

1965, which describes some methods for creation of the propulsion force by means of the gradient of the dielectrical properties of the substance. The method allows to compensate the gradient of the potential for one plate and to increase the gradient for the second plate, so attraction of the plates becomes asymmetrical.

The work created in such sort of system is a result of the constant propulsion force, which can be used by Brown to rotate any powerful dynamo or to make the flying machine. According to the present paper, it is also a result of the asymmetry of the chronal balance.

Conclusion

From the concept disclosed above any quantity of the energy can be created in accordance with the balance law: any energy process is created in pair with contra-directional energy process. Mutual-compensation for processes can take place both in space (spatial separation) and in time (chronal separation). Asymmetry for spatial separated paired energy processes is a technology for reactionless propulsion force in space. Asymmetry for chronally separated paired energy processes is the technology for propulsion force in time. Both technologies can be designed as an advanced propulsion system.

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Reactionless Propulsion and Active Force

Alexander V. Frolov

The goal of the report is the demonstration of some technological ways, which allow to create an active force. This force don't require a reactive mass flow. The active force can be applied to many aerodynamics systems and it is a result of the gradient of pressure. Usually air or water are the medium. By analogy, the space-time itself can be considered as some medium of interaction, where the gradient is created.

Introduction

Let's note some known research programs. There are several mechanical systems to get the propulsion: the gyroscope precession, gyroscopes of alternating radius and nonlinear vibrations gyroscopes. There is also a method: rotation speed of the mass can be changing in different parts of the trajectory that produce some inner gradient of pressure between the rotor and the stator. Some mechanical systems use special vortex (liquid or air). In some electromechanical systems electrically charged rotor is used to create a propulsion force. There are known electromagnetic systems to use Lorenz force, magneto-hydro-dynamical effect, Hall current. Some antigravitaton effects are investigated in so called

Hooper's bi-directional coils and in the flat current systems (Moebius loop). There is an old idea to use diamagnetic vapor, which is accelerated in the permanent magnet field.

High electric potential systems are known from Tesla and T.T.Brown research work. The Biffeld-Brown effect describes the active force, which is created in the flat capacitor to the positive plate side if the voltage is above 50 kV. Dr. Brown did not explain the reason of the force, so we **have a chance to suppose that this force is a result of the asymmetry in orbital motion of the electrons in dielectric atoms due to the electric field between the plates.** The asymmetry leads to the centrifugal force gradient and non-zero linear component of this force. There are also some research programs on superconductivity – gravitation connection.

Thermo-gravitation propulsion technologies is a special case. Fig.1.1 shows a plan of the experiment, which was described by Alexander Schegolev, Russia as the weight changes in heated metal ball. In the top of the ball the cone part was removed to create non-zero total heat flow of this mass. Let's find the reason of this active (reactionless) force. There is a known fact that interaction between atom or molecule and space-time demonstrated as chaotic oscillations or movements those are considered as heat processes in matter. In material objects of a special shape (like the ball above) the vector sum of such sort oscillations is not equal to zero so the object should get some impulse (moment) in

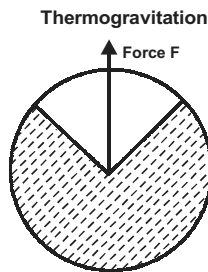


Fig. 1.1

the direction, which is defined by its shape. **The nature of this moment is the same like the nature of chaotical impulses, which are received by any atom directly from the space-time (from ether).**

Fig.1.2. is a plan of another thermogravitation closed system design: the reactive flow is transformed by some converter. One of many versions for it is the cooling of the flow by means of special vortex process. In analogy with Fig.1.1 the active force is a result of non-zero vector sum of the heat processes of each particle of matter, which is involved in the process.

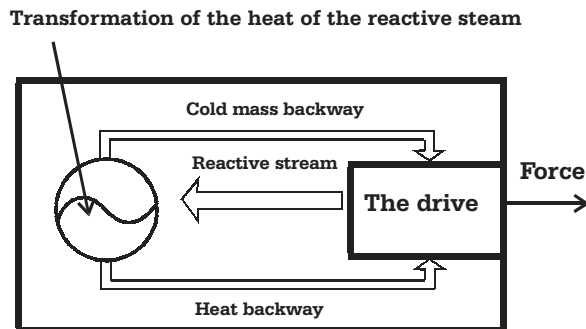


Fig.1.2

To continue we should make some supposition about the **nature of the heat energy**. According to Pavel D. Ouspensky (Russian philosopher) and Nikolay A. Kozyrev (Russian astrophysicist) there is an energy exchange between the particle of matter and the so called "flow of time" and it is a working physical mechanism for any really existing material particle. In other words, it is a physical mechanism of existence of the mass-matter in the time flow. According to P.D.Ouspensky the heat chaotical oscillations are the result of this energy exchange. According to N.A.Kozyrev, the stars have not any inner source of energy but they are working like some kind of machine, which transforms the energy of the "flow of time" into the energy of heat radiation (electromagnetic waves). So, we can make a conclusion: The existence of any material system is defined by its energy exchange with "flow of time", which have a certain speed (the rate of the process).

Modern physics of vacuum considers the notion about the "virtual particles". An old idea of ether particles also can explain the chaotical impulse interaction between real particle of matter and vacuum (ether). The goal of our research now can be formulated by the following way: **an active drive should be designed if the**

conditions of directed impulse energy exchange between the real and virtual particles are created. The interaction takes place anytime and always but its total vector sum is zero due to spontaneous nature of the process. We have a chance to order this process as a directed heat flow in the mass of the drive, or to influence onto vacuum by means of force fields (electrical, for example) to order the processes of creation and annihilation of the virtual particles.

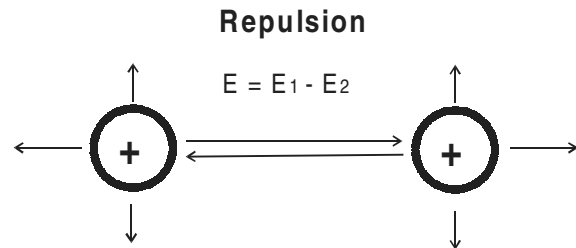


Fig. 2.1.

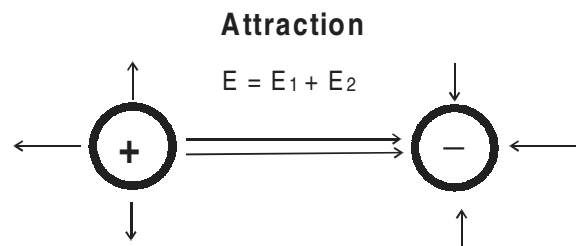


Fig. 2.2.

The Lorentz Force

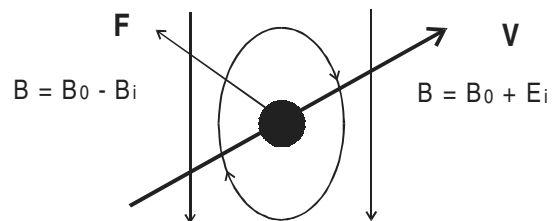


Fig. 2.3.

Such sort of influence is the reason of electrical interactions (it is an original author's conception). The Fig.2.1 shows the repulsion and Fig.2.2. shows the attraction modes for two electrically charged bodies. In the first case, total sum intensity between bodies is less than intensity of each body. The second case is that the intensity between bodies is more than intensity of electrical field of each body. **In fact at any case there is net summary asymmetrical electrical field, which surrounds each electrically charged body. Due to this fact some gradient of electrical intensity is the reason of the Coulomb forces between them.** It is important to understand that there is a direct interaction between the body and surrounding space (ether) and the force is a result of the gradient of the pressure like in the case of aerodynamics. We do not need a hypothesis about the so called "long distance interaction" since all force interactions (electrical included) are the simple

mechanical effects in ether. Lorenz force also can be considered as a result of some gradient in ether, since the pressure of ether depends on the relative velocity (vector sum or difference) (Fig.2.3). The effect seems to be the aerodynamics effect of ether.

Since the "intensity of the field" itself is a gradient of the potential, so the gradient (grad E) of the "intensity of the field" is qualitatively new notion, which leads to a new physical effect, i.e. to the **active non-compensated force**.

Assuming the common nature of the considered examples we have to conclude: the basis of all electrical and magnetic interactions is the energy exchange, which we considered for the case of the heat processes. The "field" means some area of space where the processes of interaction between ether and matter are not chaotical and spontaneous, but they are ordered in some degree. More order means a higher value of the force. The "field" is an equivalent of influence to processes of impulse interaction between material particle and ether (virtual) particle, that makes this interaction to be directed (unidirectional) in some certain direction. **By this way we come to the ether level mechanics, which is the basis of all electrical and gravitation phenomena, that is an electrogravitational unification.**

Let's consider some design, where the properties of matter are used to create the gradient described above. It is necessary to note that there is no principal difference between the particle of matter and space area near the particle that was mentioned by Faraday. They (particles and space) are both the certain physical processes in ether. **So, when we want to produce some special structure of space, we can work with the matter properties.**

The dielectric on Fig.3. is placed between the metal plates and it is a non-linear dielectric, since there is a gradient of permittivity along the electrical intensity lines. Normally, the polarization of particles of the dielectric is a symmetrical one to the side of positive and negative plates.

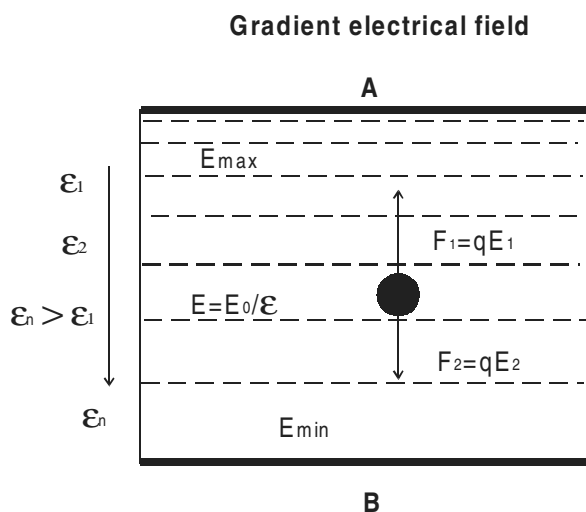


Fig.3

But in our case, the asymmetry of properties of the dielectric produces the asymmetry of polarization and there is some non compensated force in such sort of a capacitor. T.T.Brown patented a similar idea in USA patent 3187206 of May 9, 1959. The simplest case is a two-layer dielectric, (Fig.4.1.) where the force is created on the border between two different dielectrics. This force has been known from 1927 and it is applied in industry as Johnsen-Raabek effect.

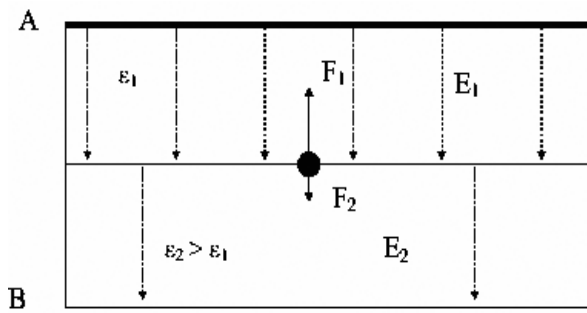


Fig.4.1

Let's consider some experiment (Fig.4.2) produced by me in 1997. The basis of the design is a dielectric plate of permittivity 6 and the second layer is a dielectric plate of permittivity 1. The square of the plate is 100 square cm. The high potential (direct current) source is a home-made design. The potential is about 10 kV. The calculated active force should be about 0.001 N or 150 mg that was detected by means of rotation torsion effect.

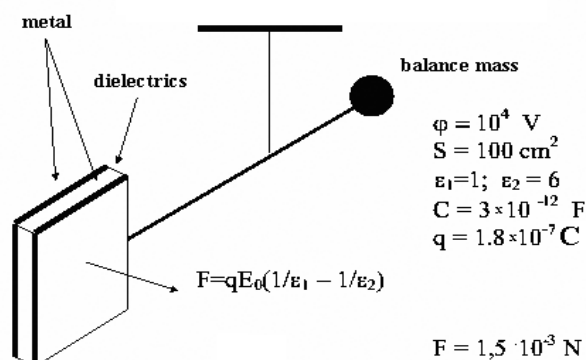


Fig.4.2

Fig.5 is an example of commercial aerospace project. Let's take the surface to be 100 square meters.

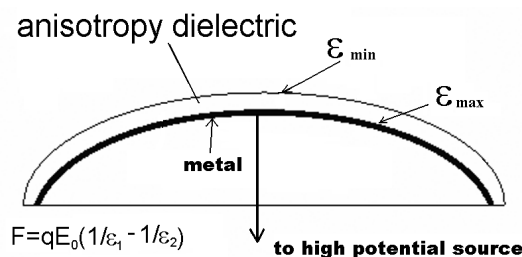


Fig.5

The capacity of 1 cm radius sphere is 1 pF, so the calculated capacity of the system should be about 1 micro Farad. The special gradiental ceramics can be used in the design, that allows to increase the permittivity gradually in the dielectric layer from 80 to 1. The potential of 100 kV is a quite real value. So, for this potential and this surface we'll get the electrical charge about 8 Coulomb. The difference of forces, which act on the particles of this gradient dielectric should be about 80 tons. There is a square function of force from the potential, so it is more useful to increase the potential than to increase the surface.

As a conclusion let me say about necessity of a true law of the momentum conservation. The name of the report "reactionless propulsion" means the absence of ordinary reactive flow of mass (rocket fuel). In the systems

considered above there is a reaction, since the velocity of system changes and the compensation effect here is the change of the impulse (momentum) of the "virtual particles" or "particles of ether". **So, the heat energy exchange balance we considered above should be changed and ether becomes colder.** It can be experimentally detected as 4-dimensional effects, since the time rate should be changed in local space around the device working according to the reactionless principle of active force.

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DNA Molecule and Four-Dimensional Holography

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Development of the four-dimensional notion of curvature allows the understanding the physical sense of time.

Search of the facts, which can prove the correctness of the concept, led to the discovery of a new Law, which demonstrate itself in whole numbers values of curvature of space for any natural object (for example, a planet, a proton, and a DNA molecule). The curvature of the given objects (with high accuracy) can be considered to be a whole number. The conclusion is: space itself is created as some periodical process and we can calculate its curvature as some "wave number", which already is a common notion in quantum physics. This proves the general correctness of quantum mechanics in all natural processes. The practical significance of the new approach lies in the possibility to calculate the resonance conditions of four-dimensional space of some object.

Curvature

Mathematical idea of the line curvature is a value inverse to the radius and measured in reverse meters:

$$r=1/R \text{ [1/m]} \quad \text{F. 1}$$

The value of the same measure is known in physics. It is called the "wave number", which is inverse to the wave length. For any surface the curvature is defined by two cross lines and in the case of sphere we will get the following formula:

$$r=1/R+1/R=2/R \quad \text{F. 2}$$

May be it will be logical to develop this approach for space, but it is necessary to set the direction of radius. The line can be curved in the direction, which "is not contained" in it like P.D. Ouspensky wrote [1]. The surface

of sphere is curved in a direction, which is orthogonal to it. In both cases the space of a line (one-dimensional) or a surface (two-dimensional) can be closed on itself, then the movement in such a space becomes cyclic. Some parameter appears, which characterizes the repeat of the position (coordinate) of the point with its movement in such self-closed space. This parameter depends on the speed of movement and radius of the closed space. Really, it is a period of time. Therefore, time has a physical sense only under consideration of some process (movement) in the space of some given curvature.

The 3-dimensional space, which is usual for us, is curved in the direction of the fourth dimension. This creates the periodicity of processes observed in nature: from the oscillations of pendulum to the half-life period of isotopes. We suppose that space itself is created due to some process of energy change. That's why we should introduce the term "space of a process" of the defined dimensionality.

Using the term "density of energy" for the one-dimensional space it is easy to find a physical analogue – the density of current. In the 2-dimensional space the density of energy corresponds to the transverse electromagnetic wave. In its turn, the change volumetric density of energy is a physical mechanism of creation of 3-dimensional space of the process. The periodicity of existence of 3-dimendional space is characterized by its curvature:

$$r=3/R \text{ [1/m]} \quad \text{F. 3}$$

In technical sense, the volumetric density of energy in space can be changing with the modulation of the density of substance (vapor or plasma) or density of energy. There are also some methods to form the longitudinal electromagnetic waves.

Examples of calculation

1. The period of rotation of the planet T is equal to 31557600 seconds, which corresponds to the frequency of electromagnetic oscillations