CREATION AND M-THEORY: TOWARDS THE GOD EQUATION

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Abstract

For centuries, the human mind has tried to understand the mysteries of creation, searching for answers about the origin and nature of the Universe. Science and philosophy constitute the two main wings of this great quest, leading us into the depths of matter, time, and space. The concept called the "God equation" in physics - that is, the ultimate expression that unites all the laws of nature in a single mathematical expression - is aimed at shedding light on this mystery. This equation is expected to solve many problems in modern physics. Humans have been striving in this direction since ancient times and have taken important steps. The 20th and 21st centuries have been the culmination of these efforts, with the successes of quantum physics and general relativity bringing us closer to a more fundamental truth—the idea that everything is inextricably linked. However, until these two great theories—quantum field theory and general relativity—can be combined, a complete and conclusive description of the Universe remains incomplete. It is at this point that superstring theory and its broader form, M-theory, emerge. M-theory is the most comprehensive and ambitious approach that attempts to unify all forces and particles into a single, unified mathematical framework. Taking into account the multidimensional nature of the Universe, it attempts to explain the essence of matter and energy not only in terms of three-dimensional space, but also in terms of higher-dimensional layers of existence. This article attempts to take one of the important steps on the scientific-philosophical path towards the "God equation". Here, both the most complex concepts of theoretical physics and the spiritual and philosophical analysis of creation are brought together. The goal is not only to create a scientific model, but also to present a broader and more meaningful perspective on the origin of the Universe. The ideas presented here interpret the multidimensional structure of M-theory in unity with the concept of creation. The string-based origin of the energy source of matter in three-dimensional space is explained and the interaction of this energy with higher-dimensional spaces is analyzed. At the same time, by considering not only the physical, but also the spiritual side of creation, it presents the beginning of the Universe not as a "mere coincidence", but as a concept expressing the entire meaning of existence. Finally, considering the limitations of our cognitive abilities, it is noted which part of the Universe is possible to fully study, and a new equation is given that may be close to the "God equation."

Keywords: God equation, creation, supersim and M theory, early quantum effects, quantum field theory, quantum gravity, living space of being.

İntroduction. One of the most fundamental questions that humanity has faced since time immemorial has been: Why does the universe exist and what power governs it? Over time, this question has become a common interest not only in the religious and metaphysical spheres, but also in mathematics, physics, and philosophy.[1] The qualitative and quantitative explanation of events by laws has changed people's perspective on the universe. The existence of these constants in the universe has made scientists ponder the origin and structure of the universe for centuries. As science has developed, scientists' views on this subject have emerged. To this day, many scientists have expressed their views on the creation and dynamics of the Universe. Some scientists believe that every event in the Universe is subject to certain laws and therefore all theories can be unified around a single goal[2]. Scientists with this type of thinking believe that there is a creative force behind the Universe and that the Universe was created. Another group of scientists believe that the Universe was created by chance or did not exist at all. Scientists with this type of thinking support the idea that there is chaos in the Universe and that there is no need for a creative force[3].

Figure 1. Human intelligence and the Universe.

The first group of scientists, based on the idea of a creative force, are convinced that there is a final expression, such as the "Equation of Everything", that can explain every phenomenon in the Universe. This final equation is called the "God equation". The "God equation" refers to the final equation that unifies all the laws of physics[4]. This equation is expected to eliminate many problems in modern physics. Because approaching the contradictory branches of physics with the same mathematical equation can unite these branches around a common goal. In this regard, the concept of the "God equation" is a very important direction in physics[5]. In order to approach this equation, we must first deeply examine the reasons for the emergence of this idea, where the need for this theory comes from, and the thoughts of historical figures on this subject. The idea of the "God equation" - that is, the expression of all the laws governing the Universe in the form of a unified and all-explaining formula - has been at the center of thoughts about the divine origin of the physical order throughout history[6]. The roots of this idea go back to Ancient Greek philosophy. The Ancient Greek philosopher Plato, claiming that the Universe is based on perfect forms in the world of ideas, noted that there is a rational and unchanging principle behind the order in the physical world[7]. Plato's student, the philosopher Aristotle, accepted the existence of a beginning - the "First Cause" - that would stand in the chain of movement and causality.[8] This "first cause" was the philosophical form of the concept of the "Equation of God" in the modern sense. According to Aristotle, the Universe was set in motion not by chance, but by a first mover. This being does not move itself, because it is motionless. It moves other things through perfection and purpose.[9] Aristotle notes that forms and causes manifest themselves in mathematical structures. Mathematics is the language of being, but it must be explained not only by physical, but also by philosophical reasons.[10] The concept of the "unmoved mover" presented by Aristotle in his work "Metaphysics" forms the philosophical basis of the model explaining creation - the "Equation of God". If the universe is a collection of resonances, and these resonances produce certain forms, then there must be a causal equation behind these forms that can be expressed mathematically. In the Middle Ages, Islamic and Christian philosophers developed these ideas further. Ibn Sina and Thomas Aquinas emphasized that God is the creator not only of existence but also of its lawful structures.[11] Thus, the concept of "law" began to be seen not only as a physical order, but also as a product of reason. In the scientific views of this period, God was both the author of laws and their permanent preserver in time and space.[12] According to the English philosopher David Hume, the Universe must have a cause, and that is God. We have not observed how the Universe was created, and therefore it is impossible to draw causal conclusions about it[13]. D. Hume denies that God can be proven by rational arguments. The German philosopher Immanuel Kant believed that the main purpose of creation was to determine the possibilities of people to acquire knowledge. According to I. Kant, complete knowledge is impossible[14]. This creates a deep harmony from both philosophical and scientific points of view. During the rise of classical physics, especially in the works of Isaac Newton, this concept took on a more scientific form. Newton's law of gravity described not only an observed phenomenon, but also a universal rule that God applied to created nature.[15] Newton himself described God as "an intelligent and living being who rules over the whole Universe".[16] He believed that these laws were a manifestation of God's will and mind. In Newton's own words, if we put all other facts aside, even five fingers are enough for us to believe in God.[17] Some mathematicians who supported Newton's ideas during this period also expressed their own opinions on this subject. The French mathematician René Descartes believed that the existence of God is more real than geometric expressions expressing a truth,[18] and the German mathematician Wilhelm Leibniz proposed the idea that everything that exists is a reflection of God's infinite knowledge.[19] The late 19th century was a period of great scientific achievement, but also of profound theoretical crisis. The laws of Isaac Newton's mechanics, Maxwell's electromagnetism, and thermodynamics were long accepted as the absolute truths that explained the nature of the universe. However, despite the consistent success of this classical model, as the 20th century approached, some experimental observations revealed serious inconsistencies that the classical theory could not explain.[20] This fact indicated the need for fundamental changes in the foundations of physics. One of the most important problems was absolute blackbody radiation. The application of classical physics here led to infinite energy - the "ultraviolet catastrophe".[21] In addition, the application of the laws of classical physics to other micro-events also yielded disappointing results. To resolve this paradox, the German physicist Max Planck proposed in 1900 that energy is not transported continuously, but in discrete packets - "quanta" [22]. This approach was the first theoretical attempt to break the boundaries of classical determinism. All these facts indicated the need for the emergence of a new physics - quantum physics, which qualitatively explains micro-events.

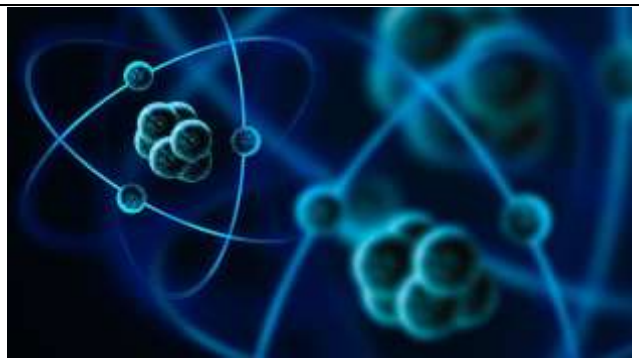

Figure 2. The quantum world.

It is clear that the laws of motion of micro-objects are completely different from those of macro-objects[23]. The characteristics of quantum physics have led scientists to disagree on the subject of creation and the existence of God[24]. Max Planck, considered the founder of quantum physics, put forward the idea that "every serious scientist encounters God when he opens the door to science."[25] The German physicist A. Einstein associated the immutability and mathematical beauty of physical laws with the "intelligence" of God. His famous statement "God does not play dice" was a manifestation of an idea that strongly defended the divine origin of order and determinism in the Universe.[26] The laws of the universe are so precisely tuned for life that it seems to have been created by a mind. According to A. Einstein, the universe emerged "from nothing," and the harmony of its laws and the existence of God can be explained simultaneously by the "God equation"[27]. Werner Heisenberg, the founder of the uncertainty principle, the most problematic topic of quantum mechanics, said this about it: "The first sip you take from the glass of natural science will make you an atheist, but at the bottom of the glass the creator is waiting for you." [28] Quantum mechanics shows that reality is often shaped by the participation of subjective consciousness. [29] Reality is shaped by observation, but observation itself is a physical phenomenon—which increases the role of "consciousness." It should be noted that the implications of quantum physics cannot be fully understood without philosophy.[30] We see that some people think that the existence of quantum mechanics does not pose a problem for the existence of God. As many new concepts emerged in quantum mechanics and theoretical physics during this period, some scientists have tended to exclude the concept of God from scientific explanations. The English astrophysicist Steven Hawking argues that the Universe originated from a finite but infinite beginning—the "Big Bang."

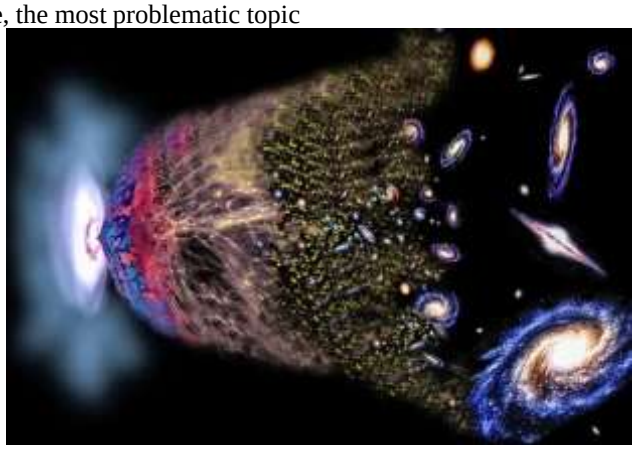

Figure 3. Illustration of the Big Bang.

This is a topic that is not classical physics, but rather a field where quantum gravity theory comes into play[31]. According to Hawking, the Universe spontaneously emerged from nothingness, from a pure quantum state. In the beginning, time did not exist in the classical sense, only quantum fluctuations existed. The very nature of the laws of physics allows for the spontaneous emergence of the Universe[32]. The Universe can and should be created from nothing. No "hand of God" or external cause is needed. This fact comes from within the laws of physics[32]. That is, creation can arise from within the laws of physics without a divine external force. However, Hawking also emphasized the fact that the cosmological constants seem to be finely tuned for the development of life[33]. Hawking based his argument on this fact and proposed the possibility of a unified theory. S. Hawking explains that this theory must be compatible with both general relativity and quantum mechanics, and must explain every aspect of the Universe. However, the existing equations do not fit together. If such a theory is found, it will be like "reading the mind of God"[34]. In the event of a unified theory being found, it will explain everything from the beginning to the end of the Universe. What we know about reality is only possible through observation and theoretical models. S. Hawking emphasized the importance of string theory in this direction[32]. Austrian-American physicist Frotjof Capra wants to show that

the structure discovered by physics and the description of the Universe understood by Eastern philosophy through mystical experience have the same roots - which shows that the "God equation" must be both mathematical and consciousness-oriented[35]. In mystical approaches, a new convergence point of science emerges - consciousness, mathematics and the structure of the Universe are not separate from each other. Everything is interconnected[36]. If mathematics is so powerful, perhaps the Universe itself is a mathematical object[37]. According to F. Capra, understanding the Universe is possible not only through technical mathematics, but also through deep experience of consciousness[38]. This approach shows the importance of building the "God equation" on both scientific and philosophical-mystical foundations. As a result, F. Capra's approach shows that the "God equation" is not just a mathematical formula, but also a unified view of the meaning of existence. The "God equation" is not just a mathematical combination of all forces, but also a deep and holistic understanding of the essence of existence and the Universe[39]. American theoretical physicist Brian Greene explains that the two pillars of current physics - general relativity and quantum mechanics - one explains gravity, the other the microworld, but these theories contradict each other[40]. B. Greene shows that the strongest candidate for solving this problem is superstring theory. The "Big Bang" is not just the starting point, but may have been created by the transition of vacuums in string theory. Creation occurs by vacuum transition in a multidimensional space[41]. B. Greene states that strings can operate not only in 3+1-dimensional space, but also in 10 and 11 dimensions. These spaces are very twisted and therefore cannot be observed[42]. If each particle is not a point, but in the form of a small vibrating string, then both quantum theory and gravity can be explained by the same mechanism. According to B. Greene, superstring theory provides a unified framework that can unify all the forces of the Universe[41]. All the diversity of the Universe may be hidden in a single symbolism[43]. Based on this approach, this equation, which could be called the "God equation," can be used to explain both microscopic quantum phenomena and macroscopic gravitational laws.The main idea of the American physicist Edward Witten, one of the founders of string theory, is that fundamental particles are not point-like objects, but very small one-dimensional 'strings'. When these strings vibrate in different modes, the particles we are familiar with appear[44]. E. Witten also notes that string theory has the ability to unify many different physical phenomena into a single framework. This makes it possible to think of it as a "theory of everything".[45] In 1995, E. Witten proposed the idea that "the five different superstring theories that actually exist are five different limit states of 'M-theory'". M-theory is formulated within an 11-dimensional space-time[46]. E. Witten finally says that M-theory may be a more fundamental structure that complements string theory[46]. The gravitational field appears naturally in string theory. This is its advantage over other models[47]. In this respect, the strongest aspect of string theory is that it automatically includes "quantum gravity" - that is, the graviton naturally appears within this theory[45]. Quantum gravity is a field that seeks an answer to one of the biggest problems in physics - the problem of unifying gravity and quantum mechanics. The goal of this field is to unify classical gravity, described by A. Einstein's general theory of relativity, and the microworld governed by quantum field theory under a single theory[48]. These two theories cannot be combined. Quantum gravity has set itself the most difficult and highest goal of science, to unify all the laws of nature in a single framework. One of these approaches, string theory, quantizes not only matter but also gravity and claims that all existence is expressed through mathematical strings[44]. Such an approach is seen as the closest scientific model to the idea of the "God equation". Because here the laws are not just physical descriptions, but also emerge as a deep, harmonious and purposeful structure. On the other hand, scientists suggest that quantum field theory also has the potential to become a "theory of everything"[49]. Quantum field theory is an important framework that plays a fundamental role in modern theoretical physics, unifying quantum mechanics and special relativity. The emergence of this theory arose from the insurmountable necessity of the limitations that classical field theories and quantum mechanics separately faced[50]. Quantum field theory is one of the cornerstones of modern physics, and its complete understanding and completion, in terms of its importance, could pave the way for a major scientific breakthrough, both theoretically and practically[51]. In the 1970s, all of these field theories were unified to form the modern "Standard Model." This model is the result of the quantum field revolution that began in the mid-20th century and is still the most accurate theory of nature.[52] The Standard Model is based on the 12 particle fields that exist in nature, called fermion fields. Fermions represent the fundamental matter components of nature, and in quantum field theory, each is described as a field that waves in a different way.[53].

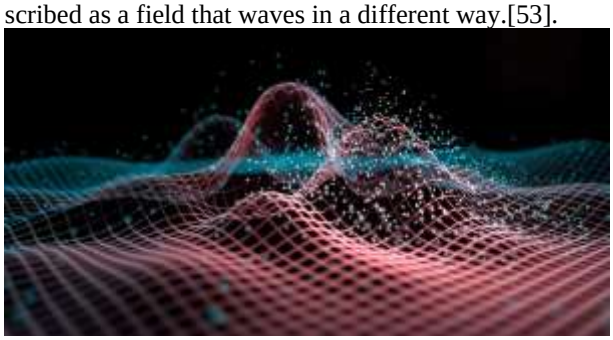

Figure 4. Fluctuation of quantum fields.

For example, the electron particle is created as a result of the quantization of the electron field, and quarks are created as a result of the quantization of quark fields. In addition to the 12 fermion fields, there are also 12 force-carrying particle fields (if gravity is not taken into account)[54]. Over time, this theory has ceased to be just a theoretical model and has become the central pillar of modern physics[55]. As can be seen, at this time, scientists tried to understand physical phenomena only with the help of laws. Nevertheless, Paul Davies, Leonard Sussking, Roger Penrose and

other prominent physicists did not hesitate to think that the mathematical harmony and laws in the Universe had a "goal at its center".[56] In their opinion, such a deep order and consistency cannot be explained only by "physical coincidence". On the contrary, this order bears the imprint of an intelligent creator, that is, God.[57] In order to determine the reasons behind this idea, the essence of these reasons must first be examined in detail. Here, two different perspectives will become clear. The English-born American theoretical physicist Freeman Dyson notes that I feel that God is present somewhere in the Universe, as if God did not just create it and withdraw, but rather works within the Universe and us[58]. In this idea, F. Dyson imagines God not as a force that intervenes from time to time, but as an intelligence that lives in the structure of the Universe. F. Dyson is one of the first scientists to put forward the idea that the Universe is regulated in accordance with the emergence of life and the development of consciousness. According to F. Dyson, the Universe seems to be waiting for our future[59]. However, F. Dyson had a different opinion about the "God equation". F. Dyson believed that physics and mathematics had not yet fully explained the fundamental principle of the Universe. F. Dyson wrote while thinking about the "Final Theory": "Physics has not reached its limits. We have not yet understood much. The Universe does not yet allow us to fully understand it"[58]. It should be noted that human intelligence ultimately owes its existence either to mindless matter or to a creator. It is really ridiculous that some people attribute their choice of the first option to their intelligence instead of the second option[60]. According to American theoretical physicist Sean Carroll, God is not a scientific theory, but a model that can be tested experimentally or expressed mathematically.[61] S. Carroll therefore does not accept the idea of a "God equation". S. Carroll notes: "I believe that a theory that explains all physical phenomena is possible, but this theory would not need God"[61]. One of the supporters of another type of view is the English physicist Paul Davies. P. Davies states that the problem of God is not just a theological one, but also a physical and philosophical problem.[62] Davies also emphasizes that scientific laws can explain how the Universe works, but the question of why the Universe exists cannot be answered by science alone.[63] Science encourages us to think objectively, moving us away from emotional, attractive, but unproven ideas.[64] Davies's own opinion is in the form of "For me, there is strong evidence to believe that there is something behind this. It seems that someone has tuned the cosmic constants in a sensitive way to create the Universe. The evidence for the traces of creation is very strong."[65] Davies is talking about sensitive tuning here, that is, the parameters of the Universe are at values such that the Universe exists. P. Davies, who thinks that there is such precision, states in his opinion about the final theory: there may be an equation, a source, that unifies all the laws of physics.[65] This point symbolizes the approach to the "God equation". If the "God equation" exists, this equation should not only explain the material world, but also justify where the laws come from, their values and symmetries[66]. P. Davies notes here that the "God equation" is related not only to mathematics, but also to philosophy. If there is a final equation, it can be a consequence not only of nature, but also of consciousness and purpose. P. Davies says that consciousness is not just a product of matter, but perhaps the initial structure of the Universe itself[67]. This idea is very important: if the mind comes before matter, then the "God equation" can be both a mathematical and a mental structure. The goal of the Japanese-American physicist Michio Kaku is precisely to unite all fundamental forces in one equation. Such an equation (God equation) can explain both the beginning of creation and the nature of the entire Universe[68]. M. Kaku believes that this equation is inherent in M-theory and that we are very close to it.[69] M. Kaku notes that if the "God equation" is found, this equation can also model the state before the "Big Bang".[68] M. Kaku says that M-theory may be the only theory that attempts to explain the physical cause of the Big Bang.[69] M. Kaku agrees with Edward Witten that the five versions of string theory are actually different perspectives of M-theory.[69] The final equation can explain the origin, evolution, and end of the Universe. The "unified equation" should describe the laws of vibration underlying the Universe. Since superstrings are a vibrational model, it can be written:

God equation = vibrational code of the Universe (1)

The "God equation" is a mathematical model of vibrations.[70] This expression is similar to the mathematical formulation of the Serbian scientist Nikola Tesla's statement, "If you want to know the secret of the universe, look at the relationship between energy and frequency."[71] This equation, which contains the unified code of time, space and matter, may constitute the scientific basis of creation. The English physicist Reger Penrose is one of the scientists who has approached the concept of the "God equation" very cautiously and critically. Although R. Penrose admits that this concept is very attractive from a scientific point of view, he opposes its naive presentation.[72] R. Penrose notes that many believe that a "Unified Theory" will be found that unifies all the laws of the Universe. However, this can often turn into an overly simplified and even metaphysical belief. [73] There are serious inconsistencies between the physics we have today, especially quantum mechanics, and the theory of general relativity, and their unification is not so simple. [74] It is clear that R. Penrose believes that a deeper and broader approach is needed that explains the Universe, consciousness, and the interrelationships of the Universe. In his opinion, we are not yet close to this equation, because the Universe has a more complex and surprising structure than we think.[73] R. Penrose believes that the creation of the Universe is not random, but follows a deeply planned order. The very precise arrangement of the Universe at the beginning was carried out with the following numerical precision:

(2)

This number is the probability of the entropy at the beginning of the Big Bang, according to R. Penrose's calculations. That is, the Universe had to be so finely tuned for it to start in such a low entropy state[75]. Entropy itself is the parameter that determines the fate of the Universe[76]. This fact is a purely super-random situation. This number strongly supports the phenomenon of "fine tuning". That is, the laws of nature, constants and initial conditions are so finely tuned that if these values were to change even slightly: no matter would be created, no galaxies would form, and no life would exist.[75]. This approach is considered by many test scientists and philosophers to be a sign of God's creative intervention. It is practically impossible for such precise initial conditions to arise by pure chance or statistical probability.[77] As R. Penrose has said, it seems that the creator has determined how precisely his goal is.[78] American theoretical physicist Leonard Sussking notes that the cosmological constant $1/10^{120}$ It is perfectly arranged, like this. Put 120 times 10 side by side and multiply them together. No one can claim that this is a coincidence.[79] To confirm the truth of all these ideas, it is necessary to touch on the nature of the problematic phenomena. If there is a design, we must look for traces of this design in the laws of physics.[80] Even the language of physics itself leads us to question the existence of God.[81] Since the most naturally observed objects are macroobjects, let us first examine the problematic points between macroevents. It should be noted first that

$$\text{3-dimensional space} \neq \text{Universe} \quad (3)$$

3-dimensional space is the field in which material structures are located. The Universe is a dynamic system expanding within this space. 3-dimensional space is more fundamental, stable and universal in nature, while the Universe is a local field within it[82]. All these living conditions show that these concepts are interconnected, that is, spaces and the Universe can be manifestations of the same basic form of energy in different directions. This energy is called "Basic energy" or "Unit energy". "Unit energy" is a single, indivisible and all-causing energy that underlies the creation of the Universe, the formation of structures (spaces) and the influence exerted by higher-dimensional spaces on lower-dimensional entities[83]. This energy:

•Creates spaces (forms structure);

•Formulates laws;

•Creates matter and fields;

•And ultimately, it creates us, the observable and the unknowable reality.

Since the distribution of a unit energy is different according to the dimensions of the spaces, each space has its own properties and, as a result, its own quantities that characterize them[84]. For example, in 2-dimensional space, each object has an area and a velocity. In 3-dimensional space, the object has the property of mass and the associated density and volume[85]. Therefore, if an object moves from 2-dimensional space to 3-dimensional space, the object will acquire new properties such as mass, density, and volume. However, human perception can only perceive 2- and 3-dimensional spaces. Continuing with the logic shown, we can conclude that if an object moves from 3-dimensional space to 4-dimensional space, it will acquire an additional property and two more properties associated with it, that is, it will be characterized by 3 new parameters (α, β, γ).

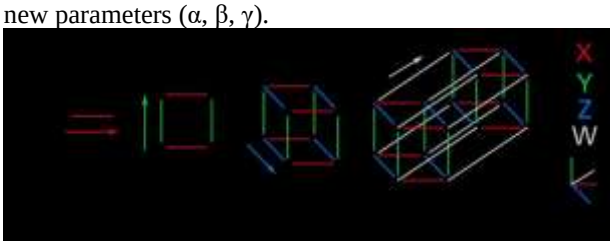

Figure 5. Formation of spatial dimensions.

Similarly, if an object moves from 4-dimensional space to 5-dimensional space, it will gain three new properties (φ,ξ,ψ). It is clear that if an object moves directly from 3-dimensional space to 5-dimensional space, it will gain 6 new properties (α,β,γ,φ,ξ,ψ). Each of the spaces is formed by an infinite number of orderings of the previous spaces in a new direction[86]. It is clear that 3-dimensional space is formed by ordering 2-dimensional spaces in new directions, and 4-dimensional space in turn is formed by ordering 3-dimensional spaces in new directions.However, since we cannot imagine this new direction, we cannot fully comprehend 4-dimensional space. Our space is just one of the spaces located within 4-dimensional space, just like one of the galaxies located in the Universe. Here another issue arises. If the dimensions and properties of the spaces differ from each other, then we can come to the idea that the spaces could have been formed at different times. That is, higher-dimensional spaces could have been formed before our space. In fact, based on the above inequality, it can be said that 3-dimensional space was formed before the Universe we live in. The problem of how many Universes can be located within 3-dimensional space leads scientists to the idea of "Parallel Universes Theory". The theory of parallel universes was proposed by American physicist Hugh Everett in 1957.[87] The theory of parallel universes proposes that the universe is not a single system, but rather that many different, independent, and sometimes different universes with different physical laws may exist.[88]

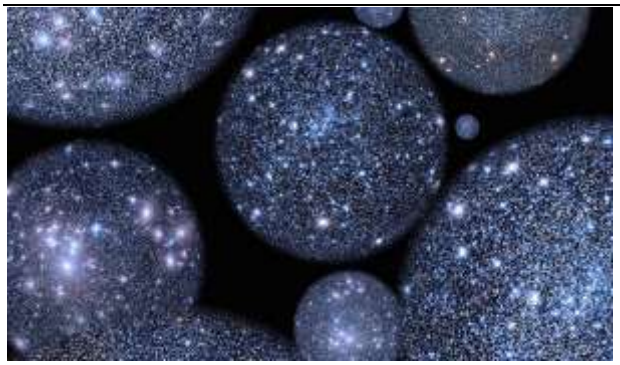

Figure 6. Illustration of Parallel Universes.

This theory has emerged in different fields with different motivations. M-theory proposes that our Universe may be one of many Universes. Each Universe may have its own laws and constants[69]. The theory of parallel Universes was originally proposed to explain the uncertainties in quantum measurements and the paradox of the "wave function collapse".[87] Now, let's look at the dynamic part. Today, the idea that the Universe was formed as a result of the "Big Bang" is based on a huge amount of experimental evidence and there is no new evidence that this idea is wrong[89]. The Universe we live in emerged from a single point as a result of the Big Bang. The Big Bang is not only the beginning, but also the point of origin of the energy and matter of the Universe[90]. For many years, scientists assumed that the Universe was static. However, as technology developed, this idea was proven wrong. In 1929, the American astronomer Edwin Hubble, through observations at the Mount Wilson Observatory in California, determined that distant galaxies in the sky showed a redshift[91]. This indicates that galaxies that do not redshift have their light pulled to longer wavelengths, as if they were moving away from us. This phenomenon is explained by the Doppler effect. As a result, E. Hubble showed that the farther away galaxies are from us, the faster they are moving away[92]. This meant that the Universe is expanding. E. Hubble was able to prove Lemaitre and Einstein, who had theoretically proposed the idea of the expansion of the Universe, right[93]. For the universe to expand, energy must be given to it. A portion of the same energy was given to our universe, causing it to expand. If we consider that the universe expanded from a single point, then it can be said that matter and the physical field, which are manifestations of matter, must have the same source at the smallest level. Whatever creates matter is not matter[94]. The source in question must be the smallest unit in the universe. The concept of the smallest unit is variable[95]. As the universe expanded and increased its volume, different forms of matter and the physical field emerged. It is clear that the fact that the Unified Energy creates so much diversity in the Universe leads to the interaction of different particles and fields with each other. Quantum field theory, by unifying this diversity, says that in fact there is no such thing as a particle in the Universe[96]. For centuries, scientists have wanted to build a theory that explains the behavior of all these particles and fields. The behavior of particles is determined by their internal structure and the field in which they carry their energy[97]. In the above topics, we have seen that there are many models that come close to this theory. However, the gravitational field cannot be fully explained by these models[98]. Gravity is explained by the general theory of relativity, and this theory is based on curvatures in space and time[99]. That is, gravity is the result of the influence of matter and energy on space. Gravitational attraction is not just a force, but a fundamental mechanism that determines the very structure of time and space itself[100]. This fact makes it difficult to quantify the classical and gravitational fields. Quantum field theory operates in a fixed space and treats all particles as field quanta. But in gravity, space itself is variable—a very big difference[101]. On the other hand, a spin-2 particle called the "graviton" has been theoretically proposed as the quantum equivalent of the gravitational field, but quantum field theory of gravity based on this particle cannot renormalize it[102]. This means that mathematical infinities cannot be eliminated, that is, the results become physically meaningless. If we look at A. Einstein's idea of gravity, we see that in fact the space-time fragment exists in a higher-dimensional space. That is, the larger the mass of an object, the larger the area it bends in the space-time fragment. Objects with a smaller mass revolve around this object[103]. Therefore, all objects and collections of objects with mass give rise to a bend in space. In this case, the number of bends becomes infinite, and an unimaginable picture emerges.

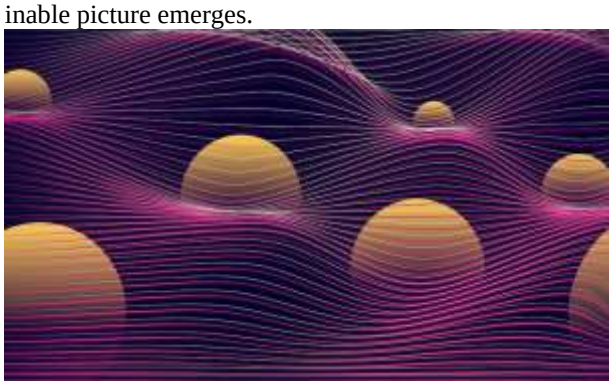

Figure 7. Objects bending the fabric of space-time.

If there are extra dimensions, their influence may be hidden in the weakness of gravity.[104] All these facts, and the close observation of the influence of the gravitational field, allow us to accept gravity as existing in the 4-dimensional space, which is the closest to us of the higher-dimensional spaces. However, the situation is quite the opposite in the equilibrium of galaxies. Studies have shown that for a galaxy to actually move, it must have a mass greater than the sum of the masses of the stars and other celestial bodies within the galaxy.[105] This is an unusual phenomenon. Since this matter cannot be observed and cannot be observed with modern technology, it is called "dark matter".[105] It is estimated that the baryonic matter (stars, gas, planets, etc.) within galaxies is about 10–20%, and the amount of dark matter is about 80–90%.[106] Therefore, in order for a galaxy to maintain its gravitational equilibrium, most of its mass is dark matter.

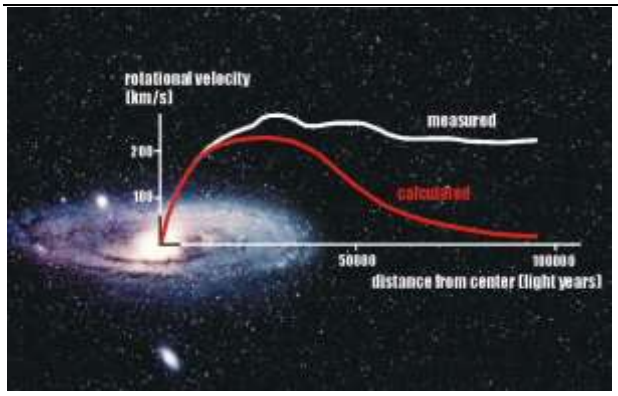

Figure 8. The effect of dark matter on the galaxy.

This fact has led scientists to conclude that only 5 percent of the universe is the part we understand. Dark energy, which forms dark matter, acts as a background energy that accelerates the expansion of galaxies, not galaxies.[107] Recently, some theoretical models have associated holoregions around black holes with high concentrations of dark matter. Gravitational waves in these regions are cited as indirect evidence for the existence of dark matter.[108] The most obvious place to observe the influence of dark matter is in the black holes at the centers of galaxies. The gravitational process for black holes is a problematic issue. At the same time, the first gravitational waves to be detected were also produced by the collision of black holes[109]. It is clear how much energy black holes carry. The sharp change in gravitational energy can be explained by a defect in the fabric of space-time. Dark matter is the main source of mass in galaxies and is directly related to black holes[103]. Therefore, black holes are not actually the remains of stars, but the skeleton of the Universe, its structural coding pillars.

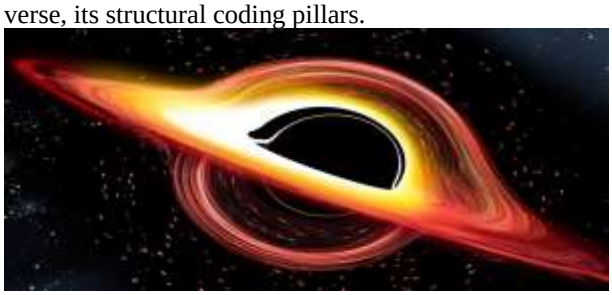

Figure 9. Black hole.

Black hole systems can be scientifically called dark matter networks. Black holes are interconnected, and through this connection, objects with enormous masses in space remain in equilibrium, preventing the collapse of the Universe.

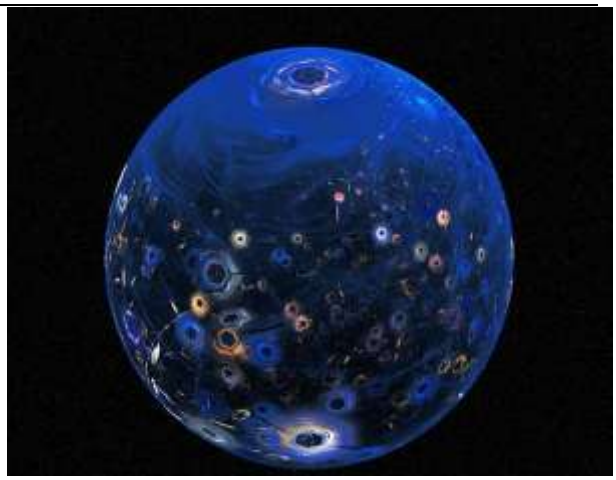

Figure 10. System of spatial defects in the universe.

Many theories have been put forward about how long the universe will continue to expand. The universe cannot be infinite. It is mathematically contradictory for an infinite object to not expand.[110] Of course, this finite system cannot always remain in equilibrium, and the end of the universe could occur. Many scientists believe that the end of the universe will be a final destruction, such as a big rift, freezing, or collapse.[111]

Figure 11. Large tear.

However, according to the theory of "Conformal cyclic cosmology" of R. Penrose, which we have already discussed, the end of the Universe will not be a big rift. As the Universe continues to expand, all matter will be destroyed by turning into photons[112]. It was unclear whether there was any order in the expansion of the Universe. In 2025, Willi Sun, a scientist at Harvard University, stated in an interview with "Tucker Carlson Network" that the expansion of the Universe continues in a stable mode. Sun says that this behavior of the Universe is not random. This fact suggests a predetermined "architecture" - a unique focus on creating conditions favorable for life.[113] These findings support the idea that the emergence of intelligent life is not a mere coincidence, but a consequence of the physical laws and initial conditions of the Universe. When we examine all these facts, we can say how the Universe was created and governed by complex laws. It is possible to believe that if a "theory of everything" that explains the mentioned facts and the "God equation" that forms its basis are formed, all problems will disappear. Currently, the closest theories to a "theory of everything" are M-theory, superstring theory, and the quantum gravity model.[114] It should be noted that when the Universe and all the structures behind it are considered, M-theory is considered the closest theory to the

goal. We noted above that the primordial particle is the source of both the physical field and matter. The particles that meet these conditions are strings. However, there are various models of string theory[69]. It is a problematic question which of these models is correct. As we examine the properties of these models, we see that the properties of strings do not coincide with the properties of space. The current form of string theory is not specific enough. There are no testable results for reality yet[115]. Many models emphasize that strings are one-dimensional and massless. The point is that the idea that one-dimensional and massless one-dimensional particles create objects with mass and shape in the Universe located in 3-dimensional space, as well as a one-dimensional form of vibration, is an approach that has no mathematical basis and is not logically acceptable.

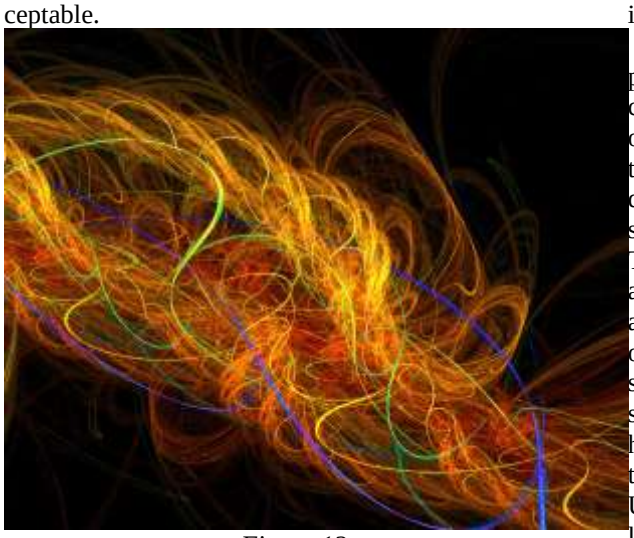

Figure 12.
Model of strings vibrating at different frequencies.

If an object exists in any space, it and its constituent particles must correspond to the properties of that space[116]. Unless these conditions are met, we accept that the object does not correspond to this space. On the other hand, most sources state that the ratio of the size of a string to an atom is similar to the ratio of an atom to the entire solar system[117]. This ratio is usually in the sense of size. This ratio can be indirectly related to mass and a suitable result is obtained. Some researchers consider it essential that one-dimensional strings be massless and consider this model contradictory. However, the presented 3-dimensional string model resolves these contradictions with a real space structure. Finally, the description of a particle by a string is a contradictory issue in terms of both energy exchange and particle-field relations[118]. As it turns out, a new model of string theory must be created that eliminates all these contradictions. That is, in this model, M-theory must be fully formed by imposing realistic conditions on the strings.

Structure of the problem It is clear that a model that can be a "theory of everything" must be able to gather all fields of physics around a single source. When trying to bring together the above-mentioned facts, a number of problematic issues arise. These problems occur when examining the characteristics of all phenomena. The following questions should be clarified with the new model we have given: are all high-dimensional spaces part of our Universe or did our Universe arise after structures? Are there parallel Universes and how are they located in the spatial structure? What is the relationship between the unified energy and the spatial structures and the Universe? Is there a connection between the gravitational field and dark matter and what is its essence composed of in reality? If the Universe expands, does its total energy increase? What properties should strings, the smallest particles in the Universe, have? Which of the string theory models of the formation of M theory should be accepted as correct? What does the "God equation" actually express and what parameters should be included in it? Finally, in what form will the end of the Universe occur? etc., important questions need to be answered.

Solution to the problem: To overcome all the problems that arise, it is necessary to explain the intricacies of the given model. Brain cosmology shows that our Universe is part of a multidimensional structure[119]. All the spaces, the exact number of which we do not know, were formed by the "Unit Energy". We simply continue our lives in the 3-dimensional space. This Universe we live in was created by the "Big Bang" and continues to expand in the 3-dimensional space. As a result, most galaxies are moving away from each other[92]. Since the objects we see exist in 3-dimensional space, they have the properties of 3-dimensional space. Every object that exists in 3-dimensional space has a shape, size and other properties. The reason for the expansion of space is the supply of energy to the Universe in a certain stable mode. This model can be likened to a balloon with dots on it and a certain amount of air inside it in a square room. As the balloon is blown with air (given energy), it begins to inflate and its volume expands within the room (the Universe expands). As the balloon grows, the dots on it move apart (galaxies move away from each other). After a certain value, the balloon either bursts (a big rupture), or the balloon empties itself (collapses) as the air flow stops. Although this is a very simplified model, it is very similar to the dynamics of our Universe. As it can be seen, high-dimensional spaces should actually be considered extremely large, not very small. For the process in the example to occur, the room must have existed before the balloon. That is, structures that existed before the Universe we live in may have existed. Other parallel Universes could be like balloons expanding independently of each other inside this room. The reason the balloon inflated was because air (energy) was given to it. As our Universe expanded, the energy of the void increased, and since the void actually consists of energy, the energy of our Universe increased. Since 3-dimensional space is inside 4-dimensional space, this space has a specific energy value that affects our Universe. When we look at the properties of dark matter, we see that it does not meet the conditions of 3-dimensional space. This matter could be an object that exists in a higher space and exerts its influence on our Universe. Since matter is a form of matter that exists only in 3-dimensional space, we can say that dark matter is not actually matter at all, but a more complex structure.

The structure in question could be the material of a piece of space-time. This material could be the layer of influence that surrounds the ball in the example room on all sides. The initial particle of our universe must obey the properties of 3-dimensional space and form both matter and the physical field.The most suitable particles that meet these conditions are strings - vibrating energy threads. The vibration of strings in different patterns creates the variety in the Universe. [120] This vibration causes displacement in space. Since it has no movement, it must be constantly given energy (actuated). [121] This energy is both the energy that expands the Universe and the energy of the action of 4-dimensional space. As we move towards higher-dimensional spaces, our 3-dimensional space shrinks to an inconsiderable size. In this respect, the influence of high-dimensional spaces is extremely small. The strings described in this model are not one-dimensional, contrary to what is said, but rather a 3-dimensional energy wire with shape, mass, and frequency. This result gives the properties of 3-dimensional space and its mathematical description. Since the strings are elementary particles, their dimensions should be almost the same, and since the described shape of the string is taken into account, its mass is approximately $1{,}42\times10^{-84}$ kg should be[122].The model, built on the basis of this given mass value, allows us to determine not only the structure of the particles, but also the distribution of energy throughout space.When the masses of particles and strings are taken into account, for example, the electron has approximately $6{,}4\times0^{53}$ It is clear that there are a number of strings[122]. If we look at the system containing particles in this arrangement from a higher-dimensional space, the system will be simplified. The strings are distributed in different numbers in different parts of space under the influence of high-energy spaces, and then a difference in distance between them appears. As a result, particles with more strings in one part of space are formed, and a field with more strings in another part is formed[123]. Strings with similar vibrational patterns are collected and create the appropriate particle. Since all of these particles are related to each other, it is as if there are quantum fields corresponding to the particles in space, and these particles are also related to each other through strings[123]. Every point in the universe carries all the information of the whole[124].This picture also creates what we call a space lattice. Thus, we see that in reality, the void is composed of strings, and the energy of the void is not zero[123]. Since the string has mass, we understand that in reality everything has mass. The proof that the strings are characterized by specific parameters is related to the existence of constants in the Universe. At this point, we see that A. Einstein's $E=mc^2$ expression is satisfied. A. Einstein's $E=mc^2$ equation showed that matter and energy are different manifestations of the same essence, that is, everything that has energy also has mass[125]. We feel the effect of the gravitational field, which affects the strings and everything in general, only at a certain energy level, and this effect increases as the mass of the object increases. Since the gravitational effect is constant, the effect on the movement of micro and macro objects is different due to the difference in mass. Since the interaction energy between micro particles corresponds to the gravitational energy, the power of gravity over the particle does not play a dominant role, and many strange phenomena and uncertainties arise in the microworld. Defects in the space of strings cause this effect energy to be felt more sharply. These defects exhibit a number of behaviors that differ from the laws of 3-dimensional space. Since the processing of a material is mainly by external influence, for there to be so many differences in a Universe consisting of just strings, this influence needs to be done from different directions, and these defects are actually important. When we look at space, we observe a number of different properties in black holes that we are not used to. From this point of view, we can conclude that black holes are spatial defects and play the role of the skeleton of the Universe. The energy given to our Universe causes the strings to vibrate. This amount of flowing energy, in turn, shapes time. The structure of time can be twisted, and time loops are possible in real physics. [126] Since the smallest movement expresses the smallest time, we come to the issue of quantization of time. This form of quantization of time forms the concepts called quantum time, and the quantization of gravity forms the concepts called quantum gravity.As the universe continues to expand, the number of defects within it will begin to increase, and after a certain critical point, this external impact energy will overcome our space energy and destroy it. Every idea regarding the disappearance of the universe can be explained in this model. It should be noted that in high-dimensional spaces, new physical parameters and phenomena expressed by them occur that we could never even imagine. Since human perception is limited to only 3-dimensional space, we get correct results for this space with our mathematical calculations. Since new directions appear in higher spaces, our mathematics will be insufficient to explain these 4-dimensional figures, phenomena and living beings. Although many of us mathematicians try to explain high-dimensional spaces mathematically, it cannot be said that these calculations are completely correct. Because, high-dimensional spaces are trying to explain with 3-dimensional mathematics. M-theory suggests that the Universe is 11-dimensional, but it is very difficult to prove this accurately. We said above that each space has its own additional 3 new parameters by logical calculation. From this point of view, each object in the 11-dimensional phase will have 24 new properties. Therefore, it is necessary to complete the "theory of everything" that we want to be sure of. It is enough to build a theory that includes the entire 3-dimensional space and the constant energy of the 4th space from the 11-dimensional spaces of M-theory. One of the measured things here is not time. When we look at the properties of spatial dimensions, we can say that time does not belong to them. Time is the observed sequence of changes and sequences that occur as a result of the transfer of a single energy to 3-dimensional space[127]. Since any event in our universe is described, these events need to be explained qualitatively and quantitatively. The "God equation" should not include all quantities, but only relate the most important factors for the existence of these

quantities, constants, and phenomena. The concept of the "God equation" here acts as a symbol of infinite harmony and conscious design, which are the basis of both material and spiritual existence[68]. It becomes clear that the basic energies that we can understand in these two spaces are the current energy of our Universe, the energy that expands the Universe, and the energy of gravitational influence. The "God equation" should be an equation consisting of these energies, and the nature of other phenomena should be investigated on its basis. It is also necessary to touch upon the essence of some important quantities (entropy, temperature, etc.) with the given model.

Result: The model given for the "Theory of Everything", whose truth we can be sure of, has provided answers to many problematic issues. If we accept the Universe as a structure that contains all spaces, we understand only a very small part of this Universe. What is important for us is the Universe we live in. This Universe is a structure that was created by the big bang and is expanding within 3-dimensional space. We can say that it is possible to describe and qualitatively explain all phenomena by taking into account the unique characteristics of 3-dimensional space. The initial particle that is created has specific characteristics. Given the limited mathematical understanding, it is necessary to work considering 3-dimensional space and the effect of 4-dimensional space on energy. The science related to the explanation of micro-events is at a very low level. Based on the model given above to solve the problem, the equation close to the "God equation" is as follows:

$$E=E_{3d}+E_{4dT}+E_{5dT}+.... \quad (4)$$

here, all the energy of our E-Universe, E_{3d}- The energy in which the 3-dimensional part of the universe exists, E_{4dT}- The impact energy of 4-dimensional space on the universe, E_{5dT}-The universe is influenced by the energy of 5-dimensional space.

We can ignore the effects of 5-dimensional spaces and higher, then

$$E=E_{3d}+E_{4dT} \quad (5)$$

Since 3-dimensional space consists entirely of strings, expression (5) will be as follows:

$$E=N\times E_{sim}+N\times E_{sim.t}=N(E_{sim}+E_{sim.t})=7\times 10^{136}(E_{sim}+E_{sim.t}) \quad (6)$$

where N is the number of strings in the universe ($N=7\times 10^{136}$;[122]), Esim is the energy of a string, and Esim.t is the gravitational energy acting on a string.

The expressions in brackets must be discovered in later stages and the discrete increase of N must be taken into account. When we insert the values of the given quantities into this expression, which at first glance seems very simple, and we derive all the expressions from it. It will become clear how all the diversity of the Universe arises from such simplicity. In fact, we see that the gravitational field is not a fundamental interaction at all. In order to prove that the model we have given is correct, all phenomena in the Universe must be perfectly explained by this model, that is, by placing conditions on the strings. All objects, from elementary particles to macroobjects, must be described correctly[128]. A new string model that satisfies the given conditions must be created. All mathematical expressions and physical constants must be taken from the "God equation". In this form, the model given can be proven to be correct. It should be noted that it is logically impossible to say with such great precision that the great grandeur of the Universe and its diversity arose by chance, simply in unconscious energy threads. It would be illogical to say that creation in this form was accidental. It seems that someone behind the Universe and superior to itself built the Universe in a way that is suitable for life. The universe is created in a way that is precise and perfect to the point of being expressed in a theory, but complex to the point that we cannot understand it. The creation of the universe to such a perfect degree means that it actually has an important essence. We accept that everything was created starting from a point, then we must accept that all sciences study the properties of this Universe. We explain how the Universe works with the laws of physics, but physics does not answer the question of why it was created. In this case, it is necessary to turn to another science (religion). God, who created the universe to such a perfect degree, has definitely stated why He created it and what our duty is, and learning this information from God is the most correct approach.

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