Vladimir A. Atsukovsky

GENERAL ETHER-DYNAMICS

Simulation of the matter structures and fields on the basis of the ideas about the gas-like ether

[Moscow, Energoatomizdat, 1990. ISBN 5-283-04014-3]

Abstract

On the basis of the ideas about the ether, a gasiform medium filling the Universe space, the structures of the material formations from microparticles to the Universe in general, the mechanisms of elementary interactions and physical phenomena are considered in the work.

The numerical values of the main ether parameters and the parameters of its element amere are obtained. The vortical models of the main stable elementary particles, i.e. proton, neutron, electron and photon, the models of nuclei and atoms, the models of the main types of interactions, i.e. strong and weak nuclear, electromagnetic and gravity and also laminary ether-dynamic ones, the models of the main electromagnetic, optical and gravity phenomena are worked out. The gasomechanical interpretation of the main quantum mechanics equations are given.

The model of the stationary dynamic Universe based on the ideas about the ether circulation is worked out. It is shown, that the ether-dynamic ideas solve the cosmological paradoxes within the limits of the eternally existing matter, uniformly passing time and Euclidean space.

Prospectus

The author attempts to create a united theory of the ether on the basis of purely mechanical ideas about phenomena's nature. With the purpose of elucidation of the reasons which have not allowed the authors of the similar attempts to work out noncontradictory conception of the ether, the analysis of their works is conducted and their mistakes are revealed. The methodology of the ether-dynamics based on the idea of generalization of experimental data accumulated in the main domains of macro- and microworld, and formulating on this base of general physical invariants is worked out.

The revelation of general physical invariants, which proved to be four categories: motion and its components -- matter, space and time, allowed to formulate the idea about the unity of the macro- and microworld laws, what in its turn gave the ground for the wide usage of analogies between phenomena of macro- and microworld. From the previous thesis and from the fact of the formation of microparticles by the vacuum clearly follows the fact that space is filled with material medium, which has the properties of the ordinary real viscous compressible gas. The main parameters of tins gas -- the ether and its element -- amere (according to Democrit) are determined in this work.

The author considers the structures of the material formations, mechanisms of elementary interactions and physical phenomena. The numerical values of the main parameters of the ether (density, pressure, viscosity, temperature, sound velocity, heat capacity, energy content in the volume unit) and the values of the amere parameters (mass, dimensions, quantity per volume unit, mean free path, thermal motion velocity) are obtained.

The vortical models of the main stable elementary particles, i.e. proton, neutron, electron and photon, the models of Nuclei, atoms and some molecules are considered in the work. The models of the main fundamental interactions, namely, strong and weak nuclear, electromagnetic and gravity and also laminary ether-dynamic are worked out. The models of the main electromagnetic, optical and gravity phenomena are worked out. The hydromechanical interpretation of the main quantum mechanics equations is given, the equations of electromagnetic field and gravitation are defined more precisely.

The model of the stationary dynamic Universe based on the idea about the circulation of the ether in the steady galaxies and exchange of the ether between galaxies is worked out.

The author explained that the ether-dynamics ideas make it possible to solve the cosmological paradoxes naturally, within the limits of the ideas about Euclidean space, uniformly passing singledirected time, non-destructible eternal matter.

The monograph consists of preface, introduction, ten chapters, containing 36 paragraphs. Each chapter is provided with bibliography containing 423 names. There are 101 illustrations, 25 tables, 336 equations in the work. The volume of the monograph is 20 printer's sheets. [270 pages]

Chapter 1

Brief History of the Ether contains brief review of theories and models of the ether, from Phales de Milet, ancient Chinese taoism, ancient Greek materialists to the modern ideas about the possibility of the ether existence. There is the paragraph in this chapter, where the main shortcomings of the known hypotheses, models and theories of the ether are stated, and idealization of the ether qualities practically by all authors, which has not allowed them to work out noncontradictory theory of the ether, is exposed.

The significant thing is that these authors had not necessary information about existence and conduct of "elementary particles" of the matter, and existence of the known at present fundamental interactions. This information was obtained only in the 20th century when the problem of existence of the ether in the nature was actually excluded from the agenda.

The little known data about the ether drift discovered by some scientists early in the 20th century (E. Morley (1901-1905), D.C. Miller (1921-1925) and A.A. Michelson himself (1929)) are given here.

Chapter 2. Methodological Bases of the Ether-dynamics

Consists of 3 paragraphs dealing with the methodology of ether-dynamics. Principle possibility and need for qualitative model presentation of phenomena are shown in paragraph 1; the same paragraph shows, that there were moments in the history of natural science when bringing of some forms of matter motions to others was considered as impossible, but later, these ideas were proved to be wrong.

Paragraph 2 deals with the approach to determination of general physical invariants. It is shown here, that only universal categories, presenting in all, without exception, material formations and physical phenomena can be general physical invariants, such as: motion and three components of it -- matter, space and time. The rest categories are of particular nature and they can not be considered as universal categories.

Paragraph 3 describes the ways of revealing the internal mechanisms of phenomena. The main proposed way is petition of the phenomena into components, exposure of general properties of elements, on which material formation can be partitioned, simulation of phenomena structures using corresponding analogies of macrocosm.

The chapter comprises the conclusion about unity of physical laws at all levels of matter organization and permissibility of broad use of analogies for studying the microcosm phenomena.

Chapter 3. The Structure of the Ether

Consists of three paragraphs. In the first of them the most general properties of macro and microcosm are compared; this comparison leads to synonymous conclusion, that the material medium filling the Universe space, which further should be named as the ether is an ordinary real, viscous and compressible gas.

Paragraph 2 of this chapter defines numerical values of the ether parameters in the atmosphere space, in this case ordinary formulas of electrostatics and gas mechanics are used, and the summary table of the ether parameters is listed, with such parameters as: density, pressure, temperature, sound velocity, thermal diffusivity coefficient, kinematic viscosity, viscosity (internal friction coefficient), adiabatic exponent, heat capacity, energy per volume unit. This table comprises also the basic parameters of amere -- element of the ether -- its mass, diameter, quantity per unit of volume, average length of free path and average velocity of thermal motion.

Paragraph 3 is about basis forms of the ether motions and about their hierarchical interactions. The oldest, the most general form is the translational motion of a single amere; the elementary volume of the ether comprises three forms of motion -- diffusion, translational and rotary, to which further ensure seven kinds of motion. Corresponding formulas of gas mechanics are listed for all forms and kinds of motion.

Chapter 4. The Structure of Gas Vortexes

The first paragraph is about formation and particularities of the structures of the gas vortexes, attention is paid to the role of boundary layer, ensuring the stability of the gas vortexes, epures of density distribution, circular velocity and angular velocity of rotation are also given. In this paragraph the author considers the structures of spiral thoroidal vortexes as gas formations capable to retain a dense gas.

The second paragraph of chapter 4 is about the power of the gas vortexes, it is shown here, that the gas vortex is a mechanism ensuring spontaneous transformation of potential energy of the gas medium pressure into kinetic energy of the gas mass rotation.

The third paragraph is about the peculiarities of gas motion in the vicinity of the spiral toroidal vortex. It is shown here that there are three kinds of motion in the vicinity of such a vortex -- circular, described by expression analogous to the expression of electro-static Gauss theorem; toroidalic, described by Biot Savart's law, which describes particles magnetic field; thermodiffusion, which is the consequence of the lowered temperature of the vortex surface and which forms gradient of temperature and pressing gradient in the environment, this motion is described by heat equation.

Chapter 5. Nucleons and Atomic Nuclei is about nucleons structures and construction of atomic nuclei

The first paragraph of this chapter defines ether-dynamics' parameters of proton and neutron, in particular, the structure and surface motion velocity and also internal energy and relaxation time. It is shown that neutron differs from proton only by presence of external boundary layer, in which the circular motion declines, that allows to accept the neutron as an electrically neutral particle.

Paragraph 2 describes the boundary -- strong nucleons and distance-electromagnetic interactions of the spiral vortical rings -- nucleons. This paragraph determines an energy of strong nucleons interactions taking into account the condensation of the ether in the boundary internucleous layer. Coulomb's law is deduced for distance interaction of the spiral vortical rings. The point of a charge polarity, essence of the charge, point of a magnetic moment are shown here; it is shown that deduced gas-mechanical dependences are fully equivalent to corresponding electromagnetic relations.

In paragraph 3 the models of atomic nuclei, hydrogen-helium group, general properties of component nuclei are considered, it is shown, that the basis of nucleous structures is alfapartical model This paragraph gives description of atomic nuclei structures, possessing the magic number of neutrons as basic structures of all atomic nuclei. Further, on the basis of analysis of nucleons interaction energies in nuclei, rules of nuclei structures organization are proposed and nuclei structures forming from basic structures by collecting the nucleons are considered in sequence. Nuclei structures of lithium-oxygen, fluorine-calcium, scandium-ruthenium, rhodium-gadolinium, terbium-actinium groups are considered.

The forth paragraph of the chapter is about excitation state of vortical rings and conformity of this state with weak nucleons interaction.

Chapter 6. Atoms and Molecules

Gives description of structures of atoms electron shells as added to nuclei of the ether vortexes with opposite orientation of the ether spiral motion.

The subject of the first paragraph is hydromechanical interpretation of quantum mechanics equations, for the purpose the data obtained by E. Madelung in 1926 are listed.

On the basis of Schroedinger wave equation transformation, Madelung showed the conformity of quantum mechanics equations with hydrodynamics equations. In this paragraph some relations of quantum mechanics are deduced: line spectra Balmer's law, relations (law) of Plank, the point of Paul's exclusion principle is revealed and mechanical interpretation of conservation laws of quantum mechanics. In the same paragraph the rules of electron shells construction as added vortexes on the basis of psi-function knowledge are formulated.

Paragraph 2 of chapter 6 is about the structures of atoms electron shells. It is shown here that proton can have three stable states: as a proton, neutron, i.e. a proton with boundary layer of the ether and as an atom, i.e. as a proton with added vortex of ether. Different states of added vortexes corresponding to different states of hydrogen are shown. Further, on the basis of analogies with Taylor's vortex structures of some atoms -- helium, lithium, beryllium and oxygen, as compound ether vortical systems are considered.

In paragraph 3 organization principles of general for several atoms added vortexes -- principles of molecules organization are considered. As an example structures of hydrogen molecules H2, H4 and water H2O are given.

Chapter 7. Electromagnetic Phenomena

Deals with electricity and magnetism from positions of ether-dynamics' ideas.

Paragraph 1 gives analysis of present hydromechanical models of electromagnetism and shows their drawbacks.

Paragraph 2 gives hydromechanical model of electricity and magnetism on the basis of ideas about the ether as a real gas, this model corresponds to ether-dynamical conception. Interaction of spiral vortical rings is analysed and the essence of electrical and magnetic interactions is considered in sequence.

The third paragraph deals with the structure of free electron and its basic parameters -- dimensions, density, rotation velocity are calculated.

Paragraph 4 gives ether-dynamical interpretation of electrical and magnetic phenomena such as electric current, formation of magnetic field, self-induction mechanism, capacitor energy, the essence of permittivity and permeability, the origin of Lorentz force.

Paragraph 5 pays attention to principal incompleteness of Maxwell's equations, describing magnetic field and certain their modernization is proposed in order to take into consideration some electromagnetic effects. Several additional members linked in particular, with: longitudinal spreading of electric field, intersection of conductors by magnetic field lines, compressibility of magnetic field, the limit of its diffusion and some other aspects are proposed and grounded.

Paragraph 6 gives experimental data, proved the given refinement of electrodynamic field equations -- longitudinal dipole radiation, predicted deviations from Ampere's circuital law, functional dependences of conductors interinduction.

Paragraph 7 is about the possibility of transformation of the four-dimensional MKSA system of Units into the threedimensional MKS system. Such a transition was possible after elucidation of the essence of permittivity, interpretated as ether density in atmosphere and the essence of electric charge, interpretated as a product of surface ether circulation by its density. The table of electromagnetic values in MKSA and MKS systems is given in this section.

Chapter 8. Light

Deals with subject of formation and diffusion of light and the essence of optical phenomena

Paragraph 1 is about photon formations and their structure. It is shown, that the most precise analogy in hydromechanics is Carman's vortex trail, possessing, in principle, some photon properties: corpuscle-wave dualism, polarization. Ether-dynamical parameters of photon are calculated, including its density, the core dimensions, time of photon relaxation is determined. Dependence of photon wave length on time diffusion of photon at the expense of the ether viscosity are studied, the essence of spectra "red shift" as a result of loss of energy by photons as their movement in the ether (the exponential law of loss of energy by photons in time) is shown.

In the second paragraph the mechanism of basic physical phenomena: reflection and refraction of light, interference, diffraction, aberration are studied. It is shown, that deduced formula expressions are in accordance with known optical laws. In case of calculation of aberration, taking into account the ether, dependences are deduced, which are in analogy with relative ones. It is predicted, that after reflection from metal mirror a photon spin should change its charge to opposite.

Chapter 9, Gravity Interactions, consists of four paragraphs.

Paragraph 1 shows, that the basis of gravity interaction of bodies is thermal diffusion processes in the ether.

Proceeding from thermal conductivity equation the thermal diffusion interaction of bodies is deduced. The law of bodies attraction is deduced, which differs from known Newton's law of gravitation with additional cofactor, which considerably decreases the force of bodies intergravitation at long distances and do not practically influence upon the law on short distances.

The temperature difference between the free ether and the surface of temperature nucleons boundary layer is determined. The reasons of Mercury perihelion shift are given, which are within the ordinary limits of classical mechanics.

In the second paragraph the velocity of the gravitation diffusion is determined, this velocity is equal to sound velocity in the ether and considerably exceeds velocity of light, which is the velocity of diffusion of the second sound.

In the third paragraph the calculation of absorption of the ether by gravitational masses is done.

It is shown here, that the ether is permanently absorbing by all bodies and the ether enters bodies at escape velocity. For different celestial bodies the velocity of their mass increase is determined and the constant of time of its increase is determined. For the Earth this time constant is equal to 3.75 billion. It is shown, that absorption of the ether by the Earth is the reason of its volume increase of continents spreading and subduction of ocean floor under continent plates.

In the paragraph 4 the hypothesis of origin of celestial bodies magnetic field as a result of formation of Coriolises forces in the ether in the surface layers of celestial bodies. These forces are the result of absorption of the ether and rotation of celestial bodies. The summary table of calculations of magnetic fields strengthes for bodies of solar system is given and comparison of calculated data with astronomical data is carried out, good coincidence of the results is shown.

Chapter 10. The Ether and Cosmology, deals with the ether-dynamical model of Universe

In paragraph 1 laminary interactions of bodies and circulation of the ether in stable galaxies and change with the ether among galaxies are studied.

It is shown, that in spiral galaxy ether circulation is carrying out: along the spiral arms of a galaxy the ether flows are going to its nucleus, which is resulted in magnetic fields strength of the arms, after collision, these flows ensure formation of vortexes, which form protons in the nucleus of the galaxy. Formed proton-hydrogen gas is jointed in stars, which with the help of gas expansion have motion from the nucleous to periphery, the stars move along the arms to periphery, where protons disintegrate because of relaxation and after this return to state of free ether.

In the second paragraph the resistance of the ether to motion of celestial bodies is considered. Some calculations are given, proving that the time constant of deceleration of the planets motion velocity is about 30 billion years.

In the third paragraph the solar system is considered as an element of the Galaxy. Ether-dynamical hypothesis of origin and development of the solar system is presented, this hypothesis explains, in total, the peculiarities of the solar system structure: the mechanism of the planet formation is shown, the reasons of the sun rotation and the planets in the straight direction and in common plane are given, the reasons of excess orbital planets moment over the sun orbital moment are shown.

In the forth paragraph the calculation of a galaxy latent mass is done.

Paragraph 5 gives analysis of cosmological paradoxes--thermal dynamical paradox, photo metrical paradox and gravitation paradox and their natural solving within limits of ether-dynamical ideas.

In conclusion the author make an assumption about need of development of special directions of ether-dynamics in biology and many other fields, because ether-dynamics gives principal opportunity to study the internal mechanism of phenomena and on this base found new directions of research.

This monograph is written by Vladimir Atsukovsky, master in technical sciences, senior scientific worker. He is also an author of five books, including three monographs in physical instrument making, information theory and theoretical physics. One of the books was published in Czechoslovakia in 1972, in China in 1973. V. Atsukovsky is an author of more than twenty articles, twenty inventions and many other scientific works.

His first article on ether-dynamics was published in "Ideen des exakten Wissens" magazine N 2 in Stuttgart, FRG, in 1974.

* * *

He made more than 40 reports on problems of ether-dynamics at various scientific seminars and conferences. He is a specialist in the ether-dynamics field for more than 25 years...