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An extensive experimental material demonstrating the unusual behavior of spinning objects is discussed. It is pointed out that these experimental results are related to the theory of torsion fields (torsion fields). The concept of phase states of Physical Vacuum is introduced, which correspond to its polarization states. The connection of torsion fields with the polarization of the Physical Vacuum along the classical back is noted. The fundamental properties of torsion fields are analyzed. Various approaches to the creation of torsion generators are considered. The outlines the scientific and technological implications of their creation. On the basis of the formulated representations, approaches to the construction of a physical theory of paranormal phenomena are discussed.

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Introduction

Over the past decades, a situation has arisen in physics when theoretical and experimental works by researchers from different countries representing different professional interests indicated observable or theoretically predicted effects, much of which were considered either as phenomenology or made up problems that could not be explained at the process level. . It should be noted that a significant part of such effects was associated with the behavior of objects with spin or angular momentum.

Apparently, the unusual behavior of spinning objects was first noted by C. Oxley of the University of Rochester on the example of the anomalous difference in neutron scattering on ortho and para hydrogen [1]. Experiments have shown that neutron scattering on parahydrogen molecules (singlet state) is 30 times stronger than on orthohydrogen molecules (triplet state).

In the 1980s, it was discovered that the spin polarization of atomic hydrogen prevents its integration into molecules [2].

In recent years, experiments have been performed in the Brookhaven and Aragon laboratories, in which it is shown that protons whose spins are oriented opposite to the spins of a proton polarized target, in A. Krish's figurative expression, pass through the target protons as if without interaction [3, 148, 149] . With the same orientation of the proton spins in the beam and the target, scattering occurs in satisfactory agreement with the theoretical concepts. The unusual behavior of spinning particles was observed at many accelerators in various experiments [175].

VG Baryshevsky and MI Podgoretsky experimentally found that when neutrons pass through a spin-polarized target, neutron precession occurs. In this case, the precession value is as if the field causing the precession was several orders of magnitude larger than the magnetic field created by the target nuclei [4].

In experiments with 3He, the dependence of the thermal conductivity of helium on the state of nuclear spins [7, 8], theoretically predicted earlier for gases [9-10], and later for solids [11], was shown.

At the facility for measuring the Lembo shift, Yu. L. Sokolov found unusual effects in the interference of hydrogen in the 2S1 / 2 and 2P1 / 2 states [12-14], which could not be explained by traditional concepts.

It is necessary to point out such practically important areas as nuclear spin waves [15, 16] and pseudomagnetism [17, 18], where the spin nature of the observed phenomena is recognized, but it is

not possible to construct an exhaustive description within the framework of electrodynamics, with the exception of special cases or the phenomenological approach .

Finally, we note a wide range of experiments, including mental ones, related to the problem of quantum nonlocality, for example, the Aharonov-Bohm effect, the Einstein – Pod-Podolsky – Rosen paradox [19], which, although they have a quantum-mechanical explanation, continue to be a subject relentless disputes (see, for example, [20-22]). For the considered circle of phenomena, it is essential that the objects of quantum nonlocality are objects with spin.

A joint consideration of a part of these experimental results, as a manifestation of spin phenomenology, was carried out [51].

Along with experiments with microscopic objects, in some cases long-range effects or phenomena were observed at the macroscopic level.

Ch. Imbert discovered that a circularly polarized electromagnetic wave is demolished from the plane of incidence [23], in which the direction of drift is determined by the sign of helicity.

AK There and V. Happer observed repulsion and attraction of circularly polarized laser beams [24]. These experiments are logical in the series under consideration, if we take into account the connection of circularly polarized vector modes with spin [25].

Of particular interest are experiments that demonstrate the so-called “gyroscopic effect”, [26–29], disputed by some researchers [30, 31]. These experiments may indicate, following [27], the presence of interacting spinning bodies.

In 1966, KN Perebeynos and others demonstrated an experimental system for transmitting information through massive screens in which the transmitter and receiver were created on the basis of mechanical rotating systems [32].

In astrophysics, effects associated with such objects as, for example, stars or black holes are usually considered in the system of parameters MQJ — mass, charge, and moment of rotation [33, 34]. In particular, R.M. Wald showed that black holes with a torque of 6J interact with particles with spin s so that bJ = bs. Moreover, b = 1, if the torque and spin are unidirectional, which corresponds to repulsion, and b = -1, if the torque and spin are opposite, which corresponds to attraction.

Approaches are known in which the phenomena usually associated with the “hidden mass” of the Universe are explained through the interaction determined by the rotation of galaxies.

As a result of many years of observations by S.E. Shnoll et al. [355], a correlation has been shown between the forms of polymodal histograms of various processes in nature even with their large spatial separation.

Once again, with all the external heterogeneity of the considered examples, they have something in common. As already noted, in all cases objects in observable processes and experiments or in natural phenomena have a spin, meaning classical spin [36-41], or angular momentum.

Formally, the examples initially cause a feeling of artificiality and arbitrariness of their joint consideration. However, it should be recalled: seemingly dissimilar processes and phenomena, for example, Coulomb scattering of charged particles on charges, light diffraction, tunneling effects, radio communications, electric motors, etc., combine the fundamental properties of electromagnetism. If we recognize the classic spin as a fundamental manifestation of nature, along

with charge and mass, then emotional contradictions and psychological rejection are quite easily removed.

The results given above, with their joint analysis, make it possible to reasonably assume the presence of specific interactions and fields generated by classical spins or angular moments of rotations. Their properties, as it follows from the above examples, indicate that, if these fields exist, they should be as universal as electromagnetic and gravitational, which manifest themselves at the micro and macroscopic level.

Following the works of G. Tetrode, A. D. Fokker and Ya. I. Frenkel [42-45] in the 20s, as well as the works of J. A. Wheeler and R. P. Feynman [46, 47] The 40s, in recent decades, work has been carried out to search for new long-range actions (see, for example, [48-51]). It was noted that the experiments made so far still leave quite a lot of white spots on the long-range map. It was also pointed out that the existence of non-Abelian long-range actions cannot be considered an exception [52].

In line with the search for new fundamental fields, there are papers on the scalar fields of P. Jordan and J.R. Fayri [53, 54], leading to the scalar-tensor theory of Jordan-Brans-Dicke [55, 56]. Of interest is the concept of V. I. Marusiak's tensor fields [57].

Along with this, there were categorically expressed opinions about the impossibility of the existence of long-range actions other than electromagnetism and gravity (see, for example, [58, 59]).

Chapter 1. Torsion Fields and Physical Vacuum Models

Probably the first direct indication of the existence in nature of a special long-range field generated by torsion was the conjecture expressed by E. Cartan at the beginning of the 20th century about the existence of fields generated by the density of the angular momentum.

At the same time in Russia, without any connection with the works of E. Cartan, Professor N. P. Myshkin of the Russian Physico-Chemical Society, experimental studies were carried out with torsion devices, which, essentially, were the discoveries of the natural manifestation of long-range fields associated with torsion [60, 61]. In the 70s, V. S. Belyaev performed similar experiments. The works of N. P. Myshkin apparently anticipated the discovery of the so-called “fifth force” for many decades [62, 63]. The nature of the “fifth force”, usually associated with a baryon charge, goes back to the work of Lee and Yang, 1955 [64]. However, even theoretically, the baryon field gives the interaction weaker than the gravitational field 109 times [59], which excludes the possibility of observing it.

The works of E. Cartan and A. Einstein in the 20s laid the foundations of the theory, which in recent decades was called the Einstein-Cartan Theory: Fuel and Energy Complex (see, for example, [65-67]), which is part of the extensive theory of torsion fields (torsion fields).

In the past, it was suggested that “true” fields (non-commutative gauge fields or “first class” fields in the terminology of R. Utiyama) are associated with the Physical Vacuum [68, 69]. From these positions, it seemed advisable to try to understand the mechanism of interactions associated with classical spin, at least at the level of simplified models.

We make a number of preliminary observations. We will consider Physical Vacuum as a material medium that isotropically fills the entire space (and free space and matter), has a quantum structure and is unobservable (on average) in the unperturbed state. This vacuum is described by the operator

<01 [70]. Different vacuum states arise in violation of the symmetry and invariance of Vacuum [71]. In particular cases, when considering various physical processes and phenomena, the observer usually creates a Physical Vacuum model that is adequate to those processes and phenomena. The use of different models of Physical Vacuum is characteristic of modern astrophysics, in which they are used as constructive models, for example, q-vacuum, vacuum Urn, Boulevard vacuum, Hartl-Hokking vacuum, Rindler vacuum, etc.

In modern interpretation, Physical Vacuum is a complex quantum dynamic object that manifests itself through fluctuations. The theoretical approach is based on the concepts of S. Weinberg, A. Salam and S. Gleshow.

However, as will be clear from further analysis, it was considered expedient to return to the electron-positron model of P. Dirac's Physical Vacuum, in a somewhat modified interpretation of this model. A return to P. Dirac's models, despite the known shortcomings and contradictions of this model, can be considered justified, and the models themselves do not exhaust their constructive potential, if they help to formulate conclusions that are not directly derived from modern models.

At the same time, taking into account that Vacuum is defined as a state without particles, and, based on the classical spin model as an annular wave packet [39] (following the terminology of Belinfant [41] - circulating energy flow), we will consider Vacuum as a system of packets of electrons and positrons, rather than the electron-positron pairs proper.

Under the proposed assumptions, it is easy to see that the condition of true electroneutrality of an electron-positron vacuum will meet the condition when the ring wave packets of an electron and a positron will be nested into each other. If at the same time the spins of these nested ring packets are opposite, then such a system will be self-compensated not only by charges, but also by the classical spin and magnetic moment. Such a system of nested ring wave packets will be called a fiton (Fig. 1).

The tight packing of fitons [72] will be considered as a simplified model of Physical Vacuum (Fig. 1).

It is useful to note that in the experiments of A. Krish [3], the observed effects are tantamount to demonstrating the possibility of realizing, albeit dynamic, but nested states in systems with opposite spins, as in the proposed fiton model. We also point out another important circumstance confirming, at least, the admissibility of the fiton model. In accordance with the model of D. Bjorken [73-75], it is possible to construct electrodynamics without resorting to the concept of fitons, based only on an interacting electron-positron field (the model of D. Bjorken is not devoid of a number of difficulties). The concept of quanta as electron-positron pairs was used by Broydo [76], independently of D. Bjorken. At the same time, Ya. B. Zeldovich showed [68] that in the presence of an electromagnetic field in Vacuum, the production of electron-positron pairs occurs. As a result of this, a non-zero energy of Vacuum appears, which is regarded as the field energy. The connection of electromagnetism and vacuum fluctuations was noted by L. A. Rivlin [166]. Earlier, similar ideas, but for the gravitational field were formulated by A. D. Sakharov [69].

Formally, with the spin compensation of fitons, their mutual orientation in the ensemble, in Physical Vacuum, would seem to be arbitrary. However, it seems intuitively that Vacuum forms an ordered structure with linear packing, as shown in fig. 1. The idea of vacuum ordering apparently belongs to A. D. Kirzhnits and A. D. Linde. It would be naive to see in the constructed model the true structure of Physical Vacuum. This would mean demanding more than an artificial circuit from a model.

Let us consider the most important in practical terms cases of perturbation of the Physical Vacuum by various external sources. This may help to assess the realism of the developed approach.

1. Let the source of the perturbation be the charge — q. If the Vacuum has a phytonic structure, then the effect of the charge will be expressed in the charge polarization of the Physical Vacuum, as it is conventionally depicted in Fig. 2. This case is well known in quantum electrodynamics [77]. In particular, the Lamb shift is traditionally explained through the charge polarization of the electron-positron Physical Vacuum [1].

If we take into account the already mentioned model of D. Bjorken, the ideas of Ya. B. Zeldovich [68], and also [73], then the state of charge polarization of the Physical Vacuum can be interpreted as an electromagnetic field (E — field).

2. Let the source of the perturbation be the mass — m. In contrast to the previous case, when we are faced with a well-known situation, a hypothetical assumption will be made here. The perturbation of the Physical Vacuum of mass m will be expressed in symmetric oscillations of the fiton elements along the axis of the center of the perturbation object, as is conventionally shown in Fig. 3. Such a state of physical Vacuum can be characterized as a gravitational field (G — field). As already noted, A. D. Sakharov introduced the idea of a gravitational field as a state of Physical Vacuum [69], which corresponds to the stated model of gravity. Polarization states of gravity were discussed in [59].

Dynamic longitudinal polarization corresponds to the unshielded property of the gravitational field. V. A. Bunin [78], and later V. A. Dubrovsky [79], without considering the mechanism of gravity, but assuming that gravitational waves are longitudinal waves in an elastic Physical Vacuum, showed that the velocity of such waves will be of the order of 109 s . (there are other points of view on this problem [79]).

Usually in physics, theories associated with superlight speeds are not considered. This is due to the fact that in this case, many thought experiments lead to a violation of cause-effect relationships. However, it is possible that at a higher level of knowledge the “superluminal catastrophe” will be overcome, just as the “ultraviolet catastrophe” was overcome.

The proposed approach to interpreting the mechanism of gravity is not something exotic. In theories of induced gravity [80], the gravitational field is considered as a consequence of vacuum decompensation, which occurs when it is polarized [68, 69, 81].

In the works of Butorin [82,83], as well as Bershadsky and Mehed-kin [84, 85], estimates of the oscillation frequency characteristic of gravity were obtained. However, the spread of these estimates is very large and ranges from 109 to 1040 Hz. There is reason to assume that the frequency range of 1020 - 1040 Hz is more realistic.

If the mechanism of gravity is really connected with the longitudinal spin polarization of Physical Vacuum, then in this case it is necessary to recognize that the nature of gravity is such that antigravity does not exist.

3. Let the source of the perturbation be the classical spin-s. We will assume that the action of the classical spin on the Physical Vacuum will be as follows. If the source has a spin oriented as shown in fig. 4, the spins of fitons, which coincide with the orientation of the spin of the source, retain their orientation. Those backs of fitons that are opposite to the back of the source will experience an inversion under the action of the source. As a result, the vacuum will physically become in a state of

transverse spin polarization. This polarization state can be interpreted as a spin field (S — field) — the field generated by classical spin. The formulated approach is consonant with the concept of torsion fields as a condensate of fermion pairs.

The polarization spin states of SR and SL contradict the Pauli prohibition. However, according to the concept of M. A. Markov [86], with densities of the order of Planck [59, 87], the fundamental physical laws may have a different, different from the known form. The refusal to ban Pauli for such a specific material environment, such as the Physical Vacuum, is probably admissible no less than in the concept of quarks.

In accordance with the above approach, we can say that a single environment — Physical Vacuum can be in different phase, more precisely, polarization states — EGS states. This medium in a state of charge polarization manifests itself as an electromagnetic field (E). The same medium in the state of spin longitudinal polarization manifests itself as a gravitational field (G). Finally, the same medium — Physical Vacuum in a state of spin transverse polarization manifests itself as a spin field (S). Thus, the EGS — polarization states of the Physical Vacuum correspond to the EGS — fields.

All three fields generated by independent kinematic parameters are universal, or first-class fields in the terminology of R. Utyam; these fields manifest themselves at the micro and microscopic level. It is appropriate to recall the words of I.Ya. Pomeranchuk: "All physics is the physics of Vacuum." Developed ideas allow us to approach the problem, at least, of universal fields from some common points of view. In the proposed model, the role of a single field is played by the Physical Vacuum, the polarization (phase) states of which manifest themselves as EGS — fields. Modern nature does not need "associations". In Nature there is only Vacuum and its polarization states. And “associations” only reflect the degree of our understanding of the relationship between fields.

The concept of the phase state of Physical Vacuum and the polarization states of Physical Vacuum in a general form has been used in many papers (see, for example, [33]). In the past, it was repeatedly noted that the classical field can be considered as a state of Vacuum [68, 69]. However, the polarization states of Physical Vacuum were not given the fundamental role that they actually play. As a rule, it was not discussed what vacuum polarizations are meant. In the approach described, the vacuum polarization according to Ya. B. Zeldovich [68] is interpreted as charge polarization (electromagnetic field); Vacuum polarization according to A. D. Sakharov [69] is interpreted as spin longitudinal polarization (gravitational field); and polarization for torsion fields is interpreted as spin transverse polarization.

The stated views correspond to the concept of “information A-fields” by R. Utiyama, according to which each independent parameter of particles a1 (once again we will clarify - to the kinematic parameter, which LA Dadashev rightly pointed out) corresponds to its material field A1, through which the interaction between particles corresponding to this parameter. In contrast to the fields of the second class, associated with the symmetries of space, the fields of the first class (gauge fields), as noted by R. Utiyama, have a connection with particles — the sources of the field. The EGS concept provides the idea of polarizing states of Physical Vacuum as a general principle.

Since it cannot be argued that other polarization states are impossible except for the three considered, there are no fundamental reasons for a priori denying the possibility of other long-range actions. It is possible that the concept of A-fields and polarization states of Physical Vacuum (phase states of Physical Vacuum) will initiate a breakthrough into the field of new long-range actions.

The universal fields generated by classical spin could be interpreted as long-range spinor fields [72]. Theoretically, the spinor long-range interaction was considered by the school researchers D. D. Ivanenko [67]. The best-known works on spinor analysis and spinor fields are [88-94]. Such an interpretation does not contradict the previous point of view, given that the torsion field can be expressed using a pair of spinor fields. The question of which point of view is more correct is not simple. Thus, M. A. Markov noted that "from the very beginning of the appearance of spinors in physics, the idea of the fundamental nature of spinor fields arose and lives, which, perhaps, determine structurally all other fields" [95]. It is useful in connection with the ideas of M. A. Markov to recall the thought of J. A. Wheeler that the physical superspace must additionally include the parameters of the spin structure [87], which is shown in this work.

In a number of fundamental works of recent years, the spin nature of [96-100] torsion fields was directly pointed out. As already noted, the concept of torsion fields goes back to the ideas of E. Cartan and A. Einstein, and in recent decades to the studies of Kibble [65] and Shima [66]. The development of the concept of torsion fields is described in detail in the analytical review by A. P. Efremov [167]. In addition, reviews [101,102] can be recommended. The introduction of torsion fields with the help of the theory of Physical Vacuum was carried out by G. I. Shipov [103].

Let us return to the models of polarization states of Physical Vacuum. Attention should be paid to the fact that in the framework of the constructed models, both the gravitational field and the torsion field are associated with spin polarization states. The gravitational field is associated with the longitudinal spin polarization, and the torsion field - with the transverse. In this regard, it is appropriate to recall that one of the directions in gravity was the concept in which the nature of gravity was associated with spin. Later, torsion (torsion field) was considered as a self-active physical reality generated by classical spin (see, for example, [150]). In the framework of previous ideas, the connection of the back with gravity and torsion created a controversial situation. In the approaches developed, this contradiction is eliminated, since gravity and torsion are associated with different spin polarization states.

Properties of torsion fields

The proximity of the polarization states of gravity and torsion suggests the possibility of the existence of close or coinciding properties of gravitational and torsion fields and their significant difference from electromagnetic fields. As noted in a number of works, torsion fields are not shielded by natural environments, like gravity fields, although for different reasons. If we follow the constructed models, the gravitational field is not shielded, since it is considered as longitudinal oscillations in Physical Vacuum. The torsion field is not screened due to the specificity of spin effects associated with classical spin. (A similar situation was considered by L. B. Okun [52, p. 122]). However, as will be shown later, knowing that the torsion field is associated with transverse spin polarization, it turned out to be quite simple to create screens for torsion radiations. To this circumstance we will come back a little later, but note that understanding the physical principles of shielding torsion radiation and the ability to make torsion screens played a key role in solving a large number of fundamental problems.

We also note a number of properties of torsion fields that are important for further analysis.

Unlike sources of electromagnetic and gravitational fields, creating fields with central symmetry, sources of torsion fields create fields with axial symmetry, as shown in Fig. 5. The spinning object creates a polarization in two spatial cones, which in one direction corresponds to the left torsion

field -SL, and in the other right torsion field -SR. The axial nature of polarization by torsion sources was apparently first pointed out by Tarutman and Kopchinsky [99, 100].

Currently known experiments suggest that torsion fields are generated not only by spin, but also by the rotation of bodies. The latter does not follow from the well-known torsion theories, but confirms the validity of E. Cartan's physical ideas.

If rotation, including classical spin, is stationary (the angular frequency does not change, the rotating mass is uniformly distributed with respect to the axis of rotation, there is no precession, nutation and higher order moments), then the source creates a static torsion field. If rotation is non-stationary, then such a source generates wave radiation.

Preliminary experimental studies indicate that a static torsion field exists at a fixed interval from the source and at this interval the field intensity experiences only slight variations with distance, which can be characterized as the presence of spatial frequencies (Fig. 6). For torsion waves, the existence of boundaries, as in the static torsion field, was not found.

Getting a conclusion about the dependence of the intensity of torsion radiation on the distance may be complicated by the fact that the torsion effects may be informational rather than energetic in nature. In this case, it is difficult to say why at different distances there is no difference in the impact: whether due to the lack of dependence of the field on the distance, or because of the vanishingly small expenditure of energy to achieve one or another result of the torsion effect, or because that the impact is in the nature of a "trigger".

Given that the torsion field is generated by a classical spin or angular momentum, the torsion field will affect objects with a spin or angular momentum.

The generally accepted point of view is the statement that Physical Vacuum behaves like a superfluid liquid. Along with this, a number of researchers adhered to the point of view that existed on the ether during Newton's time, that the Physical Vacuum behaves like a rigid (elastic) body. In the traditional approach, these points of view are mutually exclusive. In accordance with the concepts of the polarization states of Physical Vacuum, the properties of superfluidity correspond to its charge polarization. There is reason to assume that in the state of spin polarization, Physical Vacuum exhibits the properties of an elastic medium.

Thus, these points of view are not contradictory, they correspond to different polarization states of Physical Vacuum. From these positions, the conclusions of V. A. Bunin [78] and V. A. Dubrovsky [79] are not perceived as completely unnatural.

Considering that the torsion fields correspond to the states of transverse spin polarization of Physical Vacuum, that is, states when Physical Vacuum manifests itself as a medium with ideal elasticity, it is natural to assume that the torsion signal will propagate at a speed significantly higher than the speed of light. Experimental evidence in favor of this is the work of N. A. Kozyrev [104, 108] on the registration of stars in their true position in the sky. (Taking into account a number of features of these experiments, we can assume that they recorded the torsion radiation of stars). A number of obvious weaknesses in the experiments of N. A. Kozyrev, which he himself noted, might have made it difficult to refer to them, but these experiments on a more rigorous basis were successfully repeated by the group of I. A. Eganova under the guidance of Academician M. M. Lavrentiev [105]. In 1991, positive results were obtained by A. F. Pugach in the SJSC of the

Academy of Sciences of the Ukrainian SSR [106]. This, of course, is not yet final proof, but already a good enough reason to treat the problem with due attention.

It is useful to point out in this connection the unusual behavior of the object ZS395, which, according to the available estimates, moves at a speed greater than the speed of light [107], although attempts are being made to explain the observations without going beyond the limits of standard theories.

We note another important feature of torsion fields. By analogy with how, at the level of a substance, the effect of a magnet creates residual magnetization on a ferromagnet, the effect of a torsion source creates a “residual” polarization along the classical back both at the level of the substance and in Physical Vacuum. In this case, the spin polarization states are metastable. With the help of torsion generators (sources) on the substance and at the level of Physical Vacuum, a torsion field of a given spatial structure can be written.

Given that all bodies have non-zero spin ordering, the reason for which is fairly obvious, all bodies have their own torsion field, which in some neighborhood of the body creates polarization of free space, resulting in torsion phantoms. Interesting technical solutions were found by researchers from Los Angeles. Other technical solutions were proposed in the USSR by R. F. Avramenko).

Under certain conditions, the induced (induced) torsion field is fixed at the level of the substance. There is reason to believe that own torsion fields are also fixed in ordinary photographs due to the backs of the emulsion substance. The unusual behavior of photographs (photographic films) was probably first used in his works more than 50 years ago by Abraham [155], and later G. Hieronymus, C. Upton, V. Knut, De La Vorr, and others.

There are very weighty, including experimental, grounds for believing; that the so-called “water memory” is realized due to the polarization of water along the classical spin by the own torsion field of solute molecules [110] (in fact, the process of water memory is more complicated than described here [176]).

Theoretically, when analyzing a particular case of water structuring by N. A.Bulenkov biopolymers, the concept of a “dispatching module” of water was introduced [111], i.e., a water fractal that repeats the structure of a biopolymer. In the torsion model “Bulenkov module” is not an abstract fractal copy of a biopolymer, but a water cluster, the spatial spin polarization of which repeats the spatial spin structure of this biopolymer. Such water spin clusters are formed by the action of water on the fields of such molecules, whose own torsion field is more intense than the torsion field of water molecules. That is why it is not possible to observe the memory effect of water for many low molecular weight compounds.

The memory effect can be observed not only in water. It can be observed not only when substances are dissolved in water, but also remotely, as, for example, when rewriting drugs according to the Voll method.

The model of polarization states of the Physical Vacuum made it possible to establish a very important circumstance. It has already been noted that the torsion field is fixed in cases where the Physical Vacuum enters a state of spin transverse polarization. However, a more general approach can be formulated, based on the criteria of synergy. We assume that the torsion field is fixed always when the Physical Vacuum is in a spin nonequilibrium state.

In this connection, let us return to fig. 2. It is easy to see that with charge polarization of the Physical Vacuum, charge splitting of fitons leads to spin spatial splitting. As a result, the spins turn out to be uncompensated, which will be equivalent to the appearance of a torsion component in an electromagnetic field. If gravitational and torsion fields appear in “pure form”, then electromagnetic fields always contain a torsion component, which is an important fundamental fact. The torsion field will be observed both in an electrostatic field and in electromagnetic radiation.

Failure to understand this circumstance has often led to the fact that many of the phenomena generated by electromagnetic sources, unsuccessfully tried to explain the electromagnetic phenomena. In this regard, it is necessary to note the work of V.P.

Treasurer [112], Zen Kanchzhen, Hideo Uchida [113,114], etc. Thus, in the experiments of Hideo Uchida, it was found that the device he developed responded to the generator turned on at 13.0 GHz when the recorder was shielded and a metal plug at the waveguide output. It is possible to explain the observed phenomenon, knowing that the electromagnetic signal in the waveguide excites a torsion signal at the same frequency, which is not shielded.

It is also worth noting that the response of biolocation operators to electromagnetic radiation [172, 173] seems to be related to the indicated property of the electromagnetic field to generate a torsion component.

A large number of researchers working with electrostatic systems (Clell, Nipper and others [115,116]) could not provide a sufficiently convincing explanation for the phenomena they observed due to the lack of understanding of the role of spin phenomena and their connection with electromagnetic phenomena.

The manifestation of various properties of torsion fields of the science of the XX century came across quite often. At the same time, the lack of understanding among researchers of the spin nature of the observed processes and phenomena led to the fact that each author gave his name to the fields and radiations that could be responsible for the observed processes and phenomena (a number of authors worked when the spin was not yet open). These probably should include: pseudomagnetism [17, 18]; “Fifth force” [62]; “Empty waves” [163]; a significant part of the phenomenology of N. Tesla; “Energy of radiation” by Henry Moore, “tachyon fields” of Feinberg, “free energy” by D. A. Kelly, “energy of a gravitational field” by A. Nipper, “energy of space” by R. Schaffranke and J. Harris [116]; The “united field” of Maharishi-Hegelina [109]; “Energy of emptiness” Reichenbach; "Living magnetism" F. Messmer; "Bio-cosmic energy" G.Jeromeus; X is the power of Names; N — Blondlot radiation [118]; “Ponderomotive forces” by N. P. Myshkin [60, 61]; Abrams' radiant energy [155]; O — radiation or orgone by Reich [159]; M — field (morphogenetic field) by Schaldrake and Hayk [158 [; Z — rays of A. L. Chizhevsky; “Radiostetic radiation” and “form” field [119]; y — fields or y — radiation [120]; X — Agent Mori-Ama [121]; “Bipolar fields” V. Kroppa [160]; “Bioelectromagnetic fields” by P. Liakuraz; D — A. A. Deev's field; the main component of mitogenetic rays by A. A. Gurvich [122]; the main factor in the “mirror cytopathic effect” by V.P. Treasurer [112]. This list can be significantly expanded. The conjecture about the presence of a common physical entity in diverse phenomenology was expressed earlier by various authors, in particular, in the most complete form by Antwort Shimah in 1989.N — Blondlot radiation [118]; “Ponderomotive forces” by N. P. Myshkin [60, 61]; Abrams' radiant energy [155]; O — radiation or orgone by Reich [159]; M — field (morphogenetic field) by Schaldrake and Hayk [158 [; Z — rays of A. L. Chizhevsky; “Radiostetic radiation” and “form” field [119]; y — fields or

y — radiation [120]; X — Agent Mori-Ama [121]; “Bipolar fields” V. Kroppa [160]; “Bioelectromagnetic fields” by P. Liakuraz; D — A. A. Deev's field; the main component of mitogenetic rays by A. A. Gurvich [122]; the main factor in the “mirror cytopathic effect” by V.P. Treasurer [112]. This list can be significantly expanded. The conjecture about the presence of a common physical entity in diverse phenomenology was expressed earlier by various authors, in particular, in the most complete form by Antwort Shimah in 1989.M — field (morphogenetic field) by Schaldrake and Hayk [158 [; Z — rays of A. L. Chizhevsky; “Radiostetic radiation” and “form” field [119]; y — fields or y — radiation [120]; X — Agent Mori-Ama [121]; “Bipolar fields” V. Kroppa [160]; “Bioelectromagnetic fields” by P. Liakuraz; D — A. A. Deev's field; the main component of mitogenetic rays by A. A. Gurvich [122]; the main factor in the “mirror cytopathic effect” by V.P. Treasurer [112]. The variety of approaches to constructing a theory of torsion fields (see review by P. P. Efremov [167]) suggests that the theory has not yet acquired the contours of sufficient perfection. Nevertheless, its power is demonstrated in a number of important areas.

Chapter 2. Manifestations of torsion fields

Probably the first serious success of torsion theories was to obtain exact solutions for nonstationary cosmological models, from which it followed that the inclusion of spin-torsion interactions leads to the elimination of singularity [99, 100].

A theoretical justification was given for the unusual nature of the interaction of the beam polarized by the spins of the protons of the beam and the target mentioned at the beginning [123]. Specialists in elementary particle physics have known quite a lot of experiments in which the unusual behavior of spin-oriented particles is observed [162]. Usually, in such situations, a potential is phenomenologically introduced that allows one to obtain results consistent with experiment. Such experiments require, as in the case of polarized protons, estimates from the standpoint of spin-torsion interactions (classical spin interactions).

The theory of torsion fields made it possible to explain the attraction and repulsion of laser beams in the experiments of AK Tam and V. Happer [124-126], which was not possible with the help of traditional ideas. The approach to interpreting the so-called “fifth force” as manifestations of spin-torsion interactions turned out to be quite effective [127]. These experiments were considered in [51] as evidence of the real manifestation of spin long-range interaction within the framework of the concept of torsion fields.

VF Panov, Yu. T. Sytovym it was shown that the observed Berg anisotropy can be explained by cosmological rotation [164].

With respect to a number of experiments, it became possible to abandon the phenomenological description and approach their interpretation at the process level. In particular, there is a fundamental opportunity to formulate a new approach to the interpretation of the above-mentioned experiments, leading to the EPR paradox [128]. Let the process of anagilation of an e + e + pair proceed according to a scheme in which from the point where annihilation is realized, two g-quanta fly out in the opposite direction (with two-photon annihilation). Possessing the spin of these quanta, in some s-neighborhood creates a spin polarization of Physical Vacuum. In the process of moving quanta, they leave a spin-polarized cord along its path. This cord will be an ideal torsional communication channel between the flying apart quanta. Then, a change in the polarization angle of one of the quanta creates a torsion perturbation, which through the torsion channel spin-polarized Physical Vacuum (S-channel) will transmit the effect from one quantum to another [129]. This

effect will be real if the assumption about the speed of propagation of torsion signals is correct. Thus, it became possible to consider quantum nonlocality as a manifestation of “hidden parameters” [22], the role of which is performed by a torsion field.

As befits any serious theory, the theory of torsion fields has demonstrated a sufficiently large predictive power. All experimental results obtained at the time of this publication were first theoretically predicted. Part of the experiments is planned to be implemented.

The usual objection to the consideration of any experimental results that could testify in favor of the manifestation of torsion fields and spin-torsion interactions is the assertion that torsion effects cannot be observed, since the constant — spin-torsion interactions are of the order of 10–49–1050 .

But in this statement, there is a flaw in experts. This extremely small constant arises automatically only in the Einstein – Cartan theory (TEC). that is, in the torsion theory without the propagation of torsion, when a uniform Lagrangian with a single coupling constant is used for the fields, which is for. spin-torsion interactions are proportional to both G and h, which determines the smallness of the constant.

However, in the transition from the fuel and energy complex to theories with the propagation of torsion into the Lagrangian, in addition to G, there are many torsion coupling constants, and reference to a constant from the fuel and energy complex is an act of arbitrariness. Within the framework of the theory of torsion with propagation, the theoretical constants of spin-torsion interactions differ by different authors by tens of orders of magnitude. Thus, it should be recognized that in torsion theories with sources with radiation the question of the constant spin-torsion interactions remains open, and the discussion of torsion effects (torsion effects) is not only not without a reason, but is a very topical issue. Moreover, it is the experiment that can provide the real value of the constant of spin-torsion interactions.

Some experiments indicated at the beginning of this work can be considered as experiments confirming the real manifestation of torsion fields and spin-torsion interactions. These experiments include: the difference in neutron scattering on ortho and parahydrogen [1], the anomalous value of neutron precession when passing through a spin-polarized target [4], an unusual change in the intensity of interference of hydrogen in the 2S1 / 2 and 2P1 / 2 state [12 —14], the demolition of a circularly polarized electromagnetic wave from the plane of incidence, depending on the sign of the spirality [23], the change in the weight of the gyroscope in the non-stationary (non-equilibrium) state [26-29], astrophysical effects associated with the “hidden mass”, phenomena in di solar system, including solar-terrestrial connections, etc. However, with respect to these experimental results and natural phenomena, it is necessary to conduct theoretical studies, as was done, for example, for Tam and Happer’s experiments with the interaction of laser beams, first Nike and Pradkhan [124], and then Yu. N. Obukhov, P. I. Pronin and I. V. Yakushin [125, 126].

The analysis carried out above allowed, along with the above-mentioned particular consequences made in the course of the exposition, to draw a number of fundamental conclusions.

First, there was a reason to make an assumption, as already noted, that the heterogeneous phenomenology associated with spinning objects, considered in. The beginning of this work is probably determined by specific long-range interactions of a spin nature, in which the role of the material medium, the carrier of interactions, is performed by the Physical Vacuum with spin transverse polarization.

Secondly, it was suggested that the constructed model of Physical Vacuum with spin transverse polarization, interpreted as the S-field, can be identified with torsion fields. Evidence in favor of this was, in particular, the fundamental fact that the spin transverse polarization of Physical Vacuum was caused by spin; At the same time, as already noted, many researchers believed that the nature of torsion fields is also associated with classical spin.

Chapter 3. Principles of construction of torsion generators

An important consequence of the constructed models was an understanding of the principles of creating torsion generators (torsion sources). ”One can point to four classes of such generators.

1. As well as in electricity by primary sources.

the fields are the charges of elementary particles, in the same way the primary sources of the torsion field (for correctness we can add, as a rule) are the spins of elementary particles. The “as a rule” clause is related to the fact that the primary source of the torsion field, along with elementary particles, are, for example, g-quanta. It is necessary to remind once again the possibility of the existence of a torsion field in the absence of spinning objects.

Just as in electricity it is often necessary to deal with collective electric fields generated by electric charge systems (nuclei, atoms, charged bodies, etc.), so in torsion one has to deal with a collective torsion field from spin ordered systems. For example, any nuclear spin target is a source of a torsion field. The spatial structure of the torsion field of these sources is shown in Fig. 7

The same torsion field will have a body that has any spin order — nuclear, atomic, molecular. When the ferromagnet is magnetized, the spatial orientation of the molecular currents creating the primary magnetic fields is ordered. This ordering leads to the appearance of a collective magnetic field. However, the ordering of the orientation of the magnetic moments is also automatically ordered by the classical spins generated by the motion of electrons in ring molecular currents. The result is a collective torsion field. Thus, any permanent magnet in addition to the magnetic field has a torsion field (Fig. 8).

Without resorting to the concept of a torsion field, but proceeding from the understanding of the unusualness of objects with spin, A. Perez pointed to the specificity of permanent magnets as polarized macroscopic bodies [175].

The latter circumstance makes it possible to explain the phenomenon known as “water magnetization”, which consists in changing the biological activity of water, including distillate, after being subjected to a magnet. From the traditional point of view, acting as a magnet on the distillate, which is a diamagnetic, does not make sense. However, the effect is observed steadily and can be instrumentally registered. If we take into account the presence of a torsion field in the magnet, which regulates the spin structure of water, then the nature of the phenomenon becomes clear. The change in the properties of water under the action of a magnet on it occurs due to the action of not a magnetic but a torsion field of the magnet.

The indicated property of a magnetic field to generate a torsion field is, in all likelihood, one of the most important factors in the response of biolocation operators to react to a magnetic field [168-173]. The biolocation operator seems to be more responsive to the torsion component of the magnetic field, rather than the magnetic field itself.

2. Earlier it was already noted that the electromagnetic field generates a torsion field. It immediately follows from this that the overwhelming part of electrical and radio engineering devices and radio electronics is a source of torsion radiation and can be used as torsion generators. Naturally, devices generating high-voltage potentials that give rise to intense static fields will be especially effective. Radiotechnical devices have high efficiency, where there are organized ring or spiral electromagnetic processes, ranging from a coil with a current to a TWT and magnetrons. There is a wide variety of electronic and electronic devices suitable for use as generators of torsion radiation. However, a clear understanding is needed of what generates such sources: static or wave radiation; What is the spatial structure of these fields or radiations? What is the frequency spectrum (wave and spatial), etc. In some cases, Tesla transformers can be a convenient source of torsion radiation (perhaps the answer to Tesla's words lies here, "... those who think that electricity is transmitted in my system are wrong") .

In the recent past, a number of torsion generators were developed by a number of authors in the USSR and other countries, although various developers called their generators differently in which electrical and radio elements were used. We note some of them: the generators of A. A. Beridze — Stakhovsky, who used volume resonators and various crystals; generators d.t.n. G. A. Sergeeva, who used flat and bulk capacitors with special fillers; generators N. E. Fedorenko; A.A. Deev's generators, B.D. Pronin's generators, S.N. Tarakhtiya's generators using Helmholtz coil-type devices, V.N. вивirblis's generators, V.V. Bobyr's generators. The number of domestic developers could be significantly expanded.

3. Generators, created on the basis of a specially organized spin ensemble or a specially organized rotation of the material medium (field or body). Probably these first torsion sources were the generators of KN Perebeinos with rotating masses and the patented generators of V. M. Yurovitsky, who used a rotating magnetic field in his device (V. M. Yurovitsky was the first to suggest the need for using spinor long-range interaction to explain a number of physical phenomena). Currently, a large variety of torsion generators has been developed and produced in Russia. Such generators allow for smooth adjustment of torsion frequencies, the introduction of various types of modulations, the ability to generate right and left torsion fields, carry out a smooth adjustment of output power, etc.

Different generators use different working media as an object of rotation: electron flows, plasma, massless fields, etc.

4. A special class of torsion generators consists of devices using various geometric and topological forms. With their help, the same effects are achieved as with the use of other sources of torsion radiation. However, within the framework of existing torsion theories, it is not yet possible to explain their work (at present, theoretical work is being carried out in this direction). However, at the phenomenological level, a number of assumptions can be made.

As noted earlier, the fitons in Physical Vacuum probably interact with each other, and their spin properties and axial symmetry lead to the fact that the phytonic structure of Physical Vacuum forms a Euclidean space in which the fitons have a linear separation. The introduction of a nonlinear geometric or topological object into such a space should introduce a perturbation of a geometric or topological nature into this linear medium. The non-equilibrium (disturbance) in the Physical Vacuum leads to the fact that in a certain neighborhood of the specified object a redistribution of torsion potentials occurs. As a result, this area in relation to the external space continues to remain

self-compensated (in further studies it is necessary to find out for what reasons the topological perturbation of Physical Vacuum leads to a redistribution of torsion, rather than electromagnetic or gravitational potentials). Spin polarization states of topological nature manifest themselves as torsion fields. Therefore, it is advisable to consider bodies of various shapes as sources of a static torsion field. It should be noted that these torsion fields are really generated only by form. Such spin polarization states (static torsion fields) are generated as a monolithic cone, regardless of what material it is made of, and a hollow cone with arbitrarily thin walls.

Examples of configuration of torsion fields in the vicinity of cones and cylinders are shown respectively in Fig. 9 and fig. 10. It is easy to see that a topological perturbation leads to the appearance of torsion fields spatially balanced in terms of the SR and SL sign. The sign of the field can be established by the effect of the figures on various objects: for example, in [130] the effect of the torsion field of a cone on the crystallization of mycelium structures is shown.

It was experimentally established that the maxima of the left torsion field inside the cone are at its height at points that divide the height into three equal parts (points “c” and “c” in Fig. 9). It was also experimentally established that the ends of the “short” Cylinder (D> H / 2) create polarization zones with the right torsion field, and the “short” (D <H / 2) zones with the left torsion field.

In the absence of an understanding of the physical nature of effects arising in the vicinity of bodies of different shapes (effects that could not be explained on the basis of known physical concepts), these effects were called “form field”, “form radiation”, and “radio-aesthetic radiation”. There is an extensive heterogeneous literature on this issue (see, for example, [119,131,132]), as well as a large number of patents (see, for example, [133, 134]).

Probably the first torsion generators using the effect of forms were the pyramids as places of worship in Egypt and other countries, as well as the spiers and domes of the temples. The first devices, sources of radiation based on the effect of forms, if not to refer to antiquity, were the generators of A. A. Beridze — Stakhovsky.

The formulated approach allowed at the physical level to approach the explanation of a number of phenomena, in particular, to understand the effect of cavity and honeycomb structures, discovered by S. V. Grebennikov [135, 136].

5. Naturally, an extensive class of torsion generators are devices created by combining the principles underlying the previous four classes of generators. We refer only to two particular examples as a visual illustration. V. Yurovitsky, and later V. V. Bobyr, torsion generators were proposed using mechanically rotating magnets.

The patent [137] describes a device, judging by the design, which is a torsion generator, in which the excitation of a torsion field is achieved through a combination of topological effect (class 4 torsion generators) and electric polarization (class 2 torsion generators). According to this patent (Fig. 11), two pairs (2) of orthogonally located electrodes with voltages up to 300 square meters were inserted into a sixteen-angle straight prism (1), part of the sides of which was designed as a Möbius strip. Cone or ovoid can be placed on a part of the sides (3). A constant voltage generates a primary torsion field, which excites an intense torsion field due to the effect of forms. According to the authors of the patent during the operation of such a generator in a radius of 10 m, a variety of effects were observed. For example, the solubility of salts increased over two times, it was possible to carry out chemical reactions with a partially or completely removed catalyst, and the gravity decreased to 10%. As it should be with a torsion effect, the static field created leads to the spin

polarization of the Physical Vacuum, which is retained as a metastable state, as noted above. This made it possible, using this torsion generator, to observe many effects up to four days after it was turned off.

In patents V. Kroppa [160] described a generator in which the working substance was placed between the poles of the magnets. Perpendicular to the magnet's power lines, electromagnetic radiation was introduced at different frequencies (according to V. Cropp's materials in the range from Hz to GHz) to influence working substances. In such a combination of a magnetic field and electromagnetic radiation, a generator V. Croppa can be interpreted as torsion. The working substance was then used for medicinal purposes or for the manufacture of medicines.

Another example of a torsion generator using combinational principles is a device developed by Zhen Kanchzhen (the operation of the device was interpreted by the author as a “bio microwave connection”). The generator was a three-dimensional shape made up of flat pentagons (1) (the section of the device is shown in Fig. 12). On a part of these pentagons there are cones (4). The signal from this device is removed using tubes (5). Inside the volume of the figure is placed the generator of standard signals (2) and the matrix object (3). The object (3) was exposed to a generator of standard signals — GSS (2) at a frequency of the order of 11.0 GHz. The torsion component of the electromagnetic signal excited the torsion radiation of the object (3) at its own characteristic torsion frequencies. This torsion field is enhanced by the effect of the forms (1) and (4). Torsion radiation is focused at the vertices of the cones (4) and removed using hollow waveguides (the author, mistakenly believing that the work of his device is of an electromagnetic nature, used waveguides.)

It is easy to understand that the number of possible variants of torsion generators that can be created on the basis of a combination criterion is very large. The creation of torsion generators has opened up broad opportunities for fundamental, applied and technological experimental research.

Chapter 4. Methodical notes

Let us dwell only on fundamental issues. All generated generators contained electromagnetic radiation shielding in order to exclude the possibility of mistakenly accepting the effects of electromagnetic origin as torsion during the experiments.

In addition, of course, it was necessary to confirm the absence of electromagnetic radiation from such a shielded generator prior to experiments on conventional metrological equipment.

Secondly, experiments were chosen in which the expected appearance of such effects that would be impossible to obtain with traditional, including electromagnetic effects.

Thirdly, it was necessary, at least in the preliminary plan, to obtain experimental confirmation of the spin (in the classical understanding of spin) nature of the radiation of the developed generators.

For these purposes, the following idea of experiments was proposed and implemented. The torsion generator (1) (Fig. 13A) creates the torsion radiation SR in a narrow radiation pattern. By changing the characteristics of the object of impact (4) when turning on the torsion generator (1), the presence of the impact is determined. Then a material with the structure of spin ordered molecules is selected. As a result, a plate of such a material has an oriented torsion field, like the collective field of molecular spins. In the next phase of the experiment, the beam from the torsion generator is overlapped by two such molecular plates with a unidirectional orientation of their own torsion fields

(Fig. 13B). At the same time, the same result of the effect of the torsion generator is fixed as in the previous case in the absence of plates of torsion polarizers.

Finally (Fig. 13C), the beam from the torsion generator is overlapped by two polarized plates with orthogonal orientation of their own torsion fields. In this case, no effects of torsional action are observed. Such a situation is possible only in the case of a spin nature with transverse polarization of the radiation produced by the torsion generator. In this case, the observed effect is determined by the interaction of a transversely polarized spin (torsion) field with orthogonally crossed fields of polarizer plates (for the first time, AA Deev used crossed polarizers to act as a gate of one of his generators).

To prevent optical analogs from interpreting the results, you can use, for example, stretched polyethylene film, commercially produced by industry, as torsion polarizers. The technology of manufacture of this film is such that the polymers form an ordered unidirectional structure. The unidirectionality of polymers creates molecular spin ordering. This, in turn, leads to the fact that a collective torsion field arises in the film plane in the direction of alignment of the orientation of polymers. Two polyethylene films crossed by orientation of the polymers are transparent to light (and radiotransparent for most ranges), but effectively shield the radiation of the torsion generator. A comparison of this method with numerous patents of Western countries, offering various ways to reduce the influence of the so-called geopathogenic zones, shows that many of these approaches contained correct guesses, for example, the use of materials with a linear structure [156], but lack of understanding of the spin nature of radiation no one take the plunge - use crossed linear structures. A preliminary experimental verification of the screening effect of polyethylene films was carried out by AV Samokhin in his work on the study of the effect of torsion radiation on the erythrocyte sedimentation rate in 1989. Systematic studies of the effect of torsion radiation on erythrocyte cell membranes and lymphocytes, including using screening films, were performed in 1990 by a group led by V. V. Alabovsky with the participation of Yu. F. Perov.

The experiments discussed above can be implemented on the basis of a more rigorous methodology, following the scheme of Fig. 14. For research, the torsion generator (1) with symmetric torsion radiation in opposite directions from the generator is used. Unlike fig. 13C, impact objects (4) are placed symmetrically to the left and right of the torsion generator. In the space between the generator and the objects of influence (4), torsion polarizers (2, 3) are placed so that they block the torsion radiation cone. Under these conditions, if the polarizers have a unidirectional orientation of the torsion fields, then the effect on the object is observed, as if there were no polarizers. If the orientation of any of the polarizers is transferred to an orthogonal position with respect to the other plate, then the effect disappears in both objects, on the left and on the right (VD Pronin was the first to check this experimental design).

Thus, there is a phenomenon that can be interpreted as locking the spin-polarized space between the plates (2) and (3), as if this space behaved like a solid body.

Important fundamental experiments concerned the determination of the nature of radiation from torsion sources. Natural sources of the torsion field, such as crystals with polarized nuclear spins, commonly used as nuclear targets (Fig. 7), or ferromagnets having a torsion component due to the ordering of molecular currents along closed circuits (Fig. 8), form the spatial structure of the collective torsion field, satisfying the traditional views. The spins, as sources of the torsion field,

generate two cones of the directivity pattern of the torsion field SR and SL, which go in opposite directions, which corresponds to the notion of a classical back.

The situation is similar with the so-called passive torsion generators using the “form effect” (Fig. 9, 10). Another picture is observed when active torsion generators are used as torsion generators, in which the torque is created using an external energy source. Depending on the organization of the torque in the torsion generator in two opposite directions relative to the torsion generator, either only a right-handed or only left-handed torsion field arises, as indicated in fig. 15.

Such a field chart cannot be created with a classic spin. The source of the field in this case can only be helicity. The experiments considered in this collection indicate that "spin" and "spiral" sources (generators) demonstrate that the phenomena observed upon their influence are identical. However, the presence of "spin" and "spiral" sources in theory create a nontrivial situation. Intuition suggests that torsion fields may in fact be a collective manifestation of close but not identical entities.

The creation of torsion generators and their release as industrial designs made it possible to launch large-scale research to determine the feasibility and effectiveness of applying torsion methods and torsion means in various areas: the creation of new energy sources, transport, materials with new properties, information transfer, biotechnology, medicine , agriculture, etc. The task was to create a sum of technologies based on new physical principles — torsion technologies (S — technologies), which ogli to create the material basis for a new civilization of the XXI century.

Along with this, a program of fundamental theoretical and applied (experimental) research in the field of torsion fields was developed.

It makes sense to pay special attention to two important independent research directions. These are the principles of synthesis of torsion computers (VM) and the biophysical implications of the torsion paradigm.

In recent years, many studies have analyzed the prospects for the development of VM. At the same time, the closeness of the achievement of the physical limits of the improvement of the characteristics of computing facilities (see, for example, [138]) was constantly noted. At the same time, the interpretation of torsion fields as metastable states of spin-polarized Physical Vacuum makes it possible to formulate a fundamentally new approach to the creation of quantum (torsion) VMs. Elements of Physical Vacuum — Fitons have at least two metastable states: SR and SL, that is, they are binary elements. The fitons, apparently, have Planck order parameters: the switching time is 10 m sec, the size is 10–33 cm. Creating a VM on an element base with such characteristics would be immeasurably greater than a breakthrough into the VM area of a new generation. For all the fantastic nature of such a project, it is in principle realizable, although, obviously, it will require overcoming an enormous number of scientific and engineering problems. In a torsion VM (TVM), the physical environment from which it will be constructed is Physical Vacuum. In this case, two problems will be fundamental. First, it is to program some space object in such a way that its structure corresponds to the VM structure (approaches to this from different positions were studied by L. M. Porvin and independently R. F. Avramenko and V. I. Nikolaeva). The programming of the Physical Vacuum can be based on a static structure, or a dynamic architecture, or an adaptive architecture. The last two options are practically not available conventional VM. Secondly, it is necessary to know the principles and have the means of dialogue of the operator (user) with such a computational structure on Physical Vacuum.

Chapter 5. Torsion Model of Consciousness

An important area of research was the biophysical implications of the torsion paradigm. Since W. Little pointed out the analogy between neural networks and magnetic systems [139, 140], and J. Hopfield showed that such networks with symmetric connections are equivalent to spin glasses [141, 142], it became possible to build constructive models of brain mechanisms. An important analogy turned out to be that each neuron is connected to many other neurons, with long-range action in spin glasses, when each spin is connected directly to many other spins, through torsion fields.

These ideas allow us to construct a new approach, as soon as the possibility of refusing to understand spin as a magnetic moment is indicated, which in turn makes it possible to consider spin glass as an ensemble of objects with classical spins. In this case, spin glass is represented by a system in which arbitrary spatial spin configurations generating a torsion field are possible. At the same time, the external torsion field can form spatial spin structures in spin glass.

The constructed model suggests that each act of consciousness has its own spin structure in the brain, which leads to the corresponding characteristic torsion radiation. At the same time, with each external characteristic torsion radiation, its own spin structure will be formed in the brain, which will correspond to a certain perception in Consciousness.

From here you can make a number of conclusions. First, comparing the phenomenology of parapsychology and, in particular, extrasensory perception [120,143-145] with the properties of torsion fields, it is easy to see that the concept of torsion fields makes it possible to formulate effective approaches to justifying this phenomenology on a strict physical basis [145] and using it for planning experiments. In this direction, interesting studies were carried out by N. N. Lebedeva, N. N. Lyubimov, V. B. Strelets, A. N. Khlukovsky, S. A. Lytaev, and others.

All of the above allows us to say with sufficient certainty that parapsychological phenomenology is based on the laws of the microworld and fundamental interactions. To explain this phenomenology, it is not necessary to introduce a specific beginning in the form of biofields, radiostetic radiation, etc.

Secondly, it became possible to correlate their material carrier in the form of torsion fields to Consciousness and Mind. Conceptually close to the ideas developed were the ideas of J. Hegelin [109, 146, 157], in which the correct understanding of the role of the Unified Field in the processes of Consciousness did not advance to the identification of the Unified Field with the Physical Vacuum, and which were not supplemented by the ideas of the fundamental role of spin systems and torsion fields.

The essence of the ideas of J. Hegelin is given by his diagram presented in fig. 16. The left part of this scheme reflects the existing views in theoretical physics on the problem of the Unified Field Theory. New in the scheme is the right side, which essentially means that the sphere of Consciousness and Thinking has a material basis in the form of the Unified Field. Knowing the physics of the Unified Field, one can understand the physical nature of Consciousness, Thinking, Collective Mind. Fundamentally, J. Hegelin's approach does not arouse objections, although the rather formal comparison of Vedic concepts with superstring theory, which is considered by J. Hegelin as the physical basis of the Unified Field, is alarming.

If we take into account the developed ideas about the role of torsion fields in the physical nature of Consciousness and Thinking, then the scheme of J. Hegelin could take the form shown in fig. 17. This version of the scheme shows that Consciousness, Thinking and Collective Mind relate to the Unified Field through torsion fields. (The quantum approach to the mechanisms of Consciousness was studied by R. G. Jan and V. J. Dinn [152]).

Apparently, the more correct is the idea of the physical nature of Consciousness and Mind as the spin polarization states of Physical Vacuum and the identification of the Unified Field with Physical Vacuum (EGS — concepts). These views are reflected in the Metastructure of the relationship between Nature, Knowledge and Man, shown in Fig. 18. 'Introducing various theories of unification into this structure seems superfluous, since they reflect only steps in our understanding of Nature. In the constructed model, all fields can be directly represented by the polarization states of Physical Vacuum.

In accordance with the stated views, Consciousness and Thinking, and in the limit the Universal Mind is presented in Physical Vacuum (Unified Field) not abstractly, but through a concrete physical entity — torsion fields, like spin polarization states of Physical Vacuum, so-called. torsion fields. It can be reasonably assumed that Consciousness as a functional structure includes a spin biocomputer - the brain is like a spin glass, and its external part is a torsion computer (VM), which spans the polarized Physical Vacuum in the space around the brain.

The formulated representations should be considered only as a statement of the problem that requires in-depth study, especially if we take into account the known limitations of the spin glass model for describing the mechanisms of the brain.

Another problem, which follows from the findings, is connected with the exotic idea of the Universe as Super-WM. If you do not delve into the history of this idea, which probably goes back to ancient Vedic knowledge, and which developed in later times (for example, in the works of F., Schelling), then at the level of modern science it is necessary to point out S. Lem’s research [148] and the later work of R. Penrose [149], as well as studies of a number of authors [150-154], which are adjacent to this problem. In the framework of traditional ideas, to consider the Universe as something integral and interconnected, it would probably not make sense if we consider that, in generally accepted theories, the time of interaction between oppositely spaced frequent Universe is commensurate with its age. However, if we consider that the entire Universe is permeated with the environment - Physical Vacuum, we also take into account, as noted earlier, that Physical Vacuum, according to V. K. Ablekov, and others, has the property of a hologram, and take into account its properties as a spin system (the role of torsion fields with their unusual properties), it becomes possible to consider the Universe as an integral system, and the ideas of the field (torsion) VM allow not abstractly, but quite specifically discuss the quantum approach to the problem of the Universe as SuperVM (Absolute), the approach that R was looking for Penrose [149] (Absolute in this context can relate Plato's “world of ideas”, Hegel’s “self-developing spirit”, Jung’s “Collective unconscious”, Newton’s Absolute, Nalimov’s “semantic Universe”, Vernadsky’s “Noosphere” in its extended generalized understanding The constructiveness of joint consideration of these concepts was noted by Y. Sheredenko).

If we assume the torsion (spin) basis of this SuperTV (Absolute), and recall the above concept of the torsion nature of Consciousness, it becomes obvious that Consciousness is an organic part of

SuperTVM (Universe) built into it in the most natural way because of the common physical principles of functioning .

Conclusion

Fundamental, applied and technological research in the field of torsion fields is at the beginning. Like any new direction in science and technology, it is vulnerable to criticism, because the number of emerging questions is much more answers to them. In addition, as in past centuries, the difficulties of the formation of new ideas are generated by inertia and conservatism of thinking. There are a lot of examples of this at all times. Suffice it to recall Lavoisier's stubborn denial of the existence of meteorites, or the words of Pauli, who called the idea of spin in the works of Uhlenbeck and Goodsmith "a stupid idea", which, however, did not prevent him somewhat later formulate one of the fundamental principles of quantum mechanics, named after him. However, even the existing theoretical and experimental base of the torsion field paradigm, including that presented in this collection, allows us to consider torsion fields as the same reality as electromagnetism and gravity, and also inspires confidence in the great future of this area of science.

Literature

1. Shpolsky, E.V. Atomic Physics. - M., GITGL, 1949, t. 1, p. 523, 1950, t. 2, p. 718.

2. Valraven Y., Silver A. Stabilization of atomic hydrogen. // UFN, 1983, vol. 139, № 4, p. 701.

3. Krish Alan D. Clash of rotating protons. // In the world of science, 1987, № 10, p. 12.

4. Baryshevsky V. G., Podgoretsky M. M. The nuclear procession of neutrons. // JETP, 1964, V. 47, p. 1050.

(see also: Baryshevsky VG Nuclear Optics of Polarized Media. - Minsk, BSU, 1976, p. 144).

5. Lale F "Freeze D. X. Spin effects in gases. // In the world of science, 1988, № 6, p. 52.

6. Leduc M., B. Kosten. A new quantum liquid — polarized helium — 3/91. // Physics abroad, Series A. - M., 1991, p. 120

7. Lhuiller S., Laloe F. L'helium trois polarise: un "nouveau" fouide quantique? // j. Phys. (Fr). 1979, v. 40, No. 3, p. 239.

8. Lhuiller C. Transport properties in a spin polarized gas. Iii. // j. Phys. (Fr), 1983, v. 44, No. 1, p. one.

9. Bashkin E. P., Meierovich A. E. Solutions of 3 He-He "in strong magnetic fields. // Letters to JETP, 1977, V. 26, no. 10, p. 696.

10. Meyerovich FE Magnetokinetic effects in 3He-H »solutions. // Phys. Lett. A, 1978, v. 69, Ns 4, p. 279.

11. Castaing V., Nazieres P. Phase transitions of spin polarized 3He: thermodynamical nuclear orientation technique? // j. Phys. (Fr), 1979, v. 40, No. 3, p. 257.

12. Sokolov Yu. L., Yakovlev V. P., Palchikov V. G., Lin D. N. Optics of Atomic States. IAE them. I. V. Kurchatova, Scientific Council on the Problem of Atomic-Energetic Processes and Technologies. - M., 1991, p. 32.

13. Sokolov Ju. L., in: Hydrogen Atom. Eds. GF Bassani, M. Inguscio and TW Hausch. - Berlin — Heidelberg, 1989, p. sixteen.

14. Sokolov IE. L., Yakovlev V.P. Change of the Lamb shift in the hydrogen atom (n = 2). // ZhETF, 1982, vol. 1 (7), p. 15.

15. V. Tulin. Nuclear Spin Waves in Magnetically Ordered Materials. In Proc .: Low Temperature Physics, 1979, No. 9, p. 965.

16. Lvov V.S. Nonlinear spin waves. - M., 1987, p. 270

17. Pokazaniev V. G., Skrotsky G. V. Pseudomagnetizm. // UFN, 1979, vol. 129, no. 4, p. 615.

18. Abraham A., Goldman M. Nuclear magnetism. Order and mess. - M., 1984, vol. I, p. 300, t. 2, p. 360.

19. Spassky B.I., Moscow A.V. On nonlocality in quantum physics. // UFN, 1984, vol. 4, s. 599.

20. Helliwell T., Konkovsky D. Paradoxes and non-paradoxes of causality: classical superluminal signals and quantum measurements. '86 Physics abroad. Ser. B. - M., 1986, p. 193.

21. Philosophical studies of the foundations of quantum mechanics (on the 25th anniversary of Bell's inequalities). Philosophical Society of the USSR. - M., 1990, p. 184.

22. Philosophical studies of modern problems of quantum theory. Institute of Philosophy, USSR Academy of Sciences. - M., 1991, p. 119.

23. Imbert Ch. Circuit Polarized Light Beam. // Phys. Rev. 0.1972, v. 5, Ns 4, p. 787.

24. Tarn AC, Mapper W. Long-Range Interaction between Seif-Focused Laser Beams in an Atomic Vapor. // Phys. Rev. Lett., 1977, v. 38, No. 6, p. 278.

25. Kapany NS, Burke JJ Optical Waveguides. NY Academic, 1962. (H. Kapani. Fiber optics. Principles and application. - M., 1969, p. 464).

26. NA Kozyrev. A. Causal or asymmetric mechanics in a linear approximation. - Pulkovo, GAO AN USSR, 1958, p. 90.

(see also: N. Kozyrev. Astronomical Observations Through the Physical Properties of Time. In Sat: Flare Stars. International Symposium in Byurokan, 1976, Academy of Sciences of the Armenian SSR. - Yerevan, 1977, p. 209).

27. Hayasaka H., Takeuchi S. Anomalous Weight Reduction. // Phys. Rev. Lett., 1989, No. 25, p. 2701.

28. Polyakov, S.M., Polyakov, O.S., Introduction to Experimental Gravitonics, M., Prometheus, 1988, p. 136.

29. Mariyama A., Shoichi M., and Teruhisa M. Observation of the spinning gyroscopes. // j. Phys. Soc. Jap., 1991, v. 60, No. 4, p. 1150.

30. Nitschke JM, Spinning Cyrpscope. // Phys. Rev. Lett., 1990, No. 18, p. 2115.

31. Ouinn TJ, Picard A. // Nature, 22 febr., 1990, vol. 343, p. 732.

32. Perebeynos KN and others. Assessment of the possibility of using gravitational waves for communication purposes. Report on SRW. - M., 1966, p. 17

33. Novikov I.D., Frolov V.P. Physics of Black Holes. - M., 1986, p. 327.

34. Chandrasekar S. Mathematical theory of black holes. - M., 1986, p. 1, p. 276, Part 2, p. 355.

35. Shnol S. E., Udaltsova N. V., Bodrova N. B., Kolombet V. A. Discrete macroscopic fluctuations in processes of a different nature. // Biophysics, 1989, vol. 4, s. 711.

36. Ternov I.M., Bodovitsyn V.A. On the modern interpretation of the classical theory of spin Ya. I. Frenkel. // UFN, 1980, t. 132, vol. 2, s. 345.

37. Bagrov V. G., Bordovitsyn V. A. The classical theory of spin. // Proceedings of the university, ser. Physics, 1980, № 2, p. 67.

38. A. Hezlot. Classical mechanics and electron spin. '86 Physics abroad, ser. B, Mir M., 1986, p.66.

39. Oganyan X. What is a spin? '88 physics abroad. Ser. B. - M., 1988, p. 68

40. Blake R., Ankyvich A. Analogies between fiber optics and mechanics. '88 physics abroad. Ser. B. - M., 1988, p. 33.

41. Belinfante FJ On The Spin Angular Momentum of Mesons. // Physica VI, 1939, v. 6, no. 9, p. 887.

42. Tetrode H. Uber den Wirkungszusammenhang der Welt. Ein Erweiterung der Classischen Dynamik. // Zeit. fur Physic, 1922, Bd. 10, s. 317.

43. Fokker AD Ein invarianter Variationssatz fur die Bewegung mehrerer electricher Massenteilchen. // Zeit. fur Physic, 1929, Bd. 58, s. 368.

44. Fokker AD // Physica, 1929, Bd. 9, No. 2, s. 33.

45. Frenkel Ya. I. At the dawn of a new physics. - M., 1970, p. 384.

46. Wheeler JA, Feynman RP Interaction with the Absorber as the Mechanism of Radiation. // Rev. Mod. Phys., 1945, v. 17, p. 157.

47. Wheeler JA, Feynman RP Classical Electrodinamics. // Rev. Mod. Phys., 1949, v. 21, No. 3, p. 425.

48. Zhitnikov V.V., Kamenshchikov A.Yu., Ponomarev V.P. Precision gravitational measurements and new types of physical interactions. In Proc .: Gravity and hypothetical interactions. Ed. Ya. P. Terletsky. - M., 1989, p. 3

49. Markov M. Global properties of a substance in a collapsed state. - Gravity problems. Ill Soviet Gravity Conference, Yerevan, October 11 - 14, 1972 - Yerevan, Yer. State University, 1975, p. 423.

50. Grinberg, O. U. New level of the structure of matter. '87 Physics abroad. Ser. A. - M., 1987, p. 196.

51. Cheung S. I., Li P., Szeto K. I. Microscopic detection of spin-dependent long-range interaction. // Phys. Lett A., 1991, no. 4-5, p. 235.

52. Okun L. B. Physics of Elementary Particles. - M., 1988, p. 272.

53. Jordan P. Geregete Antriebe fur Papiermschintn. // Zeit fur Phys. 1959, Bd. 157, s. 216.

54. Thiry IR // Compt. Rend., 1948, v. 226, p. 216.

55. Brans C., Dicke RH Mach's Principle and a Relativistic Theory of Gravitation. // Phys. Rev., 1961, v. 124, p. 925.

56. Pyzh V.M. The Problem of Nuclear Physics and Cosmic Rays. Interdepartmental thematic scientific and technical collection. - Izv. KSU, "Vida School". - Kharkov, 1980, p. 60

57. Marusyak V.I. The law of conservation of symmetry and dynamics. - Kiev, 1976, Preprint, № 33P.

(see also: V.I. Marusyak, I.M. Rarenko. Derivation of the general equations of spiral (torsion) oscillatory chains of excitations (using symmetry representations). Chernivtsi State University, Research Report. Chernivtsi, 1991, p. 7 -9).

58. Weinberg with. The first three minutes: a modern look at the origin of the universe. - M., 1981, p. 209.

59. Dolgov A.D., Zeldovich Ya. B., Sazhin M.V. Cosmology of the Early Universe. - M., 1988, p. 200

60. Myshkin, N.P. Motion of a body in the flow of radiant energy. // Journal of the Russian Physico-Chemical Society, 1906, howled. 3, s. 149.

61. Myshkin N.P. Ponderomotive forces in the field of a radiating source. // Journal of the Russian Physico-Chemical Society, 1911, no. 6, s. 371.

62. Fischbach E., Sudarsky D., Szafer A., Talmadge S., Aronson S. N. Long-Range Forces and Eotvos Experiment. // Ann. Phys., 1988, He 182, p. one.

63. V. Milyukov. Principles of detecting new forces in gravitational experiments. In Proc .: Gravity and hypothetical interactions. Ed. Ya. P. Terletsky. - M., 1989, p. 17

64. Lee T. 0., lang S. N. Conservation of Heavy Particles and Generalized Gauge Transformations. // Phys. Rev. 1955, v. 98, p. 1501.

65. Kibble TWB Lorentz Invariance and the Gravitational Field. // j. Math Phys., 1961, No. 2, p. 212.

66. Sciama DW The Physical Structure of General Relativity. // Rev. Mod. Phys., 1964, No. 36, p. 463.

67. I.I. Ivanenko, P.I.Pronin, G.A.Sardanashvili. gauge theory of gravity. Moscow State University, Moscow, 1985, p.143.

68. Zel'dovich Ya. B. Interpretation of electrodynamics as a consequence of quantum theory. // Letters in ZhETF, 1967, vol. 6, no. 10, s. 922.

69. Sakharov A.D. Vacuum quantum fluctuations in curved space and the theory of gravity. // DAN, 1967, No. 1, p. 70

(see also: Beilin V. A., Vershkov G. M., Grishkan Yu. S., Ivanov N. M., Nesterenko V. A., Poltavtsev A. N. On Quantum Gravitational Effects in an Isotropic Universe. // JETP, 1980, issue 6, p. 2082).

70. A. A. Mushroom, S. G. Mamaev, and V. M. Mostepanenko. Vacuum Quantum Effects in Strong Fields. - M., 1988, p. 288.

71. A. A. Grib, Damansky E. V., Maksimov V. M. Problems of symmetry breaking and vacuum invariance in quantum field theory. // UFN, 1970, vol. 102, no. 4, s. 587.

72. Akimov, A.E., Boichuk, V.V., Tarasenko, V.Ya., Long-Range Spinor Fields, Physical Models. AN USSR, IPM. - Kiev, 1989, preprint № 4, p. 23.
(see also: A.E. Akimov, V.Ya. Tarasenko. Models of polarization states of Physical Vacuum and torsion fields. EGS — concept. ISTC VENT. - M., 1991, preprint No. 7, p. 31.
Akimov A.E., Tarasenko V.Ya.. Models of polarized states of Physical Vacuum and torsion fields. - Proceedings of the higher educational institutions, Physics, 1992, vol. 35, No. 3, p. 13.)

73 BWynteky-Birula I. Quantum Electrodinamics without Electromagnetic Field. // Phys. R "v., 1963, No. 130, p. 465.

74 Bjorken JD A Dinamical Orugin for the Electromagnetic Field. // Ann. Phys., 1963, No. 24, p. 174.

75. Bjorken, J.D., Drell, S.D., Relativistic Quantum Theory. - M., 1978, p. 295.

76. Broido M.M. // Phys. Rev. 1967, v. 157, No. 144.

77. Landau, LD, Lifshits, E. M. Theoretical Physics, Vol. IV. - M., 1968, Part 1, p. 480.

78. V. Bunin. The newest problems of gravity in the light of classical physics. Abstracts of the reports of the 4th astrogeological meeting of the Geographical Society at the Academy of Sciences of the USSR, Leningrad 1962, p. 88
(see also: V. Bunin. The Uniform Electrogravitational Equations of Mathematical Physics. Abstracts of the reports of the section MOIP, 1965, issue 1, p. 4).

79. Dubrovsky V. A. Elastic model of physical vacuum. // DAN USSR, t. 282, 1985, № 1, p. 83

80. Adler S. Einstein gravity as breaking force in quantum field theory. // Rev. Mod. Phys., 1982, v. 54, No. 3, p. 729

81. Sakharov A.D. // TMF, 1975, V. 9, No. 22, p. 157.

82. Butorin, G. T., On the issue of the quantum-mechanical nature of gravity. VINITI. - M., 1987, dep. Ns 5139-B87, p. 49.

83. Butorin G. T. On the possible origin of the magnetism of rotating masses. VINITI. - M., 1989, dep. No. 2139-B89, p. 49.

84. Bershadsky B. R., Mekhedkin A. A. Structural Discretization of the Main Types of Composite Relationships of Matter Types. VINITI.-M., 1990, dep. No. 40 — B90, p. eleven.

85. Akimov A.E., Bershadsky B.R., Mekhedkin A.A. Frequency spectrum of physical fields in a generalized representation. VINITI. -M., 1990, dep. No. 2826-B90, p. 6

86. Markov M. A. Very Early Universe. Proc. of the Nuffield Workshop. Eds. Gibbson GW, Hawking SW, Siklov ST — Cambridge 1988, p. 353.

87. Wheeler, JA. Foresight of Einstein. - M., 1970, p. 112

88. Cartan E. Theory of spinors. - M., 1947, p. 223.

89. Dirac P. Spinora in a Hilbert space. - M., 1978, p. 123.

90. Nonlinear spinor theory. Collection. - M., 1954.

91. Zhelnorovich V. A. Theory of spinors and its application in physics and mechanics. -M., 1982, p. 270

92. Penrose R., Rindler V. Spinora and space-time. - M., 1987, t. 1, p. 489, 1989, vol. 2, p. 574.

93. Bogolyubov N. N., Shirkov D. V. Quantum Fields. - M., 1980, p. 319.

94. Akhiezer A.I., Berestetsky V. B. Quantum electrodynamics. -M., 1969, p. 623.

95. Markov M. The Future of Science. // UFN, 1973, vol. 4, No. 719.

96. Hehl FW Spin and Torsion in General Relativity. I: Foundations. // GRG, 1973, No. 4, p. 333. l

97. Hehl FW, Heyde P., Kerlick GD, Nester JM General relativity with spin and torsion: Foundations and prospects. // Rev. Mod. Phys., 1976, Us 3, p. 393.

98. FW Hehl. On the Kinematics of the Torsion Spase-Time. // Found. Phys., 1985, v. 15, No. 4, p. 451.

99. Trautman A. // Symp. Math., 1973, v. 2, No. 1, p. 139.

100. Kopczynski W. A non-singular univers with torsion. // Phys. Lett. A, 1972, No. 39, p. 219. (see also: Phys. Lett. A, 1973, No. 43, p. 63).

101. Melnikov V. N., Pronin P. I. Problems of stability of the gravitational constant and additional interactions. Results of science and technology, sir. Astronomy, vol. 41, Gravity and Astronomy. - M., VINITI, 1991, p. five.

102. Obukhov Yu. N., Pronin P. I. Physical effects in the theory of gravity with torsion. Results of science and technology. Ser .: Classical field theory and gravity theory, v. 2, Gravity and cosmology. - M., VINITI, 1991, p. 112

103. GI Shipov. Theory of Physical Vacuum. - M., 1993, p. 362.

(see also G.I.Shipov. The Theory of Physical Vacuum, Science, M., 1997.)

104. Kozyrev N. A., Nasonov V. V. On some properties of time discovered by astronomical observations. - The problem of the study of the universe, 1980, vol. 9, p. 76.

105. Lavrentiev M.M., Eganova I.A., Lutset M.K., Fominykh S.F. On the remote influence of stars on a resistor. // Reports of the Academy of Sciences of the USSR, 1990, vol. 314, no. 2, s. 352.

106. Pugach A.F., Akimov A.E. Preliminary results of astronomical observations by the method of N. A. Kozyrev (in press).

107. Waak J., Spenser J. N., Jonston K. J., Simon RS Superluminal Resupply of Stationary Hot Spot 3C395. // Astronom J., 1985, v. 90, No. 10, p. 1989.

(see also: LI Matveenko. Visible superluminal velocities of component scattering in extragalactic objects. // UFN, 1989, Vol. 140, Issue 3, p. 469).

108. Robert G.Jahn, Brenda J.Dunne. Margins of reality. (Harmony / HBI Book, NY, 1988).

109. Scientific Research on the Maharishi Technology on the Unified Field. - MIU, 1988, p. 73.

(see also: Doctoral Program in Physics. - MIU, 1989, p. 16.).

110. Akimov, A.E., Bingi, V.N., Homeopathy, Quantum Physics, and Torsion Field. III Congress of the International Homeopathic Organization. Kiev, September 25–29, 1991. Collection of reports, p. 143.

111. Bulienkov N. A. Periodic dispiratation-modular diamond-like structures of bound “water” — possible structures that determine the conformation of biopolymers in the structures of their hydrates. // Crystallography, 1988, № 2, p. 424.

112. Kaznacheev V.P., Mikhailova L.P. Supersweak emissions in intercellular interactions. - Novosibirsk, Siberian Branch of the USSR Academy of Sciences, 1981.

113. Hideo Uchida. A Method apparatus for Detecting a Fluid. Patent England, No. 1511662,24 may 1978.

114. Hideo Uchida. A Method of Detecting Aura Phenomena. // The Journal of Japan, 1976, v. 1, Ms 1, p. 25

115. Kozyrev N. A. Selected Works. - Leningrad, 1991, vol. 1, p. 445.

116. The Mannual of Free Energy Devices and Systems. Conplied by DA Kelly. DAK WLPUB, Buitank, California, 1986, Pub). No. 1269 / F-269, p. 125

117. Nieper Hans A. Revolution in Tecnokxjy, Medicine and Society. Conversion of Gravity Field Energy. - Olderberg, 1985, p. 384.

118. Blondlot MR Sur de nouvelles sources de radius susceptibles de traverser tes metaux, les bois, ets., Ef sur de nouvelles // Academie des sciences, 2 may 1903, p. 1127.

119. Pagot J. Radiesthesie emission control forme. - Paris, 1978, p. 277.

120. Dubrov A.P., Pushkin V.N. Parapsychology and Modern Natural Science. - M., 1989, p. 280.

121. Hideo Moriyama. Challenge to Einstein's Theory of Relativity. Further studies on X-agent. Shonan Hygiene Institute, JAPAN, 1975, P. 119.

122. Gurvich A. A. The theory of biological field. - M., 1944. (see also: Gurvich A. A. The problem of mitogenetic radiation as an aspect of \ molecular biology. - L., 1968).

123. De Sabbata V., Sivaram C. Strong spin-torsion interaction between spinning protons. // Nuovo Ciemento A, 1989, No. 101, p. 273.

124. Pradhan Naik PCT Long-range interaction between spins. // j. Phys. A, 1981, No. 14, p. 2795.

125. Obukhov lu. N .. lakushin IV (in print) on axial torsion mass and coupling constants

126. Pronin P. R., Yakushin I. V. Torsion and interaction of polarized photons (in press).

127. V. De Sabbata, S. Sivaram. Fivth Force as Manifestation of Torsion. // Inter. J. Theor. Phys., 1990, No. 1, p. one.

128. Feynman, R., Leighton, R., and Sands, M., Feynman Lectures in Physics. - M., 1967, V. 9, Quantum Mechanics (II), p. 259Y

129. Akimov A.Ye., Moskovsky A.V. Quantum nonlocality and torsion radiation. In Proc .: Conceptual problems of the quantum theory of measurement. Philosophical Society of the USSR, ISTC VENT. - M .; 1991, p. 121.

130. Akimov A.Ye., Kurik M.V., Tarasenko V.Ya. Influence of a spinor (torsion) field on the crystallization process of mycelial structures. // Biotechnology, 1991, № 3, p. 69

131. Winter D.D. Resonance geometry: ticonic space, tangonic space, magnetic resonance and taconic space. In: Daniel Einter with Lorin Ketly and Cheryt Lynn Triplet. The Seed and the EGG, A Galactic Context, Cristal Hill Farm, Eden, NY, 8/88, 1988, p. 219.

132. Shevelev I. Sh., Marutaev M. A., Shmelev-I. P. Zoeothic section. - M., 1990, p. 344.

133. Schweitzer P. Patents t No. t P3320518.3,13.12.84, Bundesrepublic Deuschland. (see also: Dispositit d'application des emission denx aux formes a la matiere an mouvement. Patent Republique Francaise, No. 248096, 1982, 5 fev.
Appareillage d'amplification on des emissions u a forx. Patent Repablique Francaise, No. 2421531, 1973. 30 nov.)

134. Fantuzzi G. Patentamt, No. 250943.9, 18.09.75, Bundesrepublik Deuschland. (see also: D. Fantuzzi, patent of the USSR Nt 688107 of 09/25/79).

135. Grebennikov S.V. On the physico-biological properties of the nesting sites of pollinating bees. // Siberian Bulletin of Agricultural Science, 1984, № 3, p. 111.

136. Grebennikov S. V. Remote sensing of information by living organisms: a new possible factor. On Sat All-Union Scientific and Technical Conference "The application of information theory methods to improve the efficiency and quality of complex radio-electronic systems." - M., Radio and communication, 1984, p. 59.

137. Appareillage d'amplification des emissions dens aux formes. Demande de Brevert mJnvention Ni 7821083, 13 juillet 1978.

138. Bois D., Rosenscher E. Physical boundaries of the possible in microelectronics. '91 Physics abroad, sir. A. - M., 1991, p. 93.

139. Little WA The Existence of Persistent States in the Brain. // Math. Biosci., 1974, v. 19, Nt 1-2, p. 101.

140. Little WA, Shaw GL Analytic study of the. memory storage of a Neural Network, // Math. Biosci, 1978, v. 39. Nt 3-4, p. 281.

141. Hopfield systems with emergent collective computational abilities. // Pros. Nat. Acad. Sci. USA 1982, v. 79, No. 8, p. 2554.

142. Amit 0. J., Gutfrennd H., Sompolinsky H. Spin-glass models of neural networks. // Phys. Rev. F .. 1985, v. 32, No. 2, p. 1007.

143. Puthoff, Targ. Perceptual channel of information transmission over long distances. Background and recent research. // TIER, 1976, No. 3, p. 34
(See also “responses to the article of Puthoff and Targ: TIIED, 1976, No. 8, TIIED, 1976, nj 10.).

144. Jan R. G. The Ageless Paradox of Psychophysical Phenomena: An Engineering Approach. // TIER, 1982, I * 3, p. 63.

145. Psychophysics. Sat articles. Institute of Philosophy, Russian Academy of Sciences, ISTC VENT. - M., 1992, (in print).

146t Achieve World Peace Through A New Science and Tecnology. -MIU Press, 1991, p. thirty.

147. Kaznacheev V. P., Goryaev P. P., Vasilyev A. A., Berezin A. A. Soliton-holographic genome with a collectively symmetric genetic code. IKEM SB AMS USSR. - Novosibirsk, Preprint, 1990, p. five.

148. Lem S. The amount of technology. - M., 1968, p. 608.

149. Penrose R. The Emperor's New Mind: Concerning Computers, Mind, and Laws of Physics. - Oxford, 1989, p. 466.
(See also :) I. I. Smorodinsky. New Emperor Thinking. Review of the book by R. Penrose. // UFN, 1991, Ns 2, p. 204.
Theodor Roszak. A brief history of enigma and paradox. // New Scientist, 1990, No. 1728, p. 60. J. Brown. Is the Universe a computer? // New Scientist, 1990, No. 1725, p. 37).

150. Turing A. Can a car think? - M., 1960, p. 112

151. Ashby U. Brain construction. - M., 1962, p. 398.

152. Neyman J. The computer and the brain. - Cybernetic collection, 1960, vol. 1, s. one.

153. Feigenbaum, E., Feldman, J. Computing machines and thinking. - M „1967, p. 552.

154. Rosenblat F. Principles of Neurodynamics. - M., 1965, p. 480.

155. Tompkins P. The Private Life of Plants. - NY, 1973, p. 416.

156. Schulze Horn S., Hoffmeister H. Denstches Patentamt, No. DC 3719084 A1, 07.01.88.

157. Hablin JS Restraining Physics. // Modern Science and Vedic Science, 1989, v. 1, no. 1, p. 3

158. W. Ludwig. Science and Physical Aspects MORA-Therapy. // Amer. J. Acup., 1978, vol. 15, No. 2, p. 129.

159. Reich, Wilhelm. The Discovery of the Orgone. Vol. 1. - NY, Farrar, Strans and Giroux, 1969.

160. Werner Kroppa. Patentamt, no. 2 952 592 A61K 41/00, 1979.
(see also:
Patent England, Ns 2,066,047 A61L 2/02, A231 3/26, 1981.
Patent USA, No. P 3 612 315.3, 1986.
Patent Republique Franceise, No. 2 488 096, 1982, 5 fev.).

161. Information-active drugs company "WEKKOMA". // Bulletin of biophysical medicine, 1992, № 1, p. 44.

162. Grosbie T. A. etc. Elastic dependence of the scattering at 90 °. // Phys. Rev. D., 1981, vol. 23, No. 3, p. 600

163. Schmidt M., Selleri F. Empty — Wave Effects on Particle Trajectors in Triple-Slit Experiments. // Found. Phys. Lett., 1991, v. 4, no. 1, p. one.

164. Panov V.F., Sbytov Yu.T. On the possibility of explaining the observational Birch anisotropy by cosmological rotation. // ZhETF, 1992, vol. 101, no. 3, s. 769.

165. De Sabbata V., Gasperini M. Macroscopical Consequences of Propagation Torsion Potential. // Let. Nuovo Cimento, 1981, vol. 30, No. 16, p. 503.

166. Rivlin L. A. Energy of waveguide formation as a measure of its critical frequency. // UFI, 1991, № 3, p. 143.

167. Efremov A.P. Space-time torsion and effects of a torsion field. Analytical review. ISTC VENT. - M., 1991, p. 76.

168. Harvalik ZV // The American Dowser, 1973, v. 13, No. 3, p. 85.

169. Harvalik ZV // The American Dowser, 1973, v. 13, No. 3, p. 87

170. Chadwic D. Jensen L. Utah Water Research Laboratory Collage of Engineering. Utah stage University Logan, 1971, p. 120

171. Tromp SW Experiments on the possible relationchip between soil resisting and dowsing zones. - Oegstgeest, 1956.

172. Harvalik ZV // The American Dowser, 1973, v. 13, No. 3, p. 92

173. Tromp SW Psychical Physics: A Scientific Analysis of Dowsing. - NY, 1949.

174. VII International Symposium on Spin Phenomena in High Energy Physics. Protvine, September 22–27, 1986, vol. 1. Collection of reports. State Committee on the Use of Atomic Energy of the USSR, Institute of High Energy Physics. - Serpukhov, 1987, p. 287.

175. Peres A. Test of equivalence principle for particules with spin. // Phys. Rev. D., 1978, v. 18, no. 8.

176. Bingi V.N. Induction of metastable states of water within the framework of the concept of a torsion field. ISTC VENT. - M., 1991, Preprint number 3, p. 35