



Nikolai Levashov

Inhomogeneous Universe

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In the book, the author presents his theory of the universe. This theory makes it possible to explain almost all the phenomena of living and inanimate nature. Considering the interaction of a continuously changing heterogeneous space with matter, which has specific properties and qualities, the author introduces the concept of "quantization of space by matter". This approach makes it possible to reduce all natural phenomena into one harmonious, consistent system. And, as a result, for the first time there is an opportunity to explain the nature of gravitational, magnetic and electric fields, as a result of the interaction of heterogeneous space with heterogeneous distributed matter in this space. Using the principle of heterogeneity, the author shows the unity of the laws of nature at the level of the macro- and microcosm. For the first time, showing the necessary and sufficient conditions for the emergence of life not only on our planet, but also on billions of other planets since their inception. The book is of interest to scientists and philosophers, specialists, teachers and a wide range of readers who are not indifferent to the problems of cognition of life on Earth and achieving the highest level of consciousness of intelligent matter.

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Review of the academician's monograph N. Levashova "Inhomogeneous Universe"

The modern scientific picture of the World or Universe (Greek: Latin: universum — everything that exists) is created thanks to purposeful fundamental research, experimental observations of scientists and philosophical understanding of the information they received, on which scientific theories are based, explaining unusual facts and deepening understanding of the nature of the Universe. The concept of the "scientific picture of the world" has been actively used in natural science and philosophy since the end of the XIX century. However, a special analysis of its content only began to be carried out more or less systematically from the middle of the XX century, but so far, an unambiguous understanding of it has not been achieved. This is probably due to the objective vagueness and uncertainty of the concept of the Universe itself, which occupies a connecting position between the philosophical and natural science levels of generalization and ideological awareness of the results, methods and trends of scientific knowledge of the World (Universe). The problem of cognition of the Universe historically, has been a concern for a very long time for both philosophers and scientists. There are undoubted successes in explaining the mysteries of the World, but there are also serious problems in interpreting the new discoveries of physicists, chemists, biologists and other scientists. It is in this context that the appearance of the reviewed monograph is clear evidence of profound shifts in the modern philosophical perception of the very problematic phenomenon of the Universe, an ambiguous understanding of the nature of its existence in the scientific environment.

Academician Nikolai Levashov undertook a difficult task of scientific and philosophical rethinking of the very origins of understanding the phenomenon of the Universe in the history of philosophy and modern science, focusing on the ontological foundations in understanding the phenomenon of self-development of a heterogeneous Universe. Traditionally, all the diversity of objects and properties known to mankind in the universe is divided into macro- and microcosms. Already in the introduction of his book, the author quite legitimately claims that "this problem will exist until a picture of the universe is created, based on an understanding of the laws of the macrocosm and microcosm" (p. 25). And this philosophical thought passed through the entire monograph of N. Levashov as a refrain.

And N. Levashov's monograph is undoubtedly a phenomenon, and, like any phenomenon, it deserves the most scrupulous analytical consideration. The dominant idea of the book is that the historical formation and modern development of the culture of scientific knowledge of the Universe is due to the colossal intellectual work of the best thinkers and peoples of all times. The very formulation of the problem of an inhomogeneous universe in the history of philosophical thought represents undoubted interest both in theoretical and practical terms, since it is connected with clarifying the conditions for the appearance of life and a person — a subject of meaningful life activity and the development of spiritual and material culture.

The author skillfully engages the reader in the process of philosophical rethinking of the eternal problems of cognition of the existence and development of the Universe and its various structures. And this is a very difficult task for the author of the book, and for any reader and, especially, the reviewer. Therefore, I will draw the attention of the readers of the book to one of the most urgent, in my opinion, issues raised by the author in his monograph, and, from an appropriate angle, I will give a general assessment of this work by N. Levashov.

It will focus on the analysis of the philosophical basis of a new aspect in the theory of knowledge — the heterogeneity of the universe. I will only highlight some of the key nodes of the problem of cognition of the essence of the Universe, outlined by N. Levashov in his book. My attention was attracted by the author's methodological measurement of the role and significance of the philosophical factor in the historical formation of the scientific picture of the world, as it develops a rational-theoretical vision of the universe. The first chapter of the book "Analytical Review" is specially devoted to the analysis of this most important problem of cognition of the World. It presents and critically rethinks the most ancient mythical and ancient philosophical ideas and views of outstanding thinkers on the world, and the ancient views of ordinary people on the existence of man in the world of nature. "In the history of mankind, there have been several periods of the rise of scientific ideas about the Universe," the author emphasizes— "which were replaced by whole epochs of ignorance and barbarism. Around the preserved fragments of true knowledge, "new" theories of the universe began to be created, which, only by modern times, have reached a certain completeness." And further - "Ideas about the nature of the Universe reflect and determine the level of development of scientific thought and technology, as well as determine the future development of civilization as a whole" (67 p.).

The conceptual nature of the monograph also attracts attention. All her theoretical positions and practical observations are organically interconnected. They form a coherent and strict scientific and philosophical system of awareness and explanation of the Universe, being permeated by the end-to-end unifying bonds of philosophical analytical understanding of everything new. The author presents the ontological problems of the universe inseparably from the problems of epistemology. The problems of cognition of the heterogeneity of the Universe are considered through the prism of a new understanding of the heterogeneity of space. The author actually devoted two chapters to the analysis of this key problem: the second and the third. In them, he scrupulously rethought the modern attitude to such philosophical and scientific concepts as "matter", "space", "time", etc. It should be added to this that academician N. Levashov, with the traditional understanding of matter as an objective reality (71 p.), judges the diversity of connections of forms and types of matter with space in a fundamentally different way. And, assuming that there are many types or forms of matter, each of which differs from the other in its own properties and qualities partially or completely, and these forms of matter are "superimposed" on a space with continuously changing properties and qualities, - the author philosophically reflects, - then there is a distribution of these free forms of matter in space according to the principle of identity between the properties of space and forms of matter (83 p.). The author considers a system of matrix spaces formed by the synthesis of the same type of matter.

In classical philosophy, space, like time and motion proper, is represented as integral properties (attributes) of matter. A new vision of the existence of matter and space will give rise to difficult epistemological problems that did not exist before in the scientific theory of cognition.

In this book, many fundamentally new approaches to understanding the problems of the Universe are proposed, acute issues are named for the first time that philosophers have not yet written about. The author aims to offer a number of fundamental problems, based on a critical philosophical awareness of the nature of changes in the qualitative state of space, which manifest themselves, first of all, in a change in the qualitative state of matter. Academician N. Levashov confirms this essentially revolutionary idea with the following words: "A change in the qualitative state of matter affects the qualitative state of space with the opposite sign. As a result of the feedback between space and matter, manifested in their mutual influence on each other, a compensatory equilibrium arises between space and matter located in this space" (114 p.).

The structure of the monograph is built around the awareness of the heterogeneity of space in the universe as the main scientific and philosophical problem of thinking humanity. There is a deep meaningful relationship between the problems of scientific proof of the existence of an inhomogeneous universe and its philosophical awareness. It is philosophy that is able to link the nature of the scientific study of the mobility of an heterogeneous space and its temporal dimension. So, reasoning about the "internal logic" of stability and instability of the state the author legitimately states: "The simplest atom is a hydrogen atom, the most complex are transuranic elements. Hydrogen atoms are the most stable elements in the universe, transuranic ones are not stable at all and almost all of them exist only in artificial conditions and "live" sometimes billionths of a second, or even less" (179 p.).

More recently, it was believed that there are only four elementary particles - proton, neutron, electron and photon. Today, new elementary particles and numerous processes of their mutual transformations have been discovered. These phenomena are well described by the author and colorfully presented by him in drawings. He convincingly showed how the existence of one particle, one way or another, is connected with the presence of another, when explaining the unity of the nature of the macrocosm and microcosm. So, according to the author, "the "black hole" of the macrocosm creates around itself a powerful radial gravitational field (radial dimensional difference) causing the decay of any matter. Similarly, the internal volume of the spiral of an **RNA** or **DNA** molecule creates similar conditions leading to the disintegration of captive molecules under the action of a standing wave of dimensionality. The spiral of these molecules behaves identically to the "black hole" of the macrocosm, which makes it possible to call the **RNA** or **DNA** molecule the "black hole" of the microcosm" (pp. 260-261). The problem of the origin of life is one of the most difficult, but also the most interesting in the knowledge of the phenomenon of the Universe. If the history of the development of life on Earth for the last 4 billion years, if there is no fundamental disagreement among scientists and philosophers, then the questions of the origin and evolution of life cause incessant disputes. And in this work, the author reflects on the evolution of the living world as an extensive, multifaceted process.

It is known that in the composition of modern fauna and flora, species coexist, representing the last links of the most diverse series of the development of life substances and standing at qualitatively different levels of its organization. Academician N. Levashov, in connection with this phenomenon, considered the phenomena of inorganic and organic interaction of elementary particles, atoms, molecules, etc. Completing scientific work, he rightly concludes that in it: "on the basis of multilevel living matter, the mechanisms of mutations, their accumulation and transmission to new generations of living organisms are shown for the first time, which, in turn, is the foundation for understanding the evolutionary process of living nature" (299 p.).

The reviewed monograph "Heterogeneous Universe" by N. Levashov is of undoubted interest to natural scientists and humanities, specialists and teachers, and a wide range of readers, because the unconventional questions raised in it about heterogeneity in the Universe and the Universe itself are very relevant, quite problematic and require independent creative reading and comprehension. And this means that the creative search for scientific and philosophical answers to the "eternal" questions about the mysterious self-development of the Universe, allows us to understand all the "shakiness" of familiar truths or established ideas about the World. As a result, we can say once again that N. Levashov's monograph will be of great importance for scientists and philosophers, teachers and all those who professionally deal with the problems of cognition of the Universe. For the first time, in practice perhaps, academician Nikolai Levashov's scientific and philosophical research of the phenomenon of the universe and the formation of its being, scrupulously comprehends the philosophical and methodological foundations of cognition. He skillfully uses the dialectical method of empirical and rational-theoretical consideration of the heterogeneity of the universe. The author's key idea about the heterogeneity of the Universe received a good scientific justification and critical philosophical understanding when analyzing the picture of the Universe. The author carried out a detailed and in-depth analysis in the fourth and final chapter of the monograph "Necessary and sufficient conditions for the occurrence of life in the universe", which is quite radical in nature. It outlines the main parameters of the appearance of life, and most importantly - the qualitative features of the functioning of organic molecules. The author considers them as necessary objective conditions for the emergence of life on Earth and billions of other planets in the Universe. N. Levashov's monograph deserves the highest praise. It is an indicator of the fundamental contribution of academician N. Levashov to the formation of the philosophy of the Universe. The monograph represents a significant advance in the philosophical field of the development of a modern theory of cognition of the Cosmos. This is a truly breakthrough scientific and philosophical work, which will be of great importance (through its development, first of all, by scientists and philosophers) when students and postgraduates study various concepts of modern natural science, interested and unbiased reading of non-traditional approaches of scientists and philosophers developing topical problems of cognition of the Universe. Academician N. Levashov's monograph "The Heterogeneous Universe" is written in a strict, impartial academic language of science. Taking into account the nature of the topic of the monograph, there is no subjective-personal attitude to any theoretical predilections and

everyday judgments about the state of the World. And this is correct, because a peer-reviewed scientific monograph is a rigorous research work. At the same time, it is commendable that the author, in order to achieve a better understanding of the complex subjects of the study, resorts to vivid figurative comparisons from everyday life. So, he compares the occurrence of fluctuations in the dimensionality of space, during the explosion of a supernova, with waves that appear on the surface of water after a stone is thrown. Or, I quote: "Let's imagine primary matter of the same type as "cubes" of the same size and consider how matters interact with each other in an heterogeneous zone of space." Or, to explain the process of transition of an atom from a stable state to an unstable one, the author compares this phenomenon with the image of a hole in The reviewed monograph "Heterogeneous Universe" by N. Levashov is of undoubted interest to natural scientists and humanities, specialists and teachers, and a wide range of readers, because the unconventional questions raised in it about heterogeneity in the Universe and the Universe itself are very relevant, quite problematic and require independent creative reading and comprehension. And this means that the creative search for scientific and philosophical answers to the "eternal" questions about the mysterious self-development of the Universe, allows us to understand all the "shakiness" of familiar truths or established ideas about the World. As a result, we can say once again that N. Levashov's monograph will be of great importance for scientists and philosophers, teachers and all those who professionally deal with the problems of cognition of the Universe. For the first time, in practice perhaps, academician Nikolai Levashov's scientific and philosophical research of the phenomenon of the universe and the formation of its being, scrupulously comprehends the philosophical and methodological foundations of cognition. He skillfully uses the dialectical method of empirical and rational-theoretical consideration of the heterogeneity of the universe. The author's key idea about the heterogeneity of the Universe received a good scientific justification and critical philosophical understanding when analyzing the picture of the Universe. The author carried out a detailed and in-depth analysis in the fourth and final chapter of the monograph "Necessary and sufficient conditions for the occurrence of life in the universe", which is quite radical in nature. It outlines the main parameters of the appearance of life, and most importantly - the qualitative features of the functioning of organic molecules. The author considers them as necessary objective conditions for the emergence of life on Earth and billions of other planets in the Universe. N. Levashov's monograph deserves the highest praise. It is an indicator of the fundamental contribution of academician N. Levashov to the formation of the philosophy of the Universe. The monograph represents a significant advance in the philosophical field of the development of a modern theory of cognition of the Cosmos. This is a truly breakthrough scientific and philosophical work, which will be of great importance (through its development, first of all, by scientists and philosophers) when students and postgraduates study various concepts of modern natural science, interested and unbiased reading of non-traditional approaches of scientists and philosophers developing topical problems of cognition of the Universe. Academician N. Levashov's monograph "The Heterogeneous Universe" is written in a strict, impartial academic language of science. Taking into account the nature of the topic of the monograph, there is no subjective-personal attitude to any theoretical predilections and

everyday judgments about the state of the World. And this is correct, because a peer-reviewed scientific monograph is a rigorous research work. At the same time, it is commendable that the author, in order to achieve a better understanding of the complex subjects of the study, resorts to vivid figurative comparisons from everyday life. So, he compares the occurrence of fluctuations in the dimensionality of space, during the explosion of a supernova, with waves that appear on the surface of water after a stone is thrown. Or, I quote: "Let's imagine primary matter of the same type as "cubes" of the same size and consider how matter interact with each other in a zone of inhomogeneous space." Or, to explain the process of transition of an atom from a stable state to an unstable one, the author compares this phenomenon with the image of a hole in the road being filled with water during a rain (pp. 142, 172, 201, 198-200). the road being filled with water during a rain (pp. 142, 172, 201, 198-200).

Finishing the analysis of N. Levashov's monograph, I would like to note once again that this original book can be recommended not only to scientists and philosophers, teachers and doctors, it will be useful and to all those who are not indifferent to the problems of cognition in general, who, one way or another, are interested in philosophical knowledge of the World and are concerned with finding ways and means of cognition and understanding of the formation of life on Earth and its evolution to the highest level — intelligent matter (man). The concept of an heterogeneous Universe developed by N. Levashov will allow, in the future, to foresee and predict objective processes in the macro- and microcosm. The monograph outlines new promising directions for further fundamental research work in this field of science and philosophy.

Thus, N. Levashov's monograph is a notable event in the world philosophy of cognition of the Universe. It is imbued with deep reflections on the role and significance of philosophical heritage and modern search in the field of the theory of knowledge in general.

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From the author

The laws of nature are formed at the level of the macrocosm and microcosm. Man, as a living being, exists in the so-called intermediate world - between the macro- and microcosm. And in this intermediate world, a person faces only the manifestation of the laws of nature, and not with them directly. As a consequence, there is a problem with creating a complete picture of the universe. This problem will exist until a picture of the universe is created, based on an understanding of the laws of the macrocosm and microcosm. No matter how long we look at the tip of the iceberg, until someone thinks to dive under the water and sees the iceberg as a whole, all attempts to describe it will be, at best, incomplete. The situation is similar with the "iceberg" of the universe. Until someone "dives" into the waters of the unknown, all attempts to create a picture of the universe, no matter how beautiful they may seem, will be untenable. The history of man's knowledge of nature is a complete confirmation of this.

One of the main reasons for this is that the sense organs that a person uses in his knowledge of nature do not give him such an opportunity for one simple reason. Nature did not create the human senses so that he (man) could know nature. The human sensory organs, however, as well as the sensory organs of animals and plants, arose and developed as a mechanism of adaptation and adjustment of each species of living beings to the ecological niches that they occupy. Man began to use his senses for the accumulation, preservation and transfer of information for their own kind. But this is information about the intermediate world, not about the macrocosm or microcosm. Which, unfortunately, is not paid attention to. Ah, in vain. Because having only five sense organs, even expanded with the help of instruments, it is simply impossible to describe and create a complete picture of the universe. In order to create a complete picture, it is necessary to be able to simultaneously observe both the surface and underwater parts of the "iceberg" of the universe, which is possible only with the appearance of additional senses to the five existing ones.

Almost everyone has the opportunity to get experimental evidence of the limitations of our senses. And for this you do not need any difficult experiments, you only need to dive under the water without a mask and open your eyes. The picture of the underwater world will appear before our eyes in a distorted form: shapes, distances will not correspond to reality. And there is no paradox in this. Human eyes are adapted to the air environment, and the eyes of fish and other underwater inhabitants are adapted to the water environment. And therefore, the underwater picture will be distorted for humans, and the land picture will be distorted for fish. What can we say qualitatively about other phenomena of nature that a person has never encountered and cannot encounter through his five senses?

The most interesting thing is that no one thinks about it. And, as a result, science and its various branches, turned into blind people from the old Indian parable about the elephant, when three blind people were asked to describe an elephant. Each of them, having stumbled upon some part of the elephant, hurried to describe, through his feelings, the whole elephant. What came out of it is known to everyone, if not, then it is not difficult to imagine.

Unfortunately, the whole history of theoretical science, which tried to create a picture of the universe, very much resembles the parable of the three blind men. And, interestingly, almost all the great discoveries of mankind were made by scientists in moments of so-called epiphanies, insights that always "lay" outside the five human senses.

But even this did not cause a person think about the question — what can be obtained with the help of the five senses and what is needed for a full knowledge of nature. At the same time, one cannot blame this, just as one cannot blame a blind person from birth for not being able to understand and feel the beauty and colors of the surrounding nature. The only way for a blind person to achieve this is to see clearly. I would like to believe that I succeeded and, as a result of such an "epiphany", managed to create the theory offered to your attention and set forth in this book.

Academician N. Levashov

Preface. The relevance of the problem

The appearance of a person and the origin of his consciousness is inextricably linked with his attempts to cognize the surrounding world. The whole world in its infinity, boundlessness and immensity is not given to man in his immediacy. The ontological approach makes it possible to embrace the world as a whole, as a system. Thus, ontology answers the question: what is the essence of the universe and the understanding of the world. Specifically, the philosophical formulation of the question, which we find in the ancient Greek philosophers Thales, Anaximander and Anaximenes, consists in an attempt to establish the root cause, the primary basis, which could explain all the infinite variety of natural phenomena.

Thales considered water to be such an origin, Anaximenes - air, Heraclitus - fire, Xenophanes and Parmenides - earth, i.e., in general, the same elements that seemed to be further indecomposable in antiquity, which we find both in ancient Indian and ancient Chinese natural philosophy. Only Anaximander put forward, as such an initial, a certain indefinite first principle, which he designated by the word "apeiron". Leibniz considered the monad to be the beginning, i.e., a simple substance that does not arise and does not disappear, has no parts and can only be obtained by creation. Each monad must be different from the other, and, like any creation, the monad is subject to continuous change. Changes in the monad come from an internal origin, because an external cause cannot have an influence inside the monad. Epicurus, Leucippus, Democritus and Kant believed that the initial state of nature was the universal scattering of the primary matter of all celestial bodies - atoms. Leucippus and Democritus believed that not only the number of atoms in the universe is infinite, but also the number of forms possible for them, i.e., their shapes, outlines. The number of these different forms is infinite. The proof of an infinite number of forms of atoms, of course, could not be empirical, only logical, due to the invisibility and impalpability of these forms. This teaching has become a new and quite original way, the professor tried to solve the same problem by hypothesizing the existence of a separate "mind" from the whole - a mechanical driving force that sets these particles in motion. But neither Empedocles nor Anaxagoras assumed that the elementary particles of matter are absolutely indivisible. It is this thought that becomes the basis of the materialistic philosophy and physics of Leucippus and Democritus. The theory of atoms invisible to us follows from observations of processes and phenomena occurring in sensually perceived nature. The theory of atomism originated with Leucippus and Democritus on the basis of observations and some analogies. According to Simplicius, Leucippus and Democritus postulated the existence of an infinite set of atoms because infinity is necessary to explain all phenomena observed in the physical world. Only those who consider atoms infinitely, many in number, manage to give a reasonable explanation for everything. This justification is a classic example of the emergence of a scientific hypothesis, solutions to the natural-scientific and philosophical problem that was posed to Greek thought by the Eleans with their teaching, according to which a truly existing being can neither arise nor perish.

Leucippus and Democritus, as well as Empedocles and Anaxagoras, agree with this thesis, but, at the same time, fought against the views of the Eleans, who denied the conceivability of the multitude and the conceivability of movement. Empedocles tried to solve this problem by developing a hypothesis about the four "roots of all substances" and about the two forces by which they are set in motion. Anaxagoras tried to solve the same problem by hypothesizing the existence of a separate "mind" from the whole - a mechanical driving force that sets these particles in motion. But neither Empedocles nor Anaxagoras assumed that the elementary particles of matter are absolutely indivisible. It is this thought that becomes the basis of the materialistic philosophy and physics of Leucippus and Democritus. The theory of atoms invisible to us follows from observations of processes and phenomena occurring in sensually perceived nature. The theory of atomism originated with Leucippus and Democritus on the basis of observations and some analogies. According to Simplicius, Leucippus and Democritus postulated the existence of an infinite set of atoms because infinity is necessary to explain all phenomena observed in the physical world. Only those who consider atoms infinitely many in number manage to give a reasonable explanation for everything. This justification is a classic example of the emergence of a scientific hypothesis.

The atomistic doctrine of Democritus developed in inseparable connection with the concept of the eternity of time. Aristotle wrote that the eternity of time was for Democritus a means of proving that there is a non-arisen being. With the exception of Plato, all philosophers, as Aristotle pointed out, considered time unborn. The teaching of Leucippus and Democritus about the qualities of bodies was a completely new point of view, first introduced into ancient Greek philosophy and science. It left a deep mark on the development of physics, chemistry and philosophical understanding of nature. These views differed sharply from those prevailing in the 5th century BC. representations. Thoughts about the infinity of the universe and the simultaneous existence of countless worlds in it hardly made their way into the consciousness of people.

Kant accepted the atomistic theory of Epicurus, Leucippus, Democritus. So, Epicurus assumed that there is a gravity that causes the primary particles of matter to fall. His theory is not much different, Kant admitted, from the Newtonian attraction he accepted. Finally, vortices arising from the disorderly movement of atoms formed one of the main points in the system of Leucippus and Democritus, and these vortices are found in Kant's cosmogonic theory. At the same time, Kant says that the above-mentioned proponents of the doctrine of the mechanistic origin of the universe deduced every order observed in it from a blind case that so successfully united the atoms that they formed one harmonious whole. Epicurus, for example, was criticized for the statement that atoms, in order to have their possible meeting, deviate from their rectilinear motion for no reason.

All these philosophers, he said, attributed the origin of living beings to blind chance and truly deduced reason from unreason. Kant saw the role of the higher mind in the processes inherent in the laws of matter, when from its state of complete decomposition and dispersion, a beautiful harmonious whole naturally develops.

He noted that matter, which is the primary essence of all things and is subject to certain laws, should give excellent combinations. This reason must be God, because nature, even in a state of chaos, can only act correctly and harmoniously. With regard to the structure and motion of celestial bodies, Kant said that, since matter is given, which, by its nature, is endowed with the force of attraction, it is not difficult to determine those reasons that could contribute to the arrangement of the world system considered as a whole. It is necessary for the body to acquire a spherical shape and for freely floating bodies to make a circular motion around the center to which they gravitate. The relative position of the orbits, the coincidence of the direction, the eccentricity — all this can be explained by the simplest mechanical reasons. At the same time, Kant admits that it is easier to understand the origin of the entire structure of the universe than to find out exactly, on the basis of mechanics, the origin of just a speck of dust or a caterpillar.

It should be noted that Kant himself explained the great order of nature only by the force of attraction and the force of repulsion, which are equally primary and universal. Both of them are borrowed from the philosophy of Newton, who found it possible to abandon natural cosmogony. Kant replaced the anthology with a transcendental philosophy, i.e., a system of concepts and principles that precede a priori experience, but are given to a person sensually and therefore can be confirmed by experience. Kant evaluates his hypothesis as a new stage in the development of the theory of the universe, based on the universal laws of nature. In improving the hypotheses of the universe, as well as solving such problems, it is necessary to turn only to natural philosophy. The physical part of the science of the universe can in the future be brought to the same perfection to which Newton brought its mathematical part, Kant noted.

The initial position of Hegel's philosophy is the identity of being and thinking, i.e., understanding the real world as a manifestation of an idea, concept, spirit. This identity was considered as historically developing the process of self-knowledge by the absolute idea of itself. At the heart of all phenomena of nature and society is the absolute, the spiritual and rational principle — the "absolute idea", the "world mind" or the "world spirit". This beginning is active and active, moreover, its activity consists in thinking, or rather, in self-understanding. According to Hegel, ontology is the doctrine of abstract definitions of essence. He noted that for earlier definitions of ontology, in their monotony and ultimate significance, there was no principle and the immediate content could be based on representation, on assurance, and sometimes also on etymology. Hegel's system anticipated the idea of the unity of ontology, logic and the theory of knowledge, and thus indicated a way out to a positive knowledge of the world.

The development of scientific thought in the 20th century, as in previous centuries, required a new justification of the ontological hypothesis. And she appeared by accident. Lorenz received the next mathematical transformations, and Einstein summed up two postulates for them:

1. Space is assumed to be isotropic when its properties do not depend on direction and distance.

2. The speed of light is taken as a constant and as the maximum speed of movement of material objects. In other words, the speed of light does not depend on space.

This theory became the foundation of ideas regarding the nature of space.

At the same time, some discoveries of the last quarter of the twentieth century and the beginning of the twenty-first do not find explanations in the existing postulates. The results of the analysis of the database obtained outside the Earth's atmosphere by means of a radio telescope, published in 1997 by American astrophysicists Borg Rodlang and John Ralston, indicate that the universe is heterogeneous.

Experiments conducted by Dr. Lujin Wang at Princeton Research Institute yielded stunning results — light beams moved in a special gas medium at a speed 300 times faster than the theoretically permissible speed. In Italy, another group of physicists received data on the propagation of microwaves at a rate 25 percent higher than theoretically permissible.

Nuclear physics has not escaped a similar fate. Thus, the basic law of modern physics, the law of conservation of matter, states that matter does not appear from nowhere and does not disappear anywhere. In relation to the synthesis of particles during nuclear reactions, this law can be written as follows:

$$m_1 + m_2 > m_3 \quad (1)$$

In other words, the mass resulting from the synthesis of a particle must be less than or equal to the total mass of the particles that created it. However, in some experiments, the mass of the emerging particle was sometimes several orders of magnitude higher than the total mass of the particles that created it:

$$m_1 + m_2 \ll m_3 \quad (2)$$

These and many other experimental data indicate another crisis in science, i.e., there is a need for new approaches, hypotheses that allow us to explain the findings. For the first time in science, the concept of macro- and microcosm is proposed, based on the idea of heterogeneity of space. This idea made it possible to substantiate and explain almost all phenomena of living and inanimate nature. The continuous change in the dimensionality of space in different directions (gradients of dimensionality) creates levels within which matter has certain properties and qualities. During the transition from one level to another, there is a qualitative leap in the properties and manifestations of matter. Based on this, the existence of other universes is justified.

The basis of the idea of the macrocosm is a system of interacting universes that differ qualitatively from each other. For the first time such a position makes it possible to explain such phenomena as "black holes" and the existence of the so-called "dark matter", which were discovered as a result of astronomical research and calculations.

At the level of the microcosm, the established concept makes it possible to explain the phenomenon of radioactivity, the causes of which have not been explained by anyone. At the same time, this theory allows us to explain the mystery of life.

By analyzing the behavior of the **RNA** virus molecule in the aquatic environment as the simplest living organism, outside the aquatic environment as an organic molecule, the qualitative processes occurring at the same time are explained and an understanding of the qualitative transformation of inanimate matter into living matter is given.

Based on the idea of quantization of the dimensionality of a continuously changing space, the multidimensionality of life is justified. For the first time, the necessary and sufficient conditions for the emergence of life in the universe are deduced and justified. And also, the qualitative processes of the transformation of matter occurring at the cellular level are explained.

The results obtained allow us to take a fresh look at the existing laws of physics, chemistry, astronomy, medicine and other sciences, which, in turn, makes it possible to develop new directions in many fields of science.

Chapter 1. Analytical review

1.1. The importance of the ontology of physical processes for the philosophical and scientific thought of mankind

Space?! What is it? Since ancient times, man has looked at the starry sky and created his own idea of the universe. Homo sapiens - a reasonable person - in the self-designation, man has singled out reasonableness as the main distinguishing feature that distinguishes him from the whole of the surrounding nature. And like any thinking being, by definition, a person has an inherent desire to know the world around him, the universe. And, naturally, as a result of this process of cognition, looms the picture of the universe. History gave birth to and destroyed civilizations, and with them religions, philosophical systems, concepts of the universe appeared or disappeared. Not everything has been preserved by history, especially the irreparable damage caused to the history of civilization and the development of civilization as a whole, Christianity, especially Catholicism.

Fanatics inspired by priests destroyed the treasures of knowledge of bygone civilizations, ancient libraries — repositories of the most valuable books: the Proto-Sumerian in Babylon, the Alexandrian in Egypt, the Santorini archipelago was destroyed, papyrus storerooms in Thebes and Memphis, the Etruscan Library in Rome, they burned the temple in Athens, destroyed a huge library in Constantinople, the libraries of Yaroslav the Wise and Ivan the Terrible disappeared, manuscripts of the Maya, Incas and Aztec civilizations. And as a result, much of the knowledge of the ancient civilizations of the Earth were destroyed. Many... but, fortunately, not all. And what was saved from the fires of the Inquisition, these ancient folios, sometimes saved at the cost of many lives, amaze with the depth and accuracy of descriptions of the Universe, to the understanding of some aspects of which modern science is only approaching.

The most interesting in this respect and the most ancient are the Slavic-Aryan Vedas. The "Book of Light", which is forty thousand years old, presents a picture of the universe, which simply shocks with its accuracy and completeness. Incredibly, but a fact that everyone who opens this book will have to admit.

...In the true Primordial, or rather, then,
 when in the Infinite New Eternity
 In a great mighty stream.
 Life-bearing radiant Ingliā,
 The primordial Life-generating Light,
 in the New Reality were born
 Various Spaces and Realities
 Worlds of Yav, Nav and Prav.

.....
 And the closer to
 the Primordial Source of Light
 were these Spaces
 and Realities in the various radiant Worlds,
 the greater the dimensions
 these Greatest Spaces
 and Realities were filled with...¹

Forty thousand years ago, we knew that existed many Universes having different dimensions and forming together a single spatial system, which we will conditionally call matrix space.

How did I connect the branches of a Tree
 The Primordial Life-Giving Light
 Leaves are the Realities
 of our World Tree
 with a mighty shining trunk.
 And each Leaf-Reality
 shone immeasurably,
 shimmering with the bright Light
 of various Suns,
 and the trunk of the World Tree
 had its numerous roots
 in an Endless New Eternity,
 generated in a New Reality².

¹ Slavic-Aryan Vedas, "Book of Light", Haratya 2, p. 36.

² Slavic-Aryan Vedas, "Book of Light", Haratya 2, p. 38.

In a beautiful, figurative language, accessible to any person, regardless of whether he lived forty thousand years ago or lives now, information about the structure of the Universe was transmitted by our ancestors. The accuracy and scale of the transmitted information is amazing. Our reality, the universe, which is only partially known to modern scientists, is shown as a small part, like a grain of sand on the shore of a boundless ocean. She is only one leaf of the reality of our World Tree. And each such leaf-reality has its own dimension and a strictly defined position on the trunk of the World Tree. Curious, isn't it?!

The principle of quantization of space according to a certain feature, which is known to modern physics for processes occurring at the level of the microcosm— is the quantization of electronic orbits in atoms. The microcosm is quite deeply studied by nuclear and quantum physics, while the study and understanding of the structure of the Macrocosm is at an early stage. The simplicity and imagery of the language of the Vedas is not accidental. Those who wrote down the information in the "Book of Light" perfectly understood that any special language of presentation of information could not be acceptable, since those who created a special language could all die for one reason or another and would not be able to pass on to their descendants the meaning of the terms they used. And, as a result, no one would be able to understand the information correctly.

This will become very clear if we turn to the example of modern science. Scientists have invented and introduced so many scientific terms that more than ninety percent of living people are not able to understand the meaning of these terms. Sometimes it comes to the point of absurdity when some scientific works are able to understand only a few people on the planet. And if we analyze the development of science, it will become clear that the modern scientific language may become absurd and incomprehensible for future generations in the next century, as, for example, the language of the alchemists of the Middle Ages seems absurd and unscientific to modern scientists, although in the Middle Ages alchemy was recognized by everyone and was an academic science studied by students at universities. And if there were no alchemy, inorganic and organic chemistry would never have appeared, which have nothing in common with their "mother" anymore. Therefore, if there is a need to transmit information to distant descendants, the only way to achieve what you want is to transmit information in the most accessible language. Only in this case is there a chance that linguists and historians of the future will be able to read and understand this information. Therefore, from this point of view, the language of presentation is accessible and imaginative for almost any person to understand and is a sufficient guarantee that the transmitted information will be understood correctly. At the time of writing the Book of Light, there were not only special terms, but also different alphabets for people of different preparation and initiation level. This created a system that allowed for full control over access to information. In those ancient times, it was perfectly understood that information is a very powerful weapon that should not fall into the hands of spiritually immature people who could use this information for selfish purposes or ignorantly, which, in turn, could lead to more or less global catastrophes.

...However, among the Priests
of the second caste was a group
even more highly initiated,
...a group that few of the Priests...
of the lower castes,
and they had a different Spiritual Teaching,
very different from the previous ones.

The Spiritual Teachings stated,
that our surrounding Apparent World,
the World of Yellow Stars and Solar Systems,
is but a grain of sand in the Infinite Universe.
That there are Stars and Suns white,
blue, purple, pink, green,
Stars and Suns of colors
of colors unseen by our senses,
and the colors our senses can't comprehend.
And their number is infinitely great,
infinite in number, infinite in variety,
infinite the Spaces that separate them.

.....
And all these different Worlds
are nothing compared to the other worlds
beyond our Universe,
and again, their number is infinitely great
and immeasurably great is their diversity.
The infinities of the infinities of the infinities divide
all these different and varied Worlds...³

It was only in the second half of the twentieth century that the classification of stars by the radiated spectrum was fully formed, and some types of stars were detected only with the help of radio telescopes and, of course, were not perceived by human senses. Such a thing cannot be a mere coincidence, and if it is, then there is a high probability that many other things transmitted in the Vedas are close to the truth.

How did it happen that such valuable knowledge was "forgotten" for such a long time and why is it only now that information about them has become available to many?!

³ Slavic-Aryan Vedas, "The Book of Light", Haratya 4, pp. 84-85

Several reasons have led to this, and one - the main one - is climate change caused by a sharp cold snap thirteen thousand years ago and, as a result, the migration of peoples to warmer climates, in which the settlers broke away from their original foundations and lost much of the knowledge that their ancestors possessed. Very few High Initiates left with the settlers, which was one of the main reasons for their "savagery".

Harsh nature forced their fight for physical survival and they were not up to the stars. And when the danger passed, little remained of the old knowledge, only fragments of them were preserved in folk legends. The "fragments" of this ancient knowledge were "large" or "small" and, as a result, to a greater or lesser extent manifested themselves in the philosophical systems and religions of different peoples. With the settlers, the keepers of knowledge also went to distant lands, but for the most part they were not of high initiation. In addition, people who went to new lands, often thousands of kilometers away from their homeland, had to face many difficulties during the transitions: hunger, natural elements, repelling attacks from other tribes, making attacks themselves.

Even in those days, many habitable lands were occupied and it was not easy to find vacant lands. In most cases, by peaceful means or as a result of wars, the newcomers settled together with the aborigines, being in a state of symbiosis with the latter, gradually mixing with them. Therefore, survival was the main thing for this period, knowledge was not in demand during the migrations. Only when the tribes of the settlers found new places, the need for knowledge reappeared, to a greater extent - in applied knowledge, allowing the settlers to cultivate the land, create the necessary household items and various tools for the revival of crafts, since during the migrations people took and kept only the most necessary. Sometimes it took years, decades, until the settlers managed to find what they wanted. Therefore, the training of new carriers of knowledge, new priests could not be complete. As a result, the original knowledge was partially lost, partially modified and, as a result, in most cases gradually transformed into philosophical and mythological teachings. Similar phenomena occurred as a result of military campaigns. As a result of the h'Aryan campaign to Dravidia (Ancient India) in 2691 BC, knowledge was brought from Belovodye to the living tribes — Dravidians and Nagas — with the conquest, which, in a modified form, became the foundation of the philosophy and mythology of India:

...Other Clans of the Great Race
will settle all over the face of Midgard-Earth
and move beyond the Himavat-mountains ...
and teach people with skin the color of Darkness
Wisdom of the World of Radiance...

So that they would stop
making terrible, bloody sacrifices
to their Black Mother goddess

and Dragon Snakes from the Navi World,
and find new Divine Wisdom
and Faith...⁴

Subsequently, some of the wise sayings from the Wisdom of the World of Lights were included in a collection called the Rig-Veda, which has been preserved in India. In ancient Indian society, a system of Varnas was formed, and later castes - closed social formations that united people of strictly defined professions, excluded the transition from one caste to another and prohibited inter-caste marriages. The first place in the social hierarchy belonged to the brahmins, i.e., priests, who usually combined the functions of priests with the function of scientists in ancient times; then came the kshatriyas - military and administrative nobility; Vaishyas - free members of the community engaged in agriculture, handicrafts and trade, both in cities and in villages. These three Varnas arose in the process of the formation of classes among the Aryan tribes (h'Aryans and da'Arians), while the fourth Varna - the Varna of the Sudras, which included incomplete community members, who got the most unpleasant types of labor, was formed mainly from local tribes, Dravidians and Nagas, conquered by the Aryans, during military operations.

The Ancient Slavic Vedas marked the beginning of the philosophical tradition in ancient India. In the Indian version, the Vedas consist of four collections of hymns (samhit), chants, magic spells, prayers, etc.: Rig-Vedas, Samaveda, Yajurveda and Atharvaveda (or Atharvangirasa). Each of these collections eventually acquired various commentaries and additions of the ritual, magical, philosophical order - Brahmanas, Aranyakas, Upanishads. Actually, the philosophical views of Ancient India were most fully reflected in the Upanishads, but the first glimpses of a philosophical approach to reality can be traced already in the collections of Vedic hymns, especially in the oldest of them — the Rig Veda⁵:

7. [Cosmogonic Hymn]

Then there was no being, no bearing;
There was no airspace,
Nor heaven above it.
What was in motion? Under whose cover, was it?
What were the waters, impenetrable, deep?
Then there was no death, no immortality, no
Distinction between night and day.
Without blowing, the One breathed by itself,
And there was nothing but him.
In the beginning darkness was hidden by darkness,
All this [was] indistinguishable, flowing.

⁴ Slavo-Aryan Vedas, "The Book of Wisdom of Perun", Circle One, Santia 5, p. 39.

⁵ "Ancient Indian philosophy. The initial period". Perv. Sanskrit. M., 1963.

From the great stock the One was begotten,
 Covered with emptiness.
 And began [then] with desire, - it
 Was the first seed of thought.
 The bond of the being and the being-carrying
 The shrewd sages, perceiving in their hearts,
 found the bond of the essential and the sustaining.
 Their line is laid across. What was there
 Below [what] was there above?
 The bearers of the seed were, the powers were. Lust -
 Downward, the effort was upward.
 Who truly knows, who now would tell,
 Whence arose this creation?
 The gods [appeared] after its creation.
 [But] who knoweth of what it sprang?
 Where did this creation come from, whether it was created
 [Who created it] or not?
 He who hath seen it in the highest heaven,
 He verily knows. [And if he] knows not?

It is even more interesting to follow the reflection in the Slavic Aryan Vedas of the history of Anlantida and Egypt. And, again, this is stated in the Vedas:

...The Great Cold Snap will bring the wind
 da'Aryan on this earth and Madder by a third
 Leta will cover her with her White Cloak.
 There will be no food for people and animals during
 this time and the Great Migration
 of the descendants of the Heavenly Family will begin beyond the mountains of Ripei,
 which are protected on the western borders
 Holy Rassenia...

And they will reach the Great Waters,
 The ocean is the Western Sea,
 and the Heavenly Power will transfer them
 to the land of Beardless people
 with skin the color of the flame of the Sacred Fire.
 The Great Leader will build in that land
 The Temple of the Trident of the God of the Seas.

And the God of the Seas
will send them countless gifts of his,
and he will protect their lands from the Elements of Evil...
but great prosperity
will cloud the heads of leaders and priests.
The great Laziness and desire of a stranger will capture their minds.

And they will begin to lie to Gods and people,
and will live according to their own laws,
violating the Precepts of the Wise
Forefathers and the Laws of God, the Creator of the One.
And will use
The power of the Elements of Midgard-Earth
to achieve their goals...

And they will anger with their deeds
Nia is the Great God of the Seas...
And Nia and the Elements will destroy that land,
and it will hide in the depths of the Great Waters,
just as the Sacred Daaria disappeared in Ancient times
in the depths of the northern waters...

The gods of the Race will save the righteous people
and the Power of Heaven will carry them to the East,
to the land of men with skin the color of Darkness...
and Beardless Men,
with their skin the color of the flame of the Sacred Fire,
will be carried by the Great Power to the endless lands
in the sunset of Yarila the sun...

Men with skin the color of darkness will honor
the descendants of the Heavenly Family as Gods...
and learn many sciences from them.
The people of the Great Race
will build new Cities and Temples,
and teach people with skin the color of Darkness
to grow grains and vegetables...

The four Clans of the Great Race, in succession to one another,
will teach the Ancient Wisdom to new Priests...
and build Three Tombs,
in the form of man-made, tetrahedral Mountains...⁶

The civilization of the mythical Atlantis, as the ancient Greeks called it, according to this legend, arose as a result of the migration of the Ant tribes from Belovodye to a large island in the Western Ocean -the sea - the Atlantic Ocean - and the creation of another center of civilization there. In the future, the settlers began to call their new homeland Antlan, i.e., the land of the Ants. This name, thanks to the ancient Greeks, is transformed into Atlantis and will remain in history under this name. In his writings, Plato mentions Atlantis and expresses the opinion that Ancient Knowledge perished with the death of Atlantis. Atlantis sank to the ocean floor as a result of natural disasters. Atlantis was located to the west of north Africa. Confirmation of the correctness of this is the mystery and the fact of the existence of the mysterious Guanche people, discovered by the Portuguese when they, once again, discovered the Canary Islands, where, to their surprise, they found white-skinned aborigines who, compared to the short Portuguese, looked like giants with their two-meter height. These blue-eyed and blond giants lived on the Canary Islands, but never reached the African continent, distinguishable in good weather from these islands. It is also interesting that the Portuguese discovered feral pets on these islands. It seems that the Guanches were the descendants of people who were thrown together with their livestock on a uninhabited island, where they eventually went wild or at least lost most of the knowledge they possessed. Their language was completely unknown to the Portuguese.

Unfortunately, the aggressive policy of the Portuguese led to the fact that the freedom-loving Guanches were destroyed by soldiers or died from diseases brought to the islands, and which they did not know. It is also interesting that women who preferred death to slavery fought on a par with the men. As a result of all this, the feral descendants of the Atlanteans completely disappeared and took with them another mystery of history.

Those who did arrive on the African continent, having reached the lower reaches of the Nile, created a new civilization — the civilization of Ancient Egypt. It is known from ancient Egyptian legends that this country was founded by nine White Gods who came from the North. For the Negroid population of ancient Egypt, white-skinned aliens, initiated into the Ancient Knowledge, were undoubtedly like Gods. The newcomers not only subjugated the Negroid tribes of ancient Egypt, but also taught them a lot: the ability to build houses and temples, to master farming techniques, animal husbandry, irrigation, crafts, navigation, military art, music, astronomy, poetry, medicine, the secret of embalming, the use of minerals and secret sciences. They created a caste system, the institute of the priesthood and the institute of the pharaoh.

⁶ Slavic-Aryan Vedas, "The Book of Wisdom of Perun", Circle One, Santia 5, p. 38.

It is also curious that everything listed above appeared at once, simultaneously, and was not developed gradually, as it should have been in the case of the gradual development of civilization. And this only confirms the introduction of this knowledge. In addition, it is now proven that the first four dynasties of the Pharaohs of Ancient Egypt were white people. The study of discovered mummies of the first dynasties undoubtedly confirms this. Thus, ancient myths receive scientific

confirmation of their reality, which gives reason to believe that other myths, quite possibly, have real facts behind them. Another fact of the ancient Egyptian civilization is also interesting - for many thousands of years of existence, this civilization had not created anything new. The ancient Knowledge of the White Gods turned into shrines for posterity, guarded by a caste of priests - knowledge turned into dogmas. The priests only passed on knowledge to new generations, which they themselves, in turn, received from their teachers. Any attempt to change anything was perceived as blasphemy; the evolutionary development of Egyptian civilization was "frozen" by the priests for many millennia. And this unfortunate fact became the main reason for the destruction of Egyptian civilization. But before she died, she threw her seeds of knowledge into the fertile soil of her neighbors.

Secret knowledge from Egypt came to ancient Greece, the scientific works of philosophers and scientists whose History was preserved. Unfortunately, a huge number of ancient Egyptian manuscripts, parchments, which Alexander the Great and his companions began to collect after the conquest of Egypt, were destroyed during the fire of the Library of Alexandria, arranged by fanatical Christians. The only thing that has survived to our time is the burial grounds of the pharaohs and the nobility of Egypt, and even then, only because they were carefully hidden, and then covered with sand. That is why the history of of Egypt is based solely on the study of frescoes and inscriptions in pyramids and burial grounds. This is the reason little is known about the life of living in Ancient Egypt, about their philosophical and scientific ideas.

It is also very curious that the Slavic-Aryan Runes and Egyptian Hieroglyphs have a lot in common, and some of them are simply identical... Thus, there is practically no evidence left about the philosophy and scientific thought of Ancient Egypt, only the secret repositories of manuscripts created by the keepers of secrets, escaped the fate of being burned, but they are still not known to the masses. These manuscripts became the basis for the creation of almost all secret societies - Rosicrucians, Illuminaries, Freemasons, etc. Nevertheless, the knowledge of ancient Egypt did not disappear without a trace, but found its continuation and development in ancient Greek philosophy.

Ancient Greek philosophy did not originate in Greece proper, nor on the Balkan Peninsula, but on the eastern edge of the Greek world — in the Ionian cities of the western coast of Asia Minor, founded by the Greeks and developed slave-owning industry, trade and spiritual culture that grew on their basis earlier than it happened in Greece itself. This culture was created under the influence of the more ancient Eastern civilizations of Babylon, Phoenicia, Egypt. The first materialistic teachings arose in the 6th century BC, on the verge of the 7th-6th centuries BC, in Miletus, the largest of the Greek cities of Asia Minor.

Three thinkers lived in it and created their schools successively: Thales, Anaximander and Anaximenes. Having asked the question of where everything came from and what everything turns into, they were looking for the beginning of the origin and change of all things. At the same time, they understood the first Sign, not as a dead and inert matter, but as a substance, alive in whole and in parts, endowed with soul and movement. Thales (the end of the 7th — the first half of the 6th century BC) was a figure who combined an interest in the demands of practical life with a deep interest in questions about the structure of the universe. He was a hydroengineer, a versatile scientist and thinker, and the inventor of astronomical instruments⁷. As a scientist, he became widely famous in Greece by making a successful prediction of a solar eclipse observed in Greece in 585 BC. For this prediction, Thales used astronomical information he had gathered in Egypt, dating back to observations and generalizations of Babylonian science, which is an indirect confirmation of the presence of scientific knowledge in ancient Egypt. Thales linked his geographical, astronomical and physical knowledge in a coherent philosophical view of the world, materialistic at its core, despite clear traces of mythological ideas. Thales believed that the existing arose from a kind of moist primeval substance, or "water". Everything is constantly being born from this single source. The Earth itself rests on water and is surrounded on all sides by the ocean. It stays on the water, like a disk or a board floating on the surface of a reservoir. At the same time, the material origin of "water" and all the nature that came from it are not dead, are not devoid of animation. In the universe, everything is filled with divine essence, everything is animated. Thales' is an attempt to understand the structure of the Universe surrounding the Earth, to determine in what order the heavenly bodies are located in relation to the Earth: Moon, Sun, stars. In this matter, Thales relied on the results of Babylonian science. But he imagined the order of the luminaries to be the reverse of what actually exists: he believed that the so-called sky of fixed stars is closest to the Earth, and the Sun is furthest away. This error has been corrected by his successors.

His contemporary, Anaximander⁸, recognized that the single and constant source of the birth of all things is no longer "water" and in general, not any separate substance, but the first substance, from which the opposites of warm and cold are isolated, giving rise to all substances. This origin, which is different from other substances (and, in this sense, indefinite), has no boundaries and therefore is "limitless". By the separation of warm and cold from it, a fiery shell appeared, enveloping the air above the ground. The incoming air broke through the fiery shell and formed three rings, inside of which a certain amount of fire broke out. So there were three circles: the circle of stars, the Sun and the Moon. The earth, shaped like a section of a column, occupies the middle of the world and is motionless; animals and people were formed from the sediments of the dried-up seabed and changed their shapes when moving to land. Everything that has separated itself from the infinite must, for its "guilt", return to it. Therefore, the world is not eternal, but, after its destruction, a new world stands out from the infinite, and there is no end to this change of worlds.

⁷ V.F. Asmus. "Antique Philosophy. Textbook, p. 24. 2nd Ed. Supplement, Moscow, Vysshaya Shkola, 1976.

⁸ Ibid. 25.

The last of the Milesian philosophers, Anaximenes⁹, who had reached maturity by the time of the conquest of Miletus by the Persians, developed new ideas about the world. Having accepted air as the first substance, he introduced a new and important idea about the process of rarefaction and condensation, through which all substances are formed from air: water, earth, stones and fire. "Air" for him is a breath embracing the whole world, just as our soul, being a breath, holds us. By its nature, "air" is a kind of vapor or dark cloud and is akin to emptiness. The earth is a flat disk supported by air, just like those floating in it are flat disks of luminaries consisting of fire. Anaximenes corrected the doctrine of Anaximander about the order of the arrangement of the Moon, Sun and stars in the world space. Contemporaries and subsequent Greek philosophers attached more importance to Anaximenes than to other Milesian philosophers.

Analyzing the ideas of these philosophers about nature, one involuntarily catches the eye that each of them received but fragmentary knowledge. And, using each "one's" fragment, they tried to build their own picture of the universe. The incompleteness of the original foundation on which they relied led to one-sidedness, a strong distortion of the pictures of the universe created by them.

The cosmological representations of Empedocles, whose activity took place in Acragante (Agrigente) on the coast of Sicily in the 5th century BC, are very interesting. According to Empedocles' cosmology, there are two rotating hemispheres around the Earth. One of them consists entirely of fire, the other, mixed, consists of air and an admixture of a small amount of fire. This second hemisphere produces the phenomenon of night by its rotation. The beginning of the movement was caused by an imbalance, due to the addition of fire. According to the astronomical hypothesis of Empedocles, the Sun, by its nature, is not fiery. According to Empedocles, the sun of day, which we see every day in the firmament, is only a reflection of fire, similar to those that occur on water. The moon was formed from the air carried away by fire. This air thickened above, like hail. The moon does not shine with its own light, but with the light coming from the Sun. The shape of the universe is not spherical, in the exact sense. The world is approaching, in its shape, to an egg lying in a horizontal position¹⁰. He imagined that the stars were attached to a solid crystal-like firmament, while the planets moved freely. Empedocles already clearly distinguished planets that have visible motion in relation to the stars surrounding them from stars that are apparently stationary in relation to each other. The view of the moon as a body formed by the condensation of air and, therefore, not self-luminous, prompted Empedocles to explain solar eclipses. He saw the reason for them in the fact that sometimes the dark Moon obscures the Sun. Genius, for that time, was Empedocles' guess that light takes a certain time to propagate in space. This guess completely contradicted all the known ideas, at the time, about the nature of light.

⁹ Ibid., p. 26.

¹⁰ V.F. Asmus. "Antique Philosophy. Textbook, pp. 68-69. 2nd edition, Supplement, Moscow, Vysshaya shkola, 1976.

In the second half of the 5th century B.C., in the north of Greece, in Thrace, a new center for the development of science and philosophy emerged - the city of Abdera. It was the site of the activity of Leucippus in his mature period, as well as that of Democritus, who created a new doctrine - atomistic materialism. The name of the doctrine shows that the basic physical (and philosophical) outlook of Leucippus and Democritus consists in the hypothesis of the existence of indivisible particles of matter. The Greek word "atomos" means: "indivisible," "indivisible into parts." According to Simplicius, Leucippus and Democritus said that the beginnings (physical elements) are infinite in number, and they called them "atoms" and considered them indivisible and impenetrable, due to the fact that they are absolutely dense and contain no emptiness. They said that the separation occurs due to the emptiness contained not inside atoms, but in bodies, while atoms are separated from each other in an infinite void and differ in external shapes, sizes, position and order¹¹.

Atoms are carried around in the void, catching up with each other, they collide, and where it happens, some bounce off each other, others interlock or intertwine with each other, due to the correspondence of shapes, sizes, positions and orders. The formed compounds stick together and thus produce the appearance of complex bodies. Leucippus and Democritus believed that it was not only the number of atoms in the universe are infinite, but also the number of forms possible for different atoms, i.e., their shapes, outlines. There are atoms of various shapes: spherical, pyramidal, irregular, hooked, etc. The number of these different shapes is infinite. The proof of an infinite number of forms of atoms, of course, could not be empirical, due to the invisibility and impalpability of these forms, but only logical.

Atomists do not raise the question of the cause of the motion of atoms. They do not raise the question, not because of "infinity", as Aristotle thought of them, but because the motion of atoms seems to them to be the original property of atoms. Namely, as the original, it does not require an explanation of the reason. But the doctrine of the motion of atoms is not an arbitrary statement of the philosopher about what happens in the field of the sensually invisible and imperceptible. The theory of the movements of very small atoms invisible to us is suggested to our mind by observations of processes and phenomena occurring in sensually perceived nature. The theory of atomism originated with Leucippus and Democritus, based on observations and some analogies. The subject of these observations were such well-known facts as the ability of some solids to contract. If bodies can shrink in their volume, then they consist of particles with an empty space between them, otherwise how could they decrease in volume? In accordance with this, Democritus explained that a greater or lesser degree of hardness and softness "correspond to a greater or lesser degree of density and discharge". All things and bodies of the visible, sensed world, according to their teaching, arise as a result of the temporary union of invisible and intangible material particles. These particles no longer possess, contrary to Anaxagoras, potential divisibility to infinity. These are particles that are absolutely indivisible and therefore called "atoms".

¹¹ Ibid. 138-139.

Atoms, according to their ideas, are such small particles of matter that their existence cannot be detected directly with the help of the senses: we only conclude about it on the basis of evidence or arguments of the mind. The cosmology of the atomists and their cosmogony, in their various parts, correspond to different levels of development of ancient science and therefore, in their individual teachings, are far from equivalent.

In some cosmological ideas, the atomists were long ahead of their time, in others, they remained, approximately, at the level that the Milesian school reached, in the person of its last representative, Anaximenes. The new achievements of the atomists were their teachings about the infinity of the universe and about the innumerable worlds simultaneously existing in the infinite world space. The doctrine of Leucippus and Democritus about the infinity of the universe directly follows from their idea of the infinity of empty space and from the idea of an infinite number of atoms moving in the void. The process of formation of an infinite number of worlds in infinite space was represented by atomists as follows: "standing out from the infinite," a multitude of bodies of various shapes rushes "into the great void" and here they gather, produce a single vortex in which, bumping into each other and whirling in every possible way, they separate, moreover, the similar move away to those similar. Having the same weight, due to the large accumulation, are no longer able to spin... Thus, the thin corpuscles retreat to the outer parts of the void, as if, as it were, flying away to peripherals. The others, however, "stay together" and, intertwining with each other, move together and form, first of all, some spherical connection. This spherical compound separates from itself, as it were, a shell enclosing a variety of bodies. At the periphery of the vortex, a thin shell was formed from the constantly flowing solid masses. The reason for its formation was the rotation of the bodies and the resistance of the center. In this way the Earth arose: the masses carried to the center began to stick together. The process did not stop there. The shell formed on the periphery continued to increase, carried away by the vortex, the periphery attached everything it touched. As a result, some configurations of bodies formed connections. When these bodies, originally wet, dried up, they began to whirl along with the world vortex. Subsequently, ignited, they became heavenly bodies. The closest to the Earth is the circle of the Moon, the most distant is the circle of the Sun. Between these extreme circles are the circles of all other luminaries.

It should be taken into account that when Leucippus talks about the globularity of the connection of particles or bodies that arose in the center, and about the shell that emerged from this connection, he describes the process of formation of only one of the countless worlds — the one of our Earth, the Sun and the luminaries moving between the Earth and the periphery of our world. But the world thus created, according to Leucippus, does not yet exhaust the universe. This is only one of an infinite number of worlds being formed and dying. The Development of Ancient Greek Philosophy before Socrates was, in general, the history of the emergence and development of materialism - from Thales to Democritus. In the teachings of Democritus (late 5th - early 4th century BC), ancient Greek materialism reached its highest form, became atomistic materialism in philosophy and at the same time in science.

The situation has been changing since the beginning of the 4th century BC. Plato, with a talent rare in the history of thought, creates the doctrine of objective idealism. From now on, in Greek philosophy, the "Democritus line" is sharply and irreconcilably opposed by the "Plato line". By "matter" Plato understands the boundless beginning and condition of spatial isolation, spatial separation of multiple things existing in the sensual world. In the images of the myth, Plato characterizes matter as the universal "nurse" and "receptacle" of every birth and emergence. However, "ideas" and "matter", otherwise the areas of "being" and "non—being", are opposed by Plato not as equal and equivalent principles. According to Plato, the world or region of "ideas" has an indisputable and unconditional primacy.

Plato's doctrine did not remain the same, but, during Plato's long life, developed and changed. An important stage in Plato's development was his rapprochement with the Pythagoreans. The mathematical and cosmological teachings of the Pythagoreans, such as Archytes and Philolaus, undoubtedly became known to Plato and must have attracted his attention. In Plato's later dialogue, *Timaeus*, dealing with questions of cosmology, Plato explicitly puts the cosmological ...in the mouth of the Pythagoreans. According to this doctrine, the world is a living being shaped like a sphere. As a living being, the world has a soul. The soul is not in the world as its "part," but surrounds the whole world and consists of three beginnings: "identity," "otherness," and "essence." These bases are the higher bases of "ultimate" and "infinite" being, i.e., of ideal and material being. They are distributed according to the laws of the musical octave - in circles that attract the heavenly bodies in their movements. Surrounded on all sides by the universal soul, the body of the world consists of the elements of earth, water, fire and air. These elements form proportional compounds - according to the laws of numbers. The circle of the "identical" forms a circle of fixed stars, the circle of the "other" forms a circle of planets. Both the stars and the planets are divine beings, the universal soul animates them, just like the rest of the world. Since the elements of earth, water, fire and air are corporeal, they, like geometric bodies, are limited by planes. The shape of the earth is a cube, water is an icosahedron, fire is a pyramid, air is an octahedron. The sky is decorated in the image of a dodecahedron. The life of the world soul is governed by numerical relationships and harmony. The world soul not only lives, but also learns. In its circular reciprocal motion, it, in every contact with what has the essence, testifies with its word about what is identical to what, what is different from what, as well as, where, when, and in what way all that is being is brought to be, in relation to the eternally unchanging and in relation to other that is being. The word of this testimony is equally true, both in relation to the "other" and in relation to the "identical. When it refers to the sensual, firm true opinions and beliefs arise. When it refers to the sensible, then thought and knowledge necessarily reach perfection¹².

The greatest of Plato's direct disciples was Aristotle. The nature of Aristotle's philosophical teaching about being was reflected in his physical teaching, as well as in his cosmology.

¹² V.F. Asmus. "Ancient philosophy". Textbook, pp. 223-224. 2nd Ed., additional M., "Higher School", 1976.

Aristotle, in his doctrine of motion, takes into account everything that his predecessors, people of everyday experience and philosophy, have gained on this issue. Both of them pointed out that only four types of movement are possible: increase and decrease; qualitative change, or transformation; emergence and destruction; movement, as movement in space¹³.

Just as, in the study of types of causes, the question of causes that are mutually reducible and irreducible was raised, so, in the study of the problem of motion, Aristotle asks which of the four types of motion is the main, irreducible to the rest. Such, according to Aristotle, is motion in space: it is precisely this that is the condition of all other types of motion. Aristotle's teaching about motion in space, as the main of the four types of motion, did not lead Aristotle to approach the atomistic materialists. Leucippus and Democritus believed that the basis of all the qualities perceived by our senses are the spatial forms and spatial configurations of atoms moving in the void. This theory excluded the possibility of qualitative transformation of some properties into others. He proclaimed these transformations to be the result of the insufficient permeability of our sensations and feelings, which do not "reach" the contemplation of atoms with their only objective differences in figure, position in space and in order relative to each other. For Aristotle, this view was unacceptable. Despite the role that spatial motion plays in Aristotle's cosmology, Aristotle's physics remains fundamentally qualitative not quantitative. Aristotle asserts the reality of qualitative differences and the reality of qualitative transformation of some physical elements into others. Aristotle contrasts the physical theories of the atomists and Eleatics with his own, the physical foundations of which are based on his philosophical doctrine of possibility and reality. Since, according to Aristotle, "matter" is the possibility of "form", it is also true that "matter" is "form". The very nature of "matter" is rooted in the ability to accept form, become a form, change into a form. The change is not the result of an external body or their particles in space. For the interaction of objects with each other, it is enough that, entering into the same genus common to them, these objects differ from each other only in species characteristics.

According to Aristotle, space is nothing more than the place occupied by a body. But space is the boundary of another body hugging that body. Therefore, if there are no bodies outside the world, it means that there is neither place nor space. The world encompasses not only space, but all time. In itself, time is a measure of motion. Since motion does not extend to an area forbidden to the world, time does not extend to it either. The earth is stationary... at the center of the world. And in this statement, Aristotle's cosmology is a step backward, in comparison with the cosmology of Plato and the Pythagoreans. Both Plato and the Pythagoreans developed the doctrine of the Earth's motion. The Pythagoreans taught of its motion around a "central fire." Plato outlined, far from being clear, the idea of the Earth's movement around an axis.

¹³ Ibid., pp. 289-294.

Nevertheless, Aristotle was not behind his age on all questions of cosmology. The outstanding achievement of his cosmology was the rigorous proof of the spherical shape of the Earth. He proves this globularity from observations made during eclipses of the Moon. These observations show that the shadow of the Earth approaching the visible surface of the Moon during a lunar eclipse has a round shape. According to Aristotle's explanation, only a spherical body, which in this case is the Earth, can throw into the world space - on the side opposite to the Sun is a shadow that, projected onto the spherical surface of the Moon, will appear as a dark circle approaching the disk of the full Moon.

The influence of other cosmological teachings of Aristotle turned out to be colossal. First of all, it is the doctrine of the division of the world into two regions, quite different in their physical nature and perfection from each other: the region of the Earth with its four elements - earth, water, air, fire - and the region of heaven and the fifth element — ether. The heavenly bodies and the sky itself consist of ether. This is the realm of all that is eternal and perfect. Fixed stars, the most perfect of all celestial bodies, reside in the ether region. Their substance is pure ether, they are so far removed from the Earth that they are inaccessible to any influence of the four earthly elements. Planets, the Sun and the Moon also consist of ether, but, unlike fixed stars, they are already subject to some influence of terrestrial elements. Objects on Earth consist of elements of earth, water, air and fire. Their place of residence — the Earth, the area of constant changes, transformations, birth and death. As the heaviest of all elements, Earth is at the center of the world. It is spherical, as evidenced by the circular shape of the Earth's shadow overhanging the disk of the Moon during lunar eclipses. The Earth's globe is surrounded by water, with a shell of air above the shell of water. The lightest element, fire, is placed in the space between the Earth and the Moon, and is in contact with the boundary of the fifth element, ether. The physical body of the world is not just divided into two completely different kinds of movement in the universe. These are perfect movements, or uniformly circular, and movements imperfect, or rectilinear. The pure example of perfect motion is the diurnal revolution of the sphere of fixed stars around the earth. A less pure example of perfect motion is the complex motions of the planets, which are irregular and partially oblique. The complexity and intricacy of planetary motions are due to the influence exerted on them by Earth elements. The imperfect form of motion is top-down motion, or, what is the same, toward the center of the Earth.

All bodies rush downward, and only a violent disturbance can temporarily suspend this movement. From this Aristotle deduces that not only does the Earth occupy the center of the universe, but, in addition, that it remains stationary in it. Even if there were... the movement of the Earth could only occur temporarily, and then it would cease again.

The philosophical heritage of the ancient Greeks became the foundation for the development of philosophy in Ancient Rome, and then in Europe. In various historical periods, one or another of the propositions formulated by one or another ancient Greek philosophical school were put forward. Nothing fundamentally new was created in these historical epochs. It is only with the advent of the Renaissance that there is another revival of philosophical and scientific thought, which, unfortunately, is rigidly regulated by the Christian Church.

One of the greatest philosophers and scientists of this era was Leonardo da Vinci (1452-1519), mostly known as the greatest artist. His scientific legacy, many centuries ahead of time, is undeservedly forgotten. Not all of his scientific works have been preserved. Here's what he wrote about the Earth and the universe:

"... The Earth is not in the center of the solar circle and not in the center of the world, but in the center of its elements, close to it and connected with it; and whoever would stand on the Moon when it, together with the Sun, is below us, this Earth, with the element of water, would seem to play and really would play the same role as the Moon in relation to us. Your whole speech should lead to the conclusion that the Earth is a luminary, almost like the moon..."¹⁴

For the first time, the idea is expressed that the Earth is not the center of the universe, but only one of the planets in the solar system. In itself, this is a grandiose advance in ideas about the structure of the universe. These thoughts continued their development in the works of the Polish astronomer and thinker Nicolaus Copernicus (1473-1543). Trying to understand the structure of the universe, he put forward a number of positions:

The first position. There is no common center for all circles, i.e., celestial spheres.

The second position. The center of the Earth is not the center of the world, but only the center of gravity and the center of the Moon's path.

The third position. All the paths of the planets surround the Sun from all sides, near which is the center of the world.

The fourth position. The ratio of the distance of the Sun from the Earth to the distance of the firmament is less than the ratio of the radius of the Earth to the distance from the Sun, so this ratio, in the abyss of heaven, turns out to be negligible.

The fifth position. Everything that we see moving in the firmament is not explained by its own movement at all, but is caused by the movement of the Earth itself. It is she who, together with her closest elements, performs, during the day, a rotational movement around her unchanging poles and in relation to the firmly stationary sky.

The sixth position. Any apparent movement of the Sun does not come from its own movement; it is an illusion caused by the movement of the Earth and its orbit, along which we orbit the Sun or around some other star, which means that the Earth performs several movements simultaneously.

The seventh position. The backward motion and forward motion observed by the planets are not their own motion; this is also an illusion caused by the mobility of the Earth itself. Thus, its very movement is enough to explain so many imaginary differences in the sky¹⁵.

Copernicus assumed that the universe had a spherical shape due to the fact that the ball has a perfect shape:

¹⁴ "Anthology of World Philosophy", USSR Academy of Sciences, vol. 2, p. 88. Publishing House "Thought", Moscow, 1970

¹⁵ Ibid., pp. 118-122.

"...The universe is spherical, both because the ball has the most perfect shape and is a closed aggregate that does not need any fasteners, and because of all the figures, this one is the most capacious, the most suitable for including and preserving everything or else because we observe all the independent parts of the universe— I mean the Sun, Moon and stars— in this form; or because all bodies achieve limitation in this form, as can be seen from water droplets and other liquid bodies when they tend to self-lock. Therefore, no one will doubt that such a form is inherent in celestial bodies... The sky, in comparison with the Earth— is immense, and ... it shows the appearance of an infinite magnitude, and the Earth, according to our senses, refers to the sky as a point to a body or a finite in magnitude to the infinite. But nothing else is proved by this; and it does not follow from nowhere that the Earth should rest in the center of the world. ...All of the above comes down only to proving the immensity of the sky, compared to the size of the Earth. But as far as this immensity extends, we do not know about it".

Galileo Galilei (1564-1642) continued to develop Copernican ideas in his works. In his message to Francesco Ingoli, Galileo expressed the idea that human science will never be able to decide whether the universe is finite or infinite. And further¹⁶:

"... Of the natural things worthy of study, in my opinion, the structure of the universe should be put in the first place. Since the universe contains everything and surpasses everything in magnitude, it determines everything else and dominates everything. If any persons managed to rise, mentally, high above the general level of humanity, then it was, of course, Ptolemy and Copernicus..."

The development of ideas about the universe was accompanied by both ingenious guesses about the essence of phenomena and the layering of religious and philosophical ideas prevailing in a particular historical period. Therefore, the golden grains of true knowledge can be found both among the supporters of materialism and idealism. For example, Immanuel Kant (1724-1804), the founder of so-called critical or "transcendental" idealism, in his "precritical" period (before 1770) created the "nebular cosmogonic" hypothesis, in which the origin and evolution of the planetary system are derived from the initial diffuse cloud of particles. At the same time, Kant hypothesized the existence of a large Universe of galaxies outside our galaxy, developed the doctrine of slowing down — as a result of tidal friction — the daily rotation of the Earth and the concept of relativity of motion and rest. These studies, united by the materialistic idea of the natural development of the universe and the Earth, played an important role in the history of dialectics¹⁷.

"... I believe that the initial state of nature was the universal scattering of the primary matter of all celestial bodies or, as they (ancient Greek materialist philosophers) call them, atoms. Epicurus assumed that there is a gravity that causes these primary particles of matter to fall; it does not seem to differ much from the Newtonian attraction I accept."

¹⁶ Ibid., p. 227.

¹⁷ Ibid., pp. 92-93.

Kant sees in the indefinable tendency of each fully formed universe to its gradual destruction as one of the arguments to prove that, in contrast to this, in other places the Universe will create new worlds in order to make up for the damage done to it in some place. There is a constant renewal of nature, the infinity of creation is large enough that, in comparison with it, some world or some milky way of worlds is considered by him just like a flower or an insect, compared to the Earth. While nature adorns eternity with a variety of phenomena, God, in relentless creation, according to Kant, creates the material for the formation of even larger worlds.

"...When, through the infinity of time and space, we follow this phoenix of nature, which only then burns itself to be reborn from its ashes, when we see how nature, even where it decays and becomes decrepit, is inexhaustible in new manifestations, and at the other boundary of creation in the space of unformed primary matter, it constantly expands the sphere of divine revelation, so that eternity and all spaces fill it with miracles..."¹⁸

Relying on Newtonian mechanics, Kant tries to prove the inconsistency of attempts to explain the formation of planetary systems, in particular, the solar system, through the laws of mechanics, which, in his opinion, are unable to explain the laws of planetary behavior:

"...If we assume (and this cannot be denied) that the above analogies establish with the greatest certainty that the consonant and naturally related movements and orbits of celestial bodies indicate a natural cause as their source, then this cause can in no way be the very matter that now fills the celestial space.

Therefore, the matter that filled this space before and whose motion served as the basis for the now existing revolutions of celestial bodies, after it accumulated in these bodies and thus cleared the space that has now turned out to be empty, or (which directly follows from what has been said) the matter of which the planets, comets, and the Sun itself are composed, originally had to be scattered throughout the space of the planetary system and, in this state, had to be set in motion, which it retained even after it united into separate clumps and formed celestial bodies containing previously dispersed substances of the world matter..."¹⁹

Thus, Kant sees, in the fact of the very existence of planetary systems, the finger of God, which ultimately sets primary matter in motion and without which the Universe cannot exist, since, by itself, matter is not able to carry the organizing principle. The rapid development of natural sciences in the nineteenth and twentieth centuries provided a huge number of facts about the nature of both the macrocosm and the microcosm. More advanced devices allowed naturalists to penetrate much deeper into the vastness of the universe. There was more and more specialization of scientific research.

¹⁸ Ibid., p. 97.

¹⁹ Ibid., p. 99.

New theories of the formation of the Universe appeared, such as the Big Bang theory, according to which our Universe arose as a result of a super-explosion of the super-dense core of the Universe, the matter of which served as the building material for the formation of metagalactics, galaxies. The main proof of this position was the fact of "scattering galaxies", which, in itself, says nothing. The facts about what is happening in outer space around us required some kind of fundamental theory of the universe, which was proposed by Einstein. In his theory of relativity, he put forward two fundamental postulates — the postulate that the Universe is homogeneous in its qualities in all directions, in other words, the properties of space are identical in all directions and that the speed of light is a constant and the maximum permissible speed of matter.

In principle, Einstein's theory of relativity was the final link in the accumulation of ideas about the universe based on atomistic theory. The fundamental difference from the previous ideas about the nature of the universe is the consideration of time as a relative quantity depending on the speed of motion of matter. In principle, this position became the third postulate of the theory of relativity, in which time acts as the fourth dimension of space, unlike previous theories of space, where time was assumed to be absolute in three-dimensional space.

Based on his theory of relativity, Einstein tried to create a General Field Theory, with which it would be possible to explain all natural phenomena based on a single principle of explanation. His attempt was unsuccessful. In addition, the created devices helped not only to confirm the existence of atoms, the existence of which was mentioned by Leucippus and Democritus, but also allowed to penetrate into the atom itself and, thereby, the indivisible "bricks" of the universe themselves turned out to be complex systems. Thus, the development of the knowledge of the universe was carried out in two directions — the knowledge of the macrocosm and the knowledge of the microcosm. It is this fact that has become the main mistake of almost all theories of the universe. Nature is one at all its levels, both at the level of the microcosm and at the level of the macrocosm. Only by considering them together, in a single aggregate, is it possible to get a correct idea of the nature of the universe.

1.2 Summary.

Thus, an analysis of the history of mankind's ideas about the nature of the universe showed that:

1. Man's ideas about the nature of the universe, throughout the known history, did not consistently change. In ancient times there were civilizations and cultures whose ideas about the nature of the universe were, on some issues, much broader than modern ones. A great deal of the knowledge of ancient civilizations was destroyed either during wars or by fanatics of new religions.

2. In the history of mankind, there have been several periods of upheaval regarding scientific ideas about the Universe, to be replaced by whole epochs of ignorance and barbarism.

Around the surviving fragments of true knowledge, "new" theories of the universe began to be created, which, only by modern times, reached a certain completeness.

3. The ideas about the nature of the universe reflect and determine the level of development of scientific thought and technology, as well as determining the future development of civilization in general. Incorrect ideas about the nature of the Universe not only determines the evolutionary potential civilization, but also the degree and quality of its interaction with nature. With incomplete or erroneous human conceptions of the nature of the universe, his activities lead to the destruction of the ecological system, which can ultimately lead to the destruction of life itself on the planet.

4. The scientific discoveries of the last quarter of the twentieth century have shown the inadequacy of existing ideas about the nature of the universe, and the need for a new understanding of nature has arisen. Without a new theoretical system of notions there can be no further qualitative development of science and civilization as a whole.

Chapter 2. Heterogeneity of space

2.1. Statement of the question

Before starting to create any theory of the universe, it is necessary to determine the concepts that create the foundation of this theory. Without a clear definition of the initial and boundary conditions, a full-fledged theory cannot be created. Let's first define what time is. For a long time, time was recognized as absolute and it was only in the twentieth century, when creating his theory, that Einstein proposed the idea of the relative nature of time and introduced time as the fourth dimension. But before determining the absolute or relative nature of time, it is necessary to determine — what is time?! For some reason, everyone forgot that time is a conditional quantity introduced by man himself and does not exist in nature. In nature, there are periodic processes that a person uses as a standard for coordinating his actions with others. In nature, there are processes of the transition of matter from one state or form to another. These processes are faster or slower, and they are real and material.

In the Universe there are continuous processes of transition of matter from one state to another, from one quality to another and they can be reversible and irreversible. Reversible processes do not affect the qualitative state of matter. If qualitative change of matter occurs, irreversible processes are observed. During such processes, the evolution of matter goes in one direction - from one quality to another, and therefore it is possible to quantify these phenomena. Thus, in nature there are observed processes of change of matter proceeding in one direction. A peculiar "river" of matter emerges, which has its source and mouth. Matter taken from this "river" has a past, present and future. The past is a qualitative state of matter which it had before, the present is a qualitative state at the moment, and the future is a qualitative state which this matter will assume after the destruction of the existing qualitative state.

The irreversible process of qualitative transformation of matter from one state to another proceeds with a certain speed. In different points of space, the same processes may proceed at different speeds, and in some cases, it varies in a fairly wide range. To measure this speed, man invented a conventional unit called a second. Seconds merged into minutes, minutes into hours, hours into days, etc. The unit of measurement served the periodic processes of nature, such as the daily rotation of the planet around its axis and the period of the rotation of the planet around the sun. The reason for this choice is simple: ease of use in everyday life. They called it the unit of time and it was used everywhere. The interesting thing is that many nations, originally isolated from each other, created very similar Calendars which might differ in the number of days in a week, the beginning of a new year, but the length of a year was very close to each other. It was the introduction of the conventional unit of time that allowed mankind to organize its activities and simplify the interaction between people.

The unit of time is one of the greatest inventions of man, but it is necessary to always remember the original fact: it is an artificially created quantity describing the speed of the qualitative transition of matter from one state to another. In nature, there are periodic processes that served as the basis for the creation of this conventional unit. These periodic processes are objective and real, and the units of time created by man are conditional and unreal. Therefore, any use of time as a real dimension of space has no basis whatsoever. The fourth dimension - the dimension of time - simply does not exist in nature. It is the everyday life and ubiquity of the use of time units that accompany a person from the first moment of his life to the last, that very often create the illusion of the reality of time. Really not time, but the processes occurring in matter, the unit of measurement of which is the unit of time. There is a subconscious substitution of one by another and, as an inevitable result of such substitution of the real process by the unit of its measurement - merging in the human consciousness of one with another - played a cruel joke with Homo sapiens. Theories of the universe began to be created in which time was accepted as an objective reality. The objective reality is the processes taking place in matter, and not a conventional unit for measuring the speed of these processes. In other words, in the initial and boundary conditions of creation theories of the universe, a subjective value was mistakenly introduced. And this subjective quantity, with the development of these theories of the universe, became one of the "pitfalls" on which these theories of the universe "crashed".

Let's try to identify other "pitfalls" of well-known theories of the universe. First of all, let's define the concept of matter. Matter is understood as the objective reality given to us in sensations. Sensations are information that enters the brain about the world around us through the senses. The purpose of the human senses is to ensure the optimal existence of a person as a living organism in the environment. The human sensory organs were formed as a result of human adaptation to the conditions of existence in the occupied ecological niche. Therefore, the development of the senses followed the path of optimal adaptation of the human body to the ecological system.

Thus, the sense organs developed and formed as a result of adaptation to the conditions of existence in an ecological niche and serve for those forms of matter that formed the ecological system as a whole, and the ecological niche occupied by Homo sapiens as a species. This is the purpose of the human sensory organs, and therefore the sensations received through these sensory organs will correspond to the qualitative structure of matter forming an ecological system.

The appearance of reason in man has not changed the nature of his sense organs, so our sense organs can only give us an idea of the matter that forms the ecological environment of human habitation. Man-made devices have only allowed us to expand the range of perception of our senses, and not to penetrate into new qualities of matter. Our sense organs are limited, and therefore our understanding of the nature of matter will inevitably be limited. Adaptation to the conditions of existence in an ecological system and knowledge of the nature of matter are two completely different things, that is advisable not to confuse. The absolutization of our senses is another pitfall of existing theories. Our sense organs give us an idea of the four aggregate states of physically dense matter — solid, liquid, gaseous and plasma, as well as the optical range of longitudinal-transverse waves and the acoustic range of longitudinal waves. Everything else is not perceived by our senses and cannot be an "objective reality" given to us in sensations. Does this mean that nothing else exists, and why should our sensations be the absolute criterion for the existence of matter?

It is quite natural that we get an idea of the world around us through our senses and only through them, but this does not mean that our sensations are absolute. It should be remembered that man exists in the "middle" world - between the macrocosm and the microcosm, and therefore all our ideas have developed as a result of observing this intermediate world of nature. While the laws of nature are implemented precisely at the level of the macrocosm and microcosm, and man deals only with the manifestations of these laws in the intermediate world of human existence.

Observing the manifestations of the laws of the micro- and macrocosm in the intermediate world, man has created a picture of this intermediate world, which fairly accurately reflects the state of this world of human existence. But this picture does not reflect the nature of the macro- and microcosm completely and therefore cannot pretend to the completeness of the transmission of the picture of the universe as a whole. Thus, modern ideas about nature only partially reflect reality and the universal laws that man has created, sometimes present unexpected surprises when a person tries to penetrate both the depths of the macrocosm and the microcosm.

One of such universal, fundamental laws in the natural sciences is the law of conservation of matter. The discoveries of the last quarter of the twentieth century in the field of nuclear physics have destroyed this fundamental fulcrum of modern physics. The basic law of physics — the law of conservation of matter - was destroyed by the results of experiments of nuclear physicists. The essence of this postulate is that matter does not appear from nowhere and does not disappear anywhere. In relation to the synthesis of particles during nuclear reactions, this law can be written as follows:

$$m_1 + m_2 > m_3 \quad (2.1.1)$$

In other words, the mass of the particle resulting from the synthesis must be less than or equal to the total mass of the particles that created it. The results of the experiments put nuclear physicists into a state of shock, from which they are unable to get out to this day. The whole affair is "simply" that in some experiments the mass of the resulting particle was sometimes several orders of magnitude higher than the total mass of the particles that created it:

$$m_1 + m_2 \ll m_3 \quad (2.1.2)$$

Real experiments, real instruments, and the results are absolutely fantastic. The substance appeared out of nowhere. Moreover, the deviation of the results from the law is not within the error of the instruments. Instruments with an error of more than five percent are practically not used for scientific research. Therefore, when the results differ by several orders of magnitude from the expected results, the error of the instruments does not matter. The fact is that scientists cannot and do not have any explanation. The phenomena that they observe through instruments or visually are manifestations of the real laws of nature. The real laws of nature are formed at the levels of the macrocosm and microcosm. Everything that a person comes into contact with in his life is located between the macrocosm and the microcosm. That is why, when a person, with the help of instruments, was able to look into the microcosm, he first encountered the laws of nature, and not their manifestations. Matter does not appear out of nowhere. Everything is much simpler and more complicated at the same time: what a person knows about matter and thinks of as a complete, absolute concept, in fact, is only a small part of this concept. Matter really does not disappear anywhere and does not appear from nowhere; there really is a Law of Conservation of Matter, only it is not what people imagine it to be. Physically dense matter is only one of the forms of matter perceived by a person through his senses.

And now, let's analyze the ideas about space itself, on which modern scientific ideas are based. The space is assumed to be three-dimensional and homogeneous. I would like to clarify that the space around us is perceived by our eyes as three-dimensional. The purpose of our eyes - optical sensors created by nature - is to provide an adequate response to the nature around us. Our eyes allow our brain to create an accurate picture of the surrounding nature, without which a person simply cannot exist as a living being. At the same time, human eyes are adapted to function in a gaseous environment, which is the atmosphere of the planet. The "picture" that we see is taken for a three-dimensional space. But if we are immersed in an aquatic environment, which, according to our concepts, is also three-dimensional, then in this environment our eyes will give a distorted picture of this environment, which does not allow us to orient ourselves correctly in it. While the eyes of marine animals allow them to navigate in the aquatic environment, without any problems. Their orientation in the air environment will be just as disrupted as ours in the water. In the water, the "picture" we see will differ from the three-dimensional image to which we are so accustomed. It turns out that the aquatic environment is somehow qualitatively different from the air.

And this difference is not only in the difference in the density of the arrangement of molecules relative to each other and the qualitative composition of these molecules. Of course, these factors matter. The only question is - are they the only ones?! At this point we come to the question: is space homogeneous?!

2.2. Qualitative structure of space

All existing theories of space considered space as a homogeneous substance. The uniformity of space implies that the properties of space are the same in all directions. And this means that matter must manifest itself identically at any point in a homogeneous space. Is it so? Let's analyze this situation. Astronomers and astrophysicists are aware of the fact that during a total solar eclipse it is possible to observe objects that our Sun covers with itself. Based on the positions of a homogeneous space, this is simply impossible. But nevertheless, it is a scientific fact. The impossibility of this is determined by the fact that electromagnetic waves in a homogeneous space must propagate in a straight line. But if this is the case, then it is absolutely impossible to observe objects that are covered by another one located closer to us.

The explanation for this phenomenon was given as follows: a massive cosmic object, which is the Sun, affects the rectilinear propagation of light waves, bending their trajectory, as a result of which we are able to observe what is behind it. The explanation is certainly correct, however, there is one small but. If we consider the space homogeneous, then this becomes impossible. The question arises: is it homogeneous? And the only possible explanation for this fact may be the recognition of space as heterogeneous.

Let's analyze other facts as well. For example, the phenomenon of refraction by different media of rectilinear propagation of light waves. These phenomena are called optical phenomena of nature. Their essence is that different media have a density different from the vacuum density, which is assumed to be zero. The speed of propagation of light waves in vacuum C is taken as a constant and equal to 300,000 km/s. The medium resists the propagation of light waves, as a result of which their propagation velocity in this medium becomes less than the propagation velocity of these waves in vacuum and becomes equal to V . Thus, this medium affects the speed of light propagation with a coefficient n , which is called the refractive index of the medium:

$$\mathbf{n = c/v} \tag{2.2.1}$$

where:

n is the refractive index;

c is the speed of light (photon);

v is the speed of light (photon) in the medium.

With the help of this refractive index, it is possible to calculate the exit point of light from this medium at the boundary with another medium. Almost every student made similar calculations and experiments on passing a light cloud through a prism. Everything seems to be simple and clear.

However, again there is one small but. It will appear if you compare this information with the rules of quantum physics, which describes the nature of waves, including the optical range. According to the concepts of quantum physics, light waves are emitted and absorbed by certain portions, which are called photons. Each photon has an energy equal to:

$$E = hf \quad (2.2.2)$$

where:

$h = 6.62 \cdot 10^{-27}$ Erg/sek is Planck's constant;

f is the frequency of the photon.

Thus, each photon has a strictly defined energy, and this energy determines the speed of its movement in the medium. Therefore, we can make up the identity:

$$mc^2/2 = hf \quad (2.2.3)$$

When passing through a medium, the wave velocity decreases in proportion to the refractive index of this medium ($c = nv$) and, consequently, the photon energy decreases:

$$E_{cp} = mv^2/2 = hf \quad (2.2.4)$$

Naturally, the energy of a photon in a medium turns out to be less than its energy in a vacuum:

$$E_{cp} < E$$

Substituting their equations, we get:

$$mv^2/2 = hf < mc^2/2 = hf \quad (2.2.5)$$

Analyzing this relation, we inevitably come to the conclusion that, when the photon energy changes, the frequency and, consequently, the wavelength λ must change. In other words, one photon enters the medium and another leaves. There is a clear contradiction with reality. The conclusions of linear optics contradict quantum mechanics. Each photon has a strictly definite energy, it is emitted when an electron moves from a larger resolved orbit to a smaller one; when an atom absorbs a photon, the electron of the atom moves from the lower resolved to a larger orbit, as quantum physics defines it. But the photon, as it passes through the medium, does not change, while its velocity decreases. So how then does this exist?

If we assume that space is homogeneous, i.e., its properties and qualities are unchanged, it turns out to be absurd. The absurdity disappears if we admit that **space is heterogeneous**, that its properties and qualities change in different directions, and that the matter that fills space affects the properties and qualities of the space that it fills, and space affects matter. The so-called feedback is manifested. As a result, a state of equilibrium is established between the matter filling the space and the space in which this matter is located. At this equilibrium, matter is stable. At this point we have come to understand another natural phenomenon - radioactivity. Radioactivity is a phenomenon in which an atom becomes unstable, its decay occurs, as a result of which energy is released, and a more stable atom or atoms are formed. Instability occurs when a photon is absorbed by a given atom. When a photon is absorbed, an electron transitions from one permitted orbit to another. But why, when a photon is absorbed, does one atom become unstable and decays, while the another remains stable? Transuranic elements whose atomic weight exceeds two hundred and thirty-eight au. and having a complex structure of electronic orbits are considered radioactive.

The decay of such atoms could be explained by their complex structure, which is disrupted by photon absorption and goes from a stable state to an unstable one, as a result of which the atom decays. Everything, it would seem, is fine, if a small **BUT** would not have intervened again. It is not only transuranic elements that are radioactive, but also isotopes of all other elements. A curious fact is that, for example, hydrogen isotopes are radioactive — deuterium and tritium, with an atomic mass of two and three au., while the gold atom is the most stable, with an atomic weight of almost one hundred and ninety-seven au. In this and similar cases, it is impossible to explain stability and instability by the complexity of the structure of the organization of atoms. A paradox and a seemingly insoluble contradiction reappear. Everything would be like this if we proceed from the assumption of uniformity of space. But if we assume that space is heterogeneous, contradiction and absurdity disappear.

We will consider the nature of radioactivity below. At this point, we are interested in the nature of space. As can be seen from the above examples, both at the level of the macrocosm and at the level of the microcosm, space is heterogeneous. The notion that space is homogeneous in all directions without "north" and "south", "top" and "bottom" is the basis of modern cosmology, based on Einstein's theory of relativity. Studies carried out on a radio telescope, taken outside the Earth's atmosphere, gave confirmation of the inhomogeneity of space. By analyzing radio waves from 160 distant galaxies, physicists at the University of Rochester and the University of Kansas made the startling discovery that the radiation rotates as it travels through space in a subtle corkscrew-like pattern, unlike anything previously observed. A complete turning of the "corkscrew" is observed every billion miles that the radio waves travel. These effects are in addition to what is known as the Faraday effect, the polarization of light caused by intergalactic magnetic fields. The frequency of these newly observed rotations depends on the angle at which the radio waves travel relative to the orientation axis passing through space. The more parallel the direction of wave motion with the axis, the greater the radius of rotation. This orientation axis is not a physical quantity, but rather determines the direction in which light travels in the universe. According to observations from Earth, the researchers claim, the axis runs in one direction, toward the constellation Sextans, and in the other direction, toward the constellation Aquilla. Which direction would be "up" or "down" would probably be an arbitrary choice, they believe.

This discovery was made by Dr. George Nodland and Dr. John Ralston. The report on was published in the "Physics Review"²⁰ in 1997. Thus, the qualitative structure of the space should be heterogeneous. Let's analyze the phenomenon of an heterogeneous of space. The heterogeneity of space means that its properties and qualities are different in different areas of space. It is logical to assume two possible states of space — an undisturbed space in which its properties change continuously and smoothly, in given directions, and a disturbed space in which there is a sharp change in properties and qualities.

²⁰ "This Side Up' May Apply To the Universe, After All", by John Noble Wilford, The New York Times, 1997.

Suppose that the space was undisturbed at the beginning of the formation of spatial structures, and, as these are formed, zones of disturbed space arise. Disturbance zones arise under the influence of external factors, which may be other qualitative spaces that have some common properties and qualities with this space. Naturally, these spaces cannot be completely identical, but only partially. Thus, space can be in a disturbed and undisturbed state, which is an important point for understanding the nature of stars, which we will return to below. And at the moment, let's deal with matter. **If space is practically and theoretically unlimited and its properties and qualities change continuously, then matter is finite.** The finiteness of matter is due to the fact that it has specific qualities and properties that have their limits and, consequently, are finite. Space and matter interact with each other, and the interaction is mutual.

Therefore, **when an infinite quantity with continuously changing properties and qualities, space, interacts with a finite quantity with certain properties and qualities, matter, their interaction occurs only in the region of space where the properties and qualities of space and matter are identical to each other.** And if we assume that there are many types or forms of matter, each of which differs from the other in its properties and qualities partially or completely, and these forms of matter are "superimposed" on space with continuously changing properties and qualities, then there will be **a distribution of these free forms of matter across space, according to the principle of identity between the properties of space and forms of matter.**

There is a process similar to the process of separating a mixture of liquids having different densities. Over time, all the liquids of the mixture will be arranged in layers one above the other, denser liquids (and, consequently, heavier) will move down the vessel, and less dense (and, consequently, lighter) will be located closer to the top. If enough time passes, then layers of liquids with different densities will appear in one vessel. And if you color liquids of different densities in any color, for example, paint the densest one in red, and, as the density of liquids decreases, color them accordingly, in orange, yellow, green, cyan, blue and purple colors, then as a result, after the mixture of these liquids with different densities calms down, multi-colored layers of liquids will appear in the vessel in descending order of their density - red, orange, yellow, green, cyan, blue and purple.

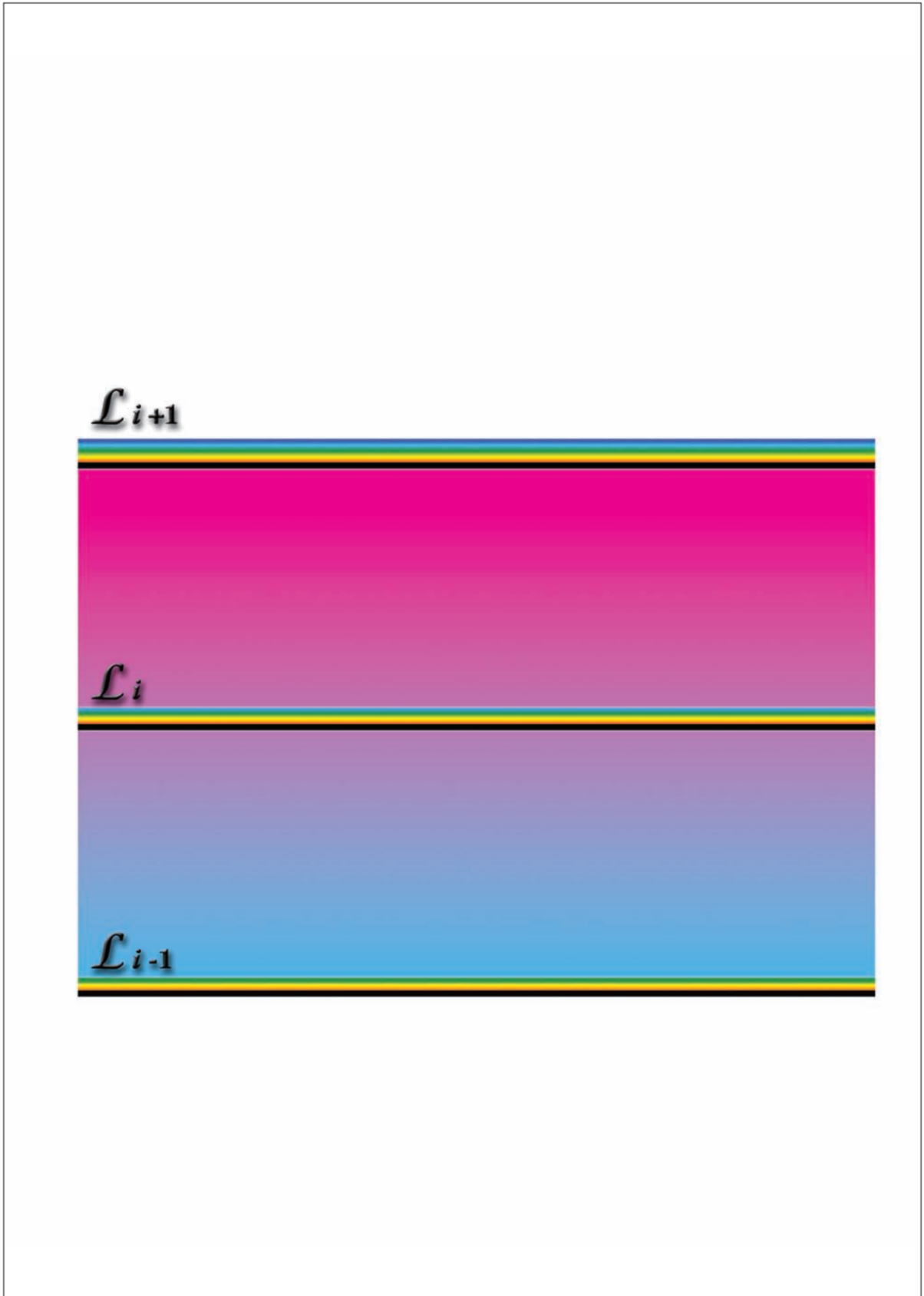
Liquids with different densities are also matter that has differences in only one of its qualities - density. In this case, there is a kind of quantization (separation) of the same matter by one property or quality. Therefore, if we assume the presence of many forms of matter that differ from each other in their qualities and properties in a space with continuously changing properties and qualities, then quantization of this space will occur according to these forms of matter. And if you give different colors to different forms of matter, space will turn into a colored layered "pie". And if, in the case of a mixture of liquids, the criterion for separating liquids in a vessel was the density of these liquids, then, in the case of different forms of matter, we take the dimensionality of space as a similar criterion. A space with continuously changing dimensionality is called a matrix space.

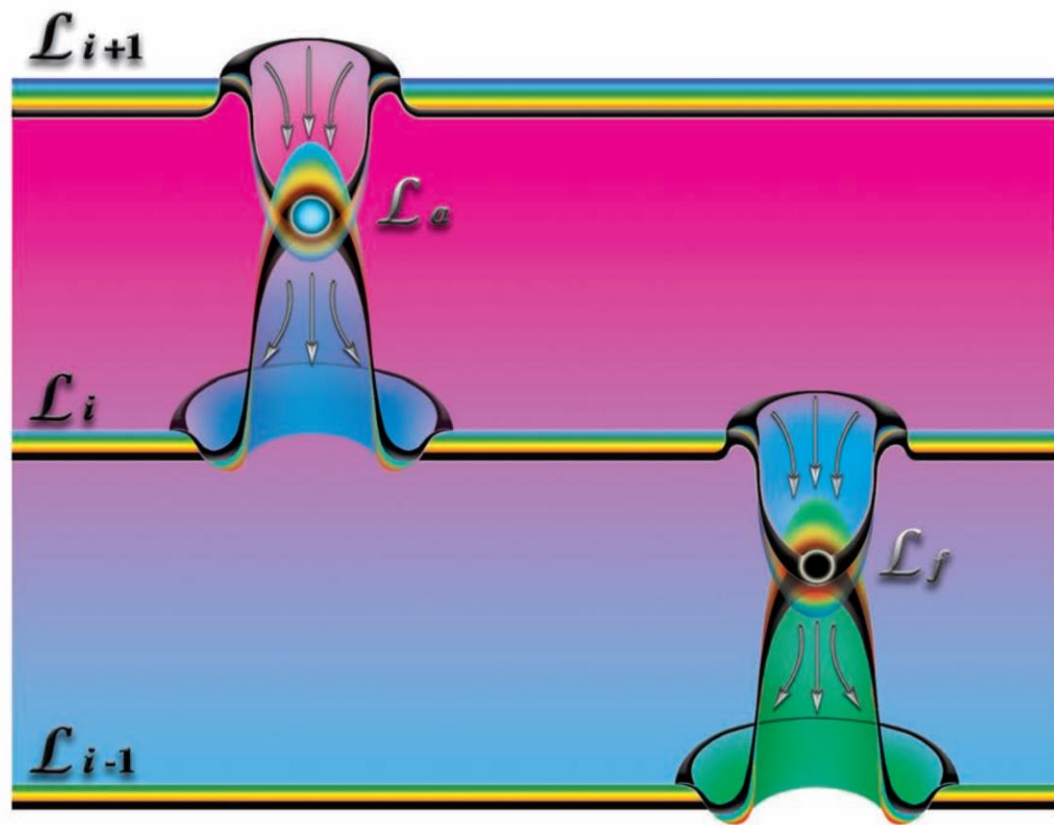
Thus, in this matrix space, when it interacts with forms of matter, layers with identical dimensionality will arise. Each layer of the identical dimension, let's call the matrix space, the space-universe with a given level of dimensionality. In other words, a change in the dimensionality of the matrix space by a certain amount, ΔL , leads to a qualitative change in the matrix space and the formation of a new qualitative composition of the universe-space in it.

Perhaps, many people played as a child, making different pictures out of cubes. So, changing the dimensionality of space by the value ΔL is equivalent to the appearance of a new cube and the ability to add up with it; a new "picture" - the universe appears by rearranging all the cubes. This becomes possible only when all the "cubes are the same size". If we mix cubes of different sizes and try to make a picture out of them, then, if with all our desire, we will not succeed, even if we have enough "cubes" for several "pictures".

First you need to sort these "cubes" by size, and then put together "pictures" of them. A sequential change in dimensionality by the same value ΔL is a quantization of the matrix space and is expressed by the quantization coefficient γ_i , which is the standard by which the "cubes" are selected to create a new "picture".

Thus, just as different pictures can be put together from different numbers of cubes of the same size, so spaces-universes are formed from the same forms of matter in the matrix space. These space-universes form a single system in the matrix space, like a layer cake, each layer of which is qualitatively different from the other. At the same time, each adjacent layer of this pie has, in its "mosaic", one "cube" more or less (**Fig. 2.2.1**). All these layers are in constant motion and interaction between themselves. The result of such interaction between neighboring space-universes is the appearance of stars and "black holes" in the contact zones (**Fig. 2.2.2**). At the same time, where the space-universe comes into contact with another, which has one more "cube" in its composition, a star appears, and where there is one less "cube" is a "black hole".





2.3. The system of matrix spaces

Thus, a system of spaces formed by the synthesis of the same type of matter is formed. The coefficient γ_i can take a variety of values. Even changing it by a negligible amount leads to the fact that matter of our type cannot merge into substance (degenerate). With a different value of γ_i , conditions arise for the fusion of another type of matter, different from this one. This leads to the formation of a qualitatively different system of spaces — another matrix space is formed. As a result, we have a whole system of matrix spaces that differ from each other by the quantization coefficient of the dimensionality of space and the type of matter forming them. This is manifested in the qualitative difference of substances arising from the fusion of different types of matter and a different number of forms of matter forming each of these types of substances. Each matrix space is inhomogeneous in dimensionality. These fluctuations in the dimensionality of the matrix space led to the fact that in some of its regions there is a convergence with other matrix spaces that have the same dimensionality in these regions. There appear zones of overflow from matrix space with one dimensionality coefficient γ into the matrix space with another one. And if in the case of the formation of stars and black holes everything is determined only by the number of matter forming the space-universes in the closure zone and at the same time the matter is of one type, i.e. quantized by the dimension coefficient, then at closing of matrix spaces there appear zones of matter flowing that have different coefficient γ_i , matter of different types, which cannot be compatible under any conditions.

What happens in these zones of matrix spaces closing? So, in these zones of closure, the disintegration of matter of both one and another type occurs, and "free" matter of both types is formed. But what happens next?! Three conditions affect the processes taking place in these zones:

1) The number of forms of matter of this type forming each matrix space in the zone of their closure. Most often, the number of forms of matter forming each of the matrix spaces is different. This, in turn, creates a different flow of matter, according to the total composition, flowing from one matrix space to another and back. Two oncoming flows arise, which leads to the formation of powerful vortex flows of two types of forms of matter in the zone of their intersection. At the same time, a more powerful flow will reverse the weak one and a powerful vortex fountain of two types of matter will arise.

2) The power of matter flowing from matrix spaces is influenced by the dimensionality of the zone of closure of two matrix spaces. Naturally, this dimensionality cannot be harmonious with the type of dimensionality of each of the matrix spaces, but it can be closer to the type of dimensionality of one or another type. In other words, there is a difference of dimensionality in the matrix spaces in the zone of closure, different for each of the matrix spaces.

$$|L'_1 - L'_{12}| < |L'_2 - L'_{12}| \quad (2.3.1)$$

And also, the sign of this difference matters - positive or negative. A negative drop means more favorable conditions for the outflow of matter from a given matrix space.

3) Which type of quantization of the dimensionality of matrix spaces is closer to the dimensionality of the zone of closure of matrix spaces.

Occurs:

$$\begin{aligned}
 & |L'_1 - L'_{12}| / L'_1 < 0 \\
 & |L'_1 - L'_{12}| / L'_2 > 0 \\
 & \text{or} \\
 & |L'_1 - L'_{12}| / L'_1 > 0 \\
 & |L'_1 - L'_{12}| / L'_2 < 0
 \end{aligned}
 \tag{2.3.2}$$

The dimensionality of the closing zone may be closer to the type of dimensionality L'_1 or L'_2 . At the same time, if the difference in dimensionality is conditionally $\Delta L'_{12}$, and the quantization coefficient γ'_1 , and the decay of matter of the dimension type L'_2 occurs.

$$\begin{aligned}
 & |L'_{12} - a \gamma'_1| < 0 \\
 & \text{If:} \\
 & |L'_{12} - b \gamma'_2| < 0
 \end{aligned}$$

There is a disintegration of matter of the dimension type L'_1 . If: $(\Delta L'_{12} - b \gamma'_2) < 0$, the synthesis of L'_2 dimensional type matter occurs. And, accordingly, on the contrary, if: $(\Delta L'_{12} - a \gamma'_1) < 0$, a synthesis of L'_1 dimensionality type matter occurs.

Where: **a** and **b** - denotes how many times the coefficient γ_i "moves" in the deformation zone of the dimensionality of space.

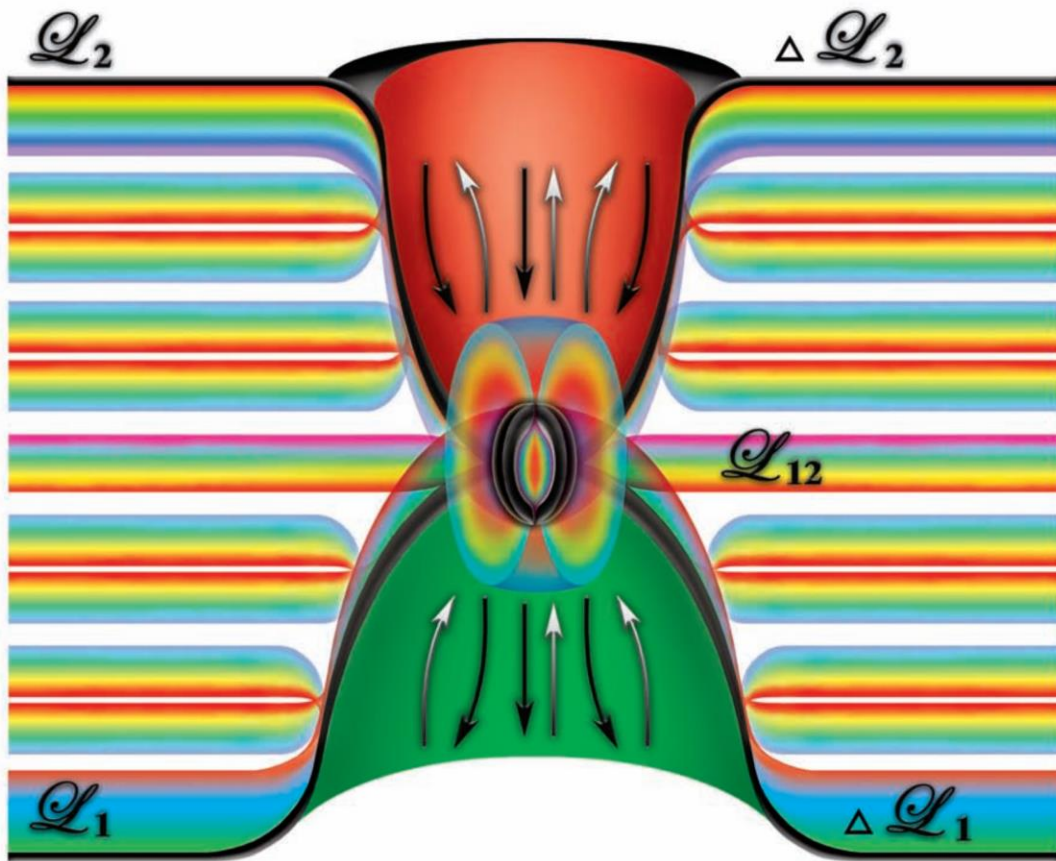
In other words, in the zone of closure, a synthesis of forms of matter of one of the two types of dimensions of matrix spaces may occur, due to the splitting of another type of matter. In this synthesis, matter of an intermediate type of dimensionality can be absorbed and - this is a matter of an intermediate type, which, in turn, causes instability in the matrix space with the type of quantization of the measures of the number γ_1 or γ_2 , depending on the direction of the flow of matter. Isn't it very similar, by its nature, to exothermic and endothermic reactions at the level of the microcosm, in which heat was either absorbed or released from the environment.

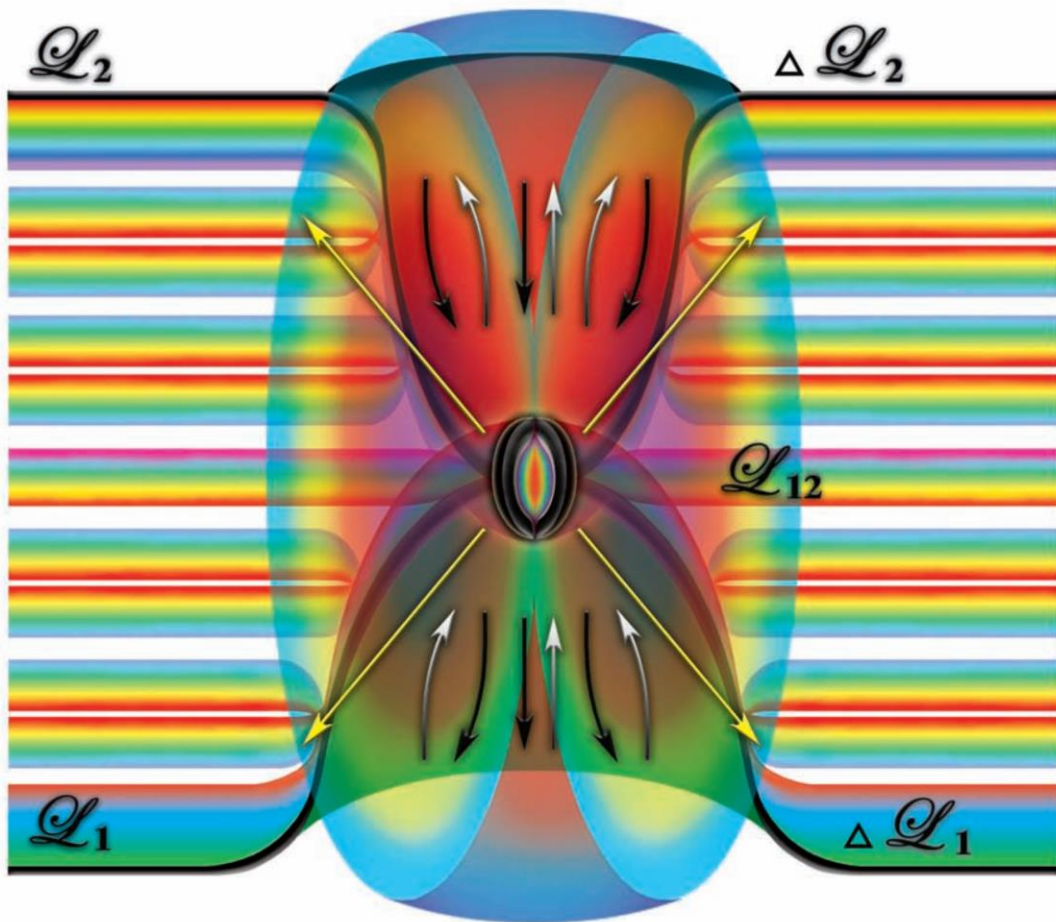
Let's return to the processes taking place in the zone of closure of two matrix spaces. Depending on how the three conditions listed above interact, a zone of synthesis of this type of matter, or a zone of decay of these matters, may arise in the zone of closure of two matrix spaces. In one case, there is a center of formation of space-universes with this type of quantization of the dimensionality of space, the supernalog of the star (**Fig. 2.3.1**). In another case, there is a center of decay of space-universes with this type of quantization dimensions of space (super analog of the "black hole").

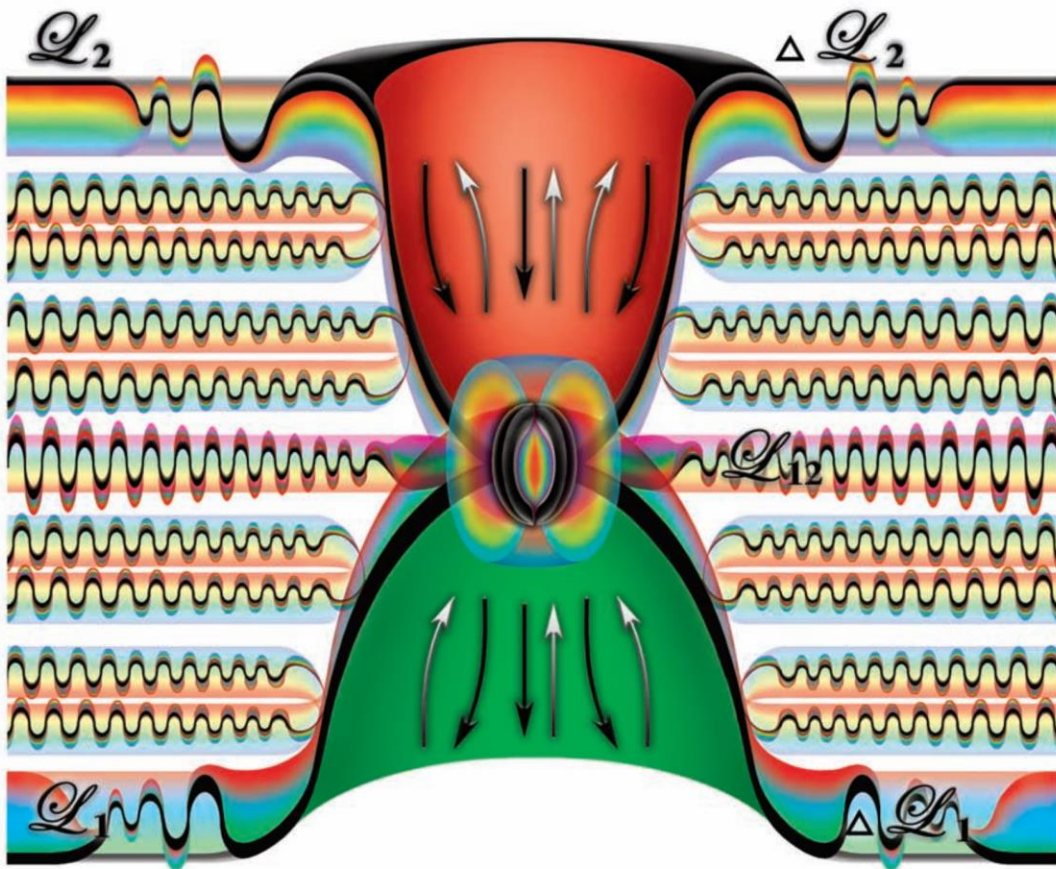
At the same time, the combined forms of matter of this type of quantization of dimensionality tend to accumulate in the zone of closure of the matrix spaces, and if the mass of matter flowing from the zone of closure is less than the mass of the combined matter, in this zone there is an excessive concentration of matter in the zone of closure of matrix spaces. Over time, the excess concentration becomes critical and begins to interfere with the flow of matter into this zone, which leads to the instability of the measures of this zone. A super-explosion occurs, in which an excess of synthesized forms of matter is ejected from the closing zone, and, at the same time, dimensional fluctuations occur within each of the matrix spaces (**Fig. 2.3.2**). In these zones fluctuations of the internal dimensionality of matrix space the process of formation of spacetime starts, from which systems of spacetime universes (metavalleys) are formed in the zones of internal dimensionality fluctuations of space (**Fig. 2.3.3**). Naturally, the amplitude of the internal dimensionality oscillation of matrix space increases with distance from the matrix space closing zone. And this leads to the fact that in these zones a different number of forms of matter of a given type can merge together. Moreover, the farther from the center of the matrix space closing zone the more matter forms can merge and form the substance (**Fig. 2.3.4**).

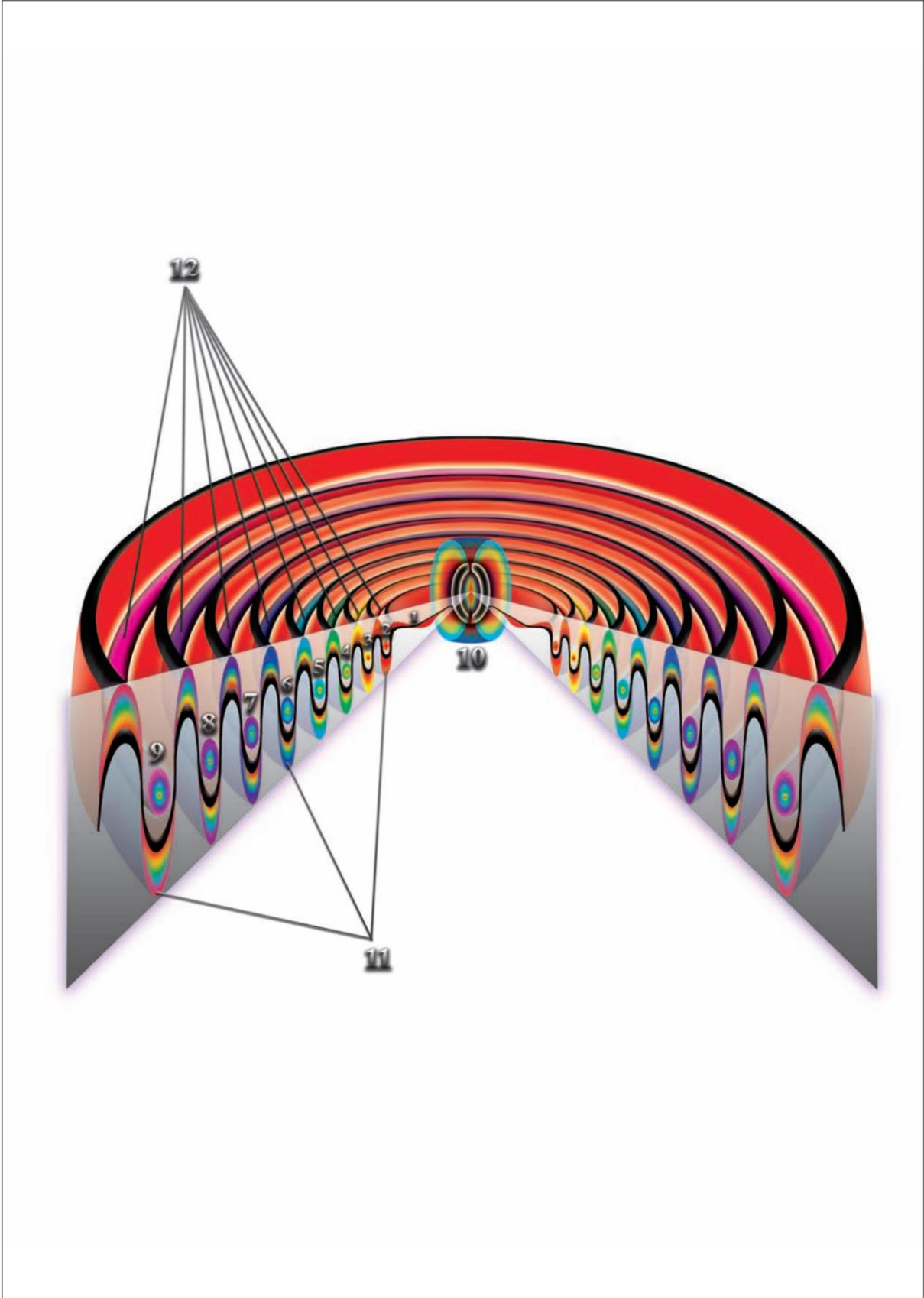
Two merged forms of matter, in the first zone from the center, form a metaverse of one space-the universe. Three merged forms of matter form a metaverse of a three space-universe in the next zone. When four forms of matter merge, a metaverse of a seven space-universe is formed. Merge five, respectively, gives twenty-five. The merger of six is sixty-six. At the confluence of seven - one hundred nineteen, eight - two hundred forty-six, nine - a four hundred fifty-nine space-universe forming the metaverse, in the corresponding zone of the inner dimension of this matrix space. The number of possible space-universes included in the metaverse is determined by the formula of the number of combinations of matter that form the substance of the space-universe (**Fig. 2.3.5**).

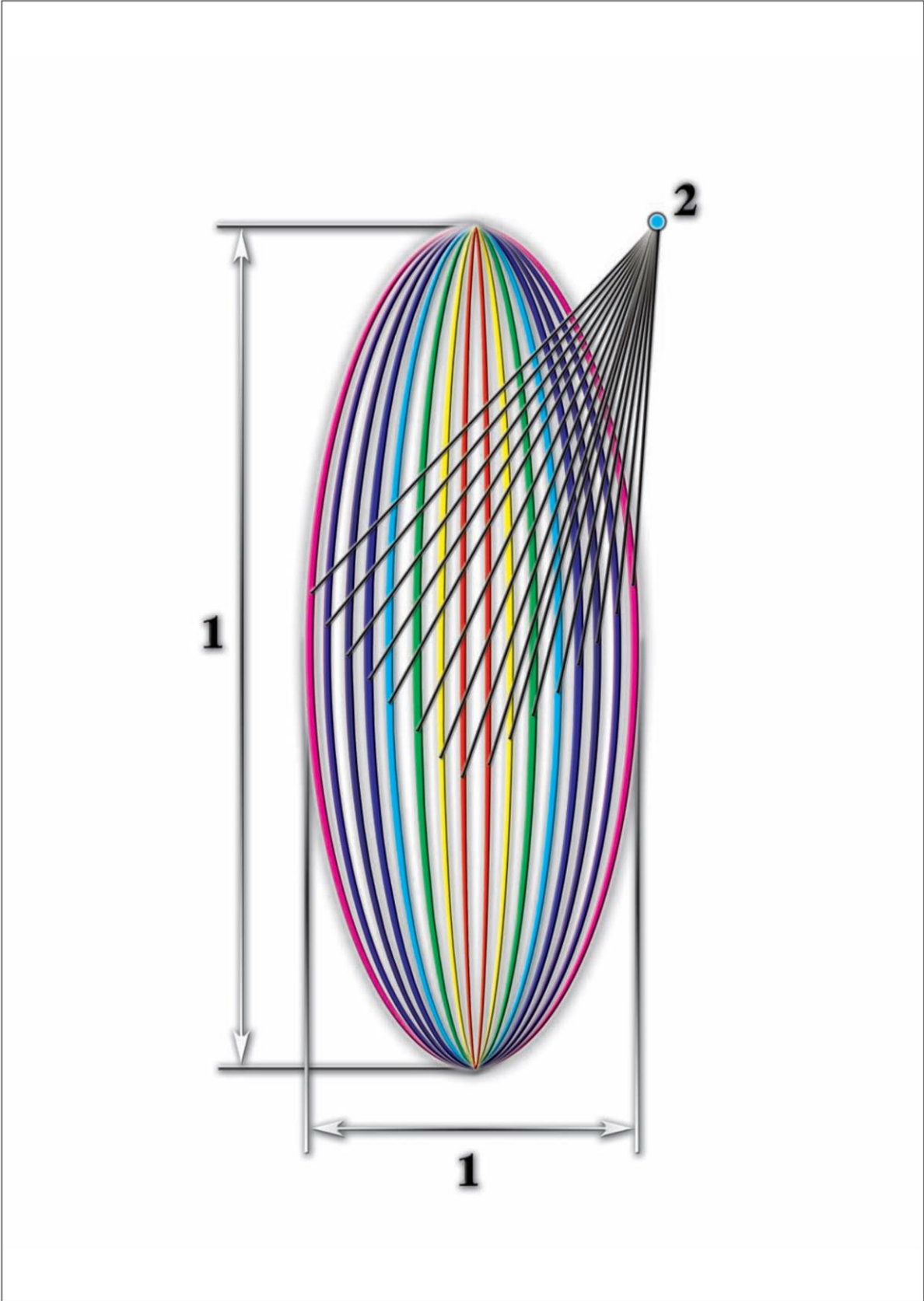
$$\sum_{2 \leq m \leq n} C_{mn} = n!/m!(n-m)! \quad (2.3.3)$$





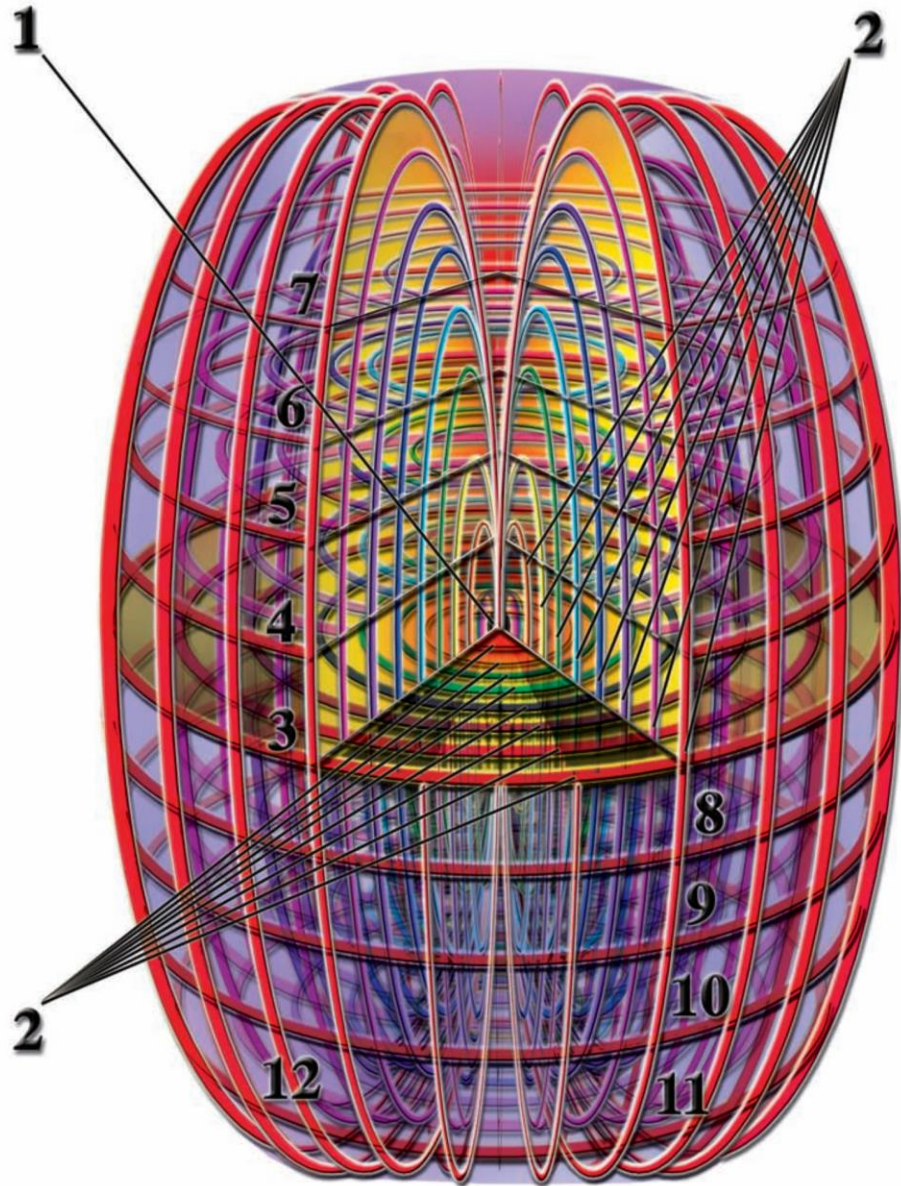






where: n is the maximum number of matters of a given type of quantum dimensionality, with a quantization coefficient γ_i , which form the space-universes in a given zone of internal oscillation of the dimensions of the matrix space. Most often, the number of space-universes forming a given metaverse is less than the maximum. And, the further away from the center of the zone of convergence of matrix spaces, the greater the difference between the possible and real number of spaces of the universes forming this metaverse. The further away from the center, the more "free places". The fact is that the conditions for quantization of the dimensionality of a given zone of dimensional fluctuations are only necessary conditions for the formation of space-universes. This condition becomes sufficient only when the necessary mass of matter for the synthesis of these space-universes falls into this zone of internal oscillation of the dimensionality of the matrix space. Although the mass of matter "ejected" from the zone of closure of matrix spaces during a superexplosion is huge, but always a finite quantity. This mass is enough to form a finite number of space-universes. After the super explosion, the zone of closure of matrix spaces decreases, which leads to a decrease in the mass of incoming matter. Over time, this process comes to a certain, balanced level. As a result of the superexplosion, a system of metaverses is formed, which we will conditionally call a first-order superspace, which is formed by the fusion of nine forms of matter (**Fig. 2.3.6**).

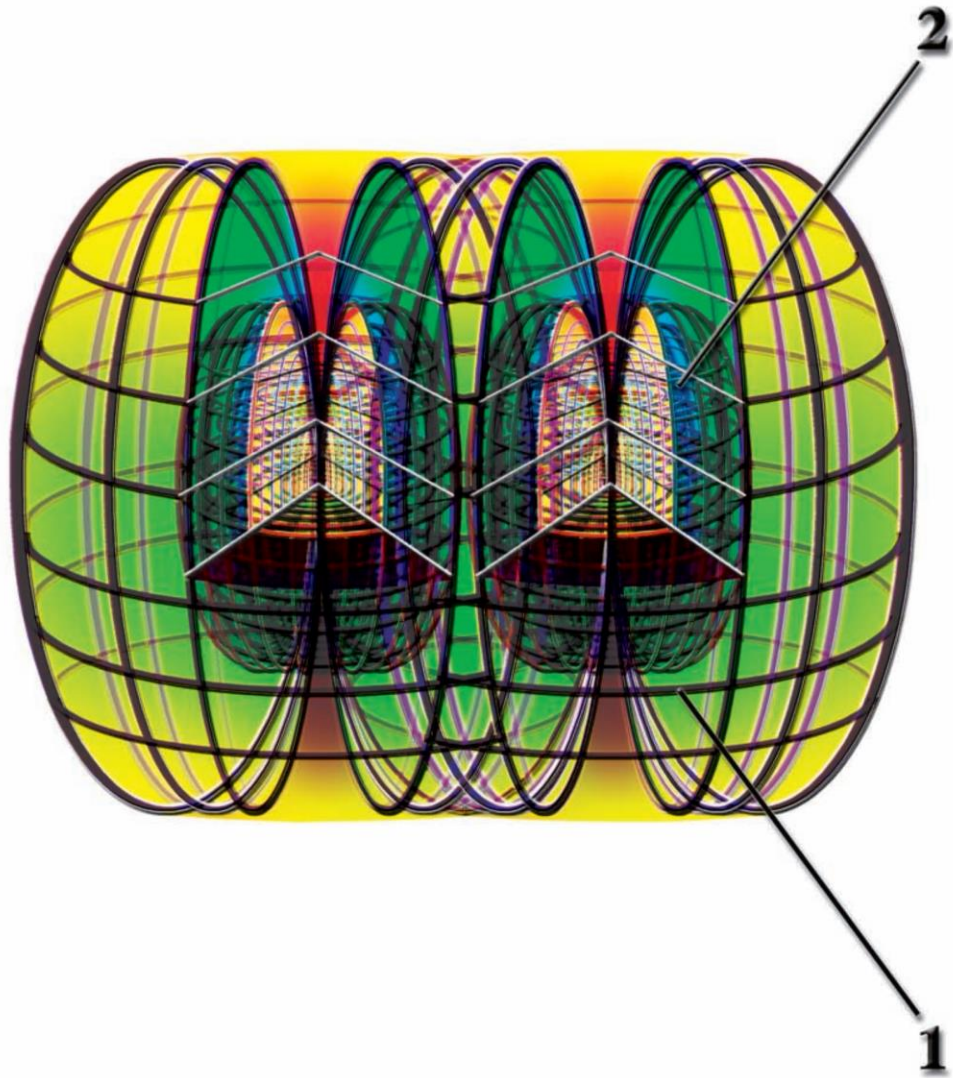
It should be noted that metaverses that have arisen in the zones of internal fluctuations in the dimensionality of the matrix space themselves influence the dimensionality of the matrix space surrounding them. The curvature that occurs when two matrix spaces are closed, is not the same in different directions. And this means some difference in both the form and the qualitative composition of the universes arising in these zones. Thus, there is an uneven distribution of matter in different directions. This, in turn, leads to a significant degree of secondary influence on the dimensionality of the matrix space by emerging metaverses in the corresponding zones. The curvature that occurs at the moment of a superexplosion also has a different sign along the axis passing through the zone of closure of matrix spaces. Therefore, metaverses appearing in these inner zones of curvature of the matrix space cause a secondary curvature of the dimension in opposite directions, parallel to the same axis passing through the zone of closure of matrix spaces. This counter-deflection from two sides, as metaverses are formed, leads to a secondary curvature of the matrix space in the zone of the horizontal dimension of the matrix space, which existed before the superexplosion.

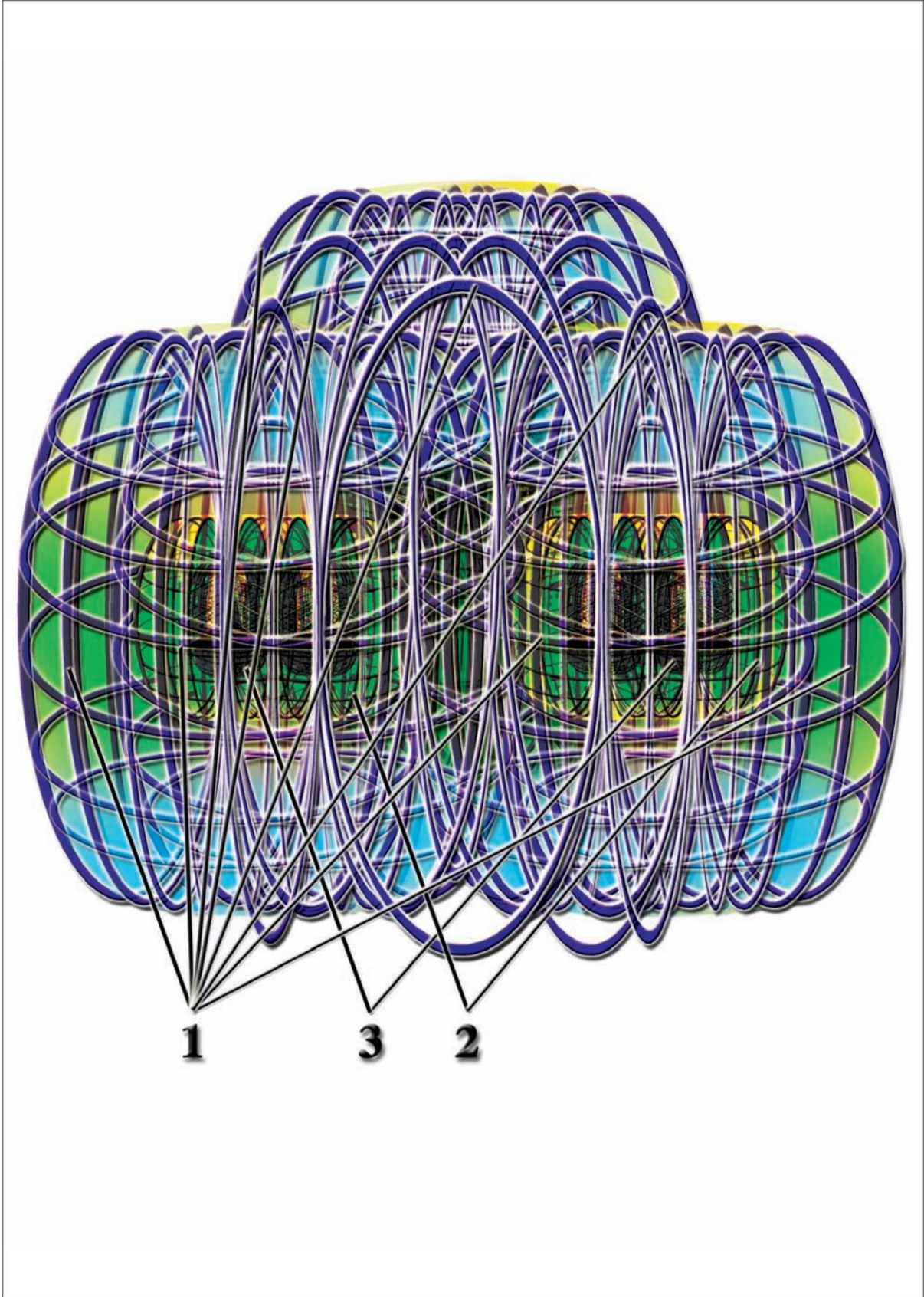


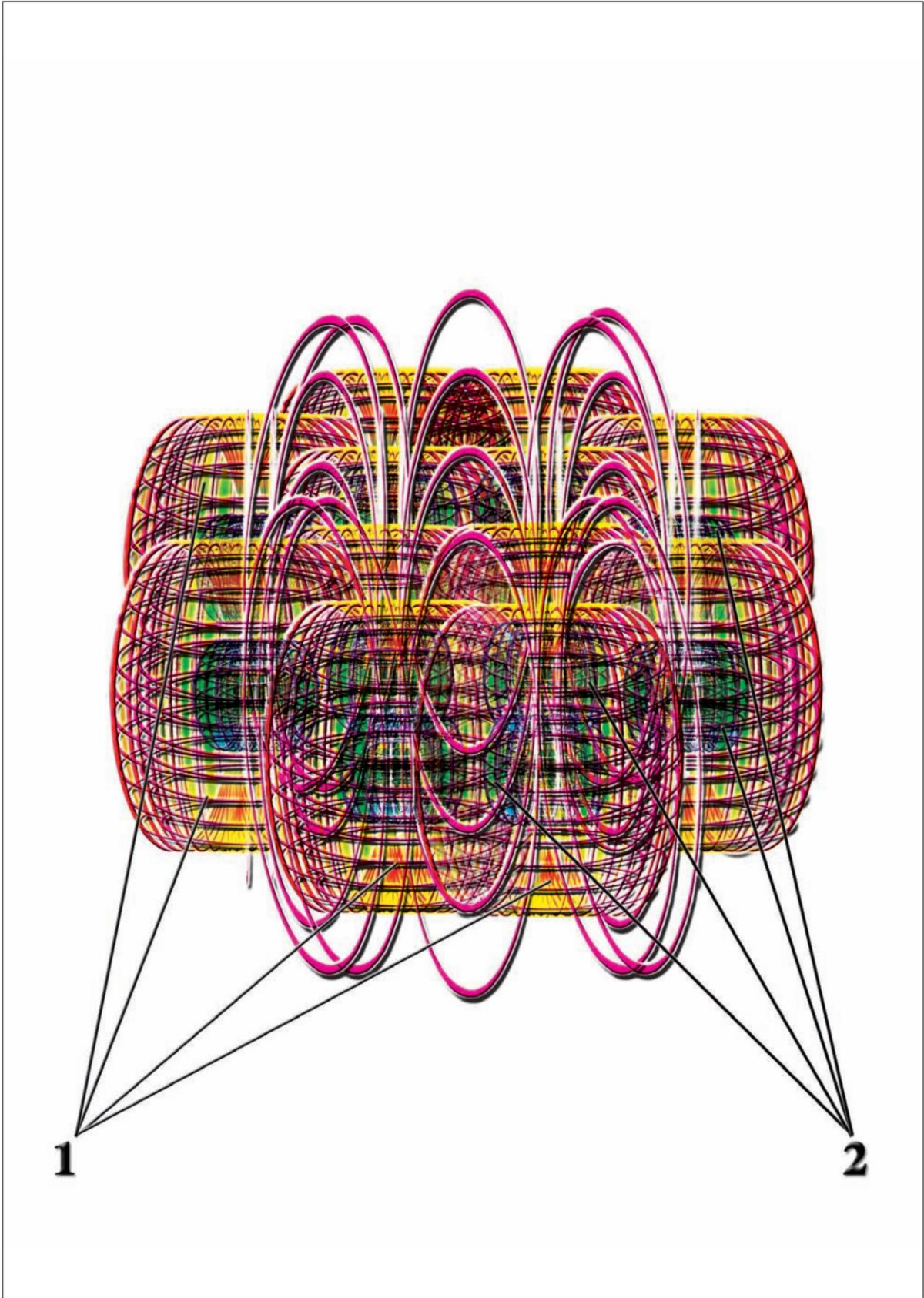
Thus, as a result of the evolution of the processes described above, a closed system of metaverses — a first-order superspace - emerges. In our matrix space, a counter-closure, which has arisen due to the influence of metaverses on the dimensionality of the matrix space, occurs in metaverses formed by nine forms of matter. At the same time, the superspace closes like the flaps of a mollusk's shell. The forms of matter flowing through the zone of closure of matrix spaces do not have another zone of curvature of the dimension of matrix space in which they could merge. Such zones arise only when two zones of convergence of matrix spaces of the same sign arise relatively "close" to each other. At the same time, counter waves of internal curvature of the dimension of the matrix space are formed, with the resonance of which, additional zones of internal curvature of the dimension of the matrix space arise. In these zones, metaverses are formed, which arose when the merging of ten forms of matter, which, in turn, again cause the counter-closure of these metaverses, as a consequence of the influence of these metaverses on the dimensionality of the matrix space in which they are located. A second-order superspace of ten forms of matter is formed (**Fig. 2.3.7**).

At the same time, the closure of the metaverses of the second-order superspace occurs at a different balanced level of the dimensionality of the matrix space than the level of closure of the first-order superspace. This is due to the varying degree of influence of metaverses formed by ten and nine forms of matter on the dimensionality of the physical space. For the possibility of the formation of metaverses from eleven forms of matter, it is necessary that three second-order superspaces be at a distance from each other no more than their own size. At the same time, three counter waves of internal curvature of the matrix space arise, which, with resonance, create additional zones of curvature. In these zones, the synthesis of metaverses from eleven forms of matter takes place. The counter-closure of the metaverses occurs again, but at a different balanced level of the matrix space. A closed spatial system is formed — a third-order superspace (**Fig. 2.3.8**).

Similarly, in order to be able to merge the twelve forms of matter, it is necessary that there be four counter waves of internal sparking of the matrix space, which, in the resonant zones, create conditions for the formation of metaverses of twelve forms of matter. At the same time, a counter-closure occurs again at another balance level of the dimensionality of the matrix space and a new, very stable, system of metaverses is formed — a superspace of the same order (**Fig. 2.3.9**).

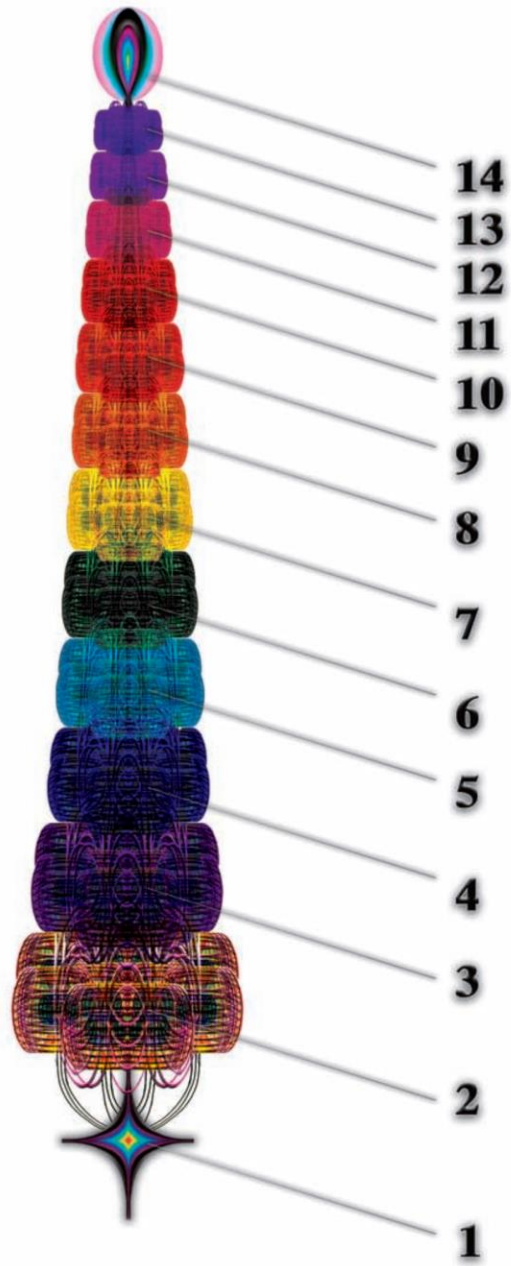






Five fourth-order superspaces, one of which is on a different spatial level from the others, create conditions for the formation of metaverses from thirteen forms of matter. There is a counter-closure, in which a system of metaverses is formed, which so strongly affects the dimensionality of the matrix space that another system of metaverses arises, similar in structure to the fourth-order superspace, but already formed by twelve forms of matter. These two systems create conditions for the formation of the next system of metaverses along a common axis, but already from eleven forms of matter. The decrease in the number of forms of matter forming each subsequent spatial formation is due to the fact that the level of closure of the metaverses changes its sign. In other words, the curvature of the dimension of the matrix space does not increase, but decreases (**Fig. 2.3.10**).

The evolution of this process leads to a consistent formation along the common axis of metaverse systems. The number of matters forming them, at the same time, gradually degenerates to two. At the ends of this "ray", zones are formed where no matter of this type can merge with another or others to form metaverses. In these zones, there is a "pushing" of our matrix space and there are zones of closure with another matrix space. At the same time, there are again two options for closing matrix spaces. In the first case, the closure occurs with a matrix space with a large quantization coefficient of the dimensionality of the space and, through this the closing zone, the matter of another material space can flow and split, and a synthesis of our type of matter will arise. In the second case, the closure occurs with a matrix space with a lower quantization coefficient of the dimensionality of space — through this zone of closure, the matter of our matrix space will begin to flow and split in another matrix space. In one case, an analogue of a super-scale star appears, in the other - an analogue of a "black hole" of similar dimensions. This difference between the variants of matrix spaces is very important for understanding the emergence of two types of sixth—order superspaces - the six-beam and the anti-six-beam. The fundamental difference of which lies only in the direction of the flow of matter. In one case, matter from another matrix space flows through the central zone of the matrix spaces closing and flows out of our matrix space through the zones at the ends of the "rays". In the antisestilbeam, matter flows in the opposite direction. Matter from our matrix space flows through the central zone, and matter from another matrix space flows through the "ray" zones of closure. As for the six-beam, it is formed by the closing of six similar "rays" in one central zone. At the same time, around the center there are zones of curvature of the dimensionality of matrix space, in which metaverses of fourteen forms of matter are formed, which, in turn, close and form a closed system of metaverses, which unites six rays into one common system - a six-beam (**Fig. 2.3.11**).





Moreover, the number of "rays" is determined by the fact that in our matrix space, a maximum of fourteen forms of matter of this type can merge with the formation. At the same time, the dimension of the resulting union of metaverses is equal to π ($\pi = 3.14 \dots$). This cumulative dimension is close to three. That is why there are six "rays", that is why they talk about three dimensions, etc...

Thus, as a result of the sequential formation of spatial structures, a balanced system of distribution of matter between our matrix space and others is formed. After the completion of the formation of a Six-beam, the stable state of which is possible only with the identity between the mass of matter flowing in and flowing out of it:

$$\iint N^{(+)} dm_i di = 6 \iint \eta^{(-)} dm_i di \quad (2.3.4)$$

where:

$N^{(+)}$ is the central region of the matrix spaces closing, through which matter flows into our matrix space;

$\eta^{(-)}$ — "ray" zones of convergence with another matrix space through which matter flows out of our matrix space;

i is the number of forms of matter forming a six-beam;

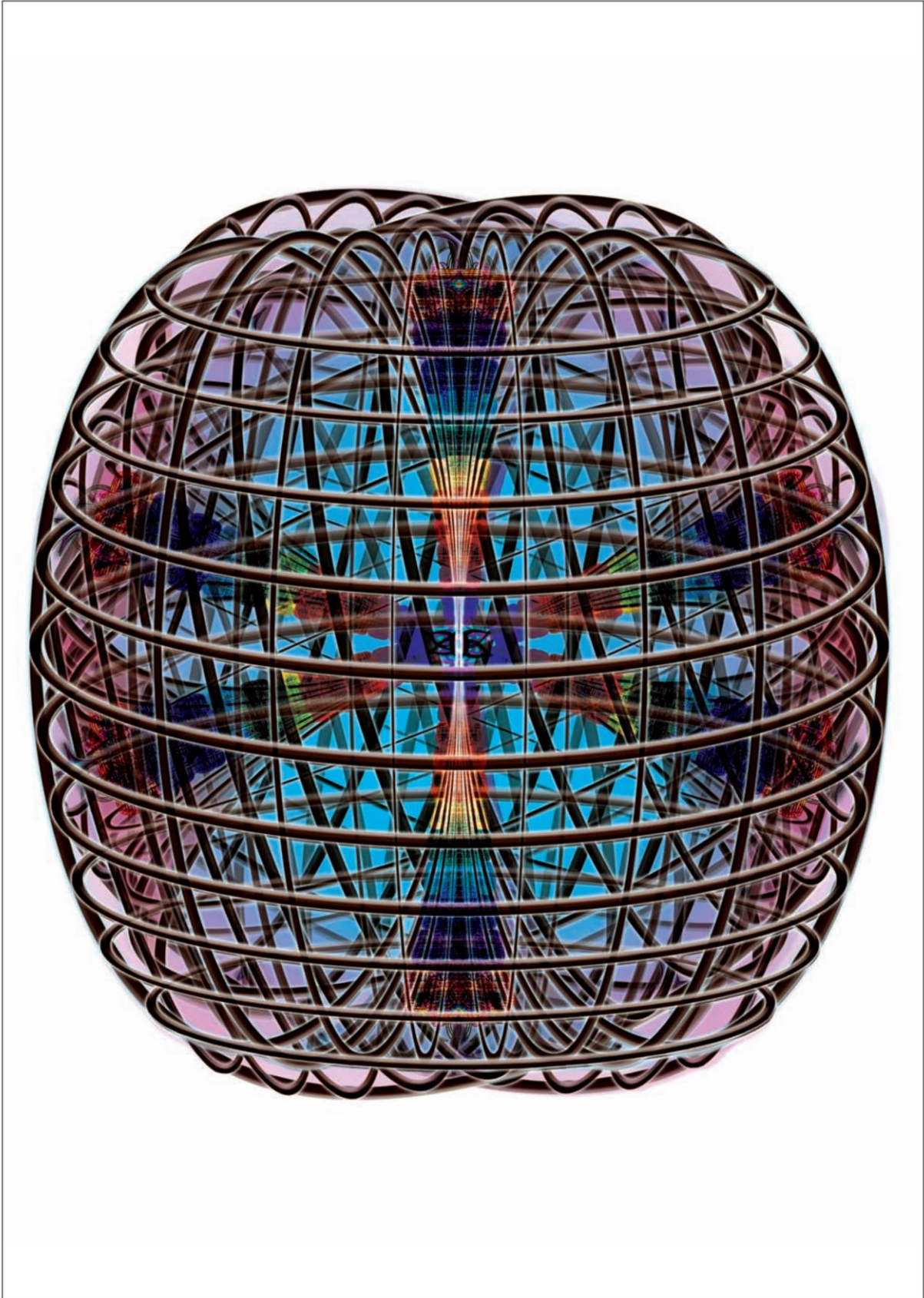
m_i is the mass of matter.

The identity (2.3.4) for our entire matrix space can be written in a more convenient form:

$$\iint N^{(+)} dm_i di - 6 \iint \eta^{(-)} dm_i di = 0 \quad (2.3.5)$$

As can be seen from this formula, the laws of conservation of matter are not violated at any level of spatial formations. From the micro cosmos to the macrocosm, they are common. The unity of the laws of which follows, at least from the fact that the microcosm is the structural basis of the macrocosm. The circulation of matter in the anti-six-beam goes in the opposite direction, from the boundaries of this superspace to its center. Moreover, the curvature of the matrix space is maximal in the boundary (**Fig. 2.3.12**). The condition for the stable state of the anti-six-beam is the harmony between the flowing matter through the central zone of the matrix spaces and synthesized in the boundary zones of the closure (external) matter of this type of quantization of dimensionality. This balance can be described by the identity of the form:

$$\iint N^{(-)} dm_i di = 6 \iint \eta^{(+)} dm_i di \quad (2.3.6)$$



where:

$\mathbf{N}^{(-)}$ is the central zone of closure of matrix spaces, through which matter flows out of our matrix space (the "black hole");

$\eta^{(+)}$ is the marginal zones of closure of matrix space, through which matter flows into our matrix space;

m_i is the mass of matter of this type.

The identity (2.3.6) can be rewritten in a more understandable form:

$$\iint \mathbf{N}^{(-)} dm_i di - 6 \iint \eta^{(+)} dm_i di = 0 \quad (2.3.7)$$

Naturally, there are many such superspaces in our matrix space. They create, as it were, nodes in the matrix space and are "atoms" in it. Again, the structure of the macrocosm is similar to the structure of the microcosm. This is another confirmation of their unity. The condition for the balanced stability of our matrix space is the balance between the matter synthesized in the matrix space and the matter flowing through the zones of closure of the matrix spaces. This condition can be written as:

$$\eta_1 [\iint \mathbf{N}^{(+)} dm_i di - 6 \iint \eta^{(-)} dm_i di] \equiv \eta_2 [\iint \mathbf{N}^{(+)} dm_i di - 6 \iint \eta^{(-)} dm_i di] \quad (2.3.8)$$

where:

η_1 - number of six-beamers;

η_2 - number of anti-six-beam;

$\mathbf{N}^{(+)}$ - the central region of matrix spaces closing, through which the matter flows into our matrix space (six-beam);

$\mathbf{N}^{(-)}$ - the central region of matrix spaces, through which matter flows out of our matrix space;

$\eta^{(-)}$ - ray closing zones with other matrix spaces, through which the matter flows out of our matrix space;

$\eta^{(+)}$ - border zones of joining other matrix spaces through which the matter inflows into our matrix space;

i - the number of matter forms;

m - mass of matter.

Analyzing identities (2.2.4, 2.3.6, 2.3.8), it is easy to conclude that they can be fulfilled only under conditions

$$[\iint \mathbf{N}^{(+)} dm_i di - 6 \iint \eta^{(-)} dm_i di] = 0$$

$$[\iint \mathbf{N}^{(-)} dm_i di - 6 \iint \eta^{(+)} dm_i di] = 0 \quad (2.3.9)$$

This identity reflects the law of conservation of matter and determines the possibility of a stable state of the universe. And it will be feasible only if there is a balance between the matter flowing in and flowing out of our matrix space, the condition for the fulfillment of which can be written as:

$$\iint N^{(+)} dm_i di - \iint N^{(-)} dm_i di - 6 \iint \eta^{(-)} dm_i di = 6 \iint \eta^{(+)} dm_i di = 0 \quad (2.3.10)$$

This identity will be feasible if:

$$\iint N^{(+)} dm_i di - \iint \eta^{(-)} dm_i di = 0$$

$$\iint N^{(-)} dm_i di - \iint \eta^{(+)} dm_i di = 0 \quad (2.3.11)$$

or:

$$\iint [N^{(+)} dm_i di - N^{(-)} dm_i di] = 0$$

$$\iint [\eta^{(-)} dm_i di - \eta^{(+)} dm_i di] = 0 \quad (2.3.12)$$

or:

$$\iint [N^{(+)} - N^{(-)}] dm_i di = 0$$

$$\iint [\eta^{(-)} - \eta^{(+)}] dm_i di = 0 \quad (2.3.13)$$

The fulfillment of these identities is possible only under the conditions when:

$$N^{(+)} = N^{(-)}$$

$$\eta^{(-)} = \eta^{(+)} \quad (2.3.14)$$

There can be an unlimited number of matrix spaces, but for a certain space quantization coefficient, γ_i , only one matrix space is possible. And the qualitative structure of this matrix space is determined by the type of matter forms and the degree of their reverse (secondary) influence on the spaces. **Space affects matter, but matter also affects space.** A change in the qualitative state of space is manifested in a change in the qualitative state of matter.

A change in the qualitative state of matter affects the qualitative state of space with the opposite sign. As a result of the feedback between space and matter, manifested in their mutual influence on each other, a compensatory equilibrium arises between space and matter located in this space.

As a result of the manifestation of this compensative equilibrium between space and matter, **each particular material space with a given quantization coefficient of the space γ_i is finite, both in size and in shape.**

2.4. The nature of stars and "black holes"

Quantization of space according to the forms of the matter forming them creates a system of spaces, each of which is qualitatively different from the others. Each layer is a space with the dimension of L_i in this system qualitatively differs from its neighbors by one primary form of matter.

There is a layer-space with a level of dimensionality $L_{i+1} = L_i + \gamma_i$ and having one more primary matter in its qualitative composition, and there is a layer-space with a level of dimensionality $L_{i-1} = L_i - \gamma_i$ having one less primary matter in its qualitative composition. These are the so-called parallel Universes, which have a different qualitative structure and therefore do not have direct contact with each other. But they, as with throughout, have, in their qualitative structure, common qualities — one or another number of primary matter that makes up the qualitative composition of each of these universes. The qualitative composition of neighboring space-universes differs only by one primary matter in their qualitative composition and their dimensionality - by the magnitude of the quantization coefficient of these primary matter - γ_i , and there is a difference in dimensionality between them.

$$L_{i-1} = L_i - \gamma_i < L_i < L_{i+1} = L_i + \gamma_i \quad (2.4.1)$$

This difference is directed from the space-universe with a larger dimension to the space-universe with a smaller one. The direction of this difference has a fundamental role, since it determines the nature of the growth, evolution and death of stars in each specific space of the universe. It was this difference in dimensionality that was recorded by physicists from the University of Chester and the University of Kansas in the United States²¹, Dr. George Nod Land and Dr. John Ralston. "Our" universe really has an "up" and "down", as well as "east" and "west". The all-space can be formed by at least two primary dimensions and, at the same time, will have a minimum dimension in this particular space. The value of the minimum dimensionality of the matrix space is determined by the quantization coefficient of the dimensionality of space for the forms of matter forming it. In addition, the forms of matter quantized by the given quantization coefficient of the space γ_i , in turn, affect the dimensionality of space.

Therefore, in the process of forming a matrix space, the number of single primary forms of matter may be greater than their number forming a given matrix space. The secondary degeneration of space caused by the impact of matter on the space in which they are located is a limiter of the upper limit of the number of forms of matter "participating" in the formation of matrix space. Thus, each matrix space is limited by the number of forms of matter forming it, both from the bottom and from above. It is the mutual influence of space on matter and matter on space that leads to the fact that each particular spatial formation is limited.

$$L_i = L_2 + \gamma_i (i-2) \quad (2.4.2)$$

And now, let's figure out what is happening at the level of our space-universe. Our space-universe has a dimension equal to $L_7 = 3.00017$. This dimensionality allows seven forms of matter to merge into a single whole, which form the entire substance of our universe. In order for conditions to arise for the fusion of another form of matter of our type, it is necessary to change the so-called dimensionality of the matrix space by the value $\gamma = 0.020203236$. The quantification of the dimensionality of the matrix space, as in an atom, is the quantification of electronic levels. Therefore, in the discrete zones of the matrix space, the synthesis of matter from a different number of materials takes place. The dimensionality of each space - the universe — is heterogeneous, which leads to the closure of inhomogeneities in these zones, two spaces combined with different dimensionality.

Let 's consider the three nearest countries - universes with dimensions:

$$L_6 = 2.979966764$$

.....

$$L_7 = 3.00017 \text{ (our universe)}$$

$$L_8 = 3.00017 + 0.020203236 = 3.020373236$$

In the zones of inhomogeneity of the dimensionality of space, neighboring spaces-universes are closing together. When the spaces-universes L_8 and L_7 are closed, a channel is formed between them. Through this channel, matter from the L_8 space-universe begins to flow into the L_7 space-universe. At the same time, there is a qualitative difference between the matter of the Universe with L_8 and the matter of the Universe with L_7 . Therefore, in the zone of the closure of these spaces, the matter of the space of the universe with L_8 decays and from the matter forming it, the matter of the space-universe with L_7 is synthesized. In other words, a substance formed by eight forms of matter decays and a substance from seven forms of matter is synthesized. The zone of closure of these spaces has a dimension lying in the interval:

$$3.00017 < L_{ep} < 3.020373236$$

Therefore, the liberated eighth form of matter continues to be in this zone, remaining free, uncollected. Over time, it accumulates in the closing zone and begins to influence the dimensionality of this zone, within limits. Which leads to an increase in the distance between

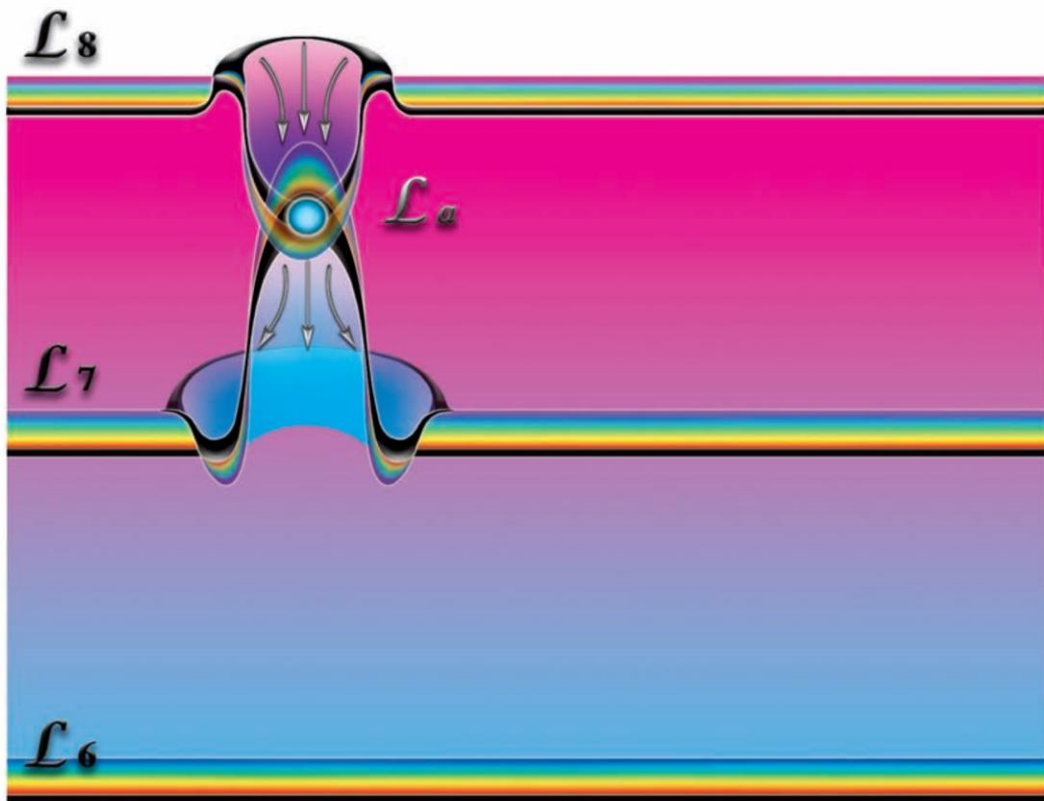
the space-universes and causes an even greater outflow of space with dimension L_8 . This leads to the occurrence of conditions; when a part of a substance with the dimension L_7 becomes unstable and begins to disintegrate into its component parts and thermonuclear reaction occurs, so to speak. This is how the stars "light up" (**Fig. 2.4.1**). At the same time, the zones of inhomogeneities can be with both $\Delta L > 0$ and $\Delta L < 0$, relative to our Universe. In the case when the heterogeneities of the dimension of space are less than zero $\Delta L < 0$, the spaces of universes with dimensions L_7 and L_6 are closed. At the same time, conditions for the flow of matter arise again, only this time, a substance with a dimension of L_7 flows into a space with a dimension of L_6 . Thus, the spatial universe with dimension L_7 (our universe) loses its substance. And this is how mysterious "black holes" appear (**Fig. 2.4.2**). In this way, stars and "black holes" are formed in the zones of heterogeneities of the dimensionality of space-universes. At the same time, there is a flow of matter, matter between different space-universes.

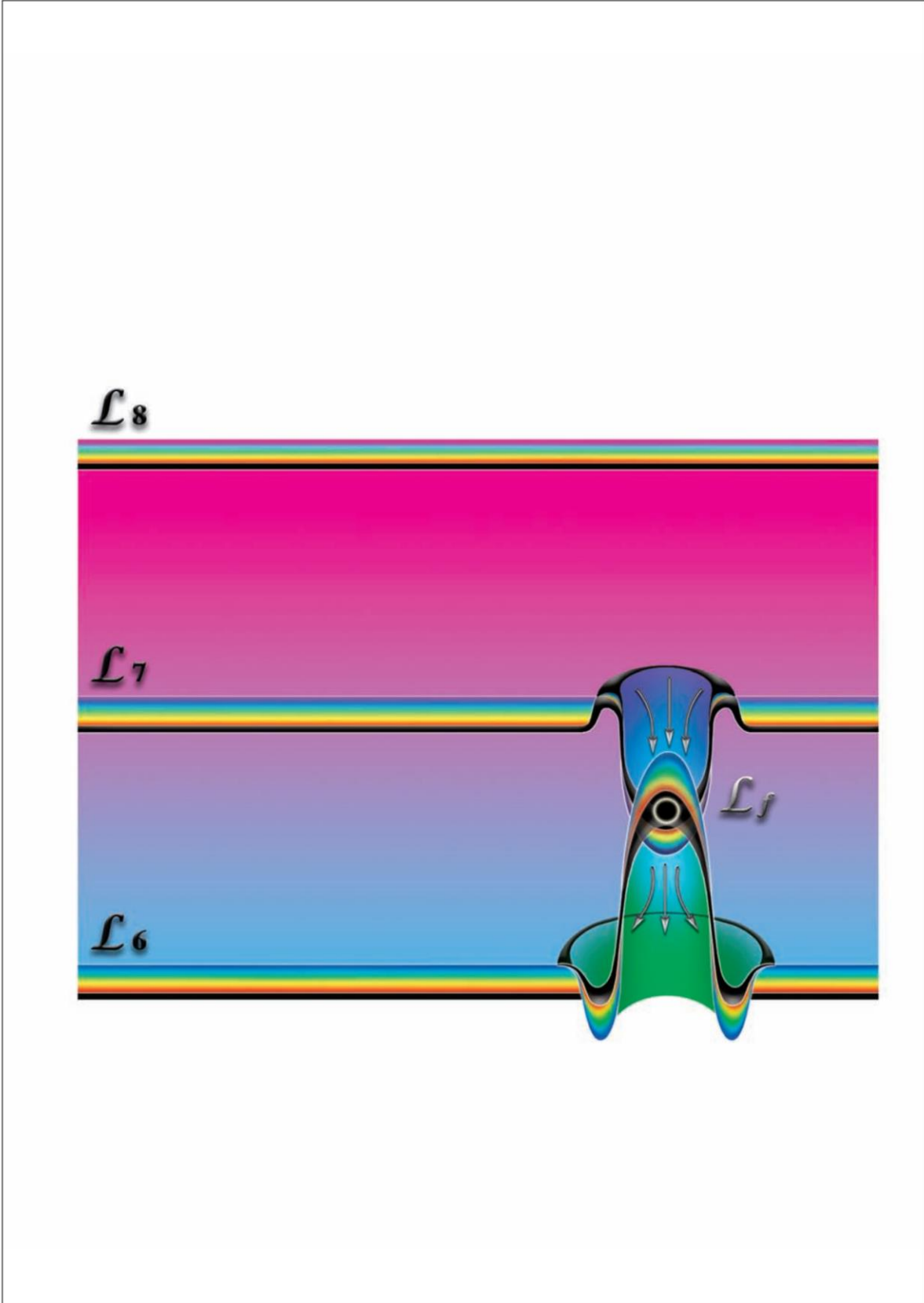
There are also space-universes with L_7 dimensions, but with a different composition of matter. At the junction, heterogeneities of space-universes with the same dimensionality, but different qualitative composition of the substance that forms them, a channel between these spaces emerges. At the same time, substances flow both into one space-universe and into the other one. This is not a star or a "black hole, but a transition zone from one space to another. The zones of inhomogeneity of space dimensionality, in which the above-described processes take place, we denote as zero-transitions. Moreover, depending on the sign of ΔL , we can talk about the following types of these transitions:

- 1) Positive zero-transitions (stars) through which matter flows into this space-universe from another space-universe of higher dimensionality ($\Delta L > 0$) n^+ .
- 2) Negative zero-transitions, through which matter flows from this space-universe to another space-universe with lower dimensionality ($\Delta L < 0$) n^- .
- 3) Neutral zero-transitions, when matter flows in both directions and are identical to each other, and the dimensions of the space-universe in the closing zone are practically the same: n^0 .

If we continue the analysis of what happens, we will see that each space-universe receives matter through stars and loses it through black holes. For stable existence of this space to be possible, there has to be a balance between the matter entering and leaving this space-universe. The law of conservation of matter must be fulfilled, subject to the stability of space. This can be displayed as a formula:

$$\iint n^+_{(i)k} dkdi + \iint n^0_{(ij)k} m_{(ij)k} dkd(ij) = \iint n^-_{(i)k} m_{(i)k} dkdj \quad (2.4.3)$$





Where:

$n^{+}_{(i)k}$ — a positive zero-transition(star),

$n^0_{(ij)k}$ — a neutral zero-transition,

$n^{-}_{(j)k}$ — a negative zero-transition,

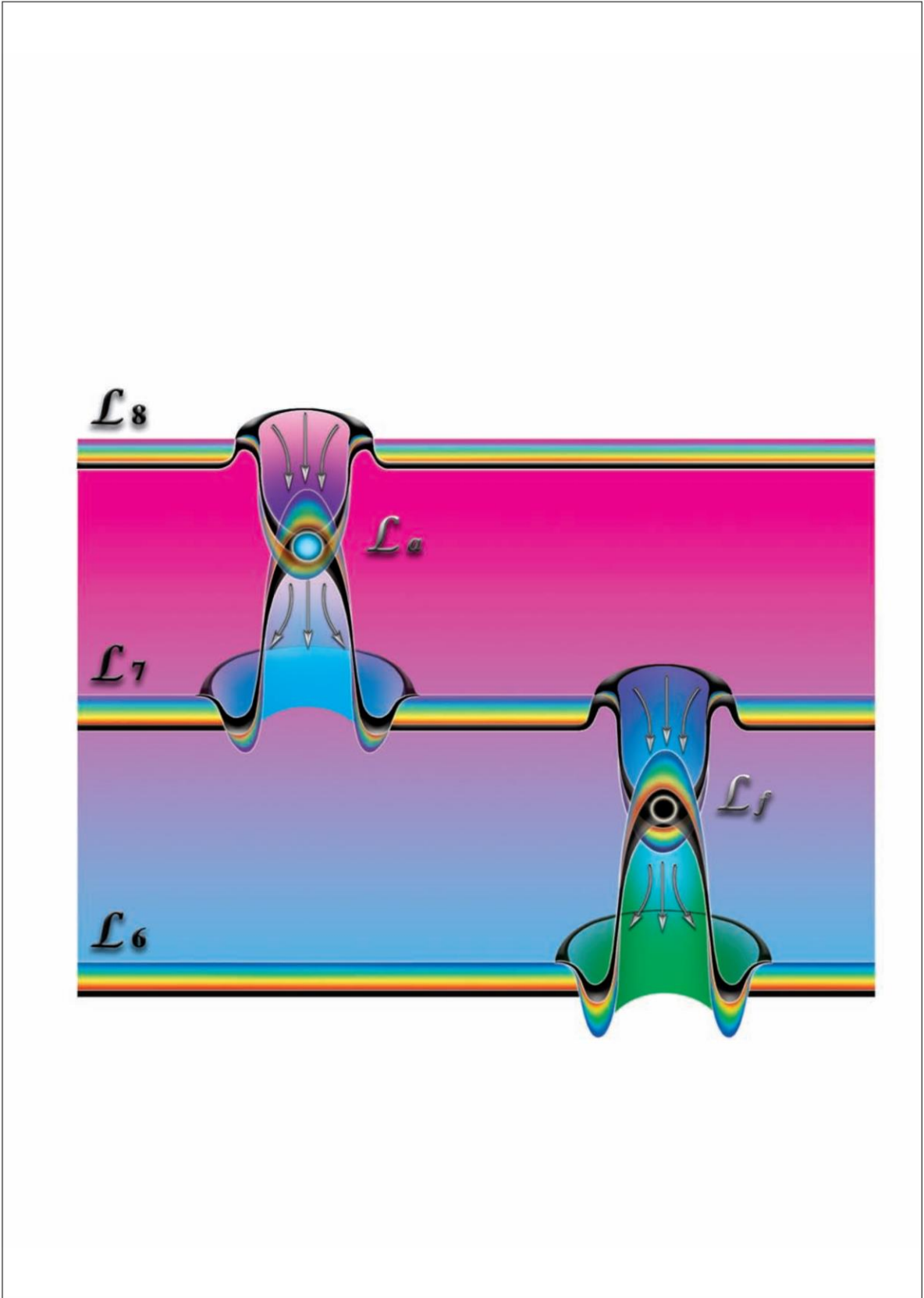
$m(i)k$ — the total mass of matter forms flowing through the star,

$m(j)k$ — the total mass of matter forms flowing through a given "black hole" into another space-universe,

$m(ij)k$ — the total mass of matter forms flowing through the zone of zero-transition.

Thus, between the space-universes with different dimensions, through the zones of heterogeneity, the circulation of matter occurs between the spaces forming this system (**Fig. 2.4.3**). Through zones of heterogeneity of dimensionality (zero-transitions) a transition from one space-universe to another is possible. At the same time, there is a transformation of the substance of our space-universe into the substance of the space-universe, where the transfer of matter is carried out. So, unchanged "our" matter cannot make its way into other spacetimes. The zones through which such a transition is possible are both "black holes" in which a complete decay of a substance of this type occurs, and neutral zero transitions through which a balanced exchange of matter occurs. Neutral zero transitions can be stable or temporary, appearing periodically or spontaneously. There are a number of areas on Earth where neutral zero transitions periodically occur. And if cars, planes, boats, or people come within their limits, then they disappear without a trace. Such zones on the Earth are: the Bermuda Triangle, areas in the Himalayas, the Permian Zone and others. It is practically impossible, in case of falling into the zone of zero-transition action, to predict to which point and to which space matter will move. Not to mention the fact that the probability of returning to the starting point is almost zero. It follows from this, that neutral zero transitions cannot be used for purposeful movement in space.

The evolution of the life of stars is no less interesting by its nature. Each star "lives" for billions of years after which it "dies". During these billions of years, matter from the space-universe with a larger dimension L_8 enters the space-universe, through the closing zone, with a smaller dimension L_7 . At the same time, this substance becomes unstable and decays into the primary matter that form it. The seven primary matter merges again, forming a physically dense substance of the space-universe L_7 . At the same time, there is such a level of dimensionality in the zone of closure that the atoms of those elements are synthesized whose own level of dimensionality allows them to maintain their stability. In the upper stability zone of a physically dense substance, only so-called light elements such as hydrogen (**H**) and helium (**He**) are "located". Therefore, the synthesis of these elements takes place in the closure zone. And it is not by chance that most of the matter of our universe is heterogeneous. In the closing zone, an active process of hydrogen synthesis takes place, the masses of which form the basis of stars. This is how stars are born — the so-called blue giants (**Fig. 2.4.1**).



The initial density of "newborns" is very small, but due to the fact that the closure zone is heterogeneous in dimensionality, there is a difference (gradient) of dimensionality in the direction of the center. As a result, the hydrogen molecules begin to move towards the center of the closure zone. The process of star compression begins, during which the density of stellar matter begins to grow rapidly. As the density of the stellar space increases, the volume occupied by the star decreases and the degree of influence of the mass of the star increases, both at the level of the dimensionality of the closure zone and at the atomic level. Thus, the star's own level of dimensionality begins to decrease, and the processes of synthesis of new heavier elements begin inside the star itself. A so-called thermonuclear reaction occurs and the star begins to emit a whole spectrum of waves as a side effect of the synthesis of elements. It should be noted that it is precisely due to this "side effect" that the conditions for the beginning of life arise. Two processes occur in parallel in the closure zone: the synthesis of hydrogen during the decay of the matter of space - all with a higher level of intrinsic dimensionality (the substance formed by the synthesis of eight forms of primary matter) and the synthesis of heavier elements from hydrogen during thermonuclear reactions. As a result of these processes, the star decreases its volume and, as a consequence of an increase in the mass of the proportion of elements heavier than hydrogen, the level of the star's own dimensionality also decreases. Which in turn reduces the closing zone. In other words, a star "born" by another space of the universe for our space-universe is gradually moving away from its "mother".

It is a curious analogy with the development of an embryo inside the womb, when a fetus "woven" from the mother's blood and flesh gives birth to the mother's womb and starts independent life, and a star "born" by the space-universe leaves the mother's womb, when the level of its own dimension decreases as a result of increasing the degree of influence on the surrounding space. Having separated from the "maternal" space-universe, the star starts its own life - life which lasts for billions of years, after which it "dies". True, stars, in turn, succeed in "giving birth" to planetary systems that have a chance of life.

Consider the mechanism of the birth of a planetary system. In the process of star compression, the balance between the radiating surface and the radiating volume is disturbed. As a result, primary matter accumulates inside the star. Over time, as a result of thermonuclear reactions, stellar matter loses the simplest atoms, such as hydrogen, helium, etc. and an increasing percentage of it is beginning to be made up of heavy elements. The size of the star is decreasing, it is becoming more and more dense, heavy, and the degree of influence on the dimensionality of the surrounding space is becoming more and more strong. If at the beginning of its evolution the star had the dimensionality of the surrounding space equal to $3.00017 < L_a < 3.02037$, then, with its compression, it causes a secondary degeneration of space by a certain amount. And this leads to the fact that the dimensionality of the surrounding space becomes equal:

$$3.00017 < (L_a - \Delta L) < 3.02037$$

$$3.00017 < L_b < 3.02037$$

$$L_b = L_a - \Delta L$$

(2.4.4)

where: ΔL can fluctuate at the first stage of the star's life within $0 < \Delta L < 0.020203236$.

Gradually, the secondary degeneration of the dimensionality of space caused by the gravity of the star becomes more and more pronounced. And the dimensionality of the space surrounding the star begins to approach the dimensionality of L_7 . As this process develops, the channel between the space-universes with dimensions L_8 and L_7 decreases. Less and less matter flows from an L_6 dimensional space to an L_7 dimensional space.

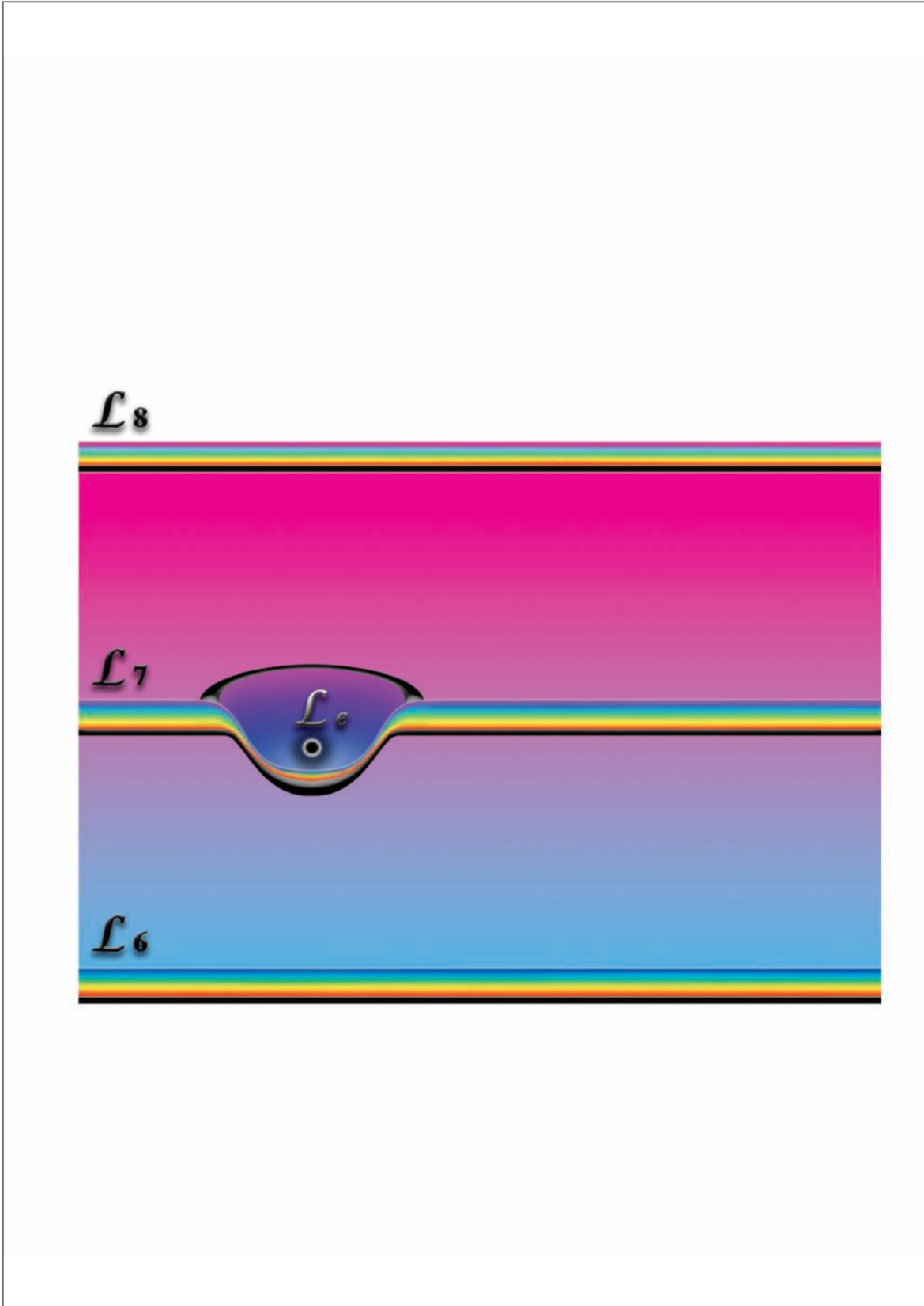
At the same time, the radiation activity of such a star becomes less and less, until it stops altogether. The death of a star is nearing. The star is "going out". If at the beginning of its evolution a star had a large mass, but less than ten solar masses, then by the end of its life it causes a secondary degeneration of dimensionality, when the dimensionality of the space surrounding it becomes less than the L_7 dimension. It produces a deflection in the other direction. A so-called neutron star appears (**Fig. 2.4.4**).

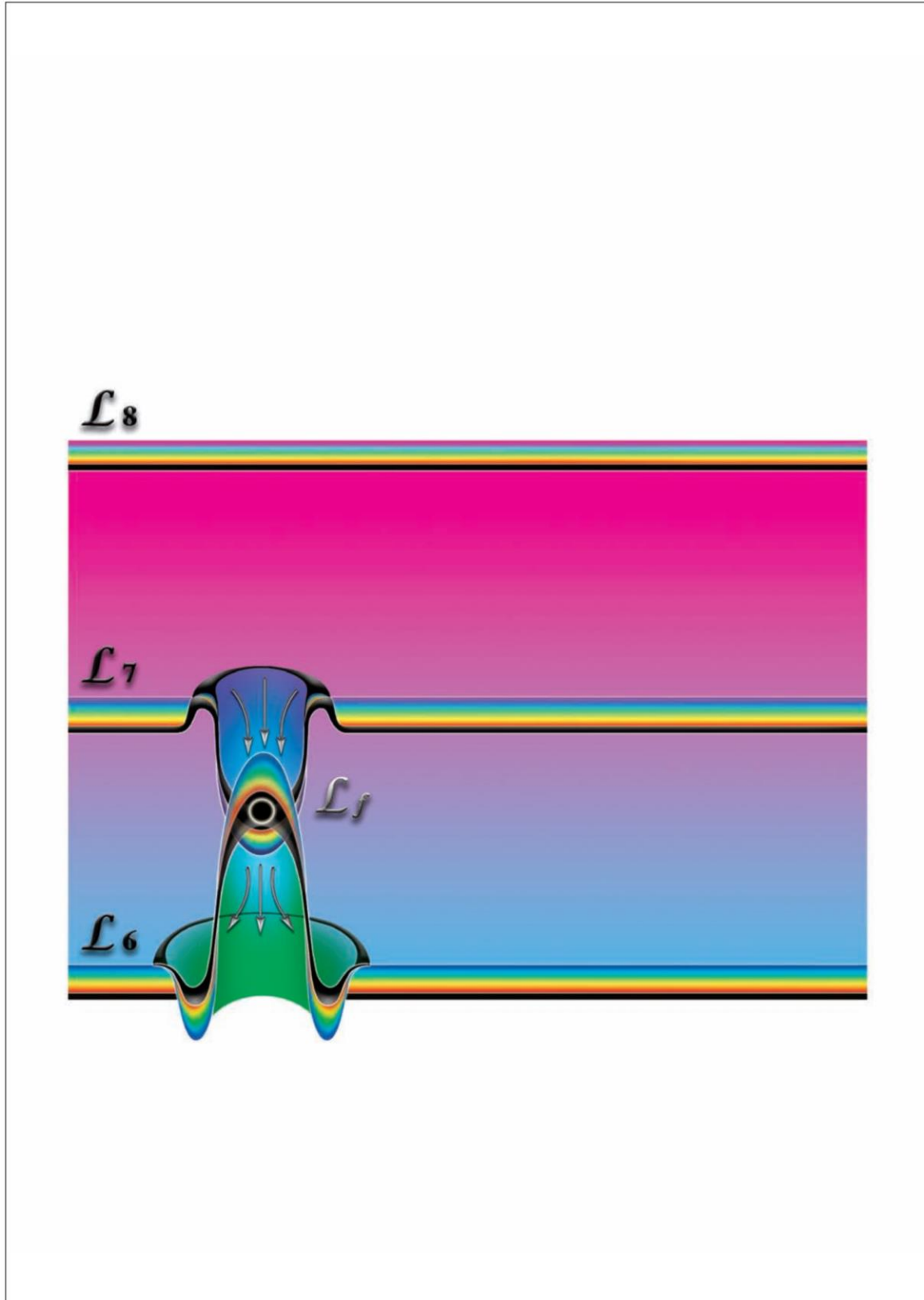
$$L_6 < L_d < L_7;$$

$$L_d = L_a - \Delta L$$

$$\Delta L 0.0102018... \tag{2.4.5}$$

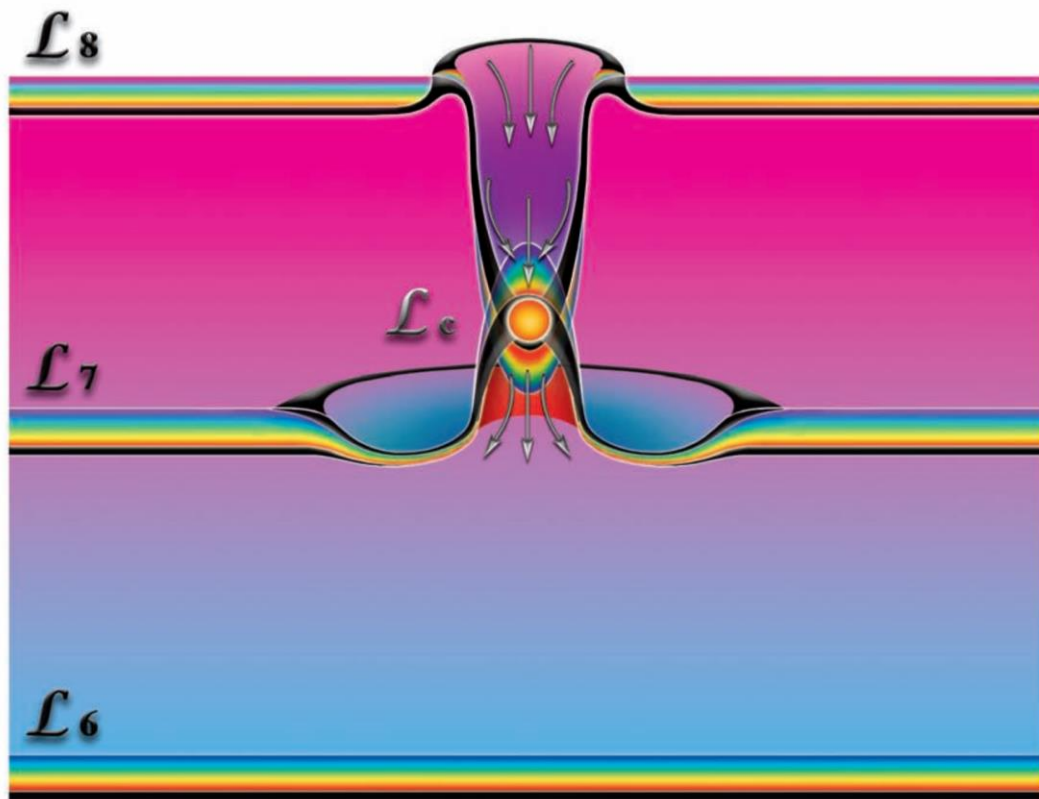
If, at the beginning of its evolution, a star had a mass greater than ten solar masses, the secondary degeneracy becomes so significant that it causes merging of space universes with dimensions L_7 and L_6 . At the same time, matter from space with a dimension of L_7 begins to flow into a space with a dimension of L_6 . A "black hole" is formed (**Figure 2.4.5**). Thus, "black holes" arise in the course of evolution of stars, or rather the "ending of life" of a star in our space-universe leads to birth of a star in the underlying space-universe.

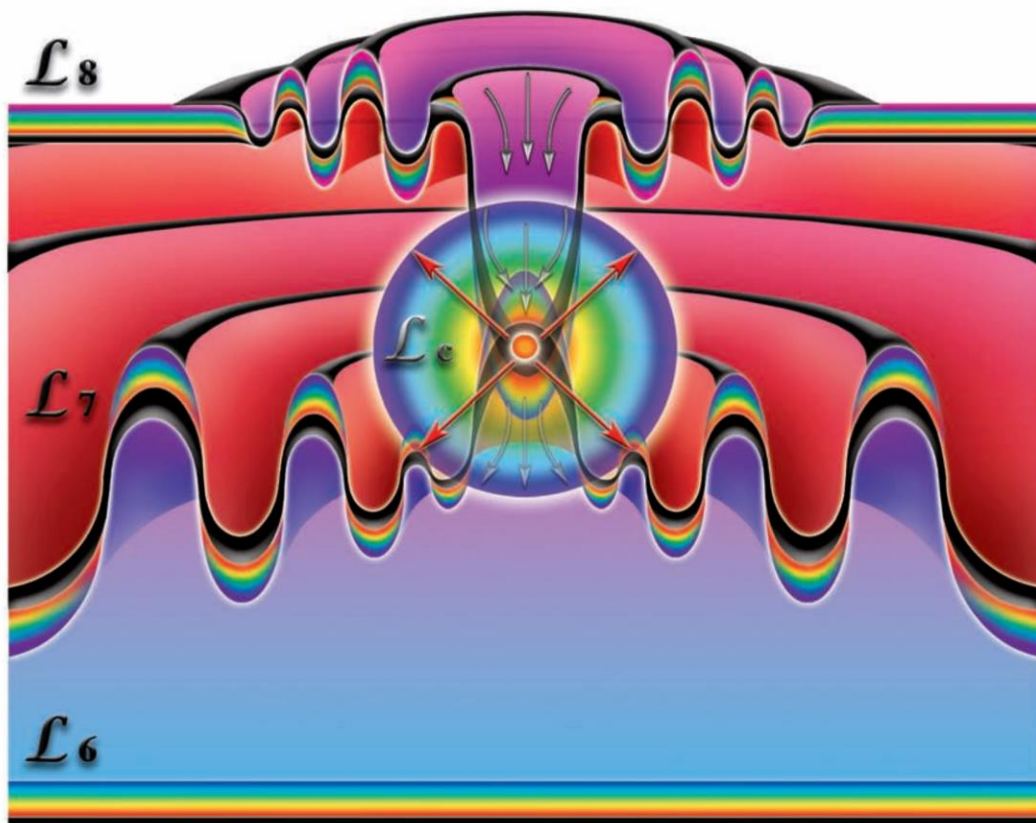


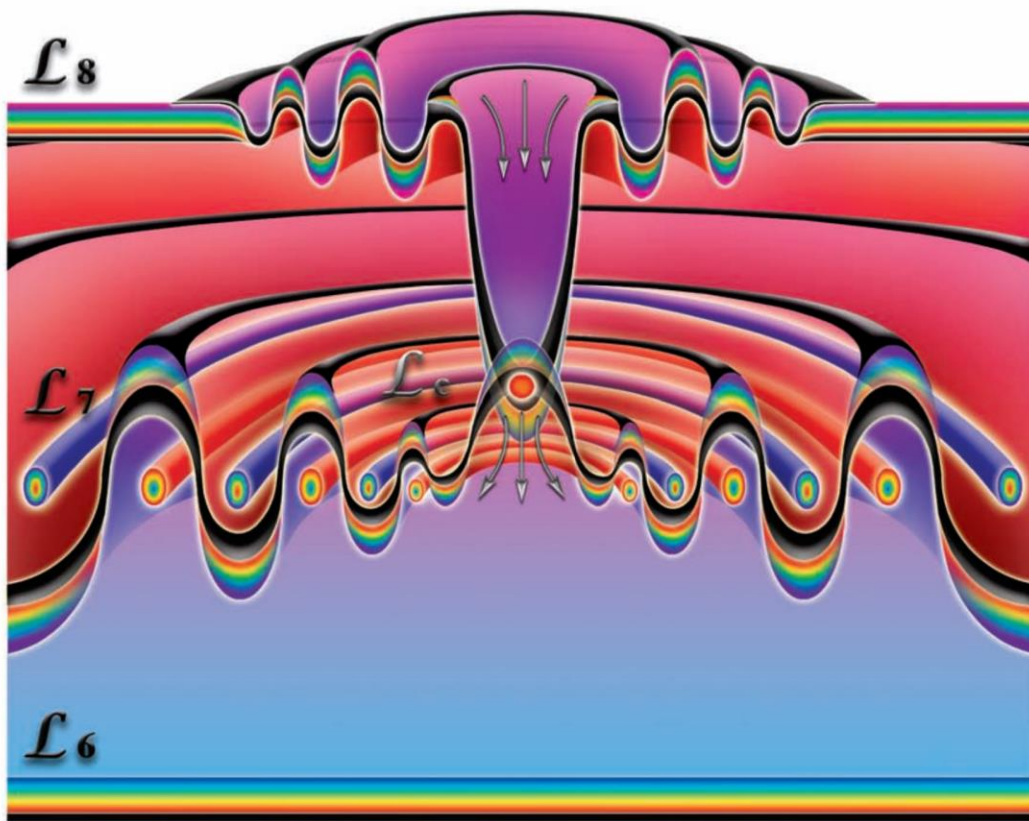


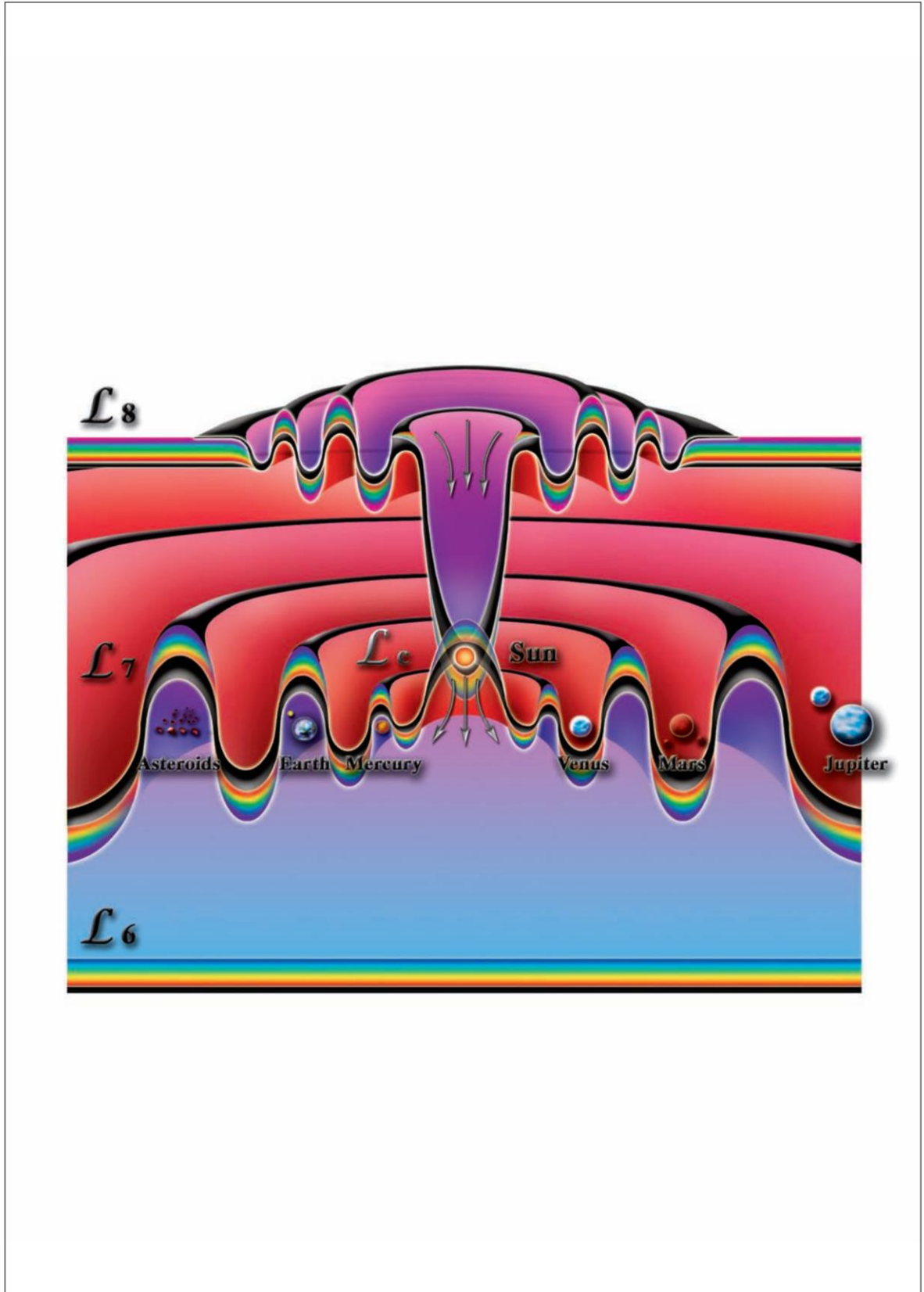
2.5. The nature of the formation of planetary systems

And now we will also consider the nature of the formation of planetary systems. At the beginning of its life, a star has a balance between its size, the channel between the spaces with dimensions L_7 and L_8 , and the amount of matter flowing through this star from the space with dimension L_8 to the space-universe with dimension L_7 (**Fig. 2.5.1**). As a result of thermonuclear reactions, with the loss of simple atoms, the size of the star is decreasing, and it is not able to pass through itself the entire mass of matter flowing from a space with dimension L_8 to a space with dimension L_7 . This imbalance increases over time and eventually reaches a critical level. A colossal explosion occurs, part of the substance of the star is ejected into the surrounding space. At the same time, the dimensionality of this space surrounding the star decreases and a channel is formed through which such an amount of matter flows that the star is able to pass through itself (**Fig. 2.5.2**). Such an explosion is called a supernova explosion. The surface layers of the star ejected by the supernova explosion, which, by the way, consist of the lightest elements, fall into the curvature of space caused by longitudinal dimensional fluctuations that occurred during this explosion. In these zones of space curvature, an active synthesis of matter proceeds from primary matter, and a whole spectrum of various elements are synthesized, including heavy and superheavy elements. The greater the difference between the level of a star's own dimensionality and the levels of its own dimensionality of space curvature zones, the heavier elements are able to "be born" inside these zones and the more stable these heavy elements are. Depending on the initial parameters - for example, there may be one or more supernova explosions during the life of a star. With each such explosion, the intrinsic level of dimensionality of the star decreases, which leads to a decrease in the synthesis of light elements and an increase in the synthesis of heavy ones. As a result, the density, and therefore the degree of influence of the star on the surrounding space increases. When a supernova explodes, there are fluctuations in the dimensionality of the space similar to the waves that appear on the surface of the water after a stone is thrown. The masses of matter ejected during the explosion fill these inhomogeneities of the dimensionality of space around the star. Planets begin to form from these masses of matter (**Fig. 2.5.3 and Fig. 2.5.4**).





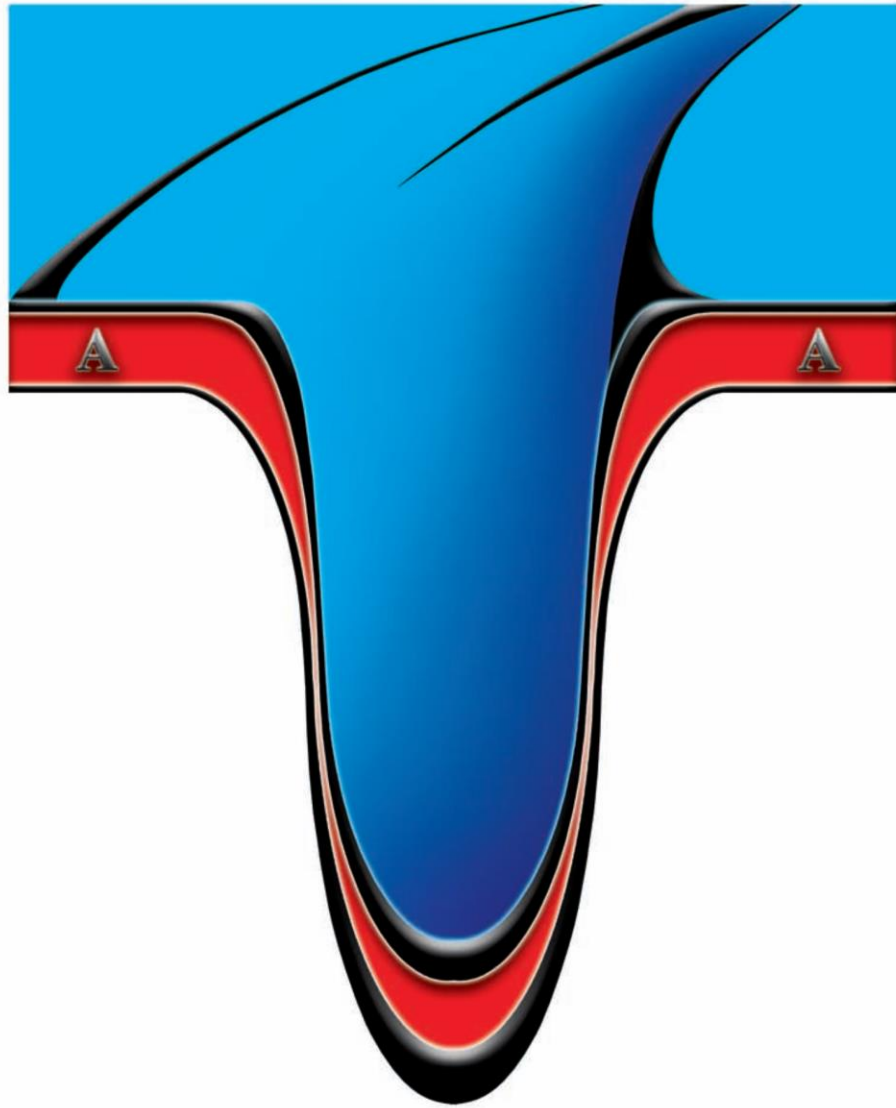


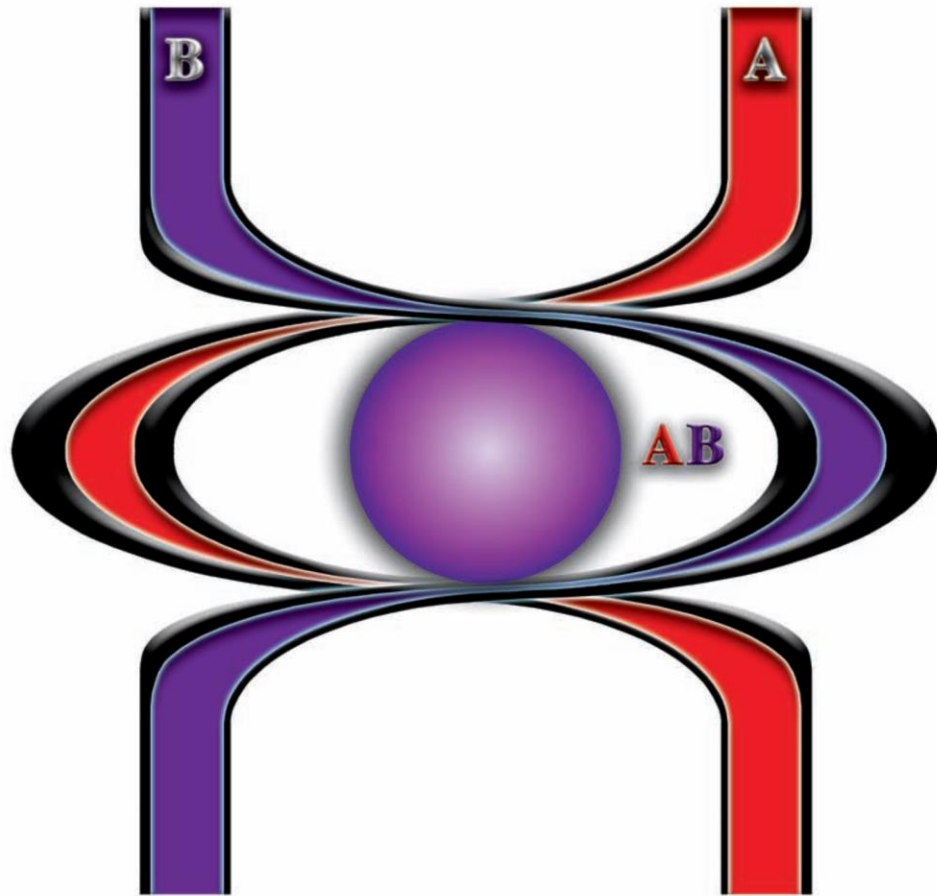


Let's try to figure out why and how this happens. Our universe has a dimension $L_7=3.00017$, which allows seven forms of matter of our type to peacefully coexist. To make it easier to understand what is the essence of the differences between different types of matter, let's remember the "cubes". The desired "picture" can be assembled only from "cubes" of the same size. In the presence of "cubes" of different sizes, it is simply impossible to assemble a "picture"; first of all, it is necessary to select "cubes" of the same shape and size from a pile of others. Only then is it possible to assemble the necessary "picture". So, such a criterion for determining the shape and size for matters is the quantization coefficient of the dimension of the space γ_i . At the same time, we should not forget that the "cubes" of other dimensions do not disappear. They continue to exist, only our "picture" can be put together from them. But, if they are sorted by shape and size, then, from such "cubes", you can add other "cubes", but these will be "pictures" of a different qualitative composition, and they will not affect and change our "picture" in any way. Similarly, in addition to spaces-universes of our type, there are space-universes with other values of the coefficient of quantization of space γ_i . But, they have practically no effect on spaces of our type, and therefore, when studying the question of the formation of our Universe, one can ignore them. In a space with a continuously changing dimensionality, the permitted forms of matter (i.e., the amount of matter that forms our space-all connected to the dimension L_7) do not interact with each other. During a supernova explosion, concentric waves of perturbation of the dimensionality of space propagate from the center, which create heterogeneous zones of space, dimensional deformation or curvature of space occurs. In the Large Cosmos there are an infinite number of forms of matter that interact with each other to a greater or lesser extent or do not interact with each other at all.

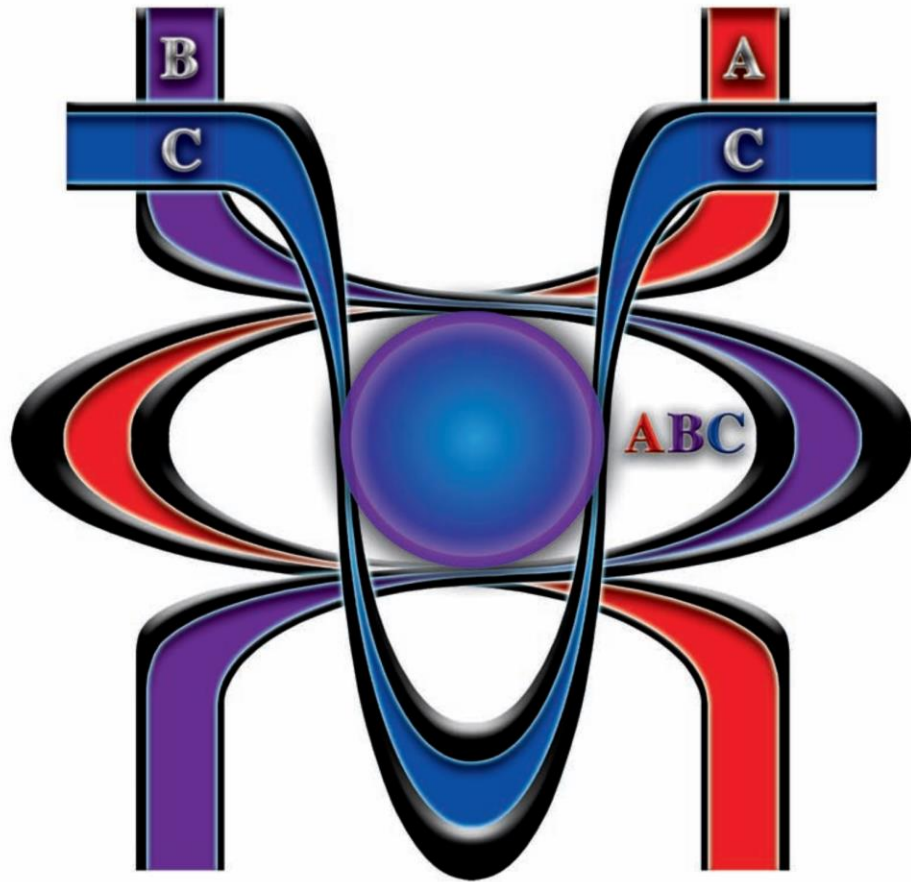
If two forms of matter do not interact with each other, then, even when penetrating each other, nothing changes in them, they do not affect each other in any way, and nothing new arises at the same time. They don't seem to exist for each other. The degree of influence of one form of matter on another is defined as the interaction coefficient α , then we can say that the interaction coefficient for these two forms of matter is zero. This means that there are no two "bricks" that would be included in the composition of both one and another form of matter. They have no common qualities and properties. The coefficient of interaction is not the same even for two forms of matter at different points in space because space itself is inhomogeneous. It is possible to speak about the interaction of matter with each other only when the interaction takes place in a specific volume of this space. There are volumes of space where the interaction of matter is maximal and volumes where this interaction is impossible in principle, or matter and matter act with each other partially according to one or another common quality (**Fig. 2.5.5**). With the maximum interaction of two matters (we call one of them by the letter **A**, the other - **B**), there is a complete fusion of these matters with each other and a new, hybrid form — **AB** arises. Fusion is possible only within the volume, where all the parameters of these matters become one. The heterogeneity of space affects in different ways the forms of matter that permeate this heterogeneity. One form of matter is affected by changing it more, the other - less.

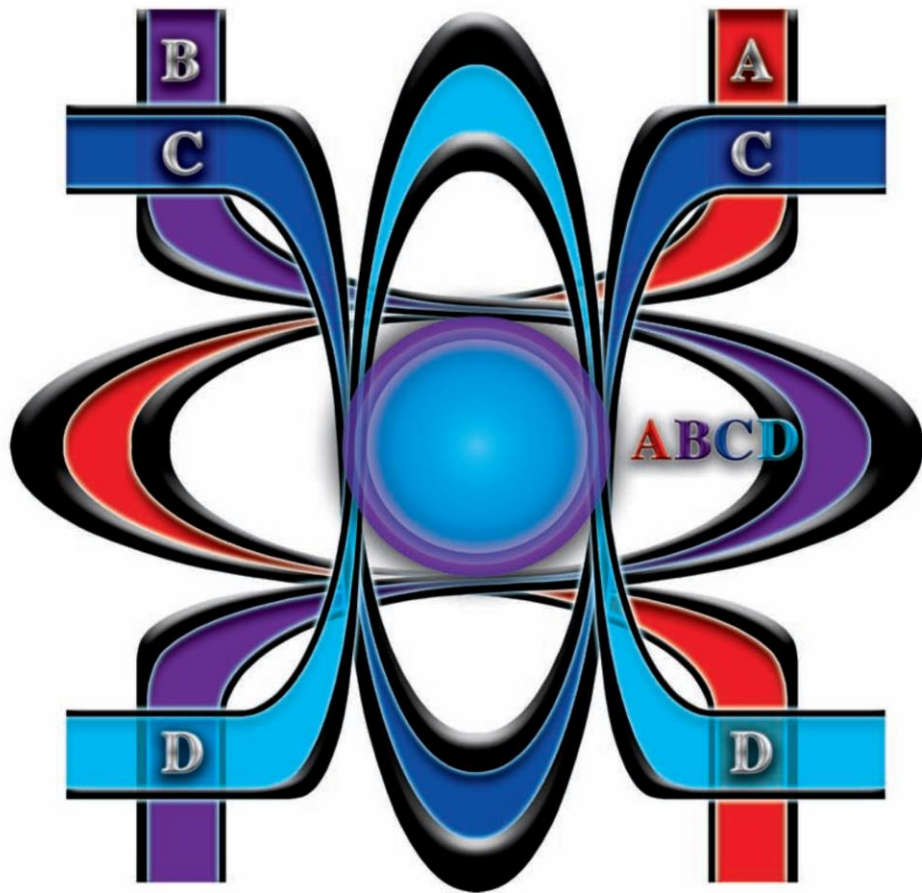
Heterogeneity changes the qualitative structure of matter, which creates conditions for their fusion and the formation of a new quality. Thus, within the heterogeneous volume, where there are conditions for the fusion of two matters, a matter of a new quality arises — a hybrid form of **AB** (**Fig. 2.5.6**). The hybrid form of AB also affects the heterogeneity of the space in which it originated. The heterogeneity is filled with the resulting hybrid form of **AB**, and its degeneration. The heterogeneity is a curvature of the space, which leads to a change in the dimensionality within this non-uniformity in comparison with neighboring areas of space. Thus, a change in the dimensionality of space by a certain amount leads to the emergence of conditions for the fusion of two matter. In order for two forms of matter to merge, it is necessary to change the dimension of space by an amount, $\Delta L = 0.020203236...$

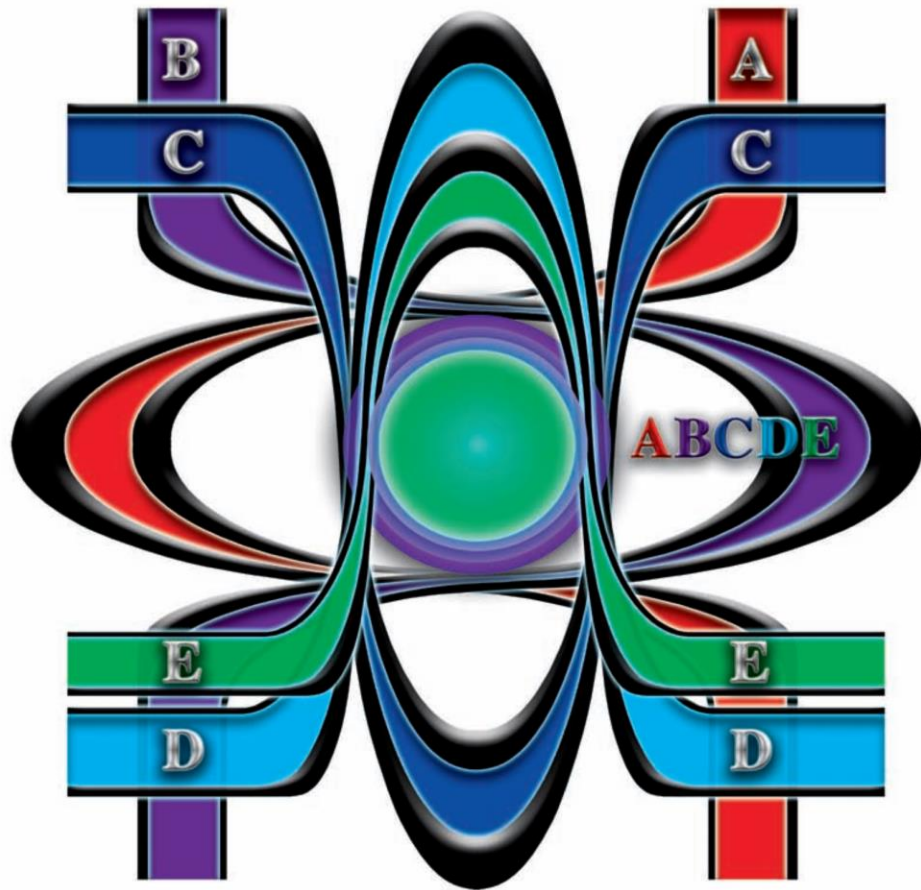




In order for the possibility of the merging of the three forms of matter to arise, it is necessary that the dimensionality of space change again by the number ΔL , which leads to a complete fusion of the three matters. Matter cannot merge in part. Only a complete fusion of matter is possible. Just as there cannot be two and a half people, but only two or three (if, of course, we are talking about living people), also two and a half matter cannot merge, but only two or three. Let's denote the third matter with the letter **C**. As a result of the merger of three forms of matter, a qualitatively new hybrid form of **ABC** appears in the space of a certain volume (for convenience, we will consider it a sphere) (**Fig. 2.5.7**), which occupies a volume smaller than the hybrid form of **AB**. Moreover, these spheres have clear boundaries, within which the dimensionality of the space is homogeneous. With the next change in the dimensionality of the space inside the heterogeneity by an amount equal to ΔL , there are conditions for the fusion of another form of matter **D**. A qualitatively new hybrid form of **ABCD** arises (**Fig. 2.5.8**). It will occupy a sphere of volume smaller than the hybrid form of **ABC**. With the following change in the dimensionality of space inside the inhomogeneity of ΔL , conditions arise for the fusion of another form of matter **E**. A new hybrid form of the **ABCDE** appears (**Fig. 2.5.9**). With the next change in the dimensionality inside the heterogeneous space by the value ΔL , conditions arise for the fusion of the next form of matter **F**. A new hybrid form of **ABCDEF** appears (**Fig. 2.5.10**). Another change in the dimensionality of space inside the heterogeneous by the value ΔL again creates conditions for the fusion of the next form of matter **G**. A qualitatively new hybrid form of **ABCDEFG** emerges (**Fig. 2.5.11**).



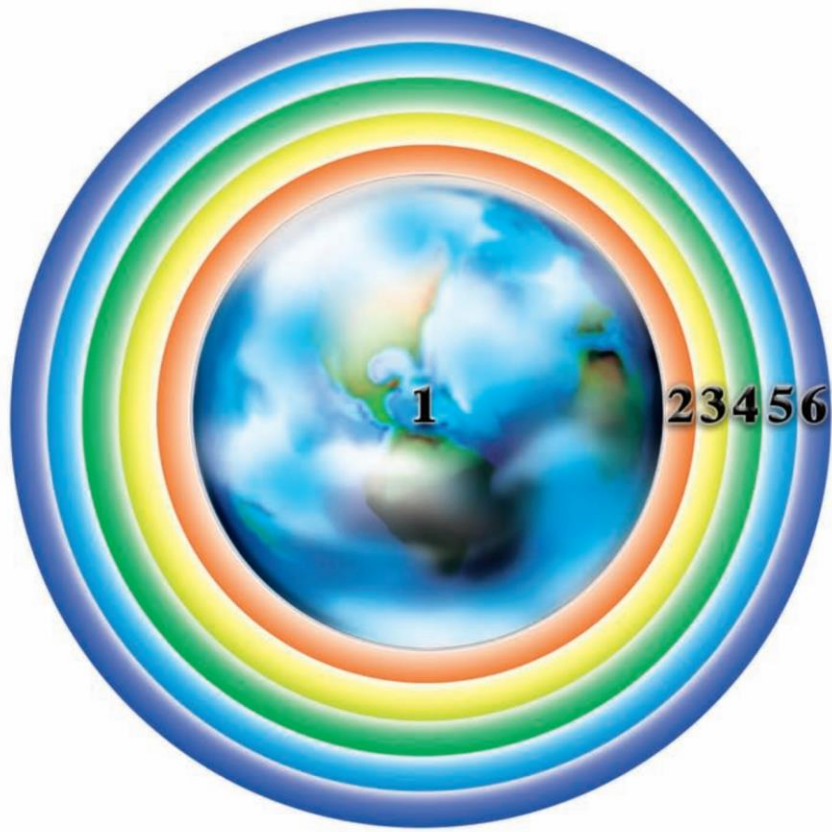








Thus, with the continuous change of dimensionality within the heterogeneity of space, within this inhomogeneity, seven forms of matter that form our universe merge and form six material spheres of different qualitative composition and size. The inner sphere, formed by seven forms of matter, is a physically dense sphere — the first planetary (material) sphere of our planet Earth, the substance of which has four aggregate states - solid, liquid, gaseous and plasma. Different aggregate states arise as a result of dimensional fluctuations less than ΔL . And if we go from the center of heterogeneity, the next sphere formed by the merger of six forms of matter is the second planetary (material) sphere; at the merger of five forms of matter - the third planetary (material) sphere; at the merger of four forms of matter - the fourth planetary (material) sphere; at the merger of three - the fifth planetary (material) sphere; at the merger of two forms of matter - the sixth planetary (material) sphere (**Fig. 2.5.12**). All these spheres are material and differ in their qualitative and quantitative composition. In principle, the planet should be considered only as a combination of these six spheres. It is only in this case that it is possible to get a full-fledged idea of the processes taking place and to get correct ideas about nature as a whole. The illusion of completeness of ideas about nature, obtained through our sense organs, more precisely, the absence of our sense organs, leads cognition to a dead end, from which it is impossible to escape without a cardinal change in the concepts of nature and an understanding of the role played by the sense organs in human life.



And now let's return to the qualitative structure of the planet. If we take the physically dense sphere as a reference point, then it has the most common qualities with the second material sphere, and the least with the sixth sphere. The common qualities of different spheres create conditions for their interaction with each other. The degree of this interaction varies, and depends on how many common qualities these spheres have. The degree of interaction of these spheres with each other can be expressed by the coefficients of interaction - α_1 ; α_2 ; α_3 ; α_4 ; α_5 (**Fig. 2.5.13**). Moreover:

$$\alpha_1 > \alpha_2 > \alpha_3 > \alpha_4 > \alpha_5 \quad (2.5.1)$$

where:

α_1 — the coefficient of interaction between the physically dense (first material) and the second material spheres;

α_2 — the coefficient of interaction between the physically dense and the third material spheres;

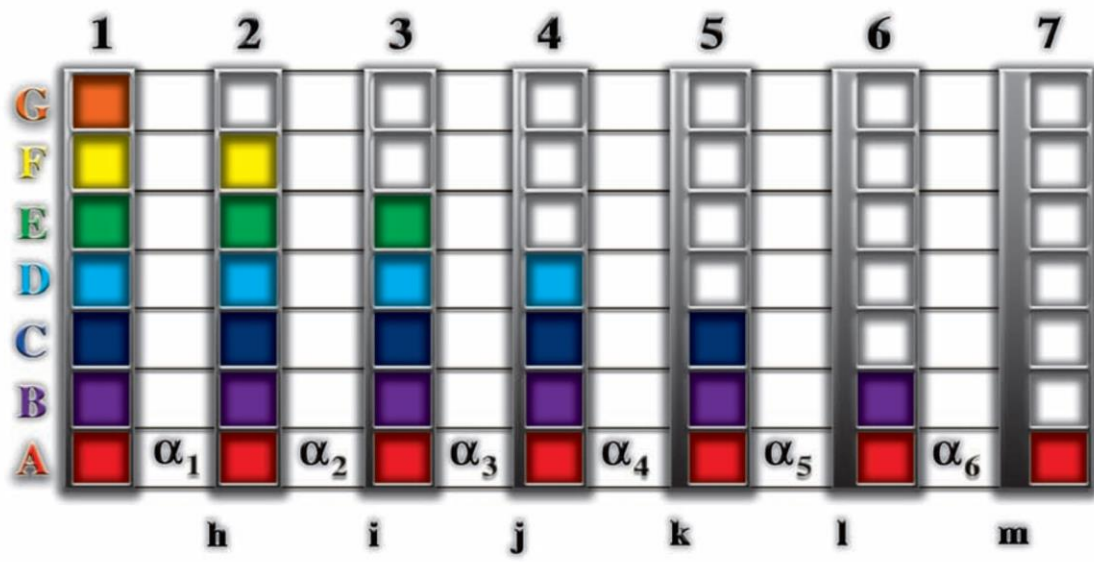
α_3 — the coefficient of interaction between physically dense and the fourth material spheres;

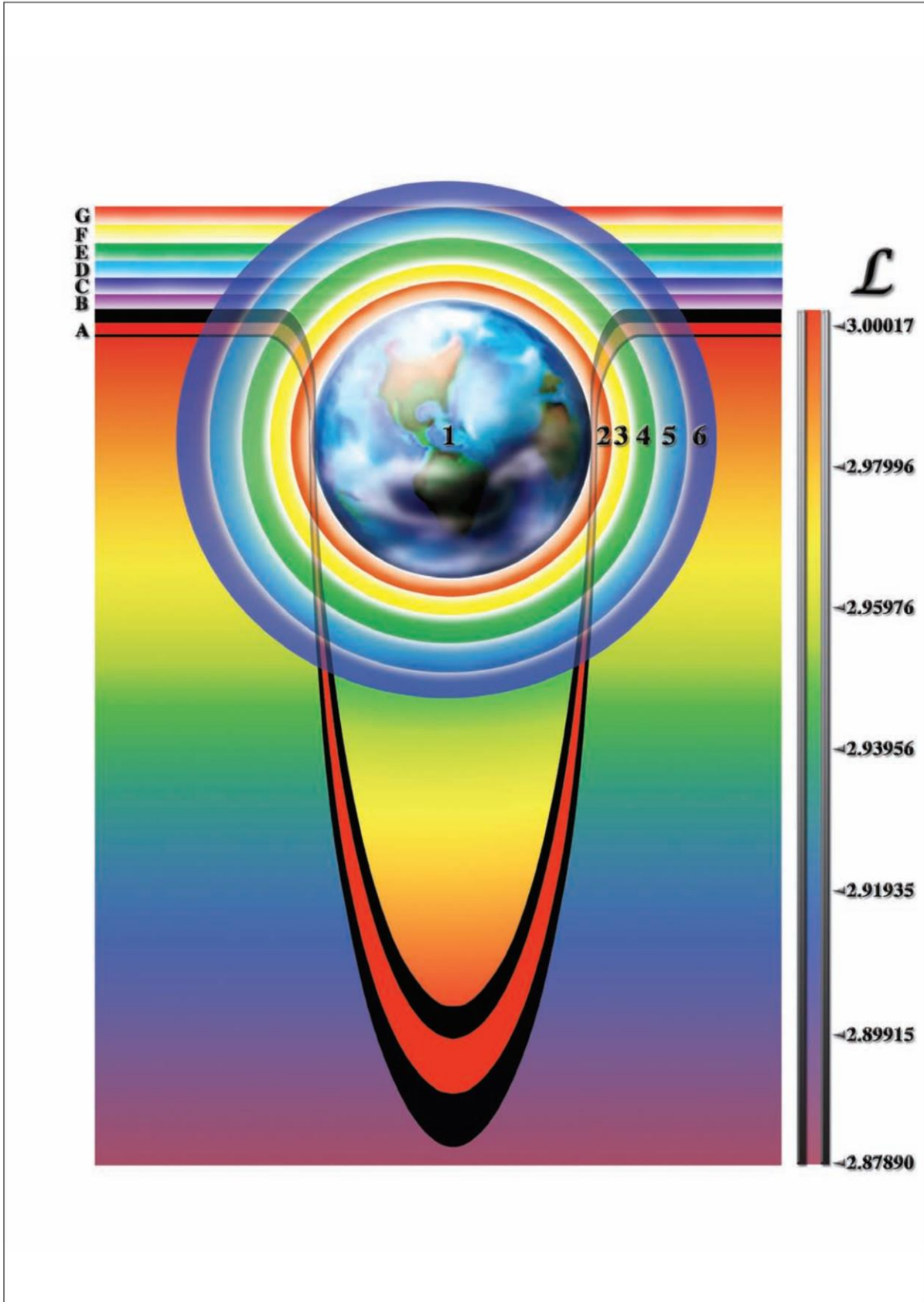
α_4 — the coefficient of interaction between the physically dense and the fifth material spheres;

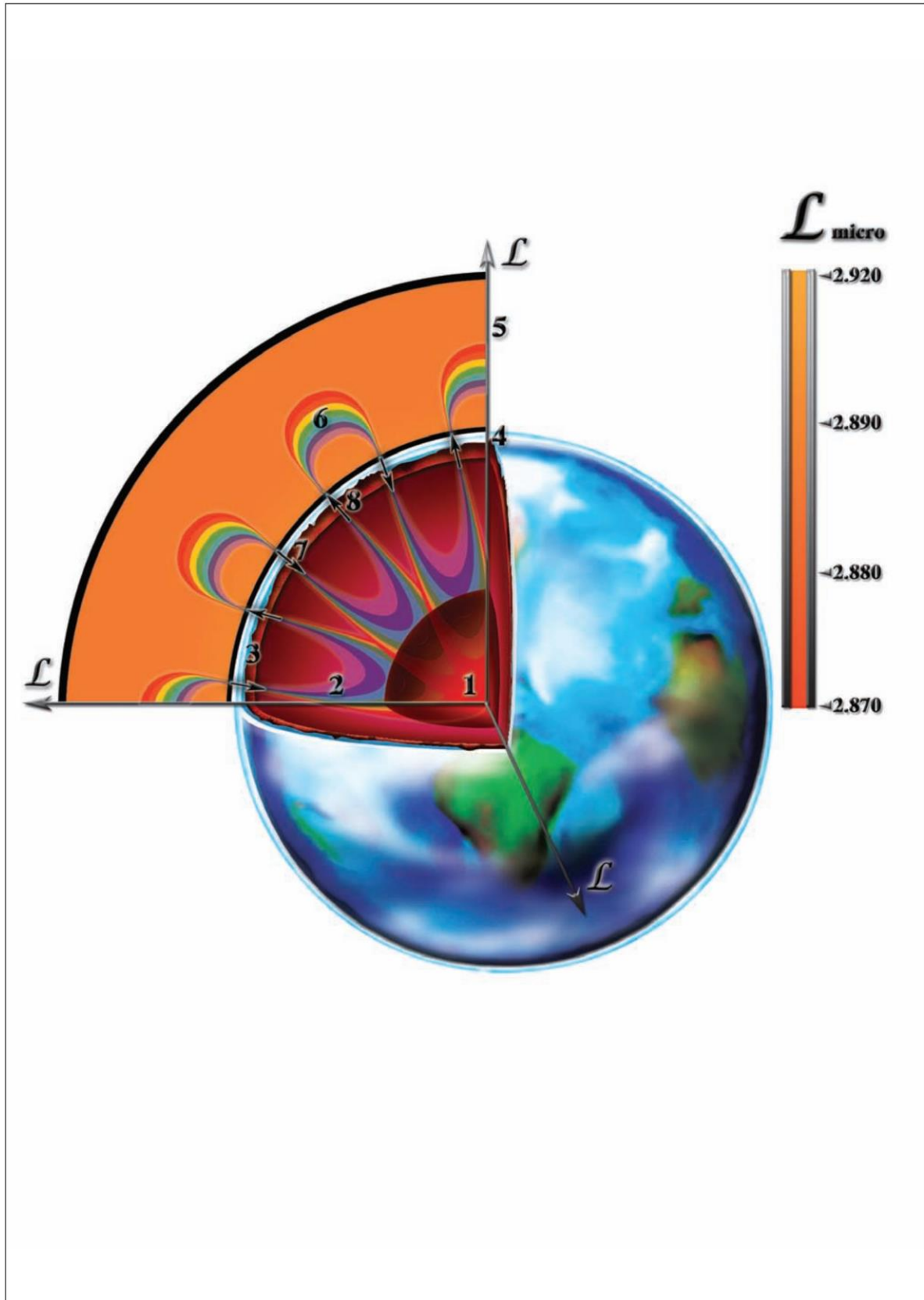
α_5 — the coefficient of interaction between the physically dense and the sixth material spheres.

When we talk about the planet Earth, we must understand by these six spheres nested one into another, like matryoshka dolls and representing a single whole. This concept is very important for understanding many phenomena and mysteries of living and inanimate matter, the evolution of life on our planet. Upon completion of the formation of qualitative structures of the Earth, the heterogeneity in space is neutralized (**Fig. 2.5.14**). The hybrid material spheres that arose during the fusion of forms of matter fill this heterogeneity. There is a "leveling of space". The heterogeneity of space can be compared to potholes on a dirt road. Until the pits are filled with earth, potholes remain. After the beginning of the formation of the planet, the forms of matter that created it continue their movement, no longer merging with each other (like water, filling up to the edges of the reservoir, begins to flow over the edge and flows on). The activity of the movement of forms of matter is not always the same, which is manifested in the movement of the Earth's crust, earthquakes and volcanic eruptions (**Fig. 2.5.15**). The process of formation of the planet ended six billion years ago. This is the first cycle of the evolution of forms of matter, which is associated with the evolution of inanimate matter. The second stage is the evolution of living matter. Before proceeding to the phase of evolution of living matter, I would like to remind you that our planet Earth and our universe, are both a fusion of seven forms of matter. Moreover, the number "seven" has no mystical meaning for anyone. And the fact that our universe is formed from seven forms of matter is not something unique or divine or unrepeatable.

It's just the qualitative structure of our universe. And it is not by chance that white light, when refracted, breaks up into seven colors, the octave contains seven notes. Quite probably, the question may arise — why does free primary matter in the curvature zone of space begin to interact with each other and create hybrid compounds?! This is because when free forms of the matter of our space fall into the dimension zones of heterogeneity, they find themselves in qualitatively new conditions. And, as a result of this, they manifest themselves in a different way. From the same seven "cubes" in the dimensional heterogeneous zones, new "pictures and stutters" begin to form. In accordance with the gradient (difference) of the dimensionality of the space, in the heterogeneity zone other qualitative conditions, free forms of matter begin to merge and form new hybrid compounds, which in principle are impossible outside the dimensional space of heterogeneous zones. Each new change in the dimensionality of space inside the inhomogeneity creates conditions for merging another form of matter. This process will continue until the entire zone of heterogeneity is filled with hybrid forms of matter. At the same time, each of these hybrid forms of matter partially compensates for the heterogeneity of the dimensionality of space. As a result of the process of the fusion of matter, the dimension that was before the supernova explosion is restored in the heterogeneous zone. And it is no coincidence that the amount of matter in the universe is an order of magnitude greater than the amount of existing physically dense matter.







Where and what are the **90%** of matter of the universe?

Modern science has solved the question very simply — "*dark matter*". The matter of the universe that we do not see, do not hear, do not touch. It is this "*dark matter*" that contains **90%** of the matter of the universe.

Isn't that a "beautiful" answer?! And it is very familiar to everyone who remembers at least a little about the crisis in nuclear physics at the beginning of the century. Only then the problem was the disappearance of a part of the matter found in some nuclear processes. At a specially convened I'm waiting for the People's conference of physicists in Genoa, after a long and lengthy debate, the problem was solved simply - vanishing matter carries a neutrino particle that we don't see, hear, or feel. But if a part of the matter known to science "disappeared" in nuclear reactions, then, in the case of "dark matter", 90% of the matter of the Universe disappears! So, "*dark matter*" represents unrelated (not interacting with each other) primary matter of our universe. While physically dense matter arises as a result of the fusion of these primary matter in the zones of heterogeneity of the dimensionality of the Universe.

2.6. Summary

Space is heterogeneous, which means that its properties and qualities are different at different points. The heterogeneity of space is expressed by the level of its dimensionality at a given point. The heterogeneity of space varies continuously, in other words, the properties and qualities of space are continuous quantities. There are two possible options for the changing properties and qualities of space – a smooth change and sharp one. A sharp change in the properties and qualities of space occurs as a result of any internal or external disturbance of space. Matter has specific properties and qualities; therefore, **matter is finite**, a finite quantity. During the interaction of matter and space, there is a distribution of matter with specific properties and qualities in space. Matter is located only in the volume of space where its properties and qualities are identical with the properties and qualities of space. Such a distribution of matter by properties and qualities occurs because matter with these properties and qualities cannot be stable in other regions of space. When a continuously changing infinite quantity (space) interacts with finite quantities (materials) having specific properties and qualities, and the distribution of matter occurs over this space; we can talk about the quantization of space by its properties and qualities; for convenience, we will call this process the quantization of space by dimensionality. Since primary matter are indivisible, and their properties and qualities are specific, which means they are finite, this means that in order for a particular matter to manifest itself in space, its properties and qualities must change by a certain amount, called the coefficient of quantization of the dimensionality of space γ_i . Each quantization coefficient of the space γ_i determines a certain number of primary elements that qualitatively and quantitatively correspond to a specific value of this coefficient. In other words, there is a rearrangement of matter in a continuously changing space, according to certain qualities and properties.

As a result, so-called matrix spaces are formed in space, which are systems of spaces formed by primary materials of a specific space quantization coefficient. Matrix spaces close together leads to the transfer of matter between them. As a result, a superexplosion occurs, causing a deformation of space. Emerging longitudinal waves of dimensional fluctuations create new qualitative conditions under which free primary matter begin to merge with each other, creating **hybrid matters**. Hybrid matters, in turn, affect the space in which they are formed. The process of synthesis of hybrid matter continues until the synthesized hybrid matter completely compensates for dimensional deformation of the space in which their synthesis began. At the same time, the space in this zone returns to a state of equilibrium. Hybrid matter plays a compensatory role in this situation. As a result of these processes, a system of spaces arises that have specific shapes and dimensions. In the matrix space, closed spatial systems, the so-called six-beams, arise, the main condition for the steady state of which is the balance of incoming and outgoing masses of matter. This is **the law of conservation of matter** at a qualitatively different level.

Stars and "black holes" are the result of the closure of a particular space-universe, a particular layer in the matrix space with its own level of dimensionality, with neighboring spaces all having, respectively, their own levels of dimensionality, which are greater or less than the proper dimensionality of the considered layer by the same magnitude γ_i . The closing of the space-universe, which has a higher level of its own dimensionality, leads to the **birth of a star**. When the space-universe closes with a smaller level of its own dimension, a **"black hole"** appears. The stability of this space-universe is possible only with the balance of the incoming matter from the "upper" space and the resulting out flow of matter into the "lower space". When a supernova explodes, waves of perturbation of the dimension of space arise and the primary matter ejected during the explosion, which have fallen into the resulting zones of curvature of dimensionality, find themselves in completely different conditions, as a result of which they begin to merge, quantifying in dimensionality, and form hybrid forms of matter.

These hybrid forms of matter form planetary spheres of different qualitative and quantitative composition. Upon completion of the formation of these planetary spheres in the zone of heterogeneity of the dimensionality of space, the level of the dimensionality of space returns to the original level that it was before the supernova explosion. **Hybrid forms of matter, by their influence at the level of the microcosm, compensate for the dimensional deformation that occurred during the supernova explosion**. After the balance of dimensions is restored, the active process of synthesis of hybrid matters stops. This is how planetary systems in the universe are formed.

Chapter 3. Heterogeneity of space and qualitative structure of physically dense matter

3.1. Statement of the question

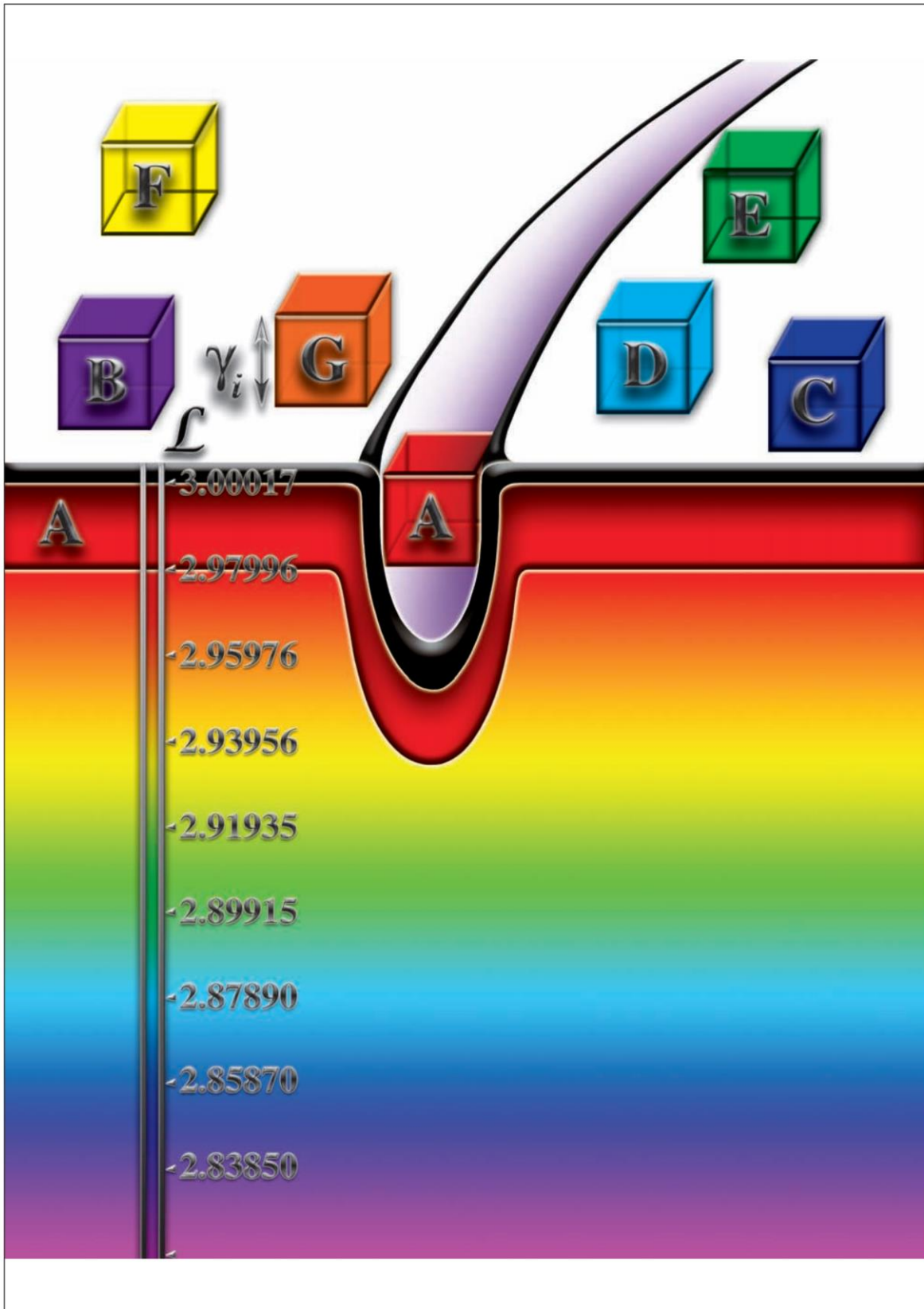
The heterogeneity of space at the level of the macrocosm leads to the formation of matrix spaces. The processes taking place at the macro level cause a qualitative change in the state of both the space itself and the matter that fills it. As a result, so-called hybrid forms of matter arise in space, which, in turn, affect the qualitative state of space, in which the formation of these matters took place. The synthesized hybrid forms of matter neutralize the zones of inhomogeneities in which their synthesis occurs. At the end of the synthesis process of hybrid matter, the heterogeneity zone in which the synthesis of primary matter took place is completely neutralized. Thus, hybrid forms of matter affect the dimensionality of space with an inverse sign in relation to the heterogeneity of the dimensionality of space in which the synthesis of these hybrid forms took place. The synthesis of hybrid forms of matter occurs at the level of microspace, thus, the qualitative structure of the microspace acts as a counterweight to the qualitative structure of the macrospace. When a qualitative and quantitative balance is achieved between them, the space acquires a stable equilibrium state. Macrospace and microspace neutralize each other, just as plus neutralizes minus. And, accordingly, all this leads to the fact that any significant change at the level of the macrocosm leads to corresponding changes at the level of the microcosm and vice versa. It seems incredible that any atom affects the macrospace, but, nevertheless, it is a fact. Naturally, the influence of one atom is microscopic, but their combined influence is the balance that balances the macrospace.

3.2. Qualitative structure of the microspace

When a supernova explodes, the space around the star is warped and matter is ejected. But first let's deal with the stars themselves. As you know, stars are made of physically dense matter. A logical question arises: how does the synthesis of a physically dense substance occur? The quantization coefficient of the space γ_i determines the qualitative structure of a given universe, in other words, which primary matter interact with each other and form a new quality. Each primary matter has its own specific qualities and properties, and therefore it is only in that part of space where the conditions of the identity of the properties and qualities of space and this matter are fulfilled, that this matter manifests itself and is able to be stable. Thus, a change in the qualitative state of space by a certain ΔL amount leads to the "loss" of matter in this zone of space, the properties and qualities of which are identical with the properties and qualities of space itself. With the next change in the properties and qualities of space by the value ΔL , there are conditions for the "loss" of a stable state in this region of space of the next primary matter.

If both changes in the properties and qualities of space ΔL are identical to each other, we can talk about the phenomenon of quantization of space by matter, more precisely, by primary matter compatible in one or another properties and qualities. Simple logic suggests that if two primary matter manifest themselves with identical changes in the properties and qualities of space, they must have some common properties and qualities. In this case, ΔL turns into γ_i - the quantization coefficient of the space. And if this is the case, then in the area of space where the conditions for a stable state of both matters are met, they begin to interact with each other by common properties and qualities and form a new qualitative state - a hybrid form of matter.

Suppose that there are many primary matter, and they have different properties and qualities. In this case, you can sort them by compatibility. The criterion in this case will be the quantization coefficient of the space γ_i . For each value of γ_i , there is its own group of primary matter compatible with each other. Even with a slight change in this coefficient, qualitatively new conditions arise for the interaction of other primary matter. In other words, each value of the quantization coefficient in the space γ_i corresponds to another universe with its own laws of nature, properties and qualities. Let's imagine primary matter of the same type as "cubes" of the same size and consider how matters interact with each other in a zone of heterogeneity of space. If the deformation space ΔL is commensurate with γ_i , only one primary matter, the properties and qualities of which are identical with the properties and qualities of a given deformation zone of space, can be in a stable state and accumulate in it. Similarly, rainwater fills any depressions of the surface and when fully filled, the surface of the puddle, lake will be equal to the level of the solid surface. However, there are no qualitative changes with the water that has filled the depressions of the surface, the water remains water. Similarly, when the deformation zone of space is saturated with one primary matter, a simple filling occurs without qualitative changes (**Fig. 3.2.1**).



Before continuing the analysis of this process, I would like to draw attention to the fact that the so-called primary matter of this type has common properties and qualities, but they also have their own characteristics, manifested in how they interact with each other and how they interact with space. Recall that sunlight splits into seven primary colors, which, when the substance is annihilated, again, a powerful light flash occurs. Each portion of optical radiation - a photon - has its own specific properties and qualities. That is why our eyes distinguish these seven primary colors, using instruments to measure their wavelength or frequency. Each photon is a microscopic curvature of space saturated with any one primary matter. The spectrum appears as a consequence of the fact that there are a lot of constant microscopic perturbations of space, the parameters of which are different. As a result, the properties and qualities of each such space deformation zone, differ from each other, although only slightly. Therefore, each of these zones of space deformation is saturated by different primary matter. Photons of the optical range, for instance - especially interesting, since they are the basis of our universe at the level of microspace. They play the main role in the processes of formation and evolution of stars, living and inanimate matter. There are many primary matter, but the substance of our universe is formed by the fusion of seven primary matter of this type. Primary matter of this type has common properties and qualities, the criterion of which is the quantization coefficient of space γ_i . Naturally, microscopic deformations with other parameters constantly occur in space, which creates conditions for their saturation with primary matter with other quantization coefficients of space γ_i . As a result, the space is literally saturated with photons not only optical range. The spectrum of electromagnetic waves is a spectrum of primary matter corresponding to the spectrum of values of the quantization coefficient of space γ_i . The values of these coefficients are close to each other, but, nevertheless, each of them forms its "own" group of compatible primary matter. But primary matter of different groups corresponding to different quantization coefficients of space γ_i do not interact with each other, at least directly. As, for example, radio waves do not interact with photons of the optical range and vice versa. While interacting with each other, forming new superpositions (hybrid combinations), both radio waves and photons of the optical range.

It is thanks to the superimposition of each other of the photons of the seven primary colors, that such a wealth of colors exists in nature. But the important point is that, at the same time, hybrid compounds of primary matter do not arise. Let's imagine the fall of colored rains. Rain — red, orange, yellow, green, light blue, blue and purple. And each of these rains falls from the sky at different times, in different places and in different amounts. As a consequence, on the surface of the planet multi-colored puddles of all colors of the rainbow would appear, since the multi-colored water in each particular puddle or lake would mix in different quantities, resulting in a different set of colors. But at the same time, regardless of the color, the water will remain water. Since there are no qualitative changes. In the same way, primary matter can flow into the same deformation of space and mix with others without creating hybrid matter of a new quality. Hybrid matters arise when primary matter merge only when specific conditions arise.

What kind of specific conditions should arise so that, after all, a synthesis of hybrid matter arises, a new quality arises?! Let's try to understand this amazing phenomenon of nature. In order for conditions to arise for the fusion of primary matter and hybrid matter to form, it is necessary to have such a curvature of space in which two or more primary matter of this type can be in a stable state in this curvature. If the amount of space deformation lies in the range:

$$2 \gamma_i < \Delta L < 3 \gamma_i \quad (3.2.1)$$

Two primary matter are able to be in a stable state inside this zone of curvature of space, which creates sufficient and necessary conditions for their interaction by common properties and qualities, and the synthesis of hybrid matter. And similarly for the possibility of merging in the area of heterogeneity, three, four, five, six and seven primary matter of this type, it is necessary that the magnitude of the deformation space lays respectively in the following ranges:

$$3 \gamma_i < \Delta L < 4 \gamma_i \quad (3.2.2)$$

$$4 \gamma_i < \Delta L < 5 \gamma_i \quad (3.2.3)$$

$$5 \gamma_i < \Delta L < 6 \gamma_i \quad (3.2.4)$$

$$6 \gamma_i < \Delta L < 7 \gamma_i \quad (3.2.5)$$

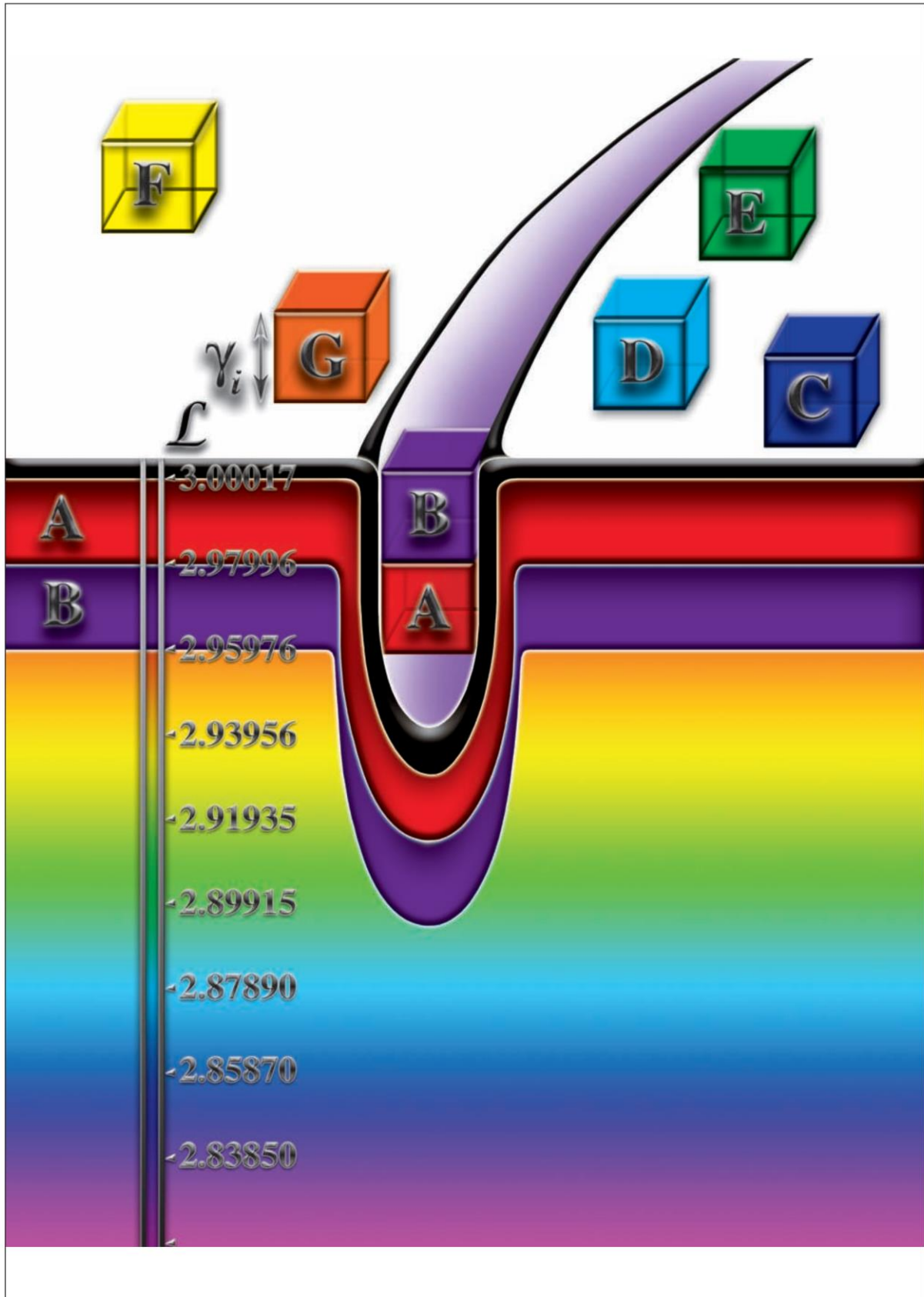
$$7 \gamma_i < \Delta L < 8 \gamma_i \quad (3.2.6)$$

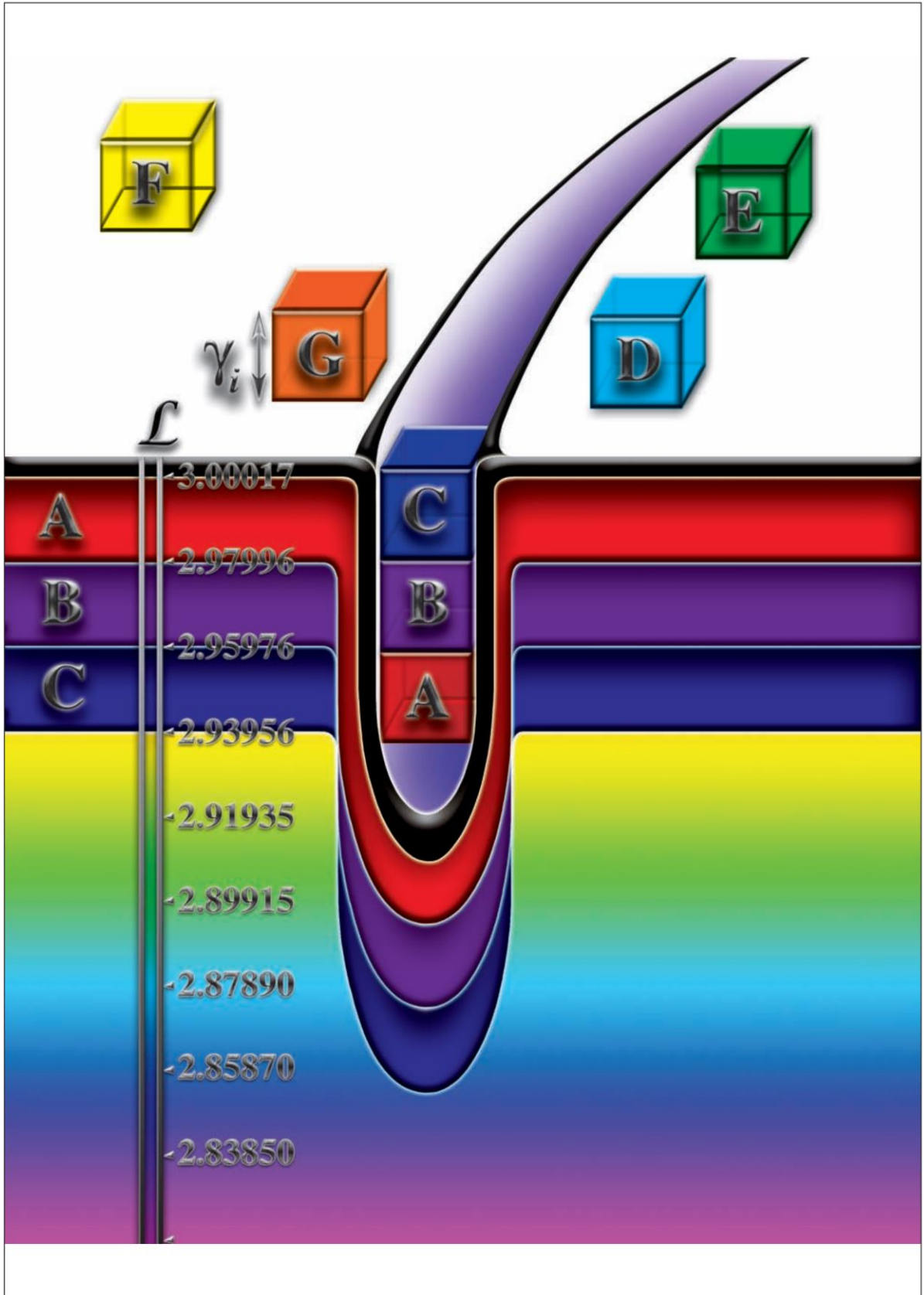
As a result of the successive fusion of primary matter in these deformation zones of space, hybrid forms of two, three, four, five, six and seven primary matter arise. Moreover, if the amount of space deformation lies in the range (3.2.1), hybrid matter is synthesized from only two primary matter. If the amount of space deformation lies in the range (3.2.2), hybrid matter is synthesized from both two and three primary matter.

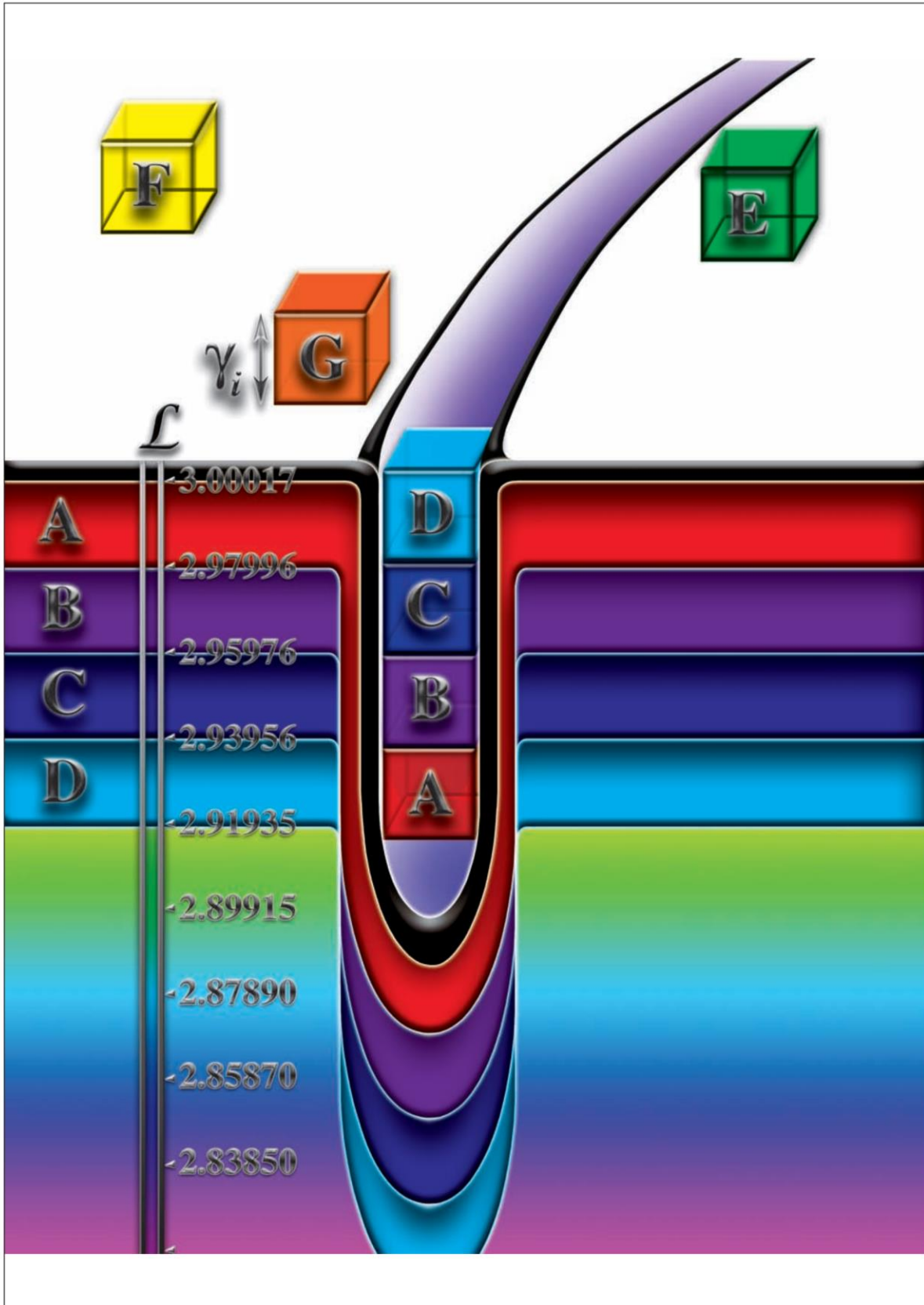
And, similarly, with each change in the amount of space deformation by γ_i , the number of hybrid forms of matter increases by one. And, when the amount of space deformation lies in the range (3.2.6), the synthesis of six hybrid forms of matter from seven forms of primary matter occurs. The hybrid form of matter that arose as a result of the fusion of seven primary matter, we will call physically dense matter (**see Fig. 3.2.2 – 3.2.7**). Before proceeding to the analysis of possible states of physically dense matter, I would like to pay special attention to borderline states. The nature of one such material substance - the electron - is key in understanding the nature of the physically dense matter of our universe. All existing models of an atom — a minimal stable material substance - describe the presence of an electron (no one has tried to explain what an electron is, except that a negative charge was put in correspondence with it, at that time, a positive charge was put in correspondence with the proton, without any explanation of what positive or negative charges really are) of dual properties - both particles and waves. Experiments have confirmed the presence of dual (duality) properties of the electron, but no one has given any explanation why it manifests itself ambiguously.

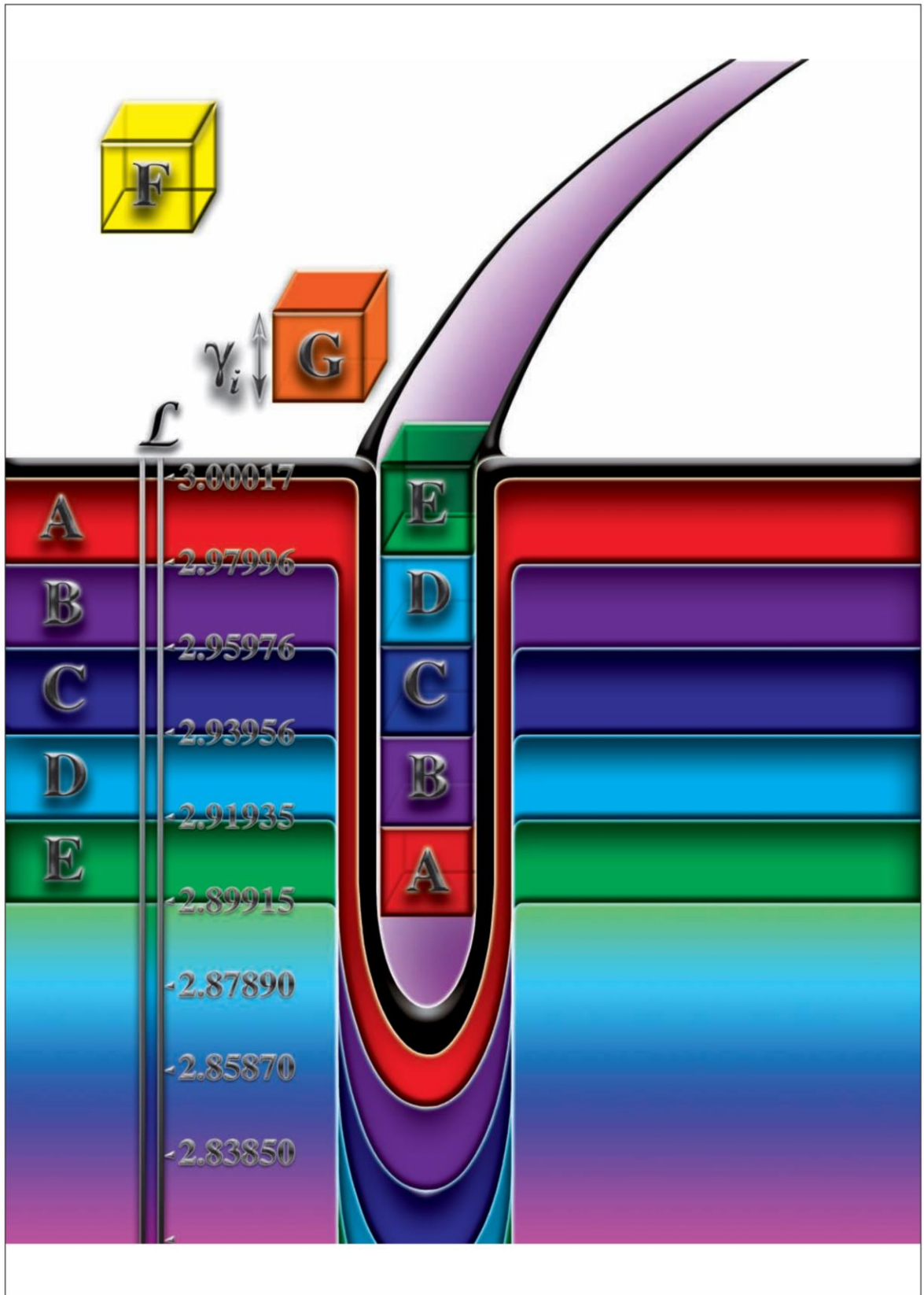
Let's try to understand the nature of the electron. Let us consider such a qualitative state of space in which the magnitude of the deformation of the microspace lies in the following range:

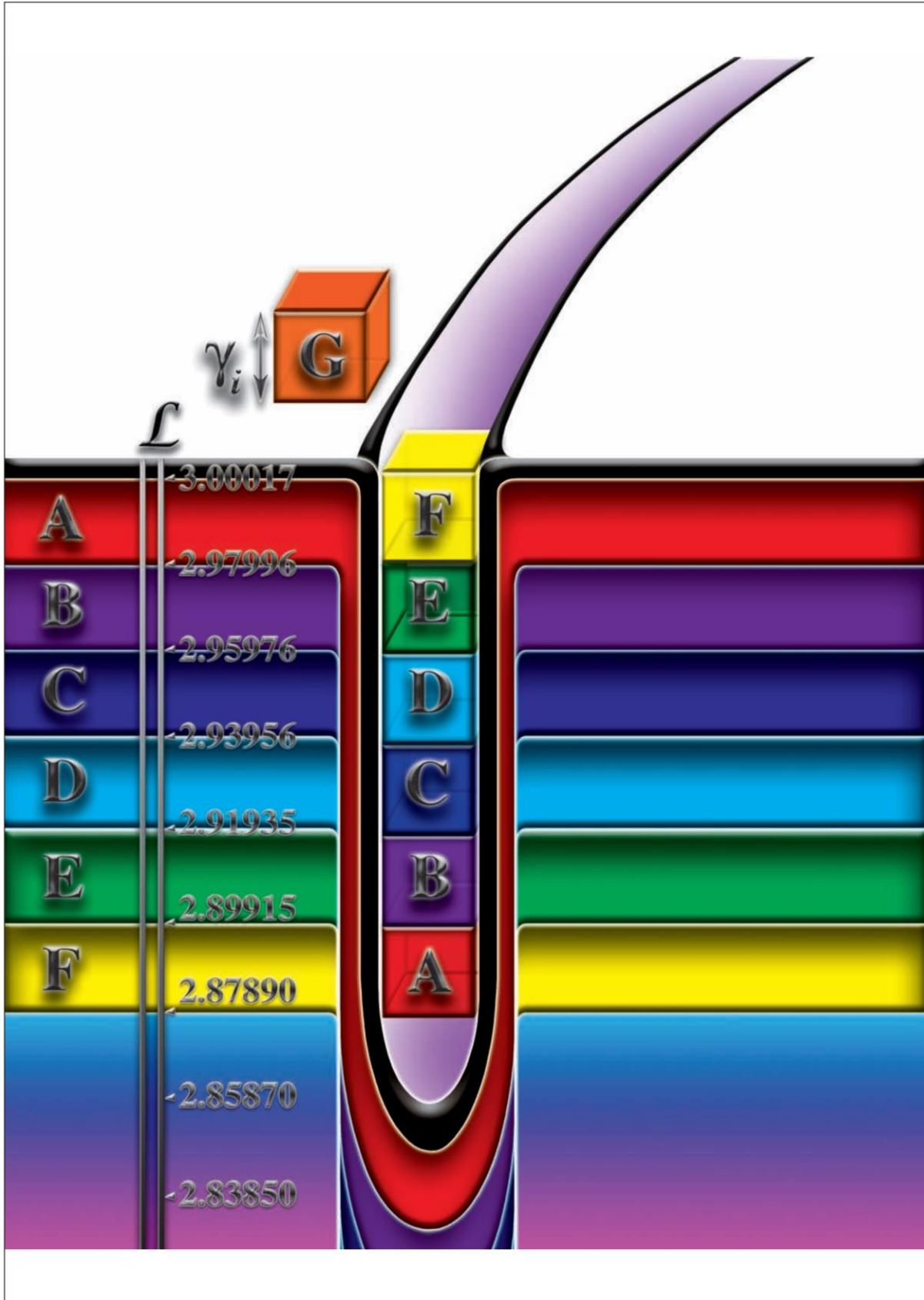
$$6 \gamma_i < \Delta L < 6,9 \gamma_i \quad (3.2.6)$$

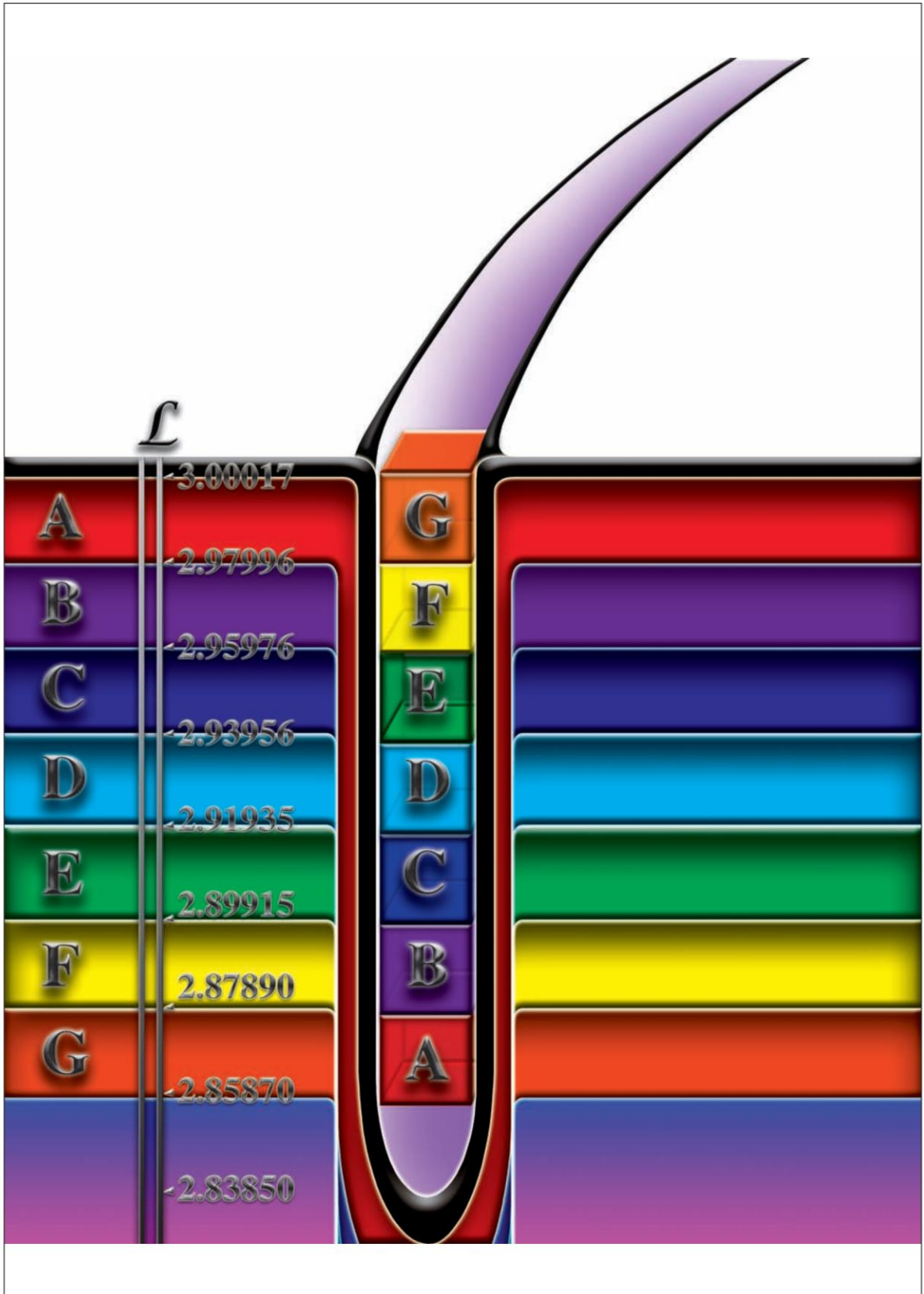






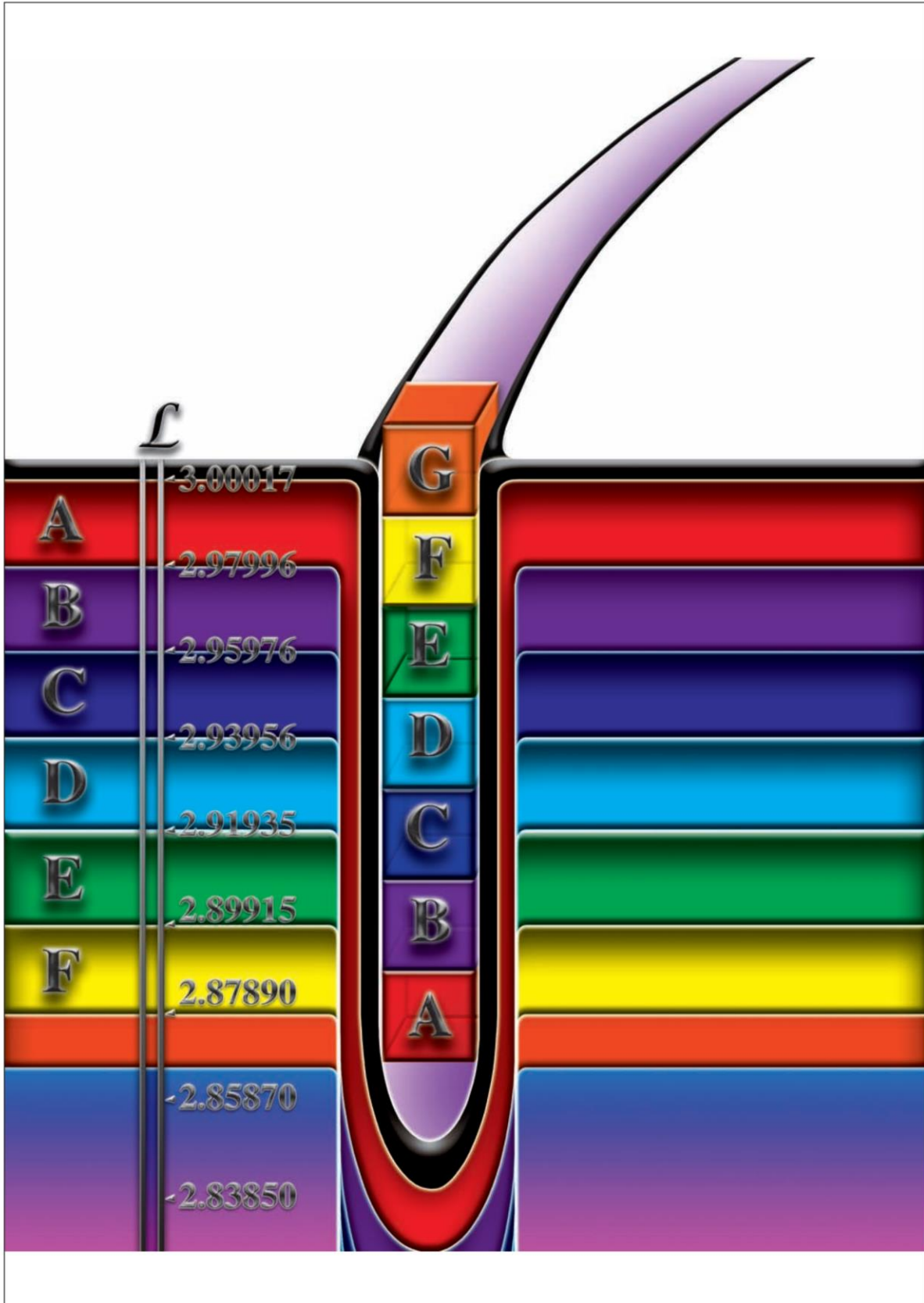


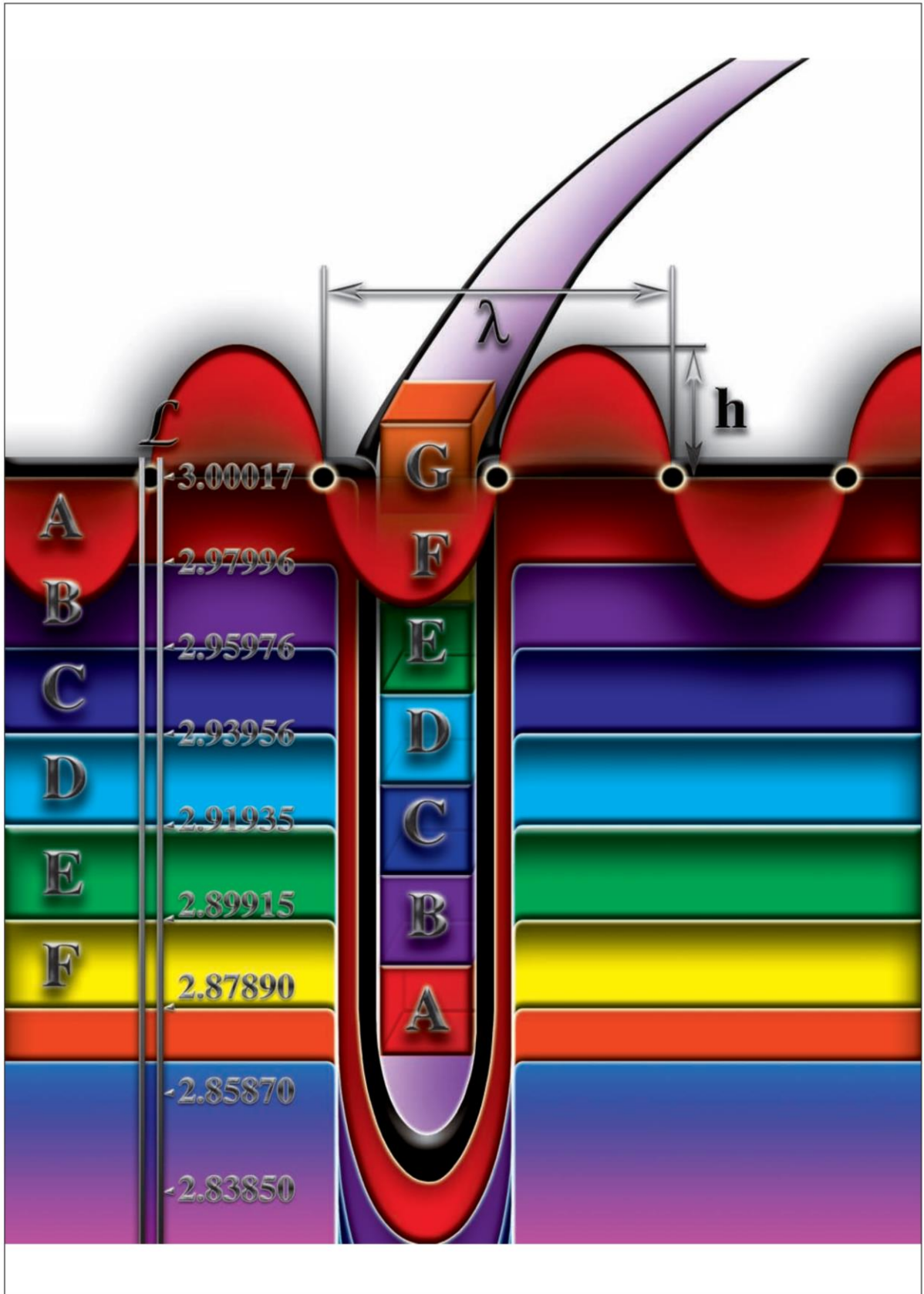




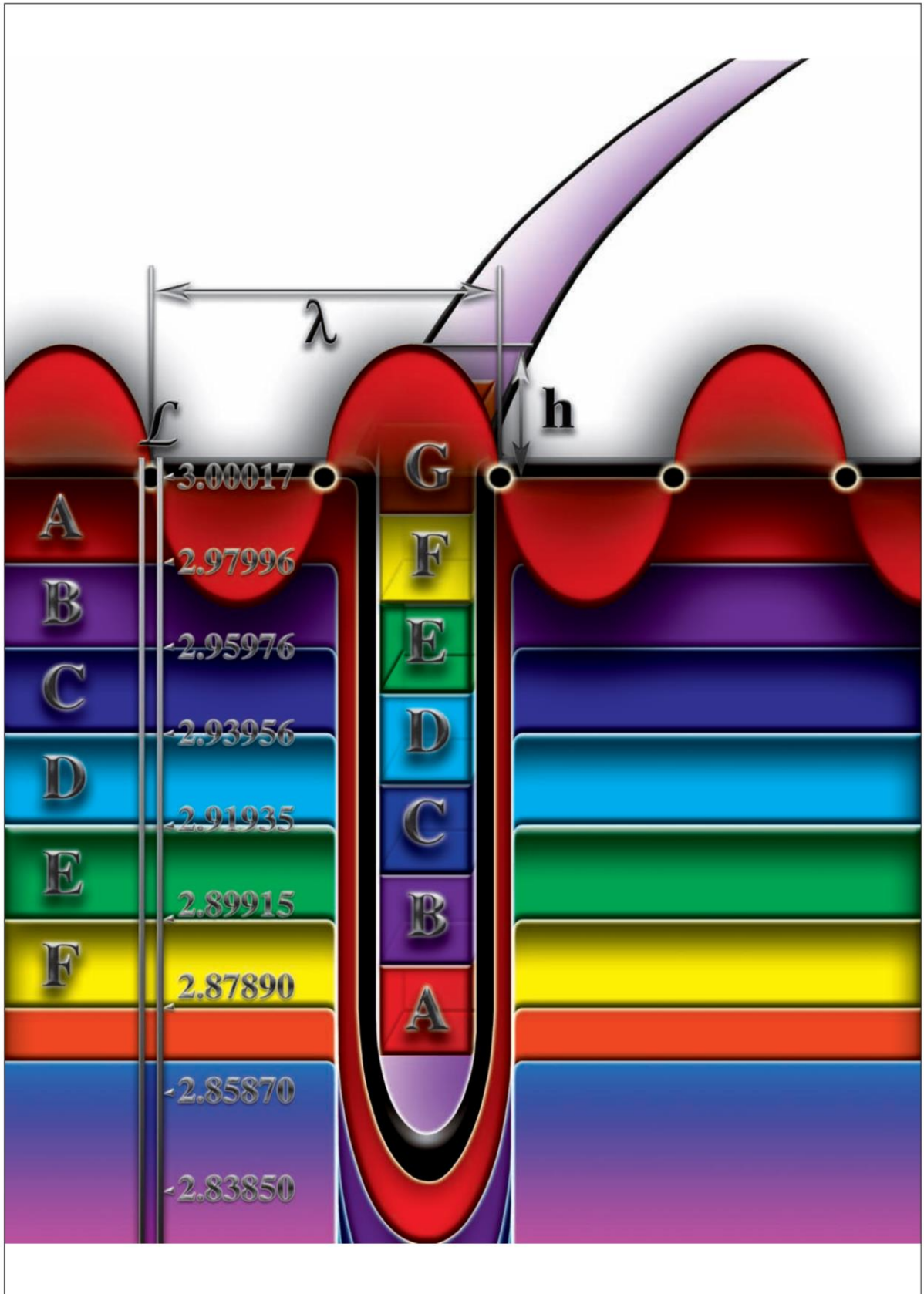
With such a qualitative state of space, the necessary and sufficient conditions are met for the fusion of six primary matter, and for the fusion of seven primary matter, the smallest thing is missing (**Fig. 3.2.8**). Space is never in a static state. There is a constant synthesis and decay of matter, atoms of its components, waves constantly pass through every point of space, carrying minor perturbations of dimensionality, astrophysics call it the relic radiation of the Universe, which mainly consists of gamma radiation. Gamma radiation is a manifestation of primary matter with other, smaller values of the quantization coefficient of space than our universe has and they do not take part directly in the synthesis of physically dense matter. However, nevertheless, their role is key in the nature of the electron. Constantly penetrating space, these waves cause insignificant, at first glance, perturbations of the dimensionality of space. Insignificant for something, these perturbations become decisive in the nature of the electron. Superimposed on the deformation of the microspace (3.2.6), gamma rays briefly create an additional curvature of the microspace, in which conditions arise for the fusion of seven primary matter of our type (**Fig. 3.2.9**).

$$6 \gamma_i < \Delta L + h \quad (3.2.7)$$



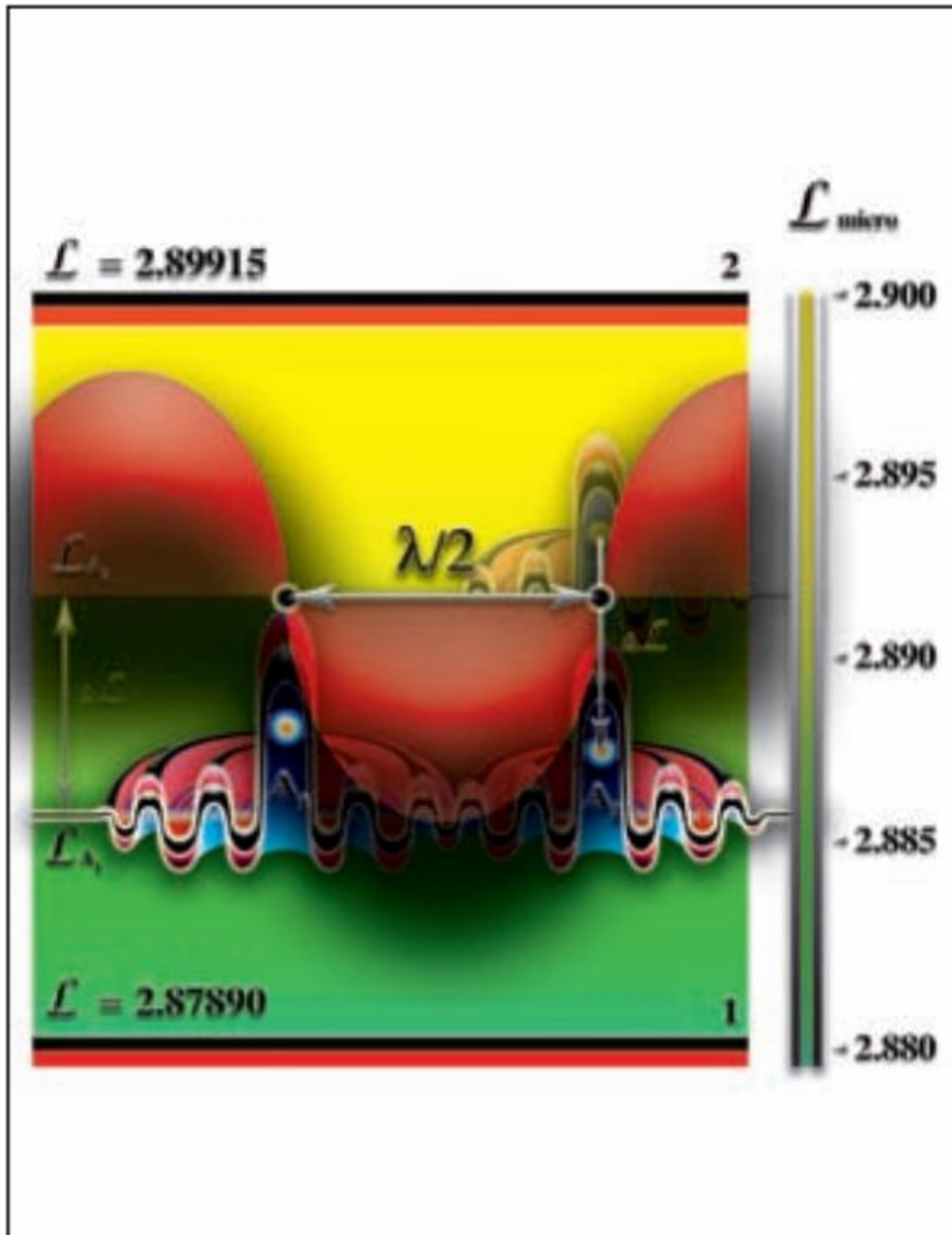


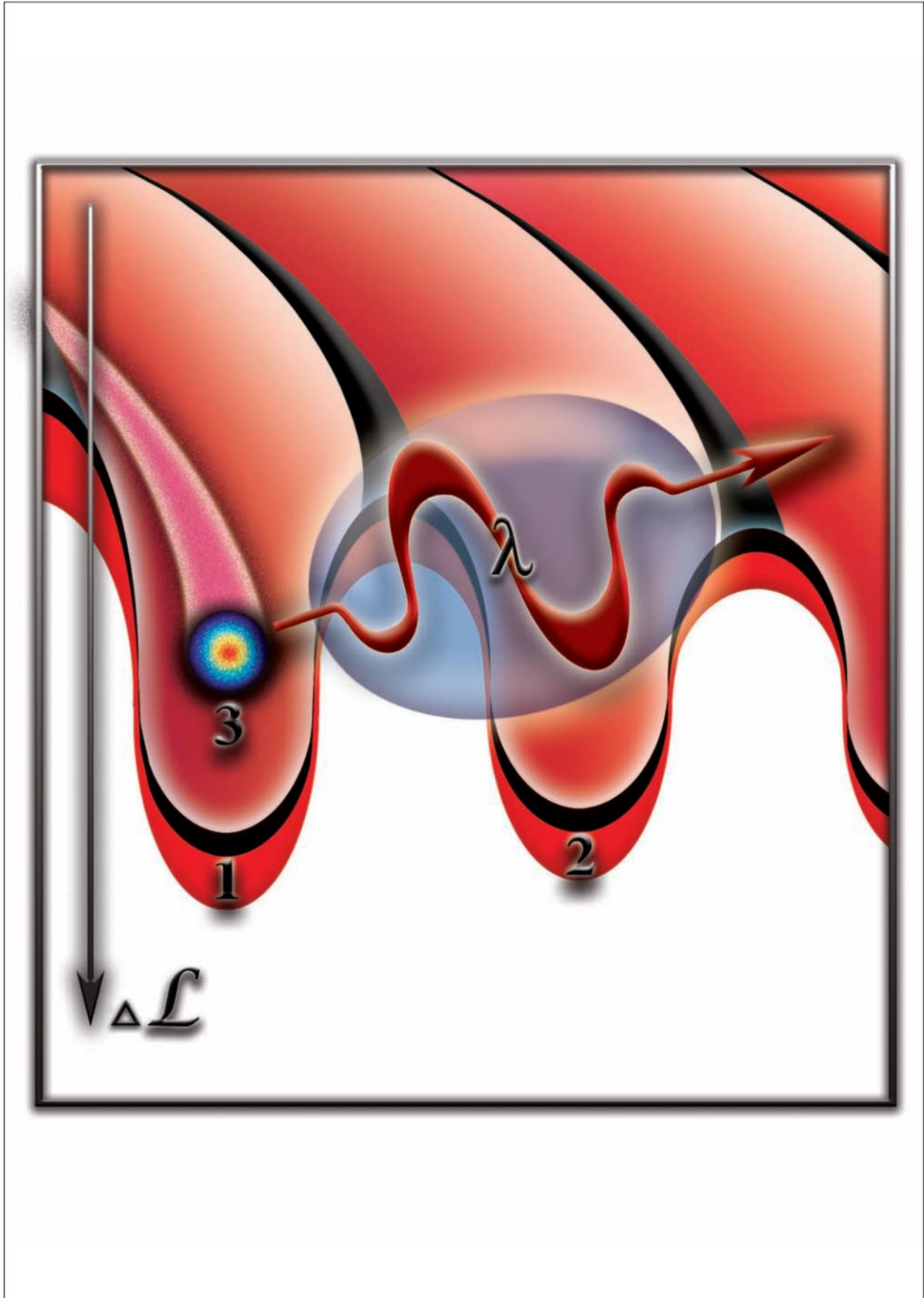
For a short time, conditions arise under which all seven primary matter are able to merge, creating a hybrid form. The synthesis process begins, a material cloud appears, which begins to condense, but the compaction process does not have time to complete. The wave front, passing through the region of microspace deformation, is constantly changing and as a result, the cumulative level of dimensionality of this region changes smoothly, respectively, within the amplitude of the passing wave. The wave brings with it a change in the dimensionality level of the microspace deformation zone, without which the necessary and sufficient conditions do not arise for the fusion of the seven primary matter. Such a qualitative state is maintained for a very short period of time, during which the passing wave creates the necessary additional deformation of the microspace. Moreover, it should be taken into account that the wave carries an additional deformation of both signs, positive and negative. As a result, the deformation of the microspace begins to decrease, and the moment comes when the qualitative conditions for the possible fusion of the seven primary matter disappear again (**Fig. 3.2.10**). The material cloud, which has just begun to compact, dissipates again. All this happens during the passage through the microspace deformation zone by a single photon of gamma rays. Due to the fact that any point in microspace is continuously penetrated by a huge number of waves, the process of densification and decompaction of matter is continuous. This state is the boundary state of physically dense matter. That is why the electron, which corresponds to this boundary state, has dual properties of both particles and waves. This is why we speak of the electron cloud as a certain clump of matter that moves around the nucleus of an atom. An analogy to an electron cloud can be fog. Water vapor in the air at the temperature of the so-called dew point begins to condense into tiny water droplets, small enough that they do not fall out as rain, but continue to "float" in the air, absorbing and scattering light. So, in deformations of microspace around the atomic nucleus the electronic "fog" appears and disappears - an unstable boundary state of physically dense matter.

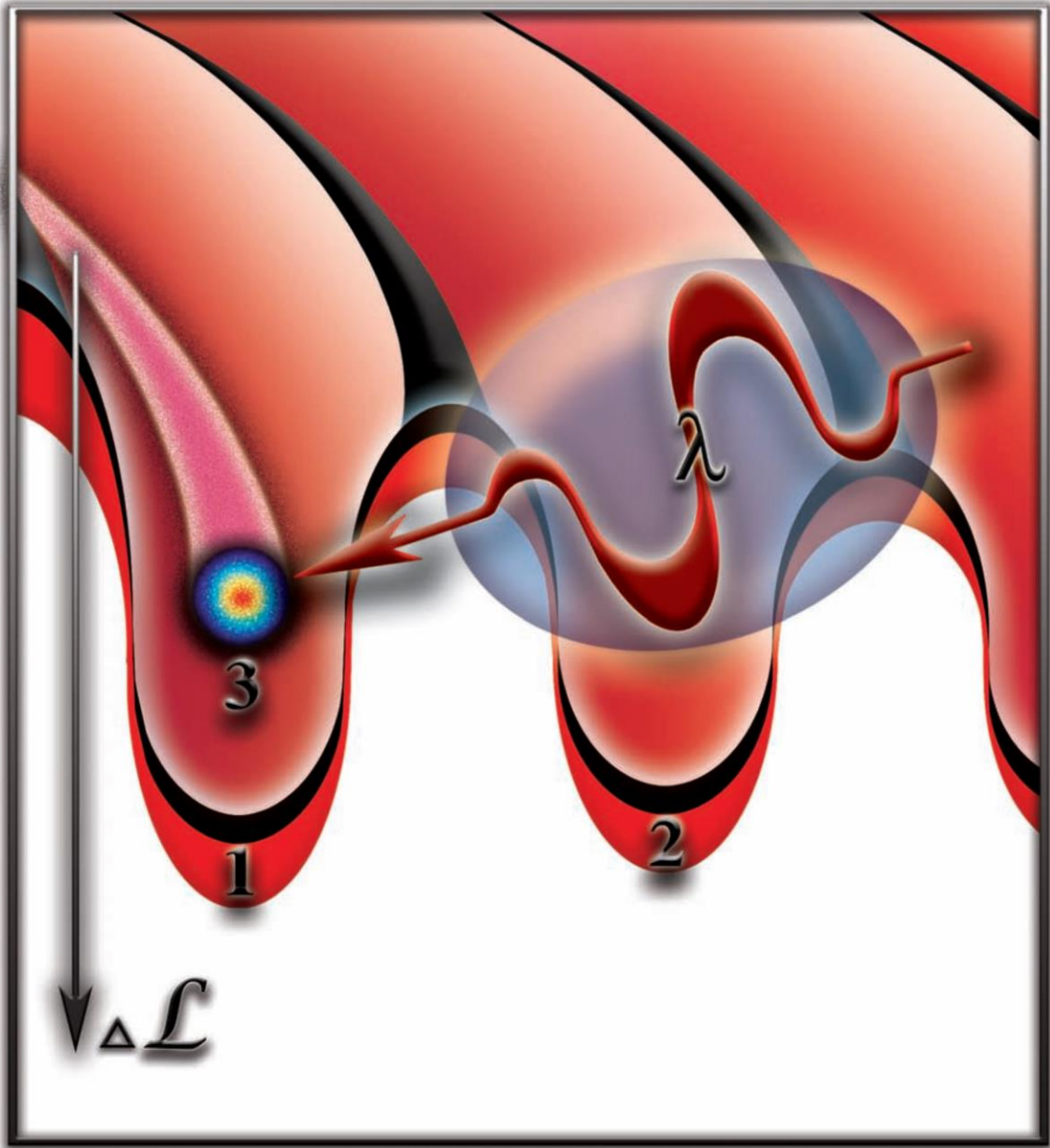


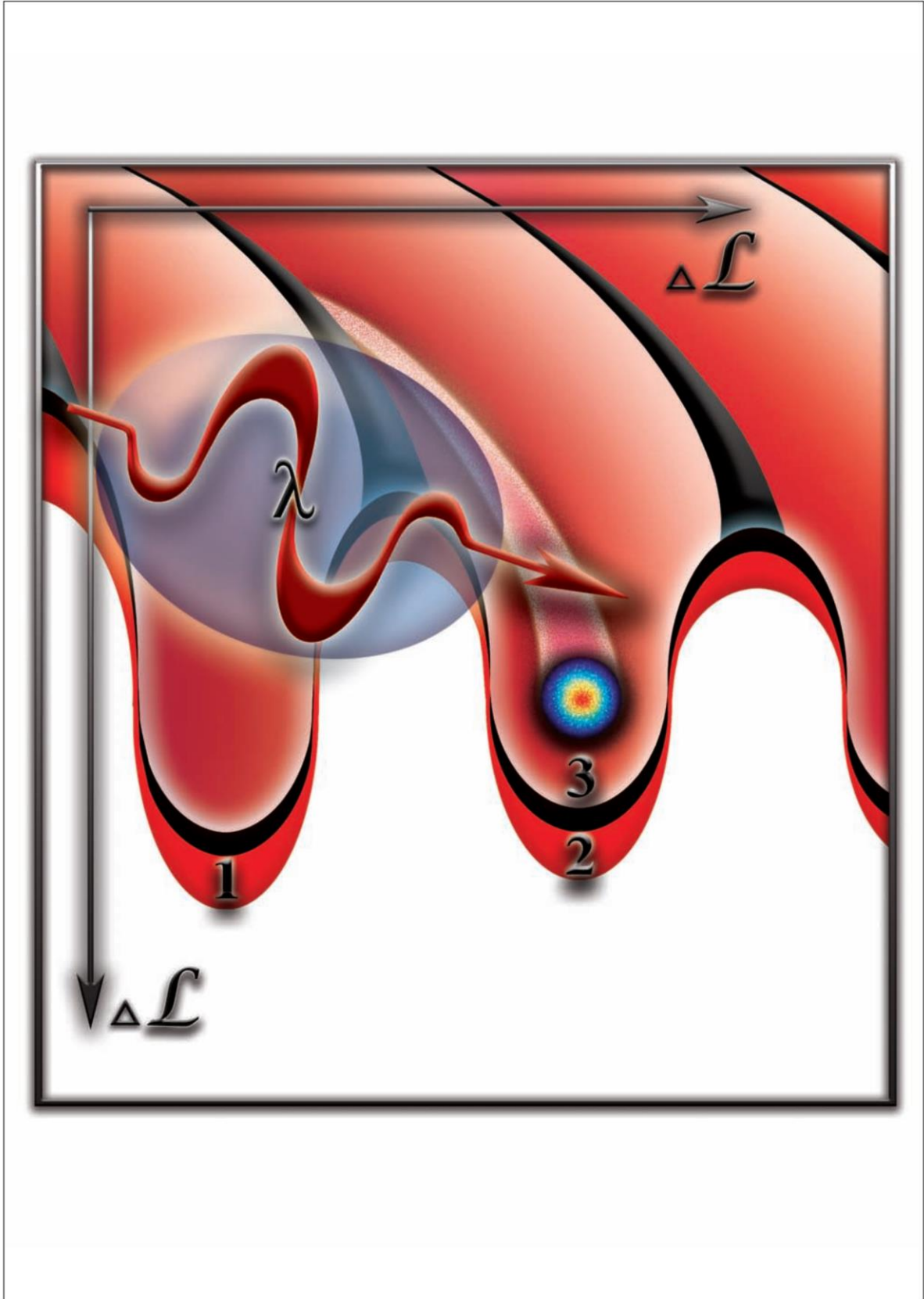
Now I would like to draw attention to the concept of electron motion. An electron, an electron cloud, does not move at all in a physically dense medium. This is primarily because the electron is not physically dense matter in the full sense, but is nothing more than extremely unstable boundary state of this matter (**Fig. 3.2.11**). This extremely unstable boundary state manifests itself primarily in the constant transition of matter from one qualitative state to another. At the same time, these qualitative states are associated with the constant absorption and emission of gamma-ray photons during the transition of matter from one qualitative state to another and vice versa (**Fig. 3.2.12 and Fig. 3.2.13**). At the same time, matter can return to the previous qualitative state not necessarily in the same place (**Fig. 3.2.14**).

In the presence of a horizontal dimensional difference, the primary matter released during the decay of an electron, having absorbed a photon of a different wavelength, can materialize in some neighboring microspace deformation zone existing around the nucleus of an atom. There is a so-called quantum transition of an electron from one orbit to another. During such transitions, electrons absorb and emit photons with different wavelengths. This is due to the fact that each zone differs from the neighboring one by the numerical value of the deformation of the microspace. Therefore, because of this difference in "depth" of microspace deformation zones, different additional curvatures of microspace are necessary for the possibility of materialization of the electron, which is realized by absorption of photons having different wavelengths and amplitudes. Since photons of different wavelengths bring with them fluctuations in the dimensionality of the microspace of different magnitude, they are able to qualitatively influence the processes in the zones of heterogeneities if their wavelength is commensurate with the size of these zones of inhomogeneity of the microspace. That is why, when an electron emits a photon, it "jumps" to a smaller orbit, and when it absorbs, respectively, to a larger orbit. The fact is that, with emission, as the electron loses a photon, the "depth" of the microspace deformation zone in which the electron is located changes by the magnitude of the amplitude of the emitted photon. As a result, the electron becomes unstable and disintegrates into the primary matter that forms it and materializes in the deformation zone closer to the nucleus of the atom. Similarly, when an electron absorbs a photon, its intrinsic dimension increases and it "jumps" to a larger orbit.









The level of dimensionality of the microspace at which the conditions for the appearance of an electron arise, we will call the electron's own level. Deformation zones of the dimensionality of the microspace that arose during the synthesis of the nucleus are located concentrically around the nucleus of the atom. The depth of these deformation zones is different, therefore, in order for conditions to arise for the fusion of the seven primary matter and an electron cloud to arise, additional dimensional curvatures of the microspace specific to each of these zones are necessary. These conditions correspond to photons of different wavelengths, as already noted above, whose wavelengths are commensurate with the size of the deformation zones. Practically all the substance of the atom, the so-called physically dense matter, is concentrated in the nucleus. The simplest atom is a hydrogen atom, the most complex are transuranic elements. Hydrogen atoms are the most stable elements in the universe, transuranic ones are completely unstable and almost all of them exist only in artificial conditions and "live", sometimes, billionths of a second, or even less.

The instability of heavy elements falls into the "procrustean bed" of logic — the nucleus is formed from protons and nucleons, the more of the latter, the less stable of a system they form. The more complex the system, the more difficult it is for it to be in a stable state. This rule applies to almost any complex system. Nevertheless, the question of the causes of the resulting instability remains open, because for different complex systems, different natural phenomena become the causes of instability. So, in modern nuclear physics there is no explanation of the phenomenon of radioactive decay itself, but only the reality of the latter is stated. And, if the logic at least agrees with the instability of transuranic elements, then with the instability of isotopes of more "simple" elements, including hydrogen, this logic, to put it mildly, refuses to work. The nucleus of a hydrogen atom contains only one nucleon - a proton - and its atomic weight is taken as one. Heavy hydrogen - deuterium or tritium - in the nucleus has, respectively, one or two more nucleons. Only these nucleons, unlike the proton, are electrically neutral, have almost the same weight and size, and are called neutrons. Unlike "simple" hydrogen, they are unstable, in other words, radioactive. While other elements, having an atomic weight of tens of atomic units, continue to be stable. And gold, whose atomic weight reaches almost one hundred and ninety-seven atomic units, in general is the most chemically stable element. The appearance in the nucleus of any stable atom, an "extra" neutron, turns it into an unstable isotope. For example, the same gold Au has seventy-nine protons and one hundred and seventeen neutrons in its nucleus, and it is stable! When another neutron appears in the nucleus of a gold atom, additional to the already existing one hundred and seventeen, it becomes unstable. While the next element, which has one proton more, mercury Hg in the nucleus contains one hundred and nineteen neutrons, is stable.

If we approach the consideration of this phenomenon from the classical point of view, there is a contradiction with common sense. The same number of neutrons in different atoms manifests itself in different ways. So, the nature of the phenomenon of radioactivity is not determined by the number of neutrons in the nucleus. If so, what makes atoms unstable, radioactive?! Let's deal with this most curious phenomenon of nature.

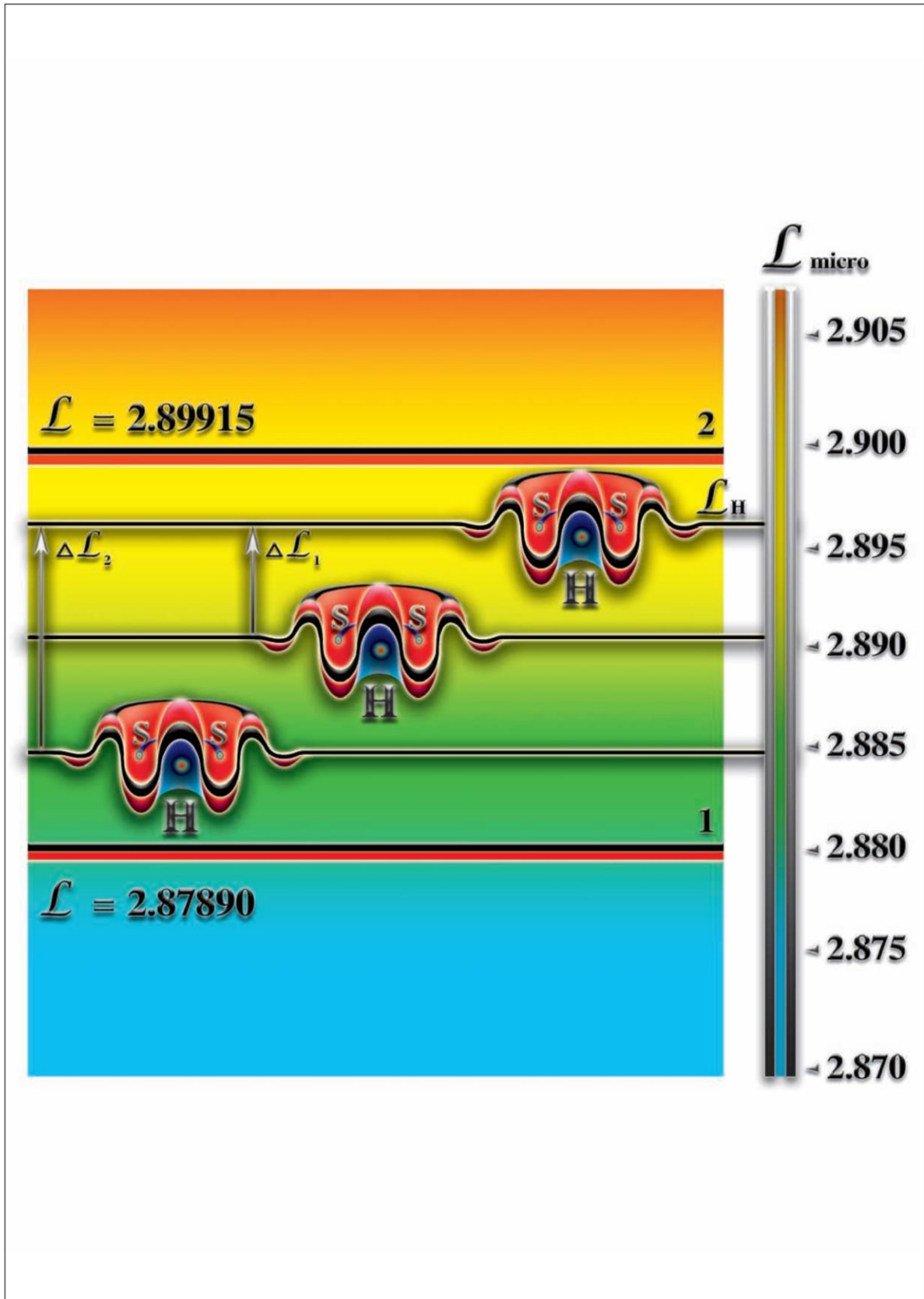
3.3. The influence of the material objects of the microcosm on the surrounding space

In the deformation zone of microspace, to which the necessary conditions for the complete fusion of the seven primary matter are fulfilled, the synthesis of hybrid forms of matter takes place. Moreover, hybrid forms of matter themselves begin to influence their microspace with the opposite sign. Each hybrid form of matter increases the dimensionality of the surrounding space by a certain amount. The process of synthesis of these primary matter will continue until the deformation of the dimensionality of the microspace is neutralized. Hybrid forms of matter fill these dimensional deformations. Imagine a dirt road with pits. If you take and fill these pits completely with stones, the surface of the road will become smooth again, although in reality the pits have not disappeared anywhere. They were simply filled with qualitatively different solid materials. So are hybrid matters that have arisen in the deformation zones of microspace, qualitatively different from the primary matter that created them, they fill the zones of heterogeneity and compensate for the curvature of space? In this case, we are interested in a hybrid form of matter that arose as a result of the merger of seven forms of primary matter.

The range of dimensionality values within which a physically dense substance is stable, i.e., does not disintegrate into primary matter forming it, lies within:

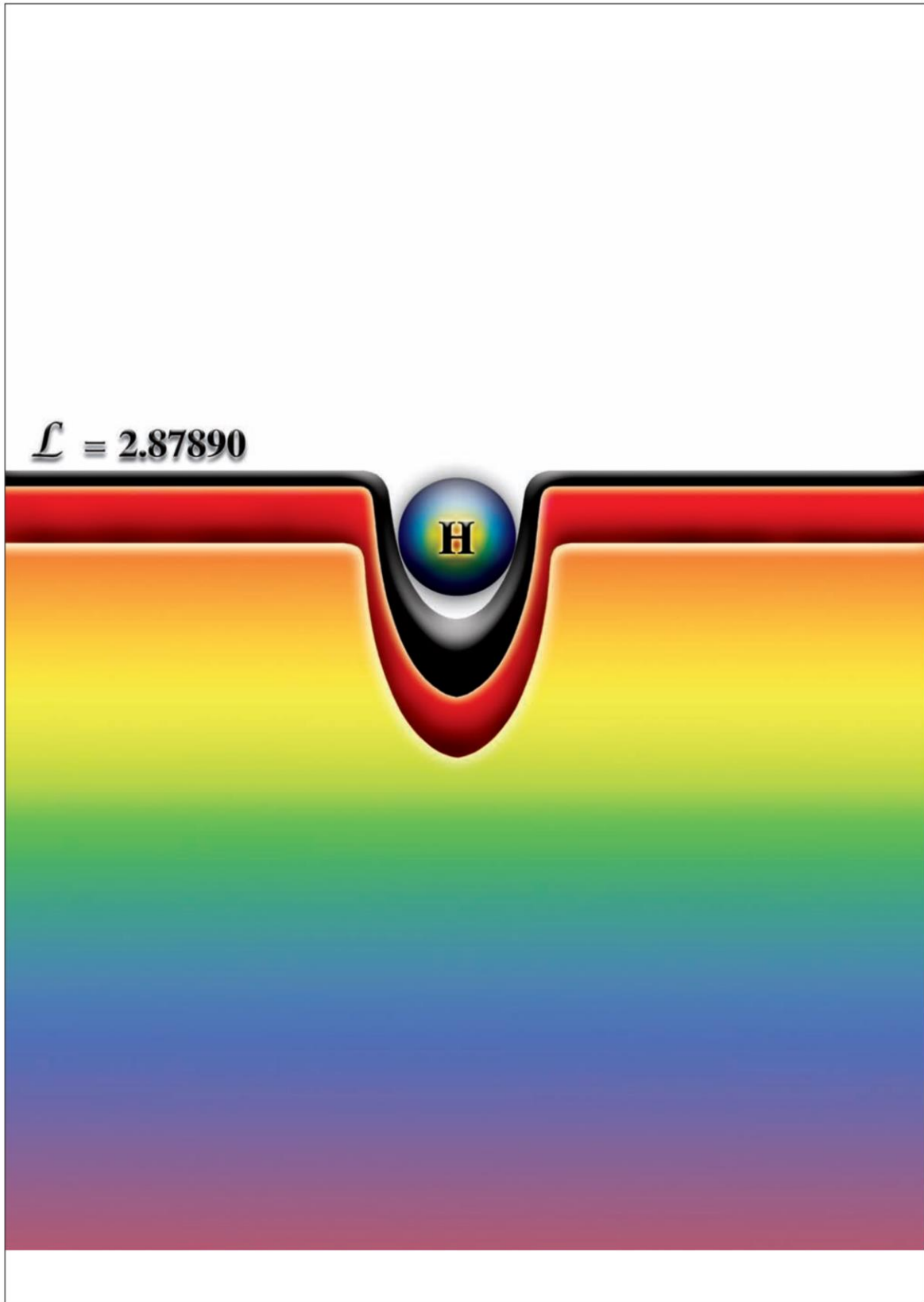
$$2.87890 < \Delta L_{f.p.v.} < 2.89915 \quad (3.3.1)$$

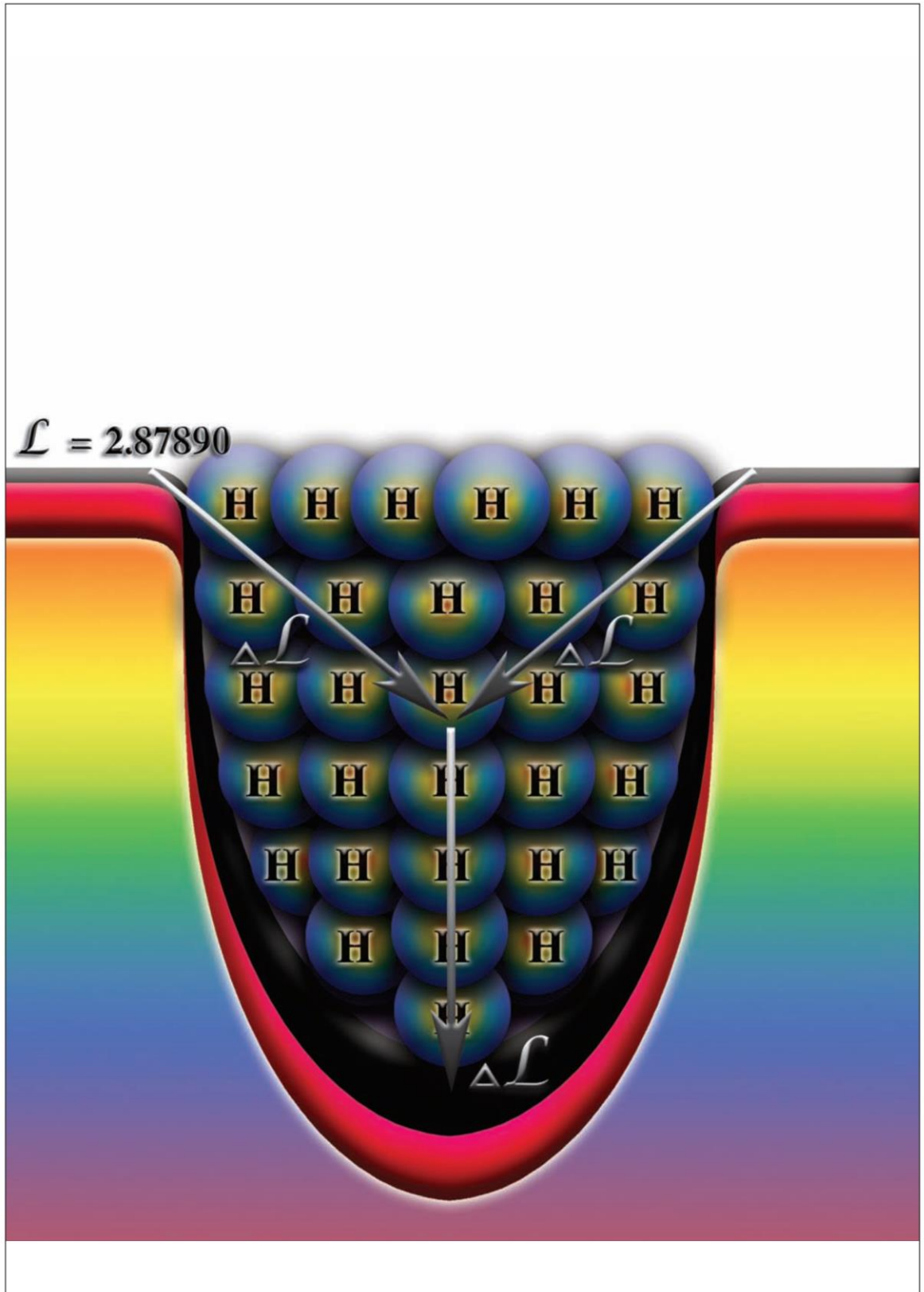
The smallest atom - a hydrogen atom — has only one nucleon in its nucleus - a proton, whose atomic weight is equal to one conventional atomic unit. It is natural to assume that the influence on the hydrogen atom surrounding the microcosm will have minimal impact. Because of this, hydrogen will be stable over the entire range of values of physically dense matter (3.3.1). That is why hydrogen is the most common element in the universe. Let's try to understand why hydrogen is the most common element in the universe? During the synthesis of atoms, in particular hydrogen, there is a change in the qualitative state of the microspace around the nucleus of these atoms. Moreover, the resulting additional curvature of space has a different sign with respect to the deformation zone of space in which there was a synthesis of these atoms. If we consider the negative value of the deformation of space in which the synthesis of atoms occurred, then the additional curvature of space caused by each atom will be a positive value. Thus, a secondary curvature with the opposite sign is superimposed on the primary curvature of space. As a result, the primary curvature of space is partially compensated. A hydrogen atom having only one nucleon in its nucleus — a proton - thus creates a minimal secondary curvature of space and therefore stable in almost the entire range. The danger of instability arises only when hydrogen atoms are found at the boundaries of the stability range of a physically dense substance. Therefore, hydrogen has a spectrum of stable states, almost equal to the stability range of a physically dense substance (**Fig. 3.3.1**).



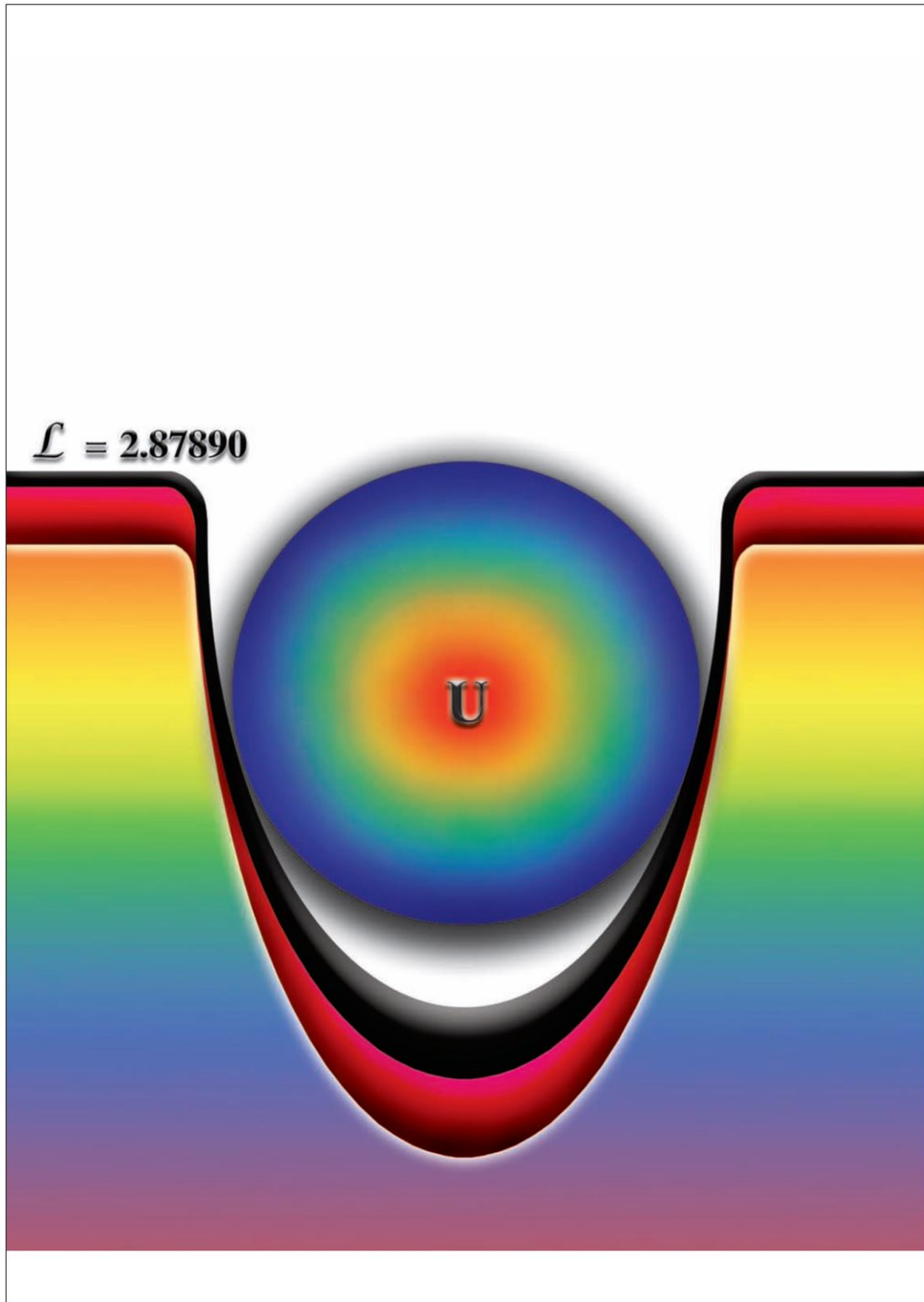
Each stable state of an atom corresponds to the level of the atom's own dimensionality. If an atom has a level of intrinsic dimensionality close to the upper limit of the stability range of a physically dense substance, then, when an atom absorbs a photon with a wavelength commensurate with the size of the atom (when an atom absorbs a photon, the electron of the atom "moves" from the orbit closest to the nucleus to a more distant one), the level of intrinsic dimensionality of the atom changes by the magnitude of the amplitude of the wave absorbed by the atom. Thus, as a result of the absorption of a photon by an atom, the level of the atom's own dimensionality increases. And, if initially the atom was close to the upper limit of the stability range of a physically dense substance, such a change in dimensionality leads to an unstable state of the atom, and it decays. The question may arise, how does a hydrogen atom in particular, or any other atom that is stable in its normal state, become unstable and disintegrate? Let's return to the image of pits on the road filled with water during a rain. Both the size and depth of these pits will always be different and it will take a different amount of water or something else to fill these pits to the brim. Therefore, if there is a slight curvature of the microspace, **there is a synthesis of only such atoms whose own influence on their own microspace is commensurate with the amount of deformation of the microspace in the field of synthesis of these atoms.** The deformation of the macrospace is superimposed on the deformation of the microspace, only with the opposite sign, and they mutually balance each other. Minimal curvature of the macrospace, at which the synthesis of a physically dense substances corresponding to the conditions of hydrogen synthesis. The hydrogen **H** atom has minimal effect on its microspace and that is why it is the first form of a physically dense substance in the universe (**Fig. 3.3.2**).

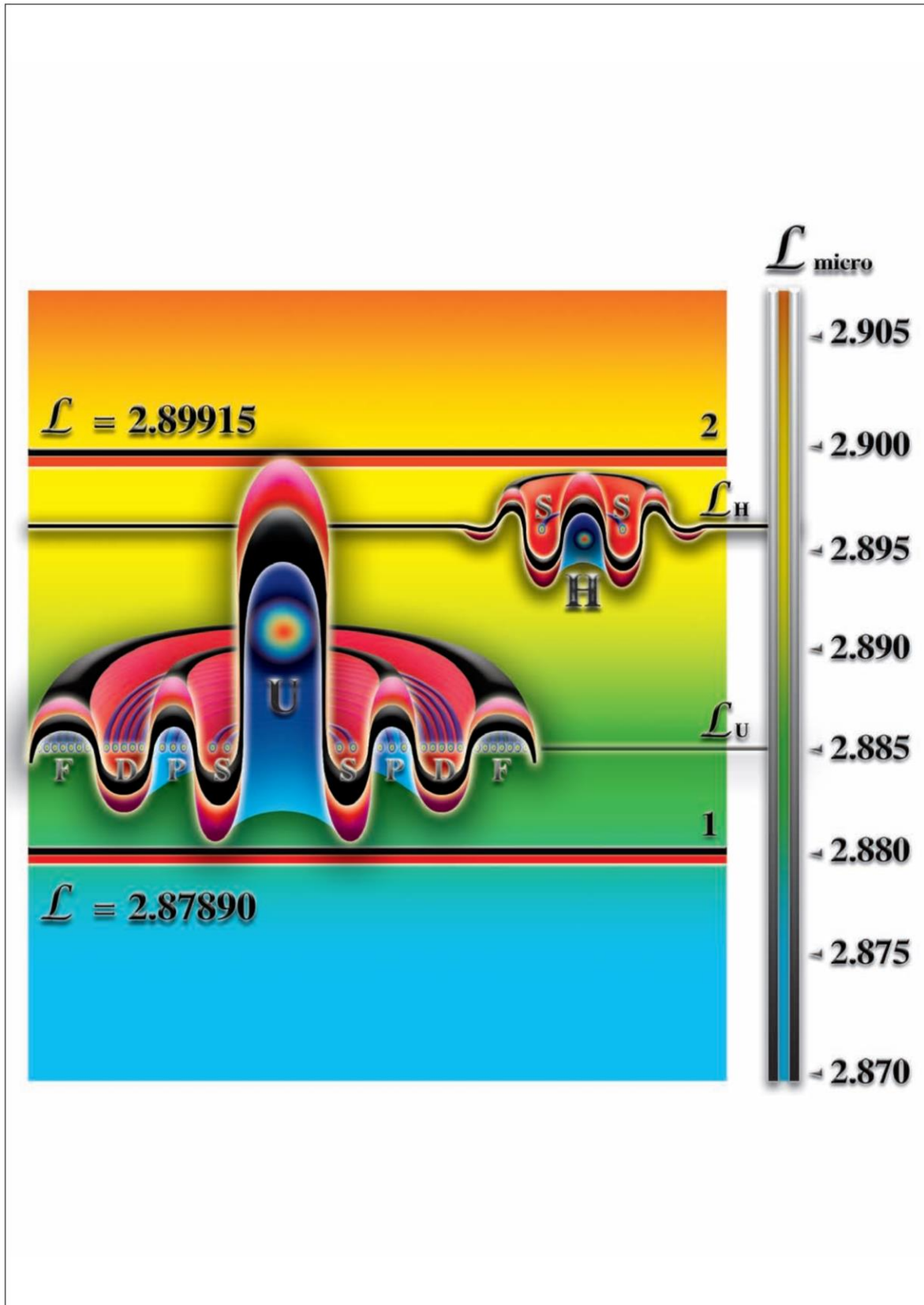
The hydrogen atom is the first brick of the matter of our universe and it was it who served as the building material for both stars and all other known atoms that arose in the bowels of stars as a result of thermonuclear reactions resulting from the compression of hydrogen stars - blue giants. The compression of hydrogen blue giants occurs due to the fact that there is a dimensional difference inside the blue giant directed towards the center of the star (**Fig. 3.3.3**). As a result of this compression, hydrogen atoms begin to move towards the center of the deformation zone of the macrospace and, colliding with each other, emit waves. In this case, the electron of each emitting hydrogen atom moves from an orbit with a higher energy to an orbit with a lower one. And this continues until the electron gets so close to the proton nucleus that a qualitative transformation of the hydrogen atom into a neutron takes place. There is a critical minimum orbit for the electron of the hydrogen atom. And if an electron, while in this orbit, emits a wave and it goes into an orbit below the critical one, irreversible processes occur and hydrogen passes into a new qualitative state - a neutron. In a neutron, the distance between a proton and an electron is so small that it can be said that the electron practically fell on the proton. When an electron is dropped into an orbit below the critical one, a situation arises when there is practically no possibility to put it into a higher orbit. A neutron that has no electric charge becomes a building material for other atoms.





Accelerating as a result of collisions with atoms and other neutrons, neutrons reach such energies when they are able to penetrate into the hydrogen nucleus and create deuterium, the so-called heavy hydrogen. Thus, conditions arise for thermonuclear reactions, as a result of which helium is synthesized. Similarly, the atoms of all other elements are synthesized. As a result of the compression of the star, there comes a moment when a so-called supernova explodes, and the substance of the upper layers of the star, consisting of atoms of different elements, is ejected into the surrounding space. In addition, it should be remembered that, within the stability range of a physically dense substance, the dimensionality of the microspace changes continuously while the secondary influence of each atom on the same space has a specific, finite value. This value of the influence of the atom itself can be very small, like that of hydrogen, or commensurate with the stability range - like that of uranium and the following elements (**Fig. 3.3.4**). The influence of all other elements lies between these extremes. We call hydrogen the "lightest" element, and transuranic elements the "heaviest" (**Fig. 3.3.5**). But hardly anyone has thought about what is behind these so obvious concepts. We are used to taking for granted many natural phenomena, although they sometimes carry amazing information, the possession of which can help solve many mysteries of nature. Imagine, that many balls of different sizes, but of the same density, are thrown into the water, and the smallest of them is an integer number of times fits in any other. As a result, the weight of each will be greater than the weight of the small one by as many times as fits in a given ball. After all these balls fell into the water, they came into a chaotic movement, relative to each other. But gradually, as they lose their initial momentum, they will be distributed in the water in a certain order. The lightest ball will float on the surface of the water or close to it, where its weight will be neutralized by water pressure. All other balls, depending on their size, and therefore weight, will be submerged to different depths. Any movement of water will set all these balls in motion, but each time, after the movement of water masses stops, all these balls will take their "places" again — they will return to the depth where their weight is neutralized by water pressure. Isn't it a clear and familiar picture to each of us? So, the "lightest ball" is hydrogen, and all the other balls are atoms of other elements, the atomic weight of which is a multiple of the atomic weight of the hydrogen atom. It is a multiple because any nucleus consists of nucleons - protons and neutrons, whose weight is almost the same.



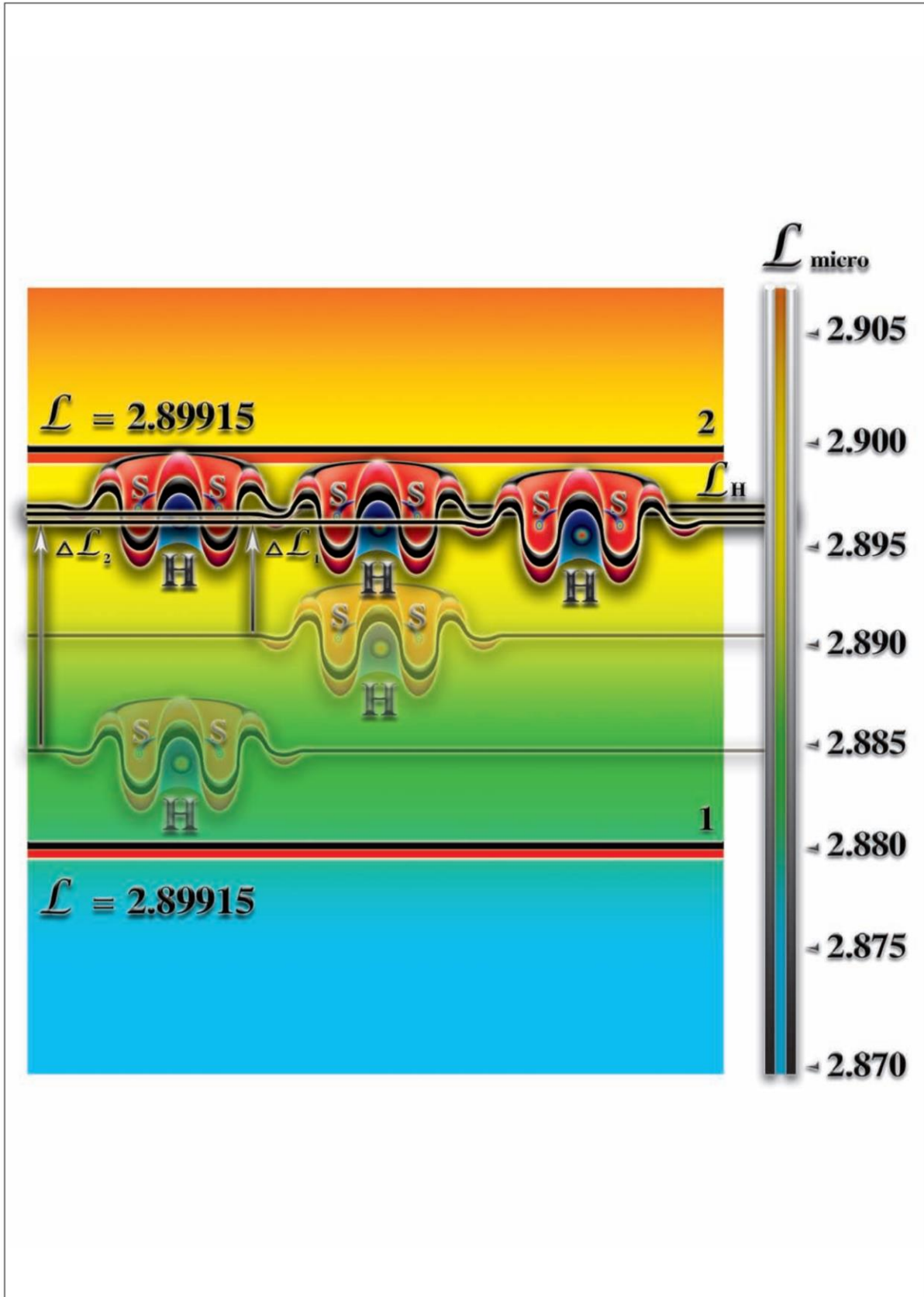


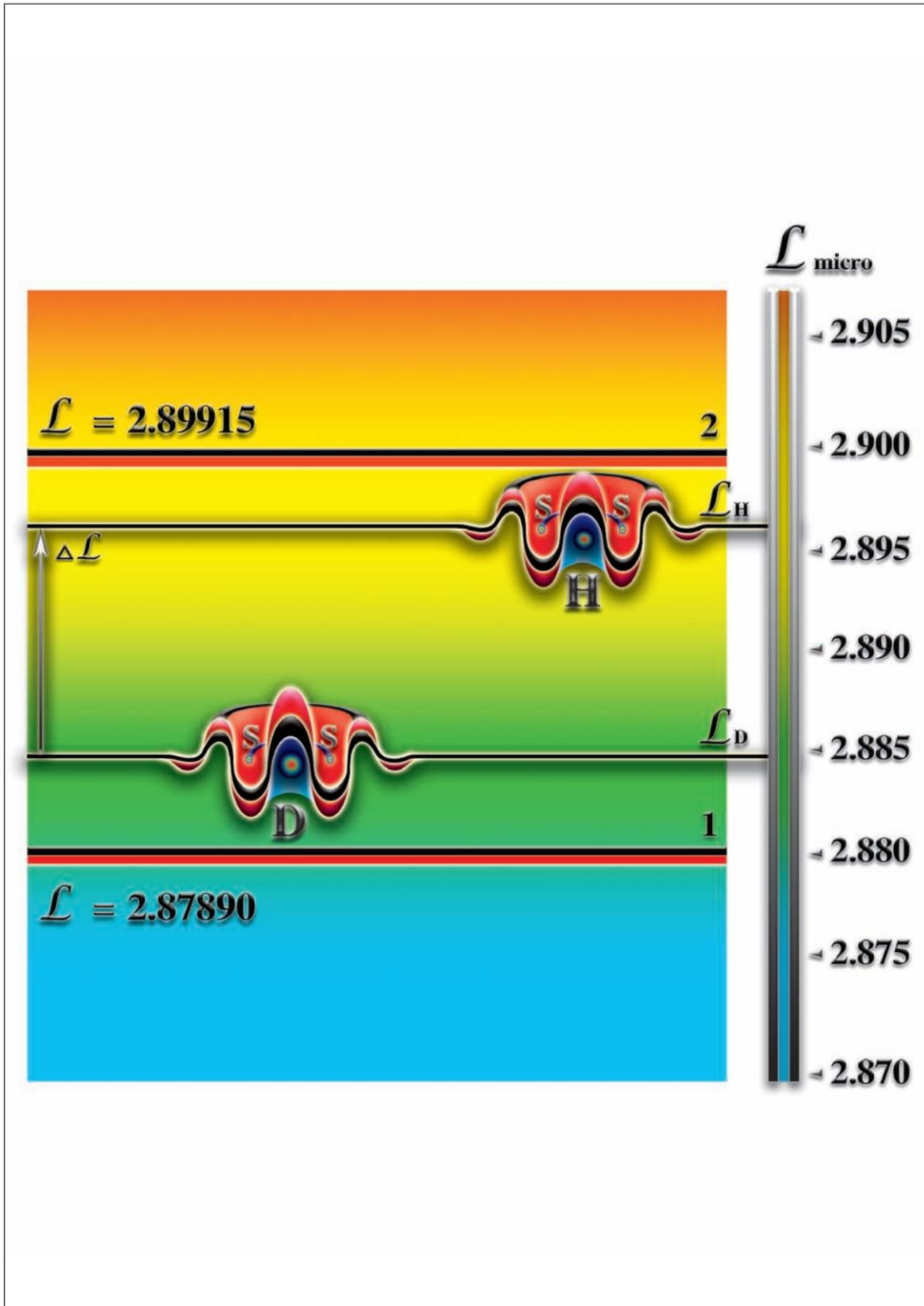
So, just as water masses move under the influence of wind or something else, various processes are constantly taking place in space (for example, the passage of different waves through space), as a result of which all atoms and molecules "floating" in space are almost constantly in motion. After each successive perturbation of the dimensionality of space, the atoms return to their states of "equilibrium". As a result, hydrogen atoms accumulate at the upper limit of the stability range of a physically dense substance. Understanding this brings us closer to understanding the radioactivity of isotopes of "light" and "medium gravity" elements. For example, when hydrogen is bombarded with neutrons, some hydrogen atoms capture one or two neutrons, as a result of which the atomic weight of these atoms increases by one or two atomic units and deuterium or tritium is formed, having a greater atomic weight than hydrogen with the same electrochemical properties. Deuterium and tritium, having such an insignificant atomic weight, are radioactive isotopes of hydrogen. Inexplicable from the classical point of view, the phenomenon becomes natural to understand if we take into account the above. In principle, hydrogen is stable within almost the entire stability range of a physically dense substance. But, at the same time, the level of intrinsic dimensionality of hydrogen is located close to the upper limit of the stability range. In order to understand what the level of its own dimensionality is, it should be remembered that each atom affects its own microspace. This influence is due to the fact that the atom occupies a part of the macrospace.

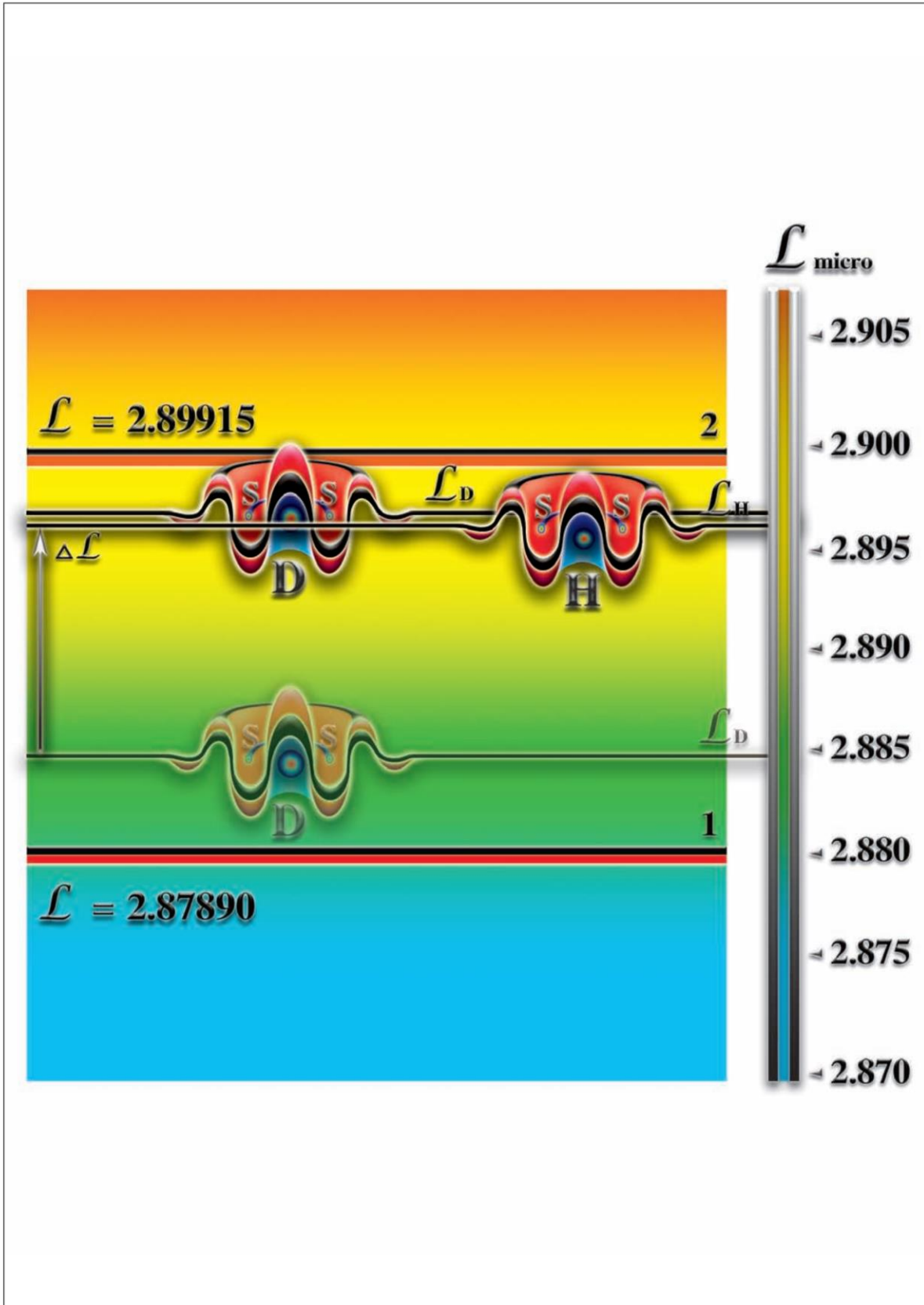
The influence of each atom on its own microspace and macrospace is constant and proportional to the atomic weight, in other words, the number of protons and neutrons forming the atomic nucleus: the greater the number of nucleons (protons and neutrons) are included in the composition of the nuclei of an atom, the greater the influence of the atom on the surrounding space. The deformation of the macrospace can be different. Atoms arising from synthesis or trapped in this deformation fill it with themselves. Therefore, when filling the same heterogeneity with different atoms, the latter (atoms) will be in different qualitative conditions. The hydrogen atom, with its minimal effect on the surrounding space, will be stable throughout the inhomogeneity zone due to the fact that the degree of influence of the hydrogen atom on the surrounding space is significantly less than the magnitude of the deformation itself. While the degree of influence on the surrounding space by the uranium **U** atom is commensurate with the maximum amount of deformation of space at which a physically dense substance can exist. Therefore, the conditions for the synthesis and stable state of the uranium atom are possible only if the amount of deformation commensurate with the degree of influence of the uranium atom on the surrounding space. And this value, as already mentioned, is commensurate with the value of the stability range of a physically dense substance. Therefore, the level of intrinsic dimensionality of the uranium atom will lie near the lower limit of the stability range.

Thus, **regardless of which atom it is, it becomes radioactive if, for one reason or another, it turns out to be close to the upper limit of the stability range of a physically dense substance.** Due to the fact that various microscopic dimensional fluctuations are constantly present in space, hydrogen atoms are constantly in motion, at which they deviate from the optimal level of dimensionality for them.

But, like a bobber that has gone under the water, it pops up after the fish releases the bait, the hydrogen atoms (as well as any other atoms) return to the optimal level of their own dimensionality (**Fig. 3.3.6**). If during the motion of atoms under the influence of perturbations of the dimensionality of the microspace, the nucleus of any of the hydrogen atoms will "capture" one or two "extra" neutrons, then, when such modified atoms return to the optimal level of dimensionality for hydrogen, they "fall out" of the stability range of a physically dense substance (**Fig. 3.3.7**). As a result, they become unstable and disintegrate (**Fig. 3.3.8**). And everything immediately falls into place, contradictions disappear, instead of the absurd, a magnificent picture of the microcosm in its pristine beauty opens up. It remains to find out only a small "but": why does heavy hydrogen return to the same optimal level of its own dimensionality as "simple" hydrogen, as a result of which it becomes unstable and decays?!







Let's "look" a little deeper into the nucleus of the hydrogen atom. The nucleus of "just" hydrogen has one nucleon - a proton - a positively charged particle, the charge of which is neutralized by the negative charge of the electron, which ensures the stability of the atom. Recall that the nucleus contains almost the entire mass of the atom, it contains a physically dense substance, which is a hybrid form of matter that arose as a result of the merger of seven primary matter. Hybrid forms affect the dimensionality of the microspace with the opposite sign. As a result, the initial microspace deformation is neutralized, and the balance is restored — a stable state of space. The nucleus of a hydrogen atom, at its birth, creates its own microscopic deformation of the dimensionality of the surrounding microspace of the same nature as the original one. And, if the initial deformation is considered negative, then a physically dense substance creates a positive deformation of the microspace. Depending on the distance from the nucleus at which the proton-induced deformation of the microspace occurs, either a hydrogen atom or a neutron appears. The fact is that a neutron is an electrically neutral particle, qualitatively formed by a proton and an electron, the distance between which is an order of magnitude smaller than the size of a hydrogen atom. Therefore, the positive and negative zones of microspace deformation are so closely located they completely compensate each other, and a neutral zone of microspace arises, which does not interact with any others, isolated in total and from everything.

In the hydrogen atom, the "electronic" deformation zone of the microspace is somewhat distant from the proton, as a result of which its effect on the proton of the hydrogen nucleus is much less, which is why the force of interaction between them is much less than inside the neutron, as a result, properties characteristic of atoms appears. Thus, the differences between the hydrogen atom and the neutron have clearly emerged, and this difference is only in the distance between the two zones of the microspace deformation of different signs. It is the distance between them that so significantly affects their properties that we are talking, in one case, about a hydrogen atom, and in the other — about a neutron. And again, spatial characteristics lead to a qualitative leap in the manifestation of matter. And now, let us recall that the "electronic" deformation zone is insufficient for the complete fusion of seven forms of matter and that the conditions for fusion arise only temporarily, during the passage of the wave front through the "electronic" deformation zone of microspace. As a result of this, physically dense matter is "born" in order to die the next moment, and so it repeats an infinite number of times. During its "short-term life", an electron exhibits the properties of matter, in other words, it affects space in the same way as the nucleus of a hydrogen atom - a proton. At the moment of its disintegration — "death" — such influence disappears. And, as a consequence, the hydrogen atom constantly makes microscopic fluctuations in the dimensionality of the surrounding microspace, relative to the level of a stable state of equilibrium. As a result of periodic materialization of the electron, the "electron" minus zone of the microspace deformation will disappear and reappear. Thus, the difference between a hydrogen atom and a neutron is determined only by their spatial structure, which has the influence only on their chemical properties, while the nature of their influence on the microspace is practically identical.

Therefore, when a hydrogen atom "captures" a neutron, the heavy hydrogen atom tends to the same optimal level of intrinsic dimensionality as "simple" hydrogen, while the total influence of the nucleus on the surrounding microspace of heavy hydrogen is two or three times (in the case of deuterium or tritium, respectively) greater than that of simple hydrogen. And, as a consequence, heavy hydrogen falls outside the stability of a physically dense substance. Its nuclei find themselves in the zone of microspace, where the matter that arose during the merger of the seven primary matter cannot exist, the nucleus disintegrates into the matter that forms it. Which corresponds to radioactive decay.

The question may arise: why should a hydrogen atom, like all other atoms, strive for an optimal level of its own dimensionality?! And in general, what is behind this concept? Another combination of words that does not have a physical meaning and a clear explanation?! Let's deal with this concept.

As already noted, hybrid forms of matter with their mass fill the deformation space in which their synthesis takes place. The synthesis process continues until the deformation zone is completely filled, just as when filling the pit with stones, the surface of the dirt road becomes flat. Hybrid matter neutralizes the deformation zone of space. And this can only mean one thing — they themselves affect the dimensionality of space with a sign that is the reverse of the sign of the space deformation in which the synthesis of these hybrid matters took place. Atoms create a secondary curvature of the microspace. Thus, each atom changes the dimensionality of its microspace, while the rest of the surrounding microspace retains the dimensionality that was before the synthesis of this atom. As a result, there is a certain difference in dimensionality, directed from the level with a smaller dimension to the level with a larger one. This small difference in dimensionality causes the atom to move to the upper limit of the stability range of a physically dense substance. Recall that the primary deformation of space, in which the synthesis of hybrid forms occurs, creates a dimensional difference directed from a level with a higher dimension to a level with a lower one, which causes free primary matter to move inside these zones, where they find themselves in other qualitative conditions under which the synthesis of hybrid matter occurs. Thus, the gradient (drop) of dimensionality, in the zone of space deformation, has one sign, while the drop created during the synthesis of the atom has the opposite sign. Let's remember another fact: the pit on the road does not disappear, but only fills with stones. Therefore, even after the completion of the synthesis of hybrid matter, the dimensional difference remains, and this leads to the fact that the primary matter continues to "flow" into the zone of space deformation. Similarly, as water rivers or streams, having filled the lake to the brim, continue to flow into it, creating currents in it. At the same time, part of the lake's water is displaced and continues to flow further. Similarly, after the completion of the process of synthesis of hybrid matter, primary matter continues to permeate the deformation zone in which this synthesis took place. The zone of deformation space does not disappear, but is only filled with hybrid forms of matter. Therefore, the initial dimensional shift, though compensated by hybrid matter, continues to exist for free primary matter, just as a lake continues to exist for water flowing into it even after it is completely filled.

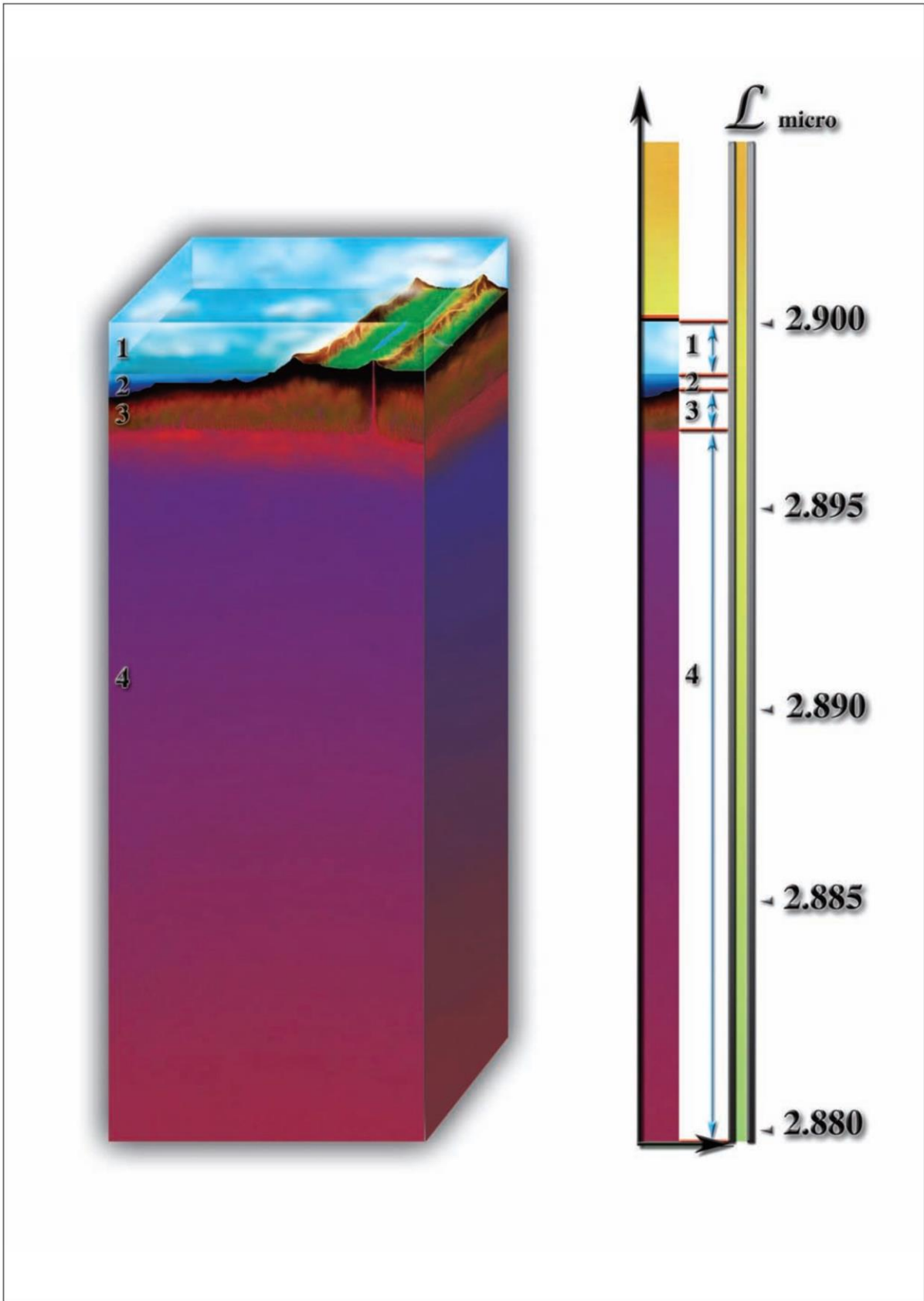
The difference in dimensionality (gradient) is always directed from the boundaries to the center of the deformation zone of space, so primary matter, moving along this gradient, creates a directional flow. This directed flow of primary matter, in the zone of the dimensional difference, creates the so-called **gravitational field**. The gravitational field has always been taken for granted, obvious and unsubstantiated. In general, the concept of any field was introduced in the form of a postulate, without any evidence and explanations, which in principle is fraught with serious consequences for the development of science as a whole. Without understanding the seemingly obvious, it is impossible for science to move forward. So, the difference in the dimensionality of space in the zones of inhomogeneity that arose during supernova explosions creates a gravitational field, gravity. Each atom resulting from the synthesis of the seven primary matters creates a secondary curvature of space at the micro level. There is a dimensional difference created by the atom, directed against the original, in other words, each atom creates an anti-gravity field. As a result, the atom begins to move to the upper limit of the stability range and stops at the balanced level of dimensionality.

Let's look at why the atom stops at the so-called balanced level of dimensionality?!

Let us recall that each atom not only creates a secondary curvature of space, but also represents a physically dense substance, a hybrid form of seven primary matters, which is qualitatively different from primary matter. The planetary difference of dimensionality forms directed flows of primary matter to the center of the planet and each atom falls under their "pressure". There is a "sail effect" — primary matter "presses" on the atom, forcing it to move in the same direction as they themselves. The flow of primary matter, as it were, "forces" the atom to move in a given direction - to the center of the deformation zone. The dimensional difference created by the atom is directed from the center of the deformation zone to its boundaries, which creates a counter momentum of the atom. As a result, the pressure of primary matter on the "surface" of the atom is partially neutralized by the antigravity generated by the atom itself. And at a certain point, these two forces balance each other, which corresponds to the balanced level of dimensionality for a given atom. Each atom has its "own" size, atomic weight and degree of influence on the surrounding microspace, therefore, each atom has its own balanced level, characteristic only for it. That is why light elements have a balanced - own - dimensionality level close to the upper limit of the stability range of a physically dense substance, while heavy elements have their own dimensionality levels close to the lower limit of the stability range (3.3.1). And, in the case of a heavy hydrogen atom, its own dimensionality level is close to the upper limit of this range and even with minor dimensional disturbances created by waves penetrating the microspace, it (heavy hydrogen) becomes radioactive, since, when waves are absorbed, the intrinsic dimensionality of a heavy hydrogen atom becomes supercritical, and the atom decays ($L_D > 2.89915$). On the contrary, the level of intrinsic dimensionality of transuranic elements is close to the lower limit of the stability range, while the influence of the nuclei of transuranic elements on their microcosm is close to a critical value.

And minor fluctuations in dimensionality are enough microcosm arising in atoms when they absorb waves so that they become unstable and begin to decay. And minor fluctuations in the dimensionality of the microcosm arising in atoms as they absorb waves, for them to become unstable and begin to disintegrate.

Hydrogen isotopes and transuranic elements find themselves in similar conditions and, as a consequence, the nature of their behavior is identical. The isotopes of all the elements between hydrogen and uranium are radioactive for the same reasons. Each of these elements has its own level of dimensionality corresponding to the optimal stability of each element's atom. The primary curvature of space, in which matter is synthesized, and the secondary curvature, caused by atomic nuclei having different signs (different signs mean dimensional gradients directed towards each other), create conditions in which form matter can be stable in a given point of space corresponding to a given level of dimensionality. As a result of such "sorting", in the zone of heterogeneity of space, matter is distributed according to its qualitative composition. That is why the planet has a core of heavy elements, the number of which decreases from the center to the surface. Medium-gravity elements, or a combination of them and light elements, form the crust of the planet, the boundary of which is located at different distances from the center of the planet's core. And if we take the sea level as a reference point, then all the depressions are filled with water, which is a synthesis of light elements: oxygen and hydrogen. Next comes the atmosphere formed by gases from light elements, passing into the ionosphere (**Fig. 3.3.9**).



Ions are the boundary form of the physically dense matter of our Universe, the decay of which is accompanied by various radiations, which, in the full sense of the word, can no longer be called matter. Thus, there is an equilibrium, harmony between continuously changing space and matter having specific properties and qualities. The infinite merges, becomes identical with the finite in some limited volume of this infinite. Another paradox, which, in principle, is not. And, if everything is more or less clear with the nature of the electron, then the concept of electric current remains an undeveloped territory. So, let's try to understand the nature of electric current.

In classical physics, an electric current is understood as a directed movement of electrons from plus to minus. It seems to be very simple, however, unfortunately, it is an illusion. Classical physics does not explain what an electron is, except that the electron is a negatively charged particle. But no one bothered to explain what a negatively charged particle is. At the same time, it was noted that the electron has dual (duality) properties, both as a particle and as a wave. Even in this definition there is a hidden answer. If some material object has the properties of both a wave and a particle, it can only mean one thing: it is neither. By nature, a particle and a wave are, in principle, not compatible and one should not combine the incompatible. What an electron is, we have understood in detail above, so let's move on to the next part of the explanation of electric current. Directional motion, it would seem, what could be simpler - motion in a given direction. This is all true, however there is a little **"but"**. **Electrons don't move in a conductor** at all, at least what is meant by electron. And assuming they do move, there must be a speed at which they move in the conductor.

Let's recall the explanation of the nature of direct current. Electrons in a conductor are not uniformly distributed in a radial direction, resulting in a radial gradient (difference) of the electric field. The electric field gradient induces a magnetic field in the perpendicular direction, which in turn induces a perpendicular electric field, etc. But, again, the concepts of electric and magnetic fields are introduced as postulates, that is, they're accepted without explanation. It's an interesting, new concepts are explained by other concepts that were themselves without explanation, and so these explanations don't stand up to criticism. One has to think about the meaning of words and a beautiful phrase turns into nonsense. But nevertheless, if you close your eyes and calculate the velocity of the surface charge by the appropriate formulas, the result will finally put all the dots over the **"i"**. The speed turns out to be several millimeters per second.

It would seem that everything appears to be fine, but it only seems this way. Since, after the circuit is closed, the electric current in it appears instantly, regardless of how far away the DC source is, and the calculation results become devoid of any physical meaning. Facts from real life completely refute theoretical explanations. And finally, what are "plus" and "minus"?! Again, no explanation. As a result of a simple analysis, we came to the conclusion that the concept of electric current commonly used in physics has no justification, in other words, from the positions currently existing, modern physics cannot explain the nature of electric current. Despite the fact that this is a real physical phenomenon.

What then is the case, what, after all, is the nature of this phenomenon?!

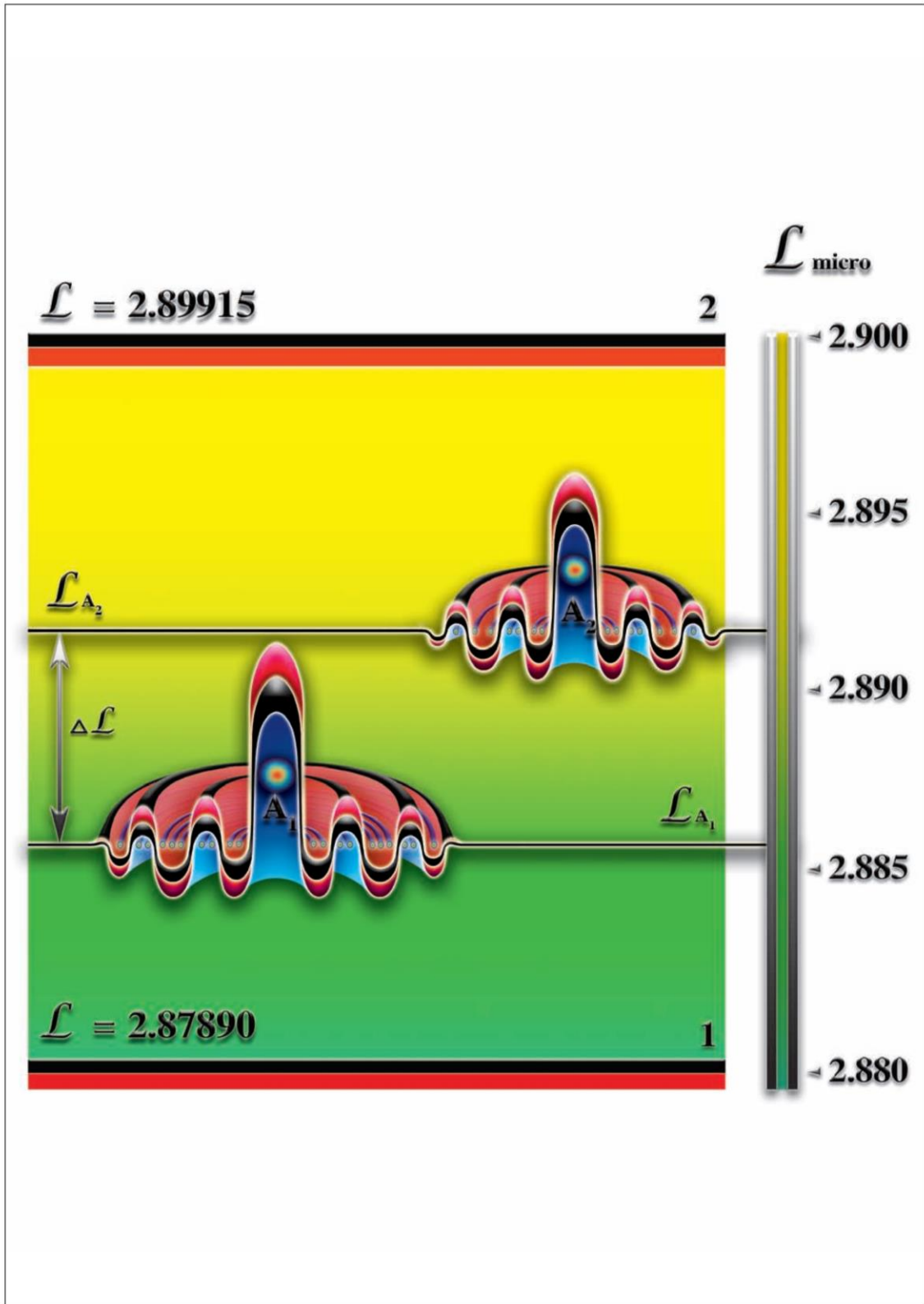
Let's try to approach the understanding of this phenomenon from a slightly different perspective. Recall that the nucleus of any atom affects its microcosm. Only the degree of this influence is very different for the nuclei of different elements. In the case of formation of crystal lattices from atoms of one element or molecules consisting of atoms of different elements, there is a homogeneous environment in which all atoms have the same level of dimensionality. For deeper understanding of this phenomenon, let's consider mechanisms of formation of molecules from separate atoms. In doing so, let us recall that restoration of the initial level of macrocosmos dimensionality occurs for the following reasons. The six spheres of hybrid forms of matter, which emerged inside the inhomogeneity, compensate for the deformation of space resulting from the supernova explosion. At the same time, the hybrid forms of matter increase the level of dimensionality of macrospace within the volume they occupy. At space dimension $L=3.00017$ all forms of matter in our Universe do not interact with each other in any way. It is noteworthy that all radiations known to modern science are longitudinal-transverse waves which arise as a result of microscopic fluctuations of dimensionality of space.

$$\begin{aligned} 3.000095 < L_{\lambda} < 3.00017 \\ 0 < \Delta L_{\lambda} < 0.000075 \end{aligned} \quad (3.3.2)$$

The speed of propagation of these waves varies, depending on the level of intrinsic dimensionality of the propagation medium. When the radiation from the Sun and stars penetrates into the limits of the planet's atmosphere, the speed of their propagation in this medium decreases. Since the atmosphere's own level of dimensionality is less than the open space's own level of dimensionality.

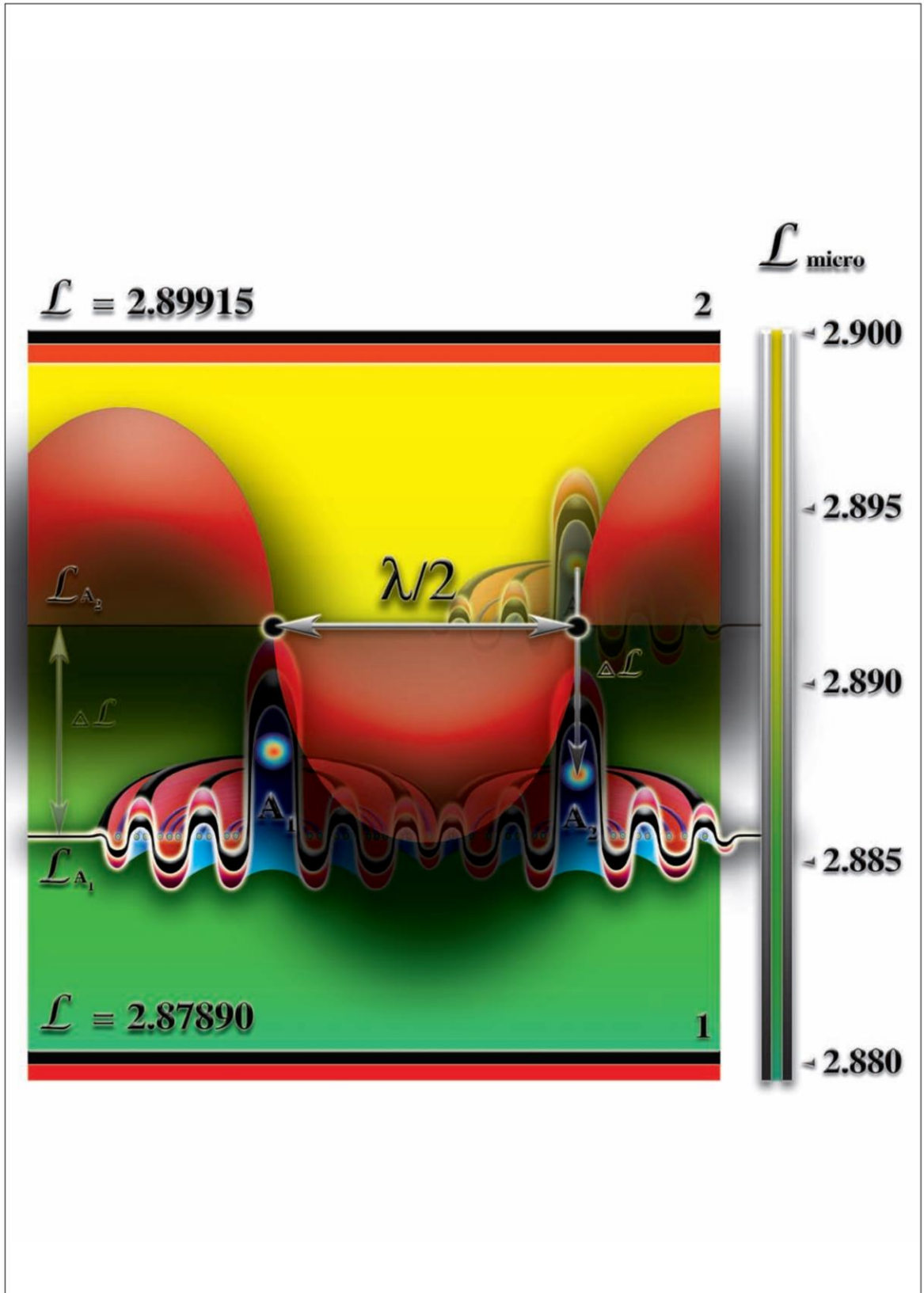
$$\begin{aligned} 2.899075 < L_{\lambda \text{ cp.}} < 2.89915 \\ 0 < \Delta L_{\lambda \text{ cp.}} < 0.000075 \end{aligned} \quad (3.3.3)$$

In other words, the speed of propagation of longitudinal-transverse waves depends on the intrinsic level of dimensionality of the propagation medium. That is usually expressed by the refractive index of the medium (n_{cp}). Longitudinal-transverse waves during their propagation in space carry this microscopic perturbation of dimensionality $\Delta L_{\lambda \text{ cp.}}$. When they penetrate various material substances, $\Delta L_{\lambda \text{ cp.}}$ is superimposed on the level of dimensionality of these substances or media. Internal dimensional fluctuation resulting from such interference (addition) is a catalyst for most processes occurring in physically dense matter. Since atoms of different elements have different sub-levels of dimensions, they cannot form new compounds (**Fig. 3.3.10**).

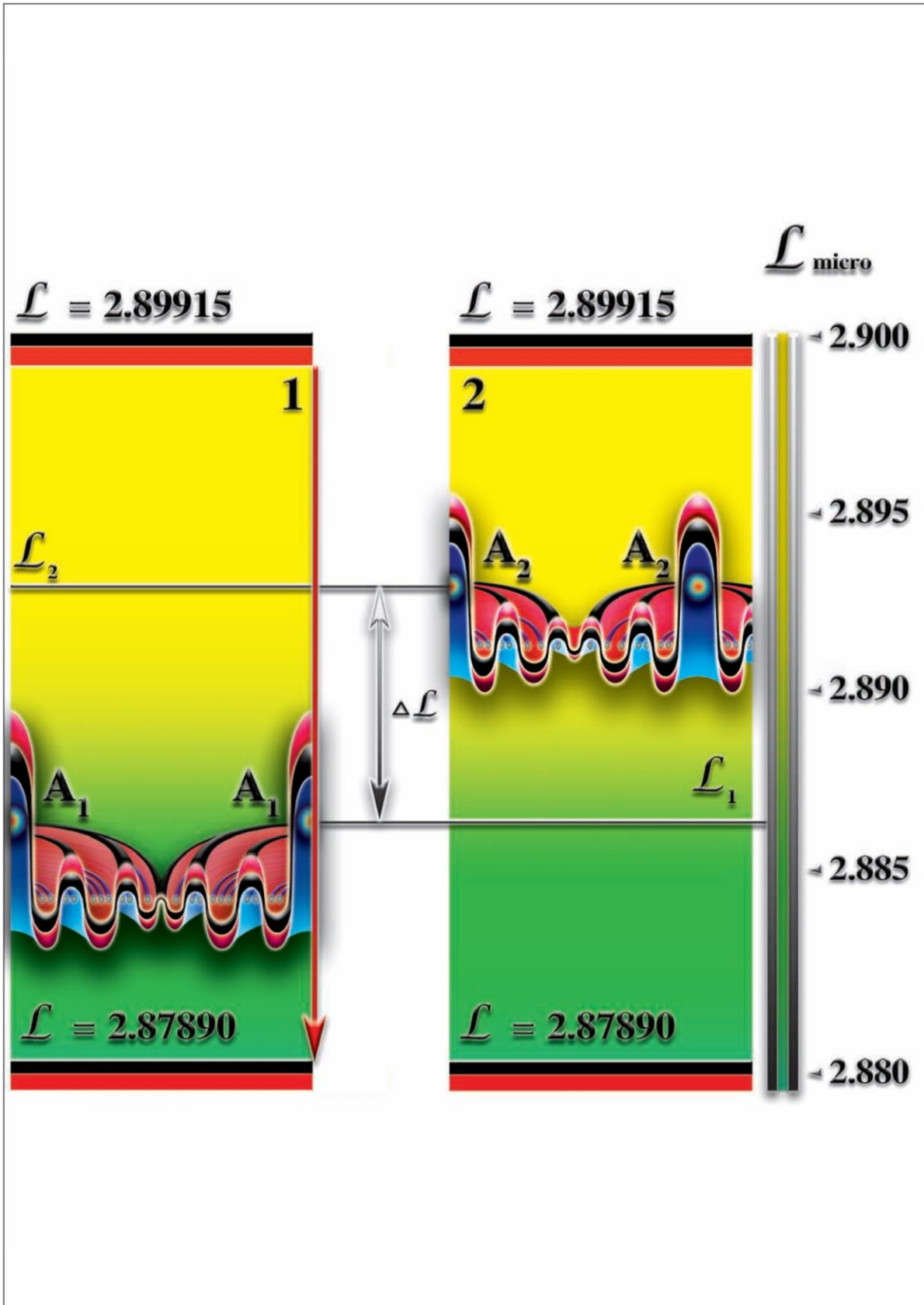


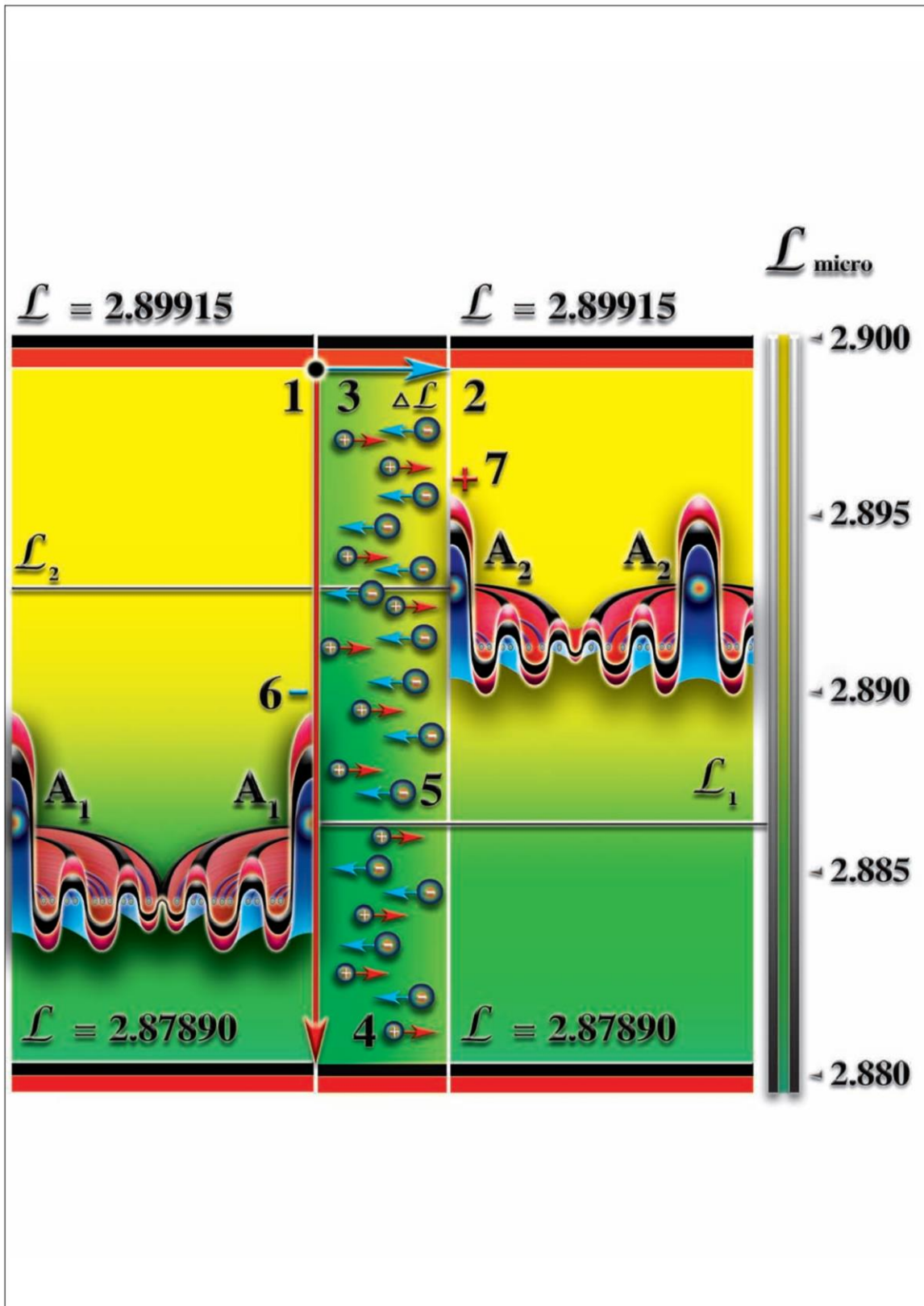
During the propagation of longitudinal-transverse waves in the medium, the microscopic perturbation of dimensionality caused by them neutralizes the differences in the values of the intrinsic dimensionality levels of different atoms. At the same time, the electron shells of these atoms merge into one, forming a new chemical compound, a new molecule. Atoms can be compared to floats on the surface of the water. Longitudinal-transverse waves raise and lower "floats"-atoms on their crests, thereby changing the level of their own dimensionality and creating the possibility of new compounds. The following parameters of longitudinal-transverse waves are fundamentally important for the realization of synthesis: amplitude and wavelength (λ). If the distance between the atoms is commensurate with the wavelength, there is an interaction between the intrinsic dimensionality of these atoms and the dimensionality of the wave. The influence of the same wave on the dimensionality levels of different atoms is not the same. The dimensionality of some atoms increases, while others decrease or remain the same. This is what leads to the balance of dimensions necessary for the fusion of atoms (**Fig. 3.3.11**).

If the wavelength significantly exceeds the distance between the atoms, then at the same time, the difference in the levels of dimensions of the atoms remains or changes slightly. There is a synchronous change in the levels of intrinsic dimensionality of all atoms, and the initial qualitative difference in the levels of dimensions of atoms is preserved. The amplitude of the waves determines the magnitude of the change in the dimensionality of space caused by these waves when they propagate in a given medium. The difference in the levels of dimensions between different atoms requires a different level of influence on them. It is the amplitude that performs this function when waves propagate in the medium. The value of the distance between atoms in liquid and solid media lies in the range of values from 10^{-10} to 10^{-8} meters. Therefore, the spectrum of waves from ultraviolet to infrared is absorbed and emitted during chemical reactions in liquid media. In other words, when atoms combine in a new order, heat or visible light is released or absorbed (exothermic and endothermic reactions), since only these waves meet the required conditions. So, longitudinal-transverse waves, from infrared to gamma, are microscopic dimensional fluctuations that have arisen during thermonuclear and nuclear reactions. The amplitude of the waves involved in chemical reactions is determined by the magnitude of the difference between the dimensional levels of the atoms before the reaction and the atoms resulting from this reaction. And it is not by chance that the radiation occurs in portions (quanta). Each quantum of radiation is the result of a single atom transformation process. Therefore, when this process is completed, wave generation also stops. The emission of radiation occurs in billionths of a second. Accordingly, the radiation is also absorbed by quanta (portions).



And now, consider the crystal lattices. Crystal lattices are formed from atoms of the same element or from identical molecules. Therefore, all the atoms forming the crystal lattice have the same level of their own dimensionality. Moreover, each crystal lattice will have its own level of dimensionality. Let's take two metals having different levels of dimensionality (**Fig. 3.3.12**). They represent two qualitatively different environments that affect the surrounding space in different ways. If they do not interact with each other in any way, no unusual phenomena are observed. However, it is only necessary for them to enter into direct interaction, for qualitatively new phenomena to appear. In the area of joining of crystal lattices with different levels of intrinsic dimensionality, a horizontal drop (gradient) of dimensionality occurs, directed from a crystal lattice with a high level of intrinsic dimensionality to a crystal lattice with a lower level of intrinsic dimensionality. Now, let's put a liquid medium saturated with positive and negative ions between the plates of these materials. In a liquid medium, molecules and ions have no rigid position and are in constant chaotic motion, so-called Brownian motion. Therefore, under the influence of a horizontal dimensional difference, the ions begin to move in an orderly manner. Positively charged ions begin to move towards the plate with a higher level of intrinsic dimensionality, while negatively charged ions move towards the plate with a lower level of intrinsic dimensionality (**Fig. 3.3.13**).



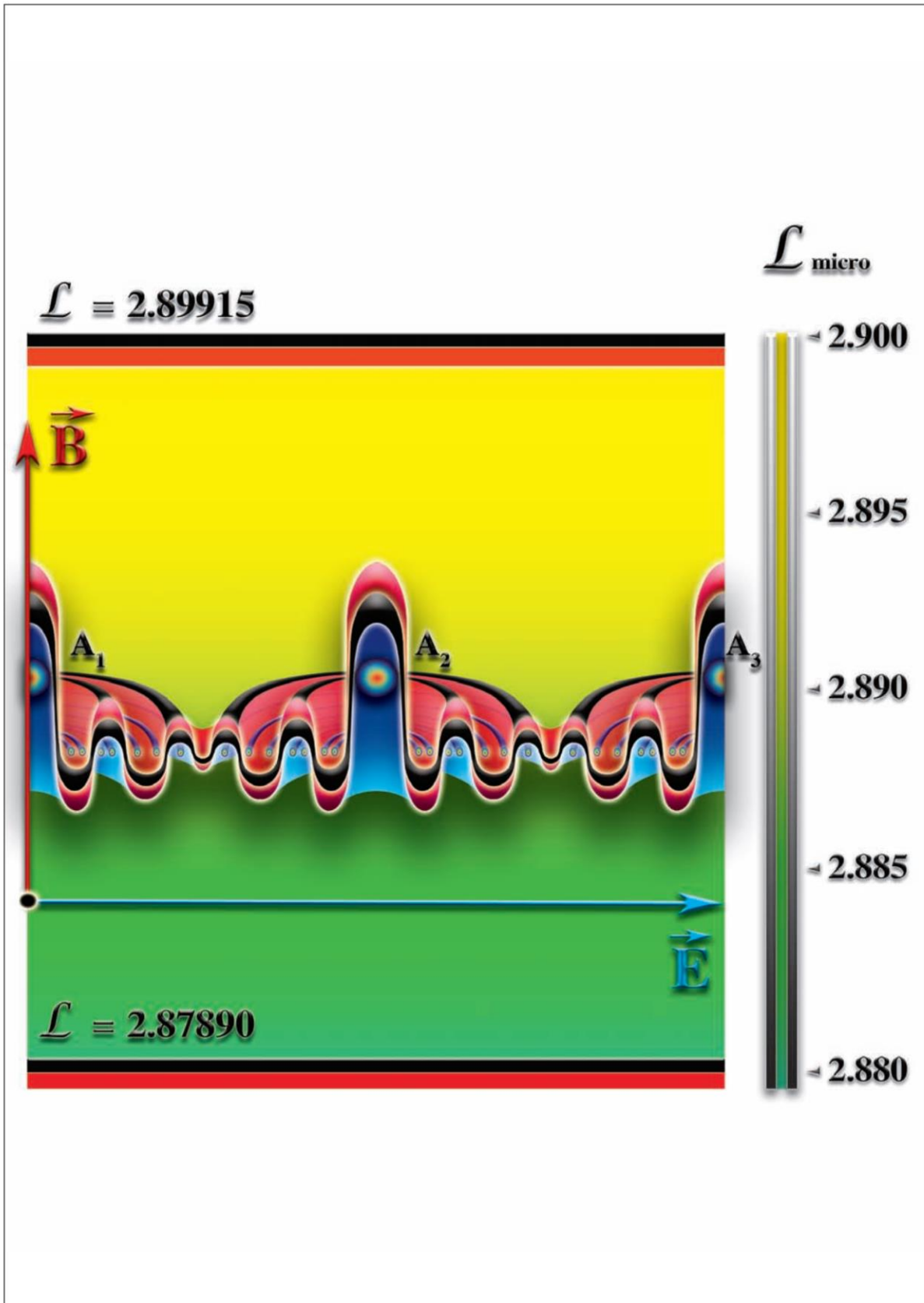


At the same time, there is a redistribution of ions in the liquid medium, as a result of which positive and negative ions accumulate on the plates. Positive ions, when they collide with the plate, capture electrons from the atoms of the crystal lattice of the plate, becoming, at the same time, neutral atoms that begin to settle on the plate itself, while there is a shortage of electrons in the plate itself. Moreover, the plate will be "bombarded" with positive ions constantly and over the entire surface. Since, with all this, the dimensional difference between the two plates continues to persist and the ions from the liquid medium, under the influence of this difference, acquire directional movement. The chaotic process of collisions of molecules and ions of a liquid medium with each other acquires a qualitatively new character. The movement of ions and molecules becomes directional. At the same time, the behavior of positive and negative ions will be different under the influence of the existing dimensional difference between the plates. The horizontal difference in dimensionality creates conditions under which positive ions must move against the difference, while negative ions move along this difference in dimensionality. Positive ions are forced to move "against the current", while negative ions are forced to move "downstream". As a result, the speed of movement, and therefore the energy of positive ions decreases, and negative ions increase. Similarly accelerated negative ions, when colliding with the crystal lattice, lose excess electrons, becoming neutral atoms. The crystal lattice, at the same time, acquires additional electrons. And, if now, these two plates with different levels of their own dimensionality are connected to each other by means of a wire made of a material compatible with them, then in the latter (wire) there will be a so-called constant electric current — a directed movement of electrons from plus to minus, where plus is a plate having a higher level of its own dimensionality, and minus is a plate having a lower level of its own dimensionality. And if we continue this analysis, the potential difference between the plates is nothing but the difference in the levels of intrinsic dimensions of the crystal lattices of these plates. As a result of our analysis of this process, we've come to understand the **nature of direct current**.

To understand the nature of the movement of electrons in a conductor, it is necessary to clearly define the nature of the magnetic **B** and electric **E** fields. The nature of the gravitational field of any material object is determined by the difference in dimensionality in the zone of heterogeneity in which the process of formation of this material object took place. And in the case of the formation of a planet, the initial cause of such a curvature of space was the explosion of a supernova. The difference in dimensionality is directed from the edges of the inhomogeneity zone of space to its center, which explains the direction of the gravitational field to the center of the planet or any other material object. Due to the fact that the deformation of space manifests itself in different ways inside the zone of heterogeneity, the synthesis of atoms of different elements occurs and, when this process occurs on the scale of the entire planet, the distribution of matter occurs according to the principle of the level of its own dimensionality. Which means the distribution of the planet's matter into zones where the given matter is maximally stable. This does not mean that atoms with non-optimal values of their own dimensionality cannot be synthesized within a given volume with a specific value of the dimensionality of space.

This means only one thing, that atoms having a level of their own dimensionality above the level of dimensionality of the volume of space in which this synthesis took place, become unstable and again disintegrate into the primary matter from which they were formed. And the greater the difference between the level of self-dimensionality of the formed atom and the level of dimensionality of the space in which this synthesis occurred, the faster the decay of this atom will occur. That is why there is a natural redistribution of atoms, and consequently of matter within the heterogeneity zone of the planet. That is why the formation of the planet's surface takes place in the form to which we have been accustomed since birth and take for granted. It must be borne in mind that any atom has a certain range within which it retains its stability, which means that the substance formed from these atoms will also be stable within this range. The solid surface of the planet simply follows the shape of a zone of inhomogeneity of space, within which, solid matter is stable, oceans, seas fill in the depressions, and an atmosphere surrounds it all. Thus, the atmosphere is located at the upper limit of the stability range of physically dense matter, while the planet itself is in the middle and lower part of this range...

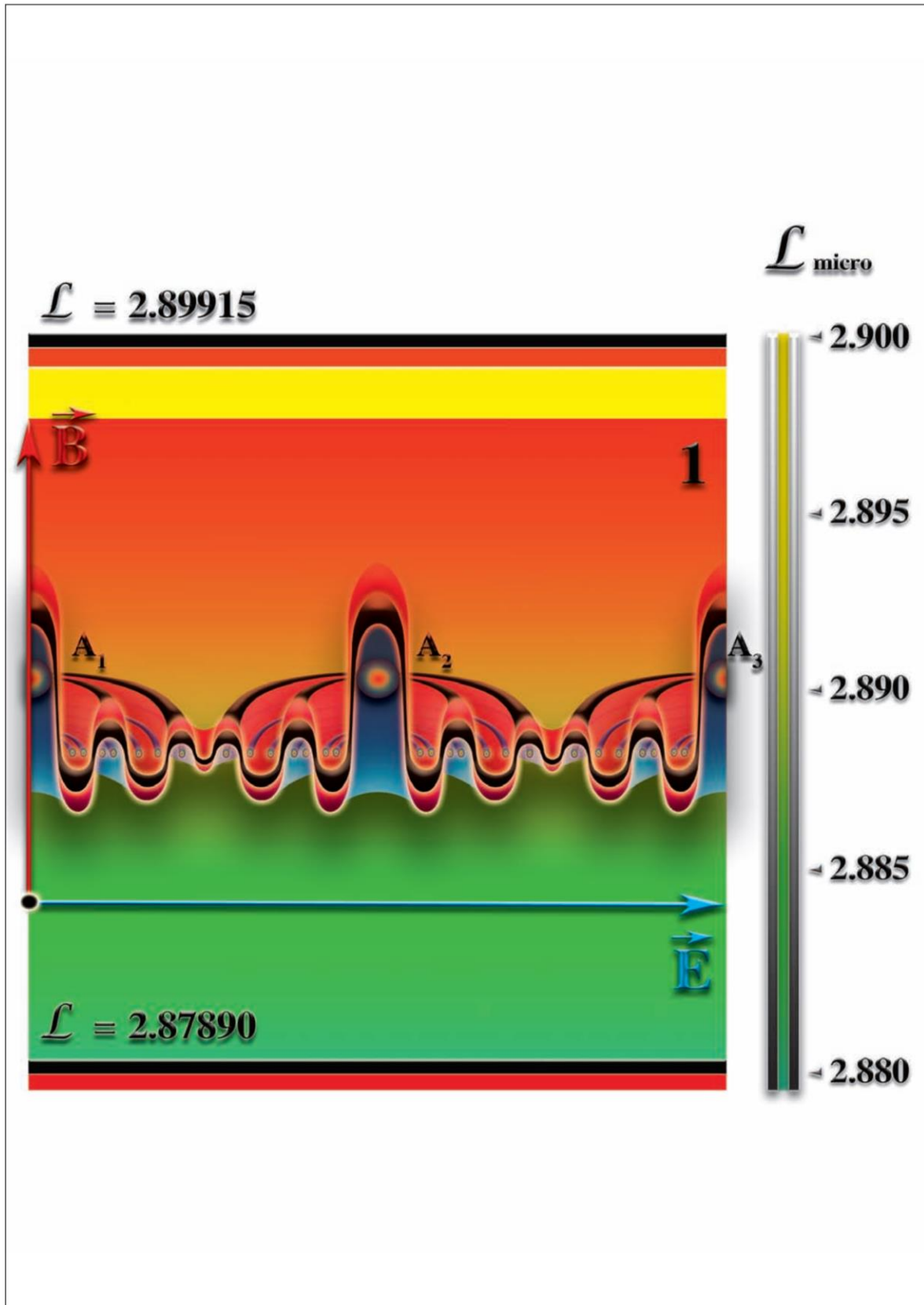
And now, let's go back to the level of the microcosm and try to understand the nature of magnetic and electric fields. Consider a crystal lattice formed by atoms of the same element or atoms of several elements (**Fig. 3.3.14**). In solid matter, neighboring atoms are locked together by their electron shells and form a rigid system, which means that the microspace distortions, caused by the nucleus of one atom are connected with curvatures of microspace of neighboring atoms, etc., and form a single system of microspace curvatures for all atoms, which are connected with each other and form so-called domains. "Connected" in this way, atoms create a single system consisting of hundreds of thousands of millions of atoms. All the atoms included in this system have the same level of their own dimensionality, which, in most cases, differs from the level of dimensionality of the microspace in which this system of atoms is located. As a result, there is a dimensional difference directed against the dimensional difference of the macrospace. A zone of interaction between microspace and macrospace is being formed. The opposite difference in the dimensionality of such systems of atoms leads to compensation for the deformation of the dimensionality of the macrospace in which the synthesis of physically dense matter takes place. Upon completion of the process of synthesis of matter, mutual neutralization occurs in the zone of deformation of the dimension of the macrospace — the deformation of the dimension of the macrospace is neutralized by counter deformations of the microspace. Moreover, in physics the deformation of the dimensionality of the macrospace is called the gravitational field, while the counter deformation of the microspace created by a system of domain atoms, creates the so-called magnetic field of the domain, at the level of one domain and the magnetic field of the planet, at the level of the planet.

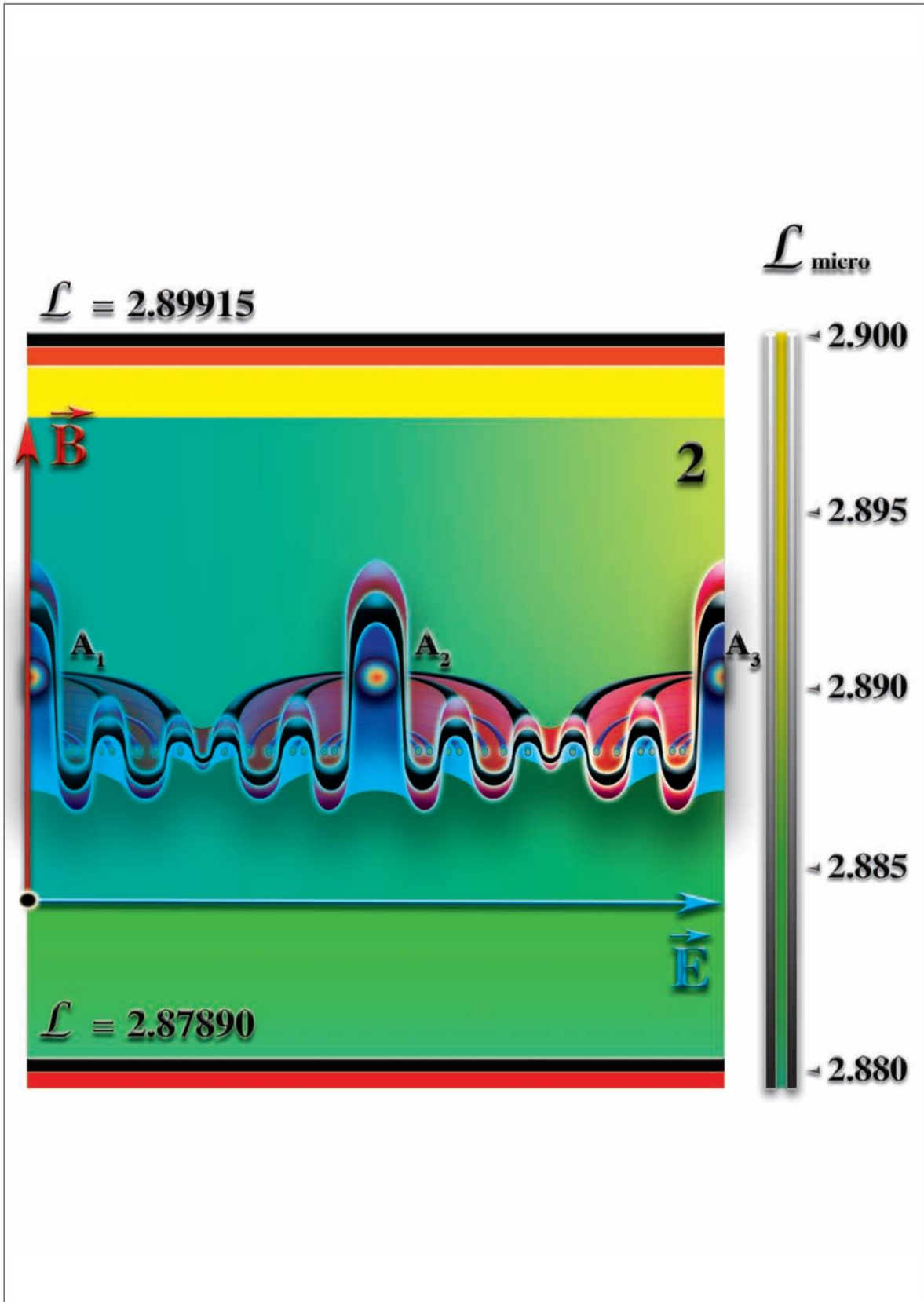


The magnetic field of the planet arises as a set of magnetic fields of all domains existing in the physically dense matter of the planet as a whole. The total magnetic field of the planet is orders of magnitude smaller than the gravitational field of the planet for just one simple reason — the myriad microscopic magnetic fields of the domains of the entire planet are oriented randomly relative to each other and only a small part of them is oriented parallel to each other and retain their magnetization, creating the magnetic field of the planet. Moreover, domains formed by different atoms have different degrees of magnetization. The magnetization is determined by the ability of a given domain to maintain a certain direction of the magnetic field of the domain and in physics is determined by the area of the hysteresis loop. The properties of magnetization are maximally manifested in iron, the alignment of the domains of which on the scale of the planet forms, in the main, the magnetic field of the planet. It is for this reason that anomalous deposits of iron-containing ores create magnetic anomalies — local disturbances of the planet's magnetic field within these anomalies.

Now, let's figure out what effect the magnetic field — the counter-dimensional difference of space — has on the atoms themselves that generate it. In the presence of a magnetic field, the electrons of atoms become more unstable, which greatly increases the possibility of their transition not only to the higher orbits of the same atom, but also the possibility of complete electron decay in one atom and its synthesis in another. Similar processes occur when waves are absorbed by an atom; the difference lies only in the fact that the absorption of photon waves occurs by each atom separately, while, under the influence of a magnetic field, billions of atoms simultaneously appear in the excited state at the same time, without any significant change in their aggregate state (**Fig. 3.3.15**).

In the presence of a longitudinal dimensionality difference, called a constant electric field, external electrons of atoms, which have become unstable under the influence of a transverse dimensionality difference, called a constant magnetic field, begin to decay into matter forming them and, under the influence of the longitudinal dimensionality difference, begin moving along the crystal lattice from a higher dimensionality level, called the plus, to a lower dimensionality level, called the minus (**Figure 3.3.16**). The longitudinal flow of primary matter released during the decay of the external electrons of some atoms, falling into the location of other atoms with a lower level of intrinsic dimensionality, causes these atoms to synthesize electrons. In other words, electrons "disappear" in some atoms and "appear" in others. Moreover, this happens simultaneously with millions of atoms at the same time and in a certain direction. In the so-called conductor, there is a constant electric current — the directional movement of electrons from plus to minus. Only, in the proposed version of the explanation, it becomes extremely clear what directional motion is, what is "plus" and "minus" and, finally, what is "electron". All these concepts have never been explained and taken for granted. Only, to be extremely precise, we should not talk about the "directional movement of electrons from plus to minus", but about the directional redistribution of electrons along the conductor.

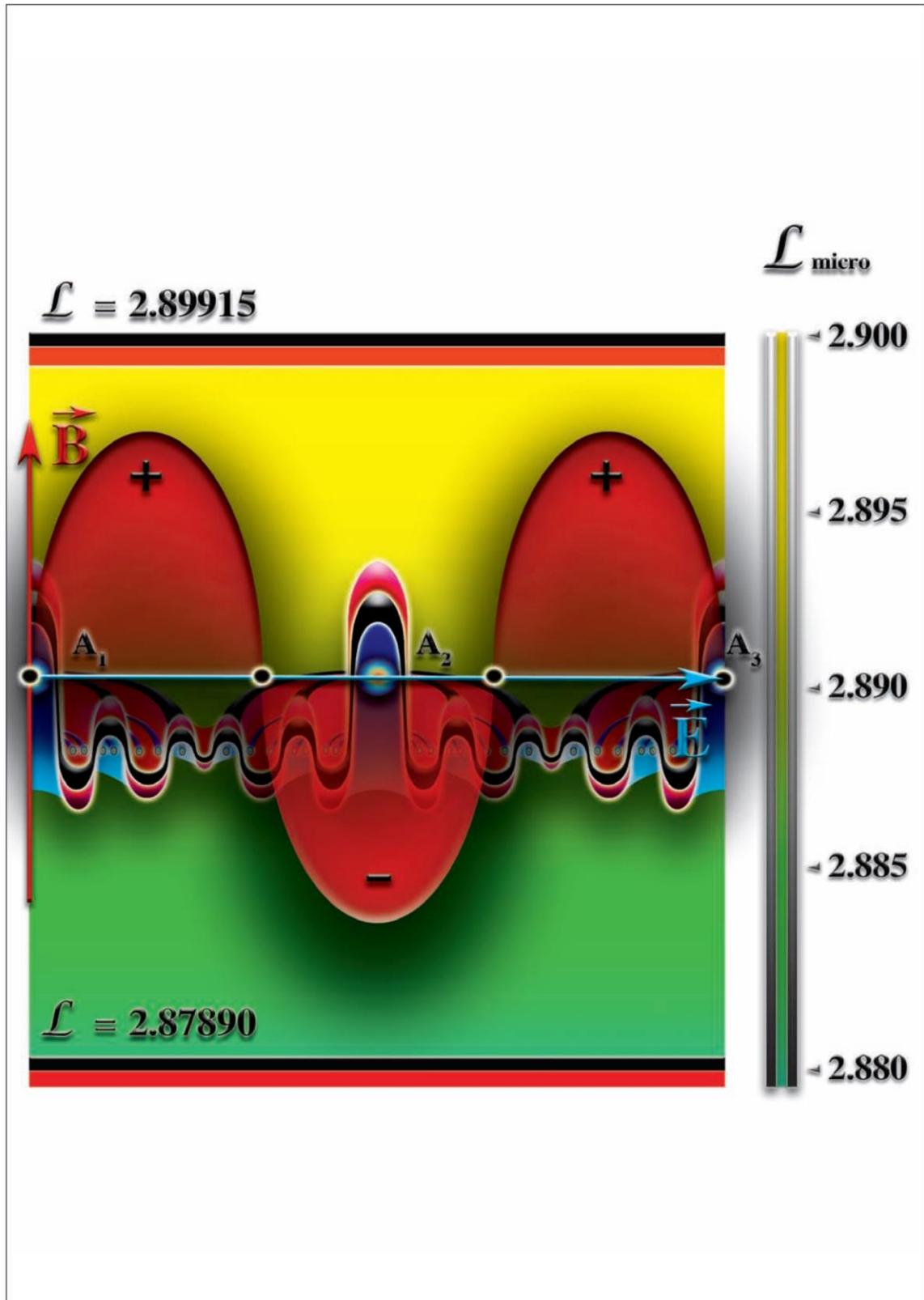


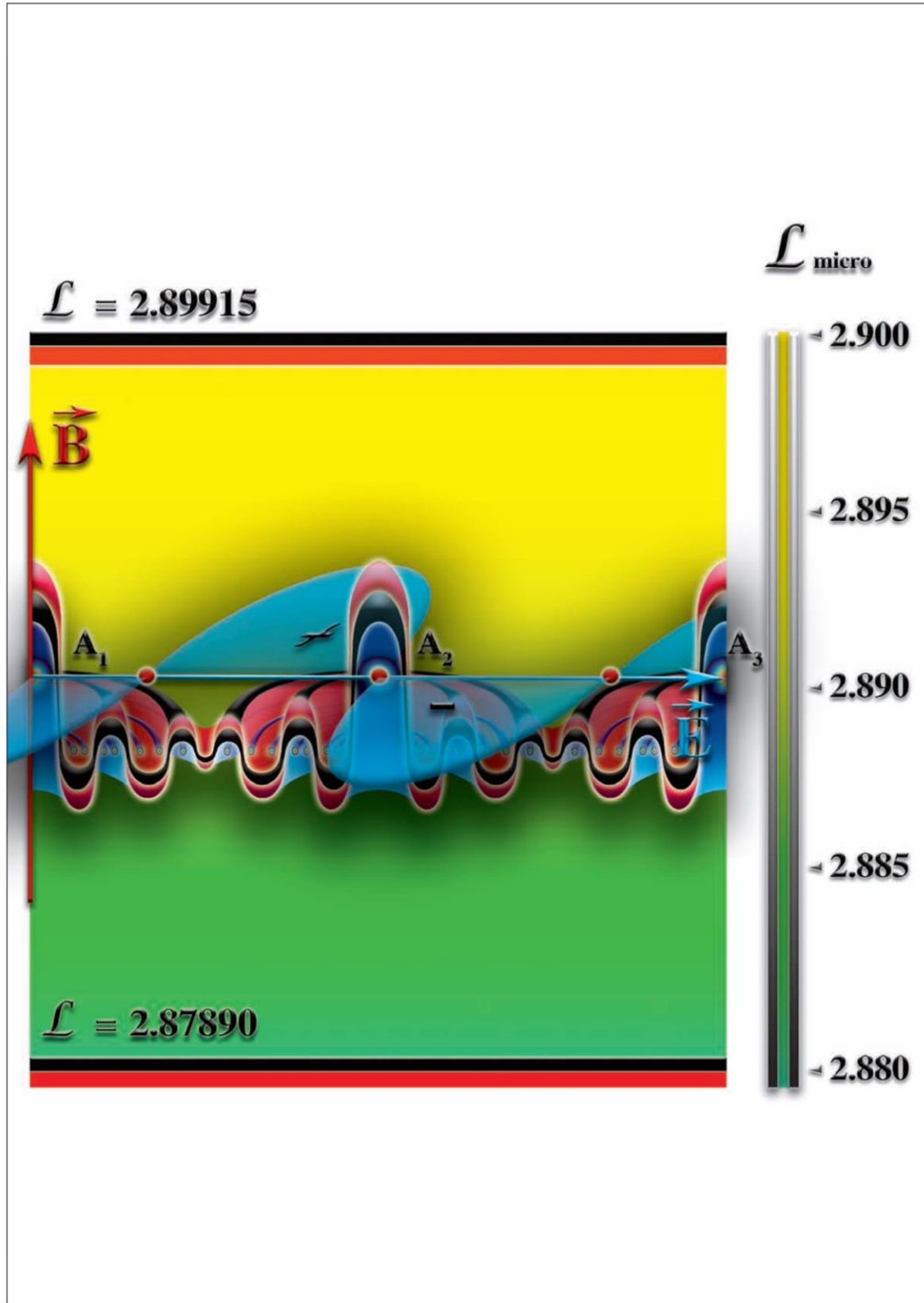


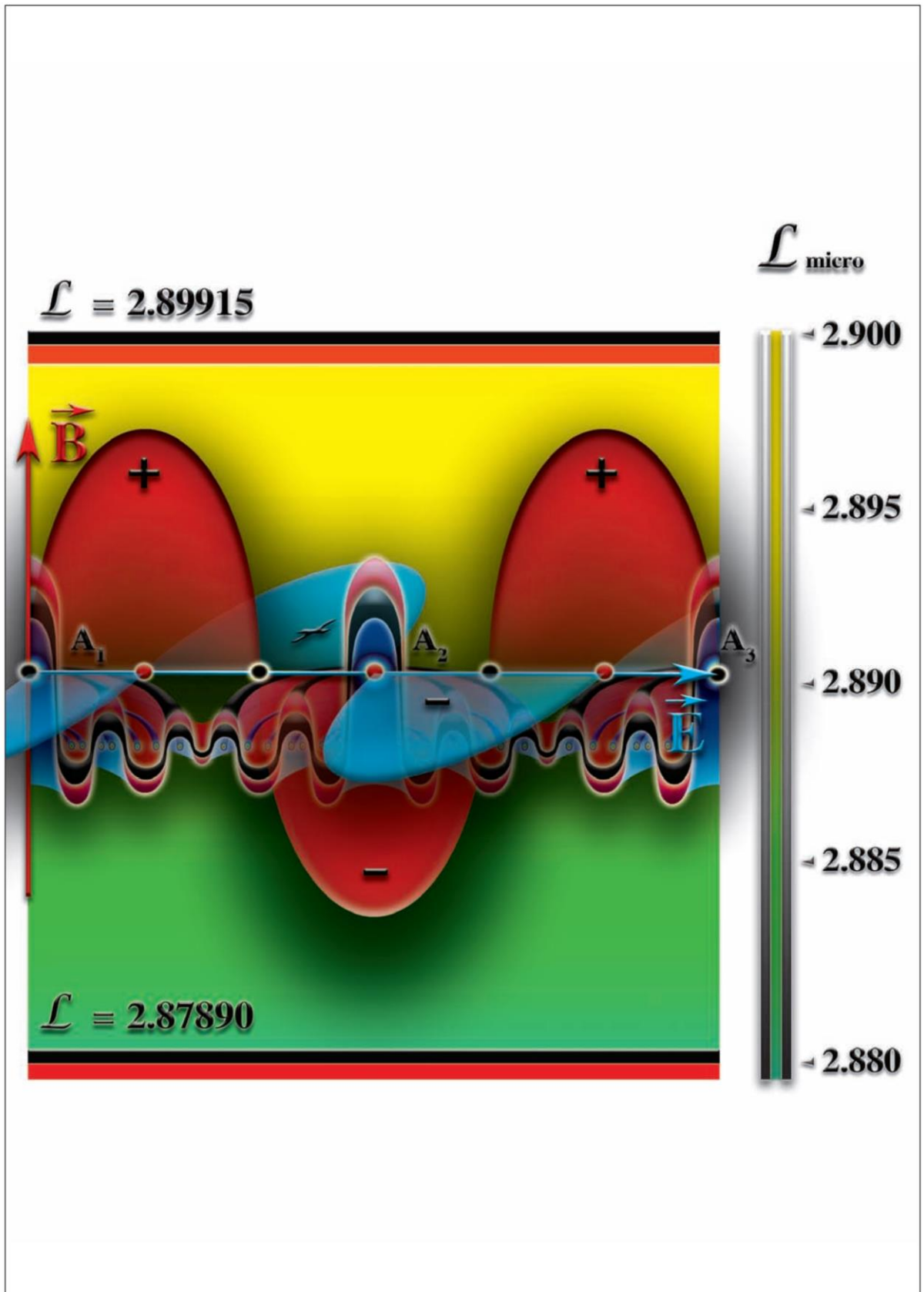
As it became clear from the above explanation, the electrons do not move along the conductor, they disappear in one place where the level of intrinsic dimensionality of atoms becomes critical for the existence of external electrons and are formed in atoms where the necessary conditions for this are met. Electrons are dematerialized in one place and materialized in another. Such a process takes place in nature constantly, chaotically, and therefore becomes observable only if this process is controlled, which is done by artificially creating a directional difference in dimensionality along a conductor. It should be noted that both magnetic and electric fields are caused by dimensional drops (dimensional gradients) of space, which are not fundamentally different from each other. Both in the one case and in the other it is a measure gradient between two points of space that have, for one reason or another, different levels of their own dimensionality. The difference in manifestation of these drops is caused only by their spatial orientation in relation to the crystal lattice. The mutual perpendicularity of the two dimensional gradients with respect to the so-called optical axis of the crystal leads to a qualitative difference in the reaction of each atom to these dimensional drops with full identity of the nature of the drops themselves. Anisotropy of qualitative structure of both macrospace and microspace leads to qualitatively different reactions of matter filling these spaces both at the levels of the macrospace and microspace.

Understanding the nature of the permanent magnetic and electric fields and the nature of their influence on the qualitative state of physically dense matter makes it possible to understand the nature of the alternating electromagnetic field. An alternating magnetic field affects the same atom in different ways, in different phases of its qualitative state. At zero intensity of the alternating magnetic field, of course, the effect on the qualitative state of the atoms of the crystal lattice is zero. When passing through the crystal lattice of a conditionally positive phase of the intensity of an alternating magnetic field, each atom begins to lose its external electrons due to the fact that the additional external effect of the dimensional difference affects the qualitative state of the electron shells of atoms, without significantly affecting the qualitative state of atomic nuclei. As a result, some external electrons become unstable and disintegrate into the matter that forms them. To the contrary, during the passage of the conditionally negative phase of the intensity of the alternating magnetic field, conditions are created for the synthesis of electrons in the microspace zones of deformation created under the influence of atomic nuclei. Therefore, when a wave of an alternating magnetic field passes through a crystal lattice, a curious picture arises. If the external electrons of a given atom or atoms under the influence of a magnetic field have become unstable and have disintegrated into matter forming them, then the same wave creates favorable conditions for the atom or atoms lying ahead along the optical axis, the same wave creates favorable conditions for the synthesis of electrons (**Fig. 3.3.17**).

It creates a difference of dimensions (electric field) shifted in phase by $\pi/2$ at the atoms lying ahead on the optical axis perpendicular to the alternating magnetic field, as a result of which these atoms synthesize additional electrons (**Fig. 3.3.18**). The additionally synthesized electrons, in their turn, create a $\pi/2$ phase shifted difference (magnetic field) perpendicularly to the electric field. And, as a consequence of all this, an alternating electric current propagates along the optical axis along the conductor (**Fig. 3.3.19**). According to a similar principle, electromagnetic waves propagate in space.







Thus, an alternating magnetic field generates an alternating electric current in the conductor, which, in turn, generates an alternating magnetic field in the same conductor. If there is another conductor with an alternating magnetic field in the vicinity of one conductor, a so-called induced electric current occurs in the latter. And, as a result, it became possible to create an electric current generator in which the rotational motion of the turbine is converted into alternating electric current. The imposition on a specific microspace, with specific properties and qualities of external influence, in the form of a drop (gradient) of dimensionality leads to the fact that the properties and qualities of the microspace in the overlay zone change. Due to the fact that space, both at the macro and micro levels, is anisotropic, i.e., the properties and qualities of space are not the same in different directions, additional external dimensional differences, depending on which direction of space they manifest, will cause different reactions of physically dense matter, filling this space. With the same nature of the dimensional difference, it is the anisotropy of space that leads to the fact that the reaction of physically dense matter depends on which of the spatial directions this difference manifests itself. That is why the nature of the magnetic and electric fields is identical, no matter how paradoxical it sounds. The difference in their properties and qualities is determined precisely by their spatial characteristics. It is the identity of the nature of the magnetic and electric fields that creates the possibility of their interaction and mutual induction.

3.4. Summary

Macrospace and microspace exist in continuous interaction with each other. But the nature of this interaction has remained a mystery throughout the existence of science. A mystery that for some reason no one paid attention to. However, it is the understanding of the interaction between macro- and microspace that gives an understanding of the life of the universe. The synthesis of physically dense matter occurs in the zones of perturbation of the dimensionality of space that occur during the explosion of a supernova. Waves of perturbation of the dimensionality of the macrospace change the properties and qualities of the space through which they pass. As a result, the nature of the behavior of matter changes, which, for one reason or another, turns out to be in these areas of perturbation of the dimensionality of space. As a result, qualitatively new forms of matter appear in these zones of space deformation. These qualitatively different forms of matter, filling the zones of the inhomogeneities of space neutralize the curvature of the macrospace, and the waves of perturbation of the dimensionality of space "freeze", there are peculiar standing waves of perturbation of the dimensionality of the macrospace. The processes occurring at the level of microspace in the zones of perturbation of the dimensionality of the macrospace ultimately lead to complete compensation of the perturbation of the dimensionality of the macrospace due to the fact that the synthesized hybrid forms of matter at the level of the microspace affect the surrounding microspace with a sign opposite to the sign of the initial perturbation of the macrospace in which this synthesis occurs.

Summing up, the microspace, in comparison with the disturbances of the macrospace, the effects of hybrid forms of matter on the surrounding microspace, compensate for the disturbance of the dimensionality of the macrospace. Compensate, but not cancel. As a result, the zones of perturbation of the dimensionality of the macrospace remain and do not disappear, filled with hybrid forms of matter, the synthesis of which, in turn, occurs only in these zones of perturbation of the dimensionality of the macrospace. Thus, the macrospace and the microspace are in close relationship with each other, cannot exist stably without each other, and the state of balance between them provides a stable state of the space as a whole. Any changes, disturbances in the qualitative state of the macrospace are manifested in a change in the qualitative state of the microspace. Conversely, any changes in the qualitative state of the microspace are manifested on the qualitative state of the macrospace. The stability of the state of the universe is ensured by the balance between macrospace and microspace. The standing waves of perturbation of the dimensionality of the macrospace arising in the process of this balance between macrospace and microspace have a constant drop (gradient) of dimensionality directed from the outer boundary of the heterogeneity zone to its center. As a result, even after the synthesis of hybrid forms of matter is completed, under the influence of this dimensional difference, primary matter continues their movement from the boundaries of the zone of heterogeneity of dimensionality to its center in the same way as hybrid forms of matter. Each hybrid form of matter is qualitatively and structurally different from the others and partially neutralizes the disturbance of the dimensionality of macrospace by its secondary degeneration of space. As a result, for each individual hybrid form of matter, the dimensional difference within the zone of macro-space heterogeneity continues to exist despite the fact that this hybrid matter partially neutralizes this dimensional difference. It is only altogether, that hybrid forms of matter neutralize the initial or primary difference of dimensionality in the zone of curvature of the dimension of macrospace. While for a single hybrid matter, the dimensional difference continues to exist. In addition, this difference in dimensionality becomes constant due to the occurrence of a standing wave of dimensionality. This phenomenon exists only because hybrid forms of matter, although formed by means of the same primary matters, differ qualitatively and structurally from each other, having only partial interaction with each other in common properties and qualities. Therefore, physically dense matter, which is one of the forms of hybrid matter, is constantly under the influence of this constant difference in dimensionality, as a result of which all physically dense objects are forced to move from the edge to the center of the heterogeneity zone of macrospace. In modern physics, this process is called gravity, the gravitational field of a planet or any other material macro-object.

Gravity is nothing more than the effect on physically dense matter of a constant radial difference in the dimensionality of the macrospace that has arisen in the zone of heterogeneity of the macrospace, as a result of the interaction of space and free matter filling this space. At the microspace level, each atom affects the surrounding space. This is the so-called secondary influence on space, which leads to partial neutralization at the microspace level of the dimensional difference of the macrospace.

In other words, each atom creates a counter-dimensional difference of space at the microspace level, partially neutralizing the primary dimensional difference of the macrospace at the microspace level. The influence of each atom is independent of the influence of any other atom. When atoms are combined into molecules and crystal lattices, their individual effects on the surrounding space are combined into a common system. Each molecule or crystal lattice is limited in space due to certain properties and qualities of the macrospace. Therefore, the counter-dimensional difference created by a molecule or a crystal lattice manifests itself at the microlevel of space. Each molecule or crystal creates a kind of domain that forms around itself a difference in the opposite dimension of space, which is called the magnetic field of this domain. The superposition of all magnetic domains creates a magnetic field of the material object, in the case of a planet — the magnetic field of the planet. The combined magnetic field of the planet affects the atoms and molecules forming the substance of the planet in different ways due to their qualitative and structural differences, as a result of which atoms, molecules, crystals exhibit different properties and qualities. The heterogeneity of space in different directions leads to the fact that the same difference in the dimensionality of space affects the qualitative state of physically dense matter in different ways, depending on which spatial direction this difference in dimensionality occurs. This is also due to the fact that the synthesis of hybrid matter, including physically dense matter, is oriented in accordance with the anisotropy of the macrospace itself in which the synthesis takes place. Anisotropy of space determines the spatial orientation of matter, both unrelated primary matter and hybrid. The anisotropy of space determines the structural and qualitative anisotropy of matter. An anisotropic macrocosm generates an anisotropic microcosm, the balance of which ensures a stable state of the universe. Due to the anisotropy of both the macrospace and the microspace, the influence of the local inhomogeneity of space on matter and on space itself becomes dependent on the spatial orientation of the gradient of the dimensional difference of space, both in relation to space itself and in relation to matter. It is, as a consequence of this, that the dimensional gradient of space manifests itself as a so-called gravitational field in one spatial direction, as a magnetic field in another, and as an electric field in the third. Thanks to this only, is it possible to propagate both electromagnetic waves and others in space. The magnetic field turns into electric, as well as vice versa — electric into magnetic. In particular, this rule also works with respect to gravitational waves. All of them are interchangeable. This rule does not apply to standing waves of dimensionality. Understanding the unity of the nature of fields gives the key to the creation of anti-gravity and the possibility of instantaneous movement in space, opens up virtually unlimited possibilities for the development of technology and the development of new energy sources.

Chapter 4. Necessary and sufficient conditions for the emergence of life in the Universe

4.1. Statement of the question

The question of the origin of life on our planet has always been a "stumbling block". Since ancient times, philosophers and scientists have tried to unravel the mystery of life. Various theories and hypotheses about the nature of living matter were created. All of them are based on postulates (concepts accepted without evidence). To keep these theories viable, new and emerging postulates were later introduced. Currently, all existing scientific theories have dozens, and sometimes hundreds of postulates in their foundation. Modern physics is one of them. The information that humanity has accumulated by the end of the twentieth century completely makes these theories untenable. The phenomena that scientists observe, by means of instruments or visually, are manifestations of real laws of nature. But, the real laws of nature are formed at the levels of the macrocosm and microcosm. Everything that a person comes into contact with in his life is located between the macrocosm and the microcosm. That is why, when a person with the help of devices was able to look into the microcosm, he first encountered the laws of nature, and not their manifestations. Matter did not appear out of nowhere. Everything is much simpler and more complicated at the same time: what a person knows about matter and thinks of as a complete, absolute concept, in fact, is only a small part of this concept. Matter really does not disappear anywhere and does not appear from nowhere; there really is a Law of Conservation of Matter, only it is not what people imagine it to be. Thus, existing scientific theories based on postulates turned out to be stillborn. They could not give any coherent and logical explanation. The impossibility of existing theories to explain the conditions and causes of the origin of life does not excuse this ignorance. Life on our planet appeared more than four billion years ago and its development led to the emergence of intelligence, but the existing civilization still cannot answer a simple question: what is life, how did it arise from the so-called inanimate matter? How and why does inanimate matter suddenly transform into living matter? Without understanding this issue, humanity cannot call itself a reasonable race, but only an unreasonable kid, for whom it's time to gain intelligence-reason.

So, what conditions should have arisen on the planet under which the origin of life is possible?

4.2. Conditions for the origin of life on planets

Before explaining the nature of the origin of life, first of all it is necessary to determine what conditions must exist so that at least protein life can be born on the planet. The nine planets of the solar system are a good example of this. At the moment, only on planet Earth are there necessary and sufficient conditions for life or, at least, complexly organized living matter.

And the primary task is to determine these conditions. Based on the understanding of the above-mentioned processes occurring at the macro and micro levels of space, the following conditions necessary for the origin of life can be distinguished:

1. The presence of a constant dimensional difference ζ . The magnitude of the constant difference in dimensionality and the quantization coefficient of the space γ_i (which determines the number of forms of matter of this type that can merge within this difference) determine the evolutionary potential of possible life. The multiplicity of these values is a criterion that gives an idea of the number of qualitative barriers (levels) that arise within this dimensional difference. The number of barriers characterizes the qualitative diversity of possible life. Including the possibility of the emergence of reason and its development. The dimensionality of the macrospace, after the completion of the formation of the planet, returns to the initial level that was before the supernova explosion. After completion of the formation process, there is a constant difference in dimensionality between the level of dimensionality of physically dense matter (**2.89915**) and the level of dimensionality of the surrounding macrocosm (**3.00017**). Thus, a constant difference in dimensionality is a necessary condition for the emergence of life. The magnitude of this difference is important. It is the magnitude of the difference that determines the evolutionary potential of living matter, life. The minimum difference in dimensionality at which the origin of life is possible should be equal to:

$$\zeta = 1 \gamma_i (\Delta L) \quad (4.2.1)$$

The appearance of the elements of reason and the origin of memory, without which the development of reason is impossible, is possible with a dimensional difference equal to:

$$\zeta = 2 \gamma_i (\Delta L) \quad (4.2.2)$$

A necessary condition for the emergence of reason and its evolution is a dimensional difference:

$$\zeta = 3 \gamma_i (\Delta L) \quad (4.2.3)$$

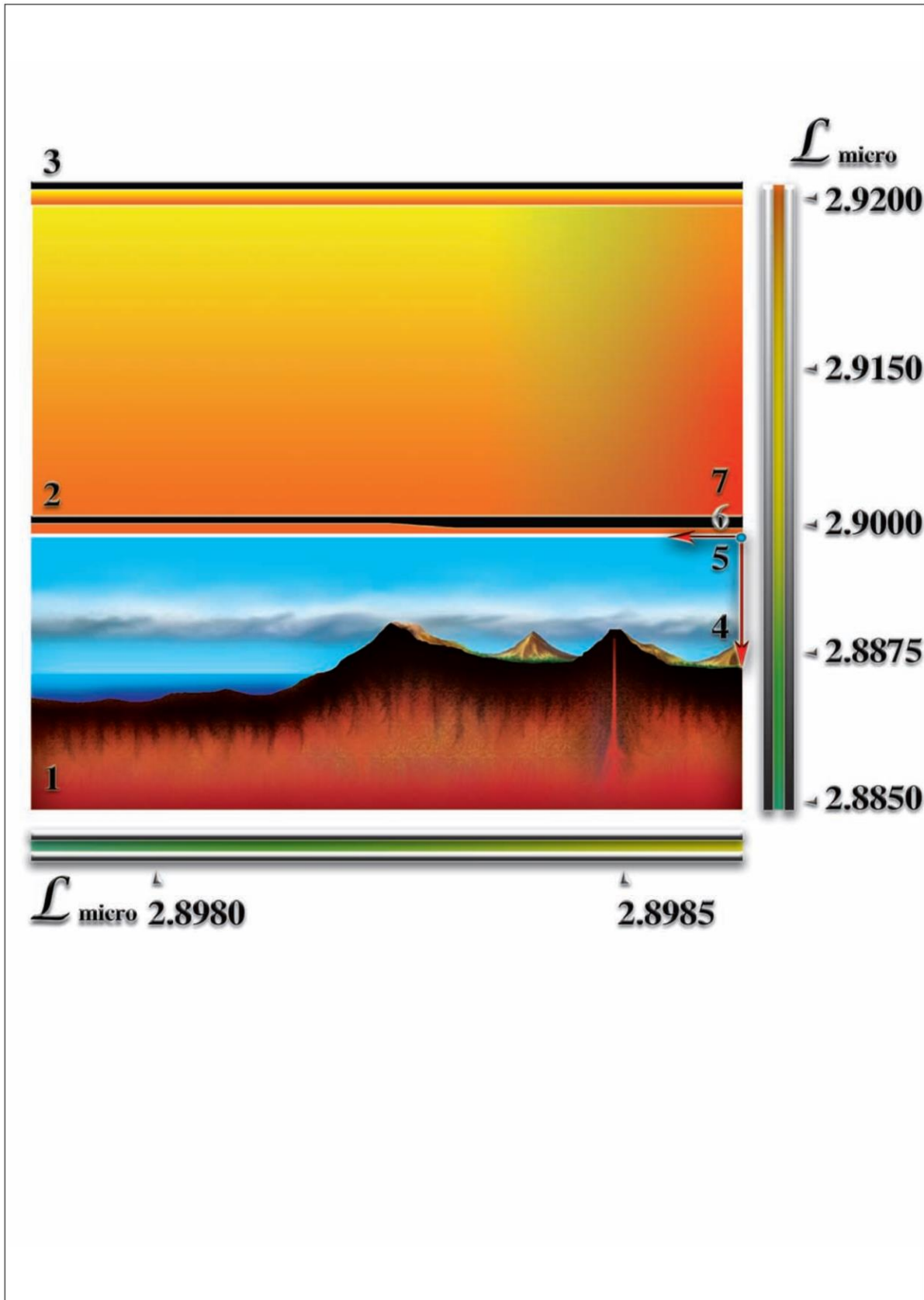
2. Availability of water. Water is the basis of organic life on our planet. Of course, there are more than just protein-based life forms. But first, it is necessary to trace the patterns of the occurrence of protein life. It is necessary to understand what is happening in our own house before looking into someone else's.

3. The presence of an atmosphere. The atmosphere is the most dynamic, active part of the planet. It reacts quickly and sharply to changes in the state of the external environment, which is very important for the emergence of life.

The presence of oxygen and carbon dioxide in the atmosphere is a sign of the presence of protein life on the planet. The atmosphere should not be very dense and excessively sparse. With a very dense atmosphere, the star's radiation does not reach the surface of the planet and does not heat it. At the same time, the lower layers of the atmosphere do not absorb the radiation of the star and the thermal radiation of the surface layers of the planet. As a result, there is no dimensional difference between the illuminated and night parts of the planet's surface. And, as a consequence, there is no movement of atmospheric masses in the lower layers of the atmosphere. In the absence of a gradient (difference) of dimensionality along the surface of the planet, atmospheric electrical discharges do not occur. In an excessively rarefied atmosphere, the lower layers have the ability to absorb star radiation and thermal radiation from the surface. But, at the same time, there is no movement of atmospheric masses, as a result of its excessive sparsity. As you know, the magnitude and density of the atmosphere is determined by the size and mass of the planet. Therefore, only planets commensurate in size and mass with our planet Earth have the most favorable conditions for the emergence of protein life. The atmosphere should be neither excessively "heavy" nor excessively "light".

4. The presence of a periodic change of day and night. The planetary day should not be very short or very long. Planets with the duration of a planetary day within the range of 18-48 Earth hours have the most favorable conditions for the emergence of life. With the mass absorption of photons of light by atoms of the surface layer of large areas, there is an increase in the level of dimensionality of this layer by a certain amount of ΔL . This value corresponds to the amplitude of the waves that are absorbed by the surface layer of the planet (infrared, optical, ultraviolet radiation of the Sun). As a result, the difference between the levels of dimensionality of the atmosphere and the surface of the planet in the absorption zone decreases by ΔL , while the unlit or nocturnal part of the surface retains the previous difference in the levels of dimensionality between the atmosphere and the surface. Thus, there is a difference in dimensionality between the illuminated and unlit zones of the planet's surface. There is a drop (gradient) of dimensionality parallel to the surface of the planet. The magnitude of this difference is of decisive importance. The fact is that the molecules of the atmosphere are under the influence of the gravitational field of the planet, which exists constantly, as a consequence of the formation in the zone of heterogeneity of the macrospace of a constant dimensional difference directed from the outer boundaries to the center of the zone of heterogeneity. The gravitational field of the planet is compensated by the fact that each atom or molecule of the atmosphere has levels of its own dimensionality, very close to the upper limit of the stability range of physically dense matter. The so-called "float effect" comes into effect, when each molecule or atom tends to the position of the most stable state of equilibrium. It is because of this that molecules and atoms of the atmosphere do not fall to the surface of the planet as molecules and atoms of heavier elements do. The difference (gradient) of dimensionality between day and night zones is directed along the planet's surface, which sets free matter in motion parallel to its surface from a zone with a higher level of dimensionality (illuminated surface) to the zone with a lower level of dimensionality (unilluminated surface).

As a result of appearance of the second direction of motion of free matter parallel to the surface, the atmospheric pressure drop appears (**Figure 4.2.1**) and gravity decreases. Since the molecules of the atmosphere are not bound together into rigid (solid state) or semi-rigid systems (liquid state), the difference of space dimensionality along the surface leads to the fact that the flow of free matter carries away the molecules that form the atmosphere. The air masses begin to move, the wind arises. At the same time, "heated" molecules (molecules that have absorbed solar radiation) move to an unlit area where unprompted (spontaneous) radiation waves occur. In other words, due to the fact that the intrinsic level of dimensionality of these molecules is higher than the intrinsic level of the atmosphere of an unlit surface, this difference between the dimensionality of the medium and the intrinsic dimensionality of heated molecules causes an unstable state of the latter and provokes spontaneous emission of waves by molecules. "Cold" molecules, in turn, have a level of their own dimensionality below their own level of dimensionality of the illuminated area, which provokes mass absorption of solar radiation and thermal radiation of the illuminated surface. Gradually, there is an alignment between the proper level of dimensionality of the illuminated surface and the proper level of dimensionality of the molecules. At the same time, if the intrinsic level of dimensionality of "cold" molecules differs significantly from the intrinsic level of dimensionality of the illuminated area, the latter decreases. When the proper level of dimensionality of the illuminated area drops to the level of the so-called "dew point", the water molecules from the gaseous state are transformed into a liquid state. Dew falls. If this happens at the level of clouds, the process of droplet formation acquires a chain character, and rain falls. At the same time, the state of the qualitative barrier between the second and physical levels returns to normal. In the case when this process occurs quickly and abruptly, the free matter accumulated at the level of the qualitative barrier flows down like an avalanche. And, as a result, atmospheric electrical discharges — lightning occurs. An analogy to this process can serve as a dam on a river, where all the locks have been opened, and all the water accumulated by the dam is released at the same time.



The periodic change of day and night makes the above described normal and natural. Optimal for the emergence of life are planets with a duration of planetary days in the interval values of 18-48 earth hours. With a shorter duration of the planetary day, the processes described above do not reach a level at which there is an active movement of atmospheric masses and discharges of atmospheric electricity, without which the emergence of organic life is impossible. Longer planetary days (more than 48 Earth hours) lead to a constant stormy state of the planet's atmosphere, which creates difficult conditions for the emergence and development of life. On such planets, life can arise only when the intensity of the star's radiation reaches the surface of the planet, it will decrease to a certain level. Only at the radiation level of the star, when the illuminated surface of the planet does not overheat, conditions arise for the origin of life. Usually, such conditions appear at the last stage of the evolution of stars, and even if life arises on them, it does not have time to develop into complex forms before the star dies. In addition, if the duration of the planetary day is small, the dimensional difference does not reach the level at which any significant mass movements of the lower layers of the planet's atmosphere occur. If the duration of the planetary day is long, the difference in dimensionality becomes so significant that it leads to powerful and prolonged atmospheric storms and weather, as a result of which the upper layer of the planetary soil is destroyed, which makes it impossible to develop the flora of the planet, without which the development of the ecological system is simply impossible. The stormy state of the atmosphere also causes a powerful movement of the surface layers of the oceans of the planet, which, in turn, makes it impossible for life to originate in water.

5. The presence of atmospheric electrical discharges. During atmospheric electrical discharges, organic molecules are synthesized in the water. In the discharge zone, an additional curvature of space is created (a change in the level of dimensionality), in which the molecules of inorganic compounds dissolved in water are connected to each other in a qualitatively new order, forming organic compounds that are chains of the same type of atoms. Only powerful discharges of atmospheric electricity can create the necessary conditions under which the level of dimensionality reaches a critical value. Two free electronic bonds of each of these atoms are able to attach to themselves both free ions and other chain-molecules. Atmospheric electrical discharges occur as a consequence of the difference in the thickness of the qualitative barrier between the physical and the second levels of the planet. When night embraces the earth with its cover, the surface layer of the planet begins to cool and emit heat waves. And, as with any radiation, the level of dimensionality of the emitting atom or molecule decreases. When this happens simultaneously with trillions of trillions of atoms and molecules in a limited area (the area illuminated by a star in the daytime), the level of dimensionality decreases throughout this area. If during the day the atmosphere and the surface of the planet warmed up strongly, and at night there was a sharp cooling, there is a jump in the level of dimensionality. At the same time, the free matter accumulated at the level of the qualitative barrier falls down like an avalanche. There is an electric discharge between the atmosphere and the surface of the planet.

So, the necessary conditions for the emergence of life on the planet are:

- ❖ **the presence of a constant difference in dimensionality,**
- ❖ **the presence of water,**
- ❖ **presence of atmosphere,**
- ❖ **the presence of a periodic change of day and night,**
- ❖ **the presence of atmospheric electrical discharges.**

Life is born automatically on all planets where the above conditions exist. And there are billions of such planets in the universe. Our planet Earth is not a unique creation of nature.

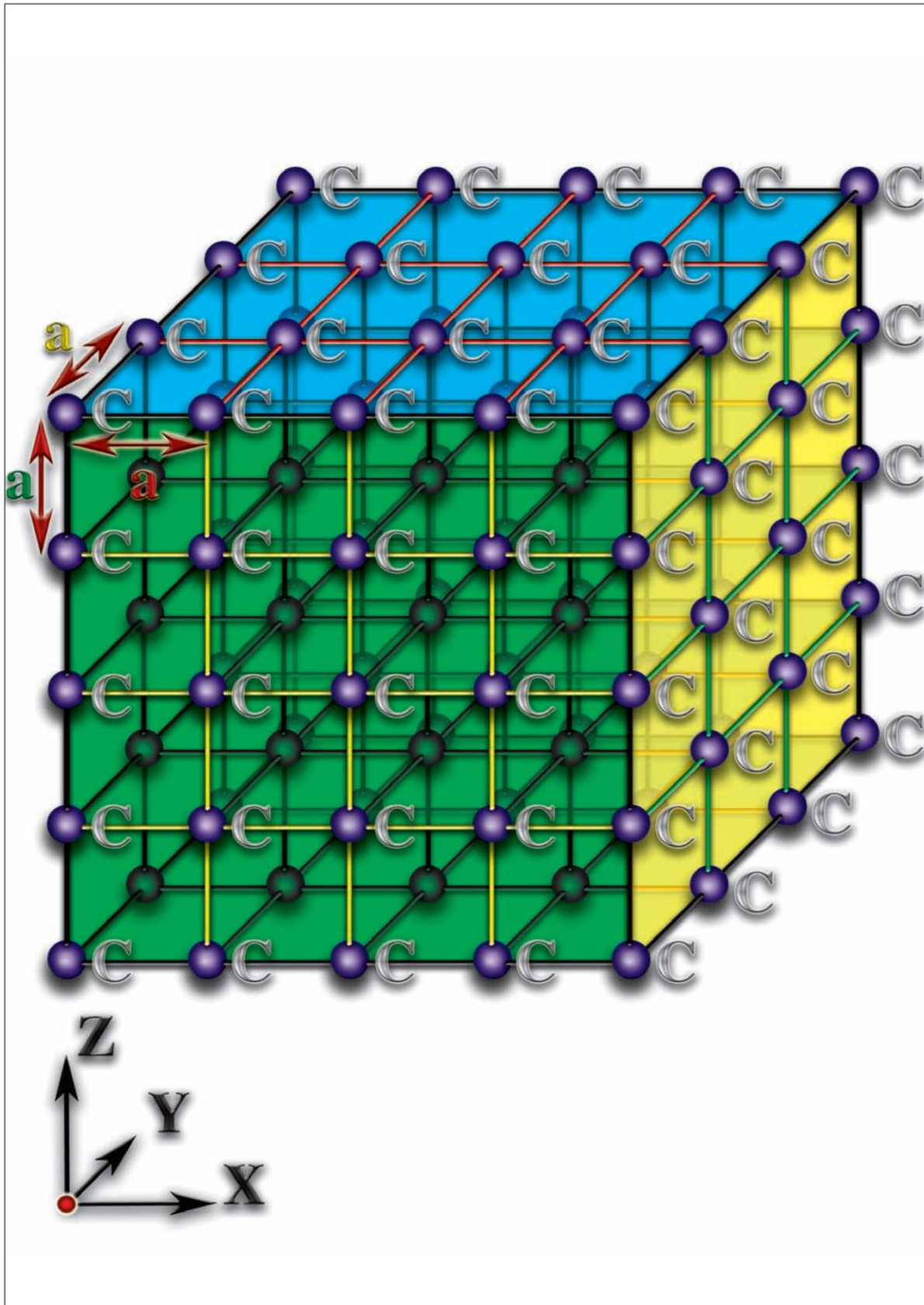
4.3. Qualitative features of organic molecules and their role in the origin of life

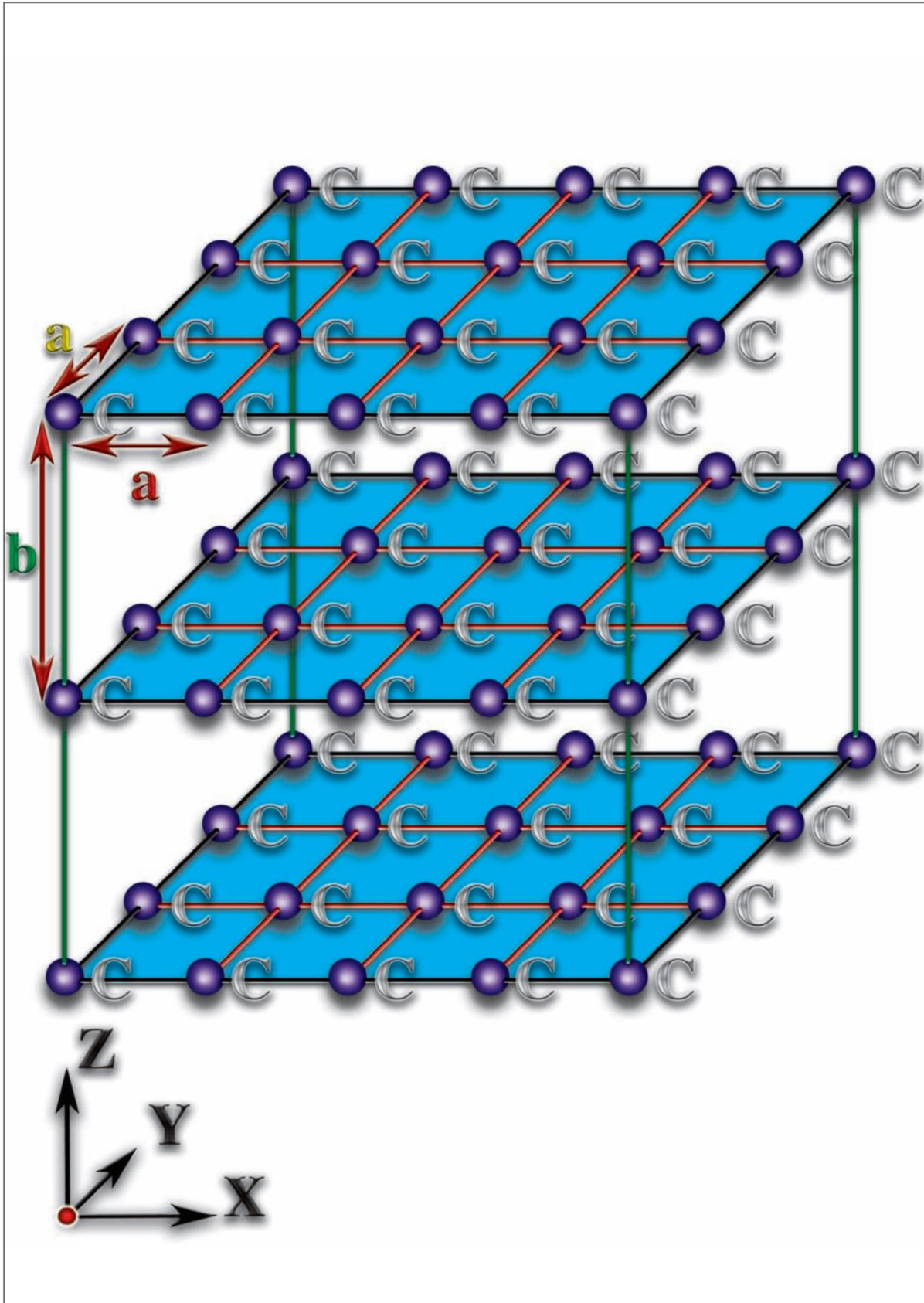
And now let's look at how, under the above necessary conditions, life originates and develops. Sea water, as everyone knows, has become the cradle of life. It contains almost all chemical elements and many of their compounds. During atmospheric electrical discharges, space is deformed. In the water permeated by these discharges (lightning), there is a level of dimensionality at which the tetravalent elements (carbon, silicon, phosphorus) begin to connect into chains. At the same time, the resulting molecules have not only structural differences, but also acquire new qualities. What new qualities arise when the same atoms are combined in a different structural order? What makes us separate the atoms that form one structural order from the same atoms that create another structural order? Why, in one case — inorganic compounds, and in the other — organic?

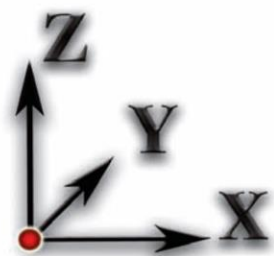
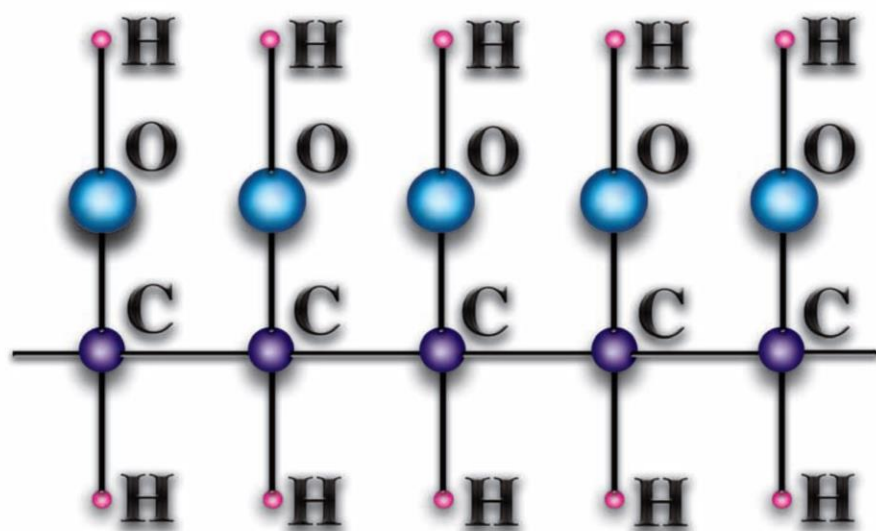
Due to the fact that the basis of protein life is carbon, it is enough to analyze the qualitative difference in the spatial characteristics of the molecules that this element creates in order to unravel the mystery of the origin of life. Let's try to understand what the differences in the structural organization of molecules lead to. Consider inorganic structural formations - crystals. Crystals are such spatial compounds where atoms are located relative to each other at almost identical distances. These distances are commensurate with the size of the atoms themselves (10⁻¹⁴ ... 10⁻¹² meters). Moreover, they (distances) are practically the same in all spatial directions (diamond) or identical in each of the spatial planes (graphite). Due to the fact that the basis of protein life is carbon, it is enough to analyze the qualitative difference in the spatial characteristics of the molecules that this element creates in order to unravel the mystery of the origin of life. Let's try to understand what the differences in the structural organization of molecules lead to. Consider inorganic structural formations - crystals. Crystals are such spatial compounds where atoms are located relative to each other at almost identical distances. These distances are commensurate with the size of the atoms themselves (**10⁻¹⁴ ... 10⁻¹² meters**). Moreover, they (distances) are practically the same in all spatial directions (diamond) or identical in each of the spatial planes (graphite).

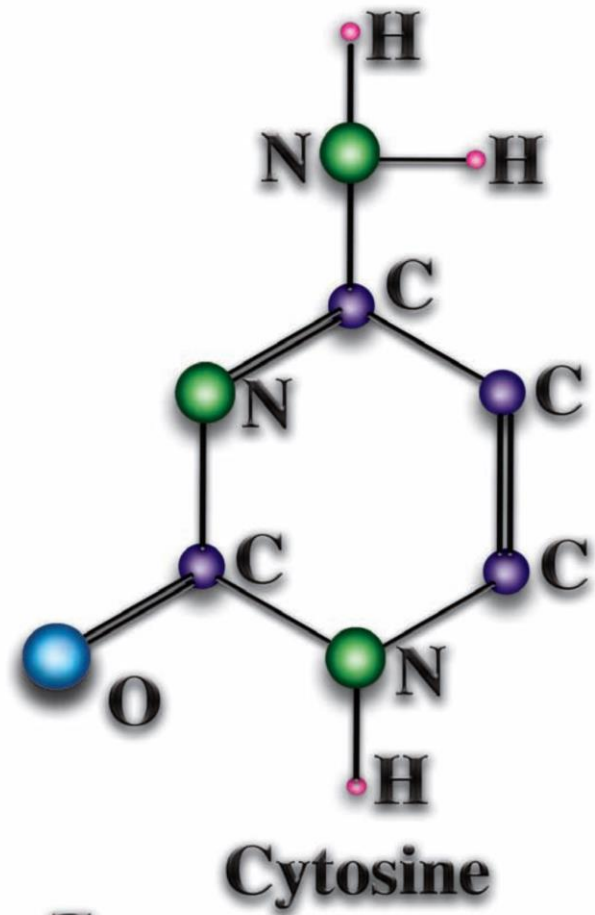
These crystals are formed by carbon (C) atoms; however, they are not just the basis for living organisms, but also of organic molecules (**Fig. 4.3.1, Fig. 4.3.2**). What are the reasons that the same carbon atoms, combined in a different spatial order, became the foundation of living nature? And they (the causes) are the consequences of the qualitative features of organic molecules (**Fig. 4.3.3, Fig. 4.3.4**). The qualitative features of organic molecules are as follows:

1. The spatial structure of organic molecules is heterogeneous in different spatial directions.
2. The molecular weight of organic molecules ranges from several tens to several million atomic units.
3. The uneven distribution of the molecular weight of organic molecules in different spatial directions.



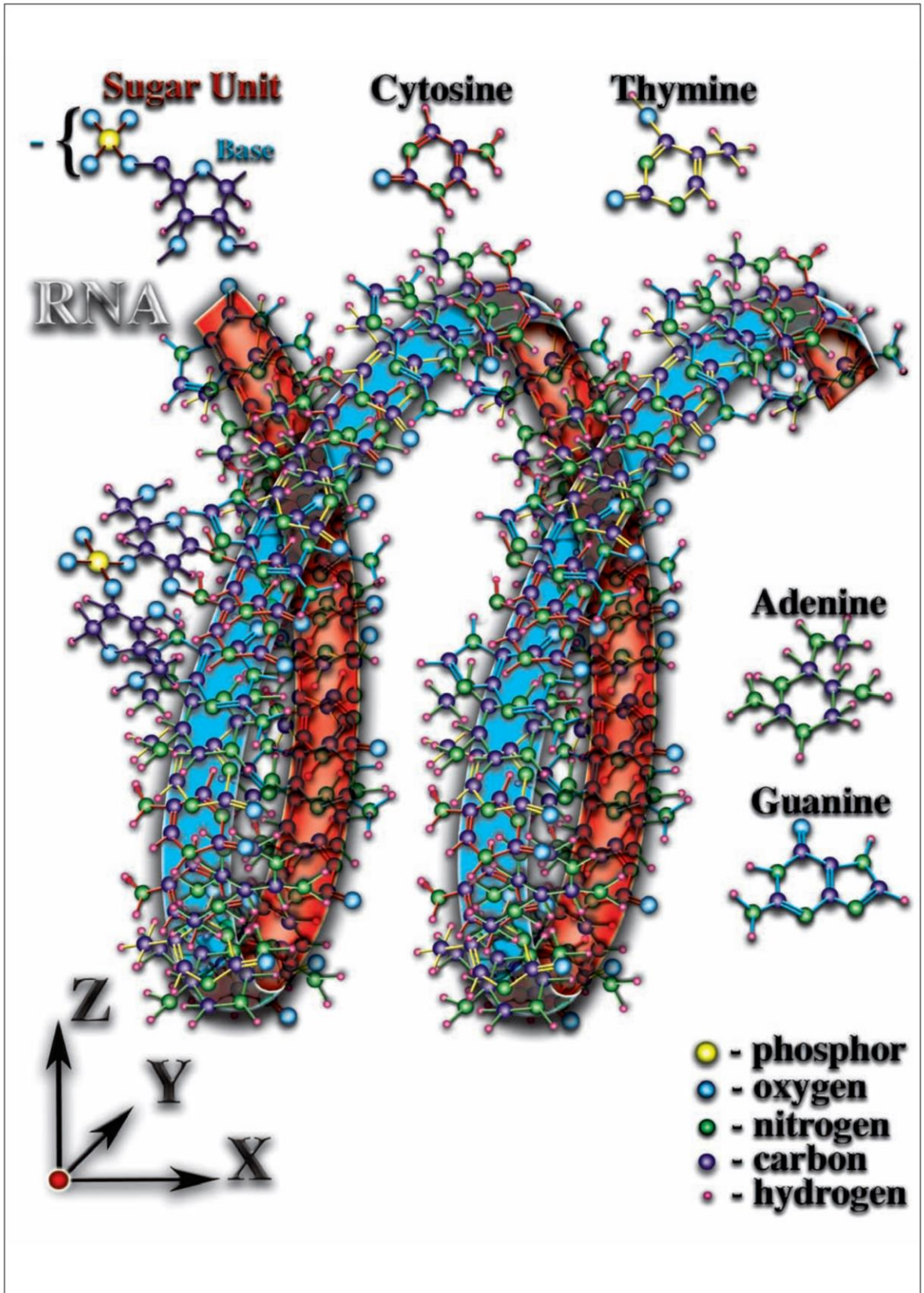


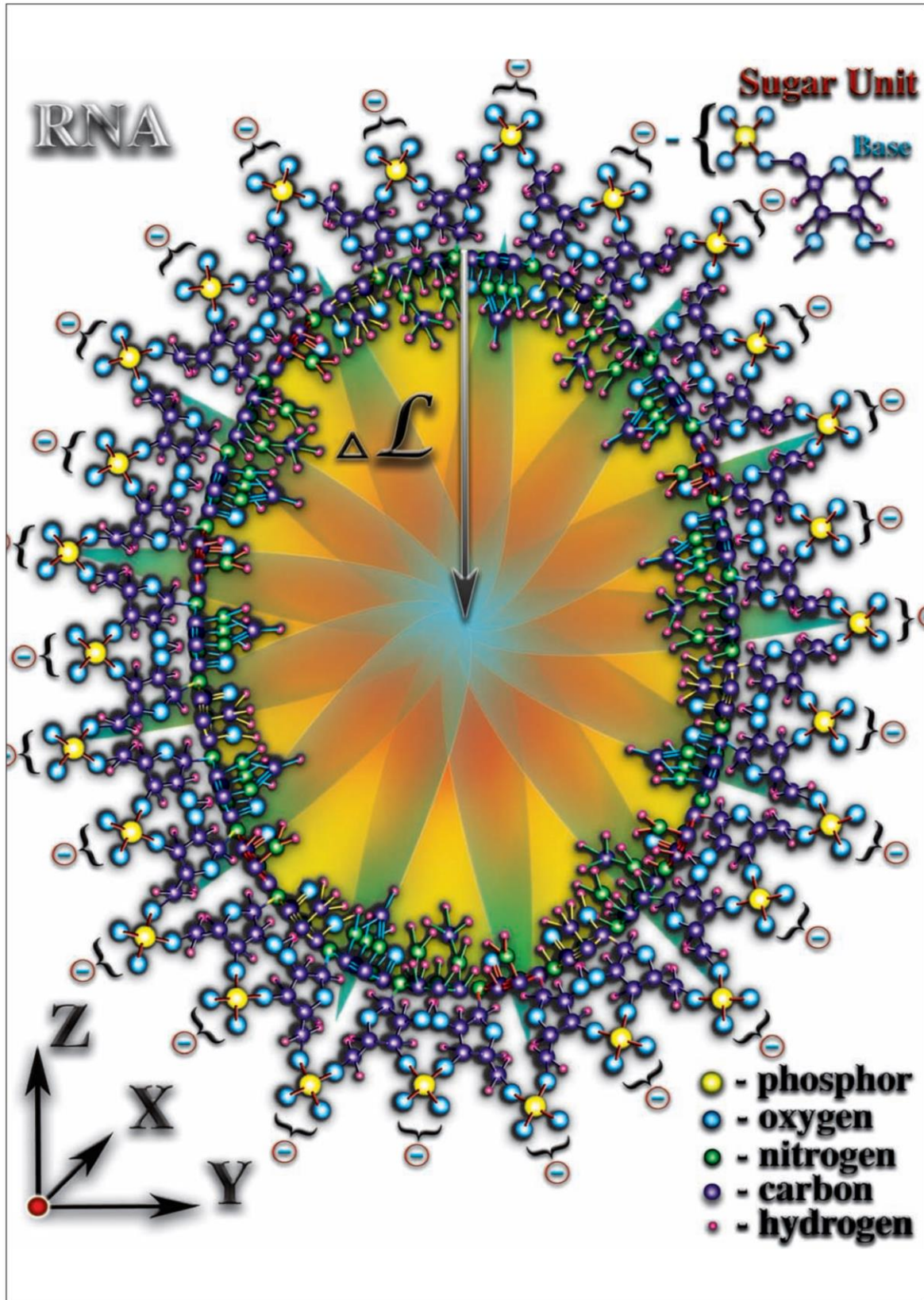


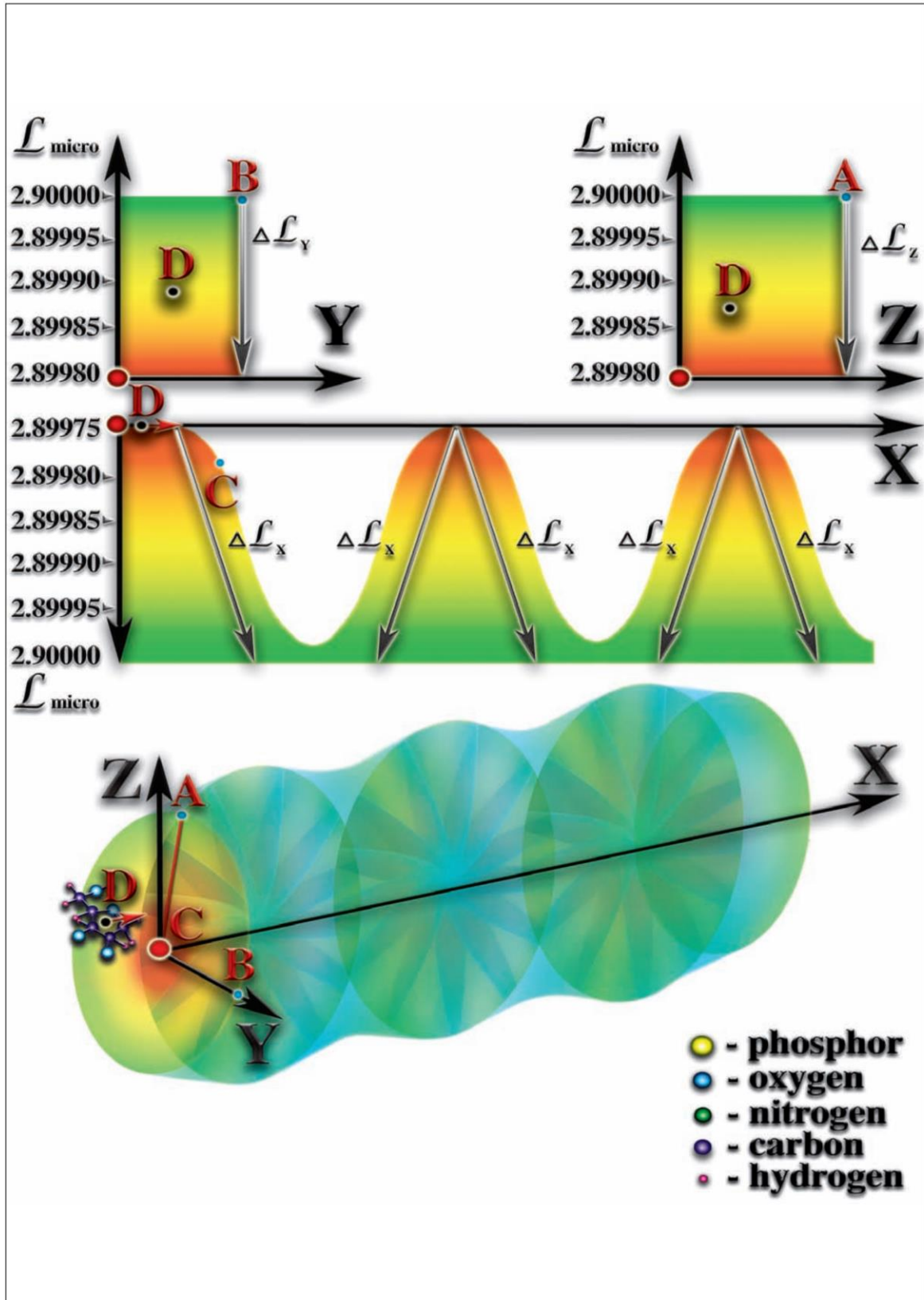


And, as a consequence of these qualitative features, organic molecules affect the surrounding microspace differently in different spatial directions. This phenomenon is especially pronounced in **RNA** and **DNA** molecules (**Fig. 4.3.5, Fig. 4.3.6**). The atoms forming these molecules create long chains twisted into a spiral. It is the spiral spatial shape of **RNA** and **DNA** molecules that creates the necessary qualities for the emergence of living matter. What are these necessary qualities that create the miracle of life? What makes it possible to talk about a qualitatively new stage of the evolution of matter - the evolution of living matter, the evolution of life? Let's try to understand the miracle that gives birth to life...

The inner volume of the spirals of **RNA** or **DNA** molecules forms a kind of tunnel. The spiral molecule has a strong influence on the level of dimensionality of the microspace of this tunnel. Moreover, this effect on the internal volume of the tunnel is not the same in different spatial directions (**Fig. 4.3.7**). Let us recall that each atom influences the dimensionality of the microspace around it. A compound of atoms creates a combination of the effects of all the atoms forming this compound on the dimensionality of the microspace of the molecule. At the same time, the spatial orientation of the influence of each incoming atom entering the compound is important. The spiral structure of **RNA** or **DNA** molecules creates conditions under which the influence on the dimensionality of most of the atoms forming them is concentrated in the inner volume of the spirals of these molecules. The dimensionality of the outer volume of the spirals of **RNA** or **DNA** molecules undergoes only minor changes. It should be noted that the changes in the dimensionality of the internal volume of these spirals are not the same in different spatial directions. Along the axis, the coils of the spiral create periodically recurring dimensional differences. These differences in the internal volume create a standing wave of dimensionality (a wave of dimensionality, the parameters of which do not change in time and space). In the radial directions, the spiral of the **RNA** or **DNA** molecule creates a smooth dimensional difference. It is the standing wave of dimensionality created by the spiral structure of the **RNA** or **DNA** molecule that is a sufficient condition for the emergence of life. We will try to find out why this is so. **RNA** and **DNA** molecules are found in an aqueous medium. Seawater, in which the first life originated, contains a huge number of molecules and ions, both of inorganic and organic origin. All these molecules and ions are in constant chaotic motion. As a result of this movement, molecules and ions periodically enter the inner volume of the **RNA** or **DNA** helix. And the miracle of life is born!..

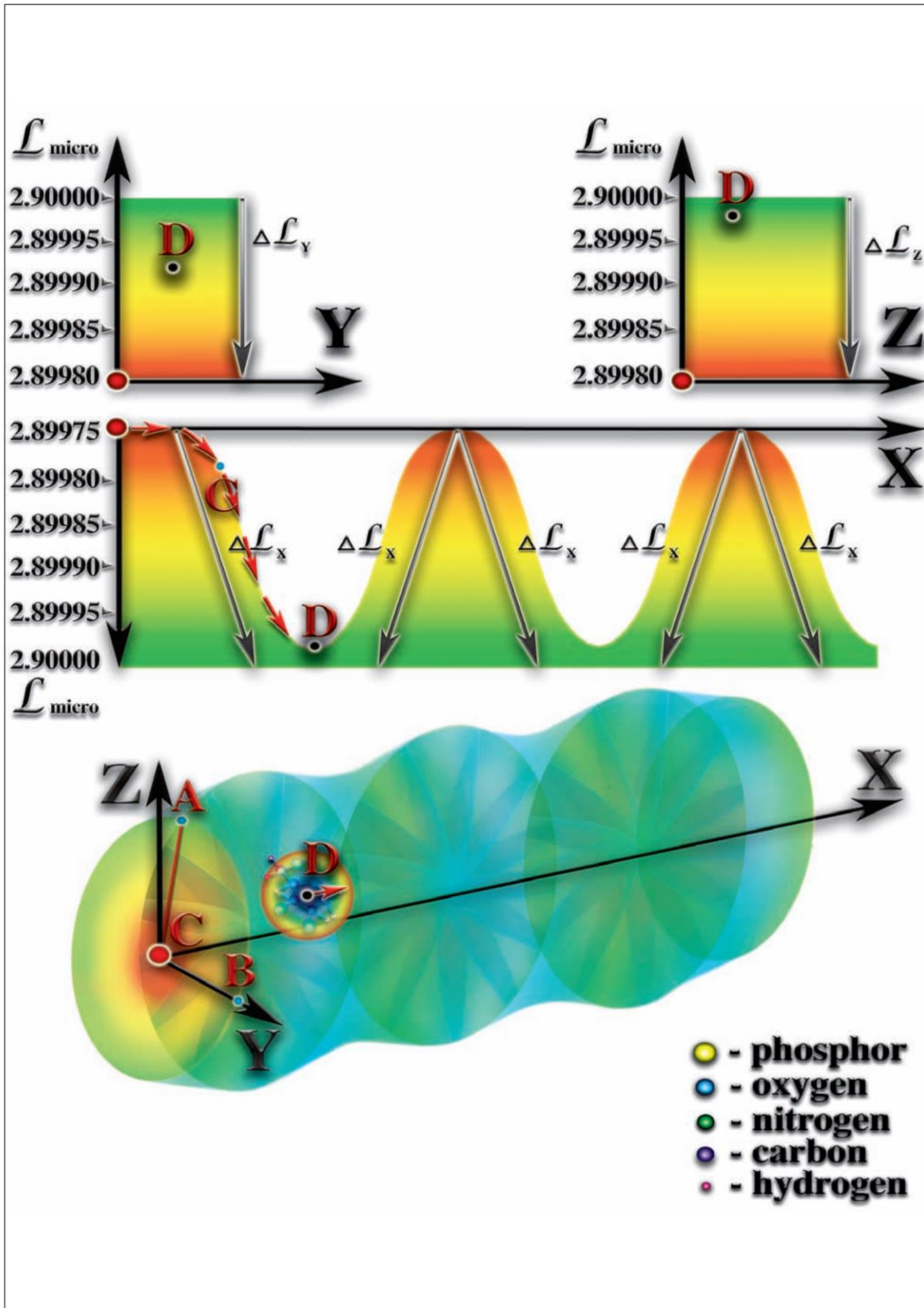


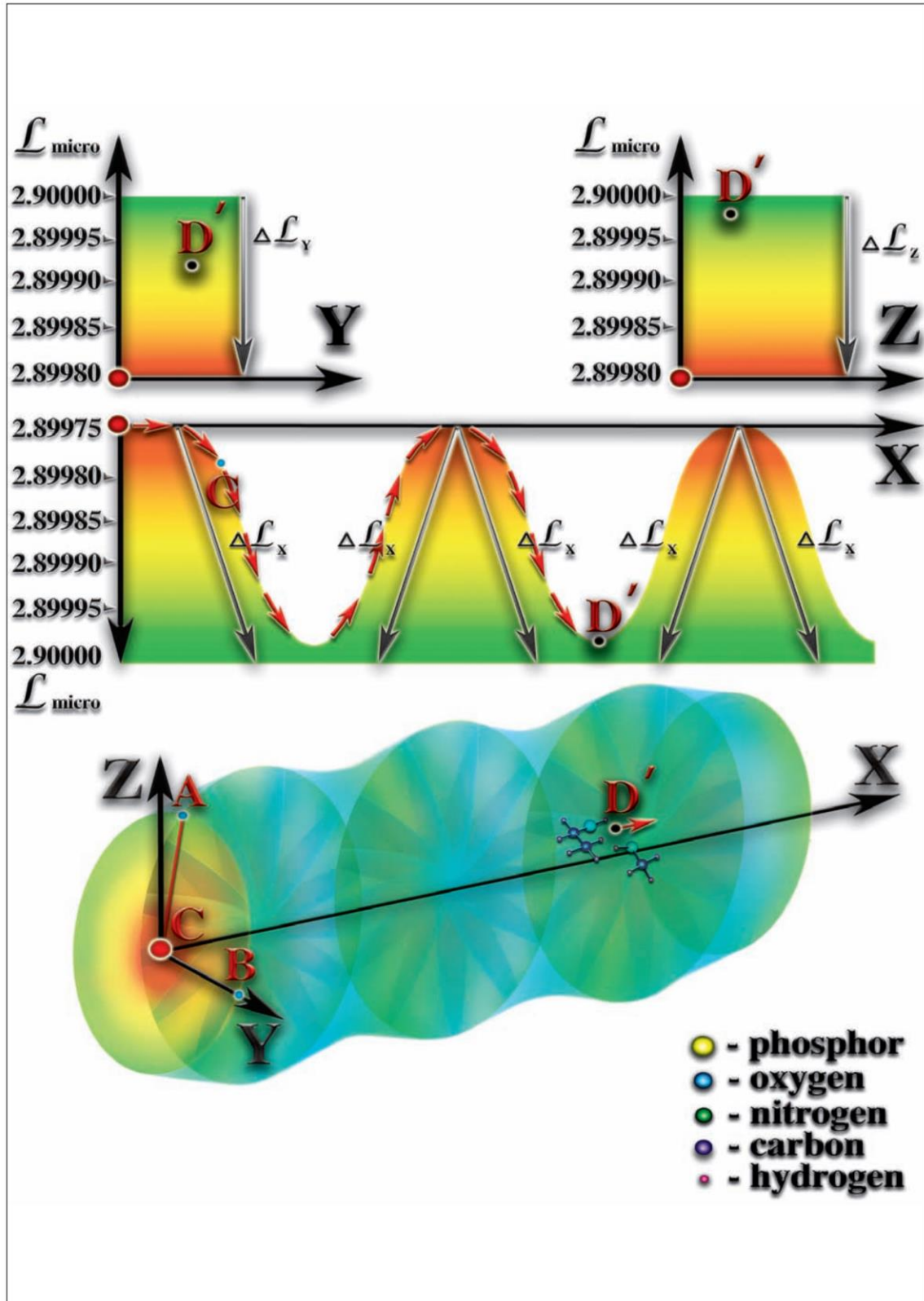




The solution to this miracle is very simple. The fact is that the inner volume of the spiral of an **RNA** or **DNA** molecule is a trap for all the molecules caught in it. The radial difference in dimensionality keeps the trapped molecules inside the **RNA** or **DNA** helix. At the same time, the radial difference of dimensionality causes free matter to move along this difference. And, as a consequence, there are gravitational forces directed towards the axis of the **RNA** or **DNA** helix. Therefore, all molecules trapped in the inner volume of the spiral, as a result of Brownian (chaotic) motion, begin to move along the axis of the spiral. Just as the flow of a river drags everything that gets into it, the radial drop drags the "captive" molecules. Only very fast molecules can escape from this captivity. At the same time, they lose part of their potential. All other molecules begin to move along the axis of the spiral. Along the axis, the spiral of the **RNA** or **DNA** molecule creates, as you remember, a standing wave of the dimensional difference. During their forced movement along the axis, the "captive" molecules fall into zones with different dimensions. Each of these molecules has its own level of dimensionality at which it is maximally stable, as well as a range of dimensionality values within which a molecule can exist without disintegrating. And as soon as the "captive" molecules, with their forced movement along the axis, fall into a zone with a dimension beyond their limits, they become unstable and begin to disintegrate (**Fig. 4.3.8**).

As a result of the disintegration of molecules, all seven primary matter are released, which formed a physically dense substance. At the same time, some of the released matter again creates new atoms and molecules that have their own level of dimensionality, identical to the dimensionality of the decay zone. Usually, newly formed molecules, with their forced movement along the axis, do not disintegrate. After leaving the inner volume of the spiral of the **RNA** or **DNA** molecule, they find themselves in an aqueous medium (**Fig. 4.3.9**). These molecules are often chemically active and, as a result, aggressive, both in relation to **RNA** or **DNA** molecules, and to other intracellular formations. Looking ahead, we note that these molecules, which in the future we will call toxins or slags, are removed outside the cell and further outside the body (in the case of a multicellular organism). Let's return to the analysis of the processes occurring in the internal volume of the **RNA** or **DNA** helix... Some of the released free matter, as it turned out, form stable atoms and molecules. And the other part? What's going on with her?!





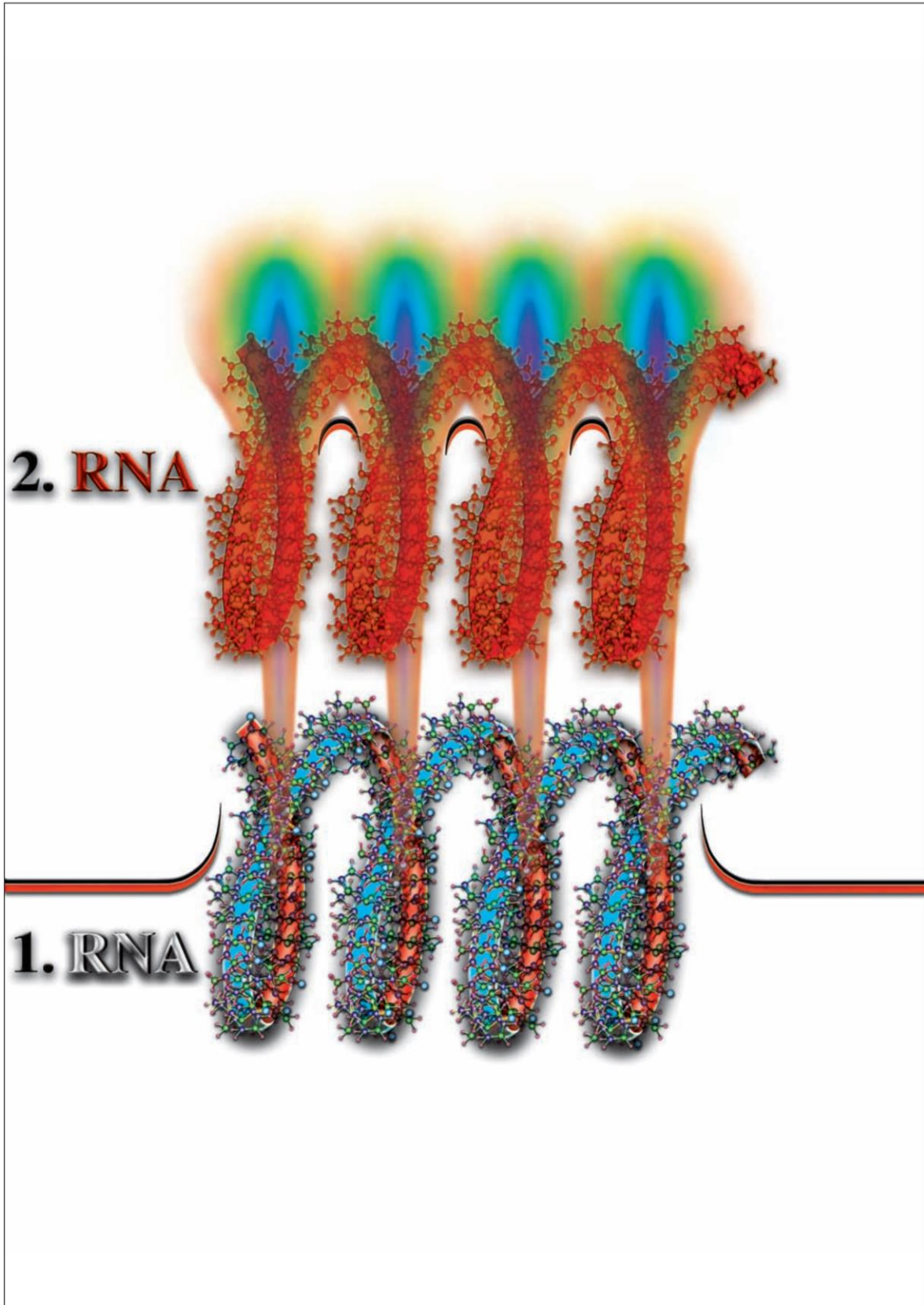
It is at this point of analysis that we have come to understand the mystery of life. Unrelated matters, through the channel between the physical (first material sphere) and the second (second material sphere) levels of the planet, which arises in the inner volume of the **RNA** or **DNA** spiral, begin to flow to other levels. Let's remember that every molecule, especially such huge ones as **RNA** and **DNA**, deform the microspace around them. And at the same time, the second material level of the planet is deformed. Moreover, the shape of the deformation completely copies the shape of the **RNA** or **DNA** molecule, as well as all other molecules. When pits (deformations) appear on the road, during rain they are filled to the brim with water. If the rain is prolonged, rainwater, having filled the pits, begins to drain into the lowlands. Also, unrelated matter, flowing through the channel to the second material level, completely fill the form of deformation. An excess of them regains freedom from the captivity of the planet. There is only one question - what released matter fills this deformation form of the second material level (sphere) and why?

In order to answer this question, let us recall that the second material level (sphere) was formed as a result of the merger of six free forms of matter. Therefore, the deformation of the second material level is filled only by matter **G**, which is the seventh matter and is not part of the hybrid matter of the second material sphere. After the deformation is completely filled with matter **G**, an exact copy of the **RNA** or **DNA** molecule is formed at the second material level (sphere). The so-called second material body of the **RNA** or **DNA** molecule appears (**Fig. 4.3.10**). With a full-fledged second material body, a qualitative barrier disappears between it— the second material sphere and a physically dense body (the first material sphere), because the system of the second material body plus the second material sphere qualitatively and structurally corresponds to physically dense matter²². Between the physically dense (first material body) molecule and the second material body of the **RNA** or **DNA** molecule, a permanent channel is formed through which the released matter continues to flow to the second and other material levels of the planet. If the process of disintegration of "captive" molecules in the inner volume of the spiral of the **RNA** or **DNA** molecule stops, then the second material body of the molecule will either disappear completely or lose its optimal density. Like a puddle on the road: if there is no new rain, all the water will evaporate from it, and the pit will be the only thing on the road that remains...

Thus, the constant decay of "captive" molecules in the inner volume of the spiral of an **RNA** or **DNA** molecule is a necessary condition for maintaining life. The emergence of the second material body is a qualitatively new step in the evolution of matter. The captive matter has found a way to free itself from its prison. And this liberation is living matter.

The appearance of the second material body is **the beginning of the evolution of living matter**.

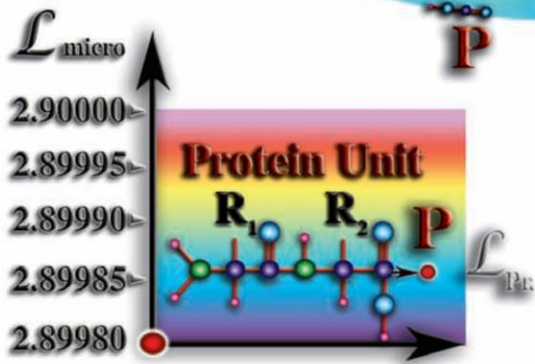
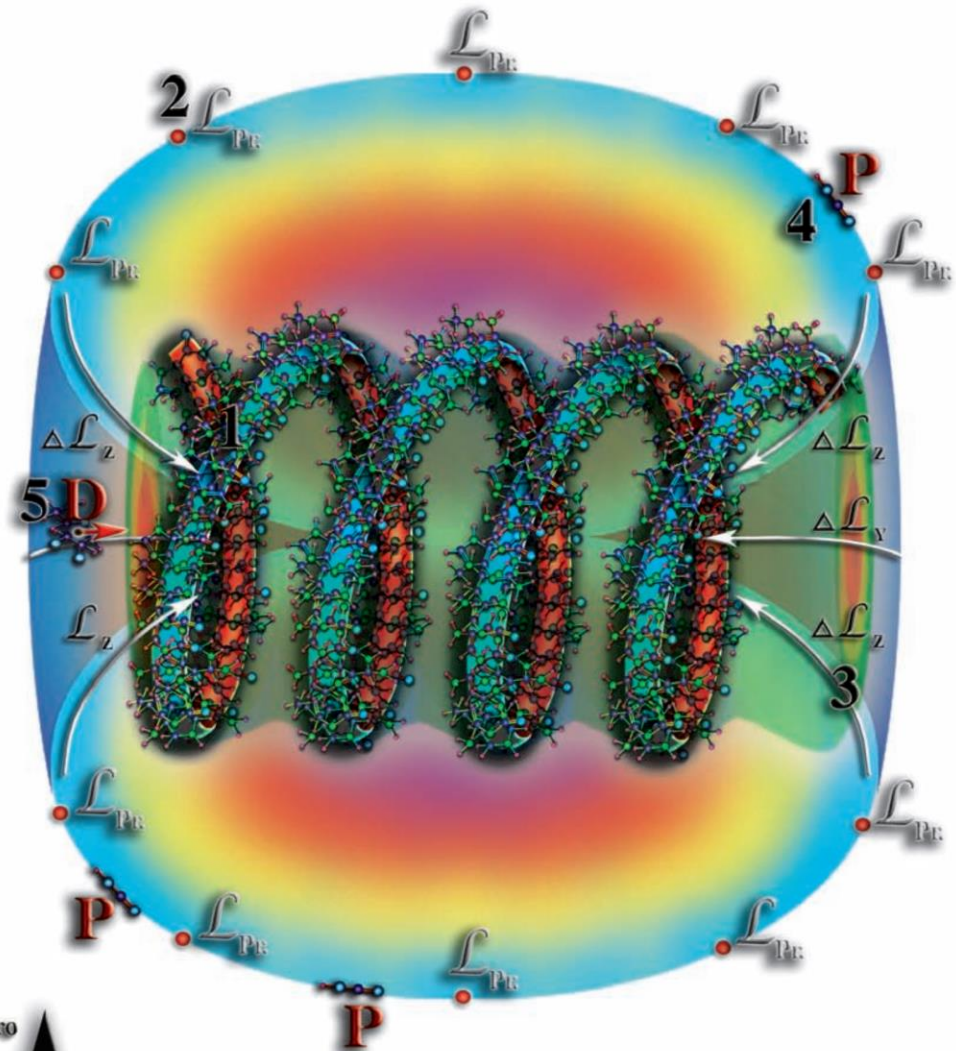
²² "The DNA PHANTOM EFFECT: Direct Measurement of A New Field in the Vacuum Substructure", by Dr. Vladimir Poponin, 1996.



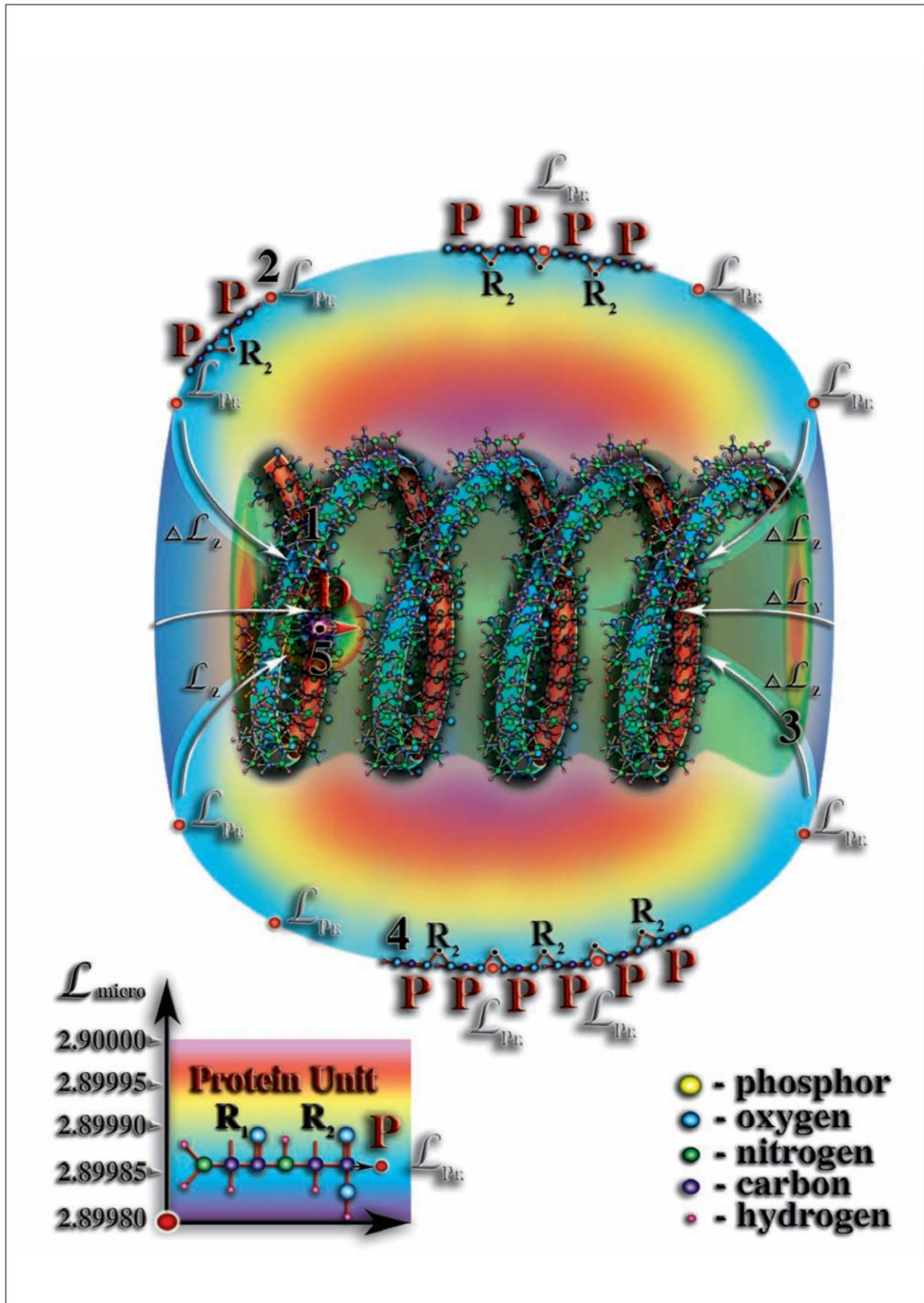
Viruses were the first living organisms. The virus is an **RNA** molecule surrounded by a protein shell. The protein shell creates a stable environment around the **RNA** molecule, a kind of microclimate is created around the **RNA** molecule due to the fact that the protein shell slows down the movement of molecules, both inside and out of itself. Therefore, molecules trapped inside the protein shell, colliding with it during their movement, can ricochet off it many times before leaving the inner volume of the protein shell. Repeated movements of molecules trapped inside the protein shell increase the likelihood that they will fall into the "sphere of influence" of the **RNA** molecule and, as a result, will be drawn into the internal volume of the **RNA** molecule and begin their forced movement along the optical axis of this molecule, falling under the action of a standing wave of dimensionality. Which, in the end, leads to their disintegration into the matter that forms them. The internal volume of the **RNA** molecule, like a vacuum cleaner, sucks in all the molecules that have fallen under the influence of the radial dimensional difference created by the spiral of the **RNA** molecule. Just like **RNA** molecules, the "black holes" of the macrocosm create a sphere of influence around themselves, falling within the limits of which any matter, including electromagnetic waves, is unable to escape. The black hole of the macrocosm creates a powerful radial gravitational field around itself (radial dimensional difference), causing the decay of any matter. Similarly, the internal volume of the spiral of an **RNA** or **DNA** molecule creates like conditions that lead to the disintegration of captive molecules under the action of a standing dimensional wave. The spiral of these molecules behaves identically to the "black hole" of the macrocosm, which makes it possible to call the **RNA** or **DNA** molecule the "black hole" of the microcosm.

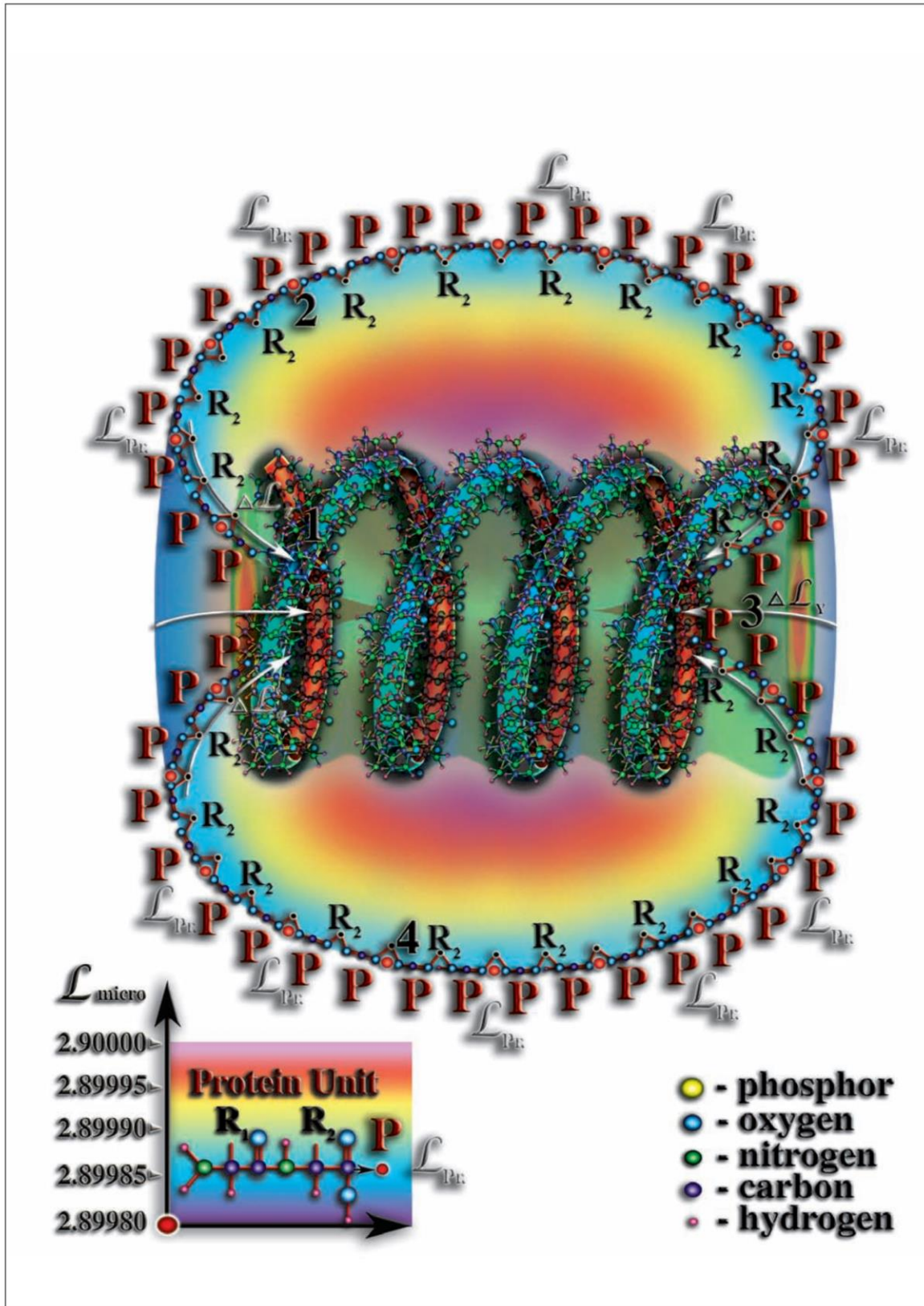
Thus, the appearance of a protein shell around an **RNA** molecule was the next step in the evolution of matter from an inanimate form to a living one. It is with the appearance of this shell that we can talk about a qualitatively new stage of the evolution of matter — the stage of the evolution of living matter. A standing wave of dimensionality arising in the internal volume of an **RNA** or **DNA** molecule, being a necessary condition for the emergence of life, is not sufficient due to the fact that, in the primary ocean, the concentration of organic molecules are very small. And therefore, without additional accumulation of organic molecules near the **RNA** molecule, there could be no question of their constant capture by this molecule with subsequent disintegration into the matter that forms them. The question arises, how could an **RNA** molecule have a protein shell? What miracle had to occur for this to happen? The answer to these questions, oddly enough, is very simple. Proteins, like all organic molecules, originated in a saturated solution of the primary ocean, as a result of atmospheric electrical discharges. Proteins themselves are large molecules, sometimes consisting of tens of thousands of atoms, and with their free (Brownian) motion in the waters of the primary ocean, falling into the "field of gravity" of the **RNA** molecule, they cannot be drawn into the internal volume of this molecule due to the fact that proteins, by themselves, represent huge molecules and simply cannot fit into the internal volume of the **RNA** molecule. But this does not mean that the **RNA** molecule does not affect the protein molecules.

The radial dimensional difference created by the spiral of the **RNA** molecule, however, captures the **primary structures** of protein molecules with its "gravity" and makes them its permanent "satellites", as it happens when a large material body (for example, a planet) captures a smaller one (**Fig. 4.3.11**). And again, there is an amazing parallel between the macrocosm and the microcosm. So, the capture and retention by the **RNA** molecule of the primary structures of protein molecules became the condition that led to the formation of a protein shell around this molecule. Over time, the number of satellite proteins of the **RNA** molecule increased, their "orbits" were commensurate, due to the close values of the levels of their own dimensionality. As a result, neighboring satellite proteins turned out to be at such a distance from each other that conditions arose for the occurrence of so-called chemical reactions between them (**Fig. 4.3.12**). Chemical reactions between the **primary structures** of satellite proteins led to the appearance of stable electronic bonds between them and they coalesced into one. Gradually, a solid protein shell appeared around the **RNA** molecule. Satellite proteins, as a result, imprisoned their invader, the **RNA** molecule, in their own "prison" (**Fig. 4.3.13**). Thus, a stable system of molecules emerged — the **RNA** molecule and its protein shell. The first living organism appeared — a virus. Now, it's time to consider another quality of living matter - **reproduction**. At the level of viruses, we can talk about their duplication of themselves, as a result of which the appearance of one living organism became a natural result of the vital activity of another.



- - phosphor
- - oxygen
- - nitrogen
- - carbon
- - hydrogen





Let's take a closer look at the nature of this phenomenon. The single protein shell that has arisen around the **RNA** molecule is not continuous, in essence, but represents a grid around the **RNA** molecule. The cells of this "grid" are not the same, which allows molecules of different sizes to get inside the protein shell. Small-sized molecules, most of which are inorganic, can quite freely leave the inner volume of the protein shell, with their chaotic movement, since most of the cells of the protein shell of the virus exceed their size. While large and medium-sized organic molecules are trapped by this "seine" inside the protein shell, since the probability that this molecule will get, during its chaotic movement, into the same cell through which it got inside, is very small. As a result, organic molecules accumulate inside the protein shell of the virus. There is a kind of filtration of primary ocean water through the internal volume of the protein shell of the virus. This process can be considered as primary nutrition of the first living organism. Part of the organic molecules captured in this way fall within the limits of the radial difference in the dimensionality of the spiral of the **RNA** molecule of the virus, are drawn into the inner volume of the spiral and decay there into the matter that forms them. If the water of the primary ocean is sufficiently saturated with organic molecules, the concentration of organic molecules inside the protein shell gradually increases. As the concentration of organic molecules inside the protein shell increases, so does the number of molecules that fall into the "attraction zone", the "black hole" of the microcosm, the inner volume of the helix of the **RNA** molecule.

It should be noted that a variety of organic molecules accumulate inside the protein shell, including nucleotides — the building material for **RNA** and **DNA** molecules. Gradually, the concentration of organic molecules inside the protein shell reaches a density level at which there is a constant decay of organic molecules trapped in the internal volume. As a result, the flow of primary matter released during the decay increases from the physically dense level to the second material level. Which leads to excessive saturation of the second material body of the **RNA** molecule. Excessive saturation of the second material body leads to the appearance of a reverse flow of primary matter **G** from the second material level to the first. As a result, a projection of the second material body appears on the physical level. Among the organic molecules saturating the internal volume of the protein shell of the virus, there are also nucleotides, which are the building material for **RNA** and **DNA** molecules. Therefore, when the projection of the second material body appears, the necessary conditions arise at the physical level for the connection of individual nucleotides into the spiral of the **RNA** molecule of the virus.

The projection of the second material body at the physical level corresponds to the exact order of nucleotides in the **RNA** molecule, therefore, it creates additional curvatures of the dimension of the microspace at the physical level, in accordance with the qualitative characteristics of the corresponding nucleotides forming the original, so-called mother **RNA** molecule. Next to the mother **RNA** molecule, its exact matrix appears. Free nucleotides, falling into this matrix, begin to connect with each other in the same order as in the parent **RNA** molecule. The induced matrix forces the free nucleotides to combine in a given order.

Since the projection of the second material body at the physical level creates such a change in the dimensionality of the microspace, in which free nucleotide molecules cannot connect in a different order. As a result of this forced connection of free nucleotide molecules, a **new RNA molecule** appears at the physical level, which is an exact copy of the mother one.

But why can't the nucleotides join together in a different order? The answer to this question is very simple. Each nucleotide has its own level of dimensionality, different from the other, so in order for two nucleotides to join together, an additional change in microspace dimensionality must be created. Moreover, for different pairs of nucleotides, the value of this additional change of microspace dimension will be different. Therefore, when a sufficiently dense projection of the second material body of the virus **RNA** molecule appears on the physical level, the initial level of dimensionality of the microspace in the projection zone changes in exact accordance with the code of this type of **RNA** molecule. Which leads to the fact that only the nucleotide whose parameters are identical to this region of the microspace can "occupy" this place. Each nucleotide literally "sits" in a specially prepared "nest" for it. Therefore, when a sufficiently dense projection of the second material body of the virus **RNA** molecule appears on the physical level, the initial level of dimensionality of the microspace in the projection zone changes in exact accordance with the code of this type of **RNA** molecule. Which leads to the fact that only the nucleotide whose parameters are identical to this region of the microspace can "occupy" this place. Each nucleotide literally "sits" in a specially prepared "nest" made for it. As a result of this process, two identical **RNA** molecules of this virus appear. This is followed by the creation of a new **RNA** molecule - an **RNA** molecule of the protein shell, by the same principle as the mother **RNA** molecule of the virus out of proteins accumulated in the protein envelope of the mother virus. A similar process will occur every time enough organic molecules - "building material" of the necessary quality - are accumulated inside the protein shell of the virus. The process of virus duplication (multiplication) takes place. As a result of this process, organic matter that arose in the primary ocean from inorganic matter is reorganized into the simplest self-organizing living matter under the influence of atmospheric electrical discharges. Thus, the first primitive living organisms appeared - viruses, the evolution of which led to a variety of plant and animal forms of life, first in the oceans, and then on land.

The next evolutionary step in the development of life was the so-called bacteriophages, an intermediate link between viruses and bacteria — the simplest single-celled organisms. The question may arise: how did the further evolution of life from a virus to a bacteriophage, from a bacteriophage to a unicellular organism occur? And again, there is no place for any miracle, everything is very simple and at the same time beautiful. The multiplying viruses filled the upper layer of the primeval ocean to a depth of no more than a hundred meters. This depth (one hundred meters) of virus penetration into the world ocean is due to the fact that the synthesis of organic molecules occurs during atmospheric discharges of electricity, which affected only the surface layer of the primary ocean.

This, firstly, and, secondly, it is the upper layer of the ocean that was in constant motion, under the influence of winds and tides, and sunlight penetrates to this depth.

So, viruses "floating" in the surface layer of the primary ocean were periodically exposed to atmospheric discharges of electricity. Atmospheric discharges cause change of space dimensionality in the zones of their passage, thus creating conditions for synthesis of organic compounds. But what happens if a virus gets in the electric discharge zone? Of course, if a virus gets under the direct influence of electric discharge, it will be destroyed completely. But what happens if the virus enters the peripheral areas of the atmospheric discharge? Will there be any changes? When the dimensionality of space around and inside the virus changes, several processes may take place:

1. Changing the order of the nucleotide connection in the existing **RNA** molecule of the virus.
2. Increase or decrease in the number of nucleotides in the existing **RNA** molecule of the virus.
3. The appearance of chemical bonds between the existing **RNA** molecule of the virus and other **RNA** molecules that were at the time of the electric discharge inside the protein shell of the virus or appeared in it as a result of the impact of an electric discharge.

When the order of the nucleotides in the **RNA** molecule of the virus is changed, a new virus appears as a result of so-called mutations. With a decrease in the number of nucleotides forming the RNA molecule of the virus, the latter may lose the qualities of living matter, since, in order to manifest the properties of living matter, the RNA molecule must reach a critical molecular weight. Viruses are a borderline form of the organization of matter between living and inanimate. To manifest the properties of living matter, the virus **RNA** molecule must reach a certain molecular weight, at which the effect of opening a qualitative barrier between the first and second material spheres occurs. At a lower molecular weight, the quality barrier does not open. That is why, if the virus is removed from the water, it goes into a crystalline state, since outside the water the **RNA** molecule of the virus loses the **H** and **OH** groups from its external electronic bonds, which quite strongly affects its molecular weight and, as a result, the qualitative barrier is restored and the properties of living matter disappear. Once in the water, the **RNA** molecule of the virus restores its chemical bonds, as a result, the **H** and **OH** groups join it, and the molecular weight increases again. When the critical molecular weight is reached, a qualitative barrier is opened between the first and second material spheres, and the properties and qualities of living matter reappear. Thus, a very important factor determining the possibility of the origin of life is the molecular weight, more precisely, there is a qualitative limit to the molecular weight of **RNA** or **DNA** molecules, the so-called critical molecular weight, at which the evolution of matter enters a qualitatively new stage of evolution — the evolution of living matter.

If, under the influence of atmospheric discharges of electricity, the number of nucleotides in the **RNA** molecule of the virus increases, several curious moments are observed. Firstly, the appearance of "extra" nucleotides leads to the birth of a new virus, a new mutation.

Secondly, an increase in the number of nucleotides leads to an increase in the molecular weight of the **RNA** molecule, as a result of which the degree of its influence on the surrounding microspace increases, which in turn leads to an increase in the size of the protein shell. The increase in the size of the protein shell is due to the fact that the heavier **RNA** molecule of the virus has a greater effect on the surrounding microspace. As a result, the satellite proteins forming the virus shell are captured by the "gravitational field" of the **RNA** molecule at a greater distance from itself, which leads to the fact that a heavier **RNA** molecule has a larger protein shell. The larger protein shell allows for the accumulation of more organic molecules inside and allows for a more stable internal microclimate. If, during atmospheric discharges of electricity, stable chemical bonds arise between two **RNA** molecules, a molecule appears, which is a spatial-chemical connection of two helices - the so-called double-helix **RNA** molecule appears, under certain conditions a **DNA** molecule appears. The appearance of **DNA** opens up a new era of development of living matter - from unicellular living organisms to multicellular, etc., to the appearance of intelligent living matter. The double helix of the **DNA** molecule creates a more pronounced deformation of microspace around itself, which accelerates the process of disintegration of "captive" molecules to the matter forming them, due to the fact that during their forced movement in the internal volume of **DNA** molecule spirals "captive" molecules get hit by two standing waves of dimensionality, while **RNA** molecules have only one standing wave of dimensionality. Thus, the double standing wave of **DNA** molecules accelerates decomposition of "captive" molecules, thereby increasing the efficiency of the system as a whole. Besides, the double helix of the **DNA** molecule creates such an effect on its microspace that the protein shell appears at a much longer distance from the molecule itself, which allows accumulation of much more captured organic molecules inside such a shell.

This is the most important factor for maintaining life.

A large protein shell "filters" a larger amount of seawater with organic molecules "floating" in it, arising from atmospheric discharges of electricity. This is natural: you can catch more fish with a large seine. Only the seine, in this case, is the protein shell, and the fish are organic molecules "floating" in the primary ocean. In addition, the double helix of the **DNA** molecule creates the conditions for the appearance of a multilayer shell, the so-called membrane. The membrane, in the process of evolution, was formed from three layers: two protein and one fat. Moreover, the fat layer is located between two protein ones. The helices of the **DNA** molecule are spatially displaced one relative to the other. Therefore, each of these spirals creates its own protein shell, which are also displaced relative to each other and, in addition, one inside the other. Two protein "fortress" walls are formed around the **DNA** molecule. As a result, organic and inorganic molecules are forced to leak through barriers to get into the inner volume of the shell. When passing through a double barrier, these molecules lose their kinetic energy. And, as a result, it is practically unable to break back through the shells. Thus, the primary ocean water is filtered and organic molecules accumulate inside the shells. A gap is formed between the protein shells nested one into the other. And any molecule, after passing through the outer protein shell, enters the space between the outer and inner.

The intrinsic level of dimensionality of protein shells is significantly higher than the intrinsic level of ocean water. Therefore, there is a double insignificant difference in dimensionality with a zone of stable equilibrium between them. During their movement, all molecules must overcome these dimensional differences and fall into a "neutral" zone with a level of dimensionality less than the level of their own dimensionality of protein shells. That is why fat molecules, falling into the gap between the protein shells, fall into a zone with a level of dimensionality very close to the level of their own dimensionality of fat molecules. Fat molecules begin, as it were, to settle in the space between the protein shells, gradually filling this gap. At the same time, fat molecules connecting with each other, create a fat layer between the protein shells. Over time, chemical bonds arise between the fat layer and protein shells. And as a result, there is a three-layer shell - **membrane**.

With the appearance of a three-layer shell, we can talk about the next stage of the development of living matter — the emergence of unicellular organisms. Their advantage over viruses is that the multilayer cell membrane creates a stable chemical environment inside the cell. In addition, the cell membrane is a protection against the aggressiveness of the external environment, which creates favorable conditions for the further evolution of life. The hydrophobic (water-repellent) properties of the fat layer of the membrane created favorable conditions for the penetration of organic molecules into the shell, creating difficulties in penetrating into the shell of water molecules. The fact is that the inner volume of the shell is limited, and therefore, if a water molecule enters it, which occupies a small, but nevertheless a real volume of space, there is no room for organic molecules, which are much larger and, therefore, move much slower than water molecules. Thus, the appearance of the fatty layer of the shell practically equalized the chances of organic and inorganic molecules. Such a shell, as it were, "holds" part of the water molecules, creating favorable conditions for the penetration of organic molecules. This is a huge acquisition, but, as with any acquisition, unicellular organisms were forced to pay a great price for it. If viruses can exist millions and billions of years, periodically being in a living or crystalline state, then unicellular organisms, as well as multicellular ones, became "mortal". In a "young" unicellular organism, the thickness and density of the fat layer of the membrane is relatively small, which allows water molecules to get inside the shell. Over time, the oxidation of fat membranes occurs, as a result of which the hydrophobic properties of the membrane are enhanced, in addition, over time, the fat layer of the shell "thickens" as a result of the continued capture of new fat molecules from the environment by protein shells. And, as a result, the circulation of substances through the membrane gradually slows down, and then completely stops. When the internal volume of the cell loses a certain amount of water, the vital activity of this cell stops, and the cell dies. Thus, **unicellular organisms have become mortal**, i.e., they can exist only for a limited time.

The appearance of a three-layer membrane gave a tremendous impetus to the development of life and, at the same time, there were temporary restrictions on the life span of unicellular organisms. By the loss of water, they, unlike viruses, died. Therefore, the first unicellular organisms could exist only in the waters of the primary ocean.

The movement of the upper layers of the primary ocean led to the fact that the same type of unicellular organisms fell into different external conditions. The influence of different external conditions on the same type of unicellular organisms created such conditions under which they either died or changed. Plant and animal unicellular organisms appeared. The variety of external conditions gave rise to a variety of forms of plant and animal organisms. The primary ecological system began to form. The ability of unicellular animal organisms to move independently gave a new impetus to the evolution of life. Animal unicellular organisms acquired with this some independence from the vagaries of the external environment. The primeval ocean still contained very few organic substances and it was very difficult for the first unicellular organisms to "catch" organic substances in the surrounding water that are necessary to maintain their vital activity. Let us recall under what conditions organic compounds arise from inorganic molecules of carbon, oxygen, nitrogen, hydrogen and others... This happens when water saturated with inorganic molecules and atoms is permeated by electrical discharges that arise as a result of a difference in static electricity between the atmosphere and the surface. Electric discharges bend the microcosm, which creates conditions for the connection of carbon atoms into chains — organic molecules. Thus, in order for the synthesis of organic molecules to occur, it is necessary to change the dimensionality of the microcosm by a certain amount:

$$\Delta L \approx 0.020203236... \quad (4.3.1)$$

And in order for the first unicellular organisms to restore and preserve their structure, the synthesis of the simplest organic compounds inside the unicellular organisms themselves is necessary. The emergence of the synthesis of the simplest organic molecules from inorganic ones is possible when the dimensionality of the microcosm changes by the value of $\Delta L/2$.

No elementary (or even complex!) living organism is able to create an electric discharge similar to the atmospheric one. In the course of evolution, the simplest unicellular organisms developed an intermediate variant giving the required value of ΔL . Recall that every molecule, every atom affects, distorts its microcosm by some value. The maximum influence on the microcosm is exerted by organic molecules. Large organic molecules such as **DNA** and **RNA** have such an impact on the microcosm, in which there is not synthesis, but decay under the influence of dimensional differences created by a standing wave of dimensionality of the internal volume of the spiral of **RNA** or **DNA** molecules. Let us recall that the synthesis of organic molecules from inorganic ones initially occurred during atmospheric discharges of electricity, which created the level of dimensionality necessary for the possibility of carbon atoms to form chains. Therefore, for the synthesis of organic molecules to occur inside the cell, processes similar to those listed above must occur.

The cell is not able to create an electric discharge similar to the discharges of atmospheric electricity, but nevertheless, the process of synthesis of organic molecules takes place in it. How did nature solve this problem!? And again, everything is elementarily simple.

To synthesize organic molecules from inorganic ones, it is necessary to create periodic fluctuations in the dimensionality of the microcosm within $0 < \Delta L < 0.020203236$, which will be superimposed on the already existing curvature of space created by cellular inclusions. At the same time, a periodically changing quantity is imposed on a constant level of dimensionality. And for a short time in a microscopic volume of space, the conditions so necessary for the synthesis of organic molecules arise. Atmospheric electrical discharges occur at the macro level, and the synthesis of organic molecules by cells occurs at the micro level. In the first case, synthesis is a side effect, in the second — a direct one. In order for this to happen, it is necessary for the cell to have molecules whose own level of dimensionality, plus a periodic fluctuation of dimensionality coming from outside the cell, would together create the necessary conditions for synthesis. This effect on the microcosm is exerted by medium-sized organic molecules. It would seem that everything is very simple... Unicellular organisms should have molecules about an order of magnitude smaller than **DNA** and **RNA** molecules, and the problem has already been solved... However, not everything is so simple. Each molecule changes the microcosm around itself, but this change continues to be unchanged as long as the integrity of the molecule itself is preserved. In order for the synthesis of organic molecules to occur, there must be an oscillation of the dimensionality of the microcosm with an amplitude:

$$0 < \Delta L < 0.010101618... \quad (4.3.2)$$

Fluctuations in the dimensionality of the microcosm must be at least periodic in order for normal conditions to arise for the synthesis of organic molecules. To do this, there must be molecules that would change with minor changes in the external environment and cause the necessary fluctuations in the dimensionality of the microcosm inside unicellular organisms. These effects of the external environment (radiation) should not at the same time destroy the unicellular organisms themselves, but should freely get inside their membranes. The external factors that meet all these requirements are weak thermal and optical radiation from the Sun, while the other part of solar radiation for organic compounds and organisms (X-ray and gamma radiation) is destructive. And again, salvation is in the water... Ocean water absorbs X-rays and gamma rays and passes thermal and optical radiation from the Sun, which can also freely penetrate into unicellular organisms. Thus, in order for intracellular synthesis of organic compounds to occur, the following conditions are necessary:

a) the presence of organic molecules inside unicellular organisms, which easily change their structure within certain limits, when external factors change, which leads to an oscillation of the dimensionality of the microcosm in the range $0 < \Delta L < 0.010101618...$

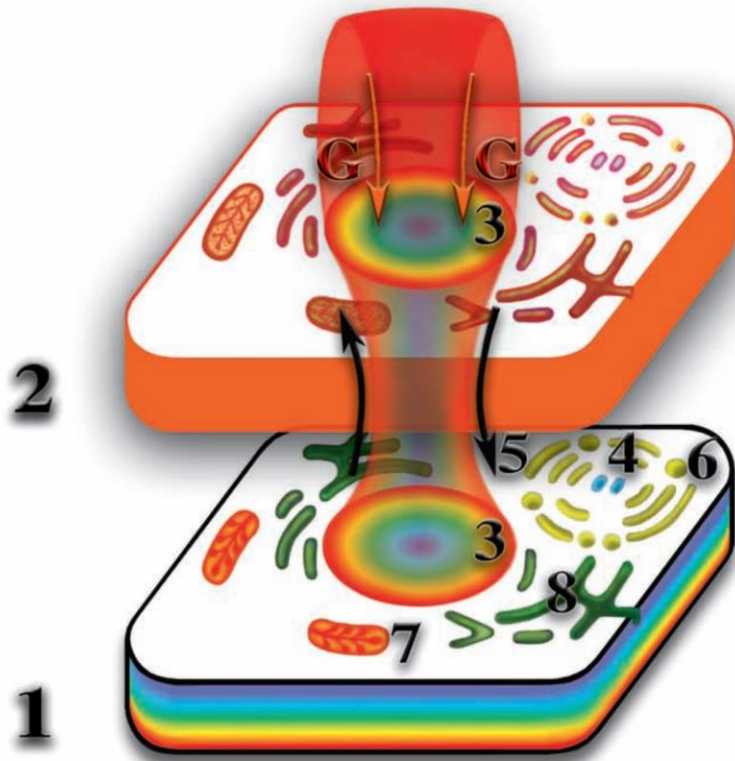
b) the presence of external factors that can cause the necessary changes in the structure of these molecules without destroying the molecules, as well as unicellular organisms themselves (weak thermal and optical radiation from the Sun).

In the course of evolution, the molecule necessary for this has emerged, chlorophyll. Chlorophyll molecules, absorbing part of the optical and thermal radiation, change their structure, creating new compounds, which in turn are very unstable, moreover, absorption occurs in portions, so-called photons. These compounds disintegrate as soon as the effect of thermal and optical radiation ceases, and this is what causes the necessary fluctuations in the dimensionality of the microcosm, which are so necessary for the emergence of the synthesis process inside unicellular organisms. Absorbing photons of solar radiation, the chlorophyll molecule causes fluctuations in the dimensionality of the microcosm. This is due to the fact that, when photons are absorbed by the atoms of the chlorophyll molecule, the electrons move to other orbits. At the same time, on the resulting electronic bonds, the chlorophyll molecule attaches the **OH** and **H** groups, which leads to a fluctuation in molecular weight. And, as a consequence, the fluctuation of the dimensionality of the microcosm, which creates the necessary conditions for the synthesis of organic compounds. The accumulated potential of the chlorophyll molecule loses during synthesis and it returns to its original, more stable state, ready for a new absorption of photons. Synthesis occurs with the absorption of carbon dioxide (**CO₂**) from the environment and, as a by-product, oxygen (**O₂**) is released. The so-called photosynthesis takes place. Consequently, the simplest unicellular organisms in the course of evolutionary development (thanks to chlorophyll molecules) acquired the ability, by absorbing sunlight, to synthesize organic compounds that are necessary for the restoration of their structure and life.

The connection of unicellular organisms by the processes of cell membranes into one conglomerate (for example, volvox) has caused another evolutionary leap in life. The fusion of unicellular organisms, through the processes of cell membranes, was the cause of another explosion of the development of life. Temporary compounds have turned into a permanent symbiosis of unicellular organisms. From this moment in the evolution of life, we can talk about multicellular organisms. The outer cells of a multicellular conglomerate were exposed to an external environment, often aggressive, while the inner cells of a multicellular organism had an environment of other cells with their external environment. As a result, over time, the cells of multicellular organisms began to perform different functions and acquired a different appearance. In the course of evolution, new types of multicellular organisms arose, old ones disappeared. More advanced ecological systems were replacing simple ones. Over time, life got out of its cradle - the ocean and mastered the land. But all this was happening on a physically dense level. How did these evolutionary processes affect other levels of the planet?..

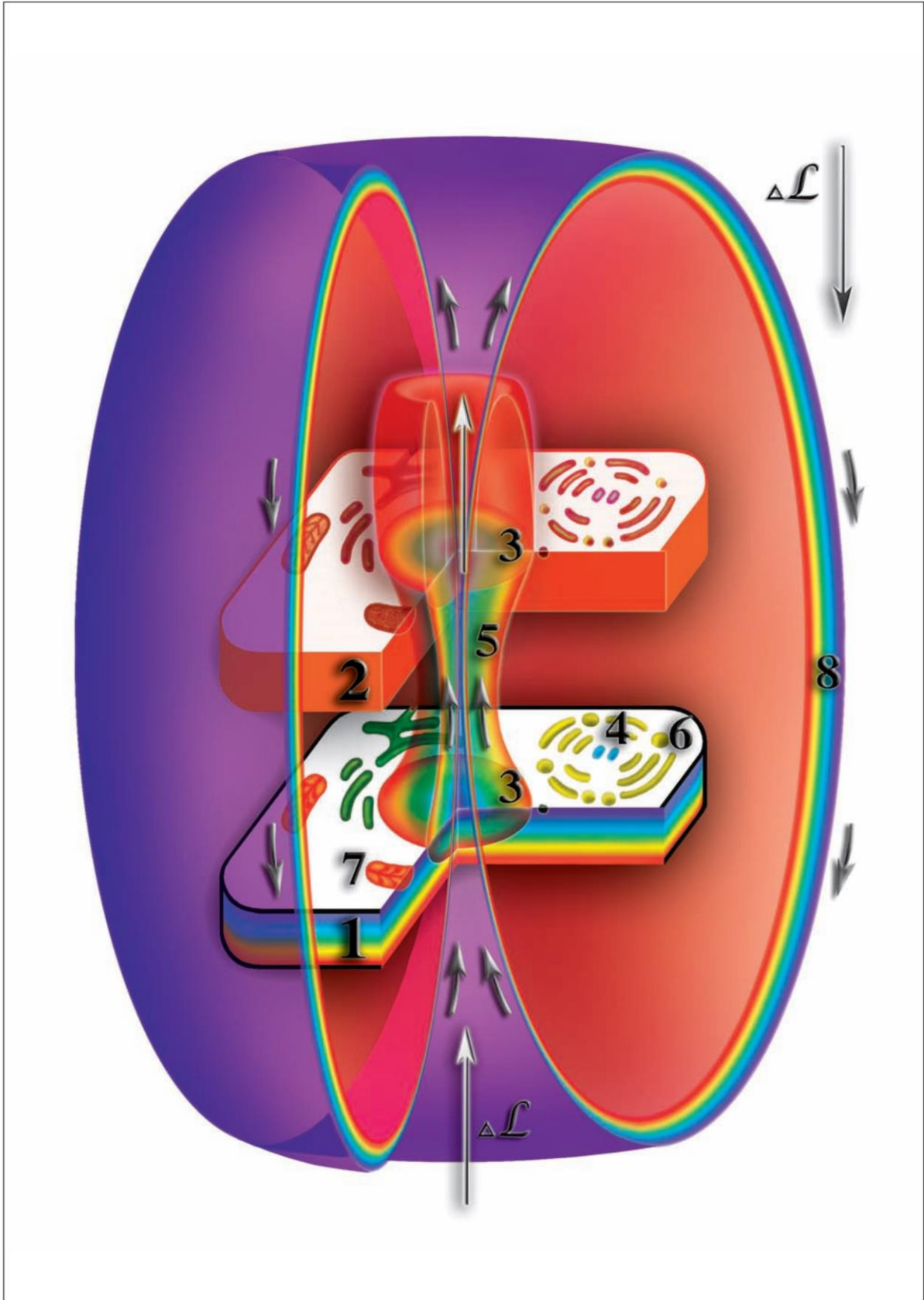
Let's remember that an **RNA** or **DNA** molecule at the second material level creates its exact copy from one matter. It (the copy) is the so-called second material body of this molecule. A unicellular organism (cell), in addition to **DNA** molecules forming the chromosomes of the cell nucleus, includes a number of organic inclusions (Golgi apparatus, mitochondria, centrioles, endoplasmic network, etc.), as well as organic and inorganic molecules.

The latter take part in intracellular biochemical reactions. So, all cellular inclusions also have an effect (i.e., deform, bend) onto the surrounding microspace. The difference between their influence and the influence of **RNA** and **DNA** molecules is that most of them (with the exception of mitochondrial **RNA**) do not open a qualitative barrier between the physical and the second material levels. Therefore, at the second material level, all these deformations, taken together, create an exact copy of a physically dense cell (**Fig. 4.3.14**). Just as the footprints on the wet ground repeat the shape of the feet, so the second material body of the cell is a complete copy of the physically dense cell. The only difference is that the second material body of the cell is formed from one primary matter, while a physically dense cell is formed by the fusion of seven primary matters. Thus, a physically dense cell system is formed — the second material body of the cell. The processes of splitting of physically dense matter are constantly taking place in the physical cell. Primary matter is released and begin to circulate between the levels along the channel created by the cell nucleus, forming the protective shell of the cell.

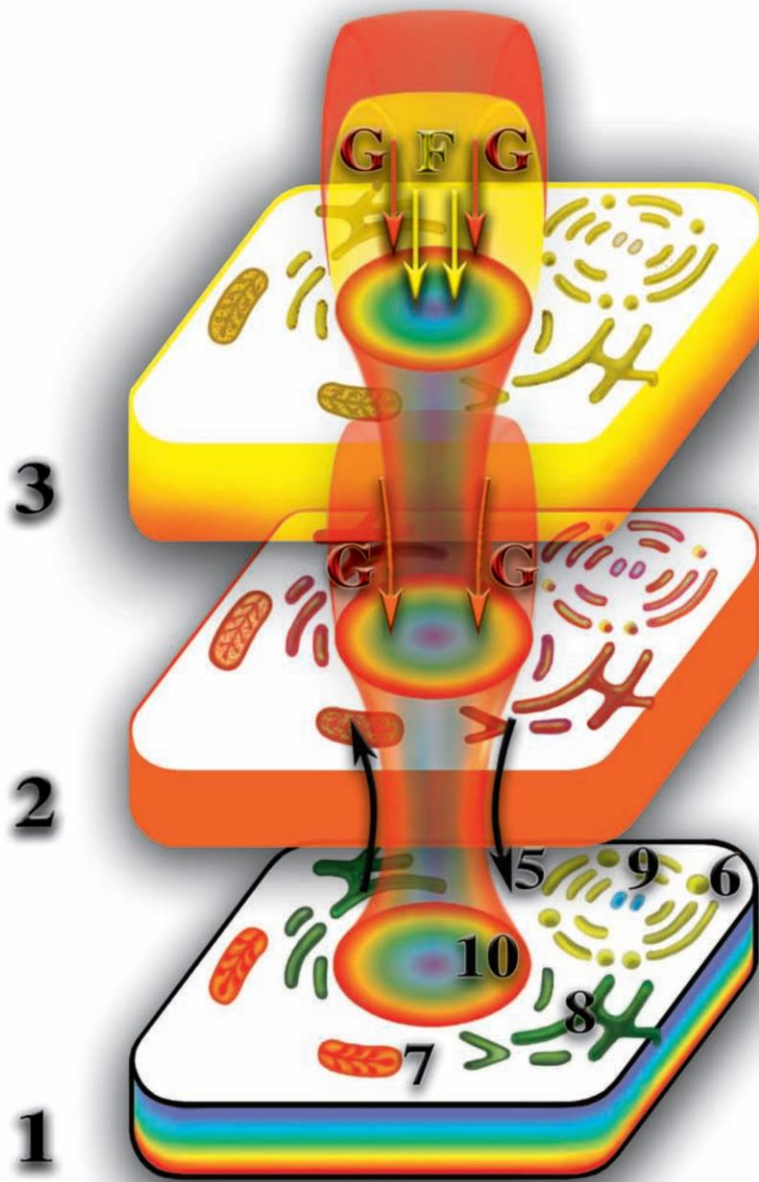


How does the protective shell of the cell arise from the primary matter ejected through the channel? What natural or divine forces "took care" of such protection of living creatures? And again, unfortunately for many, there is no divine principle in this. Everything is as always, very simple, and at the same time very difficult.

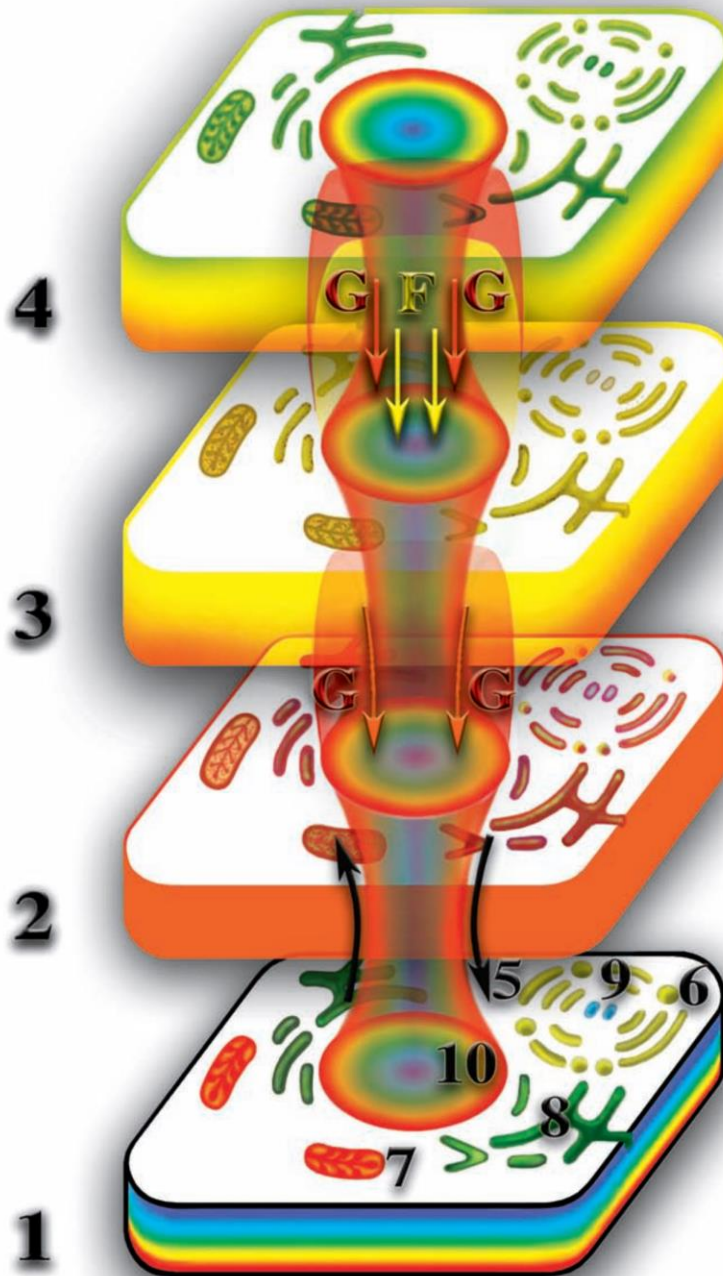
The chromosomes forming the cell nucleus deform the microspace around them. At the same time, the dimensionality of the microspace increases in the deformation zone. The primary matter released during the splitting begins to move along the channel created by the cell nucleus from the physical level to the second, third material levels, etc. This flow of primary matter is directed against the main flow of primary matter of the macrospace. Therefore, primary matter ejected through the channel of the cell nucleus unfolds in the oncoming flows of primary matter forming the spheres of the planet. A fountain can serve as an analogy to this. A jet of water ejected under pressure rises to a certain height. Having spent the initial potential, it falls down, creating a kind of water dome. Similarly, primary matter ejected through the channel of the cell nucleus unfolds in counter currents. And they move along the zone of curvature of the microspace. Having reached the physical level, they, repeating the shape of the curvature of the microspace, wrap themselves around the cell nucleus. As a result, primary matters create an isolated zone around the physically dense and second material bodies of the cell (**Fig. 4.3.15**). After the formation of the protective shell is completed, the general flow of primary matter simply wraps around this zone. Inside this protective shell there is a kind of microclimate, an oasis, where the second material body of the cell is maximally isolated, both from the chaos of the environment and from the influence of other cells or organisms. The protective insulating shell will exist as long as the splitting of substances inside the cell takes place and the channel between the cell levels functions. In other words, as long as the cell remains alive. In multicellular organisms, cells have different functions and, as a result, acquire different external forms. Any multicellular organism is a rigid colony in which the external environment of most cells is formed by other cells of the same organism. Moreover, this fixed position of cells persists throughout their entire life (with the exception of blood cells).



Recall that every living cell creates a second material body, which is its structural copy. In a rigid colony, the position of cells is fixed, so their second material bodies also have a fixed position. Therefore, at the second material level, the second material bodies of cells form a similar rigid system — the second material body of a multicellular organism. During the evolution of multicellular organisms' specialization cells have led not only to the fact that they began to look different, but also the degree of their influence on their microcosm has undergone significant qualitative changes. The deformation of the microspace created by several types of cells of a multicellular organism has led to the opening of a qualitative barrier between the second and third material levels of the planet. At the same time, at the third material level, exact copies of physically dense cells with all their features are formed, by analogy with the second material level. Let's call these copies the third material bodies of physically dense cells. Their difference from the second material bodies of cells is determined not only by their location on the next qualitative level of the planet, but also by their qualitative composition. Complete third material bodies are formed as a result of synthesis from two primary matter (**Fig. 4.3.16**). The third material bodies of cells of a multicellular organism also form a rigid system — the third material body of a multicellular organism.



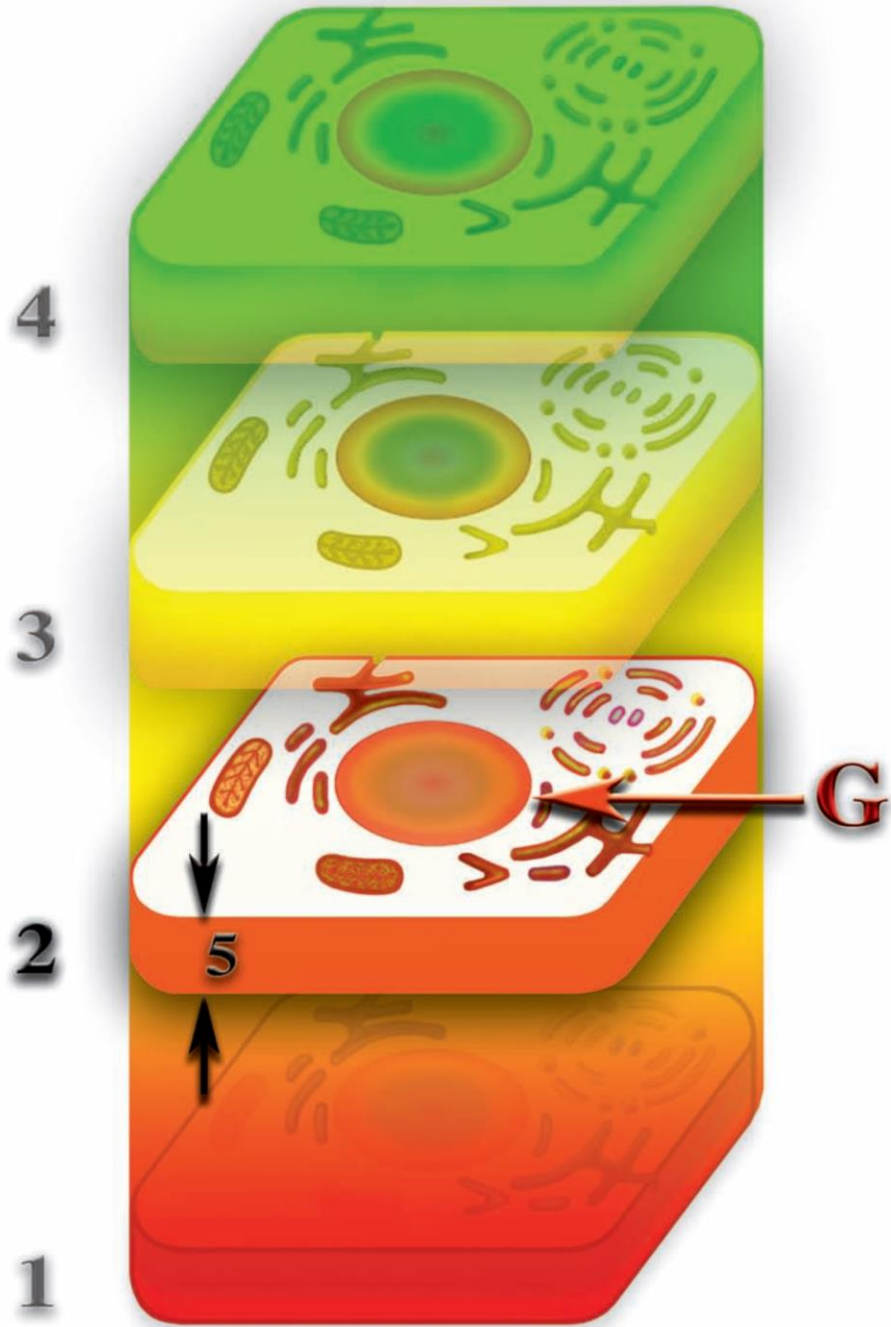
The appearance of the third material bodies in living organisms was a colossal qualitative leap in the development of nature. The presence of three interacting levels in cells has created the necessary and sufficient conditions for the emergence of memory, emotions and intelligence, which is the basis of highly organized living matter. Some cell types of multicellular organisms, with their adaptations to the functions performed by them have changed to such an extent that the deformation of the microspace caused by them has reached the fourth material level of the planet. These are the cells of the brain, spinal cord and bone marrow. Similarly, at this level, the fourth material body of a multicellular organism is formed from the material bodies of cells of this organism (**Fig. 4.3.17**). Thus, all cells of a physically dense organism participate in the creation of the second material body. Most cells are involved in the creation of the third material body. The fourth material bodies can arise only in some species of living organisms and then at only a certain level of their development. Only a part of the cells of a multicellular organism takes part in the creation of the fifth material body. Therefore, the fourth and fifth material bodies qualitatively (externally, too) differ from both the third and the second material bodies of a multicellular organism. The physically dense or first material body of the cell, together with the second, third, fourth, etc., material bodies, represent one system — a living organism, living matter. It is only together that they create a miracle of nature - living matter, life, the evolution of which naturally leads to the birth of mind — consciousness of living matter. By violation of the interaction of the physically dense body of the cell (the first material body) with other material bodies, there is a violation of the functioning of the cell itself. The cessation of the circulation of primary matter between the levels of the cell leads to the death of the latter. A living cell cannot function without feedback from its other material bodies. Just like other material bodies, cells are unable to function without a constant process of disintegration of molecules in a physically dense cell. After stopping life processes, a physically dense cell breaks down into organic and inorganic molecules. This fact requires no explanation. But, what happens, at the same time, with the rest of the material bodies of the cell? Are they destroyed like a physically dense cell body, or are other processes observed and, if so, what are they?



Indeed, the second, etc., material bodies arise as a result of the deformation of the microspace created by a physically dense cell. Therefore, the first thing that may come to mind is that all other material bodies of the cell disappear when the physically dense disintegrates. But is so, that's the question?

Let's remember that the second, etc., material bodies of the cell appear as a result of saturation of the deformation created by the cell at one level or another with primary matter that are not part of each of these levels. The second material body is the primary matter **G**, the third is **G** and **F**, the fourth is **G**, **F** and **E**, etc. In this situation, the qualitative difference between the first and all other material bodies of the cell is striking. The first material body is formed from hybrid matter that arose when the seven primary matters merged. All other material bodies of the cell arose as a result of saturation with primary matter of the deformation of the microspace created by the physically dense body of the cell. As a trace on soft soil is filled with rainwater, so the deformation of the microspace caused by a physically dense cell is saturated with the corresponding primary matter. And, just as the footprint left by the foot in the soft soil does not always disappear, so the second and other material bodies do not always disappear after the destruction of the physically dense body of the cell.

Let's find out what's going on with them! If the cell has only a second material body from primary matter **G**, a situation arises in which several variants of the development of the process are possible. The second material body eventually loses the saturation density of primary matter **G**; in the presence of a physically dense body, the losses are replenished by saturation with primary matter released during the decay of molecules inside the cell, but most of the losses by the second material body of primary matter **G**, at the same time is caused by the return flow of this primary matter to the physically dense level. This reverse flow is a necessary condition for the normal functioning of a living cell. When a physically dense cell is destroyed, the reverse flow of primary matter **G** from the second material body to the first stops (**Fig. 4.3.18**).



The second material body continues to lose some part of primary matter **G**, from which the second material body of the cell itself is formed. As a result, the density of the second material body decreases, it seems to "melt". And if the process of "melting" continued, of course, the second material body of the cell would disappear, sometime after the death of the physically dense one. Yet, this does not happen. And here's why. Recall that after the completion of the formation of the planet, the primary matter continues to permeate the zone of heterogeneity of space in which the synthesis of the planet took place. And this means that the flows of primary matter permeate all the material bodies of the cell, including the physically dense one. And if the saturation of a physically dense body with free primary matter does not play the fundamental role in the functioning of a physically dense cell, then, when the flows of primary matter permeate the second and other material bodies of the cell, the picture changes dramatically. The second material body is a clot of primary matter **G**, which filled the deformation of the microspace created by a physically dense body on the second material sphere. Therefore, when primary matter penetrates the planetary space, primary matter **G** saturates the second material body. Similarly, the loss of water by a puddle or pond on hot days is compensated by rains. The main thing is that the "rains" come regularly. However, this does not always happen in the case of puddles, in the case of saturation of the second material body with primary matter **G**, such a problem almost never arises. Thus, the qualitative difference in the nature of the formation of a physically dense cell body from the nature of the formation of other material cell bodies creates a unique situation, without which the evolution of living matter would simply be impossible.

After the destruction of a physically dense cell, other material bodies of the cell do not disappear, are not destroyed, but are preserved by feeding flows of primary matter permeating the planetary space.

However, there is a very significant difference between these two states. Without a physically dense cell body, in which there is an active process of disintegration of molecules into the primary substances that form them and a powerful saturation of the second and other material bodies of the cell, secondary saturation with primary substances of these bodies occurs very slowly. As a result, all processes occurring at the level of the second and other material bodies of the cell slow down hundreds, and sometimes thousands of times. They slow down, but they don't stop. This is a very important point, which is of fundamental importance for understanding both life itself and the possibility of the evolution of nature. Let's analyze in detail, step by step, the processes taking place in a living system after the destruction of a physically dense cell body.

If the cell has only a second material body, after the destruction of the physically dense body of the cell, the second material body does not disappear, does not dissipate like morning fog under the rays of the Sun. Of course, the density of the second material body without a physically dense one drops significantly, but the recharge due to primary matters permeating the planetary levels does not allow the second material body to completely "dry out". Why is this fundamentally important? What would happen if the second material body of the cell "dried up" after the destruction of the physically dense body?

Nothing "special", only that the evolution of living matter, the appearance of mind "simply" would not have happened. Situations are quite possible when the second material body can be completely destroyed due to various reasons, such as, for example, the impact of powerful vortex flows of primary matter flowing through the planetary levels. But such phenomena do not happen so often and do not create global problems, do not threaten living matter and its evolution as a whole. But, the question of why the "non-drying" of the second and other material bodies of the cell, after the destruction of the physical body of the cell, is a key moment for the possibility of the evolution of living matter and the origin of mind, we will postpone for some time and return to the qualitative processes occurring with cells having different qualitative structure.

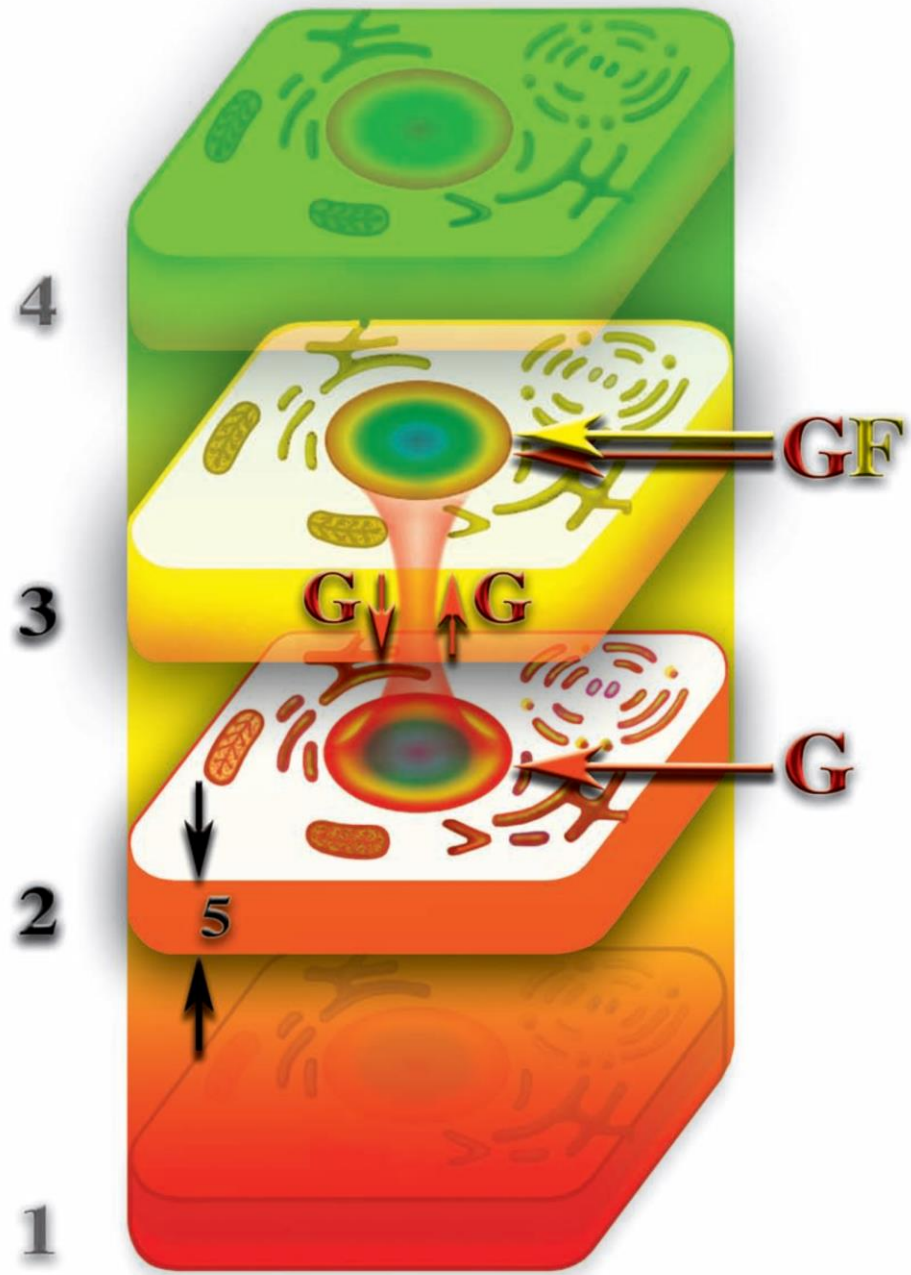
If a living cell has both a second and a third material body, then, when a physically dense body is destroyed, due to not being fed with primary matter, through the splitting of molecules in a physically dense cell, two material bodies are found — the second and third material bodies. And, naturally, after the termination of the "feeding up" by the physically dense cell of primary matter, both the second and third material bodies of the cell "lose weight". But, again, there is no disappearance of these material bodies after the destruction of a physically dense cell due to the same saturation of the latter with primary matter that constantly permeate the planetary levels. The difference lies in the fact that the third material body of the cell is already fueled by two primary matter **G** and **F**. Moreover, the rate of saturation with primary matter of the third material body of the cell is greater than the rate of saturation of the second material body, for one simple reason. The flows of primary matter, falling into the planetary deformation zone, during their movement through it, are forced to "leak" through the qualitative barriers of the six planetary material spheres. As a result, the speed of their movement slows down and the speed of movement of primary matter that have reached the second planetary material sphere becomes minimal, in relation to the speeds at all other planetary levels.

In addition, planetary qualitative barriers affect different primary matter differently, as a result, there is a change in the ratio of primary matter in the general flow, and the speeds of their movement relative to each other begin to differ more and more after passing each qualitative barrier of the planet. This, in turn, significantly affects the relationship between primary matter at each planetary level and, accordingly, the intensity of the processes occurring at each of the planetary levels. Therefore, if the cell has the second and third material bodies, the saturation of primary matter **G** and **F** of the third material body of the cell will occur faster than the saturation of the primary matter **G** of the second material body occurring at the same time. And, if we take into account that the "melting" or in other words, the loss of primary matter of cells by the second and third material bodies occurs approximately the same way, then, as a result of the different density and speed of movement of primary matter through the second and third planetary levels, the rate of saturation with primary matter of these bodies will be different. As a result, saturation with primary matter of the third material body will occur relatively faster than saturation of the second.

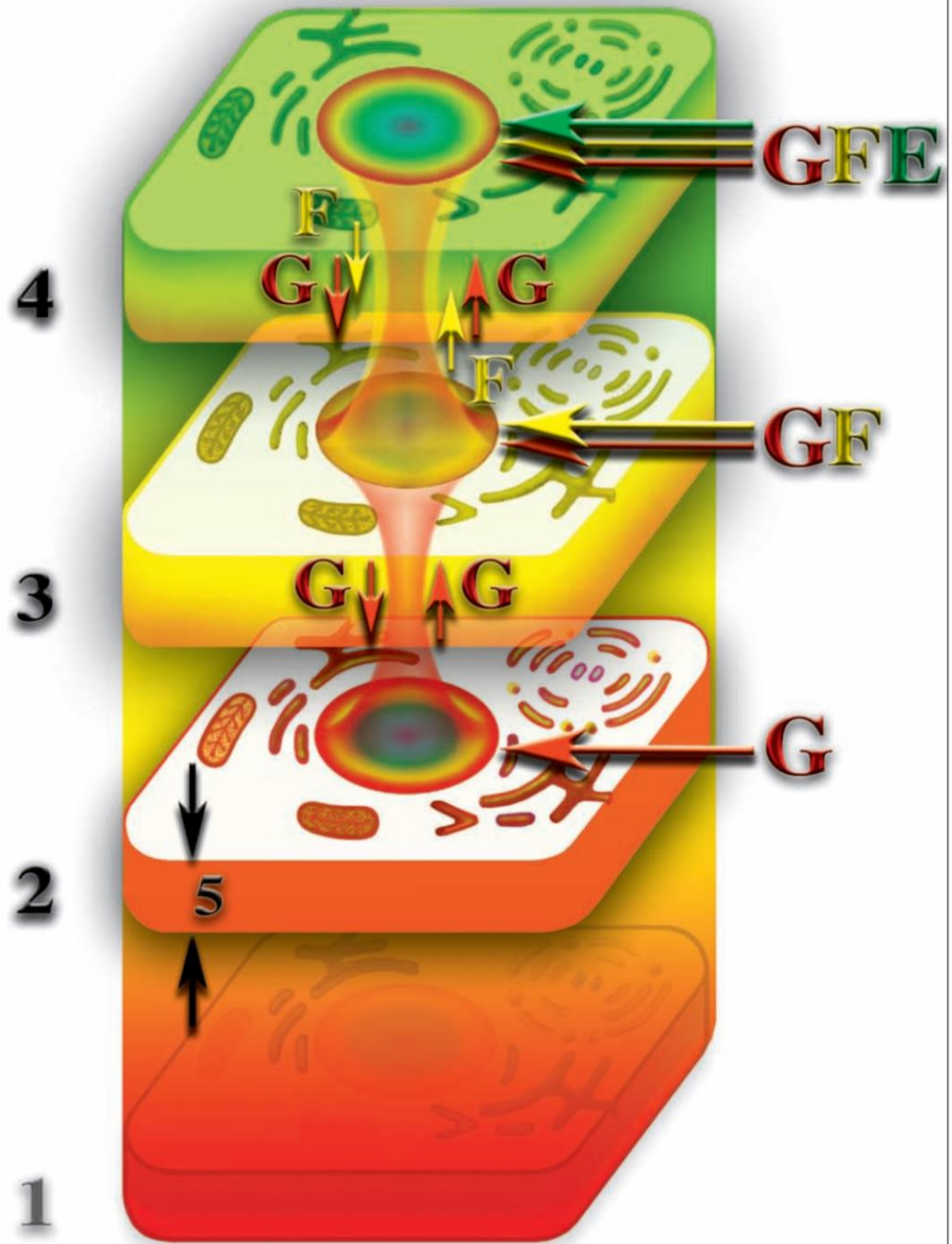
Of course, this saturation does not compare with the saturation of primary matter of these bodies, in the presence of a physically dense cell body, but, nevertheless, as a result of this saturation, a certain excess, relative to the second material body, of primary matter in the third material body of the cell appears. The relative excess of concentration of primary matter at the level of the third material body, in relation to the second material body, leads to a very weak circulation of primary matter **G** between the third and second material bodies of cells **(Fig. 4.3.19)**. The circulation of primary matter between the second and third material bodies after the complete destruction of a physically dense cell is nothing but a manifestation of vital activity. In other words, if a physically dense cell had both a second and a third material body in its qualitative structure before it collapsed, then, after the destruction of a physically dense body, the processes of the cell's vital activity at these levels does not stop, but only slow down many times.

Similar processes occur at the level of physically dense bodies in amphibians and reptiles, when, when the body cools, the activity of their vital processes slows down tenfold without any harm to these animals. Moreover, some amphibians, such as frogs, can freeze completely, turning into ice statues, and then heating up under the influence of sunlight, gradually they return to a normal level of activity. They can stay in such a frozen state for hundreds of years, only for the same hundreds of years the development of their organism, evolution, stops. In such a frozen state, the vital processes of physically dense cells of the frog body slow down tens of thousands of times, but do not stop completely. Therefore, in the frozen state, the frog continues to use the reserves of organic molecules accumulated in her cells before she froze. Therefore, in the frozen state, the frog loses weight very slowly, starvation gradually begins, and if such a frog is not defrosted in time, it will simply die from exhaustion. Since, unfortunately, frogs are not able to eat in the frozen state. The midges, which are the main food of these amphibians, they can only catch them while they're active. Frogs almost never have a special danger of dying from exhaustion in a frozen state, since they are frozen only for the winter period, when the temperature of their habitat drops below zero Celsius. So, without a physically dense cell body in the second and third material bodies, life processes do not stop, but slow down thousands of times. Nevertheless, it is still not a complete death, which implies a complete stop of life processes at all levels, the so-called, absolute death.

So, for living organisms, in most cases, absolute death never occurs.



After the destruction of the physically dense body of the cell, the relative death of a living organism occurs, when the processes of vital activity at the level of the second and third material bodies proceed hundreds of thousands of times slower than in the presence of a dense physical body. At the same time, a living organism loses a physically dense body, in this case one cell, but the "upper floors — the second and third material bodies — continue their vital activity, albeit slowed down by hundreds of thousands of times. However, at the same time, there is an evolutionary "freezing" of these bodies. Fortunately, these bodies are not in this state forever. For unicellular organisms, the complete destruction of a physically dense body occurs during the process of division (**Fig. 4.3.20**). As a result of division, two identical new cells appear, while the "old" cell disappears completely collapsing during the division process. Therefore, the "old" cell dies, in the understanding that it ceases to exist.



Understanding the mechanisms of cell division will allow us to clearly imagine the phenomena occurring during the destruction, death of a living organism. What is cell division, how does it happen?! Let's try to understand this mechanism, which is the basis of all living things. When the concentration of organic substances that have arisen in the cell as a result of photosynthesis or absorbed by the cell from the external environment becomes critical, it loses its stability and the process of division begins. Why, when a cell is saturated with organic substances, does it become unstable, and the process of its division starts?! Why, it is the concentration of organic substances that serves as an impetus for the disintegration of the old cell and the birth of two new ones, namely birth, since the appearance of new cells, instead of the old one, is the birth of cells? Why and how does this process start? Why exactly does the critical concentration of organic substances in a cell lead to its own death and the birth of two new cells?

Recall that the cell membrane serves as a trap for organic and inorganic molecules in the immediate vicinity of the cell. When synthesizing organic compounds on its own, the cell membrane is an almost insurmountable obstacle for the synthesized molecules, as a result, they start to accumulate inside the synthesizing cell. So, why is an unsaturated, "hungry" cell unable to divide, while only a saturated, "full" cell becomes ready to die itself and "give birth" to two new cells? What are the qualitative differences between unsaturated, "hungry" and saturated - "full" cells? Actually, the cell influences the surrounding microspace, deforming it in a certain way, as a result of which an identical imprint appears on the second material level, which is filled by the primary matter **G**, forming the second material body. It follows that the level of dimensionality inside a cell differs from the level of dimensionality of the surrounding microspace.

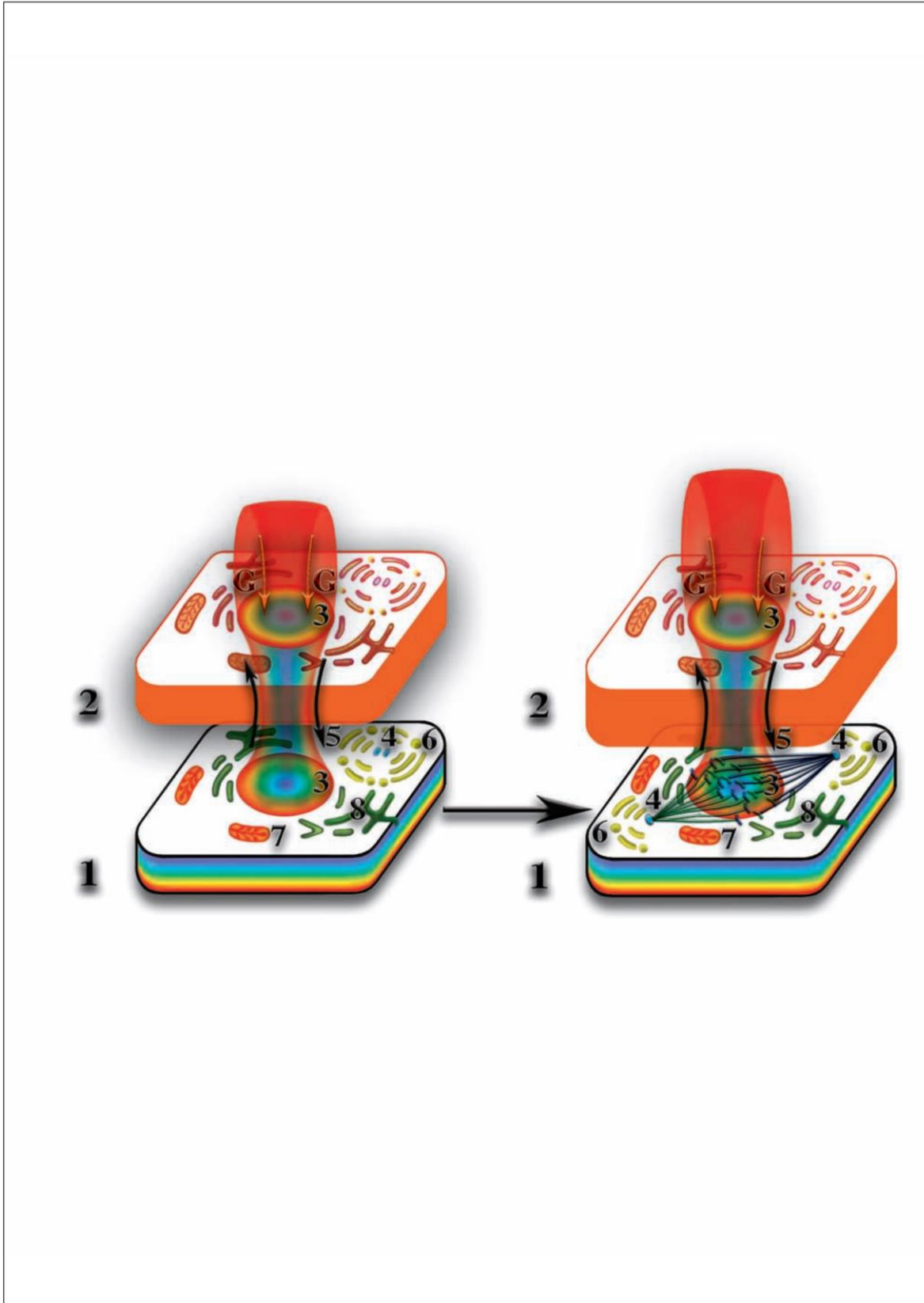
The **DNA** and **RNA** molecules of the cell, creating a standing wave of dimensionality, as already noted above, deform their internal space so much that a qualitative barrier is opened between the first and second material spheres. As a result, conditions arise for the formation of a second material body. It is only in the inner space of these molecules that a qualitative barrier is opened, while the rest of the cell contents only deforms its surrounding microspace, without causing the opening of a qualitative barrier. But, nevertheless, the deformation of the intracellular microspace caused by the whole cell turns out to be very significant. Thus, the intrinsic level of dimensionality of the cell itself turns out to be very close to the critical level at which physically dense matter becomes unstable and decays into the primary matter that forms it. But, in a normal state, the cell is in a stable state. So, when the cell is saturated with organic substances, the cell begins to "get heavier" and more strongly influence its internal and external microspace. The cell's own level of dimensionality changes and, as a consequence, the cell becomes less stable in general. When the cell is critically saturated with organic substances, this instability reaches a maximum level. In addition, with a high concentration of organic molecules inside the cell, the number of molecules captured by the internal volume of **DNA** and **RNA** spirals increases significantly.

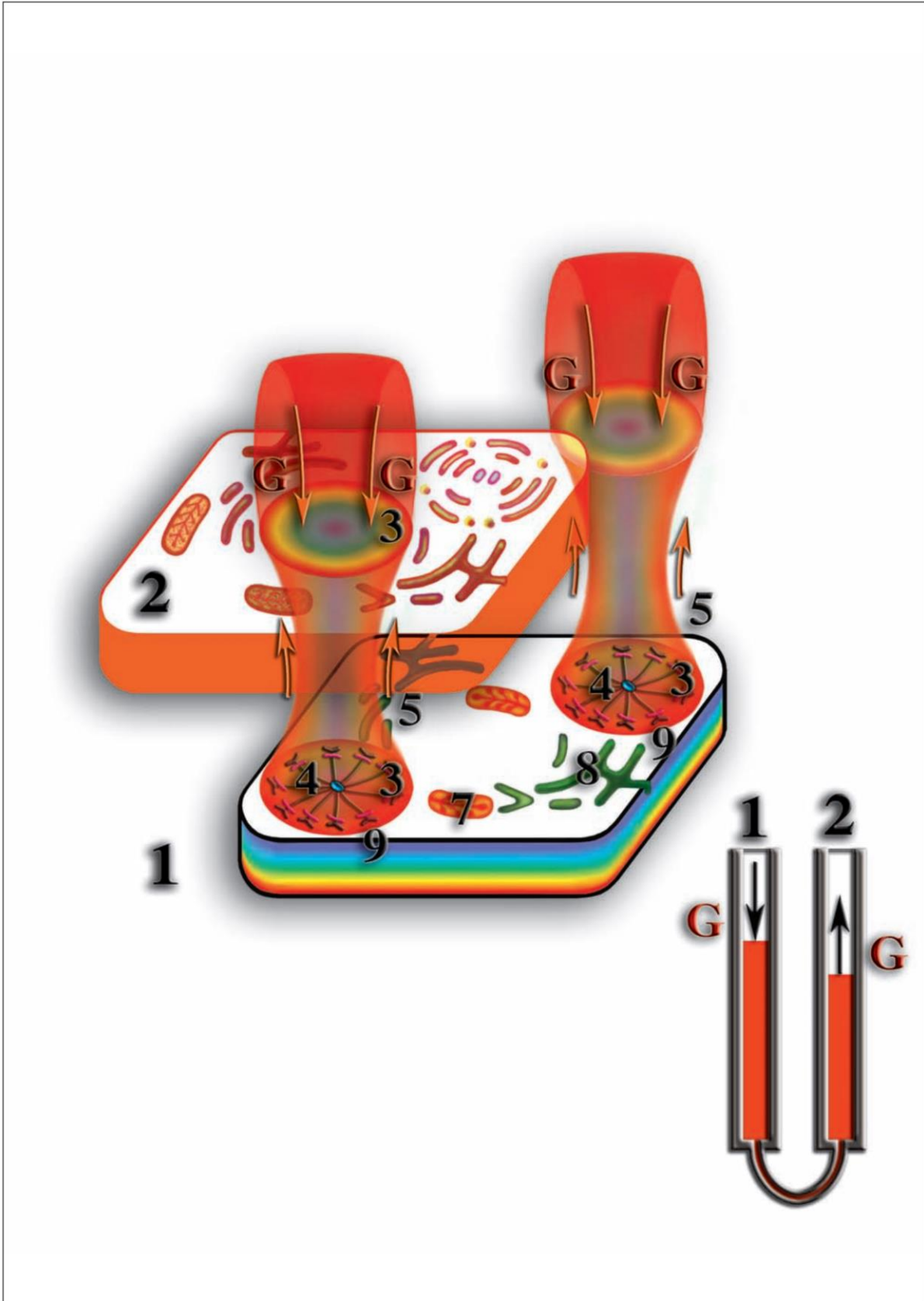
As a result, the flow of primary matter from the physically dense to all other levels of the cell increases. This leads to additional saturation with primary matter of the second and other material bodies of the cell.

The second and other material bodies of the cell also affect their microspace, as a result of which, with the appearance of additional saturation of the second material body with primary matter **G**, additional deformation of the microspace of the cell also occurs from the side of the second material body of the cell. There are two counter additional deformations of the microspace of the cell, both from the physically dense cell and from its second material body. As a result, the saturated cell is approaching a critical state of its stability. It is approaching, but, nevertheless, it has not yet reached a critical state. The "last straw" in this process is the beginning of the formation of the second cell nucleus.

How does this happen?!

The centrioles diverge along the opposite poles of the cell and become centers around which the process of division and formation of new cells takes place (**Fig. 4.3.21**). Protein strands pull chromosomes from the old cell nucleus to the centrioles, and this is the beginning of the formation of two new cells. Initially, the new nuclei contain a half set of necessary chromosomes, so the two channels they create are practically equivalent to the channel of the nucleus before division begins, and the cell still retains its stability. At the same time, the dimensionality of the microcosm of the cell practically does not change and the balance of flows between the physical and second levels of the cell. Each chromosome in such nuclei begins to recreate its mirror double from the organic substances accumulated in the cell, which is the natural tendency of any system to a state of maximum stability (**Fig. 4.3.22**). At the end of this process, two nuclei are formed inside one cell, each of which has a channel through which primary matter flows to the second material level. Two nuclei in the local volume of the cell create such a curvature of the microcosm, in which the cell itself becomes unstable and the organic substances forming it themselves begin to disintegrate, and the primary matter forming them begin to flow to the second material level due to the fact that the "extra" nucleus in the cell creates an additional curvature of the microspace of the cell, and the cell's own level of dimensionality becomes critical. At the same time, the number of primary matter flowing from the physical level to the second material level is significantly greater than the amount of matter flowing from the second material level to the physical (**Fig. 4.3.23**).

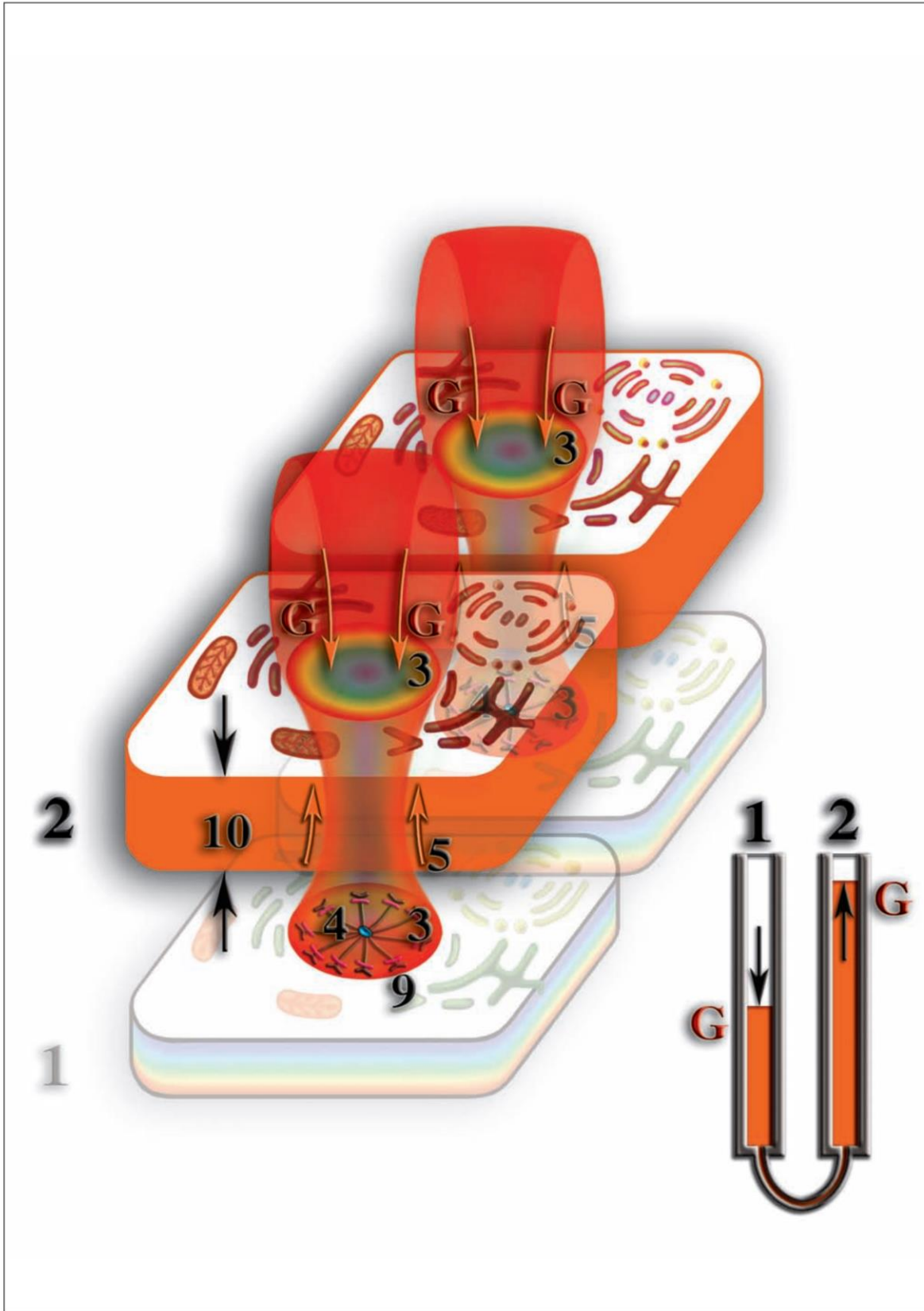


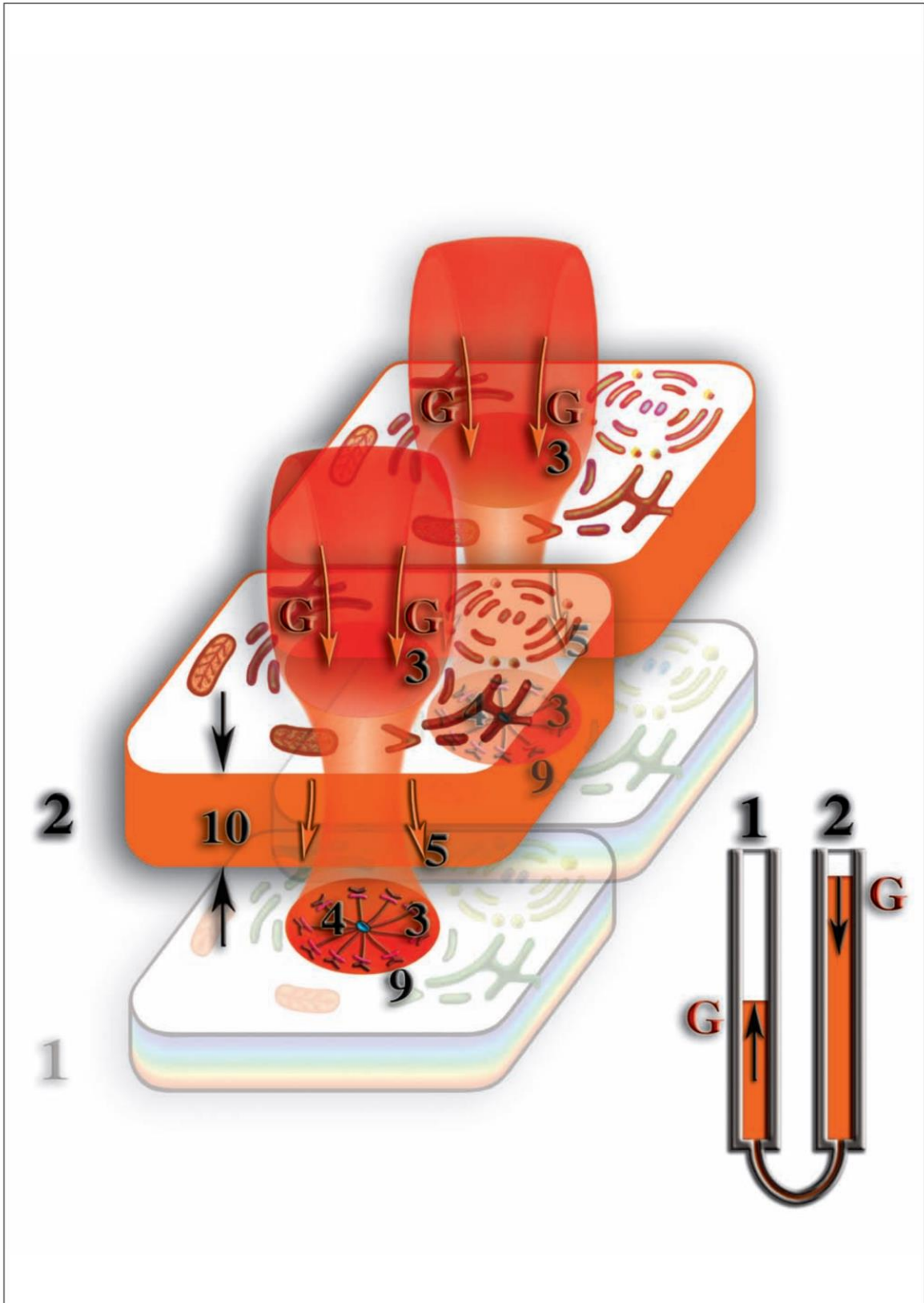


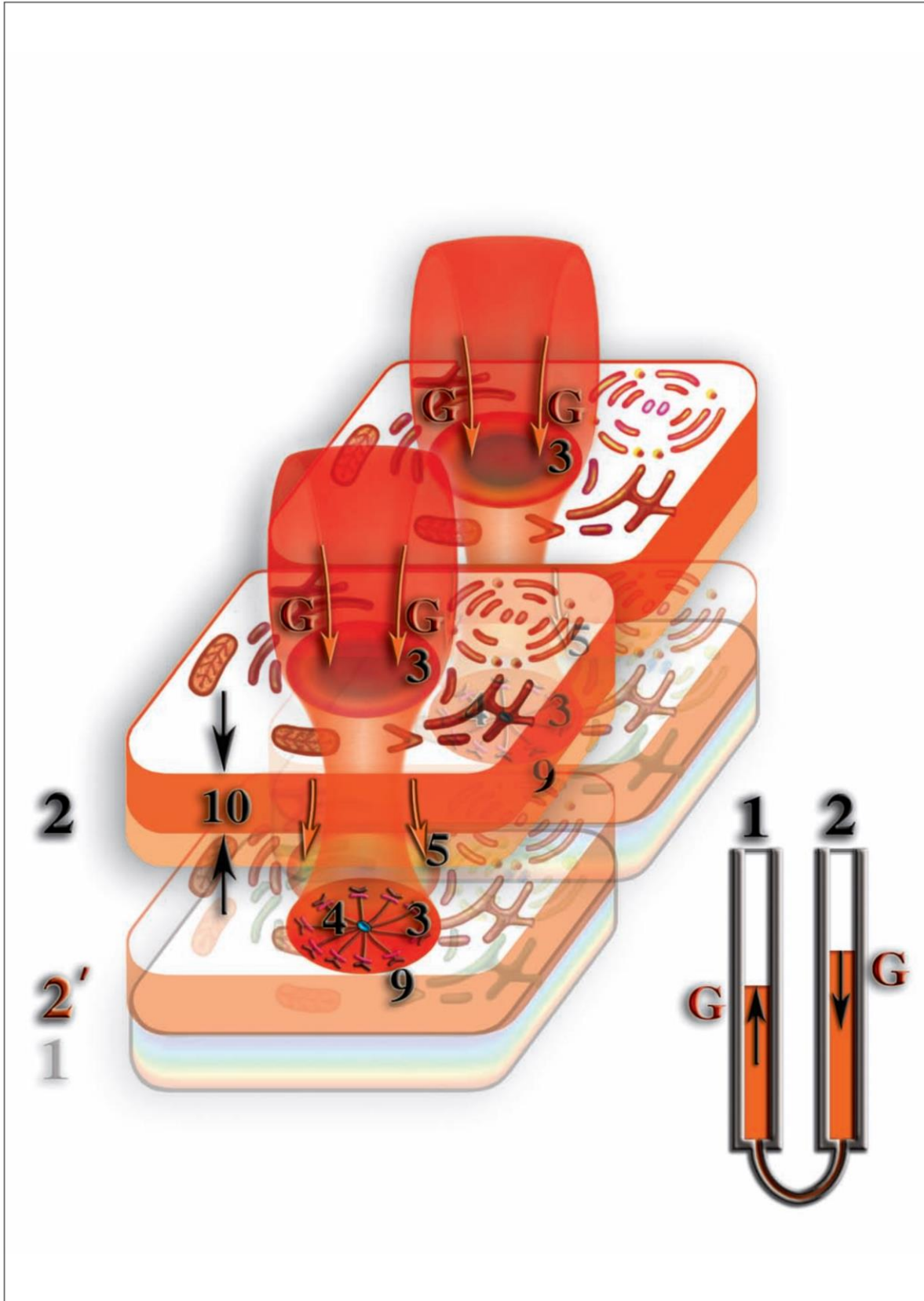


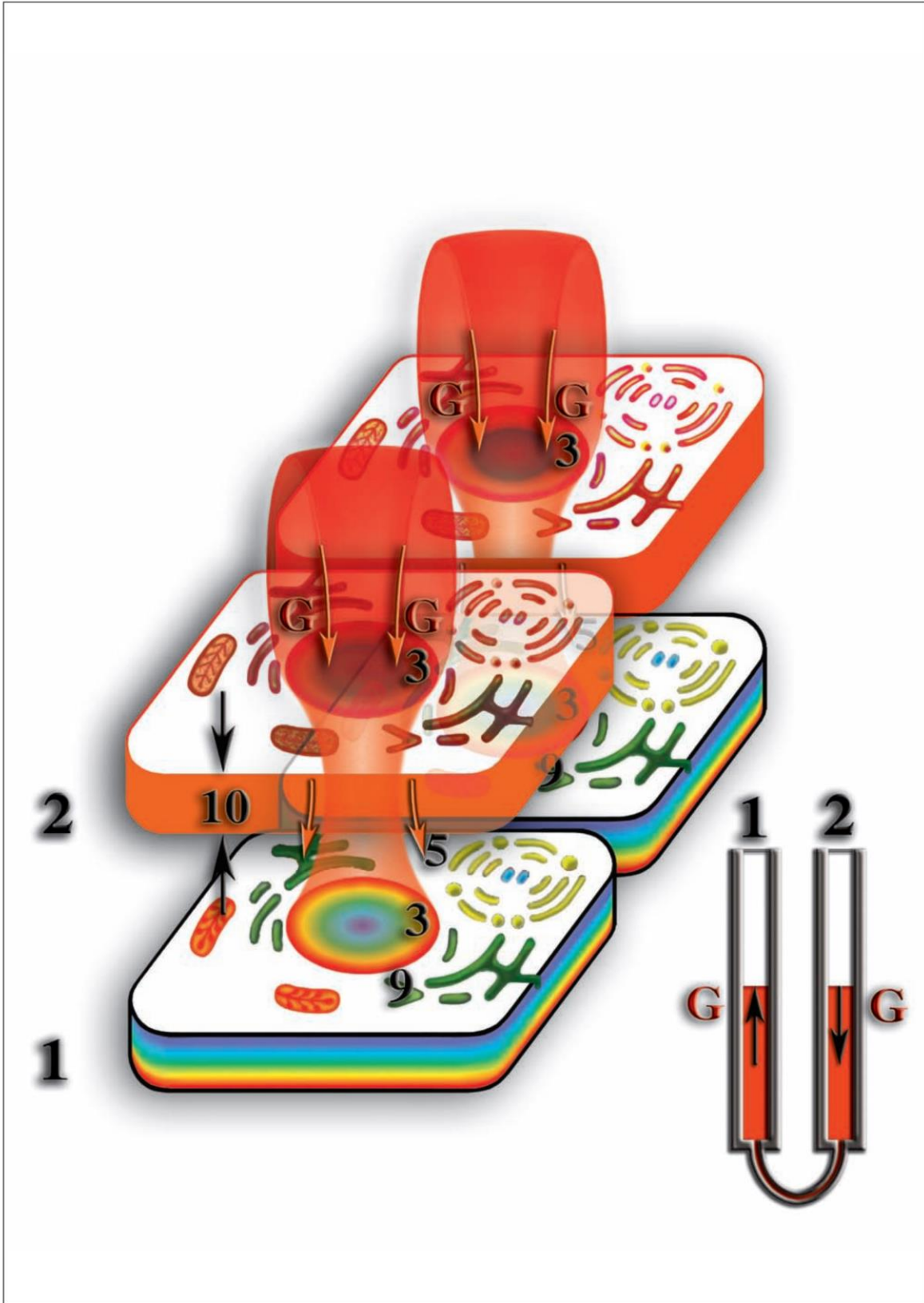
A physically dense cell (an old cell) begins to disintegrate into the molecules that form it due to the fact that each individual molecule has a lower level of its own dimensionality than the systems of them, and therefore they do not disintegrate into parts themselves. There is a supercritical state for a physically dense cell, as a single system, and not for individual organic molecules. The intrinsic level of dimensionality of a cell is significantly greater than the intrinsic level of dimensionality of a single organic molecule. As the physical cell disintegrates, two second material cell bodies are created on the second material level because each nucleus creates an identical curvature of the microcosm on the second material level. At the same time, the amount of primary matter **G**, in particular, flowing to the second material level, becomes excessive at this level (**Fig. 4.3.24**).

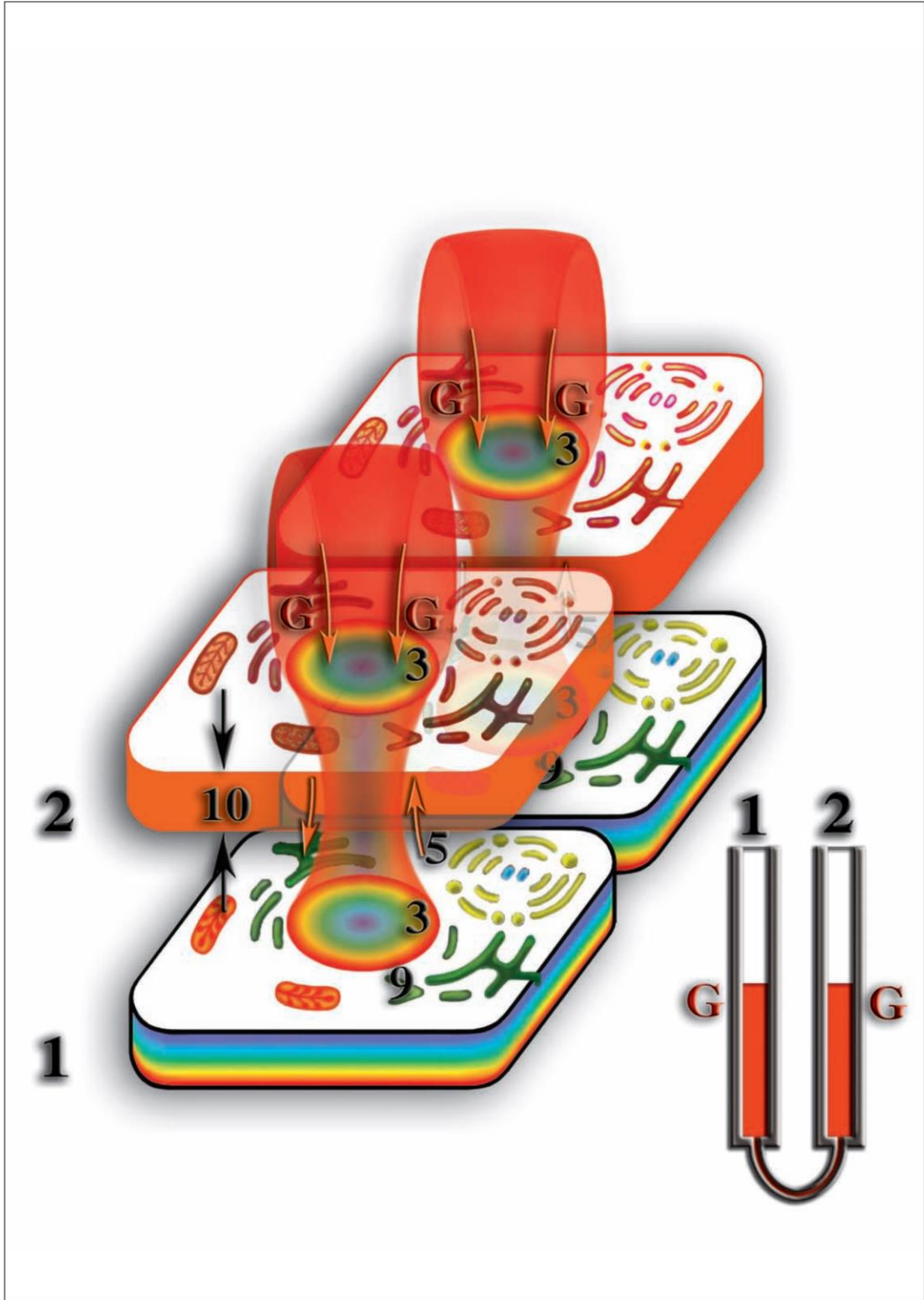
When the decay of the old physical cell is completed, in its place the constituent organic molecules remain, i.e., organic matter is the building material for the creation of new cells. And, as soon as the intensive flow of primary matter from the physical level to the second material stops, the excess of primary matter **G** from the two formed second material bodies of the cell begin to flow through the same channels from the second material level to the physical and creates projections of the two second material bodies of the cell at the physical level (**Fig. 4.3.25**). At the same time, in the projection zones of the second material bodies at the physical level, an additional curvature of the microcosm is created, i.e., the necessary conditions are created for the synthesis of molecules from the mass of organic matter accumulated in the cell before division and arising from the decay of the old cell and its arrangement in the order specified by the second material bodies of cells (**Fig. 4.3.26**). An analog of this process, moreover, which is very similar, is the magnetization and distribution along the magnetic field lines of metal dust. Upon completion of synthesis, two completely new cells are formed in the image and likeness of the second material bodies of the cell, with a balanced flow of primary matter between the physical and second material levels of the cell. The new cells that have arisen as a result of the division of the old cell are not absolute copies of the old cell, although they are very close to it (**Fig. 4.3.27** and **Fig. 4.3.28**). It is thanks to this phenomenon that occurs during cell division, the evolution of life is possible.











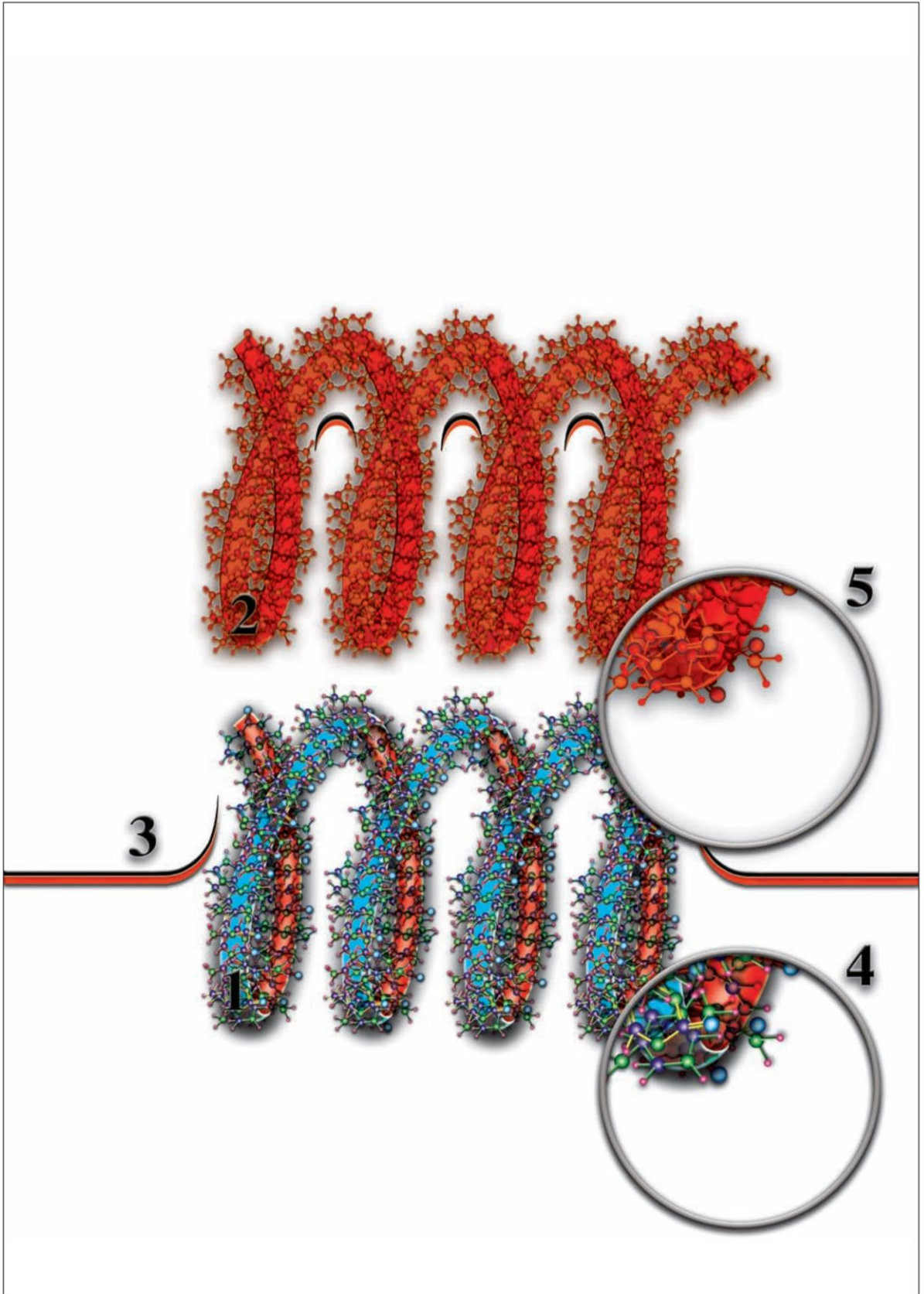
It should be noted that when a cell divides, there comes a moment when the old cell disappears, completely collapses, and new cells have not yet begun to assemble. This phenomenon has been observed for a very short time, but, nevertheless, it is a fact. During division, the old cell dies and for some time there is neither the old cell nor the new ones. And although the time interval between the disappearance of the old cell and the appearance of new ones is negligible, this does not change the essence. Between the "phase of the old cell" and the phase of the "new cells" there is a qualitative state when there is neither one nor the other. Which, in turn, fully confirms the mechanism of cell division described above. In addition, only the processes of cell division described above can explain the evolution of living matter itself, the emergence of new species, accumulation, and the possibility of transferring experience and positive mutations to future generations. In order for this not to become an unfounded statement, let's try to conduct a qualitative analysis of this phenomenon of nature. Understanding this phenomenon provides the key to unraveling the nature of memory, consciousness and many other phenomena of nature, which to this day remain "white spots on the map of world understanding." Let's consider how new acquisitions, positive mutations are transmitted from one generation to another.

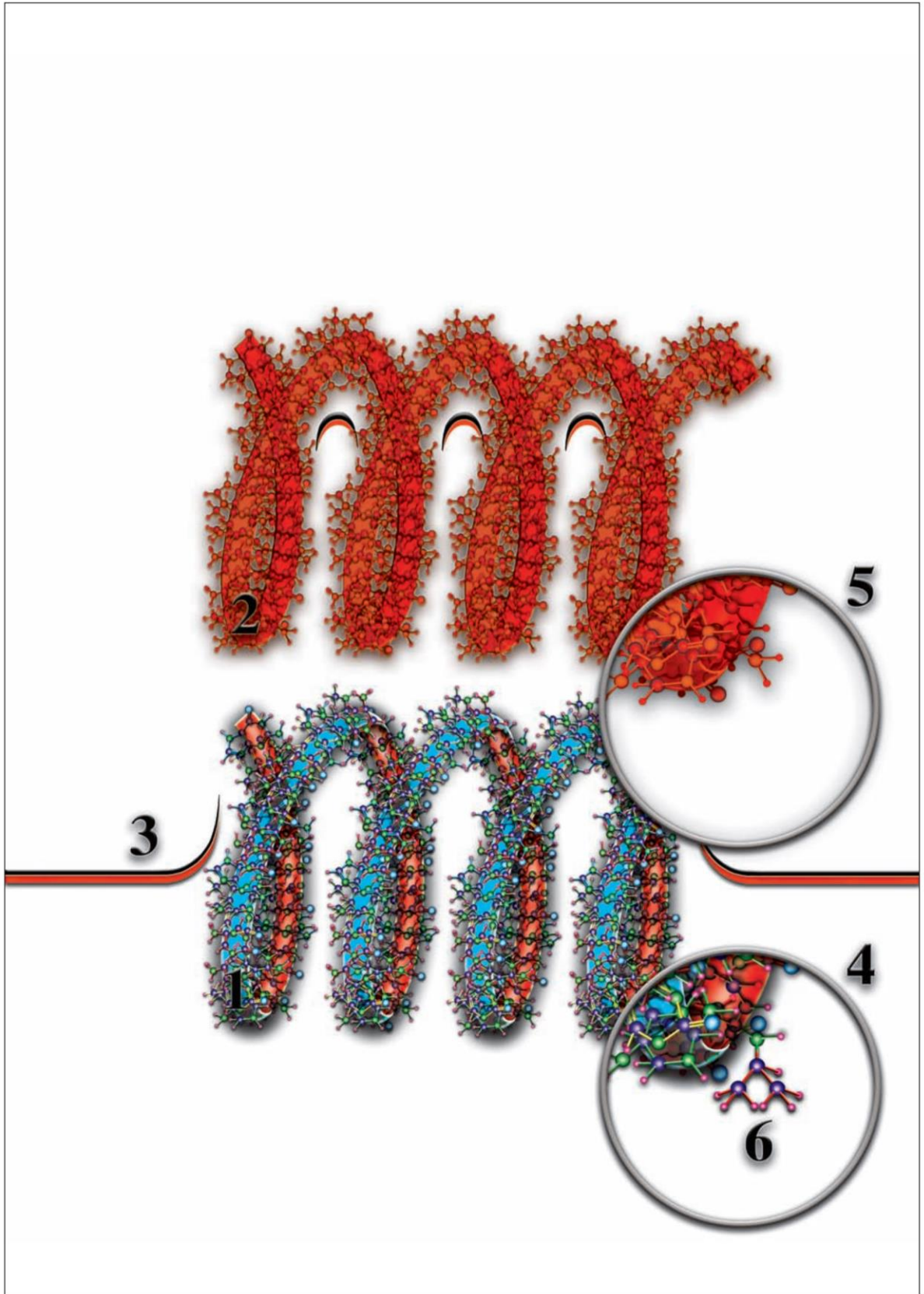
Life could not have originated in the variety of life forms that exist today. The first single-celled organisms became the basis for all living organisms on the planet. How did this amazing transformation of the first single-celled organisms into this diversity of life forms happen? The first unicellular organisms, as already noted, originated in the upper layer of the primary ocean. When a unicellular organism divides, two identical unicellular organisms appear and, it would seem, this should have been the end of the evolution of life. The surface layer of the primary ocean should have been filled with identical single-celled organisms, and that should have been the end of it. But this did not happen. What is the reason for this "illogical" behavior of nature, which created the diversity of life? The answer to this question lies right on the surface, or rather, in the surface layer of the primary ocean. The air masses set in motion the surface layer of the primary ocean, as a result of which, single-celled organisms, and later multi-celled ones, were carried away by the oceanic or marine currents at a great distance from each other. It would seem so, but what does this have to do with the appearance of the diversity of forms of living organisms? It is very simple! The currents spread the same kind of organisms tens, hundreds and sometimes thousands of kilometers away from each other. As a result, they found themselves in different external conditions. Water temperature, chemical composition, gas saturation in one place of the primary ocean differed from the other. There were especially big differences occurring in shallow waters, in the areas of eruption of terrestrial and underwater volcanoes. When entering a different chemical environment, the organisms of the same type found themselves in external conditions that differed quite significantly from each other. Eventually, this led to changes in the intracellular environment as well. And, as a consequence of changes in the chemical composition inside the unicellular organisms themselves, there were qualitative changes in the unicellular organisms themselves - mutations.

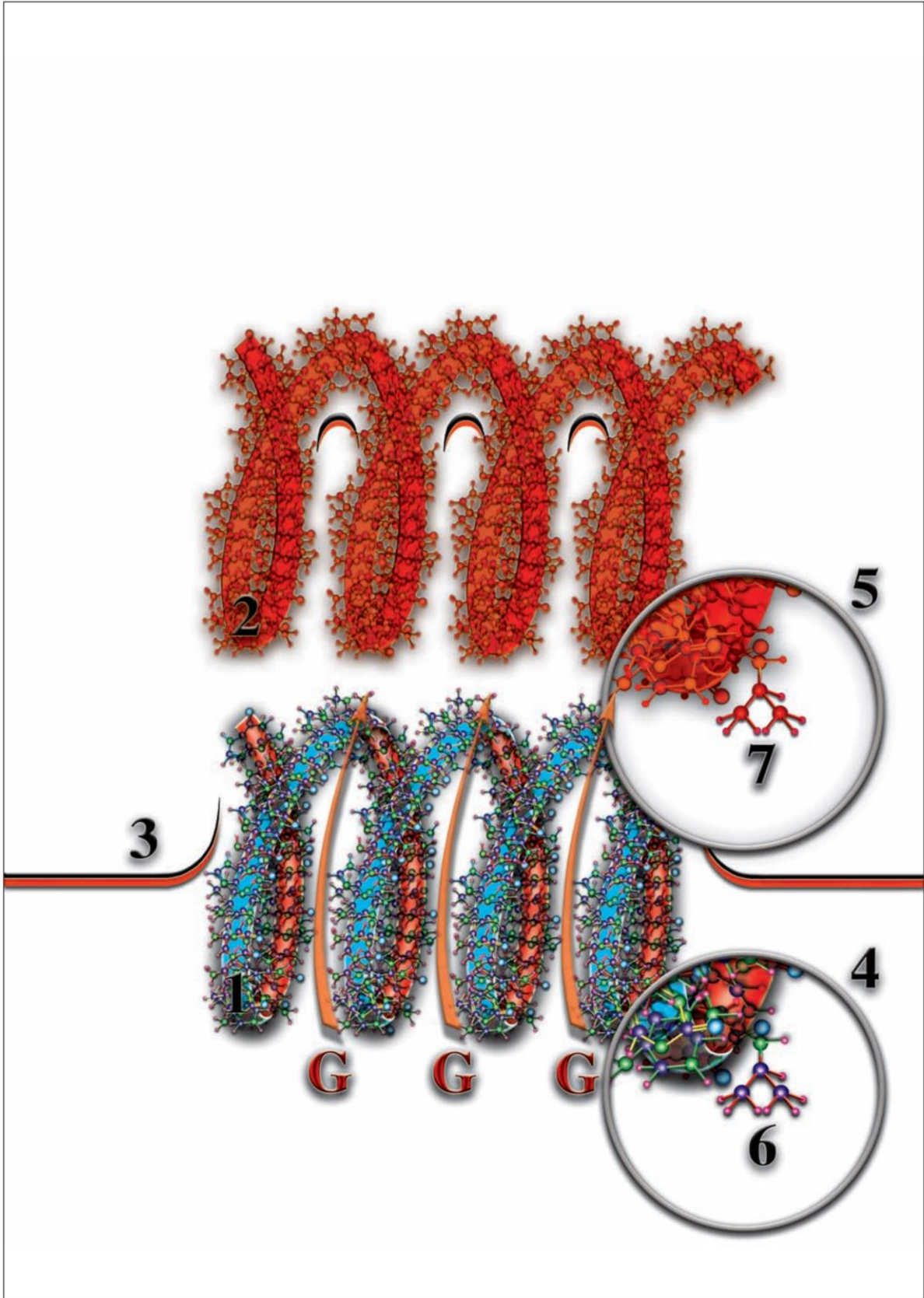
Under the influence of changes in the ion balance within unicellular organisms as a result of changes in the chemical composition of the external environment, there were changes in the molecular weight, qualitative composition and spatial structures of organic molecules from which unicellular organisms are formed. Those unicellular organisms that did not die after such "reconstructions", to one degree or another were different from the original organisms. Gradually, these changes accumulated, and the moment came when we could talk about the emergence of new species of unicellular organisms. When the modified unicellular organisms were critically saturated with organic substances, the process of division was started, as a result of which positive mutations were fixed. The number of modified unicellular organisms increased exponentially. The changed organisms, as well as their "parent", the original unicellular organisms were transported by currents to other places, with a different chemical composition, and everything was repeated again. To understand the mechanism of mutation propagation, it is necessary to remember that, with a qualitative change in organic molecules under the influence of the external environment, it is not only physically dense molecules change structurally and qualitatively, but also their second material bodies.

The appearance of additional chains of atoms or the loss of existing organic molecules forming unicellular organisms leads to the fact that the deformation of the microspace caused by the unicellular organism as a whole change. And, as a consequence of this process, the second material body of a unicellular organism also changes. In other words, qualitative changes occur at all levels existing in a given unicellular or multicellular organism (**Fig. 4.3.29**, **Fig. 4.3.30** and **Fig. 4.3.31**). The resulting additional structural changes in organic molecules of unicellular organisms cause similar deformations of the microspace of the cell at the second material level. The released primary matter, when organic molecules disintegrate in the internal volume of **DNA** and **RNA** molecule spirals, saturate these additional deformations at the second material level, resulting in fixation at the second material level. And when the process of division of such an altered cell begins, the second material body of such a unicellular organism carries all the changes that have occurred with this living organism throughout its life. The second material body of a unicellular organism plays a key role in the process of division, since during this process there is a complete destruction of the physically dense "old" cell. At the same time, the modified molecules are also destroyed, all acquired changes that have occurred in the cell completely disappear along with the old cell. In general, this process of cell division would be impossible without the presence of the cells of the second and other material bodies, which are copies of this cell at the appropriate levels with all its features. With the complete disappearance of the old cell in the process of division, only the presence of the second and other material bodies in the latter makes it possible to understand and comprehend the real physical process of cell division. Only the presence of unicellular and multicellular organisms of the second and other material bodies makes it possible to talk about the appearance and development of living matter.

Neither cell division, nor the emergence of new species and, ultimately, the formation of the ecological system of the planet, nor the emergence of intelligence, is possible to understand and comprehend, without the appearance of a second and other material bodies in living organisms. That is why all attempts to explain the nature of living matter from the point of view of existing science have failed completely.







4.4. Summary

The origin of life on the planet Earth in particular and in the Universe remained a "white spot" in the system of representations created by mankind within the limits of history. The fact of the existence of life was either taken for granted, or acquired a divine nature in the minds of people, or simply "bypassed" the created pictures of the universe after unsuccessful attempts to give a coherent and holistic explanation of the phenomenon of living nature. A methodologically correct approach to understanding the nature of living matter should begin with determining the necessary and sufficient conditions for the origin of life from inanimate matter:

- 1. The presence of a constant dimensional difference ζ .**
- 2. Availability of water.**
- 3. The presence of an atmosphere.**
- 4. The presence of a periodic change of day and night.**
- 5. The presence of atmospheric electrical discharges.**

The second key point is the need to understand the qualitative difference between living matter and inanimate. Without understanding how each atom and molecule affects its microcosm, how spatial organization affects the properties of space, it is impossible to penetrate into the nature of living matter. The use of the principle of heterogeneity of space at the microspace level makes it possible to create a complete picture of the processes occurring at the molecular level. As a result, it is possible to identify qualitative features of organic molecules that create conditions under which matter manifests itself in a new quality — as living matter:

- 1. The spatial structure of organic molecules is heterogeneous in different spatial directions.**
- 2. The molecular weight of organic molecules ranges from several tens to several million atomic units.**
- 3. Uneven distribution of the molecular weight of organic molecules in different spatial directions.**

The spiral shape of **RNA** and **DNA** molecules creates a unique phenomenon — a standing wave of dimensionality in its internal volume. Organic molecules drawn into the inner volume of the spirals of **DNA** and **RNA** molecules begin to move along the optical axes of these molecules, periodically falling under the blows of dimensional differences, which for most molecules create supercritical conditions, and they begin to disintegrate into the primary matter forming them. The primary matter released in this case saturates the deformation created by these molecules at the second material level and forms a second material body. The appearance of the second material body is a qualitative leap in the organization of matter and serves as the beginning of the era of living matter. The emergence of viruses, the appearance of protein shells in them, receives a holistic explanation based on the principle of interaction of microspace with continuously changing properties and qualities and matter having certain properties and qualities. At the same time, a picture of nature appears, in which each element has an explanation and its place. The concept of the heterogeneity of space allows us to reveal the mechanisms of the evolution of life, the appearance of a variety of forms of living organisms, which makes it possible to substantiate the positions of the evolutionary theory. Determining the conditions and mechanisms of changes leading to the emergence of new types of viruses and other living organisms allows you to see a complete picture of the ecological system of the planet:

1. Changing the order of the nucleotide connection in the existing **RNA** molecule of the virus.
2. Increase or decrease in the number of nucleotides in the existing **RNA** molecule of the virus.
3. The appearance of chemical bonds between the existing **RNA** virus molecule and other **RNA** molecules that were inside the protein envelope of the virus at the time of the electric discharge or appeared in it as a result of the impact of an electric discharge.

The concept of heterogeneity of space allows us to give a detailed explanation of the mechanism of cell formation as the basis of all living things and to reveal the role of the appearance of protein shells in viruses, and later cell membranes. The cell membrane is a qualitative leap in the organization of living matter. This principle allows us to reveal the mechanisms of the origin and synthesis of organic substances by living organisms themselves and the **necessary conditions** for this:

- a) the presence of organic molecules inside unicellular organisms that easily change their structure within certain limits when external factors change, which leads to an oscillation in the dimensionality of the microcosm in the range $0 < \Delta L < 0.010101618\dots$

b) the presence of external factors that can cause the necessary changes in the structure of these molecules without destroying the molecules, as well as unicellular organisms themselves (weak thermal and optical radiation from the Sun).

When the synthesis of organic compounds by living organisms occurs, the evolution of living matter enters a qualitatively new stage. The independent synthesis of organic substances by living organisms, called plant substances, created the conditions for the independent evolution of life, independent of atmospheric electricity. The principle of heterogeneity of space makes it possible to explain the nature of the mechanisms of the appearance of second material bodies at a certain stage of the evolution of organic matter and their role in the development of living matter. Taking into account the full picture of what a living organism is (second and other material bodies), it becomes possible to give a full and exhaustive explanation of the processes of cell division and the phenomena that occur during this. The heterogeneity of space and its interaction with matter having certain properties and qualities makes it possible to create an integral representation and explanation of what happens when the so-called physically dense body of a living organism — a physically dense cell, is destroyed. At the same time, qualitative and functional differences between the physically dense and other material bodies of a living organism are clearly defined. For the first time it is proved that life does not stop with the death of a physically dense body, but only moves to a qualitatively different level of functioning. The nature of the cycle of life on the planet is explained. Based on the multilevel structure of living matter, the mechanisms of mutations, their accumulation and transmission to new generations of living organisms are shown for the first time, which, in turn, is the foundation for understanding the evolutionary process of living nature.

List of references

1. "Slavic-Aryan Vedas. Book Two. The Book of Light. The Word of Wisdom of the Magus Velimur." - Omsk: Publication of the Old Russian English Church of Orthodox Old Believers-Ingling; Publishing house "ARKOR", 1999.
2. "Ancient Indian philosophy. The initial period". Translated from Sanskrit. M., 1963.
3. V. F. Asmus. "Ancient philosophy". Tutorial. Ed. 2-e, DOP., M., Vysshaya SHKOLA, 1976.
4. "Anthology of world philosophy", Academy of Sciences of the USSR, V. 2, Publishing house "Mysl", Moscow, 1970.
5. "Anthology of world philosophy", Academy of Sciences of the USSR, vol. 4, IZDATEL'stvo "Mysl", Moscow, 1970.
6. "This Side Up", After All, May Refer To The Universe", John Noble Wilford, New York Times, 1997.
7. "THE PHANTOM EFFECT OF DNA: Direct measurement of the new Field in a vacuum substructure", Dr. Vladimir Poponin, 1996.

Description of drawings

Fig. 2.2.1. A sequential change in dimensionality by the same value ΔL is a quantization of the matrix space and is expressed by the quantization coefficient γ_i , which is the standard by which the "cubes" are selected to create a new "picture". Thus, just as different pictures can be put together from different numbers of cubes of the same size, so space-universes are formed from the same forms of matter in the matrix space. These space-universes form a single system in the matrix space, like a layer cake, each layer of which is qualitatively different from the other. At the same time, each adjacent layer of this pie has one "cube" more or less in its "mosaic". All these layers are in constant motion and interaction with each other.

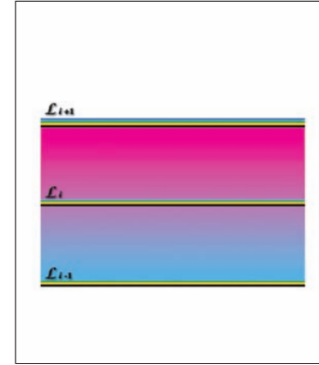
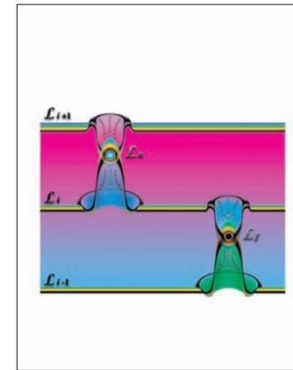


Fig. 2.2.2. As a result of the curvature of space caused by various reasons, zones of closure between neighboring space-universes arise. If, for example, a space-universe with a smaller intrinsic dimension L_i closes with a space-universe with a larger L_{i+1} , then, as a result, a star L_a is born in the closing zone for a space-universe with a lower level of intrinsic dimension L_i . Similarly, the closing of a space-universe with a lower level of intrinsic dimensionality L_{i-1} leads to the appearance of a "black hole" - L_f in the space-universe with a higher level of intrinsic dimensionality L_i .



Through the so-called positive closing zones (stars), matter from the universe with a higher level of dimensionality enters the space-universe, and through negative closing zones ("black holes"), matter from the space-universe enters the space-universe with a lower level of dimensionality. Each space is preserved in a stable state in the presence of a balance between the volumes of matter "flowing in" and "flowing out".

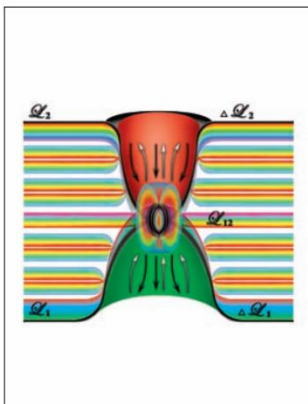


Fig. 2.3.1. The closure of two matrix spaces having different quantization coefficients of dimensionality. In the closure zone of matrix spaces with different space quantization coefficients, the decay of matter of both types into primary matter of two types occurs. Primary matter of both types returns to a free (unbound) state. The opening of a qualitative barrier between neighboring matrix spaces leads to the fact that primary matter of all types rush into the zone of closure and begin to accumulate in it.

L'_1 — the dimension of the first matrix space.

L'_2 — the dimension of the second matrix space.

L'_{12} — the dimensionality of the closure zone
of matrix spaces.

L_1 — the range of oscillation of the dimensionality of the first matrix space.

L_2 — the range of oscillation of the dimensionality of the second matrix space.

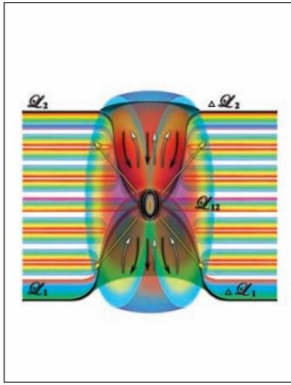


Fig. 2.3.2. Ejection of matter through the closure zone of matrix spaces during a super-explosion, when the zone of closure cannot pass through the entire mass of moving matter. The accumulation of primary matter occurs as a consequence of the decay of hybrid matter of different matrix spaces into the matter forming them. The released primary matter begins to move from the epicenter of the explosion in all spatial directions. At the same time, it should be remembered that space is heterogeneous in different directions, i.e., it has different properties and qualities. Therefore, matter is distributed heterogeneously in space. The designations are

the same.

Fig. 2.3.3. During an explosion, there is a perturbation of the dimensionality of the space surrounding the closure zone, heterogeneous zones of dimensionality are formed, in which the matter ejected by this explosion begins to settle. Processes similar to the explosion of a supernova are taking place, only at a different qualitative level. The difference is only in scale. In one case, planetary systems are born, and in the other, universes. In the latter case, deformation during the explosion of layers of identical dimensionality leads to their closing together and the birth of galaxies. The designations are the same.

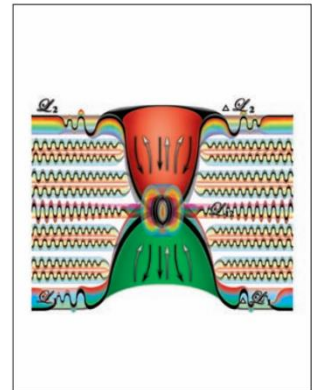


Fig. 2.3.4. The formation of metaverses in the heterogeneous zones of the dimensionality of space that arose during a super-explosion.

1. A zone where there are no conditions for the fusion of matter.

2. A zone where two forms of matter can merge.

3. A zone where three forms of matter can merge.

4. A zone where four forms of matter can merge.

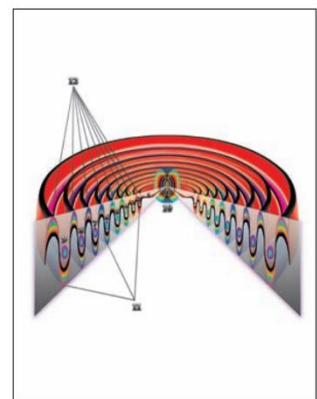
5. A zone where five forms of matter can merge.

6. A zone where six forms of matter can merge.

7. A zone where seven forms of matter can merge.

8. A zone where eight forms of matter can merge.

9. A zone where nine forms of matter can merge.



10. The closure zone of matrix spaces.
11. Metaverses.
12. Dimensional deformation zones.

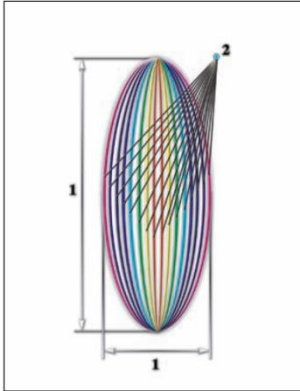


Fig. 2.3.5. Within each heterogeneous zone, the dimensionality of space changes continuously from the center of the heterogeneous zone to its edges. As a result, matter is distributed unevenly, creating discrete layers that differ in the qualitative and quantitative composition of the primary matter forming them. There is a so-called quantization of primary matter in space. In which primary matter, each of which has its own properties and qualities, interact with space only where the properties of space are identical with the properties and qualities of primary matter. Quantization of space by primary matter leads to the appearance of a system of space-universes that are

qualitatively heterogeneous within the heterogeneous zone due to the fact that the zone of heterogeneity in which they originated is heterogeneous in different spatial directions.

1. The heterogeneous zone of space.
2. Spaces are universes that are formed inside a single heterogeneous zone of space.

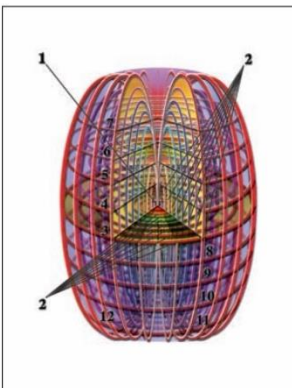


Fig. 2.3.6. First-order superspace. Due to the fact that space deformation occurs during a super-explosion, systems of space-universes arise in all spatial directions, which differ from each other in the number of primary matter forming them. Moreover, the differences in the dimensionality of space in different spatial directions inside the heterogeneous zone are so significant that there is a quantization of space in several spatial directions at the same time. With such a multidimensional quantization of space, systems of space-universes (metaverses) arise, which have a rigid spatial position unchanged with respect to each other, just as electrons have their

rigid allowed orbits around the nucleus. As a result, metaverses create a single stable system.

1. The zone of closure of matrix spaces.
2. Metaverses.

Fig. 2.3.7. Second-order superspace. During a super-explosion, undulating deformations of space occur, radiating in circles from the center of the super-explosion. The super-explosion causes such powerful ring-shaped waves of deformation of the macrospace that they spread over huge distances. Moreover, the stronger the explosion, the greater the deformation of the microspace caused by the waves created by it. Over time, the space in the super-explosion zone returns to a state of equilibrium. This process is accompanied by a gradual decrease in the amplitudes of the waves of deformation of space from the center. Therefore, the further away from the epicenter of the super-explosion, the greater the depth of the deformation zones of space will be. And this means that the farther away from the epicenter of the super-explosion, the greater the number of primary matter merge with each other, forming systems of metaverses.

1. Metaverses formed by the fusion of nine forms of matter.
2. First-order superspaces.

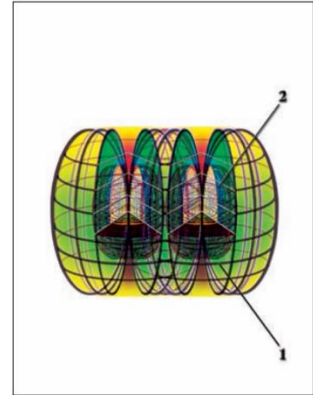


Fig. 2.3.8. Third-order superspace. Usually, a lot of super-explosions occur in the macrospace, so the waves of deformation of the macrospace of some are superimposed on similar waves of disturbance of the macrospace of others. As a result, there is a superposition of macrospace deformation waves that form combined spatial systems. The qualitative structure of these spatial systems depends on how many super-explosions occurred in a given area of the macrospace and at what distance from each other their epicenters are.

1. Metaverses formed by the fusion of eleven forms of matter.
2. Second-order superspaces.

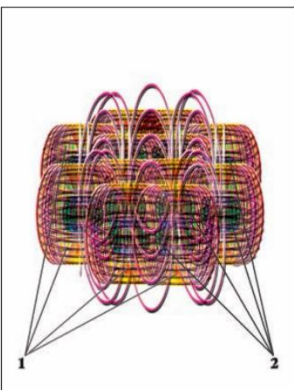
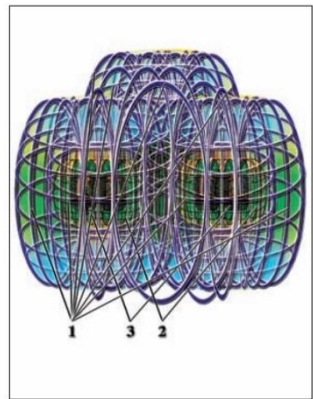


Fig. 2.3.9. The fourth-order superspace. The disturbance of the dimensionality of the macrospace caused by each super-explosion spreads in circles from the epicenter. The further away from the epicenter, the stronger the deformation of the microspace is created by a wave of dimensional disturbance created by a super-explosion. And this means that the further away from the epicenter—the greater the number of primary matter can merge with each other in zones of inhomogeneities. The more primary matter merge together to form hybrid matter, the more inertial, the more resistant to external influences it becomes. In addition, the further away from the epicenter of the super-explosion, the greater the number of disturbances of the dimension of the macro-space from other super-explosions are superimposed on the disturbance created by this super-explosion.

1. Metaverses formed by the fusion of twelve forms of matter.

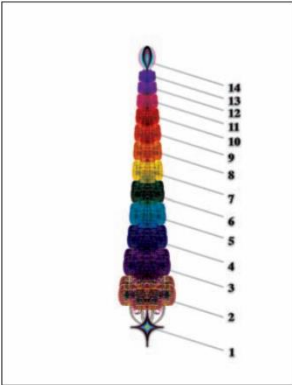


Fig. 2.3.10. Fifth-order superspace. Due to the fact that the matrix space is inhomogeneous initially, the perturbation of dimensionality caused by each superburst spreads unevenly along different spatial directions of the macrospace. Therefore, the synthesis of hybrid matter occurs only along some spatial directions of the matrix space.

1. The central zone of closure of matrix spaces.

2. Metaverses formed by the fusion of thirteen forms of matter.

3. Metaverses formed by the fusion of twelve forms of matter.
4. Metaverses formed by the fusion of eleven forms of matter.
5. Metaverses formed by the fusion of ten forms of matter.
6. Metaverses formed by the fusion of nine forms of matter.
7. Metaverses formed by the fusion of eight forms of matter.
8. Metaverses formed by the fusion of seven forms of matter.
9. Metaverses formed by the fusion of six forms of matter.
10. Metaverses formed by the fusion of five forms of matter.
11. Metaverses formed by the fusion of four forms of matter.
12. Metaverses formed by the fusion of three forms of matter.
13. Metaverses formed by the fusion of two forms of matter.
14. The end zone of the closure of matrix spaces.

Fig. 2.3.11. The six-beam. It should be borne in mind that hybrid matter arising as a result of synthesis from primary matter affect the matrix space in which they are located, and there comes a moment when the secondary influence of hybrid matters reaches a critical value, as a result of which one matrix space is "pushed" into another. As a result, a super analog of a "black hole" appears in one matrix space, and a super analog of a star appears in the other. Thus, in a given matrix space, the systems of spaces have quite finite dimensions. The quantization coefficient of a given matrix space determines the type of primary matter from which, in this matrix space, spatial systems are formed. Hybrid matter that arise in deformation zones due to super-explosions have a finite maximum number of primary matter forming them for each specific matrix space. The secondary degeneration of the dimensionality of space created by them completely neutralizes the primary deformation of the macrospace.



Fig. 2.3.12. Anti-six-beams. During super-explosions, ring waves of deformation of macro-space occur. These longitudinal waves deform space, both "up" and "down". This phenomenon arises due to the fact that the matrix space itself is heterogeneous. There are differences (gradients) of dimensionality "from above" to "down" and to "east" and to "west". Therefore, when an inhomogeneous deformation of the matrix is superimposed on an inhomogeneous space, the formation of two types of deformation zones of the matrix space that occurs during the superexplosion. One zone of hybrid matter synthesis is a "pit", the other is a "hillock". Six—beams are formed inside the "pits", and anti-six-beams are formed inside the "bumps". The difference between the former and the latter lies in the fact that in the latter there are superspaces with the maximum number of primary matter in the external volumes, and with the minimum — in the internal. Conditionally, we can say that in one case the spaces have a positive spin, and in the other — a negative spin.

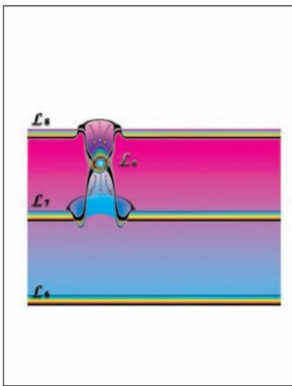
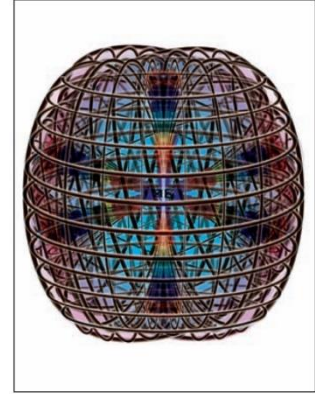
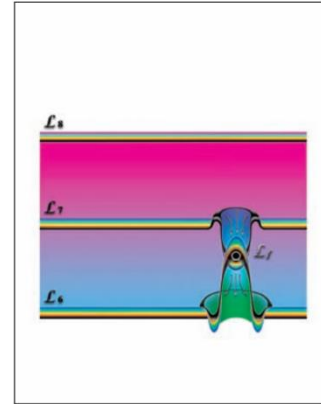


Fig. 2.4.1. The appearance of a star when the space of the universe of our dimension closes with the space of the universe of a larger dimension. Perturbations of space lead to the fact that the layer of identical dimensionality of space in some zones are closed with each other. When a layer of the space-universe of one identical dimension closes with a layer of a larger identical dimension, a star is formed in the closing zone. At the same time, matter begins to flow from the space-universe with a larger dimension into the space-universe with a smaller one. The reason for the overflow in this direction is that two adjacent layers differ from each other by one primary matter of identical dimensionality. In the zone of closure, the disintegration of matter of a higher dimensional level and the synthesis of matter of a smaller dimension occurs.

L_6, L_7, L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_a — dimension of the star.

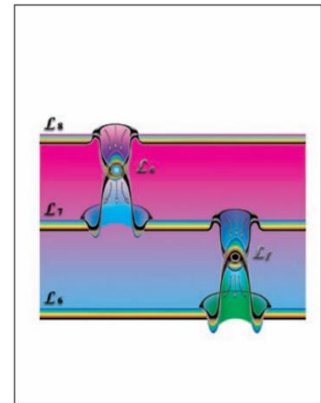
Fig. 2.4.2. The appearance of a "black hole" when the space-universe of our dimension closes with the space-universe of a smaller dimension. When a layer of the space-universe of one identical dimension closes with a layer of a smaller identical dimension, a "black hole" is formed in the zone of closure. At the same time, matter begins to flow from the space-universe with a larger dimension into the space-universe with a smaller one. The reason for the overflow in this direction is that two adjacent layers with identical dimensionality differ from each other by one primary matter. In the closing zone there is a disintegration of matter of a higher dimensional level and a synthesis of matter of a smaller dimension. The "black hole" is practically a window into a parallel universe.



L_6, L_7, L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_f — the dimension of the "black hole".

Fig. 2.4.3. Matter flows into each space-universe through stars and flows out through "black holes". Thus, the balance of matter in space is realized. Through the zones of closure between the layers of space, matter is redistributed and it is thanks to this that the conditions for the origin of life arise. The substance of the layer with a high level of identical dimensionality decays into primary matter, and the synthesis of the substance of the layer with a lower level of dimensionality occurs. The "extra" primary matter, at the same time, is released from captivity. The newly formed substance, when it enters the "black holes", disintegrates into the matter forming it and the synthesis of the substance of the layer with a lower level of dimensionality occurs, etc.



L_6, L_7, L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_a, L_f — star and "black hole"

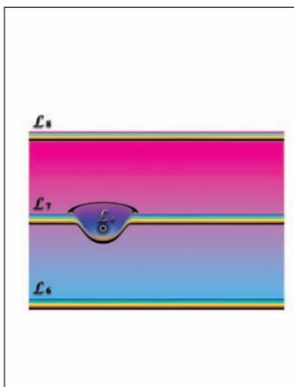
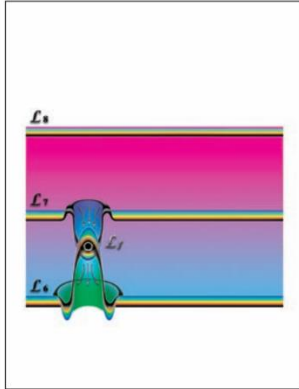


Fig. 2.4.4. Neutron star. As the star ages, the proportion of light elements decreases as the proportion of heavy elements increases. As a result, the degree of influence of the star on its microcosm increases, and there is a deformation of the layer of identical dimensionality in the sphere of influence of the star. If the initial size of the star was less than ten solar radii, then when the star dies, a so-called neutron star is formed. And, although a neutron star does not "open" the door to another layer of identical dimensionality, it nevertheless has a significant impact on the qualitative state of "its" layer of identical dimensionality.

L_6 , L_7 , L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_c — a neutron star.

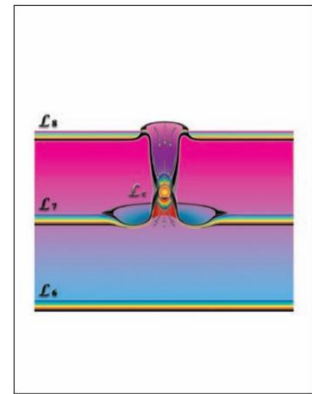


L_f — "black hole".

Fig. 2.4.5. "Black hole". If the initial radius of the star was more than ten solar radii, then, with the death of such a star, a black hole is formed. The mass of neutron matter is so large that it pushes the matrix space to the next, underlying space-the universe. A new star lights up in the lower layer of the universe. Through this peculiar door, matter from one space-the universe, begins to flow into the underlying, completely disintegrating into the primary matter forming it. Dying, matter of one type generates matter of another type.

L_6 , L_7 , L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

Fig. 2.5.1. Each star "lives" for billions of years, after which it "dies". During these billions of years, matter from the space-universe with a larger dimension L_8 , through the closing zone enters the space-universe with a smaller dimension L_7 . At the same time, this substance becomes unstable and decays into the primary matter that forms it. The seven primary matters merge again, forming the physically dense substance of the space-universe L_7 . There is such a level of dimensionality in the zone of closure that the atoms of those elements are synthesized whose own level of dimensionality allows them to maintain their stability. In the upper stability zone of a physically dense substance, only the so-called light elements such as hydrogen (**H**) and helium (**He**) are "located". Therefore, the synthesis of these elements takes place in the zone of closure. And it is no coincidence that most of the matter in our universe is hydrogen. In the closing zone, an active process of hydrogen synthesis takes place, the masses of which form the basis of stars. This is how stars are born, the so-called blue giants. The initial density of "newborns" is very small, but, due to the fact that the closure zone is heterogeneous in dimensionality, there is a difference (gradient) of dimensionality in the direction of the center. As a result, the hydrogen molecules begin to move towards the center of the closure zone. The process of star compression begins, during which the density of stellar matter begins to grow rapidly.



As the density of stellar matter increases, the volume occupied by the star decreases and the degree of influence of the mass of the star increases, at the level of the dimensionality of the closure zone, and at the atomic level. Thus, the star's own level of dimensionality begins to decrease, and the processes of synthesis of new, heavier elements begin inside the star itself.

A so-called thermonuclear reaction occurs and the star begins to emit a whole spectrum of waves as a side effect of the synthesis of elements. It should be noted that it is thanks to this "side effect" that the conditions for the origin of life arise. Two processes occur in parallel in the closure zone: the synthesis of hydrogen during the decay of the matter of the space-universe with a higher level of its own dimensionality (a substance formed by the synthesis of eight forms of primary matter) and the synthesis of heavier elements from hydrogen during thermonuclear reactions. As a result of these processes, the star decreases its volume and, as a consequence, increases in the mass of the proportion of heavier than hydrogen, the level of the star's own dimensionality also decreases. Which, in turn, reduces the closing zone. In other words, a star "born" by another space-universe, for our space-universe, gradually separates from its "mother". Isn't it, as it turns out an interesting analogy with the development of the embryo inside of the uterus, when, "woven" from flesh and blood of the mother the fetus leaves the womb of its mother and begins a life, and a star, "born" space-universe leaves the "mother's womb" when the level of self-dimensionality is reduced as a consequence of the increase in the degree of influence on the surrounding space. Separating from the "mother" space-universe, a star begins its own life — a life that lasts billions of years, after which it "dies". However, the stars, in turn, manage to "give birth" to planetary systems on which life has a chance to appear.

L_6, L_7, L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_c — a star.

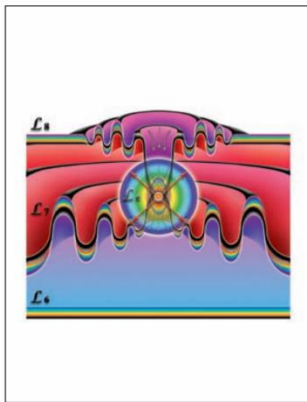


Fig. 2.5.2. In the process of star compression, the balance between the radiating surface and the radiating volume is disturbed. As a result, primary matter accumulates inside the star. The accumulation of primary matter eventually leads to the so-called supernova explosion. A supernova explosion generates longitudinal fluctuations in the dimensionality of space around the star. The surface layers of the star ejected by the supernova explosion, which, by the way, consist of the lightest elements, fall into the curvature of space created by longitudinal dimensional fluctuations that occurred during this explosion. In these curvature zones of space, an active

synthesis of matter takes place from primary matter, and a whole spectrum of various elements are synthesized, including heavy and super-heavy ones. The greater the difference between the level of proper dimensionality of a star and the levels of proper dimensionality of the zones of curvature of space, the heavier elements are able to "be born" inside these zones and the more stable these heavy elements are. Depending on the initial size, there may be one or more supernova explosions during the life of a star. With each such explosion, the star's own level of dimensionality decreases, which leads to a decrease in the synthesis of light elements and an increase in the synthesis of heavy elements. As a result, the density and, consequently, the degree of influence of the star on the surrounding space increases.

If the initial weight of the star was less than ten solar radii, it will turn into a so-called neutron star by the time of its "death" (extinction). If, however, the initial weight of the star exceeded ten solar radii, then, at the end of its life path, the star turns into a "black hole". The neutron remnant of the star (neutron matter is a qualitative structure of physically dense matter in which only neutrons, having no electric charges, form the mass of this matter and, therefore, there is no "empty" space between them as between the nuclei of neighboring atoms) deforms the surrounding space so strongly that there appears a new merging zone, only with the space-universe with a lower level of the L6 dimensionality.

L_6, L_7, L_8 — the dimensions of the space-universes formed by the merging of six, seven, and eight forms of matter.

L_c — a star.

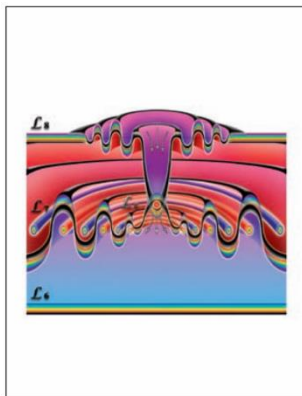


Fig.2.5.3. Primary matter ejected during the supernova explosion — part of the mass of the star itself, ejected at the same time, fall into the zones of curvature of the dimensionality of space caused by the explosion. In the deformation zones, an active process of synthesis of hybrid matter begins, and this process continues until hybrid matter completely compensates for the deformation of the space in which their synthesis takes place. This is because hybrid matter itself affects the space in which they are located. Moreover, if the change in dimensionality in the deformation zone of space caused by a supernova explosion is considered negative, then hybrid matter

will affect the dimensionality of space positively, increasing the dimensionality of space in the deformation zone.

L_6, L_7, L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_c — a star.

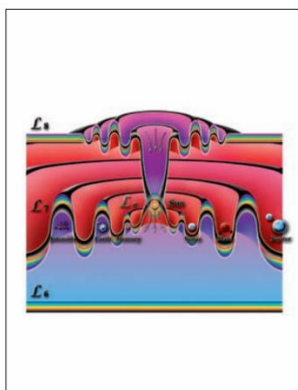


Fig. 2.5.4. Gradually, the substance in the zones of curvature condenses and planets are born. The compaction of the substance occurs due to the presence of a drop (gradient) of dimensionality directed to the center of inhomogeneity inside the zones of curvature. The closer the curvature zone is to the star, the difference is more pronounced. Therefore, the planets closest to the star will be smaller and contain a larger proportion of heavy elements. Which, moreover, are more stable, since the planet's own level of heterogeneity zone is lower the closer the planet is a star. Thus, there are the most stable heavy elements on Mercury and, accordingly, as

the proportion of heavy elements decreases, there are Venus, Earth, Mars, Jupiter, Saturn, Uranus, Pluto.

L_6 , L_7 , L_8 — dimensions of space-universes formed by the fusion of six, seven and eight forms of matter.

L_c — a star.

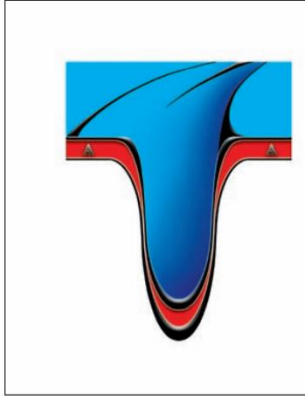


Fig. 2.5.5. The curvature of space in which conditions arise for the fusion of forms of matter into matter. Primary matter have their own qualities and properties. The qualities and properties of primary matter have their limitations. Each concrete quantity is finite, just as a finite quantity has its own form. Therefore, in order for the interaction of a finite quantity (primary matter) with specific properties and qualities and an infinite quantity (space) with continuously changing properties and qualities to occur, it is necessary that this matter falls into a zone of this space that has adequate properties and qualities. And this can only happen in a

limited amount of this space. Therefore, when space is deformed during a supernova explosion, there is also a change in the deformation zones of the qualities and properties of this space. As a result, in these zones primary matter manifest themselves in a new way and the synthesis of hybrid matter takes place.

Fig. 2.5.6. Merging of the forms of matter **A** and **B** in the curvature zone of space, and the formation of a substance of type **AB**. This substance is qualitatively different from the forms of matter forming it, a new quality arises from the old qualities. Moreover, the fusion of matter occurs in a limited volume, where the parameters of the forms of matter **A** and **B** are identical. The identity of the parameters of the primary matter is due to the fact that they fall into the deformation zone of space that arose during the supernova explosion. In this area of space, properties and qualities change, as a result of which primary matter, having their own qualities and properties, begin to interact with each other where their properties and qualities are identical to each other. Specifically, due to the identity of the properties and qualities of the region of space and primary matter, the necessary conditions arise for the fusion of free primary matter and the formation of a hybrid form with new properties and qualities. Moreover, the hybrid form that has arisen as a result of synthesis itself affects the space in which it is located.

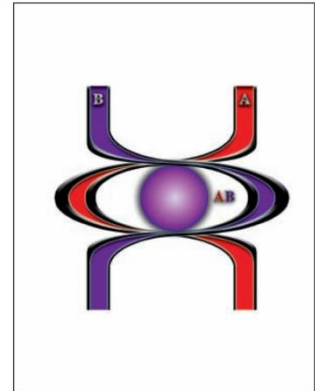
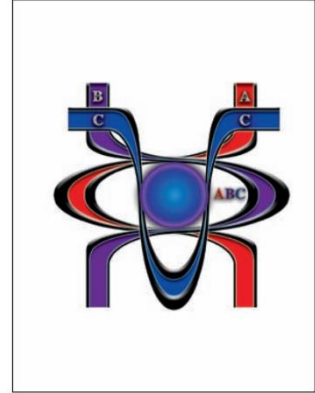


Fig.2.5.7. Fusion of forms of **ABC** matter in the curvature zone of space, and the formation of a substance of the **ABC** type. This substance **ABC** is qualitatively different, both from the forms of its constituents and from the substance of the **AB** type. Fusion occurs in a smaller volume than when two forms of matter **A** and **B** merge, since the properties and qualities of the three primary forms of matter are identical, respectively, in a smaller volume inside the curvature zone of space. In the space deformation zone, properties and qualities change continuously. Primary matter, being qualitatively coordinated in a specific volume of space, create hybrid forms of matter that affect space, changing its properties and qualities, which makes possible a new fusion of primary matter in another combination. There is a so-called feedback when a new quality affects the quality that gave rise to it, changing it and creating conditions for the emergence of a new quality.



A, B, C, D, E, F, G — the seven primary matter that form our space-universe.

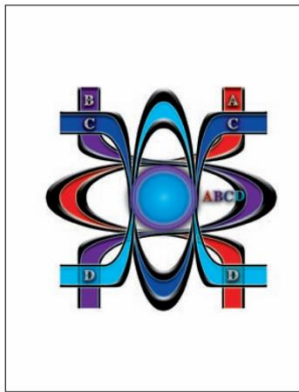


Fig. 2.5.8. The fusion of forms of matter **A, B, C, D** in the curvature zone of space and the formation of a substance of type **ABCD**. This substance occupies a volume smaller than the **ABC** type substance because the properties and qualities of the four forms of matter are identical in a smaller volume inside the curvature zone of space is less than when three forms of matter merge. The hybrid form of **ABCD** is spatially located inside the hybrid form of **ABC**. In turn, the new hybrid matter affects the surrounding space, creating qualitative conditions for the possibility of synthesis of a new hybrid matter, which has one more primary matter in its qualitative composition. At

the same time, each new hybrid matter partially neutralizes the curvature zone of space. There is a gradual filling of the "pit" with hybrid matter.

A, B, C, D, E, F, G — the seven primary matter that form our space-universe.

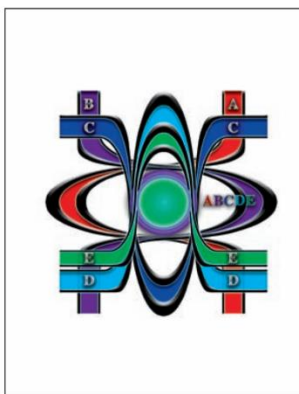


Fig. 2.5.9. Fusion of forms of matter **A, B, C, D, E** in the curvature zone of space and the formation of matter, type **ABCDE**. This substance occupies a smaller volume than type **ABCD** substance, because the properties and qualities of the five forms of matter are identical in a smaller volume inside the curvature zone of space than when the four forms of matter merge. The hybrid form of **ABCDE** is spatially located inside the hybrid form of **ABCD**.

In turn, the new hybrid matter **ABCDE** affects the surrounding space, creating qualitative conditions for the possibility of synthesis of a new hybrid matter, which has one more primary matter in its qualitative composition. At the same time, each new hybrid matter partially neutralizes the curvature zone of space, there is a gradual filling of the "pit" with hybrid matter.

A, B, C, D, E, F, G — the seven primary matter that form our space-universe.

Fig. 2.5.10. Fusion of forms of matter **A, B, C, D, E, F** in the curvature zone of space and the formation of a substance of type **ABCDEF**. This substance occupies a volume smaller than the substance of type **ABCDE** because the properties and qualities of the six forms of matter are identical in a smaller volume inside the curvature zones of space than when merging five forms of matter. The hybrid form of **ABCDEF** is spatially located inside the hybrid form of **ABCDEF**. In turn, the new hybrid matter **ABCDEF** affects the surrounding space, creating qualitative conditions for the possibility of synthesis of a new hybrid matter, which has one more primary matter in its qualitative composition. At the same time, each new hybrid matter partially neutralizes the curvature zone of space. There is a gradual filling of the "pit" with hybrid matter



A, B, C, D, E, F, G — the seven primary matter that form our space-universe.

Fig. 2.5.11. The fusion of seven forms of matter **A, B, C, D, E, F, G** in the curvature zone of space and the formation of a substance of the type **ABCDEFG**. This substance occupies a volume smaller than the substance of the **ABCDEF** type because the properties and qualities of the seven forms of matter can be identical in a smaller volume inside the curvature zone of space than with the fusion of the six forms of matter. The hybrid form of **ABCDEFG** is spatially located inside the hybrid form of **ABCDEF**. In turn, the new hybrid matter **ABCDEFG** affects the surrounding space, creating qualitative conditions for the possibility of synthesis of a new hybrid matter, which has one more primary matter in its qualitative composition. At the same time, each new hybrid matter partially neutralizes the curvature zone of space. There is a gradual filling of the "pit" with hybrid matter.



A, B, C, D, E, F, G — the seven primary matter that form our space-universe.

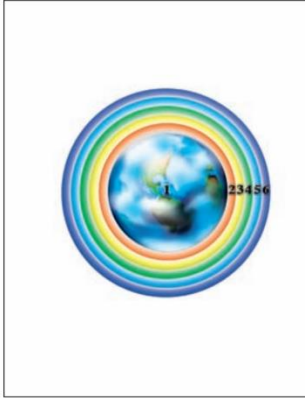


Fig. 2.5.12. The planet Earth, which arose in the zone of curvature of space as a result of the successive fusion of seven forms of matter and representing six material spheres of different quantitative and qualitative composition, one inside the other. These spheres together represent one system - the planet Earth and cannot exist without each other. Therefore, when considering the processes taking place at the physical level, it is necessary to remember that this is only the visible tip of the iceberg, which is the planet. The inner sphere formed by seven forms of matter is the physically dense planet Earth.

1. Physically dense (first material) sphere.
2. The second material sphere.
3. The third material sphere.
4. The fourth material sphere.
5. The fifth material sphere.
6. The sixth material sphere.

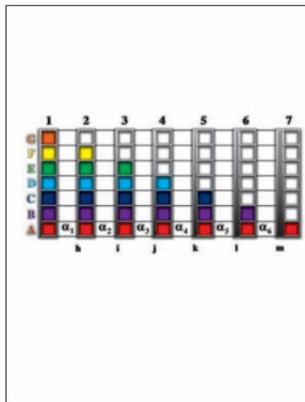


Fig. 2.5.13. Structural and qualitative composition of the Earth's spheres. This diagram clearly shows what is common and how the material spheres of the Earth differ from each other. Common elements create conditions for interaction between the spheres of the Earth, the degree of this interaction is reflected by the coefficients:

1. Physically dense (first material) sphere.
 2. The second material sphere.
 3. The third material sphere.
 4. The fourth material sphere.
 5. The fifth material sphere.
 6. The sixth material sphere.
 7. A layer of non-curved space.
- α_1 — the coefficient of interaction between the physically dense and the second material spheres.
- α_2 — the coefficient of interaction between the physically dense and the third material spheres.
- α_3 — the coefficient of interaction between the physically dense and the fourth material spheres.
- α_4 — the coefficient of interaction between the physically dense and fifth material spheres.
- α_5 — the coefficient of interaction between the physically dense and the sixth material spheres.

α_6 — the coefficient of interaction between a physically dense sphere and a layer of non-curved (undeformed) space.

h — a qualitative barrier between the physically dense and the second material spheres.

i — a qualitative barrier between the physically dense and the third material spheres.

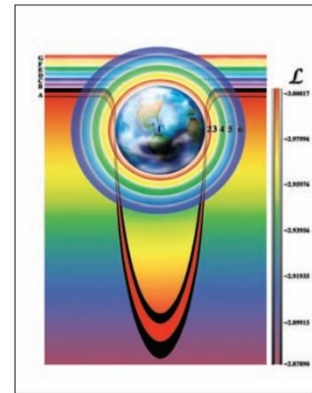
j — a qualitative barrier between the physically dense and the fourth material spheres.

k — a qualitative barrier between the physically dense and the fifth material spheres.

l — a qualitative barrier between the physically dense and the sixth material spheres.

m — a qualitative barrier between a physically dense sphere and a layer of non-curved space.

Fig. 2.5.14. When merging in the curvature zone of space, seven forms of primary matter form six types of matter that differ from each other in qualitative and quantitative composition. These substances create six material spheres, one inside the other, which cause a secondary degeneration (curvature) of space and neutralize the primary curvature of space in which the fusion of these seven forms of matter took place. After the completion of the formation of the planet, the decay of some part of the substance occurs, which again creates conditions for the synthesis of matter from free forms of matter, a circulation of matter occurs.



1. Physically dense (first material) sphere.
2. The second material sphere.
3. The third material sphere.
4. The fourth material sphere.
5. The fifth material sphere.
6. The sixth material sphere.

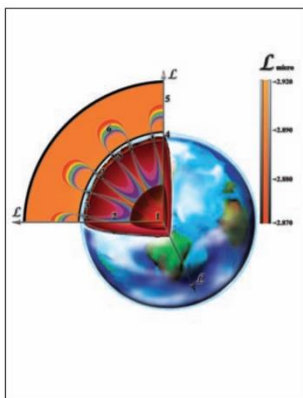


Fig. 2.5.15. After the completion of the formation process of the planet, primary matter continues to "flow in" and "flow out" from the heterogeneous zone. Hybrid forms of matter that have arisen as a result of synthesis from the primary ones compensate for the difference in dimensionality in the heterogeneous zone, but do not "remove" it. Therefore, just as running water continues to flow into and out of the reservoir, maintaining its level, so primary matter, after the completion of the formation of the planet, continues to flow in and out of the heterogeneity zone. Due to the fact that the planet partially loses its substance mainly in the form of the gas plume and the radioactive decay of the elements, there is a slight additional synthesis of physically dense matter and the balance is thus restored.

Within the planetary heterogeneous zone, there are many small inhomogeneities that affect the primary matter "flowing" through them, as a result of which, each section of the surface is permeated by flows of primary matter in a certain proportional ratio. As a result, depending on the specific distribution, the synthesis of certain elements occurs during the formation of the planet. This is the reason for the formation of deposits of certain elements in different parts of the crust and at different depths. And when these deposits are produced, there is a heterogeneity of dimensionality at this place, which provokes the synthesis of the same elements. Upon completion of synthesis, the balance of dimensionality is restored. True, the balance-restoring synthesis can last hundreds, and sometimes thousands of years, and its results can only be seen by subsequent generations. Thus, each section of the planet's surface is permeated in one direction or another by a certain superposition (proportional ratio) of primary matter. Ascending streams of primary matter penetrating the surface create so-called positive geomagnetic zones, while descending ones create negative ones.

1. The core of the planet.
2. Magma belt.
3. Shell.
4. Atmosphere.
5. The second material sphere.
6. Circulation of primary matter through the surface of the planet.
7. Negative geomagnetic zones (descending flows of primary matter).
8. Positive geomagnetic zones (ascending flows of primary matter).

Fig. 3.2.1. If we imagine primary matter of the same type in the form of multicolored cubes of the same size, then, in this case, the interaction of space and primary matter can be represented in the following form. Each primary matter has its own specific properties and qualities, therefore, in order for it to interact with space, it is necessary to change the properties and qualities of space until they become identical to the properties and qualities of this primary matter. In order for changes in the properties and qualities of space to occur, it is necessary to perturb this space.

A similar disturbance occurs during a supernova explosion.

Longitudinal ring waves of perturbation of the dimensionality of space propagating from the epicenter of the supernova explosion and create the necessary conditions for the emergence of a new quality — hybrid matter. Perturbation waves can have different amplitudes. If the amplitude of the perturbation of the dimensionality of space is commensurate with the quantization coefficient $\Delta L = \gamma_i$, then only one primary matter A "resonates" with space, and no new quality is formed.

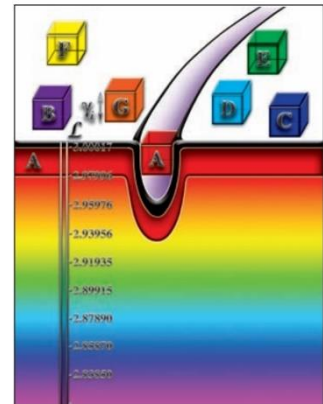


Fig. 3.2.2. If the amplitude of the perturbation of the dimensionality of space that arose during the supernova explosion is proportional to the quantization coefficient, as the value $\Delta L = 2 \gamma i$, then two primary matter **A** and **B** "resonate" with space, and a new quality arises - hybrid matter **AB**. At the same time, the hybrid form itself affects the space and completely neutralizes the deformation zone of the space in which it originated. The synthesis of the hybrid form of matter **AB** in the heterogeneity zone of space at the same time "freezes" this zone of heterogeneity, creating a standing wave of dimensionality in space. At the same time, the system returns to the stable state that it was before the arrival of the longitudinal wave of the perturbation of the dimensionality of space. The restoration of equilibrium becomes possible only when standing waves of dimensionality arise, due to hybrid matter, and the new stable state of space is qualitatively different from the original, with the appearance of hybrid matter. In other words, the space before the supernova explosion and after the explosion are qualitatively different from each other.

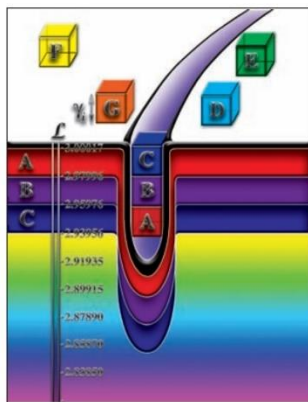
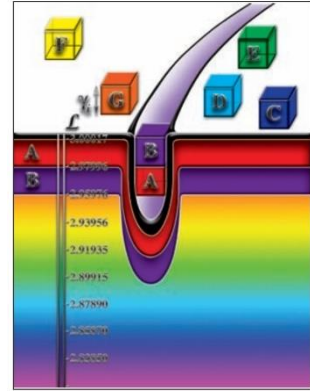


Fig. 3.2.3. If the amplitude of the perturbation of the dimensionality of space that arose during the supernova explosion is proportional to the quantization coefficient, as the value $\Delta L = 3 \gamma i$, then the three primary matters **A**, **B** and **C** "resonates" with space, and a new quality arises — hybrid matter **ABC**. At the same time, the hybrid form itself affects the space and completely neutralizes the deformation zone of the space in which it originated. Synthesis of hybrid matter **ABC** in the heterogeneity zone of space, neutralizes this heterogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of equilibrium. But, at the same time, this state of equilibrium will be different from any other, since the amplitude of a standing wave of dimensionality will differ from the amplitudes of other standing waves in this space. Since if you fill up all the pits on the road, it will not mean that the pits have disappeared or that they are exactly the same, if only because in order to completely fill up the pits of different depths, different amounts of rubble or something else will be required.

Fig. 3.2.4. If the amplitude of the perturbation of the dimensionality of space that arose during the supernova explosion is proportional to the quantization coefficient, as the value $\Delta L = 4 \gamma_i$, then the four primary matter **A, B, C** and **D** "resonate" with space, and a new quality arises - hybrid matter **ABCD**. At the same time, the hybrid form itself affects the space and completely neutralizes the deformation zone of the space in which it originated. The synthesis of hybrid matter of **ABCD** in the heterogeneity zone of space neutralizes this heterogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of equilibrium. But, at the same time, this state of equilibrium will be different from any other, since the amplitude of a standing wave of dimensionality will differ from the amplitudes of other standing waves in this space.

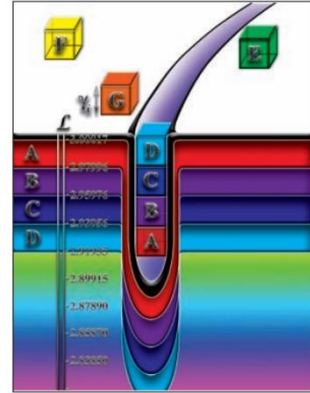


Fig. 3.2.5. If the amplitude of the perturbation of the dimensionality of space that arose during the supernova explosion is proportional to the quantization coefficient, as the value $\Delta L = 5 \gamma_i$, then the five primary matter **A, B, C, D** and **E** "resonate" with space, and a new quality arises - hybrid matter **ABCDE**. At the same time, the hybrid form itself affects the space and completely neutralizes the deformation zone of the space in which it originated. The synthesis of hybrid matter **ABCDE** in the heterogeneous zone of space neutralizes this inhomogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of equilibrium. But, at the same time, this state of equilibrium will be different from any other, since the amplitude of a standing wave of dimensionality will differ from the amplitudes of other standing waves in this space.

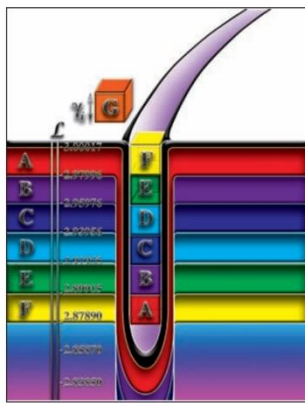
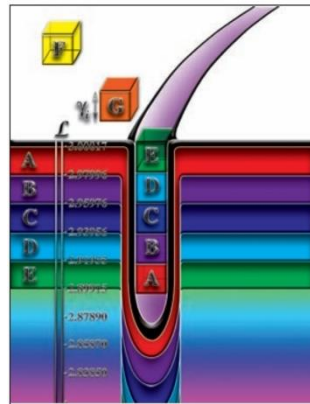


Fig. 3.2.6. If the amplitude of the perturbation of the dimensionality of space that arose during the supernova explosion is proportional to the quantization coefficient, as the value $\Delta L = 6 \gamma_i$, then six primary matter **A, B, C, D, E** and **F** "resonate" with space, and a new quality arises - hybrid matter **ABCDEF**. At the same time, the hybrid form itself affects the space and completely neutralizes the deformation zone of the space in which it originated. The synthesis of hybrid matter **ABCDEF** in the heterogeneity zone of space neutralizes this heterogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of equilibrium. But, at the same time, this state of equilibrium will be different from any other, since the amplitude of a standing wave of dimensionality will differ from the amplitudes of other standing waves in this space.

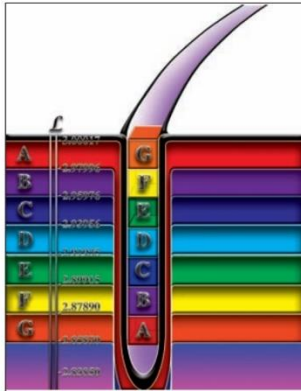


Fig. 3.2.7. If the amplitude of the perturbation of the dimensionality of space that arose during the supernova explosion is proportional to the quantization coefficient, as the value $\Delta L = 7 \gamma_i$, then seven primary matter **A, B, C, D, E, F** and **G** "resonate" with space, and a new quality arises - hybrid matter **ABCDEFGG**. At the same time, the hybrid form itself affects the space and completely neutralizes the deformation zone of the space in which it originated. The synthesis of hybrid matter **ABCDEFGG** in the heterogeneity zone of space neutralizes this heterogeneity, creating, as already noted, a standing wave of dimensionality. Space returns to a state of

equilibrium. But, at the same time, this state of equilibrium will be different from any other, since the amplitude of a standing wave of dimensionality will differ from the amplitudes of other standing waves in this space.

Fig. 3.2.8. If the amplitude of the perturbation of the dimensionality of space, which arose during the supernova explosion, is proportional to the quantization coefficient, as the value $6 \gamma_i < \Delta L < 6.9 \gamma_i$, then the seven primary matter **A, B, C, D, E, F** and **G** cannot "resonate" with space, and a new quality does not arise - hybrid matter **ABCDEFGG**. Under these conditions, only six primary matter can merge and form a hybrid matter **ABCDEF**. Each primary matter has its own specific properties and qualities and cannot interact with others partially with any part of it, but only entirely. How can there be a half of a person or a quarter of a person, since a person is a single living organism, all the cells of which work together, providing the conditions for the vital activity of the organism as a whole. Similarly, primary matter cannot interact with only a part of their own property or quality, but only with a "whole" property or quality. Thus, the quantization of space by primary matter is observed.

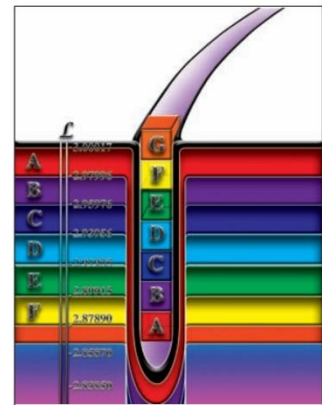
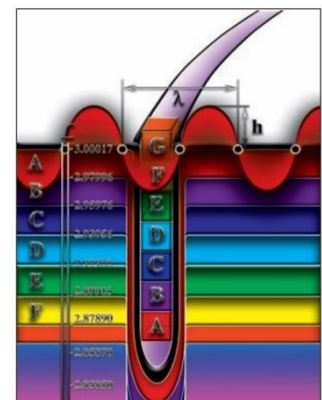


Fig. 3.2.9. In space, there are constantly minor fluctuations in the dimensionality of space, which are relict cosmic radiation, which are echoes of supernova explosions that occurred billions and billions of years ago or radiation from already dying stars. All these radiations create a kind of spatial "background". And therefore, in a situation where the deformation zone of the dimensionality of space lies in the range $6 \gamma_i < \Delta L < 6.9 \gamma_i$, the relict radiation of space, carrying minor fluctuations in the dimensionality of space, act as a "rescue stick".



The overlay (superposition) of the amplitudes of the dimensionality fluctuations that they bring with them on the dimensionality of space at a given point in space, temporarily for some time, will create conditions for the fusion of the seven primary matter.

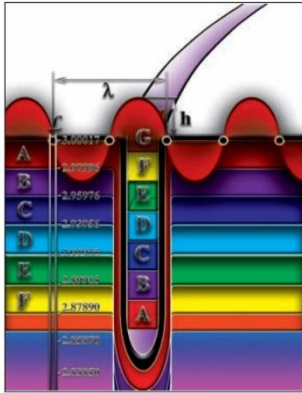


Fig. 3.2.10. After the passage of the wave front through a given point in space, the dimensionality of space returns to the level that was before the arrival of the wave front and the necessary conditions for the synthesis of the seven primary matter disappear, and the hybrid matter **ABCDEFG** decays into primary matter. A new wave front restores the conditions necessary for synthesis, and everything repeats again. Hybrid matter **ABCDEFG** — physically dense matter — is in a state of flickering, which is the boundary state of physically dense matter and is nothing more than the so-called electron. That is why the electron has dual (duality) properties, both

waves and particles. In principle, an electron is neither one nor the other, but is a boundary form of matter.

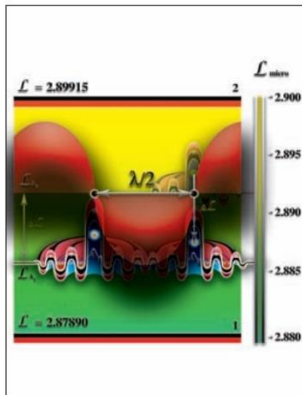


Fig. 3.2.11. When the nucleus of an atom is formed, perturbations of the dimensionality of space arise, similar to those that occur during a supernova explosion, only everything happens at the level of microspace. Ring waves of microspace perturbation dimensionality created by the nucleus of an atom decay rather quickly, and the smaller the nucleus of an atom, the faster this attenuation occurs. But, nevertheless, one or more zones of microspace deformation arise for the fusion of the seven primary matter of **ABCDEFG**. The fusion of the seven primary matter takes place in the form of a borderline form of physically dense matter. At

the same time, standing waves of microspace dimensionality are formed around the core. Due to the fact that microscopic fluctuations in the dimensionality of the microspace are constantly present at the level of the microspace, periodic changes in the level of dimensionality occur in one or another zone of the standing wave of the dimensionality of the atom.

1. The first resolved orbit of an electron.
2. The second resolved orbit of an electron.
3. Electron.

Fig. 3.2.12. Due to the fact that all known radiations exist in the form of portions - photons - the latter, when moving in space, affect only one or another part of the microspace, depending on the wavelength of this photon. The perturbation of dimensionality leads to the fact that the boundary form of matter - the electron - becomes unstable and decays into primary matter. At the same time, a microscopic explosion occurs, all the energy of which is spent on creating a single photon. The electron disappears from this electron orbit and not only from the orbit. This electron simply ceases to exist, "dies". The lifetime of an electron is trillionths of a second. After the "death" of an electron, a "vacancy" appears in its place. The fact is that the presence of an electron creates a standing wave zone in a given electron orbit of an atom. After the "death" of an electron, this zone becomes unstable and active, since the level of its own dimensionality of this zone becomes higher than the level of its own dimensionality of the atom as a whole. The resulting microscopic front of dimensionality creates a "photon trap".

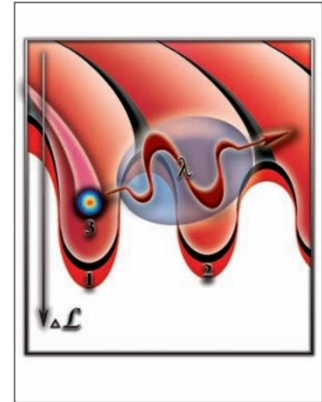
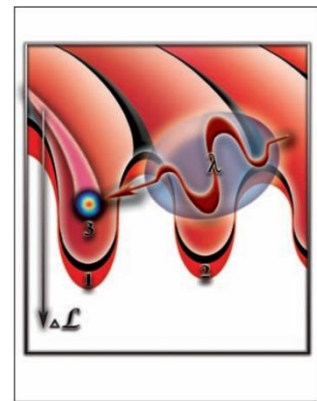


Fig. 3.2.13. Vacant electron zone does not remain free "for a long" time. All space is literally saturated with microscopic fluctuations of dimensionality, which, for the most part, are chaotic radiations of electrons of the whole Universe. One of these photons is absorbed and new electron is born in the same deformation zone - electron orbit. The process of death and birth of the electron happens so fast that the illusion of flickering of the same electron is created. Due to the fact that during the phase of the vacant electron, there is also a radial difference of dimensionality within the inhomogeneity zone, the birth of a new electron does not occur in the same place where the previous electron disappeared. Therefore, each new birth of an electron occurs in a new place. As a result, there is a flickering motion of the electron in orbit around the nucleus.



1. The first resolved orbit of an electron.
2. The second resolved orbit of an electron.
3. Electron.

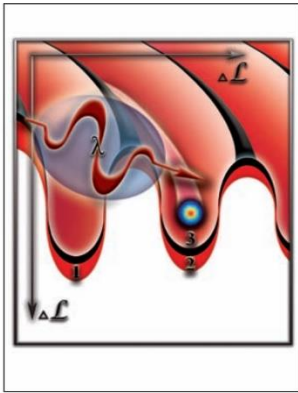


Fig. 3.2.14. The "death" of an electron can occur in one orbit, and a new "birth" — in orbits closer to the nucleus, or more distant. This is a well — known fact in atomic physics. Moreover, the jump can occur only one orbit down or one orbit up. As a result, does the "registration" of the newly born electron change after the decay of the previous one?! What, the yet "unborn electron" "did not like" the " old" place of residence?! Yes, nothing. The fact is that the "registration" of an electron changes only if a dimensional disturbance is superimposed on the structure of the standing waves of an atom, the wavelength of which is commensurate with the

distance between neighboring zones of dimensional deformation around the nucleus, in other words, commensurate with the distance between neighboring orbits, or there is an external difference in dimensionality ΔL . In these cases, the place of the electron's "birth" is carried away by the gravitational wind in one direction or the other, depending on the situation and the direction of the processes taking place.

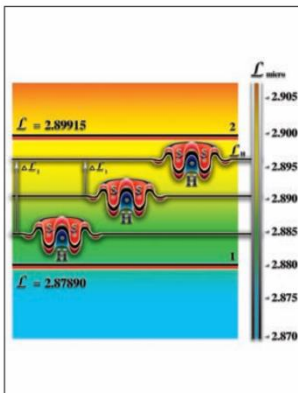
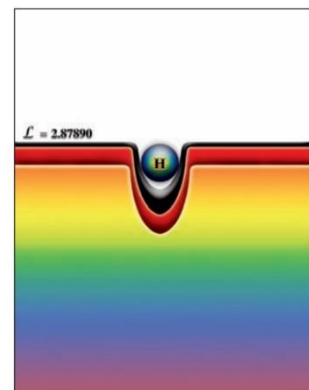


Fig. 3.3.1. The intrinsic level of dimensionality of hydrogen **H** (the degree of influence of an atom or other material object on the surrounding space) is so insignificant that it makes it stable within the entire range of dimensionality between the physically dense and the second material spheres. Hydrogen can be stable, both inside a red-hot star and in interstellar space. Because of this, hydrogen is the most common element in the universe. Almost all the processes taking place in the Universe are not complete without its participation. Hydrogen is the basis not only of the thermonuclear reactions of stars, but also plays a crucial role in ensuring the

possibility of the existence of living matter.

1. The lower level of dimensionality of a physically dense sphere.
2. The upper level of dimensionality of a physically dense sphere.

Fig. 3.3.2. The hydrogen **H** atom is the most stable and most common element in our universe due to the fact that it (hydrogen) has minimal influence on the surrounding space. Due to the fact that minor changes in the dimensionality of space are sufficient for the synthesis of hydrogen from primary matter. That is why hydrogen is the most common element in the universe. At the same time, it should be remembered that each atom, including the hydrogen atom, affects the dimensionality of space, filling the deformation space by its mass.



Therefore, after the synthesis of each atom, the deformation zone of space decreases by a certain amount, proportional to the atomic weight of this atom. Therefore, as the synthesis of physically dense matter with each synthesized atom, the amount of deformation of space decreases, and this process will continue until the deformation zone is completely neutralized due to the resulting synthesis of atoms. At the same time, the synthesis itself stops.

Fig. 3.3.3. The synthesis of atoms, mainly hydrogen, is constantly taking place in the Universe; because of this, synthesis occurs in the zones of closure between this space-the universe and the overlying one. Therefore, the deformation zones of space most often occur closer to the upper limit of the stability of a physically dense substance. And, as a consequence, optimal conditions arise for the synthesis of hydrogen, due to its minimal secondary effect on the surrounding space. Since the heterogeneous zones have huge spatial dimensions, synthesized atoms begin to accumulate in these zones, gradually filling them with themselves. Due to the fact that the heterogeneous zones themselves are inhomogeneous in different spatial directions, there are internal differences (gradients) of dimensionality directed to the center of the inhomogeneity zone. As a result, hydrogen atoms trapped in the inhomogeneity zone fall under the influence of primary matter flows directed to the center of the heterogeneous zone. And, as a consequence, there is a compression of the hydrogen substance, which leads to heating and the beginning of thermonuclear reactions.

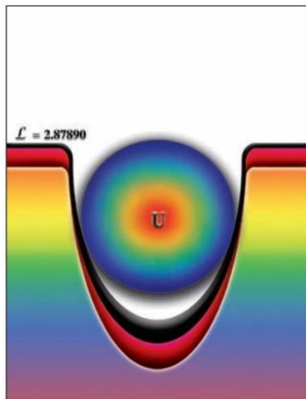
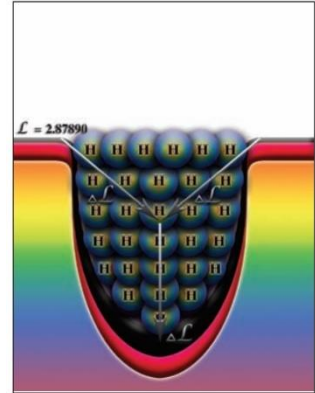


Fig. 3.3.4. For the synthesis of the uranium **U** atom, the deformation zone of space must be the maximum permissible for possible states of physically dense matter. The deformation of space created by the nucleus of a uranium atom is so significant that a single uranium atom almost completely neutralizes the maximum possible difference in dimensionality for physically dense matter. Therefore, uranium and all transuranic elements become unstable and begin to disintegrate into the matter that forms them under normal conditions. Since even the absorption of radiation from the noise background of the Universe is enough for the state of the atom

that has absorbed a photon of this background to become supercritical and it will decay. In the process of decay, the synthesis of atoms stable under these conditions occurs from the released primary matter and a powerful emission of radiation occurs. After that, the system returns to a stable state. The processes and causes leading to a supernova explosion and the processes and causes leading to radioactive decay are identical in nature, having features caused by differences between the macro- and microcosm.

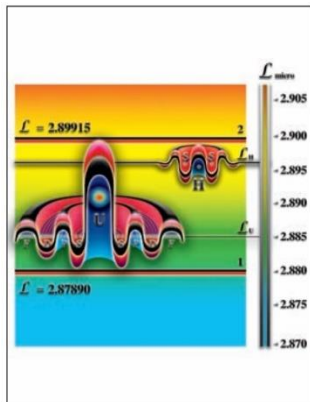


Fig. 3.3.5. Comparison of the degree of influence on the surrounding microcosm (microspace) of the hydrogen **H** atom and the uranium **U** atom. The intrinsic level of dimensionality of uranium **U** allows it to be stable within an insignificant range of dimensionality. That is why uranium and all transuranic elements are radioactive, i.e., unstable, under almost any conditions. While hydrogen and other light elements become unstable only under certain conditions. The lighter the element, the more stable it is, which means that more external influence is needed to cause its instability.

1. The lower level of dimensionality of a physically dense sphere.
2. The upper level of dimensionality of a physically dense sphere.

Fig. 3.3.6. Synthesis of hydrogen atoms can occur within almost the entire range of stability of physically dense matter. The level of hydrogen's intrinsic dimensionality, however, is close to the upper boundary of stability. The float effect comes into effect. The optimal level of dimensionality of hydrogen is close to the upper boundary of the stability range. This is due to the fact that hydrogen is the lightest of the atoms and its own influence on the surrounding space is minimal. And therefore, flows of primary matter, which continue to circulate in the zone of space deformation after completion of the synthesis process, "carry" hydrogen atoms to that level of dimensionality, at which their own influence on the surrounding space balances the influence of flows of primary matter. Analogously, the buoyancy of an object submerged under water is balanced by its weight; as a result, a material object will stop at that depth where both these forces balance each other. At the same time, the object seems to hang at a certain depth. So, any atom will strive for its optimal level.

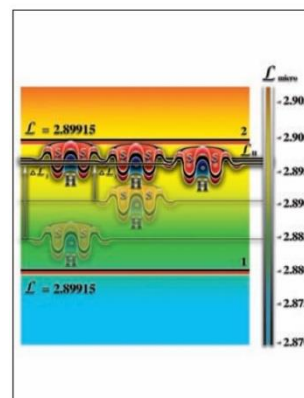
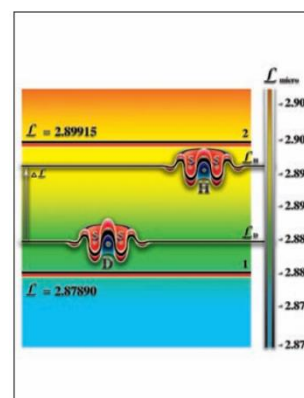


Fig. 3.3.7. Almost all atoms have radioactive isotopes. Radioactive isotopes of hydrogen - deuterium and tritium - have one or two more neutrons in their nuclei than hydrogen itself. Their atomic weight is one or two atomic units different from the atomic weight of hydrogen and, nevertheless, they are radioactive. While the atoms of other elements having exactly the same and even greater atomic weight do not show signs of radioactivity and only their isotopes having an "extra" neutron manifest themselves as radioactive elements. Atoms of very many elements in their stable states have neutrons in their nuclei, sometimes dozens, and, nevertheless, do not become radioactive. Why does the appearance of another neutron, in addition to those already present, make such an atom radioactive?



The thing is that an extra neutron does not change the optimal level of dimensionality of the atom as a whole, but changes the degree of influence of the nucleus of this atom, within the nucleus itself. Therefore, an atom with an "extra" neutron continues to behave like an atom without it and, as a result, becomes radioactive.

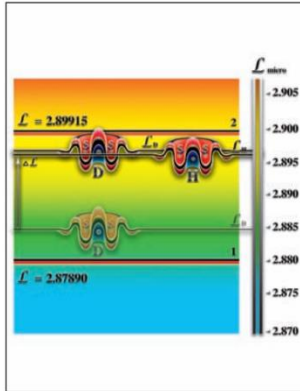


Fig. 3.3.8. The radioactive isotope of hydrogen, deuterium **D**, regardless of where its synthesis took place, rushes to the optimal level of intrinsic dimensionality of ordinary hydrogen **H** and as a result, it turns out to be in conditions close to critical for physically dense matter. Space is constantly saturated with microscopic fluctuations in the dimensionality of space at different levels of its own dimensionality, including at the level of optimal dimensionality of hydrogen. Basically, these microscopic dimensional fluctuations (photons) occur during the transitions of electrons from orbits more distant from the nucleus to orbits closer to the nucleus of the same

hydrogen atoms that "float" at the level of their optimal dimensionality. When these photons are absorbed (superimposed on an atom) by deuterium **D** atoms, the level of intrinsic dimensionality increases and as a result, such an atom turns out to be outside the stability range of a physically dense substance.

1. The lower level of dimensionality of a physically dense sphere (F.P.S.).
2. The upper level of dimensionality of F.P.S.

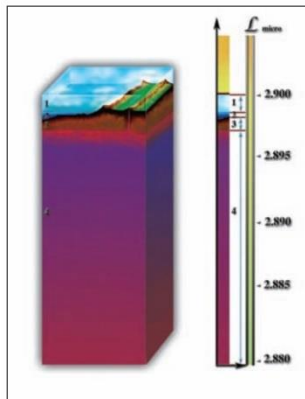


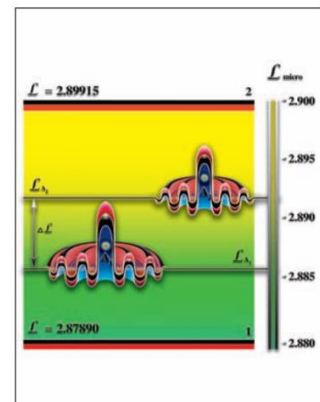
Fig. 3.3.9. Each molecule or atom has its own range of dimensionality, within which they maintain their stability. Therefore, the physically dense matter of the planet is distributed over the stability ranges. The boundaries of these ranges are the levels of separation between the atmosphere, oceans and the solid surface of the planet. The stability boundary of the crystal structure of the planet repeats the shape of heterogeneity, so the surface of the solid crust has depressions and protrusions. The depressions subsequently filled with water and formed oceans, seas, lakes. Water, which is a liquid crystal and has an insignificant level of its own dimensionality,

is stable in the upper part of the range, this is what allows it to accumulate in the depressions of the crust. The atmosphere, smoothly passing into the ionosphere (the plasma boundary state of physically dense matter), occupies the upper boundary section of the dimensionality range of physically dense matter. After the synthesis of a physically dense substance, the atoms acquire some resistance to external changes in the dimensionality of the macrocosm. Therefore, it is only when the amplitude of the external difference of dimensionality becomes commensurate with half the dimensionality range of a physically dense sphere, that atoms become unstable and disintegrate.

Any change that is caused in the overall level of dimensionality of the macrospace, including outbreaks of solar activity, due to the fact that the solar system moves relative to the core of our galaxy, and, as a consequence, falls into areas with other levels of its own dimensionality, due to the heterogeneity of space itself, leads to stresses in the earth's crust. Stresses in the crust lead to its splits, lowering or raising it in different places, the eruption of volcanoes and the appearance of new ones, as a result of changes in the conditions of magma movement, etc. There is a redistribution of physically dense matter inside the inhomogeneous zone of the planet, in accordance with the position of the optimal dimensionality levels for different aggregate states of physically dense matter: solid, liquid, gaseous and plasma.

1. The level of dimensionality of the atmosphere.
2. The level of dimensionality of the oceans.
3. The level of dimensionality of the Earth's crust.
4. The level of dimensionality of magma.

Fig. 3.3.10. Each atom has its own level of dimensionality and if this level coincides with the level of dimensionality of the macrospace where this atom is located, then it will be in a stable state. Otherwise, the atom will become unstable and its decay will occur. Two atoms of different elements A_1 and A_2 have different levels of their own dimensionality due to the fact that they have different atomic weights and, consequently, affect their microspace differently. Therefore, the intrinsic dimensionality levels of two atoms of different elements differ from each other by a certain amount ΔL and therefore cannot form one system under normal conditions.



- A_1 — the nucleus of the first atom.
- A_2 — the nucleus of the second atom.
- L_{A1} — the self-dimensionality level of the first atom.
- L_{A2} — the self-dimensionality level of the second atom.
- ΔL — the difference between the proper dimensionality levels of two different atoms.

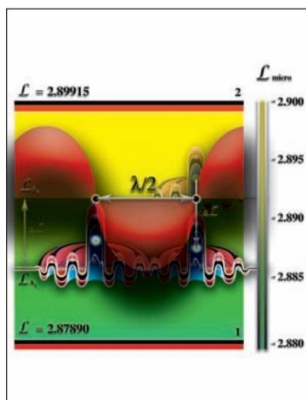


Fig. 3.3.11. The possibility for atoms having different levels of their own dimensionality to form molecules appears when one of them absorbs or emits electromagnetic waves whose wavelength is commensurate with the distance between these atoms. These requirements are met by waves in the range from infrared to ultraviolet, inclusive. When one of the atoms absorbs a wave, its level of intrinsic dimensionality increases by the magnitude of the wave amplitude. When a wave is emitted, the level of its own dimensionality decreases accordingly by the magnitude of the amplitude of the emitted wave. As a result, the proper levels of different A_1 and A_2 atoms are aligned, and they are able to form a new molecule.

The entire spectrum of chemical compounds existing in nature, including organic ones, exists due to a small area - the diazone of so-called electromagnetic waves. Consequently, the appearance of living matter is impossible without these insignificant fluctuations in the dimensionality of microspace - electromagnetic waves from infrared to ultraviolet.

Fig. 3.3.12. Atoms of the same element have the same optimal levels of their own dimensionality. Therefore, if the medium where they are located is not excessively saturated with infrared (thermal) radiation, after a while, these atoms will gather at the level of optimal dimensionality, which creates qualitative conditions for connecting their electronic shells to each other and forming a crystal structure. At the same time, they talk about the temperature of the medium at which crystallization occurs. For atoms of different elements, this temperature has its own, just as after the crystallization process is completed, crystals of different elements will have different levels of their own dimensionality, and there will be a difference in dimensionality between them.

A_1 — the nuclei of the atoms of the first element.

A_2 — the nuclei of the atoms of the second element.

L_1 — the level of dimensionality of the crystal of the first element.

L_2 — the level of dimensionality of the crystal of the second element.

ΔL — the difference between the proper dimensionality levels of two different elements.

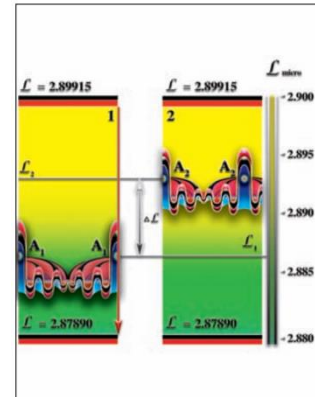
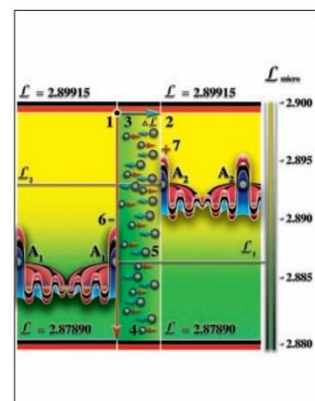


Fig. 3.3.13. Crystal structures of different elements have different levels of their own dimensionality. And if you place these crystal structures at a distance commensurate with the size of the crystals themselves, a dimensional difference (gradient) will occur in the intermediate space from the level of the crystal structure of a larger intrinsic dimension to the level with a smaller one. This difference is not so significant as to cause instability of the atoms forming these crystal structures, however, if a liquid medium saturated with positive and negative ions is placed between them, the difference between the crystal structures will cause free ions to move in different directions. At the same time, positive ions having a higher level of intrinsic dimensionality, under the influence of this difference, will begin to accumulate on the surface of the crystal structure with a higher level of intrinsic dimensionality, while negative ions with a lower level of intrinsic dimensionality, will accumulate on the surface with a lower level of intrinsic dimensionality. An excess of positive ions on one surface suggests a positive charge, while an excess of negative ions indicates a negative charge of surfaces.



The presence of a difference in the levels of intrinsic dimensionality between different crystalline surfaces causes a redistribution of ions saturating the intermediate medium and leads to the appearance of a so-called direct electric current between these surfaces if they are connected to each other by means of a conductor.

1. A crystalline surface with a lower level of intrinsic dimensionality.

2. A crystalline surface with a high level of intrinsic dimensionality.

3. Intermediate liquid medium saturated with ions.

4. Positive ions.

5. Negative ions.

L_1 — the level of dimensionality of the crystal of the first element.

L_2 — the level of dimensionality of the crystal of the second element.

ΔL — the difference between the proper dimensionality levels of two different elements.

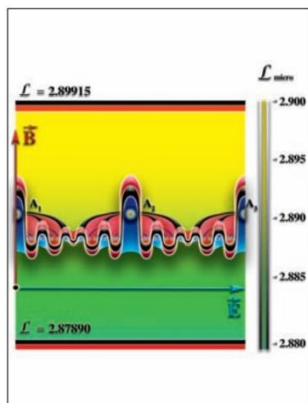
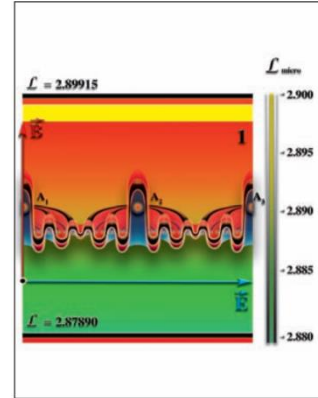


Fig. 3.3.14. The crystal lattice of any solid substance is heterogeneous in different spatial directions. This is the result of the fact that the synthesis of atoms takes place in an inhomogeneous space. Inhomogeneous space, interacting with the heterogeneous structure of atoms, forces them to orient and position themselves in relation to each other in a certain order. Therefore, nearly all crystals are anisotropic, i.e., their properties and qualities are different in different spatial directions. For the same reasons, their reaction to the same external influence will depend on the spatial direction in which this influence occurs. Therefore, the dimensional difference

along the optical axis of the crystal is called the electric **E** field, since it causes electrons to jump from the orbit of one atom to the orbit of another. While the dimensional difference perpendicular to the optical axis of the crystal is called the magnetic **B** field, since it causes atoms or groups of atoms to reorient in space. Although, in both cases there is a difference in the dimensionality of the space ΔL .

Fig. 3.3.15. The constant magnetic \mathbf{B} field is a difference in the dimensionality of space, which is superimposed on the crystal system in the direction perpendicular to the optical axis of the crystal. And if we conditionally take the upper limit of stability of a physically dense substance as "north", and the lower one as "south", then the difference in dimensionality from south to north acts as the north magnetic pole, and the difference in dimensionality from north to south acts as the south magnetic pole. These differences are determined by the heterogeneity of crystals in these directions (topside). The heterogeneity of the properties of crystal lattices is associated with the spatial orientation of the electron orbits. Therefore, the difference in dimensionality from "south to north" facilitates the "transitions" of electrons from orbit to orbit, both inside a single atom and between neighboring atoms of the crystal lattice. While the difference in dimensionality from "north to south" - to a large extent, complicates these transitions.

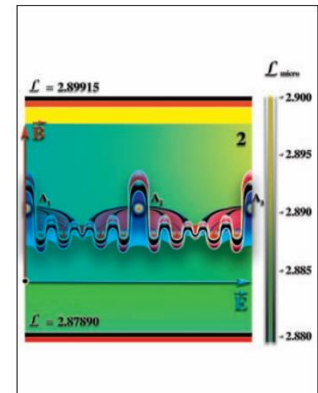


A_1, A_2 — the nuclei of atoms of the crystal structure.

1. Permanent magnetic field.

\mathbf{B} — the difference of dimensionality along the optical axis of the crystal.

Fig. 3.3.16. The constant electric \mathbf{E} field represents a dimensional difference along the optical axis of crystal lattices. The direction of the electric field can be either from "west to east" or from "east to west". In this case, the properties of the electric field will be identical due to the fact that the crystal lattices in these directions are identical. The nature of the electric field is simple. It creates a "gravitational wind". The dimensional difference along the optical axis carries electrons from the electron orbit of one atom to the orbits of another during the phase between electron materializations. Atoms located along the optical axis of the crystal fall under the influence of the dimensional difference of different strengths, resulting in the redistribution of electrons in atoms along the optical axis, which creates the so-called electric current — the directional movement of electrons from plus to minus.



A_1, A_2 — the nuclei of atoms of the crystal structure.

2. A constant electric field.

\mathbf{E} — the difference of dimensionality along the optical axis of the crystal.

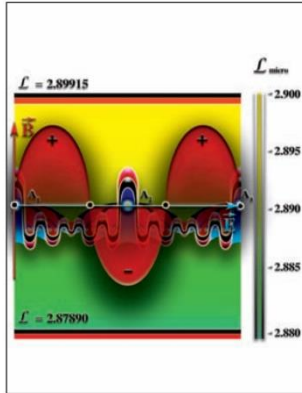


Fig. 3.3.17. The alternating magnetic \mathbf{B} field is a periodic (wave-like) change in the dimensionality of space in the direction perpendicular to the optical axis of the crystal. At the same time, the same atom of the crystal lattice periodically falls under dimensional differences, both in the direction from "south to north" and in the direction from "north to south". As a result, every atom periodically finds itself in different qualitative conditions. As a result, each atom will periodically find itself in conditions when its electrons are either "attached" to their atom more rigidly, or on the contrary are practically "free", depending on which direction the dimensional

difference acts on this segment of the optical axis of the crystal. Naturally, different crystals consisting of atoms of different elements will react to such dimensional differences in different ways due to the fact that they have different nuclei and different numbers of electrons with different electron shells. The weakest electrons are "connected" with their atoms in metals, which are called conductors of electricity.

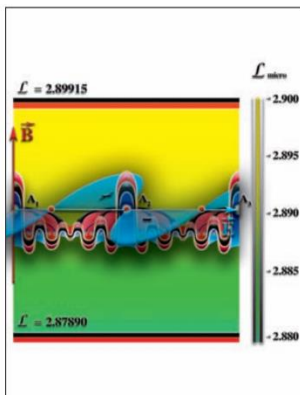


Fig. 3.3.18. The alternating electric \mathbf{E} field is a periodic (wave-like) change in the dimensionality of space along the optical axis of the crystal. At the same time, the same atom of the crystal lattice periodically falls under dimensional differences, both in the direction from "west to east" and in the direction from "east to west". As a result, there is a periodic redistribution of electrons along the optical axis, both in one direction and in the other. There is an alternating electric current. The same atom falls under opposite dimensional differences along the optical axis of the crystal lattice. At the same time, each atom loses electrons, then receives them from

neighboring atoms. At the same time, by adjusting the amplitude and frequency, new qualitative states of physical matter can be obtained due to the short-term transition of an atom or group of atoms to dimensional levels above or below the optimal for this element. Such transitions provoke the emission or absorption of photons by these atoms, to which these atoms do not react in their normal state.

Fig. 3.3.19. If we recall that the alternating magnetic \mathbf{B} field represents a dimensional difference perpendicular to the optical axis in the directions "from north to south" and from "south to north", then the result of such periodic action on the spatially heterogeneous structure of a physically dense substance is the loss or acquisition of additional electrons by an atom or a group of atoms along the optical axis of the crystal lattice. The periodic loss or acquisition of electrons by atoms is nothing more than an alternating electric current. Thus, an alternating magnetic field generates an alternating electric field and vice versa. At the same time, the "birth" of the electric field occurs with a certain delay, with the so-called phase shift, which creates conditions for the possibility of propagation of electromagnetic waves in space. Magnetic and electric fields, both constant and variable, are the result of the effect on a spatially inhomogeneous physically dense substance of the same dimensionality difference in different directions.

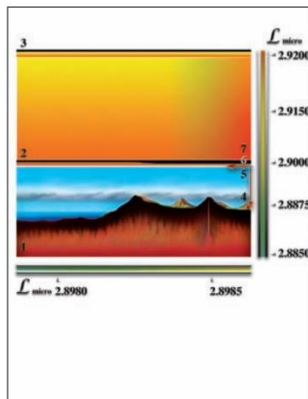
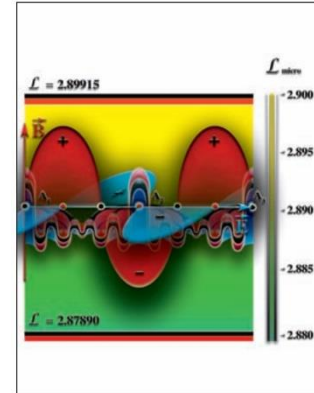


Fig. 4.2.1. When atoms absorb waves, their level of dimensionality increases. Sunlight is absorbed by the planet's surface. Each atom, after absorbing a photon of light, is in an excited state for some time (its own dimensionality level becomes higher than the dimensionality levels of neighboring atoms forming a crystal lattice), after which it emits a wave. An atom absorbs one wave and emits another. This happens because part of the energy of the absorbed wave is lost. As a result, the "heated surface" during a sunny day begins to emit waves, mainly thermal waves. The heat waves emitted by the heated surface begin to be absorbed by the molecules of the atmosphere. At the same time, the level of intrinsic dimensionality of the atoms of the atmosphere above the heated surface increases. And, as a result, the overall level of its own dimensionality of the atmosphere above the heated surface increases, while the intrinsic level of dimensionality of the atmosphere above the unlit surface decreases. A decrease in the intrinsic dimensionality of the atmosphere over the unlit (night) surface of the planet or partially illuminated occurs due to the fact that the atoms of the atmosphere also emit waves and this leads to a decrease in the intrinsic dimensionality of the emitting molecules. As a result, a horizontal difference (gradient) of dimensionality occurs between the illuminated and unlit surfaces of the planet. Therefore, the molecules of the atmosphere, which are not bound into a rigid system, begin to move along this horizontal dimensional difference, which is the reason for the movement of the layers of the atmosphere — the wind.

1. The surface layer of a planet with an atmosphere.
2. A qualitative barrier between the physically dense and the second material spheres.
3. A qualitative barrier between the second and third material spheres.
4. Vertical difference of dimensionality within the heterogeneity.

5. The longitudinal (horizontal) dimensional difference that occurs between the illuminated and unlit surfaces of the planet.

6. Increasing the quality barrier over the illuminated surface.

7. The accumulation of primary matter on the border between the physically dense and second material spheres above the illuminated surface.

Fig. 4.3.1. The spatial structure of a diamond, in the crystal of which carbon **C** atoms are located at the same distance from each other. The distance between carbon atoms in a diamond crystal is commensurate with the size of the carbon atoms themselves.

Therefore, no other atoms and molecules, not only larger than a carbon atom, but also smaller, are able to move between them. It is only possible to replace some carbon atoms with others, which leads to the fact that a transparent diamond crystal acquires a color. For this reason, a person has the opportunity to admire the beauty of yellow, blue, red and black diamonds, which, processed by a human hand, turn into stones of amazing beauty... In addition, such a crystal lattice makes diamonds the most durable compound of atoms in nature, and this makes it indispensable in engineering.

a. The distance between carbon **C** atoms in a diamond crystal.

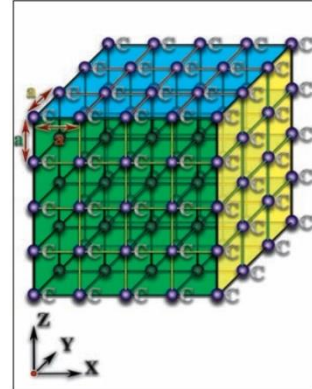
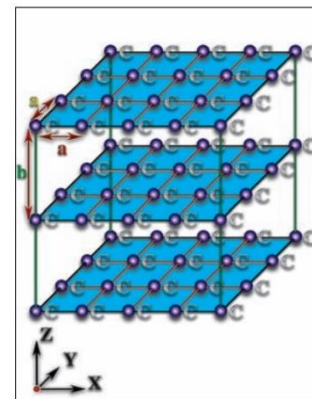


Fig. 4.3.2. The spatial structure of graphite, in the crystal of which the carbon atoms are located at the same distance in the horizontal plane, while the distance between the layers in the vertical plane is much greater than the distance between the carbon atoms in the horizontal. Such a seemingly insignificant difference in the spatial arrangement of carbon atoms makes these crystals very soft. This spatial organization of carbon atoms is called graphite and is very widely used in industry and in everyday life (pencil lead, electronics, etc.). The same carbon atoms that they create the strongest compound in nature — diamond, and create the softest of natural crystalline compounds — graphite. A seemingly insignificant change in the spatial structure of the compound of carbon atoms turns the strongest compound of atoms in nature into the softest. The reason for this difference in the properties of these carbon **C** compounds lies in the different external conditions under which they are formed.



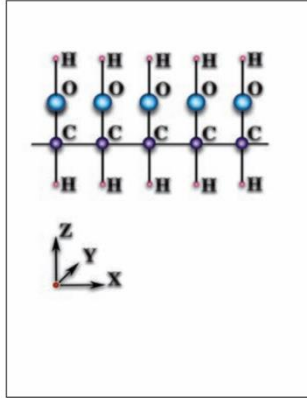


Fig. 4.3.3. Spatial structure of the carbon chain. Connecting in chains, carbon **C** atoms can create molecules in hundreds of thousands, millions of atomic units. At the same time, such molecules unevenly affect the surrounding microcosm, creating an anisotropic microcosmic structure around them. The ability to create similar compounds with carbon atoms is determined by the fact that it is tetravalent. It is this property of the electronic shells of carbon atoms that creates a spectrum of qualities, thanks to which the appearance of life became possible. The so-called external electrons of carbon atoms are capable of creating connections with the external electrons of other atoms in directions perpendicular to each other. It is this property that allows carbon **C** atoms to create various spatial compounds.

C — carbon atoms.

H — hydrogen atoms.

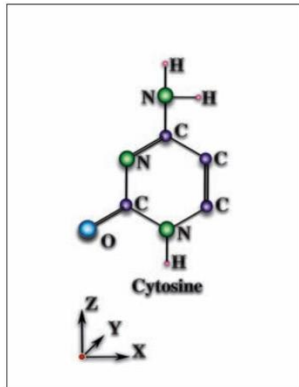


Fig. 4.3.4. Spatial structure of cytosine, one of the four nucleotides structurally forming **DNA** and **RNA** molecules. Connecting with each other, nucleotides form spirals of **DNA** and **RNA** molecules, which are the foundation of life. The miracle of life is born as a consequence of a qualitatively different spatial connection of carbon atoms with each other. A similar spatial structure of the compound of carbon atoms is formed in an aqueous medium during atmospheric discharges of electricity. Three types of compounds of carbon atoms together give rise to three types of spatial organization of matter — the isotropic structure of diamond, isotropic in two spatial directions and anisotropic in one, the structure of graphite and, finally, anisotropic in all spatial directions, the structure of **DNA** and **RNA** molecules. Thus, the anisotropy of matter is the foundation of life.

C — carbon atoms.

H — hydrogen atoms.

O — oxygen atoms.

N — nitrogen atoms.

Fig. 4.3.5. The spatial structure of the segment of the **RNA** molecule, which is a sequential connection in a chain of nucleotides - guanine, adenine, thymine and cytosine. The molecular weight of this molecule is hundreds of thousands, millions of atomic units and is distributed disproportionately in different spatial directions, which is a unique property of this molecule. Spatial anisotropy of **DNA** and **RNA** molecules is a necessary condition for the origin of life. It is the spatial heterogeneity at the level of the microcosm that creates the necessary and sufficient conditions for the appearance of living matter. Inanimate matter is characterized by the presence of an isotropic, symmetrical spatial organization of matter. Spatial and qualitative asymmetry are necessary conditions for living matter. Isn't it a curious paradox of nature? Asymmetry is a living matter. Spatial heterogeneity is not only the cause of the birth of stars and "black holes" in the universe, but also the cause of the miracle of nature — life.

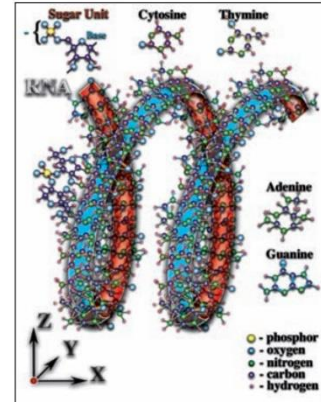


Fig. 4.3.6. Spatial view from the end of **RNA** and **DNA** molecules. The spirals of these molecules create a tunnel in the microspace, the inner volume of which has a radial difference in dimensionality. An anisotropic microspace structure is created inside the spirals of **RNA** and **DNA** molecules. There is a kind of sucking funnel for all the molecules that, when moving inside the cell, fall into a "dangerous" proximity to **DNA** and **RNA** molecules. Isn't it a curious analogy with a "black hole" that sucks into itself any matter that gets into its "territory" — a region of space within which excessive attraction acts? Both in the case of **DNA** and **RNA** molecules, and in the case of "black holes", matter is sucked in as a result of the presence of a certain constant difference in dimensionality in the area of the location of these material objects. The difference is only in the magnitude of this difference in dimensionality and in the fact that in the case of **DNA** and **RNA** molecules, processes take place at the level of microspace, and in the case of "black holes" — macrospace.

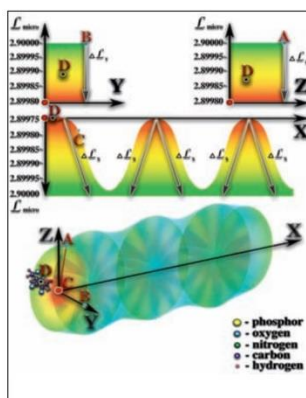
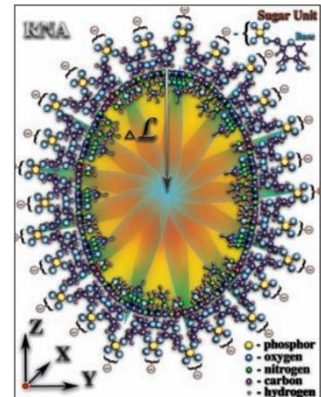


Fig. 4.3.7. The spiral spatial shape of **RNA** and **DNA** molecules ensures the creation of an anisotropic microspace in the internal volume of these molecules. Radial and longitudinal dimensional differences, overlapping each other in the inner volume of the spirals of **RNA** and **DNA** molecules creates a longitudinal standing wave of the dimensional difference. Such a spatial structure creates a trap for all other molecules, of both organic and inorganic origin. As a result of the Brownian motion of molecules inside the cell, they end up near the **RNA** or **DNA** molecule.

The radial difference in the level of dimensionality inside the spirals of these molecules causes the molecules trapped in the inner volume of the spirals to move along the so-called optical axis of **DNA** and **RNA** molecules. During their movement in the internal volume of the spirals of **DNA** or **RNA** molecules, the "captive" molecules fall under the influence of differences in the levels of dimensionality.

1. Anisotropic internal volume of the **RNA** and **DNA** helix.
2. The difference (gradient) of the dimensionality of the microspace along the **Y** axis.
3. The difference (gradient) of the dimensionality of the microspace along the **Z** axis.
4. The standing wave of the dimensional difference of the microspace of the internal volume of the spirals of **RNA** and **DNA** molecules along the **X** axis coinciding with the axis of these molecules.
5. Captive external molecule **D**.

Fig. 4.3.8. **RNA** and **DNA** molecules trapped in the inner volume of the helices, under the influence of a radial difference in dimensionality, are forced to move along the axis of the spiral. During its movement along the axis, the captive molecule falls under the longitudinal dimensional differences of the microspace created by the standing wave of dimensionality. For most captive molecules, this difference is beyond their limit and leads to the disintegration of these molecules into the primary matter that forms them.

1. Anisotropic internal volume of the **RNA** and **DNA** spiral.
2. The difference (gradient) of the dimensionality of the microspace along the **Y** axis.
3. The difference (gradient) of the dimensionality of the microspace along the **Z** axis.
4. The standing wave of the dimensional difference of the microspace of the internal volume of the spirals of **RNA** and **DNA** molecules along the **X** axis coinciding with the axis of these molecules.
5. Captive external molecule **D**.

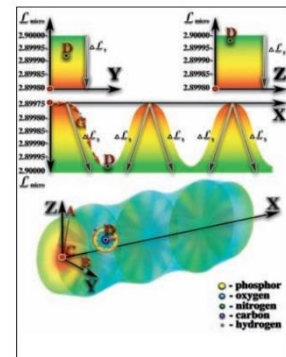
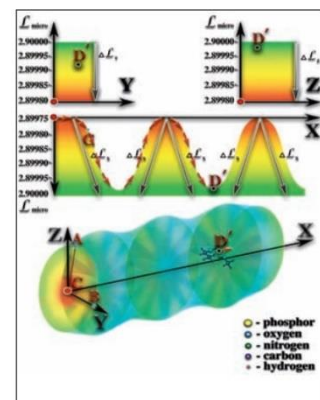


Fig. 4.3.9. Under the influence of longitudinal dimensional differences along the axis of the spiral, the molecule is in an unstable state and, when the swing reaches a critical value, this molecule **D** decays into the primary matter that forms it. At the same time, **D'** molecules are synthesized with such a level of their own dimensionality, at which these molecules retain their stability under the influence of longitudinal dimensional differences of the standing wave of the spiral of the **RNA** and **DNA** molecule. These molecules, newly synthesized from primary substances, resistant to such changes, are toxins, slags and must be removed from the body. Thus, nuclear decay and synthesis reactions take place in the inner volume of **DNA** and **RNA** molecule helices.



But these are nuclear reactions of a different type, when external molecules that have fallen into the "trap" of the spirals of **RNA** or **DNA** molecules undergo decay. However, nevertheless, the fact remains that nuclear reactions of splitting and synthesis of molecules occur in living matter. And there is no contradiction in this; in living matter, nuclear reactions occur only inside the spirals of **DNA** and **RNA** molecules, in a microscopic volume, no matter how large these molecules are. And at the same time, there is no chain reaction, as in the case of classical nuclear reactions.

1. Anisotropic internal volume of the **RNA** and **DNA** spiral.
2. The difference (gradient) of the dimensionality of the microspace along the **Y** axis.
3. The difference (gradient) of the dimensionality of the microspace along the **Z** axis.
4. The standing wave of the dimensional difference of the microspace of the internal volume of the spirals of **RNA** and **DNA** molecules along the **X** axis coinciding with the axis of these molecules.
5. Captive external molecule **D**.

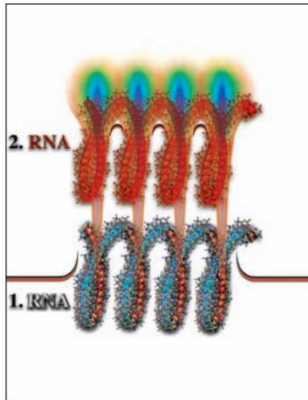
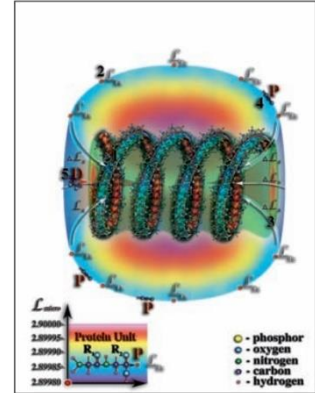


Fig. 4.3.10. Formation of a copy of the **RNA** and **DNA** molecule at the second material level of the so-called second material body. This body is created from primary matter **G**. The qualitative difference between the physically dense and the second material spheres consists in the absence of primary matter **G** at the second material level, and when the qualitative barrier between the physically dense and the second material spheres disappears in the zone of influence of the spirals of **RNA** or **DNA** molecules, the qualitative balance of primary matter is restored. The second material body is formed from the primary matter, which is released when the

molecules split into matter, forming them in the inner volume of the spirals of **DNA** and **RNA** molecules. Microscopic "black holes" living in cells provide an incessant flow of released primary matter to the second material level, which ensures the constant feeding of the second material bodies with primary matter **G**, their stability.

1. Physically dense **RNA** molecule.
2. The second material body of the **RNA** molecule.

Fig. 4.3.11. **RNA** and **DNA** molecules create not only a standing wave of dimensionality in the internal volume, but also create a difference in the dimensionality of the microspace around them. As a result, layers having identical levels of dimensionality are formed around the spirals of these molecules. The influence of the spirals of these molecules on the outer space is significantly less than the influence on the dimensionality of the microspace of the inner volume spirals of **RNA** or **DNA** molecules. Nevertheless, at the microspace level, the spirals of these molecules act as the centers of deformation of the microspace. **DNA** and **RNA** molecules have dual properties at the microcosm level. These molecules are at the same time analogs of "black holes" and stellar systems at the level of microspace. The internal volume of **RNA** and **DNA** molecules exhibits properties similar to the "black hole" of macrospace, while the external volume of these molecules exhibits properties similar to a star. All other molecules, falling into the field of attraction of these "stars" — "black holes" of microspace, are either drawn into the inner volume of the spirals of **RNA** or **DNA** molecules, where they disintegrate into the primary matter forming them, or settle at the levels of identical dimensionality that arise around these molecules. The primary structures of the protein molecule, falling into the field of attraction of the spirals of **RNA** or **DNA** molecules, begin to settle at the level of the identical dimension L_{Pr} .



1. A physically dense **DNA** or **RNA** molecule.
 2. Protein shell.
 3. The difference in the dimensionality of the microspace created by the internal volume of a **DNA** or **RNA** molecule.
 4. Primary structures of protein molecules.
- P** — protein amino acids.
R₂ — free radicals of protein amino acids.
L_{Pr} — the level of identical dimensionality of the primary structure of the protein molecule.

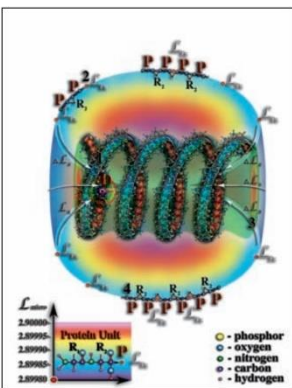


Fig. 4.3.12. Over time, the primary structures of protein molecules captured by the field of attraction of **RNA** and **DNA** molecules become more and more numerous. Located close to each other, the primary structures of the protein molecule, through hydrogen bonds and various bonds between the amino acid radicals that form the primary structures of proteins, begin to create a secondary protein structure. In contrast to the free synthesis of protein from the primary structures of protein, the connection of the latter does not occur arbitrarily. Held by the field of attraction of the spiral of the **RNA** or **DNA** molecule, the primary structures of the protein are forced to connect along the level of identical dimensionality.

As a result, at the level of identical L_{Pr} dimensionality, a protein envelope begins to form around the helix of a **DNA** or **RNA** molecule. The level of identical dimensionality around the spirals of **RNA** and **DNA** molecules acts as an organizing field, forcing the primary protein structures captured by the "gravitational field" of the spiral to connect in a certain order, as, for example, magnetic field lines force metal grains to be located along the contours of these lines of force, which, in essence, are levels of identical dimensionality created by a magnet around itself.

1. A physically dense **DNA** or **RNA** molecule.
2. Protein shell.
3. The difference in the dimensionality of the microspace created by the internal volume of a **DNA** or **RNA** molecule.

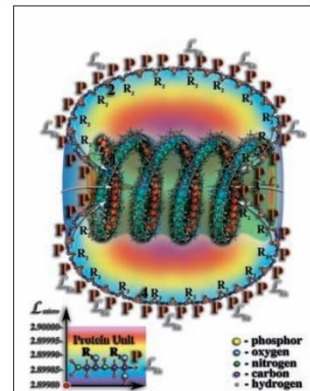
4. Primary structures of protein molecules.

P — protein amino acids.

R₂ — free radicals of protein amino acids.

L_{Pr} — the level of identical dimensionality of the primary structure of the protein molecule.

Fig. 4.3.13. Gradually, more and more primary structures of proteins are captured by the "gravitational field" of the helix of the **DNA** or **RNA** molecule and are forced to connect to each other at the level of identical dimensionality. The size of the protein layer around the helix of the **DNA** or **RNA** molecule gradually grows, and there comes a moment when the protein field completely surrounds the helix of the **RNA** or **DNA** molecule. This is how the protein shell of viruses appears. The appearance of the protein envelope of the virus was the beginning of a new era of the evolution of matter — the origin of life. The protein shell has created conditions in its internal volume that differ significantly from conditions outside its limits. It contributed to the retention of organic and inorganic molecules inside itself, which penetrated through this protein network. The protein shell of the virus seemed to filter the water of the primary ocean, collecting organic and inorganic molecules dissolved in this water in its internal volume. Such seawater filtration allowed organic molecules to accumulate in the immediate vicinity of the helix of the **DNA** and **RNA** molecule. And, when the concentration of organic molecules reached a critical level, conditions arose for the duplication of **DNA** and **RNA** molecules and the protein envelope. As a result of this process, an exact copy of the virus appeared. From this moment on, we can talk about the origin of life.



1. A physically dense **DNA** or **RNA** molecule.
2. Protein shell.
3. The difference in the dimensionality of the microspace created by the internal volume of a **DNA** or **RNA** molecule.
4. Primary structures of protein molecules.

P — protein amino acids.

R₂ — free radicals of protein amino acids.

L_{Pr} — the level of identical dimensionality of the primary structure of the protein molecule.

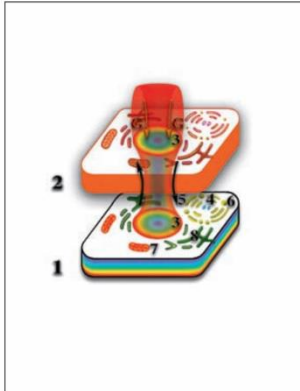


Fig. 4.3.14. The cell and its second material body. Each molecule bends the microspace around itself, therefore, a living cell formed from organic and inorganic molecules creates a deformation on the second material level that completely repeats the appearance of the cell itself. However, this deformation would remain unfilled if it were not for the presence of **DNA** and **RNA** molecules in the cell, which not only open a qualitative barrier between the physical and the second material levels, but also create conditions for the splitting of molecules into primary substances that form them in their internal volume spirals.

1. Physically dense cell.
2. The second material body of the cell.
3. The cell nucleus.
4. Centriole.
5. The energy channel between the physically dense cell and the second material body.
6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic network.

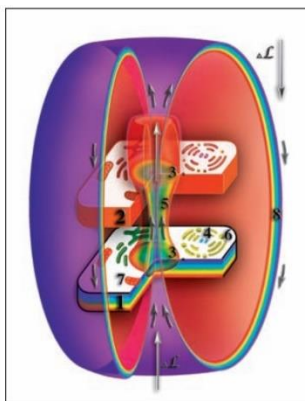


Fig. 4.3.15. In the cell nucleus, the process of splitting molecules into primary substances that form them takes place. The primary matter released in this case begin to circulate through the channel existing between the physically dense and the second material bodies. As they move from the physically dense to the second material level, the ascending streams of primary matter unfold and begin to move in the direction of the dimensional difference. Around the physically dense cell and its second material body, the circulating primary matter create an insulating shell.

1. Physically dense cell.
2. The second material body of the cell.
3. The cell nucleus.
4. Centriole.
5. The energy channel between the physically dense cell and the second material body.
6. Golgi apparatus.
7. Mitochondria.
8. Insulating-protective shell.

Fig. 4.3.16. A physically dense cell with the second and third bodies. The second material body of the cell differs from the third in its qualitative structure. The third material body is formed by the fusion of two primary matter **G** and **F**, and the second by one primary matter **G**. Together they form a single system — the next stage of the evolution of living matter. The appearance of the cells of the third material body led to significantly greater stability, resilience and a higher degree of adaptability to changing environmental conditions.



1. Physically dense cell body.
2. The second material body of the cell.
3. The cell nucleus.
5. The energy channel between the physically dense cell, the second and third material bodies.

6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic network.
9. Centriole.
10. The cell nucleus.

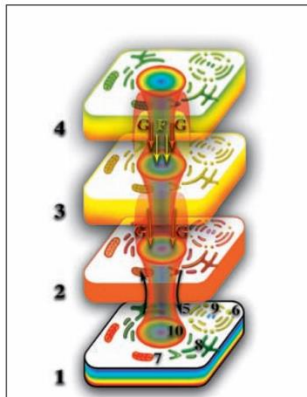


Fig. 4.3.17. A physically dense cell with the second, third and fourth material bodies. The fourth material body is formed by the fusion of three primary matter **G**, **F** and **E**, the third material body is formed by the fusion of two primary matters **G** and **F**, and the second material body is formed by one primary matter **G**. The presence of the fourth material body is the next qualitative leap in the development of living matter, an opportunity for the development of consciousness at a qualitatively different evolutionary level.

1. Physically dense cell body.
2. The second material body of the cell.
3. The third material cell.
4. The fourth material body of the cell.
5. The energy channel between the physically dense cell, the second, third and fourth bodies.

6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic network.
9. Centriole.
10. The cell nucleus.

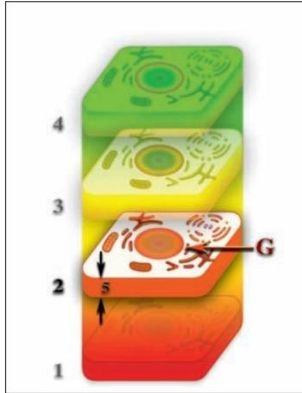


Fig. 4.3.18. If a cell has a physically dense body and a second material body (the original cell), then, after the destruction or death of a physically dense body, the second material body does not disappear. The streams of primary matter **G**, permeating the entire space of the planet, saturate the second material body. As a result, the second material body retains its integrity even after the loss of the physically dense body that created it. Naturally, saturation of the second material body is significantly different from saturation through a physically dense body, but nevertheless, it turns out to be sufficient to preserve the integrity of the second material body. At

the same time, the second material body turns out to be "frozen" and this state will persist until the physically dense body is restored.

2. The second material body of the cell.

5. The thickness of the second material body of the cell.

G — primary matter permeating space and saturating the second material body.

Fig. 4.3.19. If a cell has a physically dense body and a second and third material body, then after the destruction or death of a physically dense body, the second and third material bodies do not disappear. The streams of primary matter **G** and **F**, permeating the entire space of the planet, saturate both the second and third material bodies. As a result, both the second and third material bodies retain their integrity even after the loss of the physically dense body that created them. Naturally, saturation of the second and third material bodies differ significantly from their saturation through a physically dense body, but nevertheless, it turns out to be sufficient to preserve their integrity.

2. The second material body of the cell.

3. The third material cell.

5. The thickness of the second material body of the cell.

G and **F** — the primary matter permeating space and saturating the second and third material bodies.

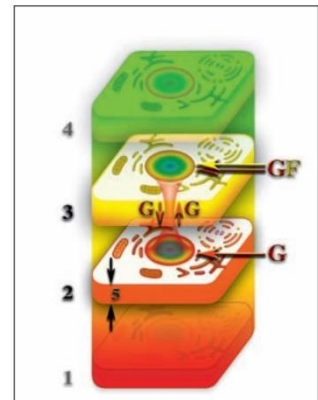
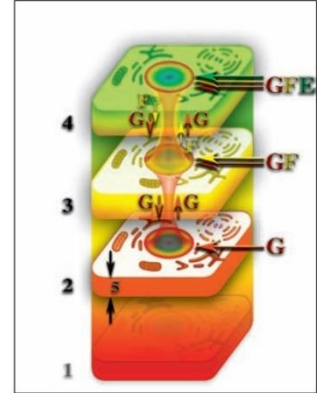


Fig. 4.3.20. If a cell has a physically dense body and a second, third and fourth material body, then after the destruction or death of a physically dense body, the second, third and fourth material bodies do not disappear. The streams of primary matter **G**, **F** and **E**, permeating the entire space of the planet, saturate the second, third and fourth material bodies. As a result, the second, third and fourth material bodies retain their integrity even after the loss of a physically dense body. At the same time, the saturation of these bodies with these primary matter will differ from their saturation through a physically dense body.



2. The second material body of the cell.
3. The third material cell.
4. The fourth material body of the cell.
5. The thickness of the second material body of the cell.

G, **F** and **E** — the primary matter permeating space and saturating the second and third material bodies.

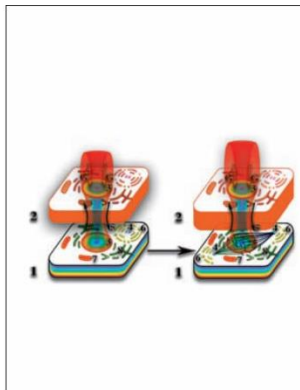


Fig. 4.3.21. The first phase of cell division. When the concentration of organic substances that have arisen in the cell as a result of photosynthesis or absorbed by the cell from the external environment becomes critical, it loses its stability, and the process of division begins. The centrioles of the cell diverge along the opposite poles of the cell and become centers around which the process of division takes place.

1. Physically dense cell.
2. The second material body of the cell.
3. The cell nucleus.
4. Cellular centrioles.
5. The channel through which matter circulates.
6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic network.
9. The chromosomes of the nucleus.

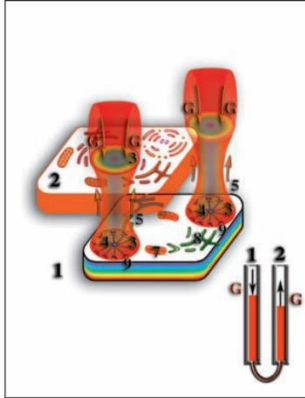


Fig. 4.3.22. Protein strands pull chromosomes from the old cell nucleus to the centrioles, and this is the beginning of the formation of two new cells. At the beginning, the new nuclei contain a half set of necessary chromosomes, so the two channels they create are practically equivalent to the channel of the nucleus before the division begins. The dimensionality of the microcosm of the cell is almost unchanged and the balance of flows between the physical and the second material levels of the cell is maintained.

1. Physically dense cell.
2. The second material body of the cell.

3. The cell nucleus.
4. Cellular centrioles.
5. The channel through which matter circulates.
6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic network.
9. The chromosomes of the nucleus.

Fig. 4.3.23. Each chromosome in such nuclei begins to recreate its mirror double from the organic substances accumulated in the cell, which is the natural aspiration of any system to a state of maximum stability. At the end of this process, two nuclei are formed inside one cell, each of which has a channel through which matter flows to the second material level.

1. Physically dense cell.
2. The second material body of the cell.
3. The cell nucleus.
4. Cellular centrioles.
5. The channel through which matter circulates.
6. Golgi apparatus.
7. Mitochondria.
8. Endoplasmic network.
9. The chromosomes of the nucleus.

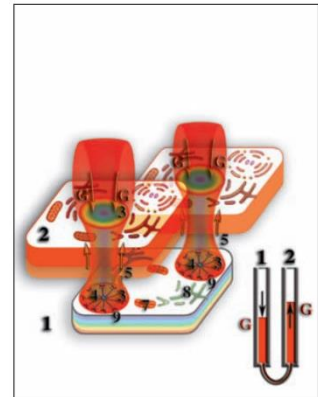
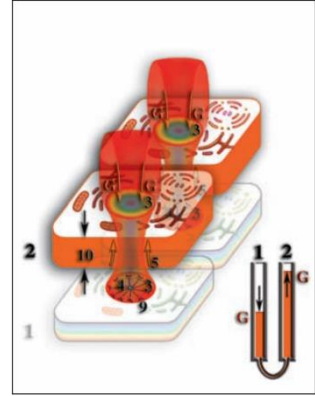


Fig. 4.3.24. During the disintegration of a physically dense cell, a second material body of the cell is formed. Moreover, the concentration of matter **G** in the second material bodies of the cell is several times higher than the balance ratio for the second material level. Excessive saturation occurs due to the fact that during the decay of the old cell, primary matter **G** flows many times more through nuclear channels to the level of the second material bodies than under normal conditions, while the loss of primary matter **G** by the second material bodies remains the same. And, as a result, there is excessive saturation.



1. Physically dense cell.
2. The second material body of the cell.
3. Cell nuclei.
5. Channels of cell nuclei.
10. The "thickness" of the second material body.

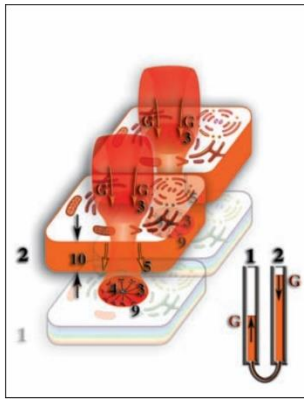


Fig. 4.3.25. After the completion of the decay of the old physically dense cell, on the second material level remains two second material bodies that are supersaturated with primary matter **G**. Excessive saturation significantly exceeds the optimal one.

Therefore, when the flow of primary matter from the physically dense level stops, the excess of primary matter **G** begins to flow from the second material level to the physical one. Moreover, the flow to the physically dense level occurs through the same channels through which it flowed to the second material level. It should be noted that there is a certain time interval between the moment of complete destruction of the old physically dense cell and the occurrence of the reverse flow of primary matter **G**.

1. Physically dense cell.
2. The second material body of the cell.
3. Cell nuclei.
5. Channels of cell nuclei.
10. The "thickness" of the second material body.

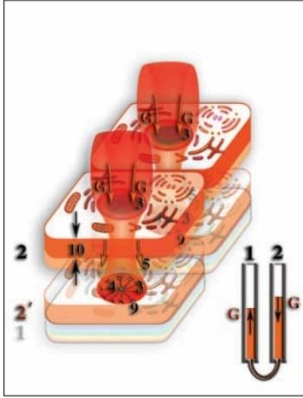
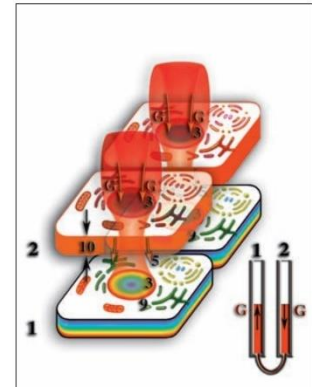


Fig. 4.3.26. The reverse flow of primary matter **G** from the second material level to the physically dense one creates projections of two second material bodies at the physically dense level. These projections continue to be saturated with primary matter **G** until the density of these projections at the physically dense level becomes commensurate with the density of the second material bodies themselves at the second material level. It can be said that as a result of this process, two second material bodies are formed at the physically dense level.

1. Physically dense cell.
2. The second material body of the cell.
- 2'. Projection of the second material body of the cell at the physically dense level.
3. Cell nuclei.
5. Channels of cell nuclei.
9. The chromosomes of the nucleus.
10. The "thickness" of the second material body.

Fig. 4.3.27. Two new physically dense cells, which are exact copies of the cell before division, are synthesized using two matrices of the second material bodies at the physically dense level. The matrices (projections) of the second material bodies force, by creating appropriate dimensionality gradients on the physically dense level, the molecules on the physically dense level to join together in the same order as they were joined in the old cell. The newly assembled molecules, for the same reasons, form cellular inclusions, a membrane and, eventually, two new cells appear in place of the old cell, which are not an absolute copy of the old cell, although they are very close to it.



1. Physically dense cell.
2. The second material body of the cell.
- 2'. Projection of the second material body of the cell at the physically dense level.
3. Cell nuclei.
5. Channels of cell nuclei.
10. The "thickness" of the second material body.

Fig. 4.3.28. After completing the process of forming two new physically dense cells in the image and likeness of the old one, the membranes of the new cells create a dimensional difference directed into the new cells. This difference occurs as a result of the difference in the concentration of organic and inorganic molecules inside and outside these cells. Differences in concentration arise due to the fact that cell membranes have selective permeability to molecules. As a result, there is a difference in the concentration of molecules. The dimensional difference directed inside the cells forces all the molecules that fall within the limits of this difference to move inside the cells, where they, in turn, split into the primary substances that form them when they get inside the spirals of **DNA** and **RNA** molecules. The primary matter released as a result of this process begin to saturate the second material bodies at the second material level. Newborn cells "come to life". The death of an old cell causes the birth of two new cells, and life continues, and the number of living cells doubles.

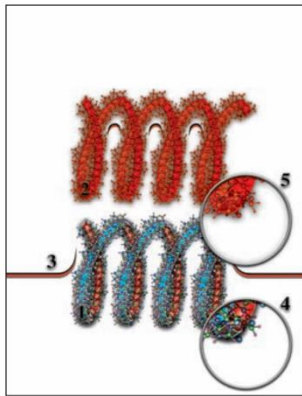
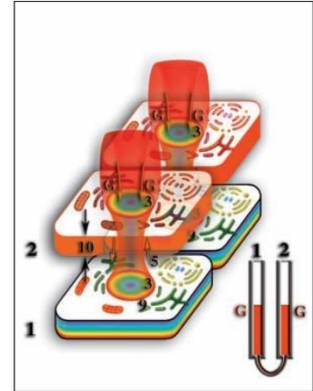


Fig. 4.3.29. At the second material level the spirals of **DNA** and **RNA** molecules create their exact copy from the primary matter of **G**. This is due to the fact that these molecules, having a huge molecular weight, have a spiral shape. The spiral form creates conditions when the influence of each atom that is part of these molecules on the microspace creates such a level of dimensionality in the internal volume of these spirals, at which a qualitative barrier opens between the physically dense and the second material levels. At the same time, the decay of these molecules occurs. Only the molecules that fall inside the spirals disintegrate.

1. The helix of a **DNA** or **RNA** molecule at a physically dense level.
2. The second material body of the **DNA** and **RNA** molecule.
3. A qualitative barrier between the physical and the second material levels of the planet.
4. An enlarged section of the spiral at the physical level.
5. An enlarged corresponding section of the spiral at the second material level.

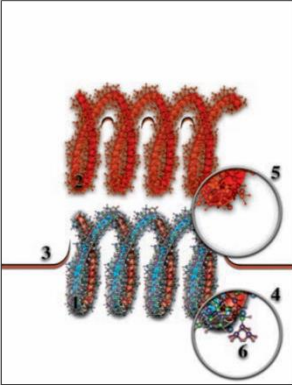
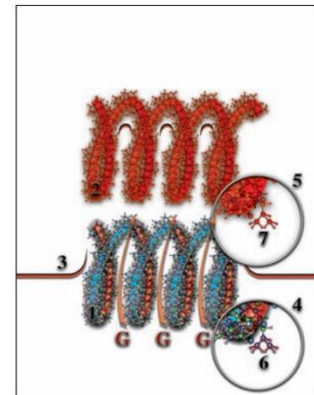


Fig. 4.3.30. An external signal in the form of an ion code reaches the body of the neuron itself. In other words, several additional ions end up inside the neuron. At the same time, the ion balance inside the neuron changes. These "extra" ions provoke additional chemical reactions, as a result of which new or old electronic bonds appear or are destroyed, and the molecular weight and qualitative structure of the molecule changes at the physically dense level.

1. The helix of a **DNA** or **RNA** molecule at a physically dense level.
2. The second material body of the **DNA** and **RNA** molecule.
3. A qualitative barrier between the physical and the second material levels of the planet.
4. An enlarged section of the spiral at the physical level.
5. An enlarged corresponding section of the spiral at the second material level.
6. Additional atoms attached to the selected part of the helix of the **DNA** or **RNA** molecule at the physical level.

Fig. 4.3.31. Additional curvature of the microspace caused by the "extra" atoms attached changes the structure of the second material body of the **DNA** or **RNA** molecule. The imprint of the second material body is saturated with the flow of primary matter **G**, and thus the identity of the helix structures of the **DNA** or **RNA** molecule at the physically dense and at the second material levels is restored.



- . The helix of a **DNA** or **RNA** molecule at a physically dense level.
2. The second material body of the **DNA** and **RNA** molecule.
3. A qualitative barrier between the physical and the second material levels of the planet.
4. An enlarged section of the spiral at the physical level.
5. An enlarged corresponding section of the spiral at the second material level.
6. Additional atoms attached to the selected part of the helix of the **DNA** or **RNA** molecule at the physical level.
7. The imprint of an external signal on the second material level.

Nikolai Levashov, July 2005.

Other books by the author

The Final appeal to mankind

In his first book, the author offers the reader a new system of knowledge and ideas about the laws of nature, which are necessary not only in order not to destroy our home planet, but also for understanding by every thinking person, by everyone who wants to understand and realize what is happening to himself, to the people around him at home or at work. This book is for those who seek to penetrate the secrets of nature, to understand and realize the miracle of the origin of life, to understand what the soul is and what happens to a person at the moment of death and after death. Concepts such as soul, essence, and reincarnation are transformed from mystical concepts of a "miraculous" way, into real concepts conditioned by the laws of the evolution of living matter. For the first time in this book, we are given an explanation of almost all phenomena of living and inanimate nature and the unity of the laws of the macro and microcosm is shown. The author managed to create a unified field theory, to combine into one whole ideas about nature.



Essence and Mind. Volume 1

In this book, the author continues, using his theory of the heterogeneity of space, to tear the veil of secrecy from the next "paradoxes" of nature. This time, the focus of the lens of cognition is nature and man himself. The author formulates the necessary and sufficient conditions for the emergence of life on planets. The simplicity and beauty of the concepts allows the reader, quite possibly, to experience enlightenment with knowledge for the first time in his life, when there is a feeling that knowledge becomes an integral part of himself. In the first volume of this book, the author exposes the nature and mechanisms of emotions. Shows the role of emotions in the evolution of life in general and man in particular. For the first time, an explanation of the feeling of love is given, and from this explanation, love does not lose its beauty, on the contrary, allows a person to understand what is happening to himself and avoid unnecessary disappointments... In addition, the author sheds light on the nature of memory, again for the first time showing the mechanisms of formation of both short-term and long-term memory. And on this basis reveals the mechanisms of the origin of consciousness.



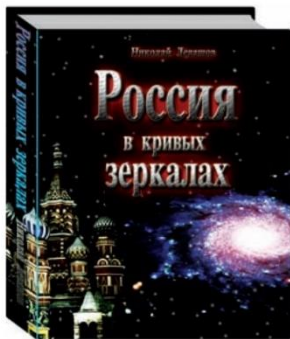
Essence and Mind. Volume 2



In the second volume of the book, the author clearly and accurately shows the necessary and sufficient conditions for the emergence of consciousness at a certain level of the development of life. Understanding the mechanisms of the formation of memory and consciousness at the level of material bodies of the essence allows the author to explain the phenomenon of life after death that occurs with people in a state of clinical death. Due to this, these facts move from the category of unexplained phenomena to the category of natural phenomena of nature. The phenomenon reincarnation — from the category of religious and mystical concepts, again, passes into the category of real natural phenomena. Just like the concepts of karma, sin ceases to be an instrument of manipulating the consciousness of the masses in the hands of state and religious figures and turns into manifestations of the same laws of nature. Understanding all this makes a person truly free and the creator of his own destiny. Neither God, nor the King, nor the Hero, but the person himself determines his actions and bears full responsibility (not only morally) for them.

Russia viewed through distorted mirrors

Volume 1. From the Starry Rus to the Defiled Russians



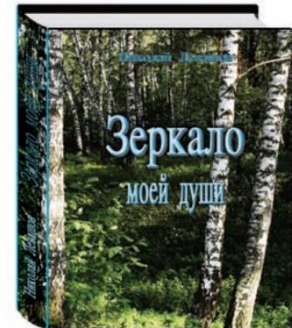
The author started working on this book in 2003, although the idea of writing such a book had been maturing for more than one year. Children's passion and interest in the past of both his homeland and the whole planet did not disappear over time, but became one of his vocations. Analytical thinking, unusual opportunities and a lot of books read, eventually led the author to the idea of writing a book about the real history of Russia, and not the "version" that was imposed on the Slavs-Russians by "well-wishers" with the coming to power of the Romanov dynasty, whose founders agreed to betray their people and the great past of their ancestors in exchange for the throne. In his book the author shows "izTORia" in a fundamentally new light, as no one else had done before him. He confirms his conclusions with real historical documents and maps, which the reader will be one of the first to get acquainted with. Step by step, the author reconstructs the real past of our planet and Russia, which for many thousands of years has played a key role in the development of the Earth's civilization, which was originally a colony created on planet Earth by a large association of humanoid civilizations.

Of course, then it was not called Russia, but the point is not in the name, but in the essence of what is behind it. And behind Russia stands the amazing past of the people inhabiting it, without which there would not be the many cultures, nations and peoples, nor modern civilization.

The mirror of my soul

Volume 1. It's good to live in the Soviet country...

The reasons that I took up my life story are very trivial. For quite a long time I had to talk about some of the events of my life and very often my stories came back to me in such a form that I did not even imagine the possibility of such "folklore". My stories were overgrown with such "facts" that even I became interested in listening to them. The second reason that pushed me to such a "feat" was the fact that periodically there were people who offered to write a book about me and every time something stopped me. Once I even agreed to have an American writer record my memories on cassettes and I spent several days telling him my memories and reflections. But soon changed his mind and refused this offer. Firstly, I had to spend quite a lot of time presenting and explaining what happened to me. Secondly, even having audio cassettes with my memories on their hands, writers and journalists managed to distort everything so much that I was simply amazed. Moreover, the distortion was observed, both in the direction of exaggeration, and in the direction of distortion of facts and outright lies...



Svetlana de Rogan-Levashova

Revelation

Part 1. Childhood. Volume 1.



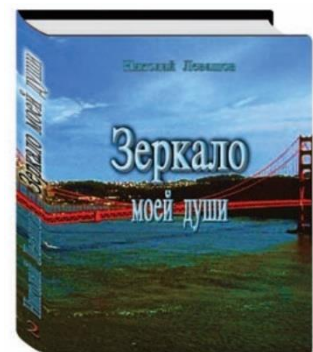
Svetlana means the Bearer of Light. It is very rare that there are coincidences when a person's purpose, his deeds and name coincide almost completely, as with Svetlana de Rogan-Levashova. Her whole life, from early childhood, was permeated with the desire for Light, for Knowledge, for spiritual development. To say that her fate is unusual is to say nothing. From the first years of her life, she had to adapt to the fact that she was not like everyone else, to the fact that she could do many things that were incomprehensible and inaccessible to the people around her. Very young Svetlana had to study and master her abilities herself, learn to control them and use them correctly. She learned early the bitterness of misunderstanding and distrust, envy and cruelty, loneliness and hatred. The wonderful abilities that she had possessed since childhood turned out to be misunderstood and unclaimed by the people around her; she had to survive and live in this world herself — a very dangerous and treacherous world, especially for a lonely little girl...

Books the author is working on

The mirror of my soul

Volume 2. It's good to live in the country of America ...

This book will tell about the American period of the author's life, which was almost fifteen years, from 1992 to the end of 2006. This time was full of a huge variety of meetings, events, achievements, struggles, retreats and victories. Many of them influenced the life of the author and his wife, Svetlana, some had planetary significance, and some influenced our universe. Life in America turned out to be quite different from what was shown on TV or written in beautiful magazines. Life in general is never the way it is depicted in advertising. And the point here is not at all that some people are considered stupid, but some are smart, some are greedy, and some are generous. Smart and stupid people are everywhere.



The point here is that a huge myth has been created on Earth, consisting of many other myths, such as the myth of freedom, the myth of democracy, the myth of God and the devil, about equality and brotherhood, the myth that science knows something for sure, the myth of human relations and many others. And we — people — are forced to think and live in accordance with these myths, and not with the real picture of the universe and the laws of nature. And in America, this manifests itself to a very large extent, which at first caused the heroes of the book utter bewilderment and even some confusion. Later, having figured out where the wind was blowing from, they began their long-term confrontation with the System. That's what this book is about...

Russia viewed through distorted mirrors

Volume 2. Russia crucified



In the second volume of the book, the author presents his vision of Russia's past. At the same time, the author not only raises the question of deliberate distortion of the events of the past, but also reveals for the first time the causes of this distortion, shows why and who is behind it, and how all this became possible. The author suggests looking at the events of the distant past and not so much, from a completely different angle, more precisely from several angles at the same time. The author considers a whole range of phenomena from the life of society as a whole and shows that almost any event of

the past of any country with such consideration cannot be interpreted in two ways, as it is beneficial to those in power. And receives a very definite explanation, which does not depend on the desires or ambitions of the explainer, but only on objective processes taking place within the human community. He succeeds, thanks to this approach in "cleaning up" the muddy waters of the temporary "river" of the past of the civilization of Midgard-Earth, and especially what concerns the past of Russia, although during the existence of this Slavic-Aryan empire it had many different names. The viewer can read about how he does it in this book...

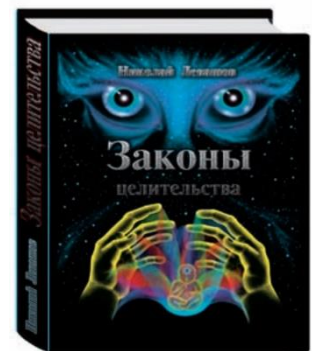
Essence and mind. Volume 3



In this volume, the author continues to reveal to the reader the secrets of nature step by step. In the center of his attention is the nature of human mental phenomena. Further, the author gives a whole layer of pioneer ideas about the phenomena of the human psyche and societies that no one else has ever touched before. He introduces new concepts such as human geopsychology and evolutionary geopsychology of societies. These concepts allow us to take a completely different look at the development of the earth's civilization and historical events of the past, present and even the future. This knowledge allows us to see, instead of the "chaos" of events and the "arbitrariness" of personalities that historians like to talk about, the regularity of what is happening, determined by the real laws of nature operating in the human community. And, as a consequence of this, for the first time it becomes possible to understand the reasons behind certain social events and phenomena and to see the puppeteers who have been in the shadows for so long; and if someone guessed about their presence, then, without understanding the laws of nature, through the efforts of these puppeteers, they became crazy, or forgers. Next, the author introduces the concept of human cosmopsychology and explains the influence of cosmic phenomena on the development of civilization.

The Laws of Healing

Modern medicine "got lost" in the maze created by itself and, having lost the "thread of Ariadne", is unable to get out of it. In the middle of the twentieth century, doctors said that when they had accurate diagnostic devices and the necessary medicines, they would lead humanity to a golden era of universal health... They got it all... But, nevertheless, people not only get sick less than before, but more. Children are born with an already weakened immune system; coming to a hospital or clinic relatively healthy, a person is very much at risk of leaving them in the company of a number of diseases that quite often lead to death. And everything can happen because a person just breathes the air of these "temples of health". In this book, the author explains the reasons for this and gives an idea of the medicine of the future. And the knowledge of this medicine is already working and the real results confirm the rightness of the new way. In this book, the author explains how a living organism works, how and why diseases and pathologies arise, body scanning mechanisms, methods for determining the root causes of diseases, strategies and tactics for treating diseases and restoring the body to a healthy state, up to the genetic correction of the body.



Russian Social Movement

Revival. The Golden Age



The Russian Social Movement "Renaissance. The Golden Age" was created on the initiative of a Russian scientist, academician of several academies, Nikolai Levashov. This is a project for the qualitative transformation of a modern person who has been subjected to constant zombification over the past few thousand years, into a real Reasonable Person. This project aims to awaken the genetic memory of the Russian people and other indigenous peoples of Russia, to restore the truth about the glorious past of these people, about their role in the creation of a highly developed terrestrial civilization that flourished on our planet for many hundreds of thousands of years. This project aims to show people the path of Knowledge — the only path leading along the path of evolution, the only one that will allow our civilization to survive the tragic dead-end stage into which we were led by social parasites — bandits from the big space road.

The project "Revival. The Golden Age" is a joyful opportunity for people to wake up from the destructive evolutionary "sleep" into which parasitic forces helped us to plunge, and from which we have not been allowed to get out for a long time, because it is easier to control the "sleeping" masses and it is easier to take their energy, their vitality from them, leaving instead diseases, misfortunes and death. "Rebirth. The Golden Age — is the path of the evolutionary development of mankind, which, ultimately, will allow it to survive, achieve a high level of development, take its rightful place in the family of intelligent civilizations of our Universe and live happily for many millions of years.

Now there is no time to argue about insignificant trifles, it's time to put aside all personal ambitions — the fate of the nation, its future and even its very existence are at stake. Alien Gods and "ideals" have already brought Russia to the brink of disaster. They led to the fact that the unified social organism of the Rus nation turned into many tiny "fragments", many of which are no more than one family, and sometimes one person who only speaks for himself. This is exactly what our enemies wanted. Therefore, all those who resonate with the information set out in the book "Russia as viewed through Distorted Mirrors" and who are ready to act for the benefit of their people, and not just for their own personal benefit, will respond to this call.

It's time for every Russian person and every representative of other indigenous peoples of Russia to stop being a slave and work for the benefit of foreigners, obvious and hidden enemies-destroyers, and become a free person, creative, bringing good to his Kind, his PEOPLE; to become NOBLE.

The Movement's web page can be found at the following addresses:

www.rod-vzv.net

www.rod-vzv.org

www.rod-vzv.info

Nikolai Viktorovich Levashov
Inhomogeneous Universe