The fundamental principle of matter

(Written by: Bogdan Szenkaryk "Pinopa")

The fundamental principle of the interaction of components and the structure of matter has been discovered. It concerns the interactions between the components in the sense that it determines the nature of mutual accelerations, and the mutual acceleration is equivalent to the interaction. It concerns the structure of matter in the sense that it defines conditions that are related to accelerations and determine that stable material structures can be formed from the components. Further on, the fundamental principle of the interaction of components and the structure of matter will be briefly referred to as the fundamental principle of matter.

The fundamental principle of matter includes Newton's laws of dynamics, Kepler's laws of celestial mechanics and other known physical laws and principles, but most of all directly related to it is the law of free fall of bodies in a gravitational field, discovered by Galileo. If the fundamental principle of matter is taken as the basis for all physical phenomena, then the laws and principles follow in a simple and obvious manner from the fundamental principle of matter. This relationship is obvious because the fundamental principle of matter arose as a result of a synthetic approach and placing in it in such a way many physical phenomena.

But from the fundamental principle of matter, in addition to the well-known ones, also result completely new laws of dynamics, which seemingly contradict Newton's laws of motion and other physical laws. In fact, as it turned out, after a detailed examination of the new relationships and dependencies that arose as a result of the discovery, they do not contradict known laws, but extend the field of operation of the laws of dynamics with new physical laws, in particular, with new laws of dynamics. These new laws operate in the world of physical phenomena on an equal footing with Newton's laws of motion. They will be presented here in connection with known physical laws. They will be presented here in a kind of summary, i.e. without going deeper into details that are not needed in such a summary. And they will be presented here in the form of their main representative - in the form of the automatic movement of structural systems.

First, a brief explanation that the Newtonian principle "I don't make up hypotheses" will be applied to the term "force", and will not be used here. The fundamental principle of matter concerns the relationship between its components in the form of mutual accelerations, without going into the mechanism of the "forces" that cause these accelerations. The point is that at the level of the relationship between the constituents of matter, e.g. atoms, elementary particles, force is really something that can only be sensibly said to be the cause of acceleration. On the other hand, each detailed description of the mechanism of the operation of force is a fabrication in which only one logical justification is presented for the existence and operation of force. Namely, the existence of force is justified by the fact that if there are visible effects, e.g. in the form of an acceleration of the body, then there must be a force causing them.

The fundamental principle of matter requires that a hypothetical fundamental component of matter be introduced into the theoretical description. This component is necessary for logical reasons. For, logically speaking, if there is a thing, then it can be argued that it must either have some components, or it must itself be a component of a more complex thing. So matter is made of atoms, atoms are made of neutrons, protons and electrons. These constituents may consist of hypothetical fundamental constituents of matter which, by structurally combining with each other in different configurations, result in such more complex structures.

The fundamental principle of matter in terms of content is identical to the law of free fall of bodies in a gravitational field discovered by Galileo. Galileo's law of gravity says that in a gravitational field (in a selected, specific place in this field) all bodies move (fall) with the same acceleration, regardless of their

mass.

The fundamental principle of matter contained the content of Galileo's gravitational principle, but it was extended. It no longer concerns only the interactions of large objects in the form of celestial bodies, but covers all interactions at all, because it concerns the fundamental components of matter from which both these large celestial objects and all other things are made.

The fundamental principle of interactions that takes place between the fundamental constituents of matter consists in the fact that the chosen fundamental constituent is accelerated in the same way every other fundamental constituent, regardless of the value of the eigenvalues of that other constituent. And this chosen fundamental ingredient in a similar manner and principle is accelerated by all the other fundamental ingredients that exist around it. In megascals, in the world of celestial bodies, interactions take place over great distances and are called gravitational forces. And these are in fact the resultant interactions between the fundamental components that make up the individual celestial bodies and create these bodies, interacting on this scale at smaller distances.

There is one fundamental principle of interactions in matter, but the interactions that take place between various complex structures manifest themselves in various ways. Atoms interact with each other differently when they form crystal structures, and macrostructures that make up, for example, the body of the Earth, interact differently with each other. Despite these differences, the fundamental principle of interactions can be applied to the analysis of physical phenomena, adapting it to the scale of the given phenomenon. So, for example, the stable position of an atom in a structure can be viewed as the sum of the accelerations given to it by all other atoms, and most significantly the accelerations given to it by the neighboring, nearest atoms.

The fundamental principle of matter is, in fact, the principle that defines the essence and form of an ingredient as that thing that affects other ingredients. For on the basis of logical inference one can define a spatial field that can be identified with a component of matter. This spatial field (or, in other words, a material particle) is determined by the acceleration values that other similar spatial fields obtain in the volume (or space) of its interaction.

This spatial field is centrally symmetric in nature because - taking its central point as a reference point - the accelerations determine it in the same way in every direction. So with a change in the distance from the central point of acceleration, they change, and these changes in each direction proceed in the same way, i.e. they are described by the same mathematical function. So the fundamental principle of matter is closely related to the mathematical function of acceleration.

The fundamental principle of matter, although closely related to the mathematical function of acceleration, does not define the structure of the mathematical function according to which the fundamental interaction proceeds, or should proceed. The structure of this function is determined by experimental facts in the form of results of physical research. The point is that many physical phenomena can proceed in the same way, and many physical laws can remain the same, even though the accelerations of the components will change according to different mathematical functions than can be found in nature. For this reason, to model physical phenomena and laws, one can use mathematical functions that describe the accelerations of the components of matter only approximately, and not exactly. The exact functions will only be known after a detailed study of these accelerations in nature, and only then can these functions be described as real. But now it is possible to discover dependencies in the world of phenomena, using similar mathematical functions and modeling phenomena.
The research results indicate that the acceleration of fundamental particles is approximately (!) As follows. Namely, for larger distances, the acceleration is inversely proportional to the square of the distance between the central points of the accelerated field and the accelerating field, and is directly proportional to the inertial parameter that exists as a function of the accelerating field. (The inertial parameter is simply the proportionality that exists as a function of acceleration.) The acceleration function described above can be called the gravity acceleration function.

At smaller distances, the course of the acceleration function is completely different than the one presented above. This course can be exemplified by the situation of an atom which, along with other atoms, is in a certain structural arrangement. This system was created and it is stable thanks to the mutual influence and the accelerations applied. The situation can be explained and described in such a way that each atom has in its structure something that for description and modeling can be called a potential shell. This potential shell is simply the area around the central point (central area) of the atom, which, unlike the area further away from the central point, which is described by the gravitational acceleration function, is described by a completely different mathematical function.

While in the area of gravitational acceleration everywhere there are accelerations of non-zero value, in the potential shell, at a certain distance from the atom, there are zero acceleration values. Near such a place, at points more distant from the center of the atom (than the point with zero acceleration) there is a negative acceleration, which means that at this distance other atoms are accelerated towards the "center" of a given atom, while at points closer to the center of the atom there is positive acceleration, which means that at this distance, other atoms are accelerated "away from the center" of the given atom. An atom that is accelerated in such a place is in a state of permanent equilibrium and behaves as if it was swinging around a point with zero acceleration.

The existence and functioning of such potential shells around each atom results in the dynamic stability effect of the relative position of atoms in space. The mathematical acceleration function in the potential shell region can be called the shell acceleration function.

The mathematical acceleration function of an atom is, of course, a certain unity. Here, for descriptive purposes, it has been divided into two parts - the part called the gravitational acceleration function and the part called the shell acceleration function. This division is helpful to show that atoms interact differently at large distances from them and at small distances.

The results of research into atomic structures in the form of crystals, known to scientists physicists for decades, indicate a great variety of crystal structures and the existence of different distances between atoms in these structures. These different distances between atoms in different structures exist in the presence of atoms of the same element as one of the constituents among the atoms of other elements. Such positions of the atoms in relation to each other indicate that in atoms there are several potential shells with different radii, which surround the atom concentrically.

The very existence of differences in the structure of atoms of different chemical elements and the presence of a different number of potential shells in them, with their different radii, proves that the constituent elements of atoms also have different amounts and different radii of potential shells. And this fact is simply due to the fact that the potential shells of atoms are in fact the potential shells of their constituents. Because nothing can exist in atoms that is not related to their structural components and does not result from the properties of the components.

According to the fundamental principle of interaction (between components in matter), each particular fundamental particle equally accelerates all other particles when they are at the same distance. But one fundamental particle may differ from another fundamental particle in the size of the inertial parameter (proportionality coefficient). For this reason, a different fundamental particle, when it has a different value of the inertial parameter, at the same distance, will act to give the outside particles a different acceleration.

The inertial parameter in the acceleration function, also called the proportionality factor, may also be called the mass parameter or the mass of the particle. When a particle has twice the mass, it accelerates other particles around it, giving them twice the acceleration.

If one takes into account two interacting particles, one of which has twice the mass of the other, the more massive fundamental particle gives the particle with a lower mass twice as much acceleration as it

receives from it. Hence, a particle that is twice as heavy moves twice as slowly as a lighter particle. Thus, the interaction of fundamental particles that occurs in this case and their behavior towards each other is consistent with Newton's laws of motion.

Here, attention should be paid to the fact that conditions the behavior of particles according to Newton's laws of dynamics, i.e. conditions their behavior at which their resultant center of mass remains stationary. This fact is coded somewhat in an underline here. Namely, it is coded in the tacit assumption that the acceleration functions described by both fundamental particles are identical, and the only difference is the value of the proportionality coefficient, i.e. the value of the mass parameter.

The behavior of fundamental particles according to Newton's laws of motion does not therefore literally follow from the fundamental principle of matter. Because the fundamental principle of matter does not speak of the function according to which the interaction and acceleration take place, but concerns the principle that the acceleration given by a given fundamental particle to other fundamental particles is the same for each of these other (i.e. accelerated) particles. Thus, it may also be consistent with this principle that a particular fundamental particle will be determined by an acceleration function of one kind, and another particular, selected fundamental particle will be determined by an acceleration function of another kind.

The interaction and mutual acceleration of two fundamental particles, whose acceleration functions differ from each other by a different mathematical structure, puts the nature of physical phenomena related to the dynamics of body motion in a completely new light. First of all, modern physics says that energy cannot come out of nowhere. This is correct insofar as energy which would in no way be related to matter as its carrier cannot exist without such a carrier in any way. Looking at it from the other side, the existence of, for example, two bodies is impossible without their relation to energy. Because by existing, they interact and accelerate each other, thus revealing the existence of energy.

And such disclosure of energy is independent of the function of mutual acceleration of two bodies - whether the interaction and acceleration of bodies takes place - in situation A) - according to identical acceleration functions, or takes place - in situation B) - according to two different functions acceleration. There is only such a difference that in situation A) the interaction of two bodies with each other does not affect the movement of the resultant center of mass of these two bodies, while in situation B) the interaction of two bodies with each other affects the movement of the resultant center of mass of the two bodies.

Situations A) and B) belong to two different dynamics which, although different, are not contradictory. Considering and comparing the situations A) and B), it can be noticed that completely new, previously unknown phenomena appear in the world of physical phenomena. These new phenomena not only do not contradict the existence of already known phenomena, but on the contrary, they reveal their nature and thus confirm them.

The world of phenomena known so far is described in the framework of Newton's laws of motion. In this world, automatic translational motion of a system of particles or a system of bodies is not possible - the center of mass of this system must, by definition, remain stationary. On the other hand, in this newly discovered and presented world of physical phenomena, the opposite situation occurs - the center of mass of a system of particles or a system of bodies must, by definition, move - it is a physical world governed by the laws of dynamics of spontaneous motion.

The laws of dynamics of self-motion are born automatically for us when we are able to state that in the world of fundamental particles of matter, mutual acceleration takes place according to different mathematical functions. In other words, the acceleration of the second particle caused by the first particle and the acceleration of the first particle caused by the second particle are described by two different mathematical functions.

What is, in fact, the physical world in which we live? It can be said that it is twofold. There are phenomena that follow Newton's laws of motion, but there are also phenomena that follow the laws of dynamics of self-motion. At the deepest level of interactions between the constituents of matter, up to and including the world of atoms and molecules, are governed by the laws of dynamics of spontaneous motion. At this level of fragmentation of matter, all interactions do not follow the same function, but different functions. That is, some particles act and accelerate according to one mathematical function, and other particles act and accelerate according to another mathematical function. The fact that in this microworld the interactions and accelerations take place according to different functions is evidenced by the different structure of atoms of various chemical elements. The different structure of these atoms contributes to the spontaneous movement of the systems formed from them.

Of course, in the world of particles, where particles are described by different accelerating functions, in which there are laws of physics related to the dynamics of spontaneous motion, in this world, at this level of fragmentation of matter, there are also interactions consistent with Newton's laws of dynamics. This happens when particles interact with each other, the accelerations of which are described by the same function.

There are a great number of self-moving systems in matter and they have accelerations directed in various ways. For this reason, the set of such systems, which already exist in the form of, for example, macroscopic solids, in total behaves according to Newton's laws of dynamics and the resultant center of mass remains stationary. Because variously directed accelerations are the cause of interactions and movements, which in the macroscale give zero acceleration and zero resultant motion.

Paradoxically, the existence of both the automatic motion of the systems of atoms and chemical molecules, and the resultant zeroing of the accelerations and motions of these systems according to Newton's laws of dynamics, is evidenced by the same physical phenomenon, namely Brownian motion. The apparently chaotic movements of pollen in a certain volume of fluid are caused by the spontaneous movements of chemical molecules that attack each pollen from different sides. And perhaps the self-movement of the pollen grain itself also contributes to this, which is similar to the spontaneous movement of large chemical molecules. However, overall, the resultant zeroing of the acceleration does not take place yet - the pollen grains are moving, which proves the existence of non-zero resultant acceleration. Taken together, these movements, and the accelerations of all chemical molecules and pollen, do not contribute to the directed movement of the fluid (eg, along with the vessel) as a whole. On this scale, the resultant acceleration of the system, i.e. the resultant acceleration of the common center of mass, is zero.

The existence of systems of atoms capable of self-motion opens up completely new perspectives in the development of energy. The automatic motion of systems can be used as a source of clean energy. Because the existence of self-motion systems in the microworld creates prerequisites and allows for directing their motion so that the resultant motion and acceleration of non-zero value arise. One of the ways of directing the movement of component microstructures so that the acceleration of the macrostructure composed of them arises is to impart electrostatic polarization to the macrostructure. Examples that illustrate this are the experimental lifter flights and the existence of a charged flat capacitor thrust.

Another example of an illustration of the spontaneous movement of a material system are the experimental results obtained by the researchers: Searl, Roszczin and Godin. The first was an American researcher who conducted research using a generator of his own idea. He was the discoverer of the effect that now bears his name. The two Russian researchers conducted their experiments with the use of a similar machine, which they called the converter.

Ways are currently being sought to reduce greenhouse gas emissions, which are mainly caused by the combustion of fuels. The emission of harmful exhaust gases is one of the two negative aspects of today's global energy industry. The greenhouse effect is already having a negative impact on the climate, and in

the near future it may threaten climate change that is so far-reaching that it may lead to a mass extinction of animal species. The second negative aspect that may be associated with the end of modern civilization, which consumes huge amounts of energy, is the limited resources of solid, liquid and gaseous fuels.

The use of phenomena related to the dynamics of self-motion for the purposes of global energy is an ideal solution. Certainly, many more years will pass before generators, converters or energy converters replace fossil fuels, but it is necessary to think about it and act in this direction today. The use of a new method of obtaining energy opens access to an unlimited source of ecologically clean energy.

Legnica, 25.09.2007