Photons in Physics with real Magnetic Charges and the Falsity Existing Notion of Expansion Universe (How Physicists; "Yawn" Real Magnetic Charges, Curved Space and Sentenced the Universe to Expansion)

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Abstract — The experiments of F. Ehrenhaft as well as the experimental and theoretical studies of the author showed that it is magnetic charges are the direct sources of the magnetic field. Eddy currents of magnetic charges (rotating magnetic dipoles \( g_2 - g^+ \)) which actually exist in atoms and substance, are untwisted by electric current in conductors, are direct sources of the well-known vortex magnetic field \( \text{rot} \mathbf{H} \). Together with electric charges, magnetic charges make up the shells of atoms, which are actually electromagnetic, not electronic. It is the electromagnetic shells of atoms that are the sources of the vortex electromagnetic (gravitational) field, which is described by the vortex vector \( \text{rot} \{ \mathbf{E} - \mathbf{H} \} \). The vector character of \( \mathbf{G} \) is in many respects similar to the vortex magnetic field, which has been known for hundreds of years, but no one has come up with the version of spatial magnetic waves. Therefore, the notion of gravitational waves, according to the author, is another fake, inspired by crooked physics, in which there is absolutely no representation of the real physics of the gravitational field. The introduction of real magnetic charges into the basic physical representations, as well as the discovery by the author of the World Physical Triad, made it possible to clarify the essence of spinor fields which are flows of elementary particles of the world Energo-medium, which are formed by spinor charged particles. In addition, the article proves that the concept of the expansion of the Universe was the result of E. Hubble's erroneous (extremely superficial) perception, back in 1929, of the manifestation of the cosmological redshift of the photon frequency, which he interpreted as a Doppler shift in the frequency of the so-called light waves. The inclusion of real magnetic charges in the physical representations showed that the frequency processes in photons are determined exclusively by the intra-photon physics embedded in into at the moment of formation and cannot be the result of any spatial wave formations in the environment, i.e. the shifts of photonic frequency \( \Delta \omega \) have nothing to do with the Doppler effect and depend only on changes in the translational velocity of their source. In other words, the redshift of the photon frequency under the conditions of the translational motion of their sources is exactly the same, both in the case of the source moving to the observer, and in the case of its movement at the same speed away from the observer. As for the violet shift of the photon frequency, this is an unambiguous sign of the rotational dynamics of photon source, and in the case of combined motion of source (translational and rotational), the mechanism of photon frequency pulsations is possible.


I. THE PHYSICS OF REAL MAGNETIC CHARGES; EM – ATOMIC SHELLS AND GRAVITATIONAL FIELD; THE FAKE CONCEPT OF GRAVITATIONAL WAVES

A. Introduction to the Physics of Real Magnetic Charges is True Sources of the Magnetic Field

The experiments of F. Ehrenhaft (1910–1952) with followers, as well as experimental and theoretical studies of the author of the article (period: 1968–present) showed that the direct sources of magnetic field are magnetic fundamental particles (magnetic charges) but not moving electrons [1]-[5]. The experiments that prompted the author to study magnetic charges (magnetic spinor particles) in the structures of atoms and substance were his experiments on magnetic scattering of neutrons in ferrimagnetic crystals [6]. The significant displacements of the entire density of the so-called magnetic moments of \( \text{Fe}^{3+} \) ions from the nuclei found in these experiments served as the basis for the author's assumption about the possible structural participation of real magnetic charges in atoms and matter, which were “buried” in the existing
theory under such “fig leave” as magnetic moments electrons.

The results of subsequent studies by the author showed that in the structures of physical masses (atoms, nucleons, substance, etc.), magnetic spinor particles both spinors and antispinors are present in approximately the same amount as electric particles [7], [8].

Magnetic spinors in the composition of atomic shells (the author calls them magnetons) are fundamental material particles, which in their physical parameters are magnetic analogues of electrons, that is, they have charges, spins and measures of inertia equal to electrons. Magnetons, like electrons, have a charge with a negative sign, belong to the class of leptons, and according to their statistical properties to fermions (the spin is 1/2). Magnetic antispinors, such as antimagnetons, are true antiparticles with respect to magnetons. They have a positive magnetic charge (g⁺) and are classified as antileptons. According to their statistical properties, antimagnetons are antifermions with antispin (1/2) with respect to spinors.

Note 1. The name of the magnetic spinor - magneton, as they say, is intended by God for this particular particle and should not be confused with the Bohr magneton, which is a unit of measurement for such a vicious theoretical surrogate as the magnetic moment of electrons. These magnetic moments were compelled use into the theory to replace the undiscovered and, therefore, unrecognized, but actually existing in atoms and substance magnetic charges.

It is the magnetic dipoles (a magnetic spinor pair – the magneton and corresponding antimagneton) that in the process of rotation in the conductor lattice form a known vortex magnetic field, which is determined by the vortex vector rotH. The process of formation of the last field is described by the following equation: k rotJg = rotH, where rotJg is the eddy current of magnetic charges, and in model representation is a rotating magnetic dipole. The role of the electric current in this process consists solely in the “organization” of the vortex motion of magnetic dipoles, and the process itself is written as follows: k· J = rotJg, where J is the density vector of the linear electric current.

Thus, the formation of a vortex magnetic field rotH in a conductor with a constant electric current is carried out as a result of the implementation of two successive physical processes noted above.

Note that in Maxwell's electromagnetic concept, in which real magnetic charges were ignored (unintentionally), the formation of a vortex magnetic field around a conductor with electric current is represented within the framework of only one process, defined by vicious equation: k· J = rotH.

Paradoxical as it may seem, but the existing physical science ignored the existence three-quarters of spinor particles, i.e., charged particles in compositions of atoms and substance which forced was replaced by suitable theoretical surrogates. Magnetic charges were replaced by magnetic moments of electrons, and true antielectrons were replaced by Dirac holes or electron vacancies.

The well-known Dirac monopole should also be referred to theoretical surrogates, in the author's opinion. The fact is that Dirac in his theory stays within remains in the vicious EM - Maxwell's concept, since to create a magnetic field in his monopole, Dirac threads are used through which an electric current is supplied to the monopole. If these filaments with current are removed, then there will be neither a magnetic field nor the monopole itself [9].

The main reason that the true sources of the magnetic field, i.e. magnetic charges were "buried alive" in physical science, are the harsh conditions for the retention of these elementary particles in the structures of substance, which are fundamentally different from the retention of electrons. In addition to magnetic charges, true antielectrons (e⁺) are also in a similar state of hard retention in atoms and substance, which are also not recognized in existing physics and are not included in the Standard Model [10], [11].

In addition to the indicated (main) reason for ignoring magnetic charges, Maxwell's vicious electromagnetic concept, referred to as the electric magnetism of Maxwell (1873), played a very negative role here. This erroneous concept was the result of the primitively superficial impression of the Great Theorist from the well-known experience of Oersted, which, surprisingly, was accepted by the world physical community and, as an objective truth, is dominated in the natural sciences for almost 150 years [12], [13]. The reasons that, in the author's opinion, prevented the timely detection and recognition of real magnetic charges are described in detail in the Appendix to this article.

Experimental studies of the author have shown that the existing physics of hard confinement of magnetic charges in substance significantly complicates the possibility of extraction and studying magnetic particles which is completely incomparable with the easy experimental accessibility of electrons. Moreover, the forces of confinement of magnetic charges in the structures of atoms and substance increase with an increase in the internal energy of the body, which closes the possibility of detecting these particles in experiments with high energies.

Of course, the experimental extraction and study of magnetic charges, as well as true antielectrons, is a very laborious and complex process. However, this does not mean at all that these problematic particles should be ignored and replaced by the theoretical surrogates noted above.

The electromagnetic atomic device is presented below on the example of the atom of the so-called light hydrogen or protium and is shown in Fig. 1. In Fig. 1a shows diagram of the structure of this atom, which corresponds to existing ideas, i.e. the development of which did not take into account magnetic charges and true antielectrons. As is known, the shell of the hydrogen atom in this case is formed by one electron. On Fig. 1b shows the structure of the protium atom with the inclusion in its structure of real magnetic charges and true antielectron. The shell of a real protium atom is an electromagnetic quasi-particle, which is an elementary source of the gravitational field and has received its natural name S-Graviton, i.e., source of the gravitational field. The S - Graviton is an electromagnetic formation consisting of two coupled dipoles (electric and magnetic) rotating in antiphase on the same atomic orbit.

![Fig. 1. Schemes of the structural device of the atom of the so-called light hydrogen (protium):](image)

a) generally accepted electronic interpretation, formed under conditions of ignoring real magnetic charges and true antielectrons; b) is the electromagnetic structure of protium with the inclusion of the above-mentioned real magnetic and electric charges in the composition of the atomic shell. The proton $p^+$ is the nucleus of the protium atom.

Rotating magnetic and electric dipoles in atomic shells form joint eddy electromagnetic currents which are described by the eddy vector rot[$J_e - J_g$], where $J_e$ and $J_g$ are vectors of instantaneous currents of electric and magnetic charges in the eddy EM current. As already noted, the basic element of the eddy EM current is an eddy electromagnetic quasi-particle, called the S-Graviton. It is S-Gravitons are the elementary sources of the gravitational field which is described by the vortex vector rot[$E - H$].

The process of formation of a vortex electromagnetic (gravitational) field is described by the equation $k \\text{rot}[J_e - J_g] = \text{rot}[E - H]$, where $E$ and $H$ are the vectors of instantaneous strength, respectively, of the electric and magnetic fields at each point of the gravitational field. The minus signs set in the above equation for the formation of the gravitational field are determined by the conditions for ensuring the minimization of “DE” during the implementation of this process [14].

Schemes of mechanisms formation of the vortex fields: magnetic field (rot$H$) Fig. 3a and electromagnetic (gravitational) field (rot$[E - H]$) Fig. 3b. Unlike, for example, from vortex magnetic field (see, Fig. 2a) by every point of which is answered one vector of instantaneous strength of $H$, by every point of the elementary gravitational field is responsible two vectors of instantaneous strength of fields of $E$ and $H$ equal by value and oriented antiparallel to each other (Fig. 2b).

If polarization of vortex vectors rot$[J_e - J_g]$ of S-Gravitons is realized in the structures of physical masses (atoms, nucleons, substance, etc.), what is accompanied by polarization of vortex vectors rot$[E - H]$, then in analogy with magnetic fields ferromagnetics the gravitational fields being emitted by these masses can be called a ferrogravitational fields (FGF). The gravitational field formed by physical masses in the absence polarization of the vortex vectors of s-Gravitons in their structures is a tensor or quasi-scalar field. And again, in analogy with magnetism, such field can to define as paragravitational field (PGF). Vector conditions corresponding to these fields are written in the following form: $<\text{rot}[E - H]> \neq 0$ for ferrogravitational field and $<\text{rot}[E - H]> = 0$ for the field paragravitational [15].
Fig. 2. Schemes of mechanisms formation of the vortex fields: magnetic field (rot \( H \)):
(a) and electromagnetic (gravitational) field (rot\[E − H\]); (b) By white circles on the Fig. 2 showed negative charged electric and magnetic spinors: electron (\( e^− \)) and magneton (\( g^− \)) and black circles - positively charged antispinors corresponding to them with charges \( e^+ \) and \( g^+ \). The classical equations for the formation of vortex fields are also shown in Fig. 2.

Finding out the true nature and physics of the gravitational field allowed the author to determine such an important concept in Physics as Physical Mass which is the structural formation consisting of material and antimaterial particles with magnetic and electric charges, the characteristic property of which is the ability to radiate a gravitational field. In other words, everything that is capable of generating a gravitational field is Mass. An elementary source of the gravitational field in structures of Masses is an EM quasiparticle (S-Graviton), discussed in detail above in the article. The S-Gravitons are realized in atomic-like electromagnetic structures (atoms, nucleons etc). In the same time, fundamental charged particles, for example, such as an electron, magneton and others, are massless, because individually they cannot form of the gravitational field. It is important to emphasize here that no bosons and Higgs fields, with all the will, can award these particles with Mass [16, 17].

Note 2. Thus, the introduction of real magnetic charges into basic Physics radically changes the understanding of the nature and physics of the gravitational field for the formation of which not needed at all to bend the four-dimensional space at all. To do this, it is quite enough to legalize magnetic charges and learn how to work with them, mainly, under superconductivity conditions (see [3]–[5]).

All electromagnetic radiations are separated in Nature by three physically different structural types: photon radiation, gravitational fields and ordinary (wave) EM – radiation. The different structural organization of electric and magnetic fields in the composition of various radiations, which determines their frequency physics, does not always correspond to wave processes in the environment (space).

As shown above in the article, the gravitational field is a vortex EM – field and is described by the vortex vector rot\[E − H\]. The vector character of the gravitational field is in many ways similar to the vortex magnetic field rot\( H \). It is extremely likely that gravitational fields, again similar to behavior of magnetic vortex fields, cannot participate in the formation of any spatial wave formations called gravitational waves. Therefore, the version of gravitational waves, according to the author, is most likely another fake, inspired by crooked physics, in which the true sources of the magnetic field are not recognized, i.e., real magnetic charges and there is no representation of real nature and physics of the gravitational field. The vortex magnetic field rot\( H \) has been known for more than a hundred years, but no one comes up with the version of magnetic waves or magnetic wave formations in space.

C. Matter, Antimatter and Energo-medium – the Physical Triad of the Real World. Spinor Fields and "Dark Energy".

The researches of the author showed that Masses (bodies) exist not in empty space (cosmos) but in the Energo-medium (E-M) which fills the entire space of the real World [18], [19].

Energo-medium (Energo-phase, Energo-ether) is a superdense physical medium, consisting of its own ultra-small (massless and spinless) particles - energions, moving in different directions at speeds close to light. It is the flows of particles Energo-medium (E-M) that are the real physical content of the spinor fields, i.e. fields of charged particles. These elementary particles are denoted in the article by the letter \( ε \).

The Energy-medium is of the global power factor which implements all primary forces acts in the real World. The primary source of forces acting on particles and masses are the formations of “Dark Energy”
charges are ignored. The truth of the existing global physical concept of electricity and magnetism confirms that the fields referred to as Electro and Magneto fields of electric and magnetic anti-particles, located in space by the material particles with a negative charge, are known as energions. Consequently, the energions presented by the author, i.e. own particles of the Energo-medium, which are the physical content of the spinor fields.

Note 3. It is precisely because of the global energy significance of the Energo-medium and its particles – energions in the physics of the real World that the author introduced the prefix Energo into their names. Of course, the naming of E-S particles by such a title as energies will not be to everyone's taste. However, these particles in real physics, like no other, connected with such a global physical concept as ENERGY.

It is also important to note that the particles – energions have an impulse which manifests itself in the processes of force effects of Energo-medium on spinor particles and, consequently, on masses (bodies). In addition to the Energo-medium (Energo-phase), the real Physical World includes: Material phase (Matter) consisting of electrical and magnetic particles with a negative charge, and the Antimaterial phase (Antimatter) includes all spinor particles with a positive charge. It is the marked phases that make up the world Physical Triad. Apart from these three constituents and their particles, nothing exists in the World.

D. Essence of Spinor Particles and Spinor Fields. Two Levels of Elementary Particles that Determine the Independent Natural Status of Electricity and Magnetism

The notion of the "spinor particle" refers to elementary particles that have such a physical property as spin (literally, “rotation”). It is the rotational state of particles that determines their spin or the so-called spinority and is responsible for such property of particles as charge. All spinor particles are subdivided into spinors (spin $\frac{1}{2}$) and antispinors (spin $\frac{3}{2}$) of magnetic and electrical nature. However, the rotational state is only one of the two necessary conditions for the formation of the so-called particle charge. Another necessary condition is the interaction of the spinor particle with the Energo-medium and the formation of the fluxes of its particles is energions which and are the fields of charged particles or spinor fields (see Section I, C above, as well as [20]).

The spinor fields are a product of elementary particles located at two physical levels. The particles of the upper level are spinor (charged particles), which populate two of the three global phases of the Physical Triad, namely the Material and Antimaterial phases. The elementary particles of the lower level are the energions presented by the author, i.e. own particles of the Energo-medium, which are the physical content of the spinor fields.

Note 4. Thus, the term “spinor fields”, used in the article, refers to the fields or particle flows of the Energy-medium, which are formed, in general, by charged particles. As for the terms “fields of spinors” and “fields of antispinors”, they correspond to certain specifics and refer to the fields that material particles (spinors) and antimaterial particles (antispinors) form in the Energo-medium. The noted clarification of definitions related to charged elementary particles is done to avoid confusion in the concepts used later in the article.

An important and original aspect of the article is the author's presentation of the heterogeneity of the natural composition of the Energo-medium, i.e. the existence in it of two natural types of energions (the Electro-energions and Magneto-energions), which, in accordance with their nature, fill the fields of spinors and antispinors. As is known, antispinors are antiparticles to spinors, and their fields are antifields to fields of spinors. It is easy to understand that antispinors, i.e., particles with a positive charge, by means of their fields, break the system of the rotational state of energies in the fluxes of fields formed by spinors. The process of complete destruction of the rotational state of the fields of spinors and, consequently, their complete annihilation, can be realized if the energies in the flow of the antispinor field differ in anti-directed rotation with respect to the rotation of particles in the fields of spinors. In addition, there must be both a natural identity of energies in conjugate fields, and an equal ratio of flux density. The concept of conjugate spinor fields corresponds, for example, to electric or magnetic fields in the composition of the corresponding dipole fields, which is a clear demonstration of real field annihilation processes.

Thus, in order to avoid vicious natural mixing of electric and magnetic fields, the particles of the Energo-medium must differ not only in the direction of their own rotation, but also in their nature, which manifests itself in the existence of two natural types of energions in the composition of the E-M: Electric energions (E-energions) or $E_1$ and Magneto-energions (M-energions) or $E_M$. In addition, the energions corresponding to the noted natural types in conjugate fields must also differ in the directions of their own rotation. Consequently, the energions – particles of the Energo-medium turn out to be doubly degenerate both in their nature and in rotational states. The flows of left energions of electric and magnetic nature which form in space by the material particles with a negative charge, are known electric and magnetic fields. As for the fields of electric and magnetic anti-spinors, they are flows of right energions. It is important to note here again that the fields referred to as Electro and Magneto form energions differing in their natural type.

The introduction of real magnetic charges into physical concepts, as well as noted natural degeneration of the particles of the energy medium, allows us to approach both the real physics of photons and understand the truth of the existing global physical concepts in of the so-called the curve physics, in which magnetic charges are ignored.
Fig. 3 shows a diagram of the separation of particles of the Energo-medium of energions both by natural types and by rotational states. The fields of electric spinors and antispinors are populated exclusively by E-energions. In this case, the energions in the fields of spinors differ in left rotation. Exactly the same differences are realized in the compositions of the fields of magnetic spinors and magnetic antispinors, with the condition that only M-energions participate in the formation of the latter fields. Thus, energions with left rotation refer to the fields of spinors, which are formed by elementary particles of electrical and magnetic nature with a negative charge. As for the so-called right-handed energies, then they constitute the fields of antispinors, i.e., particles with a positive charge.

The noted natural degeneration of energions – particles of the Energy-environment, is the only possible option that excludes the mixing or mutual dependence of electric and magnetic fields and the repetition of a vicious story with Maxwell's electric magnetism. A long-term study by the author of magnetic charges showed that electricity and magnetism are independent physical categories that exist independently of each other. The latter condition concerns both differences in the nature of spinor particles (electric and magnetic spinors and antispinors) and the noted natural degeneration of E-M particles - energions that make up spinor fields.

**Note 5.** It is interesting to note that the discovery by the author of real magnetic charges and their introduction into basic physics is only the first step in the physical separation of electrical and magnetic manifestations. Elucidation of the physical essence of spinor fields has shown that in order to ensure the complete independence of electricity and magnetism, it is necessary to additional natural degeneration of particles in the composition of the Energo-medium.

An important aspect of physical representations with magnetic charges is the clarification by the author of the significance of the dipole states of charged particles in the physics of the real World. In the author's publications, it is constantly emphasized that the process of binding spinor particles into the corresponding natural pairs, i.e., particle - antiparticle, is one of the main conditions that determine the status quo of the existing Physical World. The fact is that the fields induced by spinors, as a rule, perturb the energy state of the E-M and lead to the formation of regions of positive “Dark Energy” in it. As for the antispinor fields, as shown above, they are antifields to the fields of spinors and carry out their annihilation. It is the dipole state of charged particles that makes it possible to minimize the level of "DE" in the Energo-medium and, consequently, to ensure the stability of the existing real World. So, for example, all known varieties of the
Physical Mass (atoms, nucleons, matter, etc.) are formed by charged particles in dipole states, which ensures the minimization of "DE" in the corresponding areas.

II. PHOTONIC PHYSICS WITH REAL MAGNETIC CHARGES AND ABSURDITY OF CONCEPT EXPANSION UNIVERSE

The introduction of real magnetic charges, as well as true antielectrons, into basic physical concepts showed that the expansion of the Universe and the Big Bang were the result of E. Hubble's erroneous (exclusively superficial) perception of the manifestation of the cosmological redshift of the photon frequency, which he interpreted as a Doppler shift in the frequency of the so-called light waves [21].

According to the results of the author's research, a change in the frequency of photons occurs when the speed motion of the photon source changes, and only under the conditions of its forward movement. In this case, the values of Δω of photons depend only on the change in the magnitude of speed translational motion of the source and are completely independent of the direction of its motion.

Photon physics with magnetic charges is considered in detail in the author's fundamental publication (see [18]). In this article, we restrict ourselves to describing the processes of photon production in matter and the dynamics of photons outside the source, i.e. in space (Energo-medium).

A. Physics of the Process of Photon Birth in the Body of Photon Source

The author's research, involving real magnetic charges discovered by him in the analysis, showed that the process of photon production in substance triggers the so-called a primary spinor, such as an electron, as a result of its translational motion in the lattice of substance. The motion of the primary spinor is defined as a linear electric current and is denoted by J_e.

Note that in our “electric” World magnetic spinors, for example, magnetons, are in conditions of rigid confinement which greatly limits the possibilities for their linear motion. Therefore, the photons that we observe are formed mainly by electrons and, therefore, are referred to in the article as “electric” photons (see, [10]).

The electric field that the primary spinor (electron) creates in the direction of its motion in the body of the photon source is the conical spiral (helicoidal) field with a cone angle α, which is denoted as rot \( E_{con} \), where \( E_{con} \) is the vector strength of electric field, which is precesses on the surface of the marked cone.

The formation of a conical field by translationally moving primary spinor is a process of natural limitation of the value of its field velocity in the direction of photon motion \( v_e \) by the value of the speed of light.

The equation for the process of formation of a spiral conical spinor field has the form: \( k_e J_e = rot E_{con} \).

The conical spiral field formed in such a process can be represented by decomposing it into its components: the axial (linear) component \( E_{con} \ cos \alpha/2 \) and the vortex component \( E_{con} \ sin \alpha/2 \).

The spiral conical field \( rot E_{con} \), formed by the primary spinor in the body of photon source, induces the formation of “Dark Energy” in the Energo-medium, the force \( F_e \) of which, acting on the magnetic dipole, carries out its vortex motion around the axis of the spin cone. The latter processes are written in the form of the following equations: \( k_e rot E_{con} = F_e \) and \( k_e F_e = rot J_{eg} \), where \( rot J_{eg} \) is the eddy current of magnetic charges (in the model representation it is a rotating magnetic dipole).

As shown in numerous publications of the author, it is the rotating magnetic dipoles described by the expression \( rot J_e \) are the sources of the vortex magnetic field \( rot H \) in accordance with the equation \( k_e rot J_e = rot H \). It is important to note here that the appearance of a magnetic dipole in the latter process has nothing to do with the production of intrinsically magnetic spinor particles (magnetic charges). Magnetic particles, predominantly in closed pairs, called bispinors (a particle and its antiparticle), invariably exist in the composition of the Physical Mass, making up approximately half of the total number of spinor particles in it. In the absence of any extraneous spinor fields, magnetic bispinors are in a state of dense compression of particles in a pair or in a state of complete spin closure and do not manifest themselves in any way.

Note 6. It is the latter state in pairs of spinor particles that played a cruel joke on physical theory, which manifested itself in the form of a vicious concept of annihilation in a particle–antiparticle pair (see [20]).

Now possible to combine in a single sequence all the processes discussed above, which ultimately lead to the formation of so-called. “electric” photon in the body of a photonic source: \( J_e \to rot E_{con} \to F_e \to rot J_{eg} \to rot H \).

Fig. 4 shows the structural model of the so-called "electric" photon at the moment of its formation in the body of a static photon source.
The fields rot$E_{\text{con}}$ and rot$H$ are structural components of photon. The field rot$E_{\text{con}}$ formed during the translational motion of the primary spinor (in this case, an electron) constitutes the internal field of photon and is referred to as its core. The vortex magnetic field rot$H$ is, geometrically, the external field of the photon, and is called the photon ring.

The wavelength $\lambda_0$, the period of the spiral $T_0$, and the circular frequency $\omega_0$, corresponding to photons born in the body of a static source relative to the Energo-medium, is determined based on the following relationships: $T_0 = \frac{nD}{c}$, $\omega_0 = \frac{1}{T_0}$, $\lambda_0 = \frac{c}{\omega}$, where $D$ is the diameter of the field of ring.

Here it is important to emphasize that the fields of the “core” and “ring” that make up the photon correspond to each other with the corresponding physical parameters, i.e. are in mutual quantization conditions. At the same time, the combined influence of the photon fields on the energy state of the Energo-medium leads to a decrease in the level of the local “Dark Energy”, i.e. condensation of fields within a photon is energetically more favorable than their separate existence. Condensation of the fields rot$E_{\text{con}}$ and rot$H$ with the formation of photon, can apparently be defined as a phase transformation.

Another important condition that determines the implementation of the process of field condensation in the composition of a photon is the principle of geometric autonomy or non-mixing of spinor fields. The last principle excludes the “chaos” in the state of fields forming a photon.

Note 7. In existing physics, the designation $\gamma$ can be used for photons, since they, by their physical nature, are recognized as gamma quanta. However, in the article we will use only nominal designation.

It is also important to note that the status of “quasiparticle”, as applied to the photon, used in the article, is, in the opinion of the author, the only correct one, since this field condensate has no spin and mass and therefore, has no charge, i.e. is not a fundamental spinor particle. In the existing physical theory, on the contrary, it is considered that the photon is a fundamental particle from the family of bosons.

In addition, some theoretical mass is attributed to photon. From the standpoint of the results of the author's research, the existing theoretical ideas concerning the nature and physics of photons are extremely erroneous and are due to vicious ignoring the existence of real magnetic charges and true antielectrons in atoms and substance.

B. Photons in Space (in Energo-medium) and the Fake Concept of the Expansion Universe

Field condensate, i.e. a photon, forming as a result of the processes discussed above, like real spinor particles, is able to perceive force reactions of the Energo-medium (forces of “Dark Energy”).

The point is that under the influence of the axial component $E_{\text{con}} \cos \alpha$ of the field of the photon nucleus, the region of negative ”$DE$” is realized in its frontal region, i.e. area of low pressure $P_\varepsilon$ of the Energo-medium what is accompanied by the formation of the force $F_\varepsilon$ of ”Dark energy”, which accelerates the photon to the speed of light. The latter process is realized almost instantaneously due to the lack of inertial properties of the photon. When a photon reaches the speed of light, the force $F_\varepsilon$ acting on it during the acceleration stage vanishes ($F_\varepsilon = 0$), i.e. the photon continues to move with the speed $c$ under the conditions of the balance of forces on the part of Energo-medium. Since the force $F_\varepsilon$ is induced by the axial (linear) component $E_{\text{con}} \cos \alpha/2$, the latter, when the photon reaches the speed of light, also vanishes ($E_{\text{con}} \cos \alpha/2 = 0$), which implies the condition $\alpha = 90^\circ$. Thus, when a photon moves in space (Energy-medium) at the speed of light, its fields, which make up both the core and ring, are vortex fields and are written, for an “electric”
photon, respectively, as rot\( \mathbf{E} \) and rot\( \mathbf{H} \). The plane of reversal of the photon field strength vectors in this case is normal to the photon velocity vector \( \mathbf{V}_f \).

Fig. 5 shows the diagrams of the processes of the action of forces “DE” on a photon within the framework of the two described stages of its existence in the Energy-medium, i.e. from the moment of his birth in the body of a static source and until the moment he reaches the speed of light. It is also shown in Fig. 5 (see Fig. 3c) that as the photon accelerates to the speed of light, the field of its core transforms from a spiral-conical rot\( \mathbf{E}_{con} \) to an electric vortex, described by the vortex vector rot\( \mathbf{E} \).

![Fig. 5. Stages of dynamics and the state of the fields in the composition of an electric photon from the moment of its birth in a static source and reaching the speed of light: a) is acceleration of a photon to the speed of light; b) is movement at the speed of light; c) the structure of the fields in the photon as it moves at the speed of light.](image)

When a photon decelerates, when its translational velocity \( \mathbf{V}_f \) becomes less than the speed of light (\( \mathbf{V}_f < c \)), a linear component is realized in the composition of the “core” field, which leads to the condition \( \alpha < 90^\circ \). In this case, the force \( \mathbf{F}_e \) is reanimated, which restores the light speed of the photon.

Thus, based on the presented results of the study of the physics of photons with real magnetic charges, it follows that with a high degree of probability, photons do not form any light waves. The circular frequency of photons produced under the conditions of the translational motion of a photon source differs from \( \omega_\circ \) by the value \( \Delta \omega \), which is determined solely by the change in the velocity of the translational motion of the source, is an internal property (parameter) of the photon and remains unchanged throughout the entire photon “life”. The photon frequency cannot depend on any movements of the observer.

Note that the use of the concept of the so-called. light waves and kinematic approximation when explaining the effects of photon frequency shift, which, according to the theory, are Doppler, was forced due to the lack of ideas in physical science about the real physical structure of photons. The latter circumstance, as was repeatedly noted in the article, is a consequence of the vicious disregard in physics of the existence of magnetic charges in the compositions of atoms and matter, as well as the lack of concepts relating to the real physics of spinor fields.
III. CONCLUSION

The experiments of present author showed that magnetic spinor particles (magnetic charges) exist in Nature and, moreover, are, for example, real structural components of atoms and substance. Of course, new independent experiments will be required to confirm the noted conclusions, given the global significance of these particles in real physics. We note that at the moment, thanks to the above-mentioned experimental and theoretical studies of magnetic charges, it is no longer a super task to do this.

Assessing physics with real magnetic charges, one cannot help but admit that Nature very rationally put everything in its place so that the electric field is formed by electric charges, and the magnetic field is formed by the magnetic charges. As the saying goes: "Kesyryu – kesyrevo".

The vicious ignoring of magnetic charges in physics, which began in 1873 and lasted for almost 150 years, has led not only to an incredible complication of physical theory. As a result of the existing theoretical interpretations, which do not take into account real magnetic charges, most often fake concepts are obtained that are not related to reality. Of course, the described tragic circumstance in physics corresponds to the objective reasons presented in the Appendix to the article, i.e. serious difficulties in experimental work with these problematic particles. However, from the realization of these reasons, it does not become easier for anyone.

An example that demonstrates the validity of the last statements is a new vision of the nature and physics of photons with real magnetic charges presented in this article. It is the absence of real magnetic charges in working concepts and the use of such theoretical surrogates as the magnetic moments of electrons instead that led to such grandiose theoretical fakes as the global Expansion of the Universe and the Big Bang.

APPLICATION

A. The Main Reasons for Ignoring Real Magnetic Charges in Existing Physics

The real magnetic charges g and g', as well as the true anti-electrons e', which meet the condition g = e and make up ¾ of the composition of atomic shells, were “buried alive” in the existing physics as a result of four basic physical and everyday circumstances.

1) Physics of hard confinement of magnetic charges and true antielectrons in structures of substance is the main reason for their vicious ignore in physical science.

It is the physics of hard confinement mentioned above that was the main reason why these particles very difficult to experimentally extract from the substance and to study in detail.

The conditions for confinement electric and magnetic charges in the normal (non-superconducting) state of a conductor are submitted by in Fig. 6, which shows the location of the levels of electrons, true antielectrons and magnetic charges (magnetons and antimagnetons) on of energy scale.

As you know, electronic levels are in a potential "well" and for an electron to come out into a free state from connection with the conductor lattice it is necessary to increase its internal energy, for example, by heating. As for the magnetic charges and true anti-electrons, their energy levels are located under the potential “dome” and for these particles to enter the free state, the substance should be cooled, i.e. reduce his internal energy. At deep stages of cooling of some substances, their superconducting state is realized which is associated with the transition of magnetic charges and true anti-electrons into a state free from coupling with the superconductor lattice. Under conditions of superconductivity the differences in the physics of confinement of electric and magnetic charges in the lattice of a solid are removed which manifests itself in the complete symmetry of electromagnetic effects and manifestations.

The author's research shows that the physics of the retention of problematic particles in the structures of is fundamentally different from the retention of electrons. It was this circumstance that, first of all, played the noted “super cruel joke” with physical theory, which was reflected in vicious concepts both in physics and in the natural sciences in general.

However, it is important to understand that the difficulties of experimental work with real magnetic charges do not all mean at all that these particles do not exist.
2) The primitive-superficial perception of J. Maxwell in 1873 of the results of well-known Oersted experiment.

It is precisely J. Maxwell, based on his primitive and superficial impression of the famous Oersted experiment, introduced into physics the vicious myth that the direct sources of the magnetic field are moving electrons. The so-called first Maxwell equation \( k \mathbf{J}_e = \text{rot} \mathbf{H} \), in fact, is erroneous, since it involves two different physical processes: 1) \( k_1 \mathbf{J}_e = \text{rot} \mathbf{J}_g \), and 2) \( k_2 \text{rot} \mathbf{J}_g = \text{rot} \mathbf{H} \), where \( \text{rot} \mathbf{J}_g \) is the vortex orbital current of magnetic charges (a rotating magnetic dipole). The fact is that electrons in the composition of an electric current are exclusively mediators, which are capable only of spinning magnetic dipoles that actually exist in substance (see the first equation). As for the magnetic field, its direct sources are real magnetic charges which in the compositions of rotating magnetic dipoles and form the well-known vortex magnetic field \( \text{rot} \mathbf{H} \) (see the second equation).

B. The Inertia of Erroneous Human Thinking

During 150 years of the dominance of Maxwell's vicious electric magnetism, theoretical "Himalayas" were built in physical science, on which, starting from "kindergarten", many generations of scientists were brought up. It should also be noted that the physical theory in the described paradoxical circumstances was able to do the impossible, i.e. to provide, more or less, qualitative interpretations of most of the observed effects and manifestations, and even to make their satisfactory numerical estimates. Of course, the theoretical basis of existing physics, built in conditions of vicious disregard of magnetic charges and true antielectrons, cannot fully meet the natural realities. At the same time, this "collection" of highly intelligent and beautiful theoretical constructions turned out to be very attractive to many physicists and out are not so easy to abandon. This is the rare case when the expression "Woe from Wit" is appropriate.

One can understand the negative reaction of venerable physicists and especially theoreticians to the introduction of real magnetic charges into basic physics, given that their entire scientific life has passed under the sign of Maxwell's vicious electromagnetism. It is this layer of scientists that now determines what is good and what is bad in physics. But a big question for the younger generation entering physical science. Is it worth building your scientific future on the vicious delusions of the past?

C. The Discriminatory Policy of Leading Physical Editorials

For example, the articles of author with the results of the study of real magnetic charges, sent to the so-called prestigious journals were immediately repudiate, with expert opinions which, in general, can be described by the expression: this can never be. Namely the leading physical Editions stand guard over the existing theoretical physics, creating numerous "chippers" that prevent the penetration of views on their pages that are alien to official physical dogmas.

Of course, it is possible to understand the noted "defensive" reaction of Editorials and their experts, since the introduction into fundamental physics of real magnetic charges, as well as true antielectrons, presupposes a radical revision of the entire theoretical arsenal of physics created in 150 years of ignoring these particles. By the way, this arsenal accounts for at least 70% of the content of the leading physical journals for all the years of the dominance of vicious electric magnetism in the sciences, i.e. counting from 1873. Paradoxical as it may seem, but in the circumstances described, the entire existing physical theory,
built over 150 years based on Maxwell’s vicious electromagnetic concept, turned out to be in the status of a physical and mathematical fantasy that has little in common with reality.

Note. Of course, Maxwell was the “discoverer” who else in 1873 pushed physics into the “theoretical swamp” which was comprehensively described in the publications of the author of the article. It should be noted that there would be no problem if the Great Theorist were alone in his delusion. But his vicious concept has proved attractive to many thousands of scientists on all continents. Almost 150 years have passed since then, the year is 2022, and what should we all do with these garbage “Himalayas” now?

At the same time, as it usually happens in life, any delusion passes sooner or later. The author hopes that the mind will nevertheless prevail over the theoretical “fornication” of the supporters of Maxwell’s vicious magnetism and, in the future, we still have a very “fascinating spectacle” with the fall of “Crooked Physics” and its vicious derivatives from the “won theoretical heights”. Of course, this breathtaking spectacle can only be seen by those who have managed to survive until this moment.

REFERENCES