Analysis of the Additional Energy in Vortices and Vortex Heat Generators

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Abstract

There was made the analysis of the additional energy formation processes in vortices and vortex heat generators from the viewpoint of new hypotheses of the matter structure and physics of vacuum. It is shown that additional energy release takes place due to the density change of vacuum-aether in the center of vortex that causes electron "emanation". It means that, being in vortex effective area, matter electrons release and absorb antineutrino.

There was discovered the optimum vortex structure of vortex heat generators, designed for water heating. The design of the test bench was developed to examine the hypotheses and to increase the effectiveness of vortex heat generators. The construction of the test bench is underway now.

The Analysis

Nowadays it is practically proved that in the vortices both of artificial origin (various vortex heat generators) and of natural origin (tornados, ball lightings, ocean waterspouts) there are physical processes, energy of which exceeds energy consumption, required for their creation. Sometimes effects of acceleration or deceleration of time course accompanies these processes, by teleportation etc.

In different types of vortex heat generators, for example in heat generators designed in the form of "Rank's tube", the effectiveness of conversion of electric energy into heat energy often exceeds 100%. It should be noted that the difference between the understanding of output and efficiency at the value above 100% consists in the fact that energy conservation law is valid in the second case, since the additional energy is released by energy source, which is unknown for modern science.

There are different theories, which try to explain this phenomenon [1]. In our own explanation of the processes we are developing new approaches to the matter structure and to the physics of vacuum [2,3].

To understand the processes, which take place in vortices and vortex heat generators, let us outline some of general aspects of the theory [2,3].

As distinct from the previous understanding of aether as purely material medium, aether-vacuum, which fills the whole Universe, represents a matter not in pure form but in the form of energy clots. These clots create elastic spatial lattice, which is like crystal one and which has the similar properties (see Fig.1, 2). Aether demonstrates the properties of the elastic lattice only at exitation time, i.e. at time of electromagnetic waves transmission through aether or at clotting of waves into matter (see Fig.3). Therefore aether is material only in the energetic sense, as if it has "pseudomass". Due to this fact we are able to move easily throughout the aether while the experiments to reveal an aether wind failed.

For any elastic medium there is a resonance frequency, which is defined by lattice spacing, i.e. there is a minimally possible wavelength for this elastic medium. If aether oscillations, caused by electromagnetic waves, have less wavelengths they will be unstable that some time or other will cause twisting of electromagnetic wave in the form of a stable "vortex", which is the very elementary particle of matter. As can be seen from the Fig.3, electron-positron pair is created here.

Energetic node
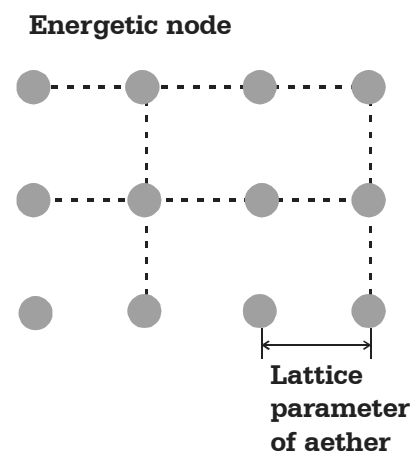

Lattice parameter of aether
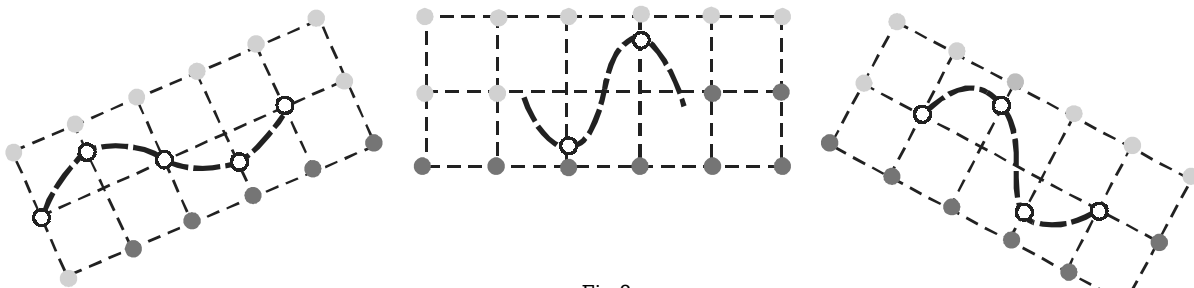
Fig.1
Energetic aether structure

Fig.2

Aether deformation at time of electromagnetic waves transmission. Energetic nodes of aether lattice are equipped only at time of transmission and in the direction of electromagnetic waves transmission
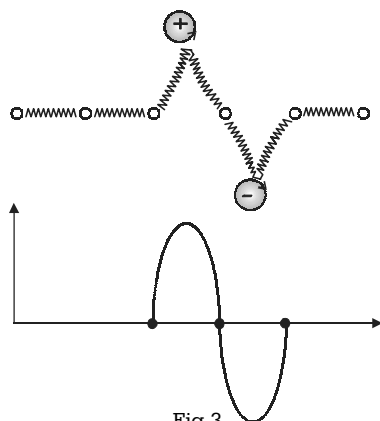

Fig.3

Creation of electron-positron pair from γ-quantum upon the critical deformation of aether

Using the notion of "resonance" of aether lattice and knowing the electron to be a minimal mass and the most lightweight matter particle, we can calculate the lattice parameter of aether lattice and its density. They are respectively equal to $6.06 \cdot 10^{-13}$ m and $1.14 \cdot 10^{36}$ MeV/m^3 ($2 \cdot 10^3$ g/cm^3).

As is well known, electromagnetic oscillations are transverse ones. *Editorial: In Tesla's conception it is longitudinal ones.* At these oscillations there is a shift removal of parallel planes relatively each other and lattice parameters do not change. At that, however, compression stress (along BD line) and tension stress (along AC line) simultaneously appear between these planes (Fig.4). These stresses finally give opposite direction of swirl of elementary vortices. By convention, there are positive directions at compression and negative at tension, that defines a charge of particle (Fig.4, 5).
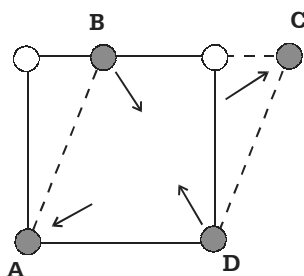

Fig.4

Appearance of tension and compression stresses at the transmission of quantum of electromagnetic wave through aether
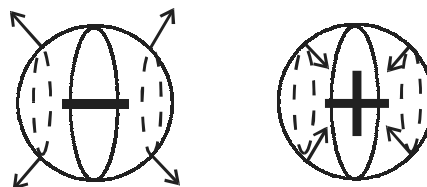

Fig.5

Creation of positive and negative charge of elementary particle

In aether with the given energetic density and lattice parameter the only stable vortex is that, which has energy equal to the energy of creation of electron (Fig.6). For example, if we examine muon, which has the similar to electron type of structure, then changing into electron, muon vortex will liberate the excess of energy in the form of muon neutrino and electron antineutrino. If the energetic parameter of aether lattice were 207 times less than in our case, i.e. aether density were more, then vortex-muon will be stable [2].
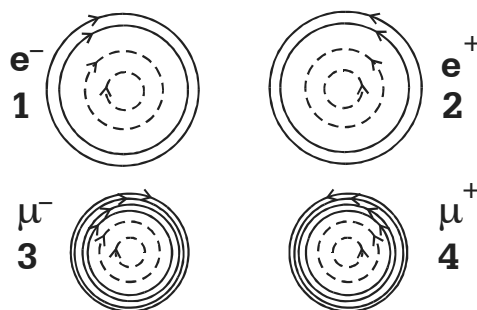

Fig.6

Scheme-structure of elementary vortex-particles: 1 – electron (e^-); 2 – positron (e^+); 3 – muon (μ^-); 4 – antimuon (μ^+)

In aether, which has the given energetic density, electron, i.e. elementary vortex is in equilibrium state. If electron gets into the aether of less density (for example, such aether can be created in the center of artificial vortex), then it will turn into the non-equilibrium state (swirl degree of vortex-electron is too big for aether of less density). Since electron is a stable charged particle and since without means of antiparticle it cannot decay spontaneously with total turn into energy, then to obtain the equilibrium state electron has to give its energy excess to aether. This energy is output as electron antineutrino ($\bar{\nu}_e$), after that the intensity of swirl degree of vortex-electron is decreased (Fig.7a).
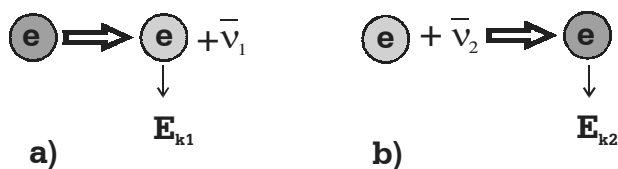
Fig. 7
Emanation and absorption of antineutrino by electron at changing of aether density:
a – at decrease of aether density; b – at increase of aether density

Changing of muon in electron can be considered as the analogues process. Muon has the similar to electron structure and it is stable in aether of bigger density. This process is accompanied by the emanation of quite a series of neutrinos and antineutrinos. There were the similar processes at the Big Bang, while at the abrupt expanding of the Universe and correspondingly at decrease of aether density, elementary particles (muon in this case) liberated the excess of energy in the form of neutrino and antineutrino [4]. The structure of neutrino and the processes of emanation and absorption of neutrino are described in more detail in [3].

It is well known from nuclear physics that at the processes, accompanied with neutrino creation, the elementary particle, which emanates neutrino, gets an impulse. If we assume the well-known process of β-decay as a basis (at which electron, departing from nuclear, gives the excess of mass (energy) in the form of electron antineutrino and as kinetic energy, caused by the impulse), then approximately 30% of energy of the whole process falls at the impulse. Thus, in this case at coming of electron in aether of less density, part of energy is taken away along with antineutrino and another part transfers into the kinetic energy of electron. Aether rarefication is obtained, for example, in vortex of heat vortex generator, in which kinetic energy, acquired by electron, causes the increase of water temperature. Schematically this process is shown in Fig. 7a, Fig. 8a.
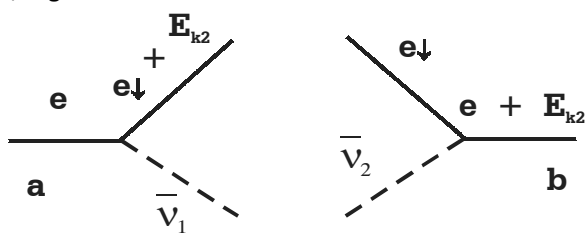

Fig.8

Diagram of the process of emanation (a) and absorption (b) of antineutrino, along with liberation of the additional kinetic energy

When electron returns into aether of normal density, then according to the compensation principle, it absorbs the additional mass in the form of antineutrino. This process provides electron stability as a true elementary particle (electron cannot decay spontaneously). Electron again obtains the impulse from antineutrino, i.e. kinetic energy, which is required for heating of water

(see Fig. 7b, 8b). Thus as a result of the coming of electron in aether of less density and backwards, along with the process of emanation and absorption of antineutrino there is a process of irreversible absorption of antineutrino in the Universe. The total energy of these antineutrino is equal to $\sim 10^{69}$ Joule [3].

There is the similar process in vortices and vortex creations. Due to centrifugal acceleration, at rotary motion there should be the changing of energetic state of the rotate system and, as the consequence, there should be exchange between peripheral and central areas. At that there is aether rarefication in the center of the rotate system. However, the maximum effect is obtained only in the case if rotary motion is balanced, i.e. periphery is hold not mechanically, as in flywheels, disks etc, but by gravitational or the similar forces. Therefore at the creation of "optimal" vortex, it should close on itself and should not touch the walls.

To all appearances this very optimal structure of vortex is created in vortex heat generators with the form of "Rank's Tube". This structure should have the form of swirling thin spiral (toroid) by the periphery of the tube and with rarefication at the center of the tube (Fig. 9). The very spiral should have the form of toroid. Then vortex in the form of spiral (1) will be hold by the rarefication inside the tube (2), where the contraflow is created, and the maximal stretching and rarefication of aether is obtained inside the thin thread of toroid, at periphery wall (3). As the radius of toroid is very small, then rates of water movement, which are inversely proportional to the radius (to the distance from the center), are very big and aether rarefication, which appears in the toroid thread, is maximum. Therefore electrons emanate antineutrinos in this part of the vortex (3) and, hence, there is maximum water heating. At the thickening of the toroid thread in the end of the tube (4), there is a decreasing of aether rarefication and of thermal effect. This decreasing is caused by friction on walls and by the reduction of water peripheral velocity. Such vortex structure allows to explain the appearance of contraflow, which comes from the peripheral layers of the toroid in the end of the tube.
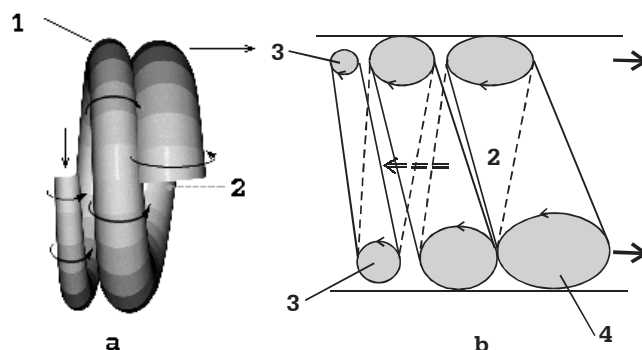

Fig.9

Creation of toroid vortex inside the vortex tube of the heat generator;
a) vortex structure and creation of the contraflow;
b) vortex section in the tube

Vortices effectiveness, first of all effectiveness of vortex heat generators, depends on the portion of energy, which is transferred to water as kinetic energy of electron and which portion of energy is taken away by antineutrino irreversibly. It can be supposed that the correlation in favor of kinetic energy is increased:

- with the increase of difference in aether densities (with degree of aether rarefication);

- with the increase of velocity of transfer from aether of normal density to aether of less density and backwards, i.e. this depends on output and intensity of the process.

As a result there is the biggest input of additional energy at the transfer in aether of less density in the beginning of the tube, i.e. in 1-2 toroid rings of vortex "Rank's tube".

In the outlet of "Rank's tube" speed of return to aether of the normal density is lower, therefore input of additional energy, required for water heating, is rather less. By the calculations this input must be realized as after-effect, i.e. as heat release in pipes and heaters. Moreover due to low speed this process is rather slow and lasting a long time. If water amount in the closed system is not big and if water frequently passes through vortex generator, then one cycle is not enough for water to return to aether of normal density. Then the additional difference between aether densities rises in the vortex and effectiveness of the vortex generator (i.e. emanation of additional heat) can be increased.

The proposed hypotheses explain the additional input of energy, by means of emanation and absorption of electron antineutrinos at changing of aether density in vortices and vortex creations. These hypotheses are based on the well-known physical processes and experimental facts, and they do not contradict to the fundamental aspects of traditional classical physics.

To check these and similar hypotheses and to confirm scientifically the appearance of the unknown type of additional energy appearing in vortex creations, there was developed a test-bench design on the basis of vortex generator NTK-3, produced by the firm "NOTEKA". *(Editorial: see p.76.)* The test-bench is supplied with all devices and sensors, required for researches. The mounting of the test-bench is started. It is planned:

- to research the processes, which take place in the vortex tube at different, including steady-state, conditions, and after-effects (energy liberation in the pipes), which were suggested by the theory;

- to research the influence of design approaches (such as changing of the vortex form, speed of water contraflow etc) on the working effectiveness of the vortex heat generator;

- to research the influence of the composition of the heat-carrier with different additions, which can change the energy of hydrogen bonds, electroconductivity, heat conductivity and other chemical and physical properties of water and also to use electrolytic solutions;

- to research the influence of electric, magnetic and electromagnetic fields of the different intensity on parameters and working effectiveness of the vortex heat generator;

- to research chemical and bacteriological properties of water at different parameters and modes of the test-bench operation.

It is supposed to increase the working effectiveness of the vortex generator up to 300% and to enclose the cycle.

The processes of increasing and decreasing of aether density also occurs in Nature and can be induced by living organisms. These processes are accompanied by the acceleration of time course and by the increase of entropy of the system [4]. The latter raises the possibility to set the research on the right track, since any system always tends to use the minimum of free energy and to increase entropy.

References

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