Mats – Initial Particles of Matter

Anatoli Bedritsky

Abstract. This article defines the properties of mats, which are the true initial particles of any matter.
Given article is one of a series of articles, which together is a part of my project "Real theoretical physics on the basis of existence of ether".

All matter of the Universe consists from mats, which represent an initial matter. The mats have different mass and form. The mats, which have more spherical form, are forming an ether, and more long mats form elementary particles. The ether is in all Universe between the gravibodies, inside the gravibodies and separate bodies, and also between atoms and inside of atoms between elementary particles. On basis of existence of the ether is defined the principle of formation and the structure of all known elementary particles, atoms, bodies, gravibodies And also is defined the principle of formation of all kinds of fields (nuclear, electric, magnetic and gravitational), which form by the ether. Herewith is also defined the principle of action of these ether fields on elementary particles, bodies and gravibodies.

The real theoretical physics is strictly materialistic and opens the essence of all physical phenomena, but the modern physics is appreciably idealistic, due to not considering (ignoring) of action of the ether. All physical experiments have a better explanation in the real theoretical physics. The real theoretical physics does not contradict, but corrects and supplements the modern theoretical physics.

1 Characteristic of Mats (Initial Matter)

The known elementary particles (protons, electrons, photons, etc.) actually are not elementary, but are composite particles. True initial particles of a matter represent particles of an initial matter and they are called *mats*. The essence of the initial matter of mats is a absolutely dense simple uniform mass. The initial matter exists always, and she cannot be generated by the emptiness and cannot vanish. As all mats have identical density, which is

a limit for a matter, then the volume and the mass of mats represents the same characteristic.

Each mat is in free (inertial) rectilinear accelerated motion in emptiness concerning others mats, and can have free rotation around its center of mass. Mats move in emptiness in different directions independently of each other, due to that they may collide with each other. At colliding, mats may sharply change the direction and acceleration of their motion and rotation. Being in motion or in an immovability for any mat in the Universe is a relative notion, as the characteristic of motion of mats depends on a choice of conditionally motionless point concerning to which one can to define the location of all mats at a certain time.

As the matter of the Universe consists of multitude of mats, which move in different directions in emptiness and can collide each with other, then most probably that the mats at collision can to parting (break down), and then the matter of Universe there is an infinite quantity of mats different size, coming nearer to infinitesimal size. But at formation of the Universe Body (before Big Bang), the mats approach closely instantly to each other, forming an dense a matter.

The above-stated logic axiomatics is reduced to 4 axioms: 1. Mats - are initial elementary particles of a matter, having absolute density. 2. The mats move in emptiness by inertia with the accelerated acceleration divergently. 3. Mat at collision with other mat can break on two parts, if on this mat is acting enough big impact impulse.

2 Spheremats, Longmats and Ovalmats

At collision two mats, one of these mats can break on two miscellaneouses parts, depending on on impact section. Since the matter of mats is absolutely uniform, the planes on which a mat is split must be completely smooth. Due to breakings the mats have a shape of convex polyhedra. But due to repeatedly chippings-off from the surface layer, the mats can become a spherical form. The mats of a spherical shape will be called *spheremats*, and the mats that have elongated shape will be called *longmats*. The mats that have the shape intermediate between spheremats and longmats will be called *ovalmats*. Of course, the border between spheremats, longmats, and ovalmats is a fuzzy one.

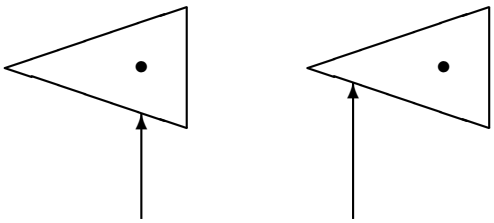

Figure 1: Translational and rotational character of the motion of mats.

3 Mobility (Sphericity) of Mats

The distance between the center of mass of a mat and its most distant point is called the *longitudinal distance* [within a mat] and denoted by R_l. If a given mat collides with another mat, and if the impact point is relatively close to the center of mass of the mat in comparison to its longitudinal distance, the motion of this mat prevails over the rotation. If the impact point is far from the center of mass of the mat, the rotation motion prevails over the translation motion. Thus, what motion is dominant for a given mat, translation or rotation, depends on the shape of this mat and of the feature of the collision. In Fig. 1 we present two situations of collision. The scheme on the left shows the case when the mat has mostly the translation motion; the scheme on the right shows the case of mostly rotational motion around center of mass of mat.

The radius that the mat would have if it had the shape of a sphere of the same mass is called the *spherical radius* and denoted by R_s. The ratio of the spherical radius and the longitudinal distance of a given mat is called the *sphericity* of the mat and is denoted by S.

$$S = \frac{R_s}{R_l}.$$

As a result of different collisions, the longmats receive in more measure rotational motion and less translational motion. On the contrary, the spheremats at collisions with any mats receive in more measure translational motion in a new direction and less rotational motion. This is due to the fact that the impact points of longmats may be at a greater distance from the center of mass than those of spheremats.

The mats that have higher sphericity have higher degree of translational motion. Since the sphericity of mats determines their degree of translational motion, and the latter determines the mobility of the mats in the space, the sphericity is also called the *mobility* of mats and is also denoted by S.

Unfortunately, it is impossible to register the mats of ether and of the elemetary particles visually, because the mats are the components of photons, which are the medium for visual observations of the matter. However, using the unique human ability to think and cognize the surrounding world, we can by logical arguments determine the properties of mats and in what way mats form to elementary particles and ether. The existence of ether is proven by the fact that all the fields (gravitational, nuclear and electric) must consist of matter, since these fields are acting on elementary particles and bodies.

As properties of mats have different characteristics, therefore different mats are forming itself ether or elementary particles, which in turn form atoms, molecules, bodies and gravibodies.

Conclusions

1.The initial matter represents a universal substance, which has absolute density. The initial matter existed eternally in manner of an separate particles - mats, which move in the infinite emptiness in different directions independently from each other.

2. The mats act on each other only at collisions. At collision of two mats they change the direction and the velocity of motion and rotation.

3. At collision one of two mats can break on two parts in case of if the moment of impact mass of both mats exceeds the substantiality of the impact cross-section of the mat.

4. Because of the breaks the mats have the different form and mass. Herewith the mass of mats can decrease infinitely, but the properties of the mats do not change.