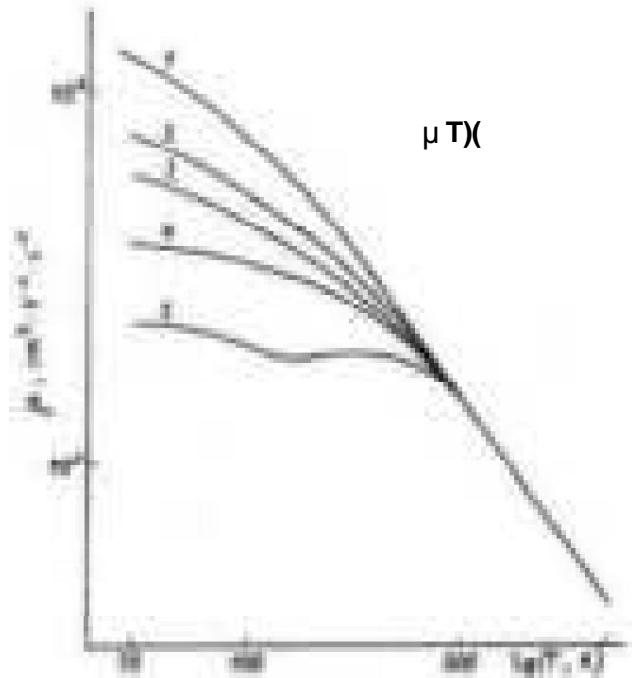
The influence of the specifics of reconstruction and the specifics of formation scattering centers in structures obtained in the process of electroplastic deformation of silicon single crystals on its electrical properties. Studied

influence of the nature of interaction and mutual influence of deformation and impurity defects on the effects of scattering of majority charge carriers (MCCs) in single crystals silicon treated simultaneously with an electrical stimulator. In Fig. 5 (cr. 1-5) the results are shown on a double logarithmic scale experimental studies of the temperature dependence of hole mobility μ (T) in P-Si samples in the temperature range 77-300 K. As can be seen from the figure, the magnitude and temperature variation of the mobility of all deformed samples differ from each other and this difference manifests itself at $T < 200$ K. Greatest scattering is observed on a sample processed in TPD mode, the smallest on a sample cut from its anode part, although the values the deformations are the same and equal to $\dot{\gamma} = 1.2\%$. However, according to electron microscopic studies, the dislocation density in samples from the TPD mode an order of magnitude higher than on samples of the anode part from the EPPD mode. As can be seen from Fig. 5, for weak deformations ($\dot{\gamma} = 1.2\%$) without diffusion of carbon impurities there strong scattering (curve 3), and in the presence of a diffused carbon impurity entrainment occurred μ and on the cathode (cr. 2) and even more on the anode (cr. 2) to parts of the crystal. Based on the above comparisons, one could assume that in both cases crystal deformations are generated identical sources of scattering of charged carriers. However, structural formation and quantitative characteristics for different modes are different. Thus, in the case of the EPPD mode, all participants in the deformation-diffusion process structural particles interact with each other in a dynamic flow and in a certain direction of movement. It can also be assumed that those formed in During the evolution of the structure, defect centers also differ in properties such as thermal, electrical and chemical activity. As can be seen from the figures shown. 5 curves 2-4, the greatest scattering is observed on a sample cut from non-diffusion part of the ingot, and the least scattering of the main charge carriers occurs on the anode part of the sample, where electrical transfer diffusion has occurred impurity carbon atoms, although the same should have been observed on cathode part of the sample. However, at the cathode the mobility value is greater than at anode part. Scattering on a sample cut from a processed ingot TPD method, the largest and differs from the original by almost an order of magnitude.

Rice. 5. Temperature dependence
hole mobility of p-Si samples
deformed by $\dot{\gamma} = 1.2\%:$

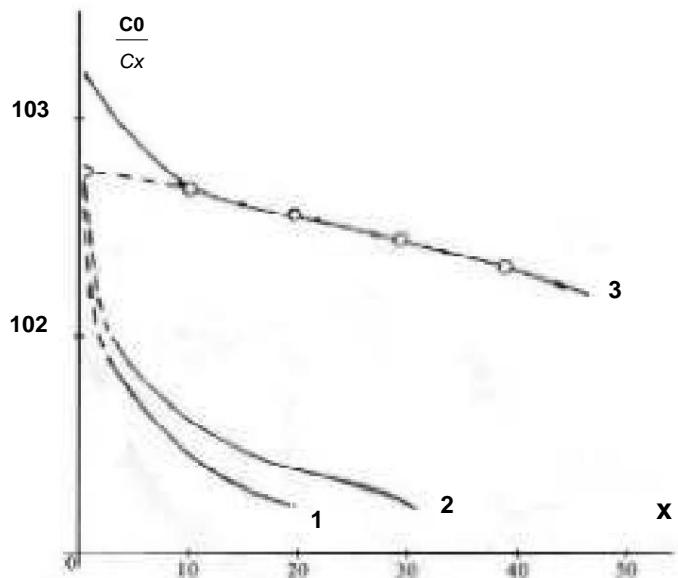
- 1-control, without deformation,
- 2-EPPD method, anode part with carbon diffusion,
- 3-EPPD method, cathode part with carbon diffusion,
- 4-EPD method without impurity diffusion,
- 5-TPD method without impurity diffusion.

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3.3 Diffusion properties

The influence of electrodiffusion-plastic deformations on the phenomena of electrical transfer of impurity carbon atoms in silicon single crystals and the effects of their predominant entrainment in side of the anode and accelerated penetration into the depths of the crystal. In Fig. 6 (cr. 1-3) shows the curves of concentration distributions of impurity carbon atoms of the depth of their penetration in the anode and cathode parts of the hole single crystal silicon processed in the EPPD mode. As can be seen from the curves, electrodiffusion is accompanied by a predominant transfer of carbon to the anode. Also noticeable is the accelerated penetration of impurities into the depth of the crystal (35 compared with volume diffusion, which at $T = 1500$ K is not noticeable penetration values for time $t = 30$ min. Diffusion flow of impurities along structural defects does not obey Fick's law. As can be seen from Fig. 6, logarithm impurity concentration is proportional to the first degree of penetration depth.



Rice. 6. Distribution of the concentration of impurity carbon atoms along their depth penetration in silicon samples deformed by the EPPD method:

1 - cathode part,
2 - anode part,
3 - volume diffusion at $T = 15000$ K
and $t = 105$

$\frac{C_0}{C_x}$ - initial surface concentration of impurity,
 C_x is the impurity concentration at depth x .

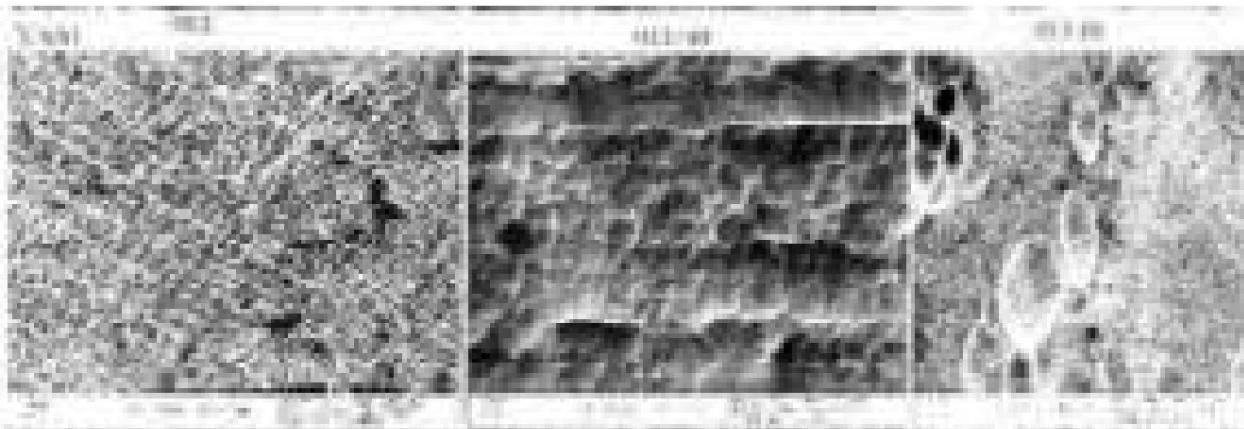


Fig.7. Microstructure of the surface of silicon samples processed in modes 1. EPD; 2. EPD with indium electrotransfer; 3. EPD with indium diffusion.

The concentration distribution of carbon obtained in the experiment, like this can be seen from Fig. 6, has a simple character. True, with rough surface treatment the initial concentrations differ by an order of magnitude. For comparison, in Fig. 4 is given concentration distribution curve of carbon in silicon obtained by the authors work when carrying out conventional volumetric diffusion at deformation temperature $\bar{y}D = 1400$ 0 \bar{y} and deformation time sec. And our $t = 4.32 \times 10^5$ was carried out at $\bar{y}D = 700$ 0C and $t = 1.2 \times 10^3$ sec. Diffusion of carbon atoms in deformed samples pass accelerated and with the effect of entrainment of impurities atoms by "electron wind". Characteristic features of microstructural changes in the sample are presented in Fig. 7. As can be seen from Fig. 7, microstructure relief surfaces of the samples differ noticeably from each other. Structuring process

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and the state of the crystal affects the impurity-dislocation interaction and character distribution of impurity atoms around their action fields. It is possible that during the EPPD method, nanocrystalline phases are formed that provide the reaction replacement of silicon atoms at the edge of the extraplane with indium. With the EPD method indium diffuses predominantly along interstitial sites.

Analyzing the morphology of microstructures, we notice that depending on the method of entry impurities - diffusion or electrotransport - depends on the surface topography. As can be seen from Fig. 7, each deformation method has its own characteristics structure morphology:

- 1) The EPD method is characterized by uniform distribution of defective microstructures over the entire surface;
- 2) For the EPPD method with the electrically transferable nature of the impurity entry there is a coherent restructuring of the traces of slip planes and their lining up in a parallel row;
- 3) For the EPD method with the usual diffusion entry of impurity atoms indium into the lattice of a deformable crystal, deep grooves in local areas as a result of the interaction of deformation-diffusion processes.

3.4 Structural properties

In Fig. Figure 8 (a-b) shows typical patterns of dislocation splitting. As can be seen from rice. 8 (b) a complete sliding edge dislocation splits into two partial 60°-new Splitting occurs in the plane for which the stacking fault energy smallest. For the diamond structure this is [111], which is also a plane slip. It was discovered that dislocations also move in split form the electron (dislocation) manifests itself as a classical spin, and as a result, the spin field affects the process of plastic deformation itself.

Properties of spin-splitting crystal structures have just begun study experimentally. The split components of a dislocation (such as spins) combine into an energetically favorable configuration such as stacking faults. On split dislocation images have local narrowings and expansion as can be seen from Fig. 8. Character of dislocation splitting (normal and anomalous) is determined by the nature of the packaging defect (intrusion or subtraction). It has been experimentally shown that at What single crystals electroplastic deformation is reduced not continuously, but abruptly, which leads the dependence curve $\dot{\gamma}(\dot{\gamma})$ to a stepwise progression, characteristic of wave-like process of plastic deformation. The electron microscopic studies we carried out in structures structured in the above-mentioned way crystals showed that under a certain electroplastic regime deformation, the splitting of edge dislocations into partial ones is observed, opening new dissipation channels with the absorption of excess energy.

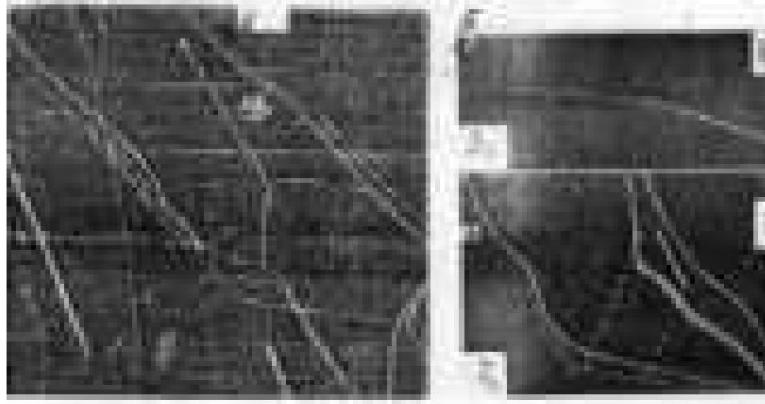
Results of measuring distances between Shockley partial dislocations for isolated dislocations are shown in Fig. 10. Calculated splitting values

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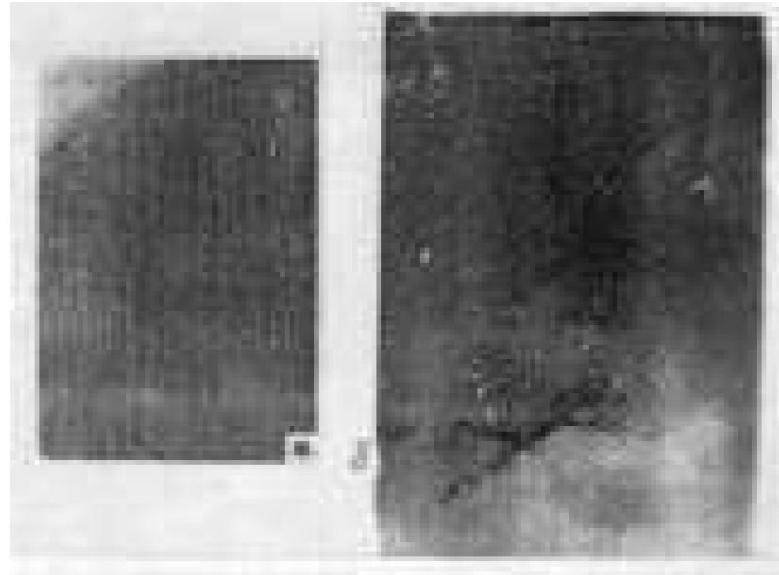
dislocations of different orientations, determined by the angle between the dislocation line and its complete Burgers vector. The splitting values lie within the region limited by curves

1 and 2. It corresponds to the stacking fault energy $\gamma = 64 + 10 \text{ erg/cm}^2$

². In Fig. Figure 9 shows how partial dislocations combine into defects packaging with an energetically favorable configuration.



Rice. 8. Splitting of edge dislocations into partial ones in p-Si at $T_d = 700^\circ\text{C}$ and $\gamma = 1.2\%$ for: a - TPD method
b - EPPD method



Rice. 9. Image of packaging defects: a) with TPD, b) with EPPD methods.

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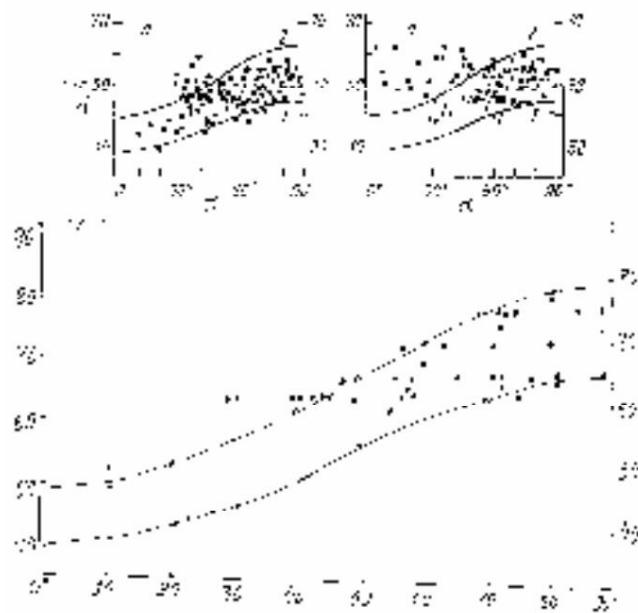


Figure 10. Amounts of splitting of edge dislocations into partial 60° ones. a, b) EPD method; c) EPPD method.

4. Discussion

When studying the mechanical properties, the possibility of significant increasing ductility with a special compression deformation technique together with doping and electrical transfer. Observable Behavioral Features The plasticity of silicon crystals in the case of the EDPD method is explained in our view, the following factors. If in the TPD process electron-phonon and electron-dislocation interactions are present as independent factors, then in the case of electroplastic EPD and EPPD methods, all structural carriers are rebuilt into dynamic flows and forces of a certain direction. At high current densities passing through deformable samples, stimulating the movement of charged defects, the deformation accelerates, which observed in experiment. In an electric field, a dislocation is affected by double force - mechanical and electrical, and potential barrier height turns out to be reduced, less activation energy is required to overcome it.

Applying a diffusing impurity to the anode-cathode surfaces deformable crystal in a special way, as shown in Fig. 1, you can achieve their strong fastening for a period of time sufficient for formation of such a surface layer that will begin to work as a source generation of defects with diffusion pumping.

Crystalline deformation resistance is determined structures distribution of obstacles to the movement of defects of various natures. These obstacles can be overcome by both thermal activation and mechanical activation methods. In the case of the EPPD method, it is possible to reduce thermal contribution, increasing the athermal component. When using the EPPD method, the silicon structure undergoes a rather complex evolution, depending on

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many factors, including the evolution of the defects themselves, accompanied changes in both size and energy.

When crystals are deformed in an electric field, charged dislocations, in addition to mechanical stresses, will be subject to an additional force equal to $F = e \cdot E$, where e is the effective charge of the dislocations, E is the electric field strength. In the presence of the above experimental conditions, it is possible that following situations: dislocations are charged and acquire preferential direction of movement with higher mobility than neutral. IN conditions for the implementation of diffusion electrical transfer can occur redistribution of impurity ions in the vicinity of dislocations and according to the effect their predominant attraction towards the anode, influence the dynamics the latter. It should be noted that all structural particles participating in the diffusion-deformation process (impurity and intrinsic atoms, charged carriers of the subsystem - holes and simultaneously generated dislocations) interact with each other in a dynamic flow and in a certain direction of movement. Thus, in the EPPD mode, the deformation conditions crystals are facilitated by the presence of an additional disturbance factor dislocation system in the form of electrodiffusion of impurity atoms. At large current densities passing through deformable samples, stimulating movement of charged defects, deformation may well accelerate, as observed in our experiment. Using Directional Flow electrons as a control parameter for dislocation excitation crystal system, as our research has shown, allows you to influence orientation and nature of the distribution of the dislocation structure.

The detected differences in the course of curves 1-4 (Fig. 3, 4) are due to the fact that if in the case TPD method electron-phonon and electron-dislocation interactions are present as independent factors, then with the EPPD method all structural carriers of a plastically deformable crystal are rearranged into dynamic ones flows and forces of a certain direction, which greatly facilitate deformation process. The greatest scattering in the sample in the TPD mode (Fig. 5, curve 5) is explained by a higher dislocation density. Regarding the difference in mobility values for samples from the anodic and cathodic parts of the crystal (Fig. 5, curves 2-3), then it is due to the interaction of a diffusing impurity with mobile dislocations.

In existing theories of diffusion along dislocations, the role of dislocations was reduced to the formation of areas with a high concentration of vacancies. Vacancies are accelerating diffusion of substitutional impurities. In the case of the EPPD mode, dislocations could directly influence the electronic structure of the carbon atom. Changes in the structure of impurities atoms are facilitated by diffusion through interstices. Interstitial atoms are attracted to the region of the missing half-plane as discharged and requiring lower activation energy. Thus, the experiment confirms the thesis that dislocations represent facilitated paths for the mobile migration of atoms along compared with volume diffusion in a lattice (Fig. 6, curves 1-3).

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In the dynamic mode of crystal deformation, the supplied energy flow can reach such intensity that at a certain stage the mechanism of dissipation can no longer cope with it and the system is threatened with destruction. Such In cases, the crystal can carry out an internal restructuring of its elements structures in such a way that the process of energy dissipation would go more intensively. This internal restructuring leads to the formation of fragmented dissipative structures. With the opening of dissipation channels the flow of energy in the system will continue without destruction of the deformed crystal, which is confirmed by our electron microscopic studies. The greatest effect of dissipation of the supplied energy from the combining mechanism dislocations can be achieved when all dislocations are parallel each other.

Reaching the next critical dislocation density leads to the fact that the boundaries of the structure become unstable and further flow arising dislocations into these boundaries is impossible. The restructuring carried out crystal structure leads to the appearance of a longitudinal-transverse stripe structures. In p-silicon crystals deformed precisely by the EPPD method at in a certain mode - initial and boundary conditions, splitting is observed edge dislocations into partial ones, opening new dissipation channels with absorption of excess energy, as shown in Fig. 8(b). As shown experiments, properties of impurities on dislocations became interesting fundamental problem with obvious applications not only in nanotechnology, but also in the production of solar cells and silicon electronics. Now there is an opportunity to study experimentally, at the nanoscale level. the effect of changing the plasticity of semiconductor crystals when exposed to electric current.

The macroscopic properties of materials are now believed to be due to processes occurring in nanosized volumes. In particular, plasticity crystals can arise not only as a result of the nucleation and movement of dislocations, but as a result of a phase transformation initiated nanoscale changes in the crystal structure. Unusually formation of the structure of nanomaterials leads to the appearance of fundamentally new physical and mechanical properties.

Structure obtained as a result of splitting edge dislocations into partial components is a unique object that is promising in regard to practical application. In the coming years, the wave method influence on the processes of structure formation may be the only possible and the spin structure will be indispensable, especially when ensuring resonance effect. It is possible to create conditions for resonant influence at least for a local group of atoms, which then transforms into a cluster that will serve a nucleus for propagation of the structure throughout the entire crystalline matrix. So the agent influencing the structural framework of the crystal lattice so that their topologies become similar is the torsion field generated by spin.

There is hope that the new methodological and technological approach applied multiparameter influence during the structure formation of crystals and studying its influence on physical properties caused by joint collective behavior of the system and subsystem, will make it possible to obtain new materials with controlled properties.

5. Conclusions

1. The patterns of influence on plastic properties were studied experimentally silicon in various ways (EPD, EPPD and TPD), different modes (without impurities, with diffusion and electrical transfer of isovalent impurities) deformation, including dynamic and static, with variation load, temperature and time parameters.
2. The appearance of softening (plasticization) of the crystal is shown when passage of high-density electric current through it at constant values of shear stress and temperature. 3. The possibility of a significant decrease in the values of starting shear stress, decreasing the magnitude of the elastic region in depending on dimensional factors, methods and modes of deformation, and degree of alloying.
4. The possibility of a significant decrease in the values of the main deformation parameters of external influence on the crystal during the EPPD method: shear stress, temperature and time compared with traditional thermoplastic deformation method.
5. It has been established that under conditions equal to the EPD mode in terms of load and temperature, achieve a noticeable amount of plasticity in the TPD process impossible.
6. The interdisciplinary and unifying nature of the study was confirmed structure-dependent properties of crystalline solids for disciplines natural-technical profile. 7. It is proposed that the change in the plasticity of crystals at nanoscale levels may be due to a phase transformation initiated nanoscale changes in the crystal structure.

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With.

Assessment and correction of the psychophysiological state of students with the help of spiritual health seminars (DOS)

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**Currently, due to the receipt of extensive information, people
interest in energy information science appeared. Both doctors and
psychologists come to the conclusion that there is a facet of the unknown. This is explained
because in many cases where official science is powerless, it helps
healing.**

**Having worked as a doctor for more than 20 years, one of the authors of this article decided, purely with
from a practical point of view, learn various healing techniques. But, in
Ultimately, I came to the conclusion that it is not appropriate for a certified specialist to stand
and wave your arms in front of the patient. And, as a result of many years of searching, my humble
servant, through insight, came to the conclusion that if a person is
energy information system, then he must be treated as a multi-level personality
(physical, emotional, mental status). Often, the disease is
suppressed life of the Soul, unrealized human abilities during life. Thus, a self-regulation technique
was invented, which is abbreviated
called DOSy, or spiritual health seminar.**

**The principle of this method is that in an altered state of consciousness and
relaxation, purification of consciousness is carried out (with God's help!) and using
music therapy and several other techniques based on viewing a person as
energy information system associated with Nature. The body is a mirror of our
inner life. As a rule, behind the feeling of fatigue and heaviness of the body lies
strongest aggression. This is the price to pay for external peace. When conducting DOS
a person at the subconscious level begins to realize - understand the source
the greatest stress in life. The blocks are "unsealed", channels open, warmth, trembling, etc. are
noted. (it's different for everyone). That is
the work occurs at the cause-and-effect level.**

**According to the cortico-visceral theory, the cerebral cortex controls the condition
internal organs. The famous American philosopher Jim Rohn wrote: "If you
If you want to correct your mistakes, you must start by correcting your views," or
"The only way to turn your life around one day is to change your
views."**

Description of the research process

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To conduct these studies, groups of BSU students were recruited, with a total of number of 45 people. Using IGA-1 devices, biofields were checked before and after carrying out DOSs.

Throughout the session, in an altered state of consciousness, all psychological problems. And even those who consider themselves prosperous in all relationships, during the session they feel periodic "twitchings" in different parts of the body, warmth in the spine, and some - "as if hot streams flow down your legs." This is caused by the fact that the spine is the core of a person. When a person thinks correctly and acts correctly, he has almost always correct posture. This suggests that he is connected to his Spirit and always in God, accordingly, always healthy. In the same cases when it happens disharmony (in thoughts, words, actions), the first signs appear ailments and then illnesses. This is due to the fact that any information entering the brain, or more precisely the cortex, enters the spinal cord, which located in the spinal canal, and through it into the sympathetic and parasympathetic nervous system, located in parallel, and energy channels. From there information goes to organs and systems. In case of a negative attitude, the body blocks it, a muscle shell is formed, proper nutrition is disrupted organ or system, and the disease develops. Each part of the body is responsible for certain information (Details in the book "Psychology of Corporality" [10]).

Before and after the DOS, the students' biofield was measured.

The examination was carried out using the IGA-1 device as follows: Resetting the device. The antenna of the device is directed to the locations energy centers along the front surface of the body. Measuring sensor moves towards the person.

When the arrow deviates, the location of the beginning of the deviation is marked. Then it is produced Resetting the device indicator, moving continues in the opposite direction, when This clarifies the location where the indicator needle begins to deflect. Moving device above this point within ten to fifteen centimeters, the place where the arrow changes the direction of movement, i.e. the arrow oscillates around zero marks on the dial indicator panel. Then the distance from antennas to the human body. Thus, the biofield is determined, or phase aurogram.

Overload or weakening of the body leads to deterioration of psycho-physical condition, which, as analysis and a number of studies show, can be assessed by configurations of the human energy field.

In Ufa, an electronic device called the Phase Aurometer (and its portable modification of IGA-1) [2, 11, 12], which records the intensity of the energy human fields by electromagnetic component. Essentially it's sensitive receiver of ultra-long electromagnetic waves with special signal processing. The operating principle of the device is based on measuring radiation intensity

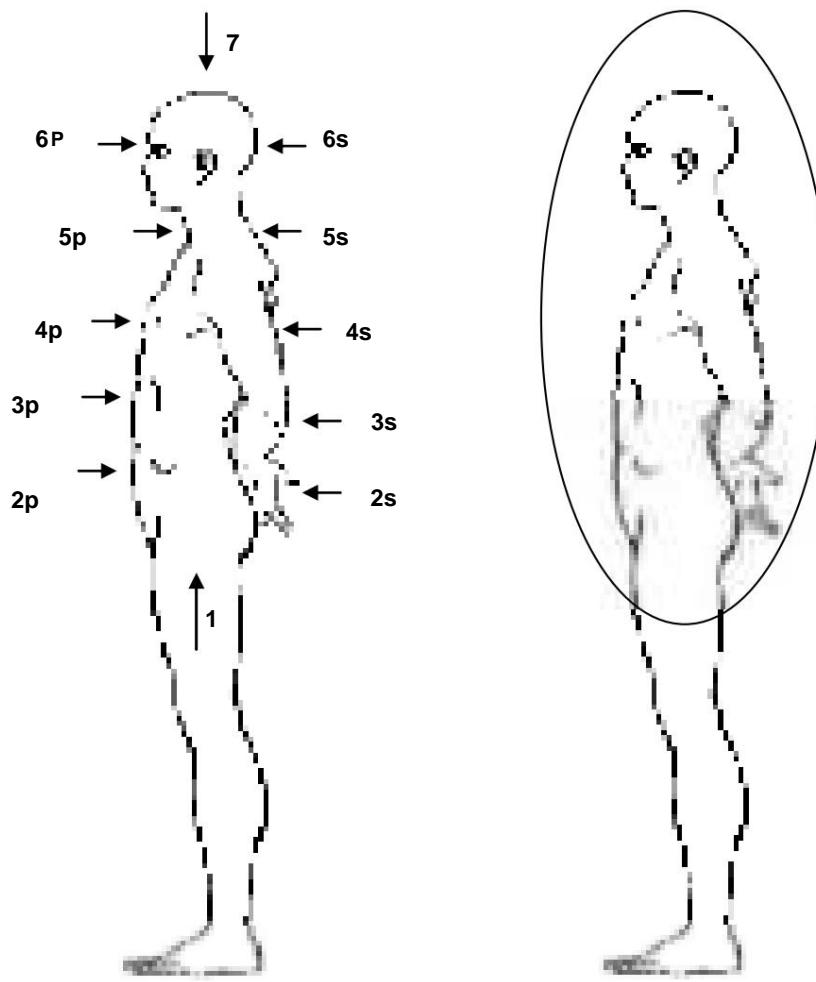
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electromagnetic radiation and phase shift angle of the recorded wave biological object. It is shown that the measurements are based on the equal field intensity located at different distances from the body surface person. This distance and field configuration (phase surface) contains information about the state of internal organs located in the measurement projection.

The most informative when measuring the energy field turned out to be measuring points along the human spine against the location of the nerve centers and endocrine glands. In this case, the measurement locations coincided with the points known in India as chakras. Translated it means "wheel", i.e. rotating vortex flows, or torsion fields of the body. Moreover, if you connect all measurement points between itself, the resulting field configuration resembles an ovoid shell, with equal intensity covering the surface of the body from the head to the coccyx. It turned out that the geometric dimensions and configuration of the shell carry integral information about the nature of the functioning of human organs.

Chakras, according to literature, are hierarchically connected with the corresponding centers and organs in the human physical body. Disturbance of chakra energy indicates the predisposition of certain organs to functional or organic disorders, which changes the shape of the phase aurogram and looks on it in the form of humps or depressions.

There are seven main chakras in humans (Fig. 1). Their centers are located on the axial line passing through the spine, and, with the exception of the two extreme chakras, the first and seventh, projected onto the front and back surfaces of the body. Place The location of the chakras is quite definite and fixed. Each chakra controls and characterizes the work of certain organs, systems and mental manifestations of a person. Each chakra has a name and number.

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Rice. 1. Location of measuring points, index "p" - in front, "c" - behind the location.

Rice. 2. Form of phase aurogram of a healthy person person.

Muladhara - the first chakra is projected from below the tailbone of a person. I-th center. It controls the sense of smell, excretory and reproductive systems, muscles and the functioning of the human musculoskeletal system. The chakra reflects positive and negative manifestations of the psyche, psychological stability and confidence man in himself. In case of psychological disorders (depression, stress), it is significantly reflected in the first chakra.

Svadhisthana - the second chakra is located in the lower abdomen (3-4 cm below navel). II center. She controls the genitourinary system, thin and thick intestines. The chakra controls the sexuality and reproductive functions of the body. When chakras are malfunctioning, sexual neuroses and internal discomfort.

Manipura - the third chakra is located at the level of the solar plexus (at 2-3 s above the navel), and controls the stomach, liver and gall bladder. This is the III center. Responsible for social manifestations of the psyche. If the manipura malfunctions local discomfort occurs in the solar plexus area and a feeling of anxiety.

The fourth chakra - Anahata is located at the level of the center of the chest and controls the work of the heart and circulatory system, is responsible for the manifestations of higher

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moral aspects, provides a positive emotional background. IV center. When chakras are malfunctioning, depressive reactions occur and abnormalities in the functioning of the cardiovascular system.

Vishuddha - the fifth chakra is located at the level of the seventh cervical vertebra. Chakra controls the bronchial and vocal apparatus, lungs, esophagus, thyroid and parathyroid gland. V-th center. Provides a person's ability to aesthetic perception and creativity. For disorders in functioning chakras, local discomfort occurs in the front of the neck and increased emotional instability.

The sixth chakra - Ajna is located at the level of the "third eye" (1 cm above bridge of the nose) and controls the functioning of the lower part of the brain, left eye, ears, nose. VIth center. It is the center of human mental activity. At dysfunction of the chakra leads to functional disorders of the central nervous system and various mental illnesses.

Sahasrara is the seventh chakra, located at the top of the head in the center of the skull. Chakra controls the top of the brain and right eye. VII center. Responsible for manifestation of higher mental functions and provides higher spiritual and intuitive manifestations. Chakra dysfunction leads to primitiveness perception of social manifestations.

Thus, the chakras are a kind of "health care wheels" of the body. According to literary sources, chakras are responsible for resistance to negative social phenomena (smoking, alcohol, drugs).

Thanks to systematization, it is possible to identify the essence, isolate the center of gravity of the problem, without ignoring the general relationships. At the same time, not forgetting that man and the world are united. Relationships with others, relatives, friends, and society, in the social sphere (microclimate).

During a spiritual health seminar, work takes place at all levels: Soul, body, Mind, Consciousness.

According to the physiology of higher nervous activity, after these DOSs, restoration of connections between the motor areas of the cerebral cortex and muscles that are shortened or damaged by bad habits, stress and other negative influences. DOS contributes not only healing, but also rejuvenation of the body. I would also like to note that it is coming well-being in all areas: health, finance, society. Execution in progress of desires. Students note that after DOS, thinking completely changes and worldview, begin to react to circumstances in a new way and emotionally and in terms of actions.

Fundamental human health must become scientifically based system of evolution of a planetary organism. Researched in physical theory vacuum, rotation fields, called torsion fields, emit microlepton waves,

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which control the processes of regeneration of cellular structures, through division of DNA molecules.

Scientists have found that DNA contains not only a program for protein synthesis, but also construction of the human body in space and time. Birth of cells occurs under the influence of soliton waves, which, emitted from the energy system DNA penetrates various cell structures.

In addition, solitons are emitted into neighboring cells, transmitting information that coordinates the group development of cellular structures, each of which has its own DNA molecule. Thus, the development of all organs is synchronized and systems of the body, as well as its metabolic processes.

This development in the microcosm is similar to what happens in the macrocosm with a person. Two energy flows of the Monad and the Soul are spiral-shaped (in configuration, like DNA molecules) enter the matter of the Personality, forming its specific scheme development. At the same time, there is a coordination of group development of people between ourselves due to the emission of thoughts from the chakras transmitted to the surrounding world human energy bodies - energy fields, which in turn enter into interaction with other energy systems and organs of the planetary organism. So a unified plan for the evolution of the Earth and all kingdoms of Nature is being coordinated.

Determination of the energy state of students before and after preschool education. Before the beginning DOS took phase-aurograms from all 45 group members.

After the DOS, phase aurograms were taken again in the same points as before meditation. A general analysis of the measurement results allows us to make a clear conclusion that DOS contributes to a shift in the energy field person into the area of normal conditions, although this indicator is individual, each student is different, and requires additional research.

Analysis of the results of testing the energy field of students allows us to evaluate level of physical and psychological condition of students. Increase in total the size of the biofield by 30-130 percent. Images of phase aurograms of students before and after the impact will be demonstrated at the conference.

It is important that the results of examination of students using a phase aurometer for considered practically healthy according to medical indicators, allow quickly and integrally evaluate, and then improve the psychophysical condition of students promoting health.

It should be emphasized that, having worked according to the author's methodology for about 10 years, we noted that after DOS there is an increase in human energy, harmonization sexual and reproductive functions, as well as normalization of weight.

The consciousness of a person after DOS, who has comprehended the essence of the application of the Universal Law Development in life, emits a controlling thought that moves energy through

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the most effective development path, ensuring full cellular development body.

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Solving the problem of accelerated decontamination of radioactive elements

Kinderevich A.V.

Corresponding Member of the International Academy of Informatization, Academician of the Ukrainian Academy of Original Ideas

A group of Ukrainian scientists and specialists, headed by corresponding member International Academy of Informatization, Academician of the Ukrainian Academy original ideas by Anatoly Vladimirovich Kinderevich, based on provisions of field theory, developed in books [1, 2, 3, 4, 5, 6, 7], carried out a series of successful experiments to solve the problem of accelerated decontamination radioactive elements.

It is known that during rectilinear motion at great speed there is no only time dilation, but also time difference between proper time object and time at any other point in space, is emitted in the form of streams time into the surrounding space. There is also a volumetric decrease moving object, and its difference flows into the surrounding space. This means that space-time streams are emitted. The same space-time flows are emitted from gravitating masses. In the surrounding space these flows produce reverse transformations: they increase the volume of material structures and speed up processes. This eliminates violations of laws storage in the service station. In the experiments carried out (Protocol dated March 15, 2001), it was established that space-time flows can be focused by lenses focalizations, which are pyramidal and cone-shaped bodies and surfaces with polished edges of the 8th accuracy class. It has also been established that during nuclear magnetic resonance, when electromagnetic energy is absorbed by natural NMR frequency f of a given material is emitted in 99% of cases positive, i.e. destructuring flows of space-time. Wherein the arrow of the Kozyrev detector deviates to the right. In the field of destructuring flows, all physical processes are accelerated. At natural frequency f_{NMR} of this material, in 1% of cases structuring flows of space-time are emitted. In this case, the arrow of the Kozyrev detector deviates to the left, and in the area the actions of these flows slow down all physical processes. Under normal conditions proton NMR [8], the resonator is a coil of 5-6 turns, in which up to 1 gram of substance is placed. Of course, the output of space-time flows will be small. But Maxwell's law about an electromagnetic wave states that in every

change point $\frac{\partial H}{\partial t}$ there is a change perpendicular to it $\frac{\partial E}{\partial t}$. IN
 coil resonator, the primary is $\frac{\partial H}{\partial t}$, and secondary $\frac{\partial E}{\partial t}$. In the capacitor,

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on the contrary - primary $\frac{\ddot{y}E}{\dot{y}t}$, secondary $\frac{\ddot{y}H}{\dot{y}t}$. A capacitor was used

a resonator, where, instead of a dielectric, a material with pronounced properties of proton NMR. This made it possible to create intensification chambers physical processes, when hundreds of kilograms of substance and flow were introduced into NMR spacetime was tens of millions of times more powerful than what was observed N.A. Kozyrev and V.V. Nasonov in October 1978 in their experiment in the Crimean Astrophysical Observatory.

We theoretically predicted that in the physical intensification chamber processes under the influence of destructuring flows, radioactive nuclei elements will increase, intranuclear forces will drop sharply and the nuclei will share spontaneous division. Under the influence of structuring flows, on the contrary, the nuclei will shrink and their activity will drop sharply. From 2001 to 2005

Hundreds of experiments were carried out with radioactive isotopes Cs-137, Sr-90, Am-241, Co-60, Mo-99. In 80 hours, the activity was extinguished by 75%. Period

The half-lives of Cs-137 and Sr-90 changed from 30.2 years and 28 years to 98 hours. Exit to background of these elements was produced in 400 hours. Energy costs a million times less nuclear binding energy. A control experiment was carried out in October 2005 with the participation of Academician Bolotov B.V., specialists from the Kurchatov Institute and Ukrainian Academy (see Act of October 25, 2005).

The world has accumulated over a million tons of radioactive waste from nuclear power plants. Their problem recycling is so focused that some countries will be forced to refuse from nuclear energy. We have received the following patents:

- US Patent: Pub.No. US 2004/0238366 A1 METHOD AND SYSTEM WITH APPARATUS FOR ACCELERATION OF ACTIVITY DECREASE AND RADIOACTIVE MATERIAL DEACTIVATION;

- Patents of Ukraine: No. 83129, Method for accelerated deactivation of radioactive materials materials and devices for its construction; No. 83906, Expedited method deactivation of tritium and devices for its use; ю, Technology accelerated decontamination of radioactive waste from nuclear power plants and energy concentrator of cone-like type for this purpose; ю Device for accelerated decontamination of radioactive waste from nuclear power plants of the middle and low activity.

Currently, we have proven pilot industrial accelerated decontamination devices that can produce accelerated decontamination of radioactive waste in containers (see photo) and remote accelerated decontamination of radioactive waste. Need funding and problem radioactive waste from nuclear power plants and other nuclear production facilities can be resolved in on a global scale.

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АКТ

Выступление по вопросам и проблемам дальнейшего изучения
результатов работы лектора Киммерова А. Н.

Ким

25 октября 2009 г.

В конференции участвовали:

- Академик Российской Академии наук Балагин Н. В.
- Доктор физико-математических наук, профессор РГУП «Курчатовский институт», Институт ядерной физики Марголин И. П.
- Доктор физико-математических наук, профессор, Институт ядерной физики Тимофеев В. Г.
- Начальник института ядра, Институт ядерной энергетики и физики, Уфимский Академгородок Смирнов А. А.
- Академик Уфимской Академии естественных наук Киммеров А. Н.
- Зав. Программой промышленного АО «ИМПЕРИАЛНЕФСТ» Ступакина С. Ю.
- Член Программы промышленного АО «ИМПЕРИАЛНЕФСТ» Чубрикова А. Б.
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- Главный инженер лабораторной группы Аникин В. А.
- Инженеры лабораторной группы: Ткачук Е. Н., Киммеров Н. Д., Панкратова А. А., Соколов Н. Д.

Основано на материалах №1-1042 от 29 сентября 2009 г., №103-1039 от 21 октября 2009 г., о приведении в норму гипотиограммы показаний ядерной разрывной машины – ШШ-алты Киммеров Продукт, г. Ким, критичных группах показаний установлены следующие:

Эксперимент по изучению критичности разрывного состояния по никелю Киммеров А. Н. приведен в №103-1039 от 21.10.09 по этим образцам приведены показания №1, №2, №3, №4, №5.

Образец №1, масса № = 96, Сг = 127 в этот измеритель не обратился, (измерение образца: показаний измеряющего образца не обратилось), т.е. измеряющее образец превысило норму.

Образец №2, масса № = 96, Сг = 127 изображен в таблице №1 (данные таблицы). Активность образца измерена на 99%.

Образец №3, масса № = 96, Сг = 127 – изображен критичностью образца (-2 часа). В этот измеритель в контроле было измерено значение активности образца до 127%, также и моменту проекции контролльного измерения активность упала до -1,8%.

Образец №4, масса № = 96, Сг = 46 изображен в таблице №2 (данные таблицы). Активность образца измерена на 94%.

Образец №5, масса № = 241 изображен в таблице №3 (данные таблицы). Активность образца измерена на 14,2%.

ВЫНОСЫ

В результате эксперимента обнаружены следы вынужденной смены генетического устройства ядра образца № 3, А.В.

Однако с этого момента погибла одна из генетических цепочек ядерного реагента, приведшая к:

- Повторяется генетическое изменение ядерного реагента в результате ядерного взрыва № 3 и № 4;
- Для создания ядерного реагента необходимо разложить ядро урана на части.

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**Comprehensive health improvement in a new modification of the installation
"Kozyrev's Mirror"**

Bulaev V.V., Obukhov N.A.

**CJSC "Aerocosmos",
State Rocket Center "KB named after. Academician V.P. Makeeva",
Miass, Chelyabinsk region.**

The work presents the results of research and examination
Bioenergy information complex for bioenergy correction
human potential, made in the form of Kozyrev Mirrors of a new modification
"ZK – OB" (vertical and horizontal installations) of using
the IGA-1 phase aurometer.

According to Nikolai Kozyrev in his publication [1]:

1. A number of processes are accompanied by the isolation and intensification of processes associated with the action of time. These processes include: warming a cold body; phase transitions (ice melting, liquid evaporation); dissolving a substance in water regardless of whether endothermic, exothermic or neutral this dissolution belongs to the process; electrolysis; all PROCESSES LIFE ACTIVITIES.
2. For processes of the same type, the allocation of time action is proportional the amount of substance that participates in them.
3. The effect of time decreases in inverse proportion to the square of the distance.
4. The action of time is largely subject to the laws of geometric optics.
5. The effect of time is transmitted mainly by the surface of the body.
6. Solids screen the action of time. Liquid bodies shield significantly worse. Gases are not shielded.
7. Bodies, delaying that physical property of time, which Kozyrev calls by the action of time, become capable of acting themselves with the same sign as the action they delayed. This property is equivalent to MEMORIZATION by bodies the PHENOMENA taking place around them.
8. A body that has absorbed the action of time does not give it back immediately, but gradually.

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9. Of the materials studied, the effect of accumulation of action is the smallest
Aluminum has the longest time, sugar has the longest.

10. *The action of time can not only be absorbed by bodies, but can also be removed from them reflect.*

11. *Of the materials studied, aluminum coating gives the best reflection glass plate.*

From publications on the Internet we also learned that the expression “Kozyrev’s Mirror” in The use was introduced by journalists and popularizers of science. And everyone put their own into it own meaning, or whatever anyone pleases.

Therefore, if we are to use the concept “Kozyrev’s Mirror,” then we should probably take into account *the opinion* of Kozyrev himself .

According to his views, the action of time can be absorbed and reflected. Better The entire effect of time is reflected by the aluminum coating of the glass plate. But If you carefully study the experiments conducted by Kozyrev, you will notice that in as mirrors reflecting the action of time, it uses an aluminum layer deposited on the smooth surface of a solid dielectric, which has negligible low electrical conductivity and relative dielectric constant in range from 3 to 15. In this case, Kozyrev Mirrors should be called such time mirrors that *satisfy* the above *characteristics*.

In Russia, the study of “Kozyrev Mirrors” (ZK) is carried out by two research center. One - in Novosibirsk under the leadership of Academician of the Russian Academy of Medical Sciences V.P. Kaznacheev and Director of the International Space Research Institute anthropoecology, Doctor of Medical Sciences A.V. Trofimova, another in Miass in Center for Energy Information Research of the State Missile Center - under the leadership of Dr. Sc. N.A. Obukhova. Center for Energy Information Research OJSC "GRC named after. Makeeva" March 25, 2009 Certificate of Conformity No. 0041906 was issued for the BioStandard Certification System, registered in the State Standard of (Reg. No. ROSS RU.0001.04.YUSH.00). The creator of the BioStandard system is Independent International Center for Radiation and Biological Safety consumers (CRBB) - a non-profit organization established jointly National Consumer Protection Fund, Scientific and Production association of the All-Russian Scientific Research Institute of Physico-Technical and Radio Engineering Measurements (VNIIFTRI), the All-Russian Scientific Research Institute of Certification (VNIIS).

ZK are aluminum (less often - glass, mirror or made of other metals) spiral planes, which, according to hypothesis proposed by N.A. Kozyrev, reflect physical Time and similar lenses can focus different types of radiation, including that coming from biobjects. The usual design of Kozyrev mirrors (in Novosibirsk) is as follows: a flexible mirror sheet made of

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polished aluminum, inside which the test subject's chair is placed and measuring equipment.

When designing a new version of the ZK in Miass, the design was changed of this device: the material has been changed - polished stainless steel instead duralumin. In Novosibirsk, the device is a pipe (not closed cylinder), and in Miass the cylinder is closed on one side by a cone, which is used as a generator of a torsion field that affects the patient, and additionally a laser is shined into the base of the cone for torsion illumination.

Research and examination of vertical and horizontal installations Bioenergy information complex for correction of bioenergy potential human "ZK – OB" were carried out for three years on a group of volunteers from 12 to 77 years with 250 person visits. Before placing a person in installation, the IGA-1 phase aurometer [3] measures the biofield in 4 zones, after which choose a vertical or horizontal installation for the first visit. After completing the session, which lasts 15-40 minutes (depending on settings and recommendations given to the person before the session) the biofield is measured again and volunteers are surveyed regarding physical and other sensations. Staying in settings leads to amazing effects. Recovery is underway the body as a whole, as well as improving the functioning of individual organs and systems that had a disruption in the work of a specific person. Volunteers for the first 5-10 minutes begin to feel their diseased organs in the form of pain, tingling, twitching and etc., but gradually these sensations most often pass.

The method of measuring the human biofield using the IGA-1 device makes it possible determine the boundaries of the biofield, and also judge the field density by speed and amplitude of movement of the instrument needle. The measurement method is simple. The device is brought to different areas of the human body from a distance of ~ 1.5 m. Examining sequentially areas of the head, chest, abdomen, genitourinary system, legs, etc., fix distance from the human body using a tape measure at which the indicator arrow is triggered IGA-1 device.

Subjective sensations of the majority of volunteers after visiting the territorial complex - a rush energy, lightness in the body and other comfortable sensations in the body.

Biofield measurements were carried out before and after sessions in 4 zones: head, chest (cardiovascular and bronchopulmonary systems), abdomen (gastrointestinal tract) and MPS (genitourinary system). Based on the results of biofield measurements volunteers, the following conclusions can be drawn:

- 1. In 3 out of 4 zones there was a significant increase in the biofield from 5 to 35 cm, in fourth - increase 0-5cm.**
- 2. In a vertical installation, the biofield increases more quickly to feelings of satiety (subjectively - a feeling of vigor, easy to open eyes, there is a desire to move, stand up or leave the installation), therefore The visiting time is shorter (15-20 minutes).**

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3. In a horizontal installation, there is greater alignment of the biofield and a better sense of the processes occurring in weakened areas. Exactly at this installation occurs harmonization (correction), improvement of organs Gastrointestinal tract, cardiovascular system (normalization of pressure) and nervous systems, i.e. observed full correlation with the research of MNIIKA (Novosibirsk) under the patent RF No. 2122446 ("Device for the correction of psychosomatic diseases human", authors V.P. Kaznacheev and Trofimov A.V.).

A preliminary examination of the influence of the "ZK - OB" installations on the bioenergetic potential of a person showed a significant increase in the value of the biofield in 100% of volunteers (30 minutes in the installation) by 10-30 cm, which corresponds to an increase in the biofield by 20-50%. At the same time, health indicators improved - general well-being, condition of organs, etc. The biofield is measured with the IGA-1 device before and after being in the installation.

Number participant experimental tal groups	Biofield of group members BEFORE and AFTER visiting "Kozyrev's Mirrors" in cm							
	Head area: Chest area: state vascular system, degree of fatigue, energy		Abdomen area: heart, lungs, bronchi gastrointestinal tract			Pubic area: genitourinary system and sexy energy		
	up	after	to	after	up	after	before	after
	to	61	29	65	to	60	59 67.5	67 70
1	45	40	29	67	32	66	55 78	50 68
2	29	62	47	69	28	68	64	63
3	40	53	48	62	35	64		
4 4	40 34	50	46	60	47 33	58		
6	44	58	37	52	40	51	60	73
7	27	58	37	62	32	67	43	63
	15	44	33	65	34	66	35	67
8	26	57	52	60	43	56	62.5	67
9	41	47	47	69	38	62	58	77
10 11	24	52	49	57	39	69	67	63
12	47	54	32	61	37	60	57	65
Norm - (50-70) cm from the human body to the border of the biofield, determined by a phase aurometer IGA-1 (The device is certified in the Russian Federation). The results are that in three out of four zones the biofield increases from 25% to 100% of the original.								

In addition to the health-improving effects, the volunteers experienced numerous phenomena of "travel" to the past, going into space, etc.

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Torsion fields: problems and prospects

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Problems with torsion fields began to manifest themselves from the moment of deeper studying the physical vacuum and unified field theory [1 - 5].

As it turned out, elementary particles or their groups that do not exist independently. Parameters of elementary particles are closely associated with the parameters of the actually existing level of physical vacuum, parameters of its matrix, which determines their predecessor, virtual creation and disappearance.

This interaction was conventionally called polarization.

The generated elementary particles continue to interact with the physical vacuum. As a result, space or its polarization changes. Effect changes are determined by the characteristics of the particle: if the particle has mass, a gravitational field appears, if the particle has a charge, then a electrostatic field. But each elementary particle, as it turned out, except the two mentioned there is a third parameter, not associated with either mass or charge. This the parameter is spin, as a quantum analogue of rotation.

This assumption was made by the young French scientist E. Cartan in 1922, who investigated a purely mathematical problem related to by turning and rotating the coordinates, he expressed a brilliant guess that in In nature, there must be fields generated by the angular momentum of rotation. It was Cartan who was the first person to introduce the concept of a torsion field.

Russian scientists A.E. Akimov, G.I. Shipov made a significant contribution to the development teachings about the physical vacuum and the nature of torsion fields. American physicist R. Uchiyama formulated a concept that he called “Theory of information A-fields.” It reflects the same parameters discussed in the works of the Russians scientists, namely: 1) the primary sources of all fields are elementary particles, 2) that each parameter of an elementary particle has its own field, 3) that this field is due to spin, i.e. field which is generated by density rotation of the angular momentum of rotation.

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Naturally, you need to understand that any moment of rotation causes disturbance environment and, accordingly, its changes, which determines its properties.

Between 1922 and the 1980s, theoretically predicted torsion fields determined the appearance of a very large number of scientific works. At the beginning, they entered Frenet's equation, later the Italian scientist John Ritchie wrote an equation that described the rotation of massive objects, similar to stars. In Eq. there were coefficients that play a fundamental role in physics (Ritchie coefficients). The coefficients for torsion fields were insignificant; they were realized only in the spring of 1997. Before this, as is known, for various physical factors having a field nature, an immeasurable parameter – interaction constant. The most powerful are nuclear interactions. Their constant is equal to one. Electromagnetic influences have constant $1/137$ (less than 10^{-2}), gravitational – about 10^{-40} , those. by 38 orders of magnitude weaker, and the constant of spin-torsion interactions was estimated to be from 10^{-50} until 10^{-66} those. still almost 30 orders of magnitude weaker than the gravitational constant.

Due to such a low constant, torsion fields had a purely theoretical meaning. Their role in the development of the universe was limited to the fact that experimentally this was difficult to confirm.

Working in this direction, scientists found that the processes associated with torsion fields turned out to be very intense, and the interaction constant for such a class of fields as electric torsion, it turned out to be $10^{-3} - 10^{-4}$. This is a few weaker than electromagnetic interactions. However, this allowed not only observe, but also register torsion interactions and have practical results. An example is the work carried out in Ukraine since 1989, when the Institute of Materials Science of the Academy of Sciences of Ukraine received ultradispersed metal during slow cooling and in the volume of the ingot in as a result of the action of torsion radiation on the melt (Doctor of Physics and Mathematics Mayboroda V.M.); influence of torsion field on the process of crystallization of micellar structures (Akimov A.E., Kurik V.M., Tarasenko V.Ya. "Biotechnology", 1991, No. 3); on reactions plants under the influence of torsion fields (Sokolova V.A., M.: MNTI VENT, 1994, Report No. 48) cit. according to Akimov A.E. [4].

Since then, man's scientific ideas about Nature have changed completely. It was the theory of physical vacuum and torsion fields that turned out to be so new scientific paradigm.

It has long been known that life on planet Earth is determined by the impact on it solar energy and the information contained in the streams of its rays. These the flows make up $\frac{3}{4}$ of the electromagnetic field and only one quarter of the gravitational field.

In the process of evolution, the body acquired the properties of electromagnetic fields, through which it maintains its homeostasis and its biofield. Concept of biofield has become firmly established in our lives, since all physical bodies are generated elementary particles. And since the living and inanimate worlds are made of the same

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same as atoms and molecules, then it is impossible for living matter to have a field that does not exist for inanimate matter and vice versa. There are three in the human body class of magnetic substances: ferromagnetic, paramagnetic and diamagnetic.

The experimental studies we conducted on a large number of animals when exposed to electromagnetic fields created by generators of terrestrial, man-made sources have shown that these fields have a significant impact on the structure and function of various formations brain [6], the disruption of which affects the functioning of the brain and body, such as integral fractal structure.

Using histo-physiological methods, including the method of conditional and unconditional reflexes, electroencephalography method, light and electronic methods microscopy, methods of histochemical and biochemical studies by us changes were detected over a wide range. They embrace change electrical activity of neurons, changes in their shape and size, changes tissue respiration and enzyme activity, to changes in the body's reactions to the effect of external stimuli, impaired memory and sexual potency. The patterns of disruption of the vital processes of the body in different levels of its organization, which took place over a long period of time even after the cessation of exposure to the microwave field.

Recovery processes are disrupted. Pathological conditions in brain tissue persist for a long time [7 - 10]. We have created a microwave hypothesis brain pathology due to the components of torsion fields [11] and the theory of brain pathology caused by the action of a microwave field [12, 13], a new understanding has been expressed physiological processes of the brain and prospects for their correction [14 - 16]. Set out physical laws of physiological processes as a methodological the basis for their management [17]. Electromagnetic radiation has been studied on transport, changes in the energy information field of electric train drivers Kyiv metro [18, 19]. The importance of subtle information embedded in the torsion field for the mechanisms of regulation of biological processes is presented any living organism, in connection with new data from the physics of ether and electromagnetic fields [20].

Analysis of the results of our long-term research, identified patterns at different levels of organization and regulation of body function, taking into account new data from the physics of ether and electromagnetic fields, including information interactions of fields point to a completely new direction in science, which we designated *bioelectromagnetology*, i.e. the doctrine of electromagnetic compatibility of external and internal fields of the body.

This problem is extremely relevant for medicine. It is associated with negative effect of electromagnetic radiation on the human body, number of sources which is constantly increasing, just as the number of chronic patients for whom Pharmacological agents help little. They are not aimed at the cause causing the disease.

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To solve this problem, it is urgent to establish closer cooperation between scientists, doctors and physicists, ways of joint search and development sensory devices for recording weak electromagnetic fields of organs and body tissues. It is necessary to construct sensory devices through which the body perceives (feels) electromagnetic fields. Develop devices to neutralize the negative impact of information fields. Devices through which it was possible to eliminate (reduce) pathological

processes at the cellular and molecular levels. Protect a person from knowingly negative effects of environmental factors and send the information that has a positive impact.

In recent years, studies have emerged indicating the important role resonant electromagnetic field on biomacromolecules with an active center containing metal atoms, creating collective wave effects that can be used in medicine [21 - 23]. All this indicates that information interactions of weak field wave processes have their own future.

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Nanotechnology of electrodynamic sea desalination water^{*}

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Data from experimental studies of electrodynamic method of desalination of sea water using electromagnetic waves space charge (longitudinal electromagnetic waves) and nanofilter.

One of the most pressing problems of our time is water desalination. One of possible and promising ways to solve it is electrodynamic decomposition of water into salty and fresh components and their spatial separation. This paper presents the first experimental data for desalination of salt (sea) water using longitudinal electromagnetic waves (EMW).

Numerous studies in the field of applicability of longitudinal EMW (EMW space charge) for various fields of science and technology show that they play an important role in many natural processes and can be used for highly efficient, low-energy solutions for various national economic problems, including water desalination [1].

The physical and technical basis of the method under consideration is the presence of a unique high frequency dispersion - sharp peaks and deep dips in amplitude-frequency characteristics (AFC) that arise during the passage of longitudinal electromagnetic waves through salt water. It should be noted that the dispersion of the frequency response of longitudinal waves significantly exceeds similar dependences for transverse electromagnetic waves.

Typical frequency response for power transmission coefficient in a quartz tube with a diameter of 20 mm and a length of 110 cm, filled with water, for fresh and sea water, are shown in Fig. 1.

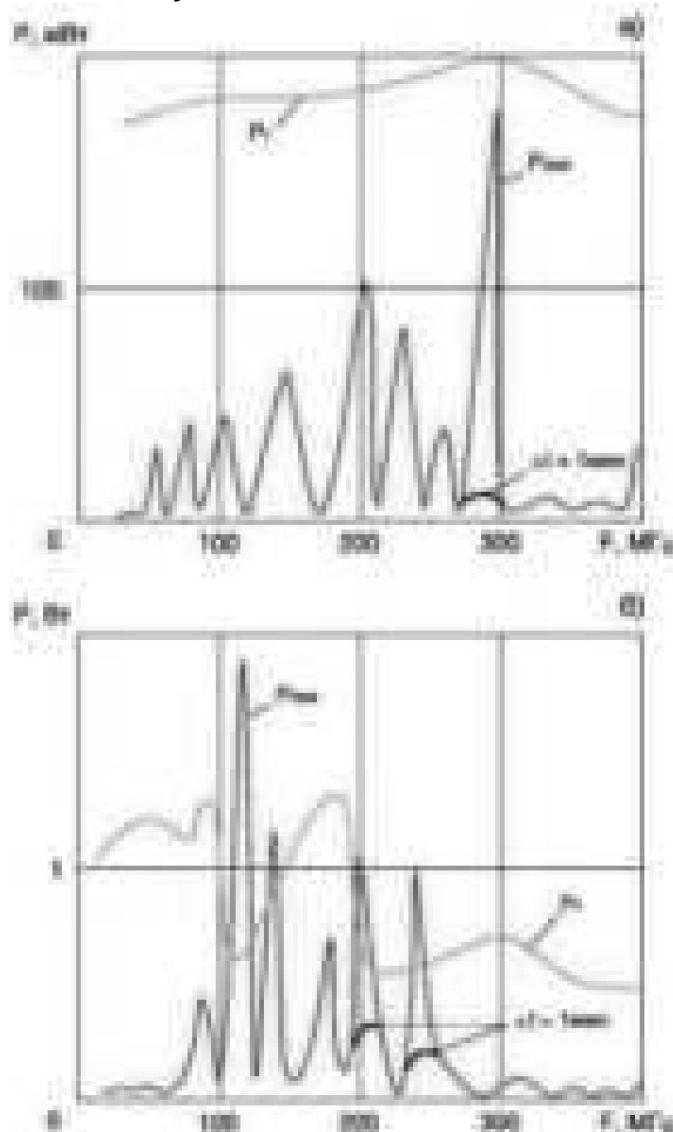
The ratio of values at the maxima and minima of the frequency response can reach 10-30 dB, which indicates the presence of resonances in water structures at longitudinal vibrations of constituent blocks in water clusters under the influence of Coulomb longitudinal field forces E .

As can be seen from Fig. 1b, with increased power for salt water on the row resonant frequencies, the output power can exceed the input power, which indicates the entry of additional charges into the water from the surrounding

* Published only in the electronic version of the collection.

environment. If the influx of charges from the environment is limited, then in a time of about 1 min. the peak of excess power disappears and the power passed through the desalination plant decreases to the size of a black peak (Fig. 1b). If in immediate There is a water tank (or a person) close to the water pipe, then the frequency response is changes significantly. When removing a vessel with water from a quartz pipe perpendicular to its axis (along the radius), the frequency response value at the resonance point changes cyclically, which directly indicates the presence of standing waves of the field longitudinal EMF around the pipe.

Analysis of the dependencies shown in Fig. 1 shows that the resonance frequencies for fresh and sea water are practically the same, but the maximum amplitude spectrum for salt water it is shifted to the low-frequency region (Fig. 1b), and for fresh water it is shifted to high frequency (Fig. 1a). In this case, the quality factor of resonant oscillations for salt water is significantly higher, which is directly related to the greater conductivity of salt water.



Rice. 1. Frequency dependences for the output power of the longitudinal EMW REMV for fresh water (a) and salt water (b) in the meter range; frequency dependences output power of the RG generator with the transverse mode of the electromagnetic wave.

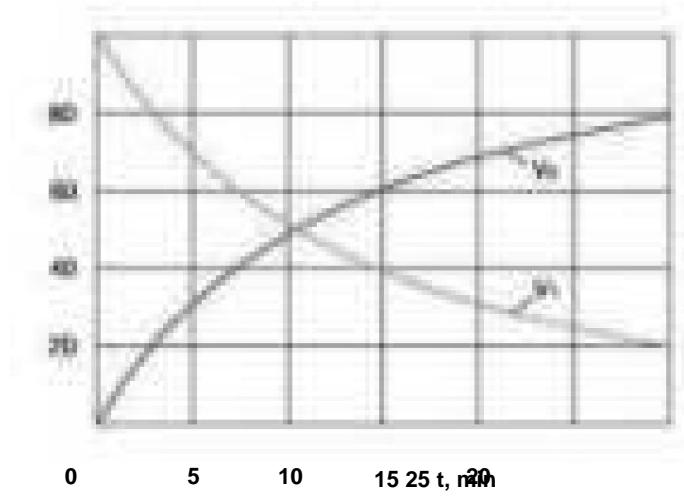
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The noted physical and technical features of the interaction of longitudinal electromagnetic waves with salt (sea) water causes the cluster structure of water to break into individual components and its desalination during longitudinal vibrations of Na and Cl ions.

With the currently most common thermal desalination of water separation of fractions occurs during the process of vaporization, while fresh water is released with steam, then condenses and is collected in a separate container, and the brine remains in the sediment, in the container where there was salt water. Thermal desalination at artificial heating requires high energy consumption, and with natural evaporation - a lot of time due to the low productivity of the desalination process.

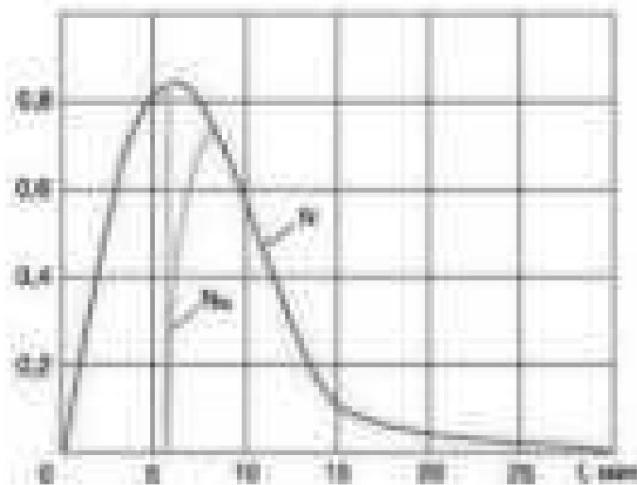
Under Coulomb force action under the influence of electric field E longitudinal electromagnetic waves, the separation of water clusters into individual components occurs in one container in the region of the maximum field of standing longitudinal electromagnetic waves. Wherein separation of fresh water and brine fractions is carried out using a nanofilter, through which, under the influence of an electric field E, a longitudinal electromagnetic wave fresh water is “pushed through.” This kind of “pushing” of liquid through the capillary structure of the xylem (including through nanocapillaries) occurs in wood drying process [2].

In Fig. Figure 2 shows the dependences of changes in volumes V1 (salt water) and V2 (fresh water) in the process of desalination under the influence of a microwave generator with longitudinal electromagnetic wave mode at one of the resonant frequencies.



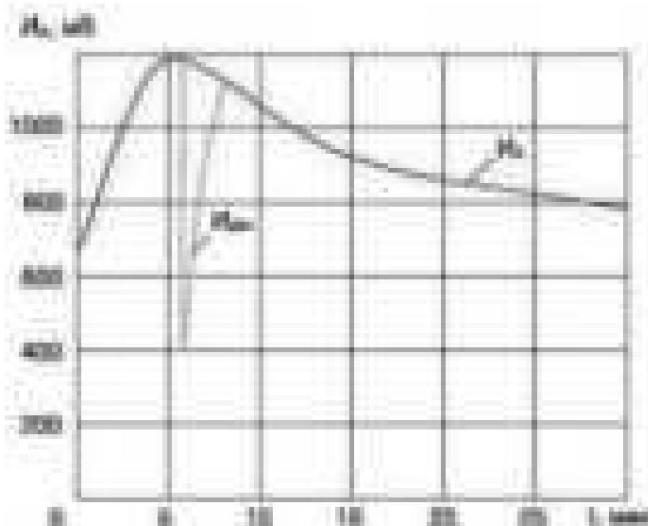
Rice. 2. Changes in the volumes of salt and fresh water during the desalination process.

In Fig. Figure 3 shows the time dependence of the change in the desalination rate, measured by the number of drops per second N (drops/s) at the outlet of the desalination unit.



Rice. 3. Change in desalination rate N , drops/s at the outlet of the desalination device and upon exposure to electric shocker N_{sh} .

In Fig. Figure 4 shows the time dependence of the voltage change on the detector, which measures the power of the longitudinal microwave electromagnetic wave transmitted through the entire structure desalination plant



Rice. 4. Change in voltage on the detector of power passed through the desalination plant longitudinal microwave electromagnetic waves in the process of desalination U_d and under the influence of an electric shocker U_{dsh} .

To confirm the physical effect of seawater desalination under the influence of Coulomb field created by longitudinal E-type electromagnetic waves at the peak of the process desalination switched on the discharge of a powerful transverse field E from the electric shocker (about 150 kV/cm) at the inlet of the desalination nanofilter. From our earlier conducted studies, it was known that the high-frequency transverse field E suppresses longitudinal E-type electromagnetic waves [3], which is clearly visible in the graph of the elapsed time Microwave signal of longitudinal EMF through the entire structure of the desalination plant (Fig. 4).

When the shocker is switched on pulsed at the moment of the peak of the desalination process ($t \approx 7$ min.), the power of the transmitted signal decreases by 5 dB (Fig. 4) and then slowly

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is restored, while the speed of the desalination process practically drops to zero (Fig. 3). This shocker experiment directly confirms physical concept of seawater desalination under the influence of longitudinal microwave E-type EMV.

When studying the degree of desalination of seawater in a given design the effectiveness of using microwave generators of different frequencies was studied and power. The measurement results are shown in Table 1.

Table 1.

Analysis of the table data confirmed the previously made assumption that nanotechnology of electrodynamic desalination of sea water using microwave generator is most successfully implemented at resonant frequencies with minimal losses, and to optimize the desalination process it is necessary selection of the optimal frequency for a given design.

In the best of the results obtained (No. 8), the amount of salts in the desalinated water is reduced by 70 times, which is approximately 10 times higher than the desalination results obtained in traditionally used technologies. It should also be noted that when exposed to resonance frequencies, the cluster structure of water is destroyed when powers of the order of 1 W, while transverse electromagnetic waves require power radiation of the order of 1 kW.

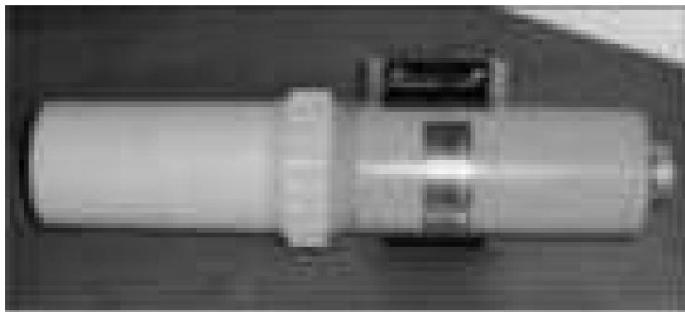
The investigated design of the desalination plant (Fig. 5) operates in the meter range wavelengths and can be used to produce desalinated water in volume about 1 liter per hour at low capacities, for example, when there is a power supply from a car battery.

To obtain large volumes of desalinated water in continuous mode with using powerful microwave sources, another design is being developed desalination plant

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The studies carried out demonstrated for the first time the functionality of nanotechnology for electrodynamic desalination of salt water. Creature nanotechnology is the use of longitudinal electromagnetic waves for electrodynamic (Coulomb) destruction of the cluster structure of water without heating it and “pushing” desalinated clusters through the nanofilter channels.

The developed design of the desalination plant (Fig. 5) ensures the production of 1 liter desalinated water per hour and can be powered by a car battery.



Rice. 5. Desalination plant with a capacity of 1 l/hour.

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Energy-information interaction between people and nature *

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Each element of the environment is a factor influencing a person. We assessed this impact, paying special attention to factors in the “non-living” environment (water, stones), living (trees of different types) and on the action of a complex of factors (places of power, pathogenic zones, sanctuaries, temples). A series of diagnostic methods, including GDV (bioelectrography) devices, assessment of heart entropy, dowsing. This message is based on dowsing technique for measuring the energy level of places of power (Table 1) and people tested (Table 2). First, about the terms: “norm” (Fig. 1 and 2). Is this the “norm”?

We experimented:

1. by the influence of water (Fig. 3, 4). Spring water improves the biofield, even better water from a holy spring and water with the addition of coral are effective calcium, balm of 25 herbs (10 drops per 150 ml of water);
 2. according to the influence of EAZ “Stone of the Blessed Virgin Mary”: it increases and aligns the biofield; 3.
- on the influence of GPZ and trees (oak and spruce) on humans (Fig. 5 and 6). GPZ reduces and distorts, and trees increase and align the biofield; 4. on the complex impact of the pagan sanctuary on men and women (m.b. Mokosh), trees on it (linden) and a cleansing ritual (there is an 8-minute film) and straightening the spine (Fig. 7 a, b). Powerful increase in biofield and alignment.

The results of EAZ action were studied during an expedition in the Verkhovazhsky region Vologda region July 7-12, 2009. There were several objects:

- a) a *mound near Verkhovazhye* - in case of strong distortion of the biofield, first increases the biofield (without correction, Fig. 8 a), and then straightens and harmonizes (Fig. 8 b). The visit to the mound took more than than 3 hours. By nature - “dynamic” (i.e. in motion). b) a *holy spring* in the same area. The subject is the same. Please note that after the action of the mound, the human biofield on the morning of the next day was much more even than the day before (Fig. 9). The field is more powerful after the source morning, initial, but less than after the mound. But more harmonized. c) the object “Crater” (Verkhovazhye) is characterized by the fact that this object has both a “+ zone” (crater edge) and a “- zone” (swampy bottom of the crater). At visiting the “+ zone” the biofield increased sharply (Fig. 10 a, 12), after 5 minutes

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- after entering the “-zone” the biofield sharply decreased (Fig. 12 b, internal circuit). After another 5 minutes of being in the “+ zone” again sharply increased (Fig. 12 b, external contour). However, such sudden jumps are bad affected the well-being, the subject’s heart ached. d) *birch grove with stones and boulders* (Verkhovazhye) smoothly and softly leveled biofield of the subject (Fig. 10 b).
- e) the influence of the EAZ (*the “Black Coast” training ground*) and *the holy spring* (Fig. 11). Biofield increases and harmonizes (dynamic EAZ visit) or simply harmonized (source). The same - the dynamics of the biofield of another subject (Fig. 13). Gradual, *smooth* increase and harmonization. f) *static 5-minute stay in the EAZ “Buried Idol”*. Sharp decrease and deterioration precisely because of statics (*stationary sitting*). Same This was also confirmed by the example of another subject (Fig. 15). Moreover, its original the biofield was small and after “Idol” the indicators dropped to *negative!* (Fig. 15 a, b).
- g) on the same day, the same subject visited another object, “*Blue Stone*” (“+ zone”). A sharp increase in the biofield. But the next two days, because of this sudden changes (“-” and “+” zones) she felt bad, i.e. even from the “+ zone” it can be bad if the increase in the biofield is sharp, to a large value (Fig. 15 c). h) the previous subject was untrained. If the action of the powerful “+ EAZ” (“Kurgan”, where at some points it even “knocks out” GPS and digital camera) is tested by a trained subject, i.e. certified dowsing operator, always ready to work and knowledgeable about the methods relaxation, then EAZ (in *dynamic visit mode*) acts on person is positive (Fig. 16).

conclusions

1. Examination of people using a complex technique (various instruments and dowsing) is undoubtedly preferable and more objective than one of methods. However, comparison of these methods gives similar results (GDV and dowsing, entropy of the heart and GDV, entropy of the heart and dowsing).
2. Any water affects the biofield: spring, balm, coral calcium, from a holy source, water when doused increases and harmonizes the biofield. Tap water degrades performance.
3. Objects - stones can both increase (“+ zones”) and decrease (“- zones”) the biofield. The biofield of the same subject may deteriorate or improve when visiting *the same object*, depending on whether the subject was *motionless* or *moving* during the experience.
4. Living objects (trees) restore, increase, harmonize biofield in all cases.

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5. EAZs can also reduce the biofield (" - zones ", "+ zones " when stationary in them situation, or visiting EAZ in winter, in frost, in the snow, when wet legs), and increase (in summer, dynamic visit, trained subject).

6. General conclusions:

There is a need for a new, scientific understanding of traditions, rituals, customs - their impact on human energy. It is necessary to protect and study the saints places, places of power and be able to assess their impact on each person and on the culture of the people as a whole. To do this, it is necessary in many places (if not all) to revive the institution of guardians of holy places. For such shrines are national treasure, regardless of their antiquity (paganism Stone Age or Middle Ages, Orthodox monuments or objects of other denominations). Therefore, both educational, patriotic and scientific work, and the creation of the "Fund for the Study and Protection of Sacred Places of the Motherland and peace."

7. The program of further work is as follows.

- 1) Creation and testing of instruments and devices for neutralizing geo- and technopathogenic zones.**
- 2) Cooperation and coordination of scientific and practical personnel (instrument specialists IGA-1, dowsing operators, doctors, geoecologists, biophysicists, historians, archaeologists, etc.). 3) Sacred places are national shrines. Therefore it is necessary creation of the "Fund for the study and preservation of sacred places of Russia and peace."**
- 4) Regular holding of conferences "Science, culture, traditions, healing, personality development."**
- 5) Creation of a program and teaching aid for competent use EAZ.**
- 6) Creation of a training group, training ground and base, training and experimental center for the study and development of EAZ (prerequisites and developments are in Vologda region - testing grounds "Kirillovskoe Highway" and "Sanctuary" Mokosh" near Totma).**
- 7) Conducting regular seminars, visiting lectures, graduation collections, atlases; courses under the government of the Russian Federation, training consultants and specialists.**
- 8) Revival of the institution of guardians of sacred places. 9) Creation of an eco-village and monitoring point, with a theme research on alternative energy sources (for example, Prasolov's solar panels, new wood-fired boilers, torsion installations), testing greenhouses and greenhouses with plant stimulation torsion bars, construction of wooden houses with a guarantee for 250-300 years using traditional technologies, etc.**
- 10) Long-term project in the village. Dairy Vologda region on the base VGSHA.**

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11) Coordinated work together with the Institute of Health and longevity in St. Petersburg. 12)

Development and implementation of tourist routes along sacred places.

13) Improving the spiritual and physical health of the nation, quality and number of children born - based on knowledge about the properties of sacred places

14) Ensuring national security (in the technogenic field, in areas of environmental management and economics, health and healing, preservation of national traditions and language, shrines and culture, in increasing the size and quality of the population, preserving borders and independence of the country, etc.). 15)

Classes of the "Bioenergetics" circle and the activities of "Biosphere" LLC.

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Table 1

Energy characteristics of the studied objects

Address of the object	Name date and time object research	Energy characteristics of the facility			Level gamma- radiation (μ R/hour)	Other
		energy activity level measured	framed V.N. Sochevanova (frame revolutions at 10 m distances)			
Vologda region, Totemsky district, near the river. Sukhona	Sanctuary (presumably the sanctuary of Mokosh, i.e. for women) (11.06.09, 12.15-12.50)	a) oval clearing 3x7 m, surrounded by linden trees: +35 points b) linden with the sign "pisti" - from the side of the sign -12 points - right +24 points - on the opposite side of the sign +36 points c) triple linden (with a woodpecker's forge): - on the northeast side +40 points. - from the southwest +42 points d) single linden: 0+3 points (background)	- - - in recalculation: -30. in recalculation: +35 +5	- - -	-12 rev. at 4 m. +14 rev. at 4 m.	
Vologda region, village Verkhovazhye	st. Coastal, residential house and garden		-	6-9	-	
Vologda region, Verkhovazhsky district	(07/07/09) Kurgan near the village. Verkhovazhsky district location + 50 points (07.07.09, 18.25)	a) north part in the area of the proposed b) southern part, near a mighty pine tree with a mark (it is possible that there was a pagan sanctuary here) c) NW part of the "gulbische" near the edge	+27 +12.5. +24.	10	18.25	
Vologda region, Verkhovazhsky district	Polygon "Black" shore" near the village. Chushevitsy (08.07.09, 13.00)		Background (\pm swing from side to side side) +24 (along the edge of the molar banks of the river Vagi, along the path)	14	Happy parko, with mornings - feathery claw-shaped clouds in the sky, halo during the day near the Sun	
Vologda region, Verkhovazhsky district	Saint Nicholas source (08.07.09, 16.22)	+37 points (above the spring water)	+24	18		

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Vologda region, Verkhovazhsky district	Test site "Crater" (07/09/09)	a) "+ zone" (in the upper part of the crater) +42 b) "- zone" (bottom of the crater, overgrown with sedge and alder) -40	+36 -36	The place where they were installed devices for measurements and where measured biofield, has background characteristics energy activity (+3 points) Energy
Vologda region, Verkhovazhsky district	Recreation area in birch grove near the turn to Olyushino (07/09/09)	a) a large birch tree with two girths (18 m high), age about 130-150 years +33 b) two birch trees to the right of the large birch tree +9 c) a gray granite boulder near the edge of the grove (height 80 cm, length 160 cm, almost round) +39 g) blue stone next to a granite boulder +15 d) background +5	- - - - - - - -	10 - - 25 - 16 - -
Vologda region, Verkhovazhsky district	Kurgan near the village.	a) north part +33 b) southern part +33 c)	+30 +27	places where carried out measurements: device (entropy hearts) +1.5 points; according to GDV- technologies +3 points; dowsing within this framework +3 points
	Verkhovazhye (10.07.09)	northwestern part, "gulbishche" +3	"frame swing", background	10.22
				11.12
				12.10
Vologda region, Verkhovazhsky district	Pagan idol in a hole 1.2-1.5 m deep (07.11.09, 10.00) Blue stone (5.0x2.5 m, stone height 0.5 m) (07.12.09, 12.12)	Energy of the idol stone: -13 points (Spanish frames); -10 revolutions (above the stone, Sochevanov frames) +33 points (at a distance of up to 2 m from the stone) + 12 points (2 m from the stone)	-26 (on the edge of the pit) +20 (at a distance of less than 2 m) +5 (at a distance of 2 m))	- - - Zone of influence stone about 1.5-2 m

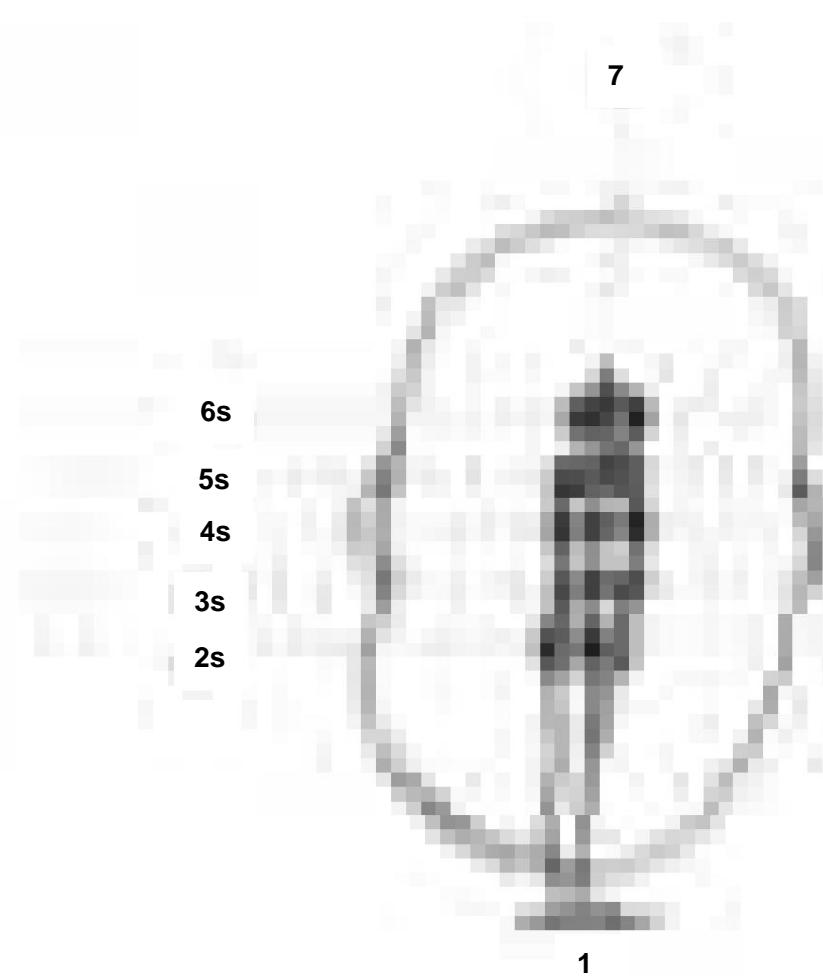
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table 2

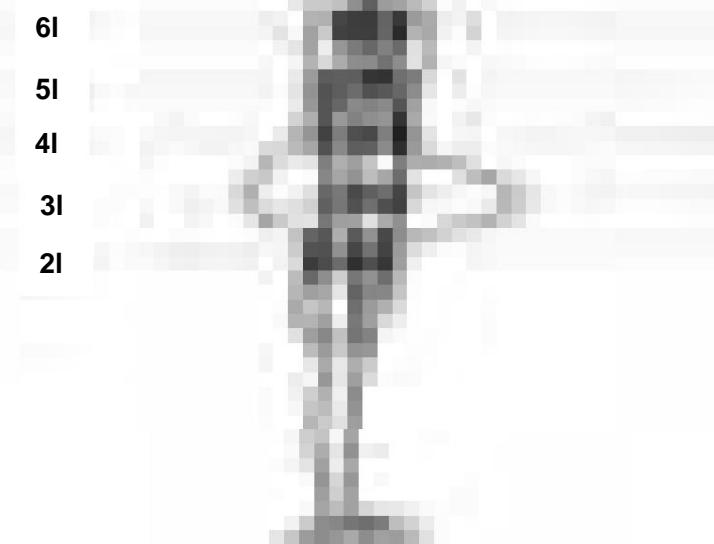
**Biofield of a “typical, apparently healthy, city dweller”
(averaged biofield of 20 subjects, - 25 measurements, - before they visited energy-active
places). Operator - V. Brunov, mathematical processing - N. Matveev.**

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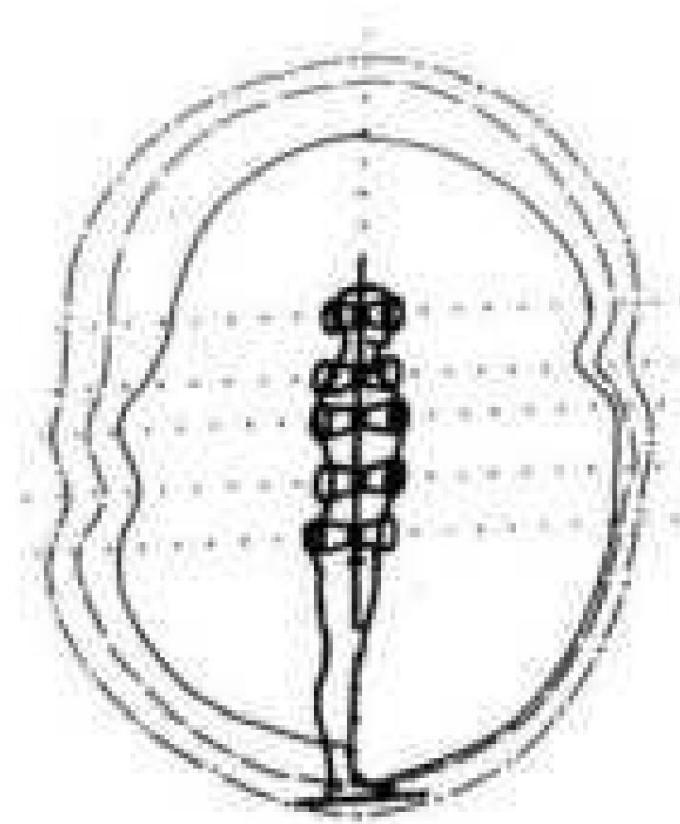
Rice. 1. Scheme of the biofield of a “typical, apparently healthy, city dweller” before visiting energy-active places
(norm)



Rice. 2. Individual biofield of an apparently healthy resident of a large industrial city before visiting him
energy-active places (Verkhovazhye, 07/10/09)

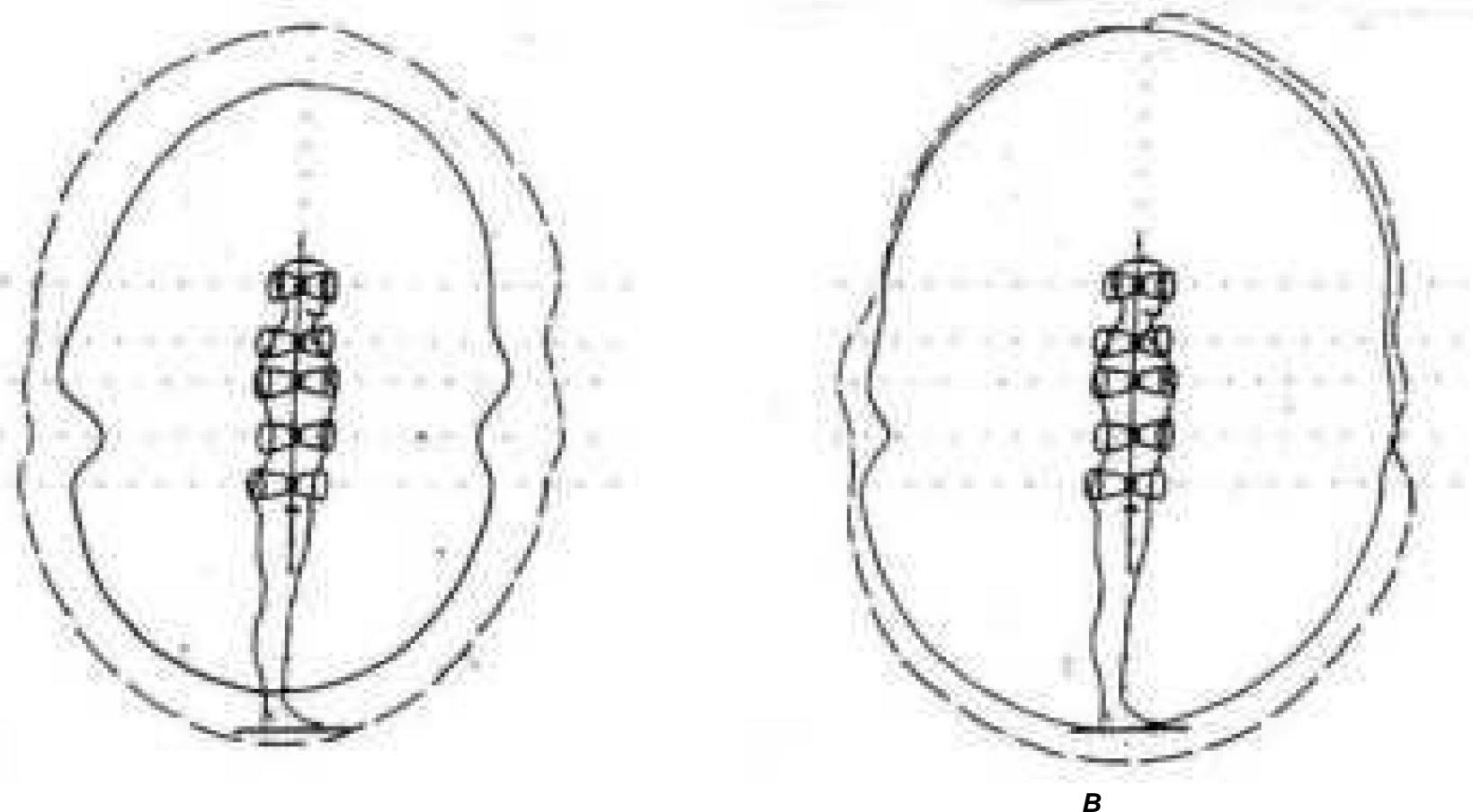
— ideal biofield
- - - - deviations from ideal

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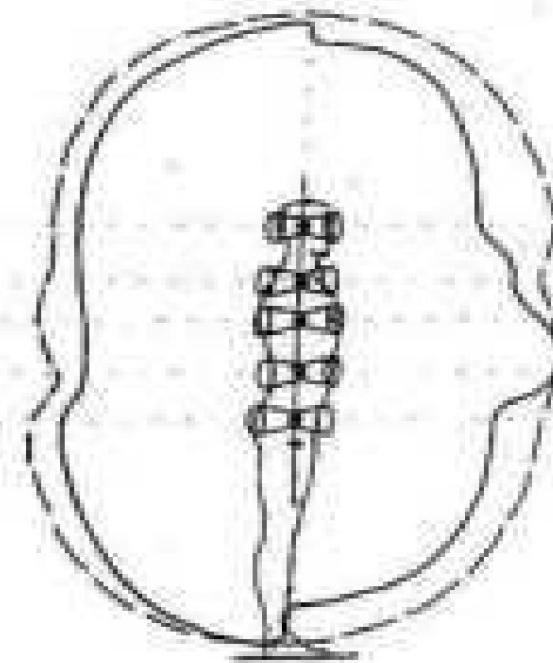
Rice. 3. Experiment (01/17/09, Vologda) to identify the influence of the information properties of water on humans. Biofield of subject No. 2. The solid line shows the border of the biofield before the experiment, the dotted line shows after drinking spring water, the dash-dotted line shows after drinking adding coral calcium

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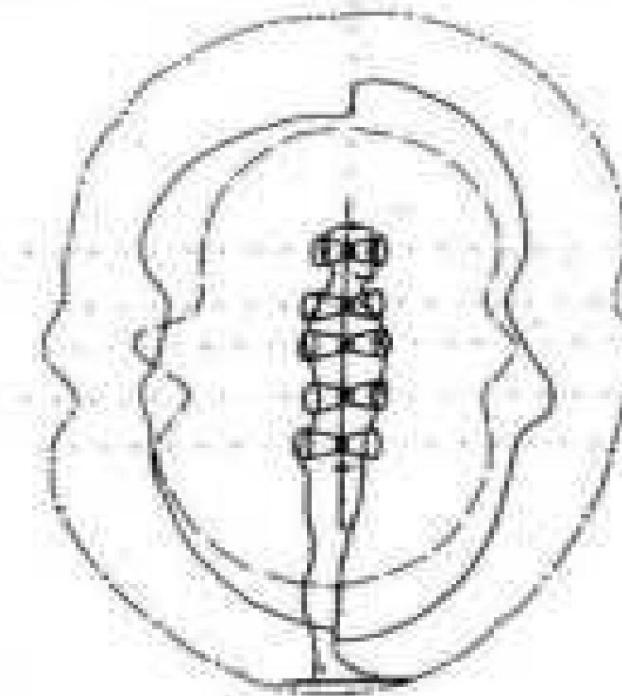


A Fig. 4. A - experiment (05/06/09, Vologda region) to identify the effect of dousing with water from a holy spring on a person. Biofield of subject B.A. The solid line shows the border of the biofield before dousing, the dotted line shows after dousing; B - experiment (05/06/09) to identify the influence of the “stone of the Most Holy Theotokos” on a person. Biofield of subject B.A. Solid line - before sitting on a stone, dotted line - after sitting on a stone for 10 minutes

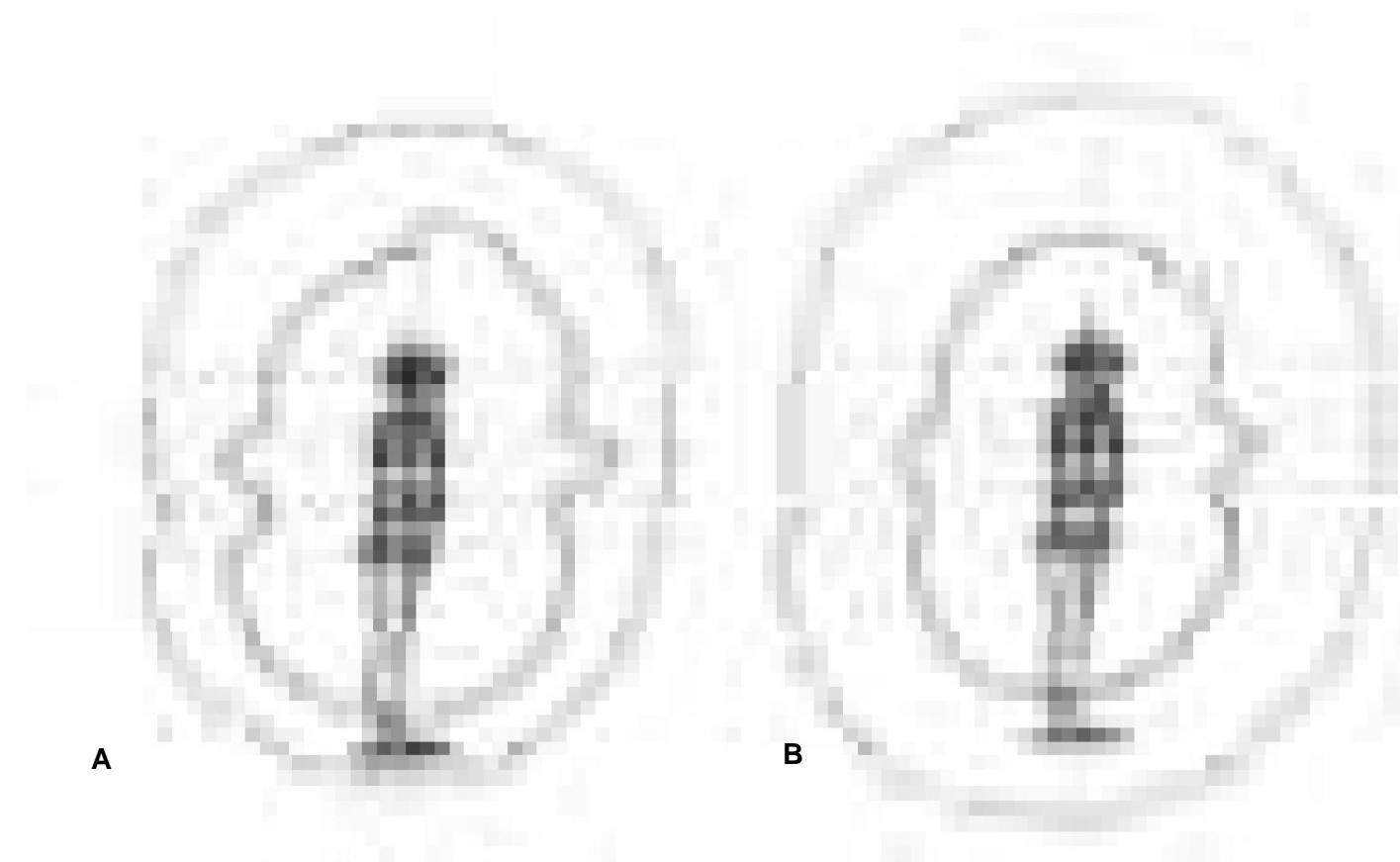
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Rice. 5. Experiment (05/16/09, Vologda) to identify the influence trees (pedunculate oak) per person. Biofield of the subject B.N. The solid line shows the border of the biofield before exposure under an oak tree, dotted line - after a 10-minute exposure under an oak tree.

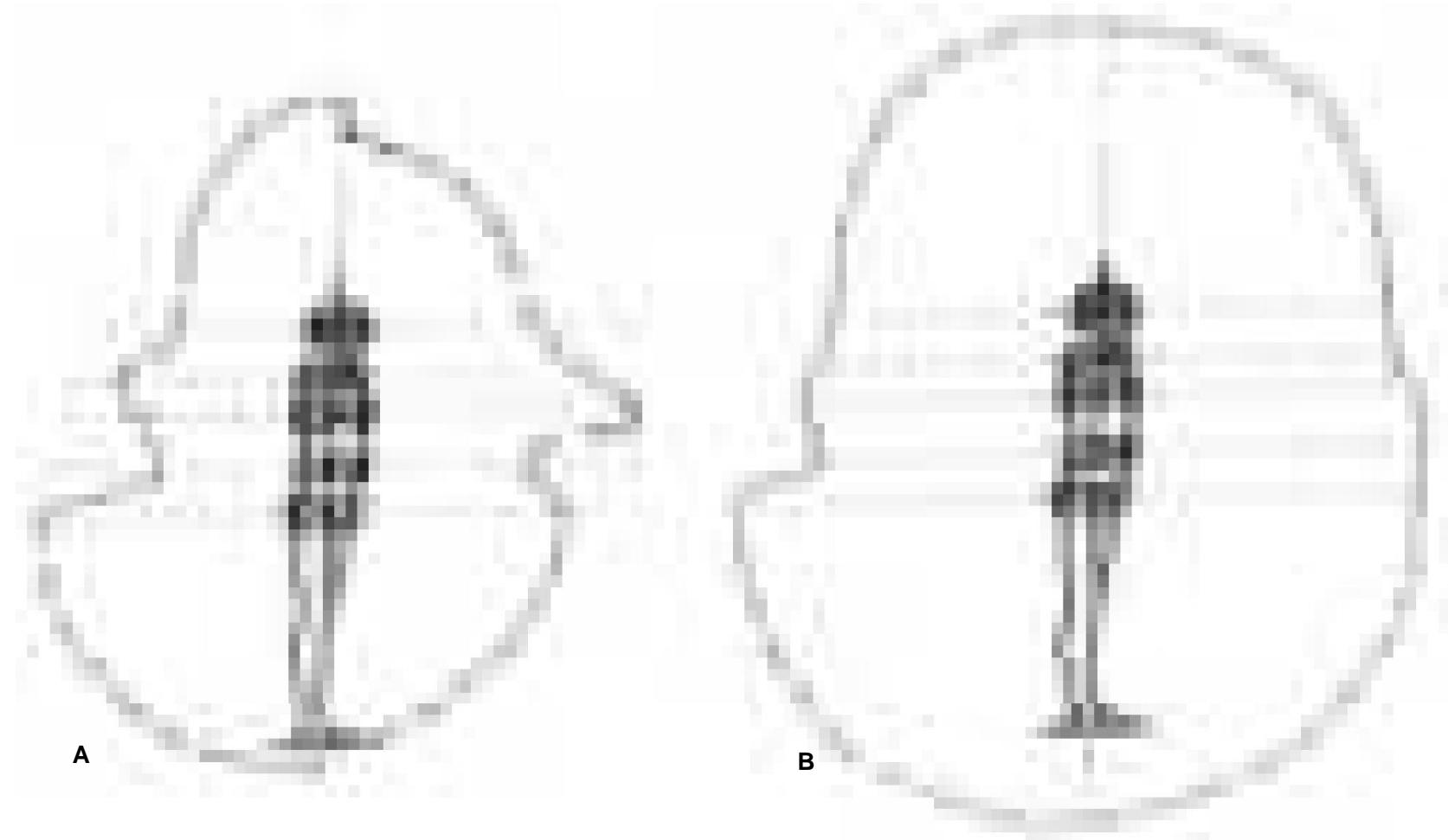


Rice. 6. Experiment (01/18/09, Vologda, DOSAAF airfield) to identify the influence of the geopathogenic zone and trees (spruce European) per person. Biofield of subject T.K. Solid the line shows the border of the biofield before the experiment, the dotted line shows after work in a geopathogenic zone, dotted line - after relaxation under the spruce for 10 minutes.

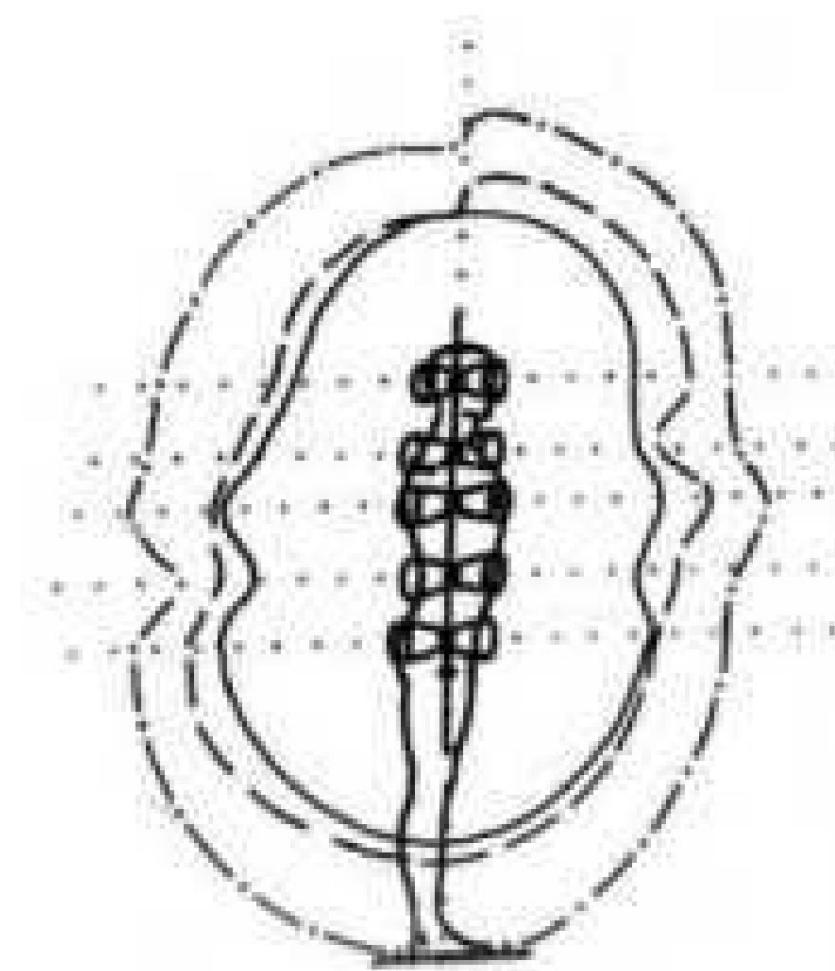


Rice. 7. Identification of the influence of the ritual at the sanctuary (06/11/09, Totemsky district, Vologda region) on people. The solid line shows the border of the biofield before the ritual, dotted line - after the ritual. A - influence on a man (K.S.), measurements at 11.25 and 11.35, respectively; B - influence on a woman (G.V.), measurements at 11.02 and 11.12, respectively.

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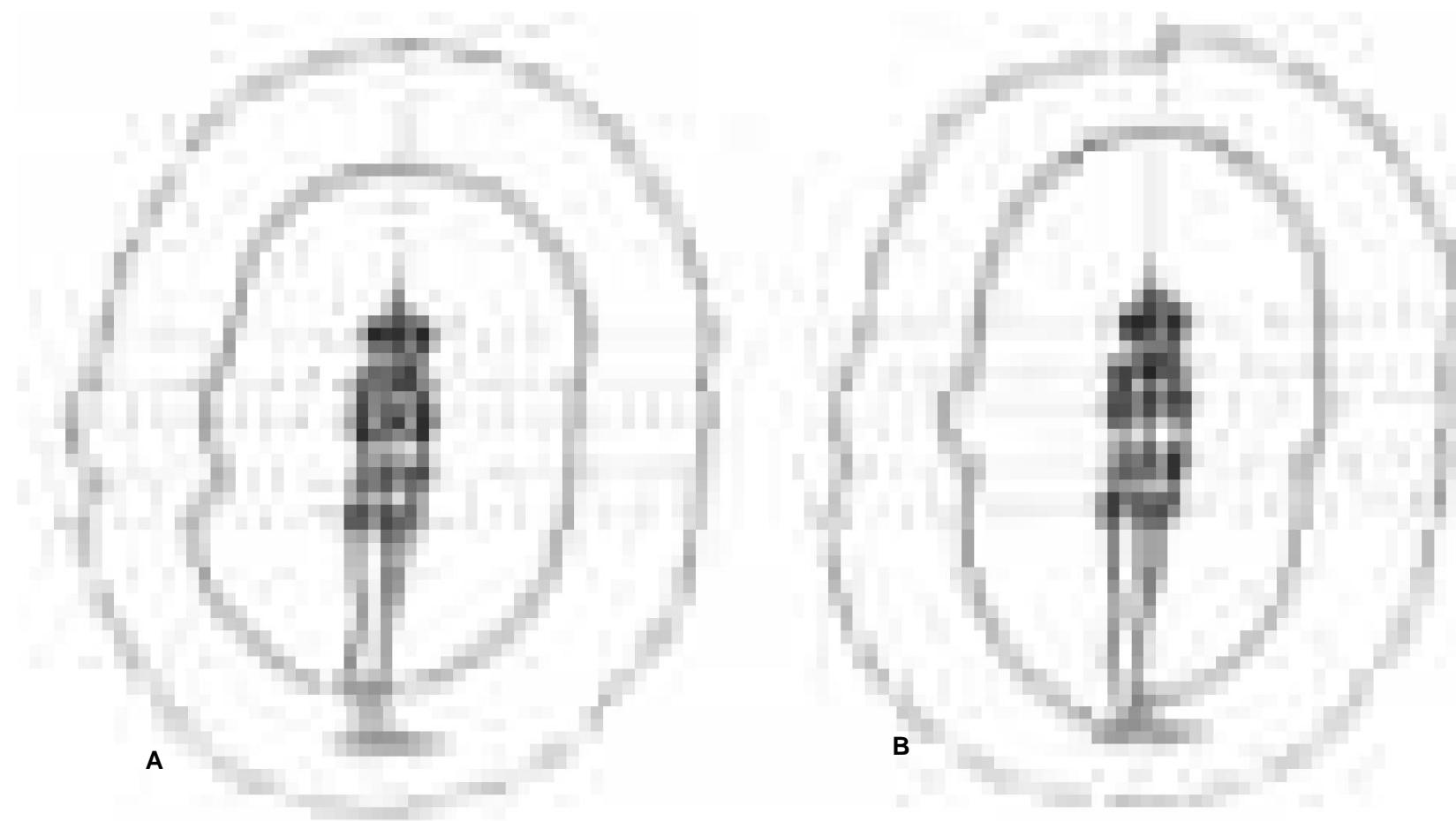


Rice. 8. Identification of the influence of objects on the mound (07/07/09, Verkhovazhsky district of the Vologda region) on a man (P.V.) A - biofield an hour after the start of the excursion (measurements at 17.10, and the northwestern part of the mound, outside the energy-active zone) ; B - biofield after two hours of excursion (measurements at 18.00, and the southern part of the mound, in the energy-active zone).

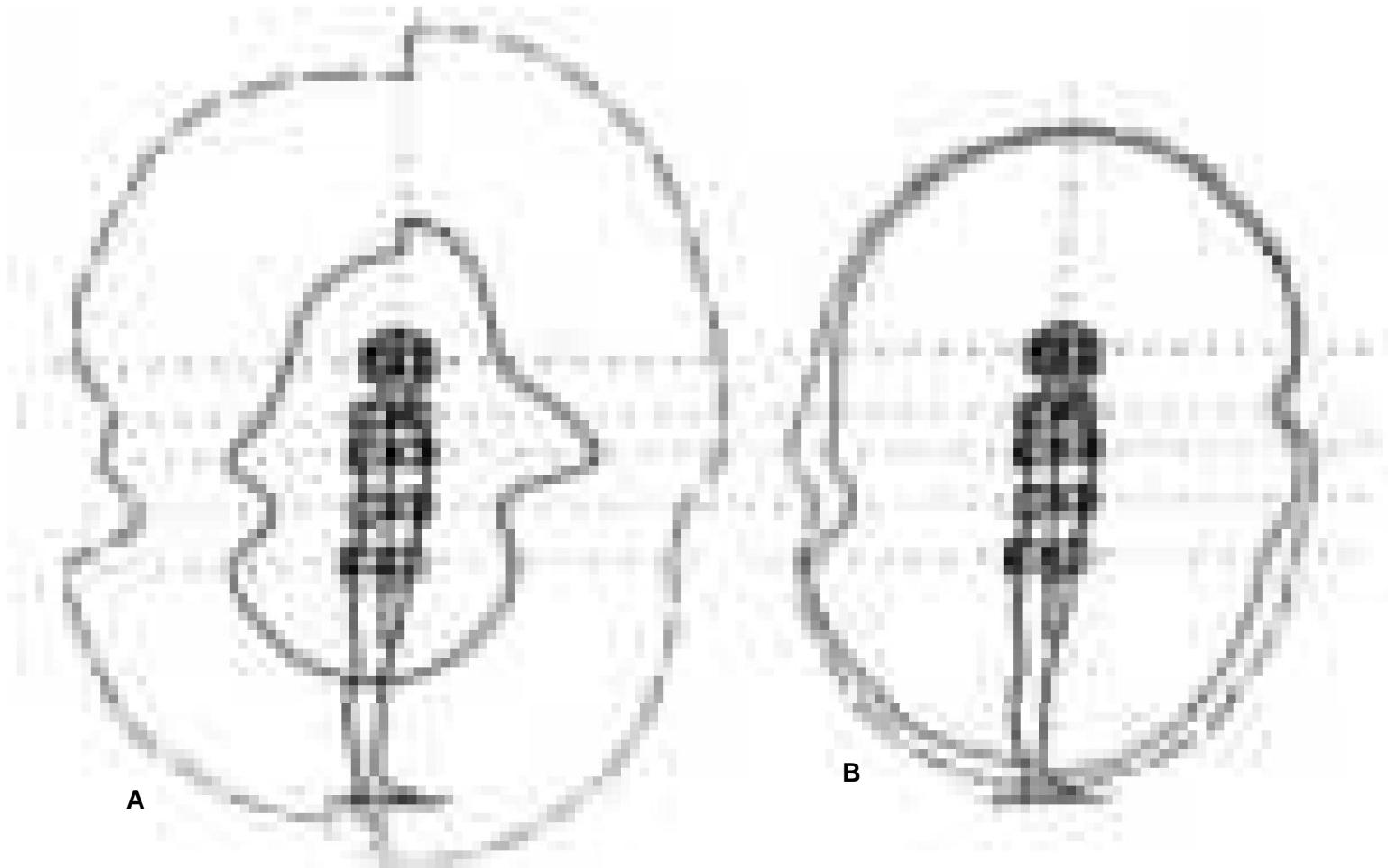


Rice. 9. Identification of the influence of visiting a holy spring (07/08/09, Verkhovazhsky district, Vologda region) on a man (P.V.).
The solid line is the border of the biofield in the morning (7.20), at
home, after sleep. The dotted line is the border of the biofield a
16.47, before visiting the source. The dashed line is the border of the biofield at 17.37, after visiting the source.

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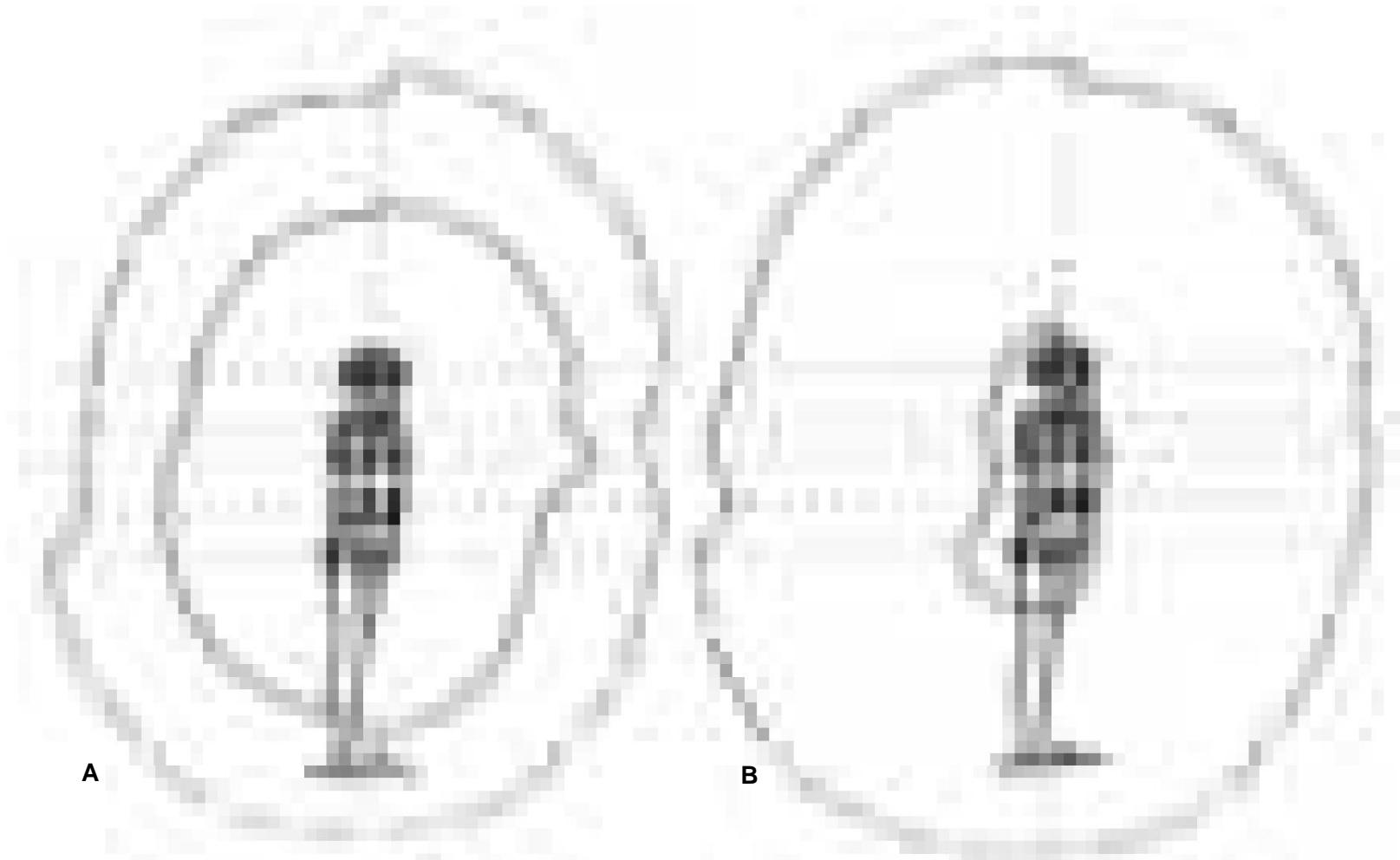


Rice. 10. Identification of the impact of visiting an energy-active zone (07/08/09, Crater test site, Verkhovazhsky district, Vologda region) and a birch grove (07/08/09, Verkhovazhsky district, Vologda region) per man (Z.N.). A - influence of the landfill. The solid line is the border of the biofield before visiting the EAZ (11.22), the dotted line is after the EAZ (12.12). B - influence of a birch grove. The solid line is the border of the biofield before the grove (15.00), the dotted line is after the grove (15.21)

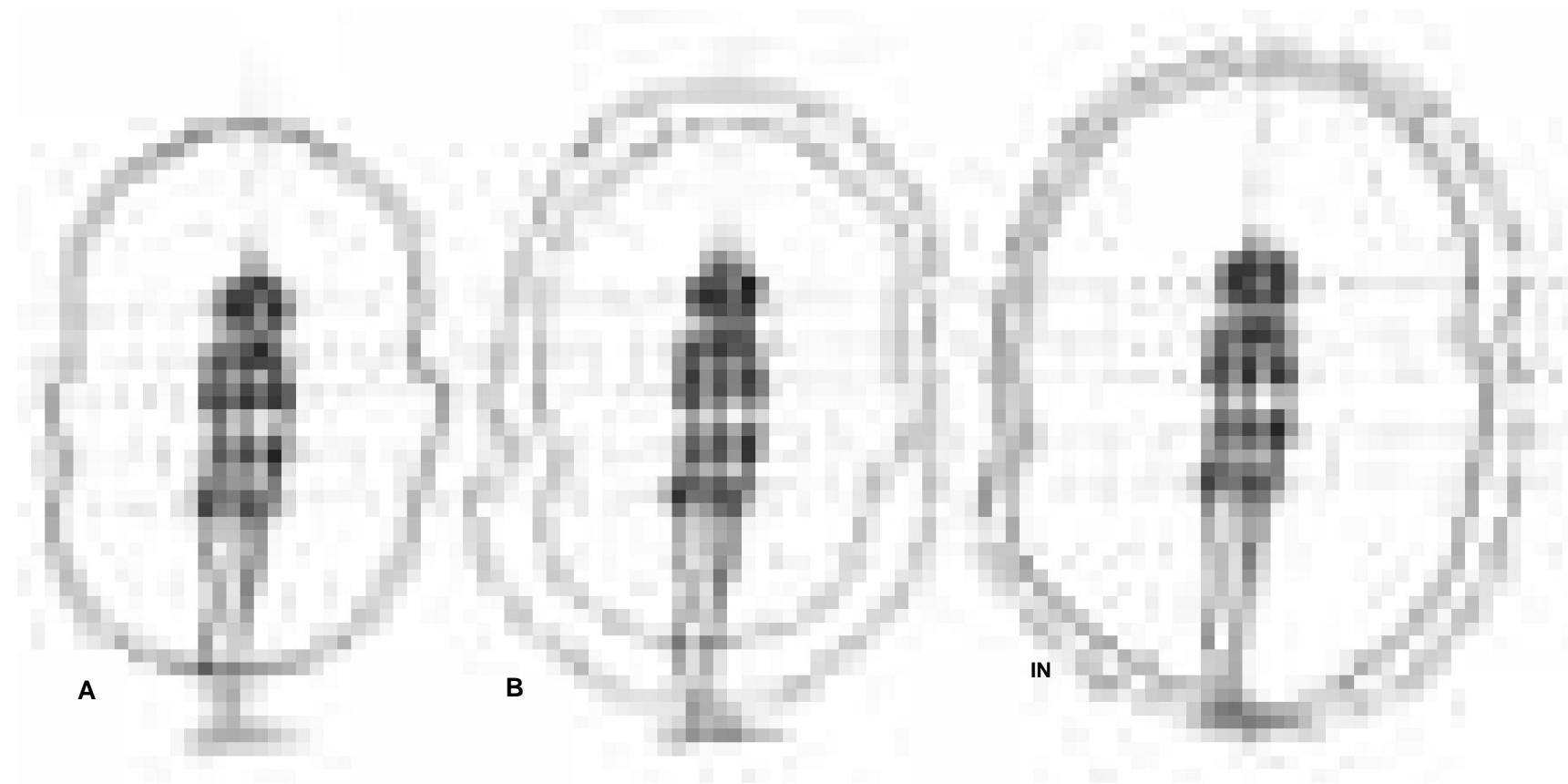


Rice. 11. Identification of the influence of a visit to an energy-active zone (07/08/09, the "Black Coast" test site, Verkhovazhsky district, Vologda region) and a holy spring on a man (Z.N.). A - influence of EAZ. The solid line is the border of the biofield before the EAZ, after driving a car in difficult conditions, the dotted line is after the EAZ (13.10, exposure in the "+ zone" 10 \ddot{y}). B - influence of the source. The solid line is the border of the biofield before the source (16.00), the dotted line is after the source

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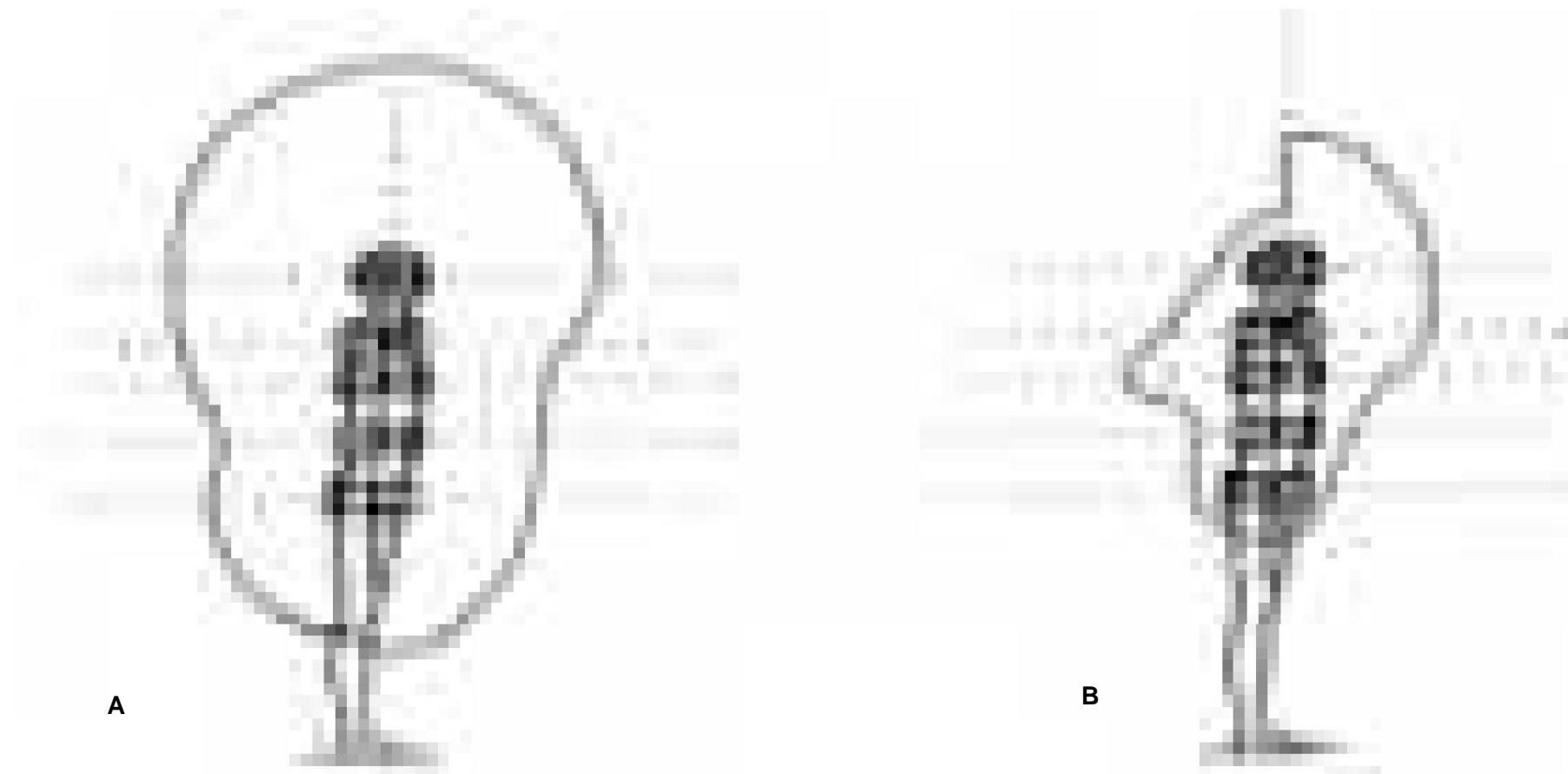


Rice. 12. Identification of the impact of visiting an energy-active zone (07/09/09, Crater test site, Verkhovazhsky district, Vologda region) on a man (D.A.). A - influence of the “+ zone”. The solid line is the border of the biofield before the EAZ (12.23), the dotted line is after the EAZ (12.59). B - influence of the “- zone”. The solid line is the border of the biofield after the “- zone” (13.10), the dotted line is after relaxation in the “+ zone” (13.17). Exposure in the “+ zone” and “- zone” 5 $\ddot{\text{y}}$ each



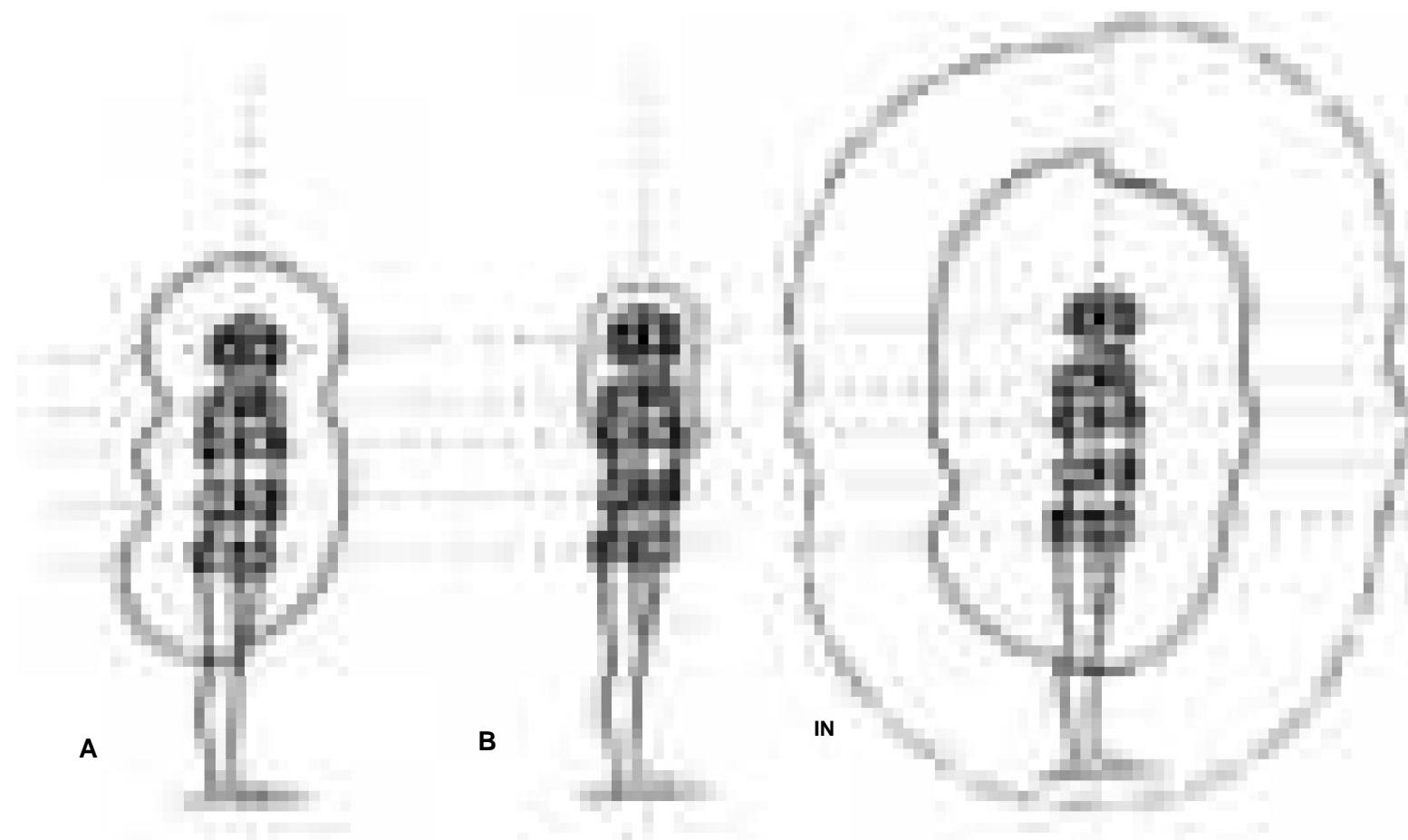
Rice. 13. Identification of the impact of visiting energy-active zones (07/08/09, "Black Coast" test site, Verkhovazhsky district, Vologda region) on a man
(B.V.). A - the border of the biofield in the morning, at home, after sleep (7.20). B - the influence of the EAZ "Black Coast", the dotted line is the border of the biofield before visiting the EAZ (12.05), the dashed line is the border of the biofield after a dynamic visit to the EAZ. B - the influence of visiting a holy spring, the solid line shows the border of the biofield before visiting the holy spring (16.40), the dotted line - after a dynamic visit to the source (17.43).

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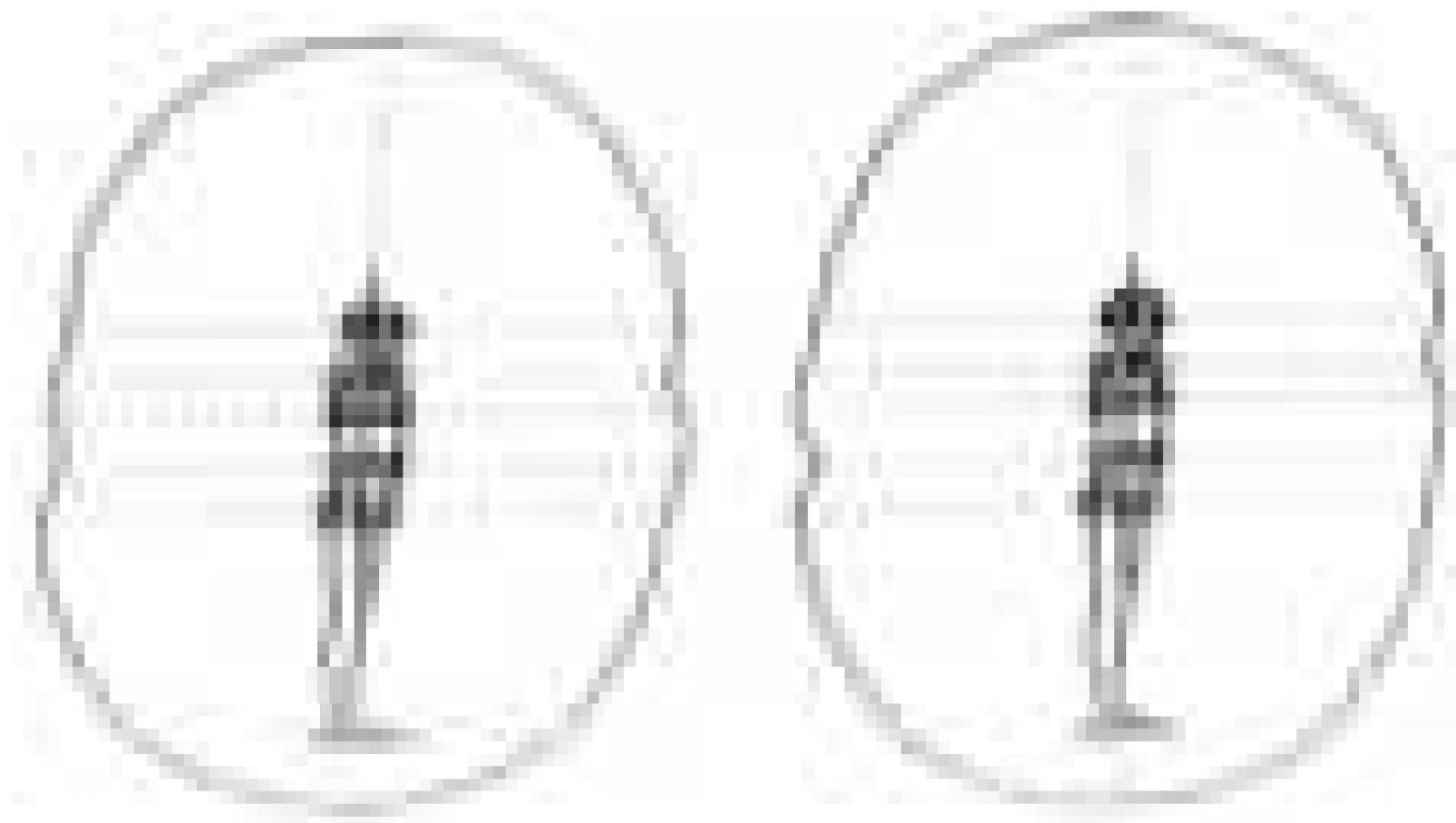
Rice. 14. Identification of the impact of visiting an energy-active zone (07/11/09, the “Buried Pagan Idol” object in the Verkhovazhsky district of the Vologda region) on a man (B.V.). A - the border of the biofield before visiting the object (9.16). B - the border of the biofield after sitting motionless on a stone (9.20 - 9.25).

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Rice. 15. Identification of the influence of EAZ on a woman (K.T.) (07/12/09, Verkhovazhsky district, Vologda region) A, B - object "Buried pagan idol": A - border of the biofield before visiting the object (9.38); B - the border of the biofield after sitting motionless on a stone (10.42, exposure 5 μ); B - object "Blue stone". Solid line - biofield border before visiting the object (11.23), dotted line - biofield after dynamic (in motion) contact with the object (12.12, exposure 5 μ)

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Rice. 16. Identification of the influence of EAZ on a man (B.V.) (07/07/09, object "Kurgan", Verkhovazhsky district, Vologda region). On the left is the biofield after an hour and a half dynamic stay on the mound (with work). On the right is the biofield after more than two hours of work on the mound.

On the energy-informational impact on people of sanctuaries located near Sochi*

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Vologda State Technical University

From August 25 to August 29, 2009, during the conference "Torsion Fields and information interactions", a series of experiments were carried out on studying the impact of various devices, techniques, and natural objects on people. Measurement of the characteristics of the biofield of volunteer subjects was carried out using dowsing L-shaped frames (the so-called "Spanish"), equipped limb of 36 divisions. Detailed technique for measuring chakra energy and images biofields on chakroaugram diagrams are described by me in previous publications (Brunov et al., 2005; Brunov, 2006), as well as in the abstracts of the mentioned conference. Therefore, in this post I will not cover this technology in detail.

I will only say about *control over experiments*. On the first day of the conference, while demonstrating measurements of the biofield of one of my colleagues using the IGA-1 device, I was proposed to measure the biofield of the same subject using dowsing frames (Fig. 2 a). "Instrumental" and "framework" measurement results turned out to be very close. On the third day of work (08/27/09), when visiting the "Circassian Stone", Yu.P. Kravchenko asked me to use frames to find and outline the local an anomaly near the Two Thrones. I found her. The size of this circular spot turned out to be about 1 sq. meters. Yu.P. Kravchenko confirmed the presence and size of what I discovered anomaly, saying that he found it in 2008 with the help of IGA-1.

I would like to express my gratitude to my colleagues G.T. Nazhimova, who conducted the sessions healing meditation, and the organizers of the conference Yu.P. Kravchenko and V.A. Zhigalov, who included a trip to Sochi sacred sites in the work plan. Gulzhan Turdymuratovna kindly agreed to monitor the biofield measurements dowsing frame using the IGA-1 device (phasarometer). And Yuri Pavlovich and Vladislav Anatolyevich continued the glorious traditions of Barnaul "BEIT" congresses, where we not only listened to reports, but also participated in laboratory and field experiments. I sincerely thank S.Yu. Kravchenko for materials on Sochi dolmens sent by her by e-mail. And further Many thanks to all conference participants for the calm, friendly tone, suggestions for improvement and constructive criticism during time for reports, discussions, round tables.

Now about the stages of research:

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1. *Testing of the protective device from Spinor (Ukraine)* is presented in Fig. 1. It can be seen that the device normalizes the contours of the biofield, eliminating or smoothing out “dips” and irregularities.
 2. *Testing the effectiveness of collective healing meditation on the subject (No. 10)*. They are shown in Fig. 2. I note that Measurements of the energy level before the meditation session were: the leader had 11 points, assistant presenter +6 points, audience in the Luch cinema hall +6 points. After the session, all three parameters leveled out to +18 points, i.e. For for the leading ones increased by one and a half times, and for the rest - three times. Same the level of +18 points was for the presenter and the audience and during the “round table” in the afternoon of August 26, in the same hall. However for for test subject No. 10, the measurements were higher: his biofield after meditation increased from +6.5 +12.5 to +25 +26 points. And it leveled out. his characteristics measured on August 27, 2009 using frames Sochevanova: before the report (at 11.30) +6 frame turns, during the report +24 frame turns. This three to fourfold increase can be explained by the fact that the audience shows increased sensitivity to the subject or speaker. attention. Much less impact of collective meditation on a subject who has an initially powerful, less distorted than others townspeople, aura (Fig. 3)
- a). 3. *Work at sanctuaries*. Unlike the first two stages of work carried out in indoors (conditionally - “laboratory”), sanctuaries are natural objects, and their impact on people is multifactorial.

I note that if the sanctuary complex “Circassian Stone” is noted in the catalog Sochi dolmens sent to me by S.Yu. Kravchenko, then the sanctuary “Stone mirror” is not in this catalogue. Yu.P. Kravchenko showed us this stone slab from sandstone during an excursion on August 27. But there's nothing special for tourists on it. noticed, because it was already late, the sun was setting behind the mountains, we were in a hurry to go home. However, returning to the object to re-measure the angle of inclination of the slab according to the horizon (it turned out to be about 50°, not 45°, as I was told primarily), I, looking along the plane of the “Stone Mirror” from south to north, in the oblique lighting I noticed relief figures. Approaching from the front, eastern hand, upon a more detailed examination I discovered a “solar sign” - a circle with a diameter of about 30 cm in the center of the slab, and to the right of it and slightly above - a pentagonal an asterisk and a little higher and further - a second circle, about 15 cm in diameter (sign Moon?). I called two colleagues who were still not far away. And together we discovered a third “small” circle to the left of the Sun and some signs similar to runes. Thanks for your help O.B. Nefedova and A.I. Poletaev. Precisely because of the found In the evening of signs, we went to the “Stone Mirror” a second time on the morning of August 29, when the sun illuminated the front, eastern side of the stone. In the morning we (a group of 7 people) worked intensively and purposefully, measuring energy characteristics objects (Fig. 4 and Table 1) and their impact on different subjects (Fig. 3 b, 5-9). For We present a comparison of the energy characteristics of sacred objects in the Vologda region and Sochi table 2 and 3. It can be seen that the maximum and average values of inanimate and man-made objects are close. However, near Sochi, a number of living objects have higher energy levels. Except Moreover, it was possible to find “right-handed” and “left-handed” living objects, and also monitor the daily dynamics of some of them.

I sincerely thank S.I. Olenova for that complex, not accessible to everyone researcher for the work she performed at the Stone Mirror site. She entered a meditative state and, with her eyes closed, "read" the signs from the stone, sketching them in a notebook (Fig. 4 b). Perhaps, subsequently, the signs read by her will coincide with those that I was able to capture with a video camera on the surface of the stone.

This is why the name "Stone Mirror" came about. About 10 meters from the dug-in At the corner of the stone (Fig. 4), I discovered another sandstone slab a little lower down the slope. It was smaller and half hidden in the ground. On its visible surface it is clear the wavy "chips" that are produced by lateral impacts of the cutter were distinguished or chisel when it lies almost parallel to the surface being processed. The idea came to me that on the found slabs people first roughly leveled surface, chipping away excess layers and mounds. Then they were dug in with the required exposure and at the desired angle. And finally polished with soft sand sandstone on a buried product, giving it the appearance of a "mirror" and applying sacred symbols. And three concentric semi-arcs and a "focus" in front of the "Stone Mirror" I discovered using dowsing.

conclusions

1. The energy (dowsing) characteristics of an inanimate object can change sharply both depending on the time of day and on exposure, from presence or absence of shadow (Table 1). The amplitude of changes in this case can be 50-fold or more (from -74 to +77 conditional points). Meanwhile, a person is "designed" by nature to withstand without visible harm 10-fold loads on a number of factors.
2. The energy characteristics of living objects also depend on the time of day, but change more smoothly (from +75 +76 conditional points in the evening to +180 points during the day (Table 1, yew).
3. The energy characteristics of living objects are much less dependent on exposure or the presence of a shadow on an object than the characteristics of inanimate objects (Table 1, eucalyptus, hornbeam with 6 girths).
4. The energy characteristics of living objects depend on their age and positions in the biogeocenosis (Table 1, single yew, old and yew alley from younger trees: +180 and +140 points).
5. "Man-made" objects (Stone Mirror shrine) may have several "spheres" (semicircles), different in energy level, and "energy centers" or "foci" with increased levels, as before object, and on the object itself (Table 1, "Stone Mirror").
6. Copies and originals of man-made objects can differ greatly in energy level (Table 2, copies of frescoes on foam plastic in the museum, +3 points and +40 +41 points for the iconostasis in an existing church) or be similar, in the case of color photocopy (Table
- 2). 7. Man-made objects (altars and domed spaces of churches, belfries) can be comparable in dowsing characteristics to the most powerful natural objects (Table 2, +140 points altar

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churches in the Ferapontov Monastery, +180 points yew, +175 points hornbeam (?), +140 points yew alley in Khostinskaya grove - table. 1, +180 points "Trace stone" on Mount Maura in the Vologda region).

8. Natural objects of central Russia and the south can be equivalent in strength (Table 1 and see previous paragraph, Vologda region). 9. What is important is the synergistic effect of objects' influence on a person, duration, "softness" or "sharpness" of the impact, the group effect. 10. Sanctuaries near Kudepsta require close scientific, comprehensive study (including with the help of geo- and biophysical instruments, medical and other equipment, dowsing, photography, excavations, deciphering, and reliable security. After all, the "Double Throne" already has fresh inscriptions scratched or painted with white paint. 11. It is impossible to entrust the removal of such inscriptions to a non-specialist, because under them there may be ancient signs that have not yet been discovered. 12. To conduct excursions to the named objects, competent, trained guides are required. Now "homemade" lectures at the objects carried out by random persons who are not responsible for the high level of their stories, nor for the objects

themselves. 13. Shrines for healing can be used, again, with the participation specialists in dowsing, medicine, instruments needed for monitoring the state of the environment and for healing practices. The approach must be strictly individual, with observation of each patient and before, during and after visiting sanctuaries. The reasons are obvious:

- a) different levels of health, sensitivity, and tolerance of patients; b) different states of objects, which depend on the season, time of day, weather, electrical phenomena in the atmosphere and earth's crust, influence activity of faults, the Moon, the Sun and planets, deep space and a number of other reasons known to specialists; c) the effect of the group, because from the composition and mood of the group and each of its participants. A lot also depends on whether people will bring harm or benefit to each other; d) group leaders must be able not only to select its composition according to signs of compatibility, tolerance, etc., but also to be able to provide necessary emergency assistance;
- e) each member of the group formed by the leader must be instructed about behavior on the route and objects and give a subscription about their responsibility (including material and legal) in case of violation of the rules. In case of non-compliance with the rules and instructions the manager is not responsible for health and well-being citizens.

14. When using shrines for healing, the optimal ones are loads leading to a gradual, many-hour increase in the biofield up to +18 +20 conditional points, with simultaneous harmonization and alignment of the biofield (Table 4, Fig. 5 a, b; 6)
- a. 15. Loads leading to a sharp "explosive" increase in the biofield can only be withstood by trained, prepared people without harm, and even then not all. The level of a person's training can be assessed by his biofield, before the patient visits the facilities.

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- 16. Under loads that increase the biofield to 35-40 points, many deharmonization sets in. Even for most trained people phenomena such as apathy, fatigue, reluctance may be observed watching anything else from the sights of the route is a headache or dizziness, pain in the heart or back, sleep disturbance, partial amnesia. Similar phenomena may continue for another two to three days.**
after a single route.
- 17. People who consciously prepare to visit sanctuaries passing route under the supervision of specialists monitoring their inner condition, the results can be fantastic! Yes, one of ours colleagues on the eve of the conference received assurances from doctors that she it is necessary to register a second disability group. However, caring and professional attitude towards oneself, as well as natural factors (sea, mild southern climate, good weather, wonderful forests, rivers, stones), surrounding friendly people, professional demand, help from a dowsing operator - all this led to the fact that on August 27 she climbed the mountain with difficulty, and already on September 5 she managed to make a swim in the sea! According to her, her condition is wonderful, she is healthy!** 18. With all due respect to people who design instruments, systems, devices for detecting, neutralizing or compensating pathogenic factors, I am still glad that these same people understand the huge, great and the irreplaceable role of Nature in the physical and spiritual healing of man. In his formation as a Personality, in the formation of creative teams, in preserving age-old traditions of cooperation with Nature, competent using both her and our own human resources!
- 19. Everyone needs to develop and improve their natural abilities and data.**

Literature

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- 2. Brunov, V.V. The influence of geo- and technopathogenic zones on various aspects life activity. - M.: Amrita-Rus, 2006. - 464 p.**

Table 1

**Energy characteristics of the studied objects located near Sochi
(cameraman V.V. Brunov)**

Address of the object	Title, date and time research object	Energy characteristics of the facility		Other	
		Energy activity level measured			
		Spanish frame (frame rotation angle in conditional points)	frame V.N. Sochevanova (frame revolutions at 10 m distances)		
Krasnodar region, vicinity of the village. Kudepsta	Sanctuary-altar "Circassian stone" 08.27.09, 17.00 a)				
	sanctuary "Two Thrones" north from sides of thrones	-33		in the shadow	
	from South	+42		in the sun	
	on top, on sacrificial surfaces	northern sacrificial deepening +32 south sacrificial deepening +33 "ridge" between them +68		in the sun	
	b) sanctuary near "Two thrones", south of them			on the stone image arrows or ax (on SW side)	
	from the north sides	-19	-47	in the shadow	
	from the southwest	+41		in the sun	
	c) sanctuary "Stone mirror", 19.00	on the first half-gum arc; from the east side "mirrors" +36		2 m from slabs - "mirrors"	
Khostinskaya yew-boxwood grove	08/27/09, 19.42 vine with a "left" twist -42 19.47 yew 19.57 yew in 2.2 girths			in the shadow	
	+75 12.12 the +76			in the shadow	
	same yew in 2.2 girths			in the shadow	
Khostinskaya yew-boxwood grove	08.29.09,	+180			
	12.15 Yew Alley from younger trees +140				

Continuation of the table. 1

	08.29.09, 10.00-10.55 sanctuary "Stone mirror" a)			
	in the center front part slabs - "mirrors" at sun sign	+74		eastern exposition, in the sun
	b) on the front (eastern) side of the stove north of the sign sun	+68		eastern exposition, in partial shade
	c) on the front side of the stove further south sign sun, near the edge slabs	+36		eastern exposition, in the sun
	d) from the south slab ribs	+46		in the sun
	d) from the back sides of the slab	-74		western exposition, in the shadow
	e) in "focus" in front "Stone mirror", inside the first semicircles	+77		on level ground herbal site, in the sun, in 1.5 m from slabs
	g) on the first arc-semicircle	+32		on level ground herbal site, in the sun, in 2 m from the stove
	h) on the second arc - semicircle	+30		on level ground herbal platform, in the sun, in 4 m from the stove
	i) on the third arc-semicircle	+29		on level ground herbal site, in the sun, in 6 m from the stove
Khostinskaya yew- boxwood grove	08/29/09 11.00-11.37 a)			
	30 m north from sanctuaries "Stone mirror"	^{wm} +105	west	V shadows; side rotated to the path

Torsion fields and information interactions – 2009**End of table. 1**

	eucalyptus, 2 girths, high 25-30 m	from north-north- east +110		from the trail
	b) near sanctuary "Two throne", north From him, Slope - tree in six girths (hornbeam?)	from the southeast +145 +34		solar side
		from the southwest +175 +34		in the shadow

Table 2
Results of measurements of energy activity of objects in the national park
“Russian North” of the Vologda region from 06/07/09
(dowsing with Spanish frames, cameraman V.V. Brunov)

No. No.	An object	Energy measurements (in points)
Temple with frescoes of Dionysius in the Ferapontov Monastery (about 14 hours) Altar Under the		
1.	drum of	+140
2.	the dome of St. Felony.	+140
3.	Martinian Cancer St. Martiniana	+43
4.	Podriznik Color photocopies	+43
5.	of frescoes	+41 +43
6.	(scale 1:4) Copies of frescoes on foam plastic Goritsky	+41 +43 +3
7.	Monastery (about 13 hours) At the	
iconostasis in the “home” (current) church At the		
8.	altar, outside the restored church, on	+40 +41
9.	churchyard:	
	a) at a monument made of black stone b) at	-thirty
	a monument made of gray marble	+33

Table 3
Results of measurements of energy activity of objects in the national park
“Russian North” of the Vologda region from 06/07/09
(dowsing using the frames of V.N. Sochevanova, cameraman V.V. Brunov)

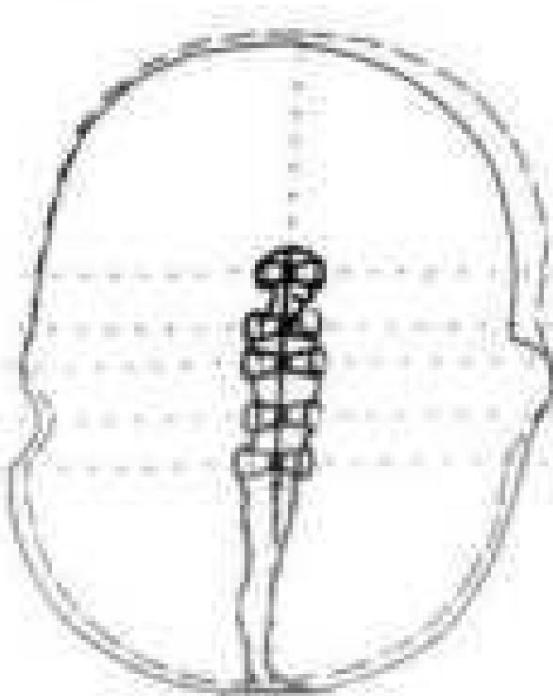
No. No.	An object	Energy measurements (rpm frames on 10 m path)
Goritsky Monastery (about 13 o'clock) At the altar,		
	outside the restored church On the hill near the monastery (hill)	+27
12.	above the monastery, with plantings of white lilac, with spruce trees aged 100-150 years)	+25

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Table 4

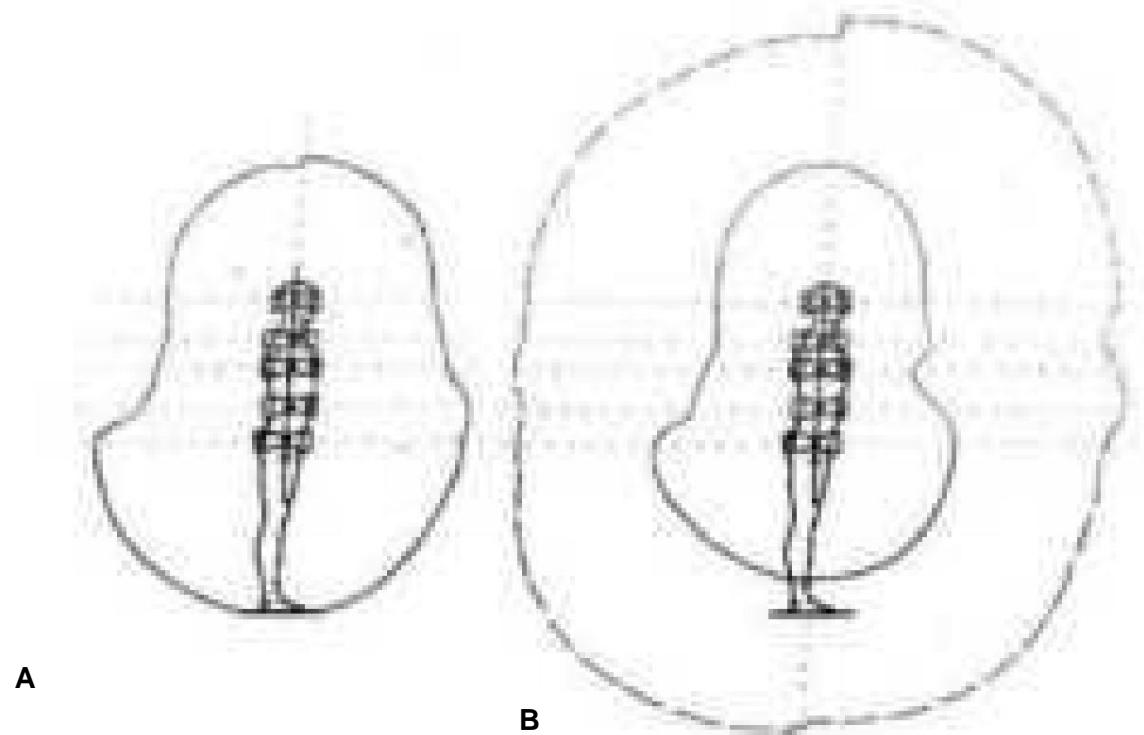
Results of measurements of the dynamics of people's biofield under the influence of a visit to Kirillovsky and Ferapontov monasteries in the Russian North National Park from 06/07/09 (measurements by dowsing Spanish frames, operator V.V. Brunov)

No. No.	Subject(s)	Chakras (back/front) 4 +13/+7						
1.	a) to the monastery (10.53)	1 +14/+14	2 +12/+12	3 +10.5/+10		5 +13/+13	6 +12/+13	7 +14/+13
	b) after the monastery (14.15)	+17.5/+18	+17/+17	+17/+17	+17/+17	+17/+17	+17/+16.5	+17.5/+17
2.	b) after the monastery (14.20)	+17.5/+17.5	+18/+17.5	+16/+18	+18/+17.5	+17.5/+18	+18/+18	+17.5/+17.5
3.	a) to the monastery (10.58)	+13.5/+13	+15/+14.5	+13/+14	+14/+15	+14/+14.5	+12.5/+14	+14.5/+14.5
	b) after the monastery (14.20)	+18/+18	+17/+18	+18/+18	+18/+18	+18/+18	+18/+18.5	+18/+18
4.	a) to the monastery (10.45)	+12/+12	+11/+10	+9/+9	+10.5/+10	+14/+10	+12/+12.5	+12/+13
	b) after the monastery (14.23)	+18/+18	+17.5/+17.5	+18/+18	+18/+18	+18/+17.5	+18/+18	+18/+18

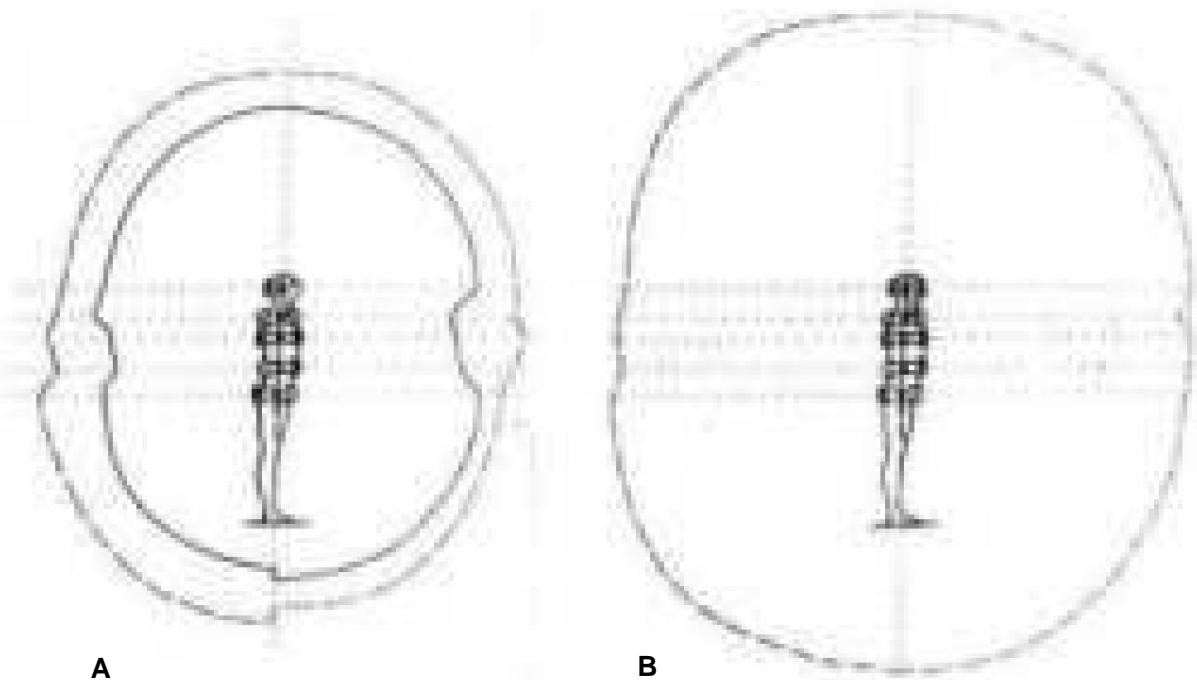


Rice. 1. Testing the effectiveness of the Spinor protective device installed on cell phone (Sochi-Khosta, in the lobby of the Luch cinema, 08/25/09). The solid line is the border of the subject's biofield before picking up the phone (9.00), the dotted line is the biofield after a seven-minute exposure of the phone in the hands of the subject (9.37). It's clear that there was some harmonization of the boundaries of the biofield, without its significant increase or decrease

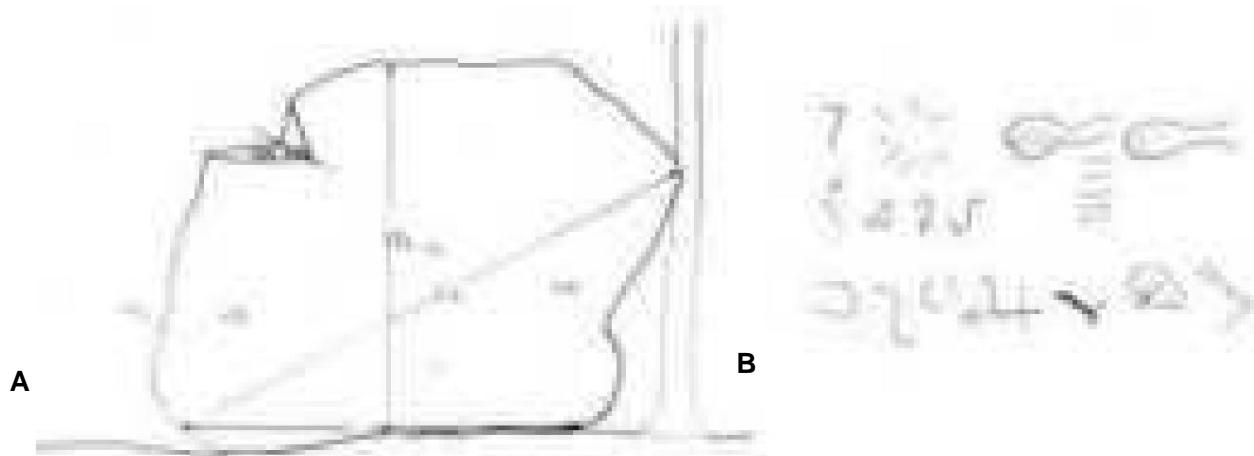
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Rice. 2. Assessment of the effectiveness of collective influence on subject No. 10 healing meditation (Sochi - Khosta, in the hall of the cinema "Luch"). A - boundaries of the biofield test subject on 08.25.09 at 13.40 (control measurement on the day of the test subject's arrival, he arrived by night train, tired, slept little). B - boundaries of the subject's biofield, measured on August 26, 2009: with a solid line - at 13.25, before collective meditation; dotted line - at 14.08, immediately after collective meditation under the guidance of a healer

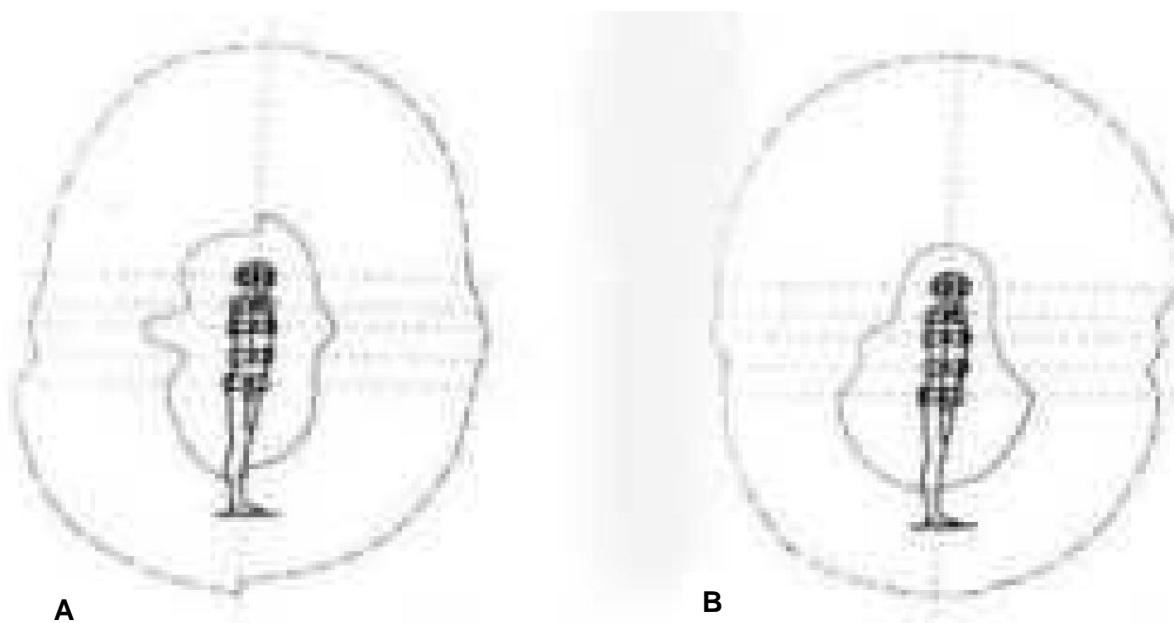


Rice. 3. Dynamics of the biofield of subject No. 3 on different days under the influence of different factors. A - 08.26.09 at 13.35 (before collective meditation in the hall of the cinema "Luch" - continuous line) and at 14.30 (after meditation, dotted line). B - 08.27.09 at 19.17, after the visit sanctuary "Stone Mirror"

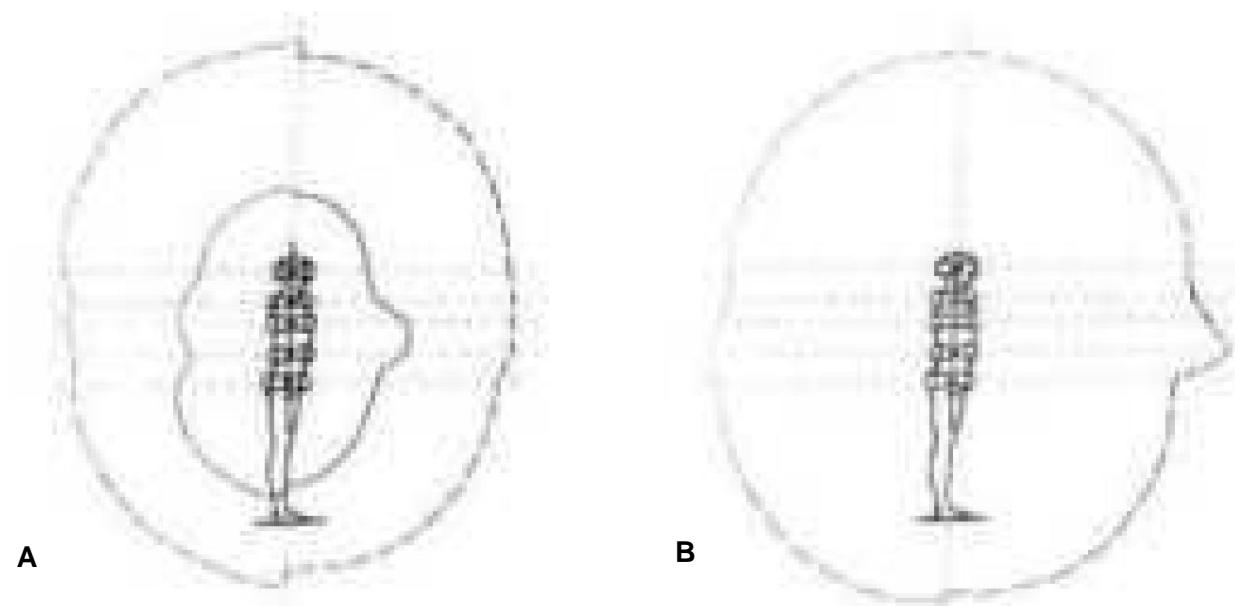


Rice. 4. Front (eastern) part of the megalith slab. A - slab dimensions and measurements energy activity on it (in the interval from 10.00 to 11.00 08.29.09). +36 and +74 points (Spanish frames) on the sunlit side; +68 points - in the shade of a tree; +46 points - from the edge. From the shadow, western side -74 points.
B - signs that S.I. "saw" during meditation with her eyes closed. Oleneva, lying with his back on the "Stone Mirror" (same time interval)

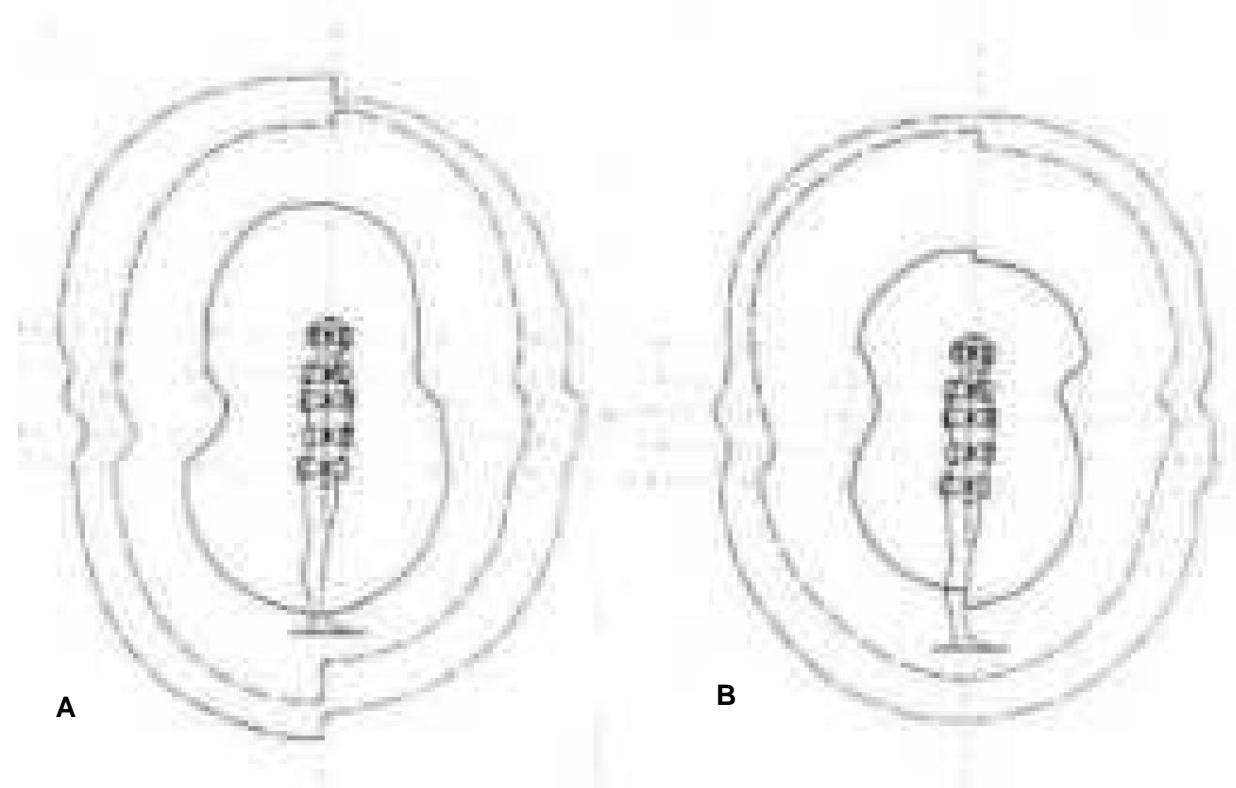
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Rice. 5. Dynamics of biofields of subjects No. 4 and 5 from 08/27/09 under the influence of a 5-minute exposition at the sanctuary "Circassian Stone" ("Double Throne"). A - subject No. 4: solid line - the border of the biofield at 16.05, to the sanctuary; dotted line - at 17.30, after sanctuaries B - subject No. 5: solid line - the border of the biofield at 16.12, before sanctuaries; dotted line - at 17.42, after the sanctuary

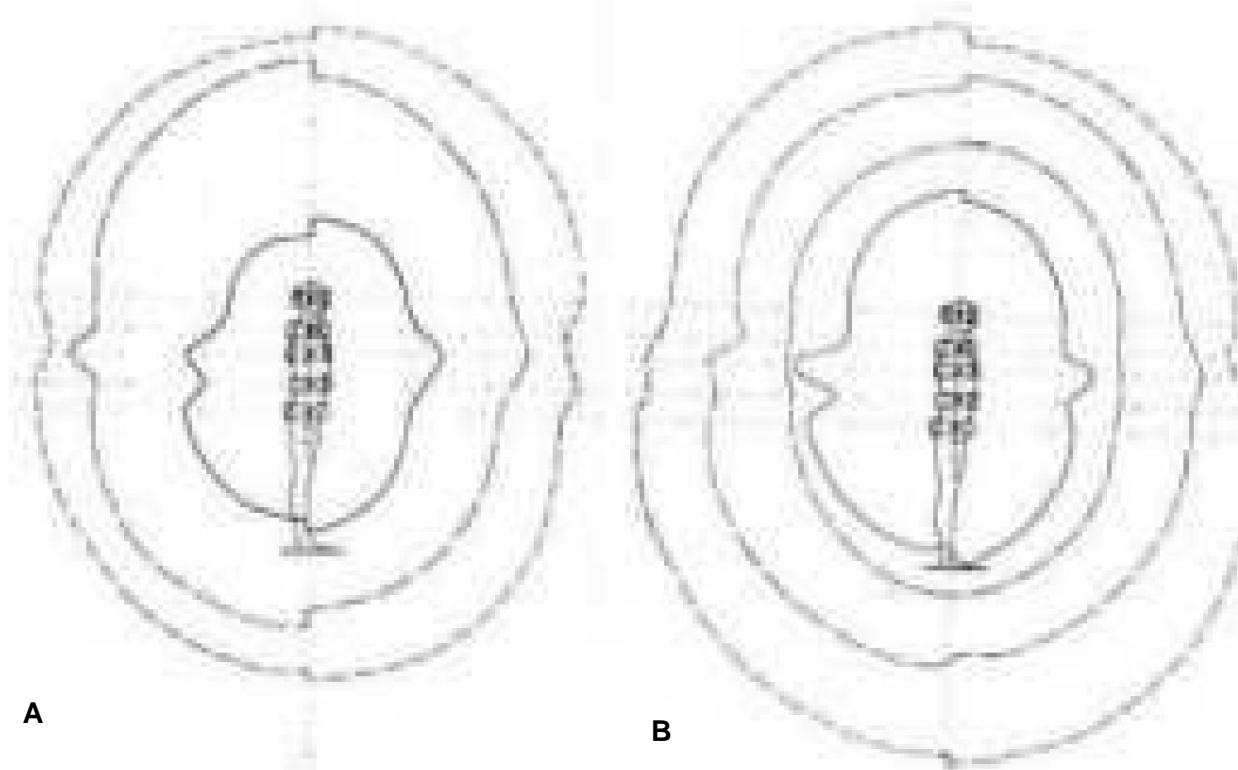


Rice. 6. Dynamics of biofields of subjects No. 6 and 7 from 08/27/09 under the influence of a 5-minute exposition at the sanctuary "Circassian Stone" ("Double Throne"). A - subject No. 6. Solid line - the border of the biofield at 16.03, to the sanctuary; dotted line - at 17.25, after sanctuaries
B - subject No. 7. Biofield after the sanctuary at 18.20



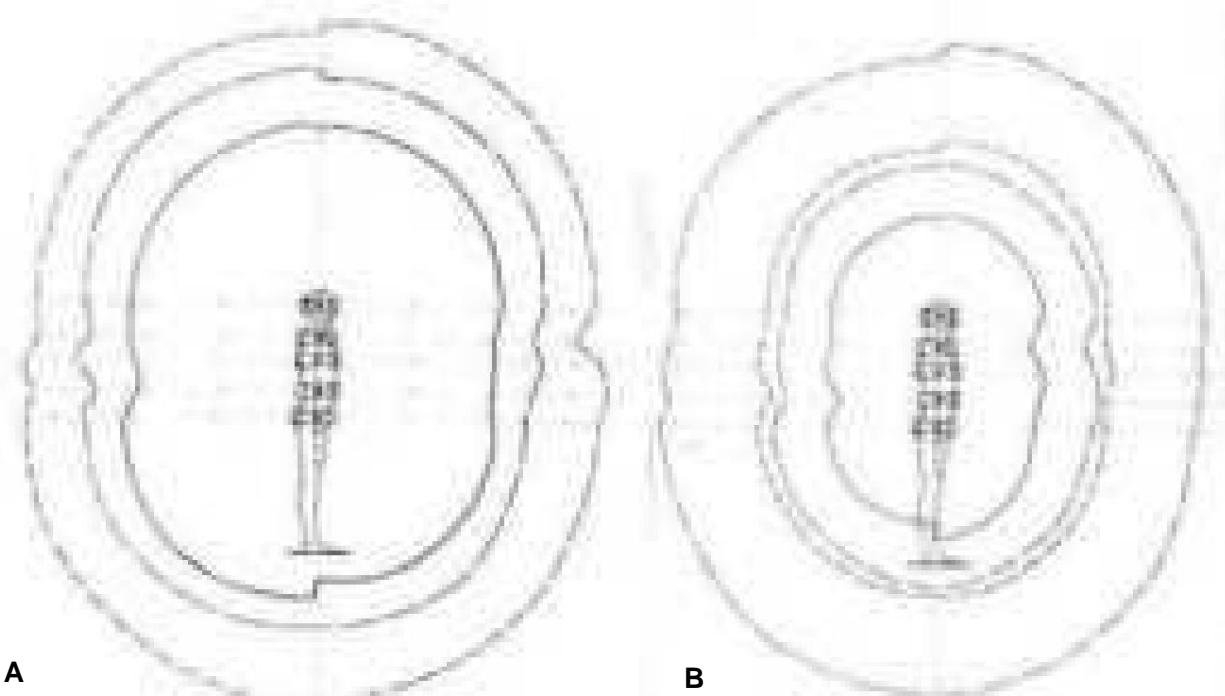
Rice. 7. Dynamics of biofields of subjects No. 8 and 9 from 08/29/09 under the influence of sanctuaries "Double Throne" and "Stone Mirror". A - subject No. 8. The solid line is the border of the biofield at 8.45, to the "throne"; dotted line - at 9.07, after the "throne"; dash-dotted line - at 10.10, after "Mirror". B - subject No. 9. The designations are the same, the time is 8.53, 9.12 and 10.08, respectively.

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Rice. 8. Dynamics of biofields of subject No. 2 from 08.27.09 (A) and 08.29.09 (B) under the influence sanctuaries "Double Throne" and "Stone Mirror". A

- solid line - before visiting the sites (16.00), long dotted line - after the "throne" (17.26), short dotted line - at 19.10, after the "Mirror". B - solid line - before visiting the objects (9.15), dotted line - after the "throne" (9.35), long dotted line - after a five-minute exposure at the "Mirror" (10.15); short stroke
- after 30 minutes of work for "Mirrors" (10.55)



Rice. 9. Dynamics of biofields of subject No. 1 from 08.27.09 (A) and 08.29.09 (B) under the influence sanctuaries "Double Throne" and "Stone Mirror". A

- the designations are the same as in

Fig. 8, time respectively 16.02, 17.27 and

19.20. B - solid line - before visiting the "throne" (8.50), long dotted line - after the "throne" (9.18); short dotted line - after a 5-minute exposure at the "Mirror" (10.05); dash-dotted line - after 30 minutes of work at the "Mirror"

(10.48)

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Conference "Torsion fields and information interactions - 2009"*

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The conference "Torsion fields and information interactions - 2009" was held in Sochi on August 25-29, 2009. 42 people took part in the conference, there were 26 reports were heard. Many speakers were unable to attend; some participants at the request of the org. committee made several reports, fortunately there was something to talk about.

The paper collection of the conference, released at the beginning of the conference, contains 51 reports from researchers from Russia, Ukraine, Israel, Poland, and Slovenia. An electronic, expanded version of the conference collection has been published (<http://www.second-physics.ru/node/23>). The conference was dedicated to the memory Anatoly Akimov.

First day

The opening day of the conference began with a double report from Victor Krasnobryzhev (Kyiv), who presented the results of his many years experiments. I must say that Victor surprised not only with the volume of his research using torsion generators of our own design (thousands of experiments since the early 90s, some of the experiments were performed in universities in Poland), but also their results. Converting a substance into coherent state with the help of torsion radiation, according to Viktor Georgievich, leads to new properties that have enormous economic potential use. It was also discussed about non-local effects that arise in coherent matter.

Then Andrey Poletaev (Moscow) spoke about studying the phenomenon of "direct vision", in which a person, without using visual receptors, is able to see objects and navigate the environment. Judging by the diffraction effects, the field through which the subjects "saw," according to Andrey Igorevich, has a wave non-electromagnetic nature (wavelength of the order centimeter), but at the same time, nevertheless, "illumination" of objects is necessary electromagnetic radiation - the field of permanent magnets, light, or microwave radiation.

* Published only in the electronic version of the collection.

Proceedings of the international scientific conference. Khosta, Sochi, August 25-29, 2009

Andrey Bobrov (Oryol) spoke about new experimental results obtained in 2009 at the Orlovsky torsion field laboratory

State Technical University. Andrey Vladimirovich now research is underway on the mutual influence of the own spin fields of material objects using indicators on double electrical layers. According to speaker, his results directly confirm the concept of torsion fields A.E. Akimova.

Vlad Zhigalov (Zelenograd) presented a review report on the effects on the first day from torsion generators and their designs. The report was an analysis about 70 different sources, incl. patents. The speaker noted that approximately after 2000 from Russian patents and publications devoted to typical torsion installations and effects, the word "torsion" has disappeared.

Yuri Kravchenko (Ufa) spoke about the device and various applications IGA-1 devices, many of whose users have long formed distributed network of researchers, covering many cities and countries, and demonstrating a variety of applications - from disease diagnosis to search leaks in gas pipelines. This device is a sensitive phase detector, and the report sparked a lively discussion about what actually detected by this device.

Doctor and healer Gulzhan Nazhimova (Ufa) spoke about the practice of spiritual health seminars. The report was combined with the first part of the demonstration: volunteers had their biofields measured using frames (operator - Viktor Brunov), and using the IGA-1 device (operator - Temirbek Kasimov). I must say that the conference successfully combined "physical" and "healing" presentations, and usually both parts of the speakers listened to each other with great interest - the majority They work precisely at the intersection of instrumental and psychic topics.

Second day

On the second day, Viktor Brunov (Vologda) spoke about the research results human biofields using the dowsing frame method. It was told about places of power, about changes in the biofield in them, as well as about the correction of the biofield by extrasensory influence.

Anatoly Pavlenko (Kyiv) spoke about the results of using protective "Outpost" devices in France, on farms. At the beginning of the conference Everyone who wanted to was given protective stickers "Spinor" on their cell phones. The speaker spoke about the history of patenting his devices in Ukraine.

Victor Krasnobryzhev's report that day was no less interesting: author spoke about the results of studies of non-local effects of torsion radiation through photographs on the processes of seed germination, radioactive decay, human brain activity, as well as the behavior of groups of people. Judging According to the results obtained, psychotronic influence is not only possible, but also

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Most likely, it is already being used in practice without publicity. Affordable means of protection and control are obviously necessary.

Then Evgeny Stepanov (Samara) reported the history in a very rich report research and results of using vortex technologies of the widest spectrum - from vortex heat generators designed by Mustafaev to obtaining various new materials in installations with a rotating electromagnetic field. The speaker, having many years of experience in serving in law enforcement agencies, shared interesting open but little-known facts.

Then the demonstration of a spiritual health-improving meditation seminar by Gulzhan Nazhimova continued. Measurements of biofields were carried out both before and after meditation, using several methods.

Round table

On the second day, a round table was held on the topic of integrating the efforts of various researchers in this field. The round table began with a minute of silence: the participants paid tribute to the memory of P.I. Goskov (1938 - 2008) and A.E. Akimov (1938 - 2007).

During the discussion, priority urgent tasks were proposed, including of which:

- creation of an information bank of researchers, their results and publications;**
- creation of a regular electronic journal; • efforts to provide metrological support for the detection of torsion fields; • education and popularization; • training of young researchers; • creation of a permanent seminar.**

There was also a discussion on terminology: the term “torsion”, although quite strongly justified both historically and substantively, not accepted scientifically community due to a number of reasons, the main one of which is the activities of the Commission on fight against pseudoscience. On what to do in this situation - the opinions of the participants divided. According to several participants in the discussion, the situation was reminiscent of the time of the first congresses of the RSDLP.

The third day

Vladimir Samokhvalov (Samara) presented the results in a double report studies of the mutual influence of rotating masses (thin disks in a vacuum). The report, accompanied by a video showing of the experiments, immediately caused genuine interest and was repeatedly interrupted by questions. Obvious transmission effect significant energy between separated rotating disks in a vacuum generated spontaneous brainstorming among listeners to explain the nature of the effect and development of experiments. In the second report, Vladimir Nikolaevich spoke about other experiments indicating mass-dynamic effects.

Igor Melnik (Tomsk) continued the topic of rotating masses. For many years he studied the effects of liquid rotation on radioactive processes decay. According to Igor Anatolyevich, the effect was reproduced in the Siberian Institute of Physics and Technology at Tomsk State University. The speaker also spoke about non-local phenomena that were noticed on radioactive samples under the influence of rotating masses, and about the effect of phantoms remaining at the location of the rotating masses.

Vlad Zhigalov after presenting three iconic releases this year monographs (books by S.E. Shnol, A.P. Dubrova, A.G. Parkhomov) spoke about results of checking experimental data of inertial motion obtained in experiments by Gennady Shipov in Thailand in 2000. According to the speaker, judging by the data, the inertiod actually violates Newton's laws of mechanics, although and does not want to obey exactly the formula derived by G.I. Shipov in 2006.

The report by Murtazali Aliyev (Makhachkala) was devoted to materials science - the study of the behavior of dislocations in silicon under the influence of deformation and electric current. According to Murtazali Alievich, these effects are largely the spin subsystem of the crystals plays a role, and the effects of torsion appear fields.

Andrey Bobrov on this day gave the first part of a lecture on the concept of field mechanism of consciousness, which assigns torsion fields one of the central roles in the mechanisms of memory and consciousness. This part was devoted to facts, not fits into traditional ideas about the mechanisms of consciousness.

Excursions to "places of power"

On the third day, Yuri Kravchenko organized an excursion to the dolmens in Kudepste (Sochi). On a hiking trip that took the afternoon, we took field indicator of geomagnetic anomalies IGA-1. Geoanomalous zones were found near the "Sanctuary" object; they were examined as dowsing methods and using IGA-1. An experiment was conducted on volunteers: biofields were measured before visiting the sanctuary and after. Sessions were given to those interested healing and manual therapy (Viktor Brunov, Olga Nefedova).

The "Slab" object was also examined - a larger flat stone about three meters in height, standing at an angle to the ground of 45°.

Two days later a second excursion was held. Another, previously undescribed dolmen was found and examined, and the signs on the "Slab" were deciphered.

Fourth day

The last day of conference reports began with Yuri Kravchenko. He talked about using the IGA-1 device to search for geopathogenic zones, as well as torsion technologies that were developed by various enterprises in Ufa and Miass.

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Very interesting facts were presented that speak about the connection between the superunit the effect of vortex heat generators with their installation location.

A video report by Soslan Tsallagov (Vladikavkaz), filmed at television and dedicated to geopathogenic zones, as well as other videos.

Then Stanislav Likholetov (Volgograd) spoke about related congresses held in St. Petersburg (in particular, "Weak and superweak fields and radiation in biology and medicine"), as well as about our own results of determining geopathogenic zones in the Volgograd region using various complementary methods. The speaker noted that it was possible to carry out surveys at the design stage of facilities, and contribute to optimal choosing a place for their construction.

Andrey Poletaev presented a report on the factors of biological evolution and history and continuity of some key ideas in biology.

Stanislav Zenin (Moscow) touched upon methodological aspects in his report studies of energy information exchange factors and briefly described the results their research into stable structural formations of water.

Alla Gorina (Moscow) spoke about protective equipment that, judging by basically passive matrices with information recorded by a torsion field. Then Victor Brunov briefly spoke about the results of the last excursion to the dolmens.

Architect Albert Notkin (Nalchik) spoke about his projects, which use "information architecture" approaches - the use of fractals and harmonizing combinations of architectural spaces.

Svetlana Oleneva (Kislovodsk) presented her developments in reading information about key events in a person's life by his name and date of birth, and also spoke about some facts of direct transmission of information to a person in an extra-sensory way.

Anatoly Rotarenko (Krasnodar) spoke about the use of torsion technologies in Kuban honey university.

The program of reports concluded with the second part of Andrey Bobrov's lecture on field concepts of mechanisms of consciousness.

At the end of this day a meeting was held at which it was continued discussion of issues raised at the round table. Following the meeting there was a protocol was drawn up.

On the last, fifth day of the conference, a second excursion to dolmens, and several business meetings of conference participants took place.

Brief summary

It is necessary to note the strengths and weaknesses of the conference. Place and the time of the conference (Sochi, peak season), although they made it possible to combine rest and work for some researchers, turned out to be too expensive for others - on the quantity full-time participants were affected by the economic crisis. Managed to keep the org. contribution to originally planned (1000 rubles), thanks to sponsorship members of the org. committee (Yuri Kravchenko, Anatoly Pavlenko, Vlad Zhigalov), as well as Andrey Bobrov. Add. It was decided to sell copies of the collection of works at a price below cost (200 rubles).

Technical difficulties also made themselves felt: an unexpected shutdown electricity in Khost at the beginning of the conference, as well as a malfunction of the LCD projector made it difficult to show presentations.

Of course, the lack of experience in holding key conferences also affected organizers. On the other hand, this was compensated by the overall positive the mood of the conference participants and understanding of the uniqueness of the event. IN The first day of the conference was attended by a film crew from Sochi television (Max-TV), several express interviews were taken, a news clip was shown on the TNT-Sochi channel. The newspaper "Evening Sochi" published a note about conference (<http://www.maksmedia.ru/news.htm?id=58738>).

The conference collection, which was released in record time, according to many conference participants, has a high level of material presented and well decorated. However, some important areas were practically not presented in the collection (torsion metallurgy ¹, vortex heat generators).

Overall, the conference left a good impression. I would like to hope that this the conference will play an important role in restoring the status of the scientific field torsion research, and will become a regular integrating event.

¹ An article on this topic by V.G. Krasnobryzheva "Coherent technology - a new direction of energy saving in processes of steel annealing" was published only in the electronic version of the collection.