Principle of Formation of Nuclear Field

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Abstract.

In given article is described the principle of formation of an ethereal field around of a proton, of a neutron and of a nucleus.

Given article is a part of the project of "Real theoretical physics on basis of existence of ether". The real theoretical physics is strictly materialistic and she opens the essence of all physical phenomena, because they occur at interaction of an ether and elementary particles of matter.

1 Momenta of Ether around Neutron

The central part of a neutron consists of least mobile mats (longmats), which is a basis of the neutron. The external part of the neutron consists of more mobile mats (ovalmats), which is a ethersphere of the neutron and have a insignificant mass. The surrounding ether consists from fast ovalmats, having a greater mobility than the ovalmats of the ethersphere of the neutron, and also consists from spheremats which have a greater mobility than the ovalmats.

Ethermats (mats of an external ether) at collision with each other reduce the velocity of their motion and change a little the direction of motion, but in intervals between the collisions the ethermats increase the velocity of the motion because of the accelerated free motion of mats. Therefore the ethermats are characterized by average velocity of motion in given ether. The ethermats with greater mobility (spherisity) have a greater average velocity of motion.

If the separate neutron is in a uniform ether, then from different directions is acting on the neutron a identical strength of momenta of ether. The ethermats at collision with the neutron collides with the ovalmats of the ethersphere of the neutron. Since the mobility of ovalmats of the ether is not much more than the mobility of ovalmats of the ethersphere of the neutron, then at collision of these ovalmats the ethermats slide on the ovalmats

of the ethersphere and are repulsed from in sides. (See article "Theory of collision is mats").

As the ethermats (ovalmats of the ether) do not pass through a neutron, and slide on the ovalmats of the sphere of the neutron, as a result of such collisions the ethermats almost do not change the average velocity of motion, but change the direction of motion. As a result of it an average momentum of ethermats, moving in a direction to the neutron, same as at ethermats, moving from the neutron. The quantity ethermats, moving in a direction to a neutron, and quantity ethermats, moving from a neutron, in unit of time also is identical. But since the ethermats after collisions with the neutron moves in direction of tangent line from the neutron, then the strength of momenta of ether in direction to the center of the neutron is more than in direction from the center of the neutron, what is an ethereal field of neutron, which is called *neutron field*. The range of the neutron field is small and comparable with the size of neutron.

2 Proton Field. (Ethereal Field of Proton)

The mass of a neutron is 1,008982ae, and the mass of a proton is 1,007593ae. Protons have a smaller mass than neutrons as the neutrons have a basis consisting from longmats, and have a ethersphere consisting from ovalmats, but the protons have only a basis consisting from longmats. Actually the protons represent itself the neutrons which do not have a full ethersphere. A big part of the ethersphere leaves from neutrons at collision of neutrons with each other and at an irradiation of neutrons by electrons, X-rays or gamma-rays and also at the big velocity of motion of the neutrons. As the protons in atom have a orbital motion with a big velocity around of a nucleus, and the nucleuses consisting of neutrons, then the protons have no ethersphere, but the neutrons have a ethersphere.

If a separate proton is in a uniform ether, from different directions on him a identical strength of ether is acting. Ethermats at collision with the proton have not central collisions with the longmats of the proton. Under these collisions the the longmats turn round its centre of mass and the ethermats continue to move through the proton. Herewith the ethermats reduces the velocity of motion, then leave the proton.

The ethermats, moving from a proton, increase the average velocity of motion and become a stabile average velocity. The ethermats, moving in direction to the proton, have a identical average velocity and an average

momentum in any point on any distance from the proton. Apparently, the ethermats, which move in the direction to a proton, have a greater average velocity and an momentum than the ethermats, moving from a proton after collision with him, due to that around of a proton an ethereal field is formed. The ethereal field formed around of a separate proton, is called *ethereal field of a proton*, or *proton field*.

Orbital electrons and current electrons due to the big velocity of motion also have no sphere and consequently the fast electrons have a ethereal field. But the strength of the ethereal field of electrons is insignificant because of small mass of electrons.

3 Strength of Proton Field

The strength of a proton field (ethereal field of a proton), formed around of a separate proton, is identical in all points which are being on identical distance from a proton, and inversely to distance from the given point up to a proton, because the average momentum of ethermats, leaving from proton, increases at increase of the distance from the given point up to the proton. The electrons as the protons forms an ethereal field. The strength of a ethereal field of a proton or of a electron is proportionally to the mass of these elementary particles.

The strength of proton field also inversely to the increase in distance between the given point and the proton, because the ethermats from the proton are dispersing spherically, why the concentration of the leaving ethermats around the proton decreases at their removal from the proton. (See Fig. 1).

Thus, the strength of a proton field in a given point which from a proton on distance much exceeding diameter of the proton, is twice inversely proportional to distance from the given point up to the proton. If to consider, that the deceleration of the ethermats, passing through the proton, proportionally to the mass of the proton, which is constant, then the strength of the proton field is defined:

$$E = \frac{M}{L^2},$$

where M the mass of proton, L the distance between the nuclon and a given point, and K_n is the constant of the strength of the nuclon field.

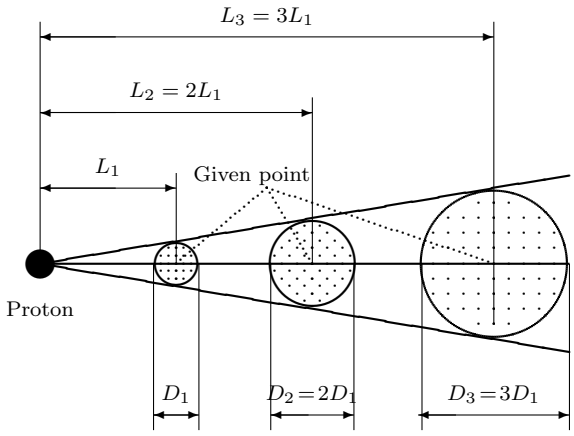

Figure 1: Strength of the ethereal field.

4 Nuclear Field

Since the ethereal field around of a separate neutron have a small range, then the neutrons can be attracted to each other only in case of when they are on enough small distance from each other. In this case on given neutron from side of another neutron acts a smaller strength of the ether than from the opposite sides.

Nucleuses of multielectronic atoms consist of neutrons which are on close distance from each other and consequently are attract to each other. The ethermats, at collisions with the nucleus, pass through the nucleus between its neutrons, and herewith decrease the velocity of motion. But the less mobile ethermats do not pass through the nucleus and slither on the outer sphere around of the nucleus and leave the nucleus. Herewith these ethermats almost do not decrease their velocity of motion.

As a result of it the strength of momenta of ether on some distance from the nucleus in a direction to the nucleus more than in a direction from the nucleus, that is a ethereal field. The ethereal field formed around of the nucleus of an atom, is called *nuclear field*.

Fig. 2, on the left, shows the intensity of momenta of ether at a given point in the direction of the center of the nuclon and on the right the intensity of momenta at the same point in the opposite direction. Fig. also shows the average momenta of ethermats which form these intensity of momenta as a

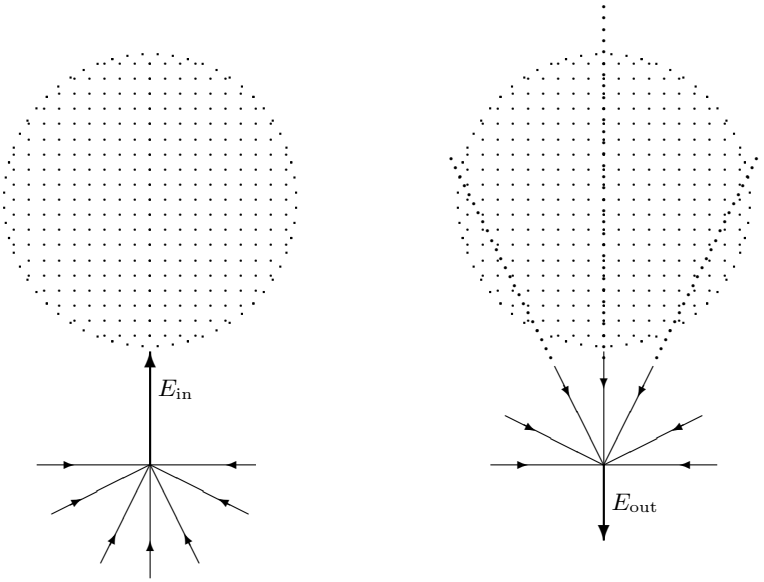

Figure 2: Intensity of momenta of ether.

vector sum.

After the ethermats are exiting from the nucleus, the velocity and the momentum of these ethermats is increasing and on some distance from the nucleus becomes same as the ethermats, which moves to the nucleus. Therefore the strength of the nuclear field decreases in process of removal from the nucleus.

The strength of the nuclear field at a given point is defined as

$$E = E_{\text{in}} - E_{\text{out}},$$

where E_{in} is the intensity of momenta of ethermats moving through the given point towards the nucleus and E_{out} the intensity of momenta of ethermats moving through the given point from the nucleus.

The nuclear field has a small range of spreading unlike a gravitational field, because a nuclear field is forming of ovalmats which have a small mobility and accordingly a small velocity, but a gravitational field is forming of spheremats which have a big mobility and velocity. The ovalmats of a nuclear field after they left from a nucleus increase the average velocity and momentum on a small distance from the nucleus, but the spheremats of a gravitational field after they left from a gravibody increase the average momentum at a great distance from the gravibody.

Since the concentration of ovalmats in ether is much more than the concentration of spheremats, and since the nuclear field and the proton field is formed from ovalmats, and the gravitational field is formed from spheremats, then the nuclear field and the proton field has a great strength.

Conclusions

1. The proton field is formed at passage of ethermats through a neutron, due to that the ethermats decrease their velocity of motion.

2. The neutron field has considerably smaller range than a proton field, because the ethermats do not pass through neutrons and slide on sphere of the neutron, without decreasing the velocity of motion, but changing the direction of motion. Due to small range of neutron field, the electrons cannot have an orbital motion around a neutron, but the neutrons attract one to other, as in nucleus of atom.

3. The nuclear field is formed at passage of ethermats through the nucleus between its neutrons. But the less fast ethermats do not enter inside of the nucleus, these ethermats avoid the nucleus and pass through the sphere around the nucleus.