

Free Rotation of Elementary Particles

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Abstract.

In given article is determined the speed of inertial rotation of elementary particles (neutrons, protons, electrons and photons) in view of inertial acceleration, ethereal deceleration and center deceleration. In this article also specify the position of the axis of rotation in relation to a direction of motion of an elementary particle.

1 Free Rotation of Elementary Particles. Right or Left Rotation of Elementary Particles. Turn of the Axis of Elementary Particles in the Direction of Its Motion

Elementary particles (electrons, protons, neutrons and photons) may have not only free motion, but also free rotation around an axis passing through the center of the elementary particle. Free rotation of an elementary particle is accelerated, and this acceleration not constantly, but accelerated. At motion of elementary particle the counter ether forms an momenta of the ether, which acts on the elementary particle and decelerates their motion. In analogy with this occurs an ethereal deceleration of rotation of the elementary particles to the limit speed of rotation, similarly to the limit velocity of motion.

If elementary particles often collide with each other in various directions, then not only their direction and velocity of motion is changing, but also the direction and speed of rotation. In that case the elementary particles do not reach the limit of the speed of free rotation and the velocity of free motion. But if the elementary particles collide rarely with each other, the elementary particles attain the limit of the speed of free rotation and the velocity of free motion.

Elementary particles may rotate in one direction round the axis, which located on line of motion of given particle, or in the opposite direction, depending on the condition of formation of rotation and motion. The direction of an elementary particle's rotation is determined by the right- or left-hand screw rule. If the elementary particles rotate in the direction of driving a right screw when one looks in the direction of the progressive motion of the elementary particle, then such a rotation of the elementary particle is called *right rotation*; when the elementary particle moves as a left screw, such a rotation of the elementary particle is called *left rotation*.

Electrons in motion have a right rotation; when they have a left rotation, they are called antielectrons or positrons. The protons in motion have a left and the neutrons have right rotation. Respectively antiprotons have right rotation and antineutrons have a left rotation.

The direction of axis of rotation of an elementary particle always coincide with the direction of motion of the elementary particle, since otherwise counter the ether will be in greater measure to act on one of the sides of the particle, and due to that the particle will turn round to equality of actions of the counter ether on all counter surface of the particle.

2 Center Deceleration of Rotation of Elementary Particles. Characteristic of Rotation of Elementary Particles (Spin)

Speed of motion of a superficial layer of an elementary particle around of an axis of rotation of this particle, presents itself as circumferential speed of rotation. In the center of electrons, protons and neutrons do not occur a circumferential motion of matter as the matter of elementary particles is disembodied. The matter of the superficial layer are connected with the matter of the center of the elementary particle only through action of the ether field of this elementary particle. Therefore angular speed and angular acceleration of rotation of an elementary particle decreases from limit speed on the surface up to zero in the center of the particle. As the central part of an elementary particle is not rotating, then superficial layer of an elementary particle is decelerated. The deceleration of circumferential speed of rotation of an elementary particle because of non-rotating of the center of this particle is called *center deceleration*.

If were no center deceleration of rotation of electrons, protons and neutrons, their circumferential speed of rotation would be 2 times more. A

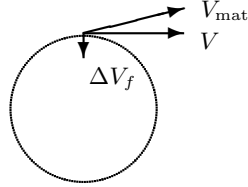


Figure 1: Free rotation of elementary particle.

degree of freedom of circumferential motion of matter of rotating elementary particle from action of center deceleration is called *spin*. The limit district speed of rotation of protons, neutrons and electrons is defined as 1/2 spin, and at photons as 1 spin, because the photons have the ring form, but the protons and electrons have a sphere form. It follows from a way of formation of photons and from this that the protons and electrons consist from longmats and ovalmats, but the photons consist only from ovalmats, having a big mobility and consequently constantly move on a ring trajectory. Since in the central part of a photon there is no mass, then the rotation of photons has no deceleration from center.

3 Speed of Free Rotation of Elementary Particles

Circumferential speed of rotation V of an elementary particle on its equator is formed of the vector sum of free velocity V_{mat} of rectilinear motion of superficial layer of an elementary particle and of field acceleration ΔV_f of the superficial layer of an elementary particle from action of a nuclear field which is formed around of any elementary particle. Fig. 1 shows the free velocity (centrifugal speed) and field acceleration (centripetal acceleration) of superficial layer of rotating elementary particle.

The limit of circumferential velocity of rotation of elementary particle on its equator is defined in fig.

$$V^2 = V_{\text{mat}}^2 - \Delta V_f^2$$

Average limited free (inertial) velocity of motion of mats of the superficial layer of an elementary particle is 300000 km/s. (See in article "The ether and ether field").

Centripetal acceleration of an elementary particle from action of the ether (nuclear) field of this particle, is

$$\Delta V_f = E \cdot K$$

In concordance with article "Formation of proton field and nuclear field":

$$E = M \cdot K$$

Hence

$$\Delta V_f = M \cdot K$$

where E is the strength of ethereal field of elementary particle, which is acting on the superficial layer of this particle, M is the mass of elementary particles of given kind, K the coefficient of proportionality, depending on chosen units of the measurement.

Limited district velocity of rotation of an elementary particle on its equator is

$$V^2 = V_{\text{mat}}^2 - \Delta V_f^2 = C^2 - M \cdot K$$

where C is the average limited free velocity of motion of mats of ether air, that is equal to velocity of light.

Angular speed of rotation of elementary particles is defined:

$$\omega = \frac{V}{r} \cdot K$$

where r is the radius of elementary particle.

Apparently, the district velocity and the angular speed of rotation of electrons is more than of protons and neutrons.

Conclusion

1. Rotation of elementary particles has an inertial acceleration, which is limited by ethereal deceleration, therefore the elementary particles have a limit of speed of rotation.

2. Protons and electrons except of ethereal deceleration have a center deceleration, but photons have no center deceleration, because in the center of a photon there is no mass. Therefore the speed of rotation of photons in 2 times are more than of protons and electrons.

3. Distinction of a limit of speed of rotation of different elementary particles defines their spin.