

# The Ether Model as Result of the New Empirical Conception

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Many riddles of the universe can be solved by application of a new in principle methodology for experimental studies. A laboratory mock-up of the physical device simulating biological systems at the level of ether perceptions has been constructed ( an engineering systems with an artificial biological field). The device responses to the fluxes, 'temperature' and polarization of the ether allow to record the ether wind arising from the motion of the Earth, the Sun and the Galaxy, and the signals are coming from the Sun and the Moon.

The obtained data is a basis for a qualitative model of the ether, that has spatial-temporal spectrum of the vortex-wave states from the near -zero scales to the megascales and features a topological diversity. The ether has proved to be an absolutely non-standard material medium, which concurrently stays in three phase states (solid, liquid and gaseous ones), owing to disturbances from non equilibrium systems similar to stars and elementary particles of the substance. The first basic phase of the ether is the 'solid' absolute space or the energy 'bottom' of the Universe.

In natural sciences only observational and experimental facts are of intransigent value. The most essential new data based on such facts have been obtained in works [1-4] where existence, to intergalactic scale, of a certain 'solid' space capable of being an absolute frame of reference, contrary to Einstein's conclusions, was proved.

But what is physical nature of the absolute space? Where are the bounds of applicability of the relativity principle? How to bring the experimental findings obtained by N.A. Kozyrev [5], Veinik [6], A.V.Chernetsky [7] and many other 'paraphysicists' into correlation with classic categories? An attempt to answer these and other questions is made in the present paper.

The author is convinced of the fact that, departing only from the properties of an ordinary substance and the fields accompanying the latter, which are unique, but not sole forms of the parameter-ether, it is impossible to see other floors of the Universe containing vortex-wave structures of other scales and topologies. Under the impact of facts it is to be admitted that fundamental knowledge, novel in principle, are given by paraphysical experiments which taken as a basis make it possible to construct a strictly scientific experimental methodology and the elements of a novel physics including the theory of ether chains and systems. This approach enable to reveal the physical meaning in those fields of science which were concealed by bare postulates to this day.

This trend in research work was developed step by step by the author in [8-10] where the essence of the novel empirical conception is stated. The material obtained later confirmed the efficiency of the experimental methodology based on the use of technical systems with artificial biological field. It is definitively proved that similar physical devices are capable of sensing the intensity of turbulent disturbances ( the temperature ) of the ether, anisotropic properties (direction of polarization ) and the ether fluxes (the wind ). Simultaneously, as shown in [8], there are methods and means for investigation of macroscopic properties of the ether based on other principles.

The device observations and special experiments performed by means of an auto-oscillational electromechanical system with artificial biological field and other devices in 1982-1996 (St.Petersburg ) enabled to obtain the following facts.

1. Any changes in internal state or mechanical movement of the substance (the physical body ) are accompanied by unconventional vortex-wave disturbances of the ether, which increase the ordinary energetic density (temperature ) of the ether in the field adjacent to this body, as well as on the way of directed speed of waves of unknown nature. In a particularly effective way the ether is disturbed by non equilibrium thermodynamic and electromagnetic processes. The ether vortex-wave disturbances properties depend on the element composition of the active body, internal structure of the latter, the geometry and the frequency of mechanical or other oscillations. The physical body at rest is filled with a heavy 'liquid' ether ( a 'liquid' mass adjoined [8] which beyond the body forms a less dense stationary envelope reproducing a gravitational field in shape and gradient.

The insufficiently explored ether processes described occupy a broad range of macroscopic spatial-temporal waves-frequencies and display an obviously pronounced persistence, which corroborates their quasi-material, vortical nature.

2. Under laboratory conditions all experiments to perform on generation and registration of new forms of ether motion obey the paraphysical adaptation law [10] or the triad law (an analogue of the relativity principle). Most efficient is the first experiment the first application of the newly built device; which is followed by formation of an energy-information barrier bringing all processes , with a threefold recurrence of the situation, to classical ones. In one of the experiments, during the first connection the unconventional radiation altered by 15 fold the parameter of the physical process.

The energy-information barrier represents the principal property of the ether that is called the least disturbance principle [8]. Subject to the conditions of the experiment adaptation takes up from several seconds to several hours. (The experimenter comes to in a more slowed-up as the vortex sizes grow ). Alteration in the spectral composition of the ether disturbance puts the energy-information barrier off for some time.

3. The excited field of the ether behaves as the field of elevated temperature which is influenced by gravity. It crawls off

in space, decreasing the intensity, but predominantly in a horizontal plane and down the vertical. Hence, the quasi-substance as vortical has the mass and its comparison with a thermodynamic process displays just one aspect of the phenomenon. Upon turning off the generation and completing dissipation of the quasi-substance ( in about 3 hours ) the ether field adjacent to the generator and in the radiation direction turns into a 'wattless' spatial inhomogeneity that can be attributed to the polarization or structural-topological anisotropy of the equilibrium, gravitational phase of the ether. But the main thing lies in another fact, that is this inhomogeneity able to exist for many hours stays on one spot, despite the Earth motion in space and the ether wind blowing on all sides.

4. Vortical viscosity of the undisturbed ether is by several times greater in the horizontal plane than in the vertical one i.e. anisotropy of the stationary ether envelope of the Earth and the gravitational field corresponding to it in structure exist. It can be evidence of the fact that the ether vortical structures spectrum alters with height towards increase in the vortex sizes, and in the horizontal plane the ether is more homogenous. The anisotropy is so great that in a vertically standing cast-iron dumb-bell when overturning it by 180 the liquid ether structurally overflows from the upper part to the lower one showing the effect of 'sand-glass'. At the same time anisotropy forms near the Earth surface a peculiar 'wave channel' offering an opportunity to record all space disturbance in the horizontal plane.

5. Energy density (excitement) of the ether depend on external natural factors. Thus, day changes in the ether temperature are correlated with the electric field of the Earth which amounts by Moscow time to minimum 6 hours and maximum 21 hours. Short energy bursts cause thunderstorm phenomena in the atmosphere.

Episodic rises in the ether energy have also been fixed at noon when directions of orbital motion of the Earth, geodetic ether wind from East to West and Hartman reticulum concludide. During a month the ether energy increases with full moon and drops with new moon.

6. Stationary geophysical ether wind of eastern direction, wind towards the Sun after sunset, as well as wind of variable direction caused by a system of cyclones and anticyclones in the atmosphere were found out. Motion of air masses entrains a most mobile portion of the ether mantle of the Earth with regard to the adaptation law.

7. On a scale of the solar system the device observations fix the ether component of the solar wind, the contrary and fair orbital winds on the Earth surface. These turbulent fluxes of the ether have a different spectral composition. For example, fair wind for the Earth, having velocity of about 300 km/s, is caused by revolution, together with the Sun, of the solar individual unconventional ether field.

8. The contrary and fair ether wind is recorder when the Sun is moving in a galactic orbit, as well as recorder are the anisotropy of space in the direction of absolute motion of the solar system towards the Leo constellation and a similar motion of the Galaxy towards the Hydra constellation.

9. Feasibility is proved to record by means of devices of the Earth with other celestial bodies. Local signals from the Moon, the Sun and the center of the Galaxy and the Hakutake comet (25 March, 1996) are fixed.

The experiments totally prove the most important point: the ether winds of various directions can be recorded by physical devices simultaneously and independently, violating the law of vector addition of spatial motions. In exactly the way, simultaneously and independently, gravitational anisotropy (polarization) is observed in the ether.

The experimental data presented bear a direct relation to the problem of absolute space. Fragments of records taken from many hundreds of observation and experiments are given in Fig.1. Below each oscilogramm Moscow legal time is indicated in hours, and in the even of spatially selective measurements geodetic azimuth  $\beta$  is also indicated, under which the main axis of sensitivity of the Artificial Biological Field Device (ABED) was exposed. In the graphs the position on the temporary axis of the solar disc in the moment of alignment of the latter with the ABFD sensitivity axis is denoted with a circle (the light circle - the Sun is in front on the main axis; the dark one- the Sun is on the back, under the Earth; and the half-dark one - the Sun is in the orthogonal direction). The designed position on the temporary axis of the main space reference points is indicated by vertical lines with corresponding inscriptions, a short horizontal line indicating the orthogonal direction.

Only local horizontal component of external disturbances of the near-earth ether layer was measured, i.e. right ascension  $\alpha' = \beta$  in the latitude of Saint- Petersburg. All the astrophysical data are put at the author's disposal by A.A. Shpitalnaya.

The first graph in Fig.1 displays the adaptation process (formation of the energy -information barrier) as ABFD reaction to a step unconventional signal technogenous origin (shown in dotted line). In this even the adaptation time constant is equal to 3 hours. For the natural processes this time can be substantially greater because of the natural dynamics of the spectral composition of the ether disturbances.

Oscilogramm 2 displays an increase in the ether energy density after 20 hours. The broken character of the curve is attributed to a charge in the ether anisotropic properties (fluxes) when the device having a sufficiently narrow diagram of sensitivity rotates jointly with the Earth. Daily changes of the ether energetics are also corroborated by record 3 obtained by means of an electromagnetic device generating pulse signals inversely proportional to the energy density (vortical viscosity) of the ether. At this point again a rise in the ether density after 20 hours, a short increase in energy for about 3 hours and a long one after 6 hours are recorded. As noted before, similar variations are inherent to the electric field of the Earth.

In oscilogramm 4 the gravitational anisotropy of the Sun is recorded. Curve A is the first connection of ABFD in a new

mode; curve b is the record of the following day, which shows adaptation loss of susceptibility and concurrently a more accurate direction towards the source of gravity.

Graph 5 demonstrates the effect of a powerful ether flux on the ABFD orthogonal channel in the direction favorable to the Earth motion and practically coinciding with the direction of the galactic orbit of the Sun. Record 6 characterizes the ether anisotropy in the direction of the absolute motion of the solar system to the Leo constellation. Similar anisotropy is caused by a contrary vortex-wave flux whose spectrum is altered by the Earth fields. In oscilogramm 7 the identical result applies to the Sun motion in a galactic orbit towards the Cygnus constellation, recorded by the main ABFD channel. This signal contains more noises, as an ether flux of a close spectral composition moving in the opposite direction exist.

In oscillograms 8 and 10 signals received from the direction close to Y.A. Baurov's cosmological vector potential were recorded to the orthogonal and main channels [11]. For the first signal (December) right ascension with no correction is to latitude  $\alpha'=283$ , for the second one (May)  $\alpha'=90$ . In the graphs perceptible also is the Center of Galaxy (CG), and the 'magnetic' anisotropy itself does not differ in anything from other directions, both by observation with ABFD and by data of sensor perception. Therefore, from our point of view, the cosmological vector potential is caused by an ordinary ether flux existing in the system of galaxies. There is good reason to assert that in stable ether fluxes both longitudinal and lateral constant magnetic fields spontaneously may arise.

Oscilogramm 9 is typical in that in it the direction of absolute motion of Galaxy (towards the Hydra constellation), the center of Galaxy were recorded, but the signal towards the Leo constellation is not in evidence. In records 6 and 7 there is no signal from the Hydra constellation. This is evidence of a sporadic character of the device observations discussed which require accumulation and statistical processing of information of the same type. Graph 11 shows that approach of several anisotropy directions (the Leo constellation, the Sun and CG) in space an increasing influence on ABFD.

Proof of the fact that gravitational anisotropy of the ether exists lies in oscilogramm 12 recorded at the moment of the nonequilibrium state of the ether energetic density. A bifurcated image of the Moon has been obtained, where the first signal corresponds to the true direction. Such things are possible, as the ether structures of various spectral compositions rotate jointly with the Earth differentially. Unique oscilogramm 14 fixed the active ether processes in the neighborhood of the Moon in 40 hours after new moon. The signal oscillations observed are in fact substantially more intensive after 15 hours, because a powerful low frequency filter is included at the tracer output. Oscilogramm 13 proves a good resolving power of ABFD, separately recording comparatively closely located directions of the ether anisotropy (the Hydra and Leo constellations). It is noticeable that the designed directions coincide with the real one not very accurately, but this is quite natural for a single session of measurements. The signal amounting to 24 hours is caused by a local increase in the ether energy.

In the last oscilogramm 15 vortex-wave disturbance of the ether produced by the Hakutake comet are recorded. Several days earlier the signal oscillations were of such an intensity that the tracer constantly went off-scale. By 25 March, 1996 a distinct angular velocity of the comet had developed, and the ether disturbances had become ordinary, as in the graph presented.

Investigation of the form of the signals recorded offers a conclusion concerning macroscopic quantization of the ether processes, particularly distinct in oscillograms 6-10. A great A A great portion of investigations has not been demonstrated here, as it was conducted without documentary records with a visual or sensory supervision. For example, the eastern ether was detected and studied with the use of hydrodynamic units [8] stationary anisotropy properties of the unconventional field of the Earth were studied by the methods of biolocation, etc. All things considered the data obtained and other scientific materials drawn enable us to describe, in the first approach, the structural model of the ether.

The Universe is a boundless three-dimensional non-linear material medium called the ether and having it's disturbances in forms of vortices and waves. The ether whose primary elementary structure can only be an object of conjectures resembles, from the macroscopic point of view, most off all a quantum super fluid liquid with strongly pronounced polarization and spin properties, and this liquid realizes the principle of least disturbance. When studying a similar little-known medium it is expedient to use the hydrodynamic approach, assuming as a basic characteristic the spatial-temporal energy spectrum of vortex-wave disturbances. Total combination of the experimental facts with a deductive approach provide an opportunity to give the following qualitative description of the ether states.

The energy spectrum of the ether Universe is given in Fig.2

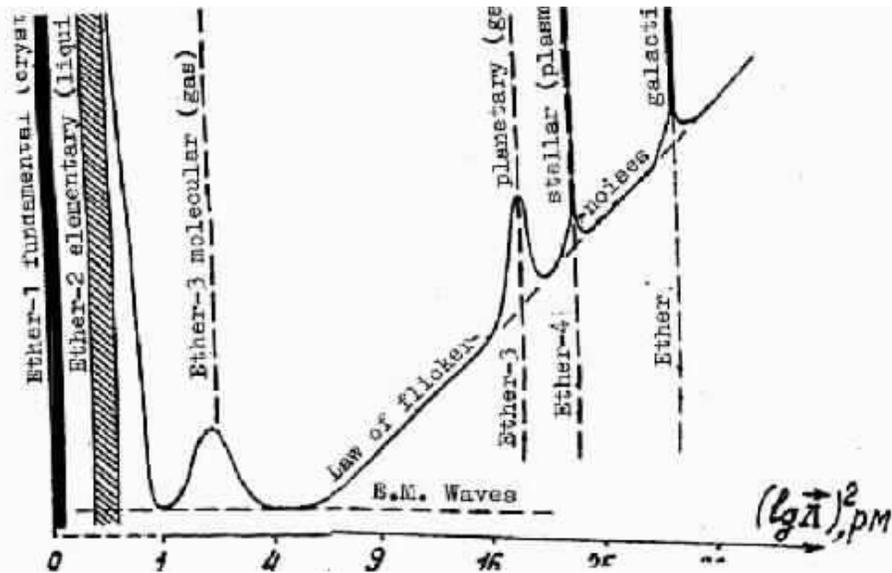


Fig.2

On the axis of abscise a spatial co-ordinate  $L = 2\pi/\lambda$  in picometres is laid off from the unit in a quadratic scale, where  $\lambda$  is wave vector; on the axis of ordinates spectral density  $W=E/L$  is laid off in an arbitrary scale. Moving along the space axis where on the 0-1 interval the scale is representative, it is possible to run down qualitative change in the stereodynamic floors of the Universe.

The blackened area of the spectrum, adjacent to the zero mark, is the basic and most steady state of the ether in form of a dense massive homogeneous medium in a liquid-crystal, practically solid-state. This is the energy 'bottom' of the Universe that in all times was identified with a concept of absolute space. Thus, space is statistically the most inert fine-structural, 'gluon' state of the ether, which we shall tentatively call solid ether-1.

The following nanoscopic scale of the spectrum is presented by the Universe, filled with elementary particles of substance, i.e. local steady vortical formations of the ether-1 with a large spiral moment of the single-sign pulse. In the same area the turbulent field of the ether lies, which is called the virtual 'foam' of the physical vacuum. The cause of formation of substance and singlescale turbulent disturbance is a category of the highest order. It can only be a supposition that predomination of particles over antiparticles is caused by rotary-and-progressive motion of the Universe as a whole. The physical vacuum as part of condensed bodies behaves as a dense superfluid liquid which we shall call liquid ether-2. The ether states under consideration determine, to an accuracy  $10^{-7}$ , the ether energetic and the whole appearance of the laboratory world surrounding us.

After the ether-2 a subspace of a quasisubstance fine matter begins, the latter consisting of vortices with typical sizes from molecular to interstellar scales. The floor of the Universe is statistically less stable and, under terrestrial conditions, displays immeasurably lesser energy as compared to the classic alone. Let us call this phase the gaseous superfluid ether-2 excitement and, as a secondary form of motion, is able to independently exist. The ether-3 has maximum energy in the area  $10^{-7} - 10^{-10}$  m, as it effectively generated by all the forms of the molecular motion. Convincing evidence for existence of the ether-3 on the Earth surface is presented by the Hartman's reticule, biological field structures, as well as data of special natural observations and laboratory experiments [5-10]. The horizontal dotted line in Fig.2 denotes the medium level of energy of nonconventional disturbances of the ether caused by the existing background of electromagnetic waves.

Beyond the molecular area the ether-3 energy at first falls, and then grows according to the flicker-noises law, which is attributed to an increase in permeability of the energy-information barrier as the size of vortices grows. The spectrum maximum in planetary scales is bound up with participation of the ether-2 and ether-3 in geophysical processes. The ether state acquires a new quality at stellar and galactic levels of vortex formation.

The spectral characteristic given in Fig.2 very tentatively displays the area of the stars which are to be attributed to the 4th plasmatic state of the ether (the ether-4), qualitatively and spatially isolated from other phases. The star is a steady anomalous phenomenon in the ether body having a spectrum with a uniform distribution of energy among the vortical structures of all scales, not avoiding the substance. In the galactic systems the new quality emerges from the fact that the ether-1, i.e. space, is partially involved into the vortical motion, and this is the cause of violation of the Newton's laws in the dynamics of the galaxies. Hence, in this spectrum region a powerful growth in the ether energy density should be observed.

The difficulty in perceiving the ether consists exactly in the fact that, being a boundless material body, in the greater portion of it's three-dimensional volume it at the same time stays in the solid, liquid and gaseous phases, apart from the phenomena of such types as elementary particles and stars. As to the original cause of the phase state the following definitions of the ether can be given: solid ether-1 is primary, or fundamental one; liquid ether-2 is elementary, substantial

one; gaseous ether-3 is molecular, wavy, etc. one; and plasmic ether-4 is stellar one. The galactic vortices as the 5th state of the ether are new elements in the Universe hierarchy, and this can be a return to the ether-2, or rather to the substance at another floor of the Universe.

It is important to size up that spectrum given in Fig.2 characterizes the energy of elementary vortices of a particular phase of the ether. For example, in the vortical motion of the cyclone in the atmosphere, air, water vapors, ether-2 and ether-3 participate. However, when plotting the spectrum only the vortices of the ether of the scale considered, ignoring the accompanying motion of the substance elementary particles whose mechanics is subject of studies of the corresponding section in the ordinary physics, are to be taken into account.

The principle of least disturbance (tendency to the lowest energy level ) which is realized via the 'violet' energy spectral cascade is the fundamental property of the ether. This principle lies as a basic in all conservation laws and the principle of relativity, but its effect is confined to certain spatial scales. According to the law of flicker-noises , grows in spectral density also stands for existence of a 'red' energy cascade in nature. Owing to this, in scales of the Galaxy the conditions are episodically formed when energy of a "cyclonic" vortex commences to exceed the ether-1 energy in the same volume. And then an energy "discharge" arises between the spectrum wings, which means birth of a new star.

Any physical body (system) having a mass has its own autonomous solid subspace in a form of a rigid vortical structure of the ether-2. The form, sizes of elements and energy of this structure are defined by the mass value and are adequate to the gravitational field. When interacting with the rigid 'reticle' of the ether-1 (absolute space) even the subspace of the Sun cannot deform it, at least in the neighborhood of the planets, by which a relative unsuitability of the main laws of physics is explained in our planetary system ether.

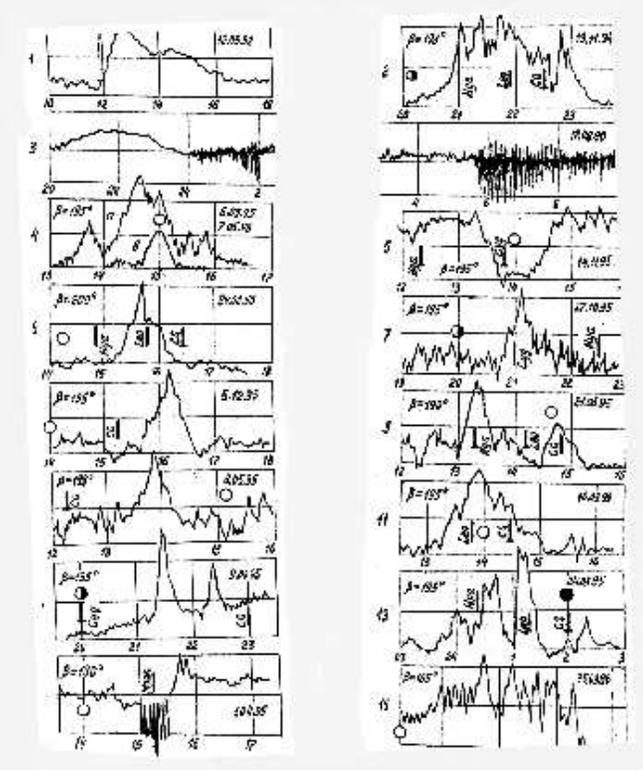
The Earth rotates jointly with its solid subspace, incorporating ether-2, ether-3, stationary magnetic and electric fields. When interacting with the motionless ether-1 under conditions of a curvilinear motion on the Earth surface a contrary eastern ether wind arises (the magnetic field of the Earth is carried westward with velocity of 0.30 a year). The Moon is influenced by two winds, that is, contrary one from the ether-1 and favorable one from the ether-2 and ether-3. (The artificial earth satellite is influenced only by the integral contrary wind). In their orbital motion the Earth and the Sun are influenced by the contrary and favorable fluxes of the ether. The space anisotropy recorded in the direction of the Galaxy motion (Fig.1) is indicative of the fact that the absolute space, i.e. the ether-1, does not alter its properties in intergalactic scale.

It follows from the laws of our world that the ether-1 is responsible for the phenomena such as substance, inertia, gravitation, electromagnetic waves ,principles of relativity and conservation. The unconventional forms of the ether motion introduce non-substantial corrections into the academical physics. The ether-2 and the ether-3, being a 'product of vital function' of the classical substance and field processes, fall into secondary forms of the ether motion, which perform mainly the information function at their stories of the vortical systems. Though, truth to tell, flowing-down of the ether towards the center of planets should contribute to warming-up of the core. Under the terrestrial conditions the ether-1 joints with the vortical motion of the substance and the ether-2 and -3 in special situation when natural cataclysms and various anomalous phenomena develop. Studies on macroscopic properties of the ether and the laws of energy-information interaction of the ether with substantial processes are to become an important part of the theory of catastrophes.

Within the scope of a small paper it is impossible to throw light on all the aspects of the fundamental problem. However, the most important part has been said, that is, the ether is an absolutely non-standard material medium, staying at the same time in three phase states, owing to disturbance from nonequilibrium systems, such as stars and elementary particles of substance. The first most stable phase of the ether is an absolute solid space ("die Feste des Himmels", according to the Holy Scripture), or the energy "bottom" of the Universe, whose elementary structure remains a mystery. In regard to the hierarchy of the vortical structures of the ether, not a single star, but a galactic vortex should be considered as analogue of a classic elementary particle. Hence, the electron is an accumulation of "plasmic" subparticles ether; and the cause of the origin of the substance and the galaxies (supersubstance) is to be common. It is most probable that the rotary-and-progressive motion of the Universe as a whole is this cause.

At the present stage only through studying the macro- and megascopic forms of motion the fundamental properties and the fine depths of the ether can be perceived. Exactly in this way and quite successfully the classical physics started on its journey in studying the microcosm.

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