

Law of universal gravitation with real magnetic charges and “dark energy”

Abstract

The discovery by the author of real magnetic charges, as well as of true antielectrons in the structures of the Physical Mass (atoms, nucleons, substance etc.) assume the necessity of introducing substantial corrections to the interpretation of well-known effects and even of ingrained physical laws, when the formation of which these spinor particles were ignored. The joint orbital currents of electric and magnetic charges in atomic shells are the source of the gravitational field which is vortex electromagnetic field. The results of the study of magnetic charges have made author possible to discover such the entity as the world Physical Triad which is formed by three fundamental phases: Matter, Antimatter and Energo-phase (Energo-medium). The force derivative from of the Energo-phase referred to as “Dark energy” is determined by the nonequilibrium states in the form of local regions pressure created by own particles of Energo-medium which are called the Energions (denoted as ϵ). The formation of “Dark energy” in the Energo-medium is induced by spinor fields, including the gravitational field. It is “Dark Energy” that determines the global energy of the real World and realizes all the so-called interactions between masses and charged particles. The need to amend the existing interpretation of the law of Universal gravitation is associated with the clarification of the real nature of the gravitational field, as well as with the definition of the status of “Dark energy” as real force factor affecting the masses (bodies) in their so-called interactions. The latter provision also assumes the obligatory replacement of the fictitious term “attraction” of bodies to “pressing” or “squeezing” them by the forces of “Dark Energy”. At the same time, the quantitative proportions corresponding to the physical processes observed in practice within the framework of the law of universal gravitation law remain unchanged.

Keywords: Magnetic charges, antielectrons, magnetons, antimagnetons, bispinor, physical mass, vortex electromagnetic (gravitational) field, dark energy, universal gravitation

*At present works as individual researcher

Volume 2 Issue 5 - 2018

Robert A Sizov

Solid State Physics Institute, Moscow, Russia

Correspondence: Robert A Sizov, Solid State Physics Institute, Paustovskogo st. 3–566, Moscow, Russia, Tel +7 495 4226 930, Email sizov.robert@gmail.com

Received: June 01, 2017 | **Published:** October 03, 2018

Introduction in physics of real magnetic and electric charges, gravitational field and “dark energy”

Experimental and theoretical studies of the author (the period from 1968 to the present time) have shown that magnetic spinor particles (magnetic charges) are real structural components of atoms and substance, and also are the direct sources of all magnetic fields in Nature.^{1–4}

The most important results which follow from his studies of real magnetic charges are:

- The discovery of the electromagnetic nature of the gravitational field which in reality is the vortex electromagnetic field;
- The determining of the physical statute of the mass;
- The determining of such important world entity as the Physical Triad, as well as the elucidation of the physics and mechanism of the formation of the “Dark Energy”;
- The identification and introduction into physical science of true antielectrons, i.e. real spinor particles of Antimatter with charge e^+ which were hidden in modern theories under the guise of fictitious electronic vacancies or Dirac’s “holes”.

Magnetic and electrical particles in the structures of atomic shells

The results of the author’s research showed that the shells of atoms are electromagnetic, and not electronic as is commonly believed. They are formed by magnetic and electric charges which in the compositions of the corresponding dipoles rotate on the atomic orbitals. The number of magnetic charges in the compositions of atomic shells is approximately equal to the number of electric charges.

The values of charges of the spinor particles in atomic shells correspond to the condition $e = g$, where g is the charge of magnetic particle. Magnetic dipoles consist of magnetons, i.e. material magnetic particles with charge g which can also be referred to as “magnetic electrons”, and antimagnetons, i.e. particles Antimatter with charge g^+ which are antiparticles to magnetons.

In composition of electric dipoles, in paired with an electron, “works” of true antielectron i.e. the real particle of Antimatter with charge e^+ . Note that this antielectron does not have direct relationship to positron and, in general, has nothing to do with the so-called e–vacancies or holes Dirac.^{5,6}

It is important to note that the basic (unperturbed) state of the spinor particles is the state of bispinor. In this state the charges in pairs + and – are tightly pressed together by the forces of “Dark energy”

what leads to compensation of the external activity of their spins. Such a pair does not manifest itself by an external spinor field and, in practice, is not detected. The process of dense compression of particle and antiparticle, described above, is connected in modern physical theory with such a fictitious concept as annihilation of particles. This concept was formed on the basis of the observed interaction of electron and positron, as result of which only gamma quanta are detected.

In Sizov⁷ the author showed that the positron is not an elementary spinor particle, but is the varieties of mass, i.e. is the atomic-shaped electromagnetic structure. A true antielectron “sits” in the positron structure as its nucleus. Upon contact of electron and a positron the electron connect with the antielectron (the nucleus of positron) with the formation of bispinor. As for the electromagnetic (quark) shell of the positron, it actually annihilates, and the evidence for its destruction is the observed gamma quanta. At the same time, the main protagonists of the so-called annihilation of particles (electron and a true antielectron), do not annihilate themselves, but remain unchanged in composition bispinor.

The gravitational field is of the vortex electromagnetic field

The author’s research has shown that electric and magnetic charges forming atomic shells exist in the compositions of the corresponding dipoles which rotate on atomic orbitals. Namely is the electromagnetic shells of atoms are the natural sources (generators) of gravitational field, which, in reality, is of vortex electromagnetic field.^{4,8} The elementary source of gravitational field is the spinor electromagnetic quasi-particle which received the name S-Graviton (S = source). Composition of the S-Graviton: two spinors (electron and magneton) and two antispinor corresponding to them. The S-Graviton is combination of the electric and magnetic dipoles rotating in antiphase at same atomic orbital. The model representation of the orbital electromagnetic current or S-Graviton can be written in following form: $rot[\mathbf{J}_e - \mathbf{J}_g]$ where \mathbf{J}_e and \mathbf{J}_g are vectors the density instantaneous currents of electric (e) and magnetic (g) charges corresponding to their of the orbital vortex flows. Then the equation process gravitational field formation by means the S-Graviton can be presented in the form $k rot[\mathbf{J}_e - \mathbf{J}_g] = rot[\mathbf{E} - \mathbf{H}]$ where \mathbf{E} and \mathbf{H} are the vectors of the instantaneous electric and magnetic field strength in the structure of the vortex electromagnetic (gravitational) field, k is the proportionality coefficient.

If the polarization of vortex vectors $rot[\mathbf{J}_e - \mathbf{J}_g]$ of S-Gravitons is realized in the structures of Physical masses (in atoms, nucleons, substance et al) that is accompanied by polarization of vortex vectors $rot[\mathbf{E} - \mathbf{H}]$, then by analogy with magnetic fields of the ferromagnetics, the gravitational fields being emitted by these masses can be called the ferrogravitational fields (FGF). The gravitational fields formed by the Physical masses in the absence of polarization of the vortex vectors of S-gravitons in their structures, are tensor or quasi-scalar fields. And again, by outward analogy with magnetism such fields can to define as paragravitational fields (PGF).

The mathematical expression corresponding to the states of PGF is having the form $\langle rot[\mathbf{E} - \mathbf{H}] \rangle \neq 0$. The gravitational fields corresponding to the condition: $\langle rot[\mathbf{E} - \mathbf{H}] \rangle = 0$, by analogy with

the paramagnetism can be defined as paragravitational field. Between the masses (bodies) that emit paragravitational field is implemented the generally accepted in physical science Attraction or Gravity. Since the overwhelming of number masses in the Universe emit the paragravitational field the process of “gravity” between them define the famous law of Universal gravitation.

The physical masses which emit ferrogravitational fields will push off from masses-sources the paragravitational fields, for example, from Earth. This last effect discovered by the author of the article called as the effect Gravitational levitation.^{9,10}

“Dark energy” is a global force factor that is responsible for all the so-called interactions between masses and charges in the real world

The results of years of research of real magnetic charges allowed the author to formulate the conception of the World Physical Triad (PT) according which the real World consists of three fundamental phases: of the Matter, Antimatter and Ergo-phase (Ergo-medium).

The Phase of Matter is inhabited with magnetic and electric spinor particles with a negative charge, and the Antimatter is formed by electric and magnetic particles with positive charge. Particles Antimatter constitute half all of real spinor particles, i.e. charged particles in real World, and their absence in the physical representations is determined by Physics their of confinement in the atoms and substance which is radically different from the confinement of electrons.

In the basic (undisturbed) state the Ergo-phase (Ergo-medium) is the isotropic high-density gas-like (possibly also quasi-fluid) medium formed by its own fundamental particles referred to as the Energions which are spinless and massless. These particles are very small, they move in all directions at speeds close to the speed of light and can only be of two types: the Left and Right what linked with the appropriate direction of their own rotation. Super-high mobility and not-inertial behavior of the Energions allow the particles and masses to move relatively freely in Ergo-medium when this medium is in basic (undisturbed) state.

According to the Physical Triad Concept all forces direct action on the particles and masses, which are implemented in the real World are the forces of the so-called “Dark energy” (“DE”) which are determined by non-equilibrium states in the “Ergo-medium” in the form of oblasts of local pressures P_ϵ created by energions (ϵ). The formation of “Dark Energy” in Ergo-medium is induced by spinor fields, i.e. fields of charged particles. All variety of spinor fields, including gravitational fields, don’t have any real of power significance. They only play the role of intermediaries exerting influence on state of the Ergo-medium and inducing formation of “Dark Energy” in it. Namely “Dark Energy” is real forces factor, performing the dynamics and the so-called interactions of masses and charged particles as in the scale of the Universe (the movement of galaxies, stars, planets and other objects) so and in the microcosm, for example, the dynamics of the spinor particles within a Physical masses of such as in atoms, nucleons, etc.

The gravitational fields radiated by masses (bodies) create in the area between them zones of negative or positive “Dark energy”. The negative “Dark energy” which realized between masses emitting the paragravitational field is determines all physical manifestations within the framework of the law of Universal gravitation.

The “Dark energy” realized in practice, can associate with the spinor fields which formed its and therefore you can define the “DE”, for example, as the gravitational “DE” or electrostatic “DE”. Considering that the gravitational field is the vortex electromagnetic, i.e. spinor field, for the present study it is important to find out the mechanisms formation of the gravitational “Dark energy” and the features of its effect on the masses (bodies).

In detail the concept of Physical Triad and the questions connected with the fields of Matter and Antimatter, as well as the essence of the “Dark energy” contain in two editions of the author’s books,¹¹ and are also represented in Sizov¹².

The essence of physical mass

In his publications, since 2001, author tried to explain that all varieties of Mass are the electromagnetic structures of atomic-shaped type consisting of electric and magnetic spinor particles.¹⁴ Main characteristic property of all varieties of mass is ability to emit the gravitational field that is formed as the result joint orbital currents of electric and magnetic charges and is the vortex electromagnetic field. In addition, in Sizov¹³ the author showed that the formation of photons also falls exclusively within the competence of mass.

To quantify the mass, usually used such physical parameter, as the weight, which is associated in modern physics with the so-called of gravitational attraction of masses (bodies) to the Earth. However, the author’s research has shown that the concept of gravitational interaction of masses is exclusively fictitious. The real force factor, which determines the so-called gravitational interaction between masses (bodies) is “Dark energy”. It is the forces “DE” that determine such parameter as weight. In the author’s publications, and also in this article, it is shown that gravitational fields formed by masses can be both paragravitational and ferrogravitational. The character of the impact of the forces “DE” on the masses in the case of the realization of these fields varies significantly. The essence of these differences is discussed later in this article (see Section 2).

It is necessary to emphasize that Physical Mass and, for example, Matter are completely different physical categories. The Physical masses are, for example, atoms, nucleons, substance. It is especially important to note that the individual spinor particles as electric, so and magnetic are massless, because mass is the result their joint structural union. For example, the electron is massless particle and no “divine bosons” can’t give him mass.

Law of universal gravitation with real magnetic charges and “dark energy”

The so-called the gravitational interaction between bodies is defined in modern physics as their attraction and is described by the law of universal gravitation (LUG) whose equation has the form $F = G (m_1 \cdot m_2 / r^2)$, where m_1 and m_2 are the masses of bodies participating in the given process, and r is the distance between the bodies. The value of G , which is called the gravitational constant, has the dimension $6.67 \cdot 10^{-11} (M^3 / (kg \cdot sec^2))$. It is important to note that this law, how it is presented in textbooks, does not explain the cause of gravitation, but only establishes corresponding quantitative regularities. The discovery of real magnetic charges by the author and the discovery of the electromagnetic nature of the gravitational field by him, as well as the elucidation of the real physics of “DE”,

allow one to determine the real forces responsible for the so-called “gravity” of the masses.

As noted above, the overwhelming number of masses (atoms, bodies, liquids, etc.) are sources of the paragravitational field. According to the concept of the world Physical Triad, presented by the author, the spinor fields, including the gravitational field, do not themselves have any significant strength. They are, solely, intermediaries which inducing in the Energo-medium the educations of “Dark energy”.

It is “DE” that is a global force factor which is responsible for the dynamics and the so-called interactions of particles and masses in the Universe. Depending on the excess or decrease in the local pressure P_e in the region of influence of the spinor fields, from its average regional value, “Dark energy” can be either positive or negative.

Figure 1 represents the physical process that takes place in Nature and which allows us to represent the force realities that correspond to the law of universal gravitation. In Figure 1 a pair of bodies emitting a para-gravitational field is shown. Negative gravitational “Dark energy”, which arises in the region between bodies, creates a pressure that corresponds to the condition $P_e < 0$. Forces of pressure F_{DE} , created by “Dark energy” from the rear areas of such a pair where value $P_e > 0$, presses (compresses) the bodies to each other what is the real manifestation of the so-called of law of universal gravitation. The author’s research has shown that there is no universal gravitation. There is a trivial pressing (compression) of bodies to each other by forces “DE”.

Thus, the refinement of the existing formulation of the Law of Universal gravity reduces to the fact that instead of the fictitious forces of gravity, the forces of the “Dark Energy” are introduced which are real forces, acting on the masses (bodies). It is the “Dark Energy” that presses person to the Earth, because both the planet and the human body are sources of the para-gravity field. It is important to note that all quantitative ratios corresponding to given law remain unchanged, including the magnitude of the gravitational constant.

In view of the foregoing, the law of universal gravitation should be called the law of worldwide pressing of masses by forces of “Dark energy”. The exact formulation of this law can be as follows: the masses (bodies) emitting the para-gravitational field are pressed (pressed) to each other by the forces “DE”, the values of which is proportional to the product of the masses and inversely proportional of distance between them. Thus, instead of the fictitious forces of the so-called the gravity between the masses (bodies) in the definition of law real forces “DE” are introduced. As already noted, the magnitude of the “DE” forces acting in accordance with this new/old law is equal to the previously invented forces of the so-called of “gravity”. All that needs to be done mathematically in relation to this Law, this is to write down the forces F acting in a pair of bodies in the form of F_{DE} , i.e. to assign them the status of actually factor of force creating by “Dark energy”.

It is very important to pay attention to the fact that **LUG**, both old and new, covers only a part of the real world’s masses that emit **FGF**. Of course, such masses constitute the overwhelming number of masses in Universe. However, one can’t ignore the existence of masses that emit the ferrogravitational field. As noted above, such masses do not gravity to the Earth but are pushed away from it by the forces of “DE”. Such a manifestation can be defined as the law of global gravitational levitation (**LUGL**). The basis of **LUGL** is the effect of Gravitational levitation discovered and investigated by the

author of this article.^{4,9} The classic examples manifestation effect of Gravitational levitation in Nature is the volatility of hydrogen atoms, as well as convection processes in liquids and gases.

Note: To the processes described the so-called interaction between masses emitting **FGF** should be added. In this case both the positive and negative “Dark energy” are realized, depending on the mutual orientation of the vortex vectors of the gravitational fields emitted by the masses.

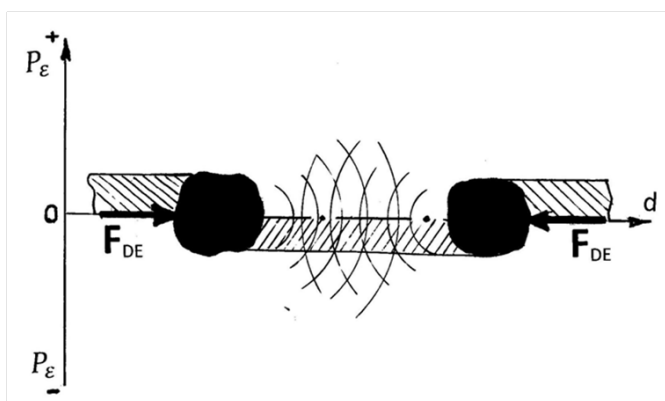


Figure 1 Diagram corresponding to the force effects associated with the formation of negative “Dark energy” in the area between bodies emitting paragravitational field. The areas corresponding to different pressure values P_ϵ are shown in the figure in different hatching.

Conclusion

The author’s discovery of real magnetic spinor particles (magnetic charges) in the structures of atoms and substance, as well as the determination of their physical parameters, should be considered as the main result of his research (from 1968 to the present). The detection of true antielectrons as real spinor particles with charge e^+ in the atomic shells, the elucidation of the real physics of the gravitational field and the nature of the physical mass, as well as the discovery by the author of such world essence as the Physical Triad are natural development of the results of his studies of real magnetic poles.

The existing representations of the law of universal gravitation reflects only superficial impressions of what is observed in practice, and does not explain the real cause of the so-called gravity of the masses. Amendments to this law, proposed by the author taking into account such important realities as the electromagnetic nature of the gravitational field and such global force factor of the real world as “Dark energy”, allow us to present the real physics of the so-called of the gravitational interaction of masses (bodies).

In his articles, the author constantly stressed that the main reason that these real spinor particles were left out of modern science is the physics of their retention in substance, which is radically different from confinement of electron. This is the main reason for the serious problems with their detection, which and led to ignoring their in physical science. The author spent only on experiments with magnetic charges for about 20 years (from 1968 to 1990). To this we should add that the remarkable Felix Ehrenhaft investigated magnetic charges for more than 40 years (1910–1951).¹⁴ However, the vicious EM-concept of Maxwell¹⁵ the so-called the electric magnetism, because of its simplicity and superficial (everyday) clarity, proved to be was more attractive than the fundamental conclusions of Ehrenhaft.

As noted above, despite the results of Ehrenhaft’s study and the present author, as well as the works of other researchers close in meaning,^{16,17} the defective conception of the electromagnetism Maxwell’s is still in demand in modern theoretical physics. We recall that magnetic spinor particles (real magnetic charges), as well as true antielectrons, do not enter the standard model and do not participate in official theoretical studies. If we call things by their proper names, then the existing physical theory, for almost 150 years were formed under conditions of ignoring both real magnetic charges and true antielectrons, which together constitute three quarters of all real spinor particles in atoms and substance. Of course, it was impossible to completely ignore these real spinor particles. Therefore and were invented such there were the surrogates–substitutes of these particles in a form of magnetic moments and electronic vacancies or “holes”.

Acknowledgements

The author expresses deep gratitude to Elena Sizova and Vitaly Sizov which are for many years helped and supported author what, in many respects, contributed of the his research activities. The author is Grateful to technical specialists: Davydov A.A., Koshelev N.V., Lomakin A.I., Moiseenkov E.V. and Staritsin S.E. which provide technical support for the main part of his experiments concerned the research of magnetic charges.

Conflict of interest

Author declares that there is no conflict of interest.

References

1. Sizov RA. *New representation of the nature magnetism, gravity and nuclear forces bonding*. Russia: Akademizdat–Center “Science”; 2001.
2. Sizov RA. Delocalization of the magnetic moment of Fe^{3+} ions in Y type hexagonal ferrite at 293°K. *Journal of Experimental and Theoretical Physics*. 1971;60:1363–1370.
3. Sizov RA. *Electric and magnetic spinor particles are structure-forming components of Mass and Electromagnetic Source Gravitation*. Russia: Akademizdat–Center “Science”; 2008: 260 p.
4. Sizov RA. Real magnetic poles (magnetic charges) in the Physics of magnetism, gravitation and levitation. *Journal of Modern Physics*. 2015;6(8):1013–1022.
5. Dirac PAM. Quantized Singularities in the Electromagnetic Field. *Proceedings of the Royal Society, Series A: Mathematical, Physical and Engineering Sciences*. 1931;133(821).
6. Sizov RA. Dirac’s “holes” are the true Antielectrons and real particles of Antimatter. *Journal of Modern Physics*. 2015;6:2280–2289.
7. Sizov RA. Nuclear Physics with Magnetic Charges. *Journal of Modern Physics*. 2018;9(2):145–171.
8. Sizov RA. Electromagnetic Shells of Atoms and Periodic System of Elements. *Journal of Modern Physics*. 2016;7(16):2374–2397.
9. Sizov RA. *Levitation as a Spread Force Manifestation of Natural Ferrogravitation*. Russia: Akademizdat–Center “Science”; 2012: 96 p.
10. Sizov RA. Real Magnetic charges in the substance, ferrogravitation and technical levitation. *Journal of Modern Physics*. 2015;6:1591–1601.
11. Sizov RA. *Matter, Antimatter and Energo-Medium is Physical Triad of the Real World*. Russia: Akademizdat–Center “Science”; 2012: 192 p.
12. Sizov RA. The World Physical Triad: Matter, Antimatter and “Dark Energy” in the Processes of Climatic Changes on the Earth. *Journal of Modern Physics*. 2016;7(6):558–572.

13. Sizov RA. Real Magnetic Charges in Physics of “Dark Matter” and “Black holes”. *Physics & Astronomy International Journal*. 2018;2(4):365–373.
14. Ehrenhaft F. Photophoresis and Its Interpretation by Electric and Magnetic Ions. *Journal of the Franklin Institute*. 1942;233(3):235–256.
15. Maxwell JC. *Treatise on Electricity and Magnetism*. UK: Clarendon Press; 1873.
16. Podkletnov E, Nieminen R. A possibility of gravitational force shielding by bulk $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ superconductor. *Physica C: Superconductivity*. 1992;203(3–4):441–444.
17. Tajmar M, de Matos CJ. Gravitomagnetic field of a rotating superconductor and of a rotating superfluid. *Physica C: Superconductivity*. 2003;385(4):551–554.