

## **The Logic (Philosophy + Mathematics) of Matter and the Universe.**

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### **Introduction**

In modern conditions, the views of philosophers, on the emergence of the universe, have faded into the background. Superiority in the subject took physicists and astronomers. Physicists and astronomers generate many models. Having multiple points of view shows that truth is elsewhere or contains most points of view. Attempts to find "another place" create an increase in the number of models. To combine theories, analysis is needed. Analysis of a large number of theories is difficult. To reduce the number, theories are divided into two groups by the postulates: “Matter has always existed” and “The Universe arose from emptiness”.

### **Annotation**

The void from which matter originated has a stopped time and volumetrically is “a point and infinity”. These properties of emptiness allow it to be divided. Separation has two options: decomposition into polarities and functional separation within.

Lack of progress time affects the measurement of the separation rate. The absence of a specific volume allows the process to be described at a point and at infinity. These properties create conditions for the emergence of many theories.

The paper shows the sequence of separation of emptiness. It has been concluded that the prime cause of the emergence of energy, matter and space is standing time. The fluctuation in the stopped time creates a moving stopped time - the analogue of a photon. The transformation of standing time, into an analog of a photon, creates the movement of time. The direction of the transformation creates an arrow of time. The duration of the transformation creates a moment "now" - the period of transformation. The sum of the periods creates the duration of the event without creating a long time interval. It is shown that for the implementation of transformation a minimum of 3-dimensional nature is necessary.

### **The emergence of matter.**

All theories of the origin of the universe are subject to valid criticism. The number of criticisms is reduced by combining the merits of different theories. To merge, you need a place where there is no separation of theories.

The emergence of the universe is associated with the emergence of matter. The variant of the existence of matter "always" creates a situation: "We cannot prove it, but we take it for granted." The question of the origin of the universe closes, leaving the topic of the evolution of matter. The matter of matter evolution is not considered in the article.

A common place of opposing theories is the assertion of the emergence of the Universe from emptiness [1-4].

Matter must arise from that which exists. Occurrence occurs by transformation or decay of an existing substance. Substance must always exist. Otherwise, the question of its appearance. What always exists? There is always a void. The transformation of the "Void" into "not the Void" will create a compression of the Universe. The observed processes are reversed [5]. Consider the decay of the "Void" into dual components, based on the properties of the "Void".

In the "Emptiness" is no matter. "Emptiness" "Simultaneously" "Point" and "Infinity". The definition of "Point" and "Infinity" coexist due to the lack of comparison. "Point" and "Infinity" "Void", are the volume. As a volume, "Point" and "Infinity" should be divided equally. The disintegration of the volume is possible on a pair of "form - shapeless." The median position of the "Void" must meet the condition "form and formlessness." In the existing Nature, the condition "form and shapelessness", in the absence of a rest mass, corresponds to a photon. A photon is a particle of energy. Consequently, the "Emptiness", an analogue of the photon, and must have Energy. Energy (E) is decomposed into energy without form and energy with form. In the existing universe, form is absent from space. Space has properties that indicate the presence of energy. Therefore, space is energy without form. Energy with form is described by the equation  $E = MC^2$  or energy with form is the mass of matter.

Findings.

1. Matter originated from the "Void". The similarity of the photon and "Void", allows you to apply quantum physics to describe the processes of classical physics. The reverse description is distorted by the secondary matter from the "Void".
2. The photon, as an analogue of the "Emptiness", is able to transform into a mass. The transformation of a photon into a mass creates a fixed momentum.
3. Transformation of a photon into space bends space. The curvature of space affects the movement of photons and gravity. In nature, both processes coexist. Consequently, the absorption of photons bends the movement of passing photons and distorts the gravitational constant.

### **Time has stopped.**

"Simultaneity" was not the time and was it. Simultaneity was not time, since time is the gap between events. The gap between events is created by the movement of time. "Simultaneity" was time, being a point of reference for time and all time. The starting point is the "now" moment. All the time is the potential of time (T) in "Simultaneity."

The lack of movement of time in the "Emptiness", creates an internal observer, instantaneous for any process that has arisen. Instant, creates more power to any process [6]. The consequences of the High Power process are recorded by an internal observer and modeled mathematically, creating the theory of High power. Mathematics allows you to see the event from the side. For an external observer who is in a moving time, the process in "Emptiness" can have infinite duration. Logical processing, a long process of low power, allows to draw opposite conclusions [4] (Roger Penrose).

"Simultaneity" is a characteristic of "Void" and its components. Consequently, "Emptiness" combines time and energy into a single two-component system:

"Emptiness" = "Time × Energy" ( $T \times E$ ). Each component of the "Void" is divided independently of the other component. Energy Separation is discussed above. Consider the separation of "Simultaneity."

The disintegration of "Simultaneity" into the polar pair "Past - Future" will create an equality of polarities in absolute value. Polarity is realized by the influence of the Past on the Future and the Future on the Past. The past and the future are united by causal processes. With absolute equality

of potentials, equality of causal and effect-causal connections is observed. A causal relationship exists in reality throughout the universe [7]. The lack of equality between causal and consequence-causal processes, shows the absence of polarity, between the past and the future. Consequently, "Simultaneity" was divided into non-polar parts.

Past and Future are different variants of the state of time. The transition from one state to another is called transformation. The transformation of "Simultaneity", separately for the Past and Future, is impossible. Causation indicates that "Simultaneity" is the future. Consequently, in nature there is a transformation of "Simultaneity" into the past, creating the direction of movement - the "arrow" of time.

The period of transformation, the future into the past, is "no longer the future" and "not yet the past." The transformation period has a duration. Between the past and the future is the moment "now." The duration of the transformation creates a period of the moment "now." The sum of the periods, the moments of "now", creates the duration of the event. Understanding the duration of the event is recognized as the movement of time. Being in the "now" moment, the movement of time is not felt by the senses and is not recorded by the instruments (the clock measures duration — the sum of periods, not time itself).

The specific size of the moment "now" limits the amount of transformed "Lump sum". The limited number of transformed "one-time", limits the transformation of the energy of "Void". The existing movement of time shows that the division of the energy of the "Void" into space and matter is currently taking place. Conclusion. The universe is expanding, with the invariance of its density.

There is no absolute in Nature. The separation of the components of the "Void" into pairs "form (mass) - formlessness (space)" and "past - future" creates a certain level of polarity within the pairs. Polarity "form - formlessness" and "past - future" seeks to acquire a stable state. Stability is achieved by neutralization. Mutual neutralization returns everything to its original state and then repeats. Cross-neutralization creates low-polarity pairs, "the past has a form - a shapeless future" or "the past is formless - the future has a form". Low polarity will increase the stability of cross pairs, making it almost impossible to return to its original state.

"Emptiness" has no form. "Lump sum" as a component of "Void", has no form. Consequently, the future has no form and is like space. The similar dissolves in the similar and the potential of time is "dissolved" in space, forming space - time and its paradoxical properties (medium for waves and emptiness for matter). For the formless to take shape, transformation is needed. The future is transformed into the past. Transforming into the past and acquiring the form, "Lump Sum" should be something. In the present world, matter has form. Matter has no paradoxical properties, i.e. there is no past in matter. There remains the option that matter is our past. The past and the future have a certain level of polarity. Opposites attract. The attraction of the "One-timeness" matter, increases its concentration around massive bodies and distorts the adjacent space - time. There is a lensing effect and a slowdown in the course of time. The transformation process is accompanied by physical processes.

### **Terms of transformation.**

For the transformation process, the ability to change its characteristics is necessary. A single system changes its characteristics by accepting or giving up a part. To implement a single transformation, the appearance and disappearance of characteristics from "nothing" or the ability to exchange characteristics with similar systems is necessary. The emergence of the Universe, from a single system, creates variants: "Out of emptiness, because arose from emptiness "and" in

emptiness arose, since around many universes." These responses are a response shift away. So explain the birth of life on Earth, transferring it from other places.

The ability to transform occurs in a min two-component and unified system. Two characteristics, for its existence, requires the presence of min 2-dimensional (flat) Nature. Therefore, "Emptiness" ( $E \times T$ ) was a flat system. Decay ( $E \times T$ ), created from each component a double (flat) system.

Two binary systems, mutually and independently exist in min 3-dimensional Nature. The arrangement of the planes along the normal creates conditions under which all phenomena of nature exist according to the general rules of the three-dimensional world. So that nature does not become 12-dimensional (4 phenomena  $\times$  3-dimensional) it is enough that all four, 3-dimensional natural phenomena, have the ability to be present in each other. The term "presence" refers to such an association, in which each volume component becomes a characteristic in the system, without changing the essence of the other component. For example, a unified system, called matter, is characterized by mass and form.

Can the real world be n-dimensional?

For the growth of dimensionality there should be a ruler of dimensionality 1,2,3,4 ... .n. Linearity implies a dual system (1 and 3 are dual to each other, with respect to 2). For the emergence of a 3-dimensional world, the immediate possibility is the transformation of two 4-dimensional worlds into 3-dimensional and 5-dimensional and transformation of two two-dimensional worlds into 3-dimensional and one-dimensional. The variant of the emergence of the one-dimensional "arrow of time" and the 3-dimensional world of two flat worlds was realized.

Why is space, matter, energy, etc. 3 dimensional? 5th dimensionality is more diverse and more complicated. In existing conditions, the main property of Nature is the desire for stability. Stability is maintained at min. In the cases considered, the minimum for decay into integers is two.

### **Energy "Void"**

Where did the energy come from in the "Emptiness?" The product ( $T \times E$ ) occurs when the functional separation of a single system. Functional separation is accomplished by transforming an existing component into more. Example. Were limbs transformed in hands. Therefore, the "Emptiness" ( $T \times E$ ), before the separation, was energy or time. Time and "Emptiness" formlessly, energy is quantized. Consequently, the beginning was "Time", or rather the absence of the movement of time. Stopped time is a constant. How is the constant functionally divided into time and energy? The middle of a constant divides the constant into dual parts, retaining unity in the constant. The fixed time was functionally divided into time and energy. Energy has potential. Likewise, the initial Time and the "One-Time" are the potential of time.

### **Conclusion**

The expansion of the number of theories does not help to qualitatively describe the essence of phenomena. To reduce the number of theories, used an increase in the number of processes. The process of the emergence of matter from emptiness, divided into two types: positive (polarity) and negative (functionality) feedback. The functional separation of the stopped time and the subsequent disintegration into polarity led to the emergence of matter, physical vacuum, energy and the moment of "now" - time in which everything exists. The created theory, including a part of the main theories of the Universe origin, adopted Bradford Skow (2007) statement about the difference of time and space, the theory of Dirac and the work of N Kozyrev.

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