

Physical Principle of Formation of Magnetic Field

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Abstract.

Given article opens physical principle of formation of magnetic field and accordingly essence of the magnetic field. This article describes the principle of formation of magnetic field around of axis of rotation of separate electron and nucleon, and also around of electric current in conductors.

Given article is one of a series of articles opening the real theoretical physics on the basis of existence of an ether. The real theoretical physics is strictly materialistic and opens essence of all physical phenomena.

1 Ether and Elementary Particles

Mats - the smallest particles of an initial matter. The mats can break and break off at collisions. The more long mats at collisions have non-central impact, due to that they have in a more measure a rotation than rectilinear motion. The mats, having more sphericity, at collisions have more central impact, due to that they have in a more measure a rectilinear motion than rotation.

The ether consists from spheremats and ovalmats, which move rectilinearly in different directions independently from each other in absolute emptiness. At collisions they change the direction of motion.

Elementary particles consist from longmats and ovalmats. The longmats are condensed to each other in a greater measure and form the basis of the elementary particle, and the ovalmats are condensed in a smaller measure and form the rarefied sphere of the elementary particle. The basis and sphere smoothly pass each other.

The ovalmats of the ether have greater sphericity and greater mobility than the ovalmats of elementary particles. The spheremats of the ether have greater sphericity (mobility) and accordingly greater average velocity of motion than ovalmats.

2 Magnetic Field of rotational Elementary Particles

Limit of circumferential velocity of rotation of electrons, protons and neutrons is not much less than the limit of speed of rectilinear motion of these particles. The speed of circumferential motion of mats of elementary particles approximately as the speed of motion of ovalmats of space ether, but it is much more than the speed of motion of slow ovalmats of body ether. The speed of motion of spheremats of any surrounding ether is much more than the speed of circumferential motion is mats of elementary particles.

The spheremats and the ovalmats of the ether at the motion can enter into the elementary particles, where they have a collisions with the longmats of the elementary particles. The spheremats and the fast ovalmats have a big sphericity (mobility) and accordingly a big velocity of motion, and have a big momenta, therefore, they at collisions with the elementary particles, pass through them, almost not changing the direction of the motion. The slow ovalmats cannot pass through the elementary particles, and can pass only in the rarefied sphere of the elementary particles, and there the ovalmats collides with the longmats, of which consist the bases of elementary particles.

If the elementary particles (electrons, protons, neutrons, etc.) have a big velocity of rotation, then the longmats of the elementary particles are having a circumferential motion with the big velocity, and accordingly with a big momenta. The circumferential motion of the longmats of the elementary particle pushes away the ovalmats of the surrounding ether with the big force, these ovalmats are repulsed from the elementary particle in a direction of rotation of the particle, and the ovalmats continues the motion on a tangential line to circumferential motion of the elementary particle as is shown in Fig. ??.

The ovalmats, repulsed away from the elementary particle, collide with others ovalmats of the ether and push them away, and as the result, the ovalmats form an ethereal field, which is untwisted in direction from the elementary particle.

The ovalmats, repulsed away from the elementary particle, are moving with acceleration, but the limit velocity and the limit momenta of these ovalmats is less than the average limit velocity of motion and the average limit momenta of the mats of the surrounding ether. Therefore these ovalmats at collision, with the mats of the surrounding ether, reduces the velocity and changes the direction of the motion, and because of this the straightforward-

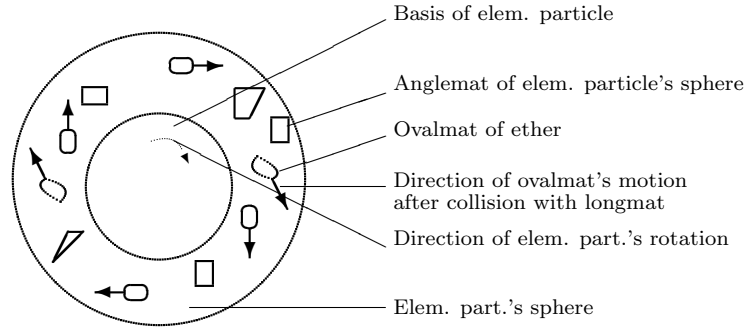


Figure 1: Ovalmats and longmats.

ness of the motion are decreasing. The field of the ovalmats in the form of a ether wind, which form around a rotating elementary particles, is called the *magnetic field*.

As electrons have a right rotation, and protons have a left rotation, then the direction of a magnetic field, created by electrons, is defined by a rule of the right screw, but the magnetic field created by protons, by a rule of the left screw, as shown in Fig. ??.

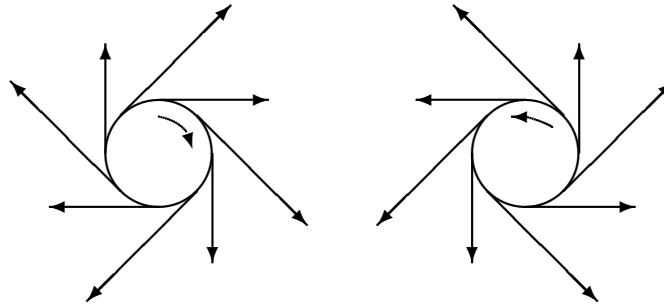


Figure 2: Direction of magnetic field.

The strength of the magnetic field of the elementary particle is directly

proportional to circumferential velocity of its rotation (to velocity of motion of the superficial layer of particle) and also directly proportional to size of the surface of the elementary particle. The strength of the magnetic field of electrons is much less than the strength of the magnetic field of protons because the mass and accordingly the surface of electrons is much less than at protons, but the circumferential velocity at them is identical. In spite of the fact that the photons have circumferential velocity of rotation twice more than at protons and electrons, the photons can not create a magnetic field, as photons have insignificant mass.

The rotating elementary particles are repulsing away also the ovalmats, which have a greater mobility than the ovalmats which form the magnetic field. Those repulsed away ovalmats, which have such great mobility, at which they have the limit velocity and the limit momenta more than the average limit velocity and the average limit momenta of the mats of surrounding ether, increases the velocity of the motion, and they are moving mainly rectilinearly, forming a ether wave. (see article "The physical principle of formation of radio waves").

3 Magnetic Field of Electric Current

As all electrons of the electric current in a conductor are have an identical direction of motion, then they have a lowered number of collisions and accordingly a great velocity of motion and rotation. As all electrons of the electric current in a conductor have an identical direction of motion and an identical direction of rotation, then all magnetic fields, formed from current electrons have a direction from the conductor on an untwisting spiral across to the length of the conductor. The magnetic fields of all current electrons form the general magnetic field inside and around the conductor. As the electrons have the right direction of rotation in relation to the direction of their motion, the direction of the magnetic field of the conductor with electric current is defined by a rule of the right screw: the magnetic field is directed in a direction of rotation of the screw if the screw to twist in the direction of motion of the electric current. The magnetic field is forming by not only from a constant electric current, but also from a variable electric current of small frequency.

The strength of a magnetic field on the surface of a conductor with a electric current is directly proportional to the strength of the electric current,

which is passing through the conductor is:

$$E_m = I \cdot K$$

Conclusions

1. The magnetic field of a rotating elementary particles (electrons or nucleons) represents itself the unidirectional motion of mats of ether from the elementary particle. This field is formed because of collisions of mats of the ether with the mats of the rotating elementary particle. The mats of the superficial layer of the rotating elementary particle push away the ethermats in a direction of the circumferential motion, forming a circumferential ether field.

2. Elementary particles have a maximum velocity of rotation in case they do not have frequent collisions with each other. It is possible for the elementary particles in space.

3. The Magnetic field of a conductor with electric current represents itself a general magnetic field, which is created by all current electrons, which at unidirectional motion through the conductor have a limit velocity of rotation.