

# A Second Discussion on Cosmic Space in Zero Dimension

## —A Discussion on Spatial Questions According to Classical Physics

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### Abstract

Since their publications, theories in classical and modern physics have thoroughly studied the essence of matters. However, modern physical models only examined the change on the appearance of substances within its surrounding space, and it has never involved the study of absolute space as models in modern physics did not endorse the existence of absolute space. This work put in question the theories of higher-dimensional Universe accepted in mainstream physics. In order to reignite discussions in the Essence of the Universe, the author proposed the hypothesis that the Essence of the Universe is the zero-dimensional space and that it does not change accordingly with the change in substances, and that space is only and solely space. This work explored the topic of a zero-dimensional Universe using Western and Eastern philosophical concepts and their derivatives. This work concluded that zero-dimensional space could be a possibility that should be further studied, that the *cause* and *information* of Intelligent Energy proposed by the author influenced the motion and change of substances, and that time and force were merely parameters that describe the state of matters.

### Keywords

Absolute Space, Appearance of Substances, Classic Newtonian Mechanics, Monadology, Theory of Relativity, Four-Dimensional Spacetime

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## 1. Introduction

Space, the most intriguing existence in the Universe, must be studied using combined knowledge from science, philosophy, and religions, and it is time that humankind finally understands the essence of space. In the past, Newton pro-

posed the concept of absolute space, relative space, and places [1]. However, the concept of absolute space was criticized by Ernest Mach and subsequently influenced Einstein in the development of his theory of relativity [2].

With the progress in technology, humans have been blinded by desires in resources and substances, thus resulting in the loss of their ability to see the space and feel the Essence of the Universe, the mother of all creation. Humans must understand that the space is not empty, to which it contained an absolute existence. The Essence of the Universe must be understood, otherwise the direction of scientific and philosophical studies might encounter further conflicts, such as the conflict between the speed of light in Einstein's theory of relativity and quantum mechanics, where Einstein stated that nothing can exceed the speed of light.

Several works previously published intend to explore, examine, and reflect on space, which the author proposed that the zero-dimensional Universe was the Essence of the Universe [3] [4] [5]. This paper will discuss the hypothesis of a zero-dimensional cosmic space from the perspectives of classical physics. The author proposes that space is an absolute existence, and it is zero-dimensional. Space is the void that holds the myriad things in the Universe discovered to date. On the one hand, space has no direct connection with substances, and they should be considered as two distinct concepts, and on the other hand, it is connected with substances by the existence of the energy that created substances under the contradiction and unification of *yin* and *yang*. In this work, the concept of absolute space and time will be discussed based on the correspondence between Clarke and Leibnitz and further extrapolate from it. The author will also discuss the hypothesis that three-dimensional matters were a form of congregated matter that manifest in the zero-dimensional Universe, and how, under the action of Intelligent Energy, or the *cause* and information, three-dimensional substances continuously changed their extrinsic phases and form in the zero-dimensional space.

## 2. Literature Review

Conflicts in current physics draw their roots in the recognition and definition of space. To unify the Essence of the Universe and to solve the conflicts in physics, this work will explore theories in classical philosophies, the predecessor of modern science, and theories on the absolute space presented in classical physics in an attempt to unify physics theories.

## 3. The Essence of the Universe According to Ancient Greek Philosophy

In the West, all discussions on space originated from the Axial Age during the Ancient Greek period. During that time, with only a primitive scientific development, human ancestors utilized the innate rational perception and logical induction to explore and discover the eternally changing Essence of the Universe. Perhaps the wording used by these ancient sages were different, where Thales of

Miletus called it *all things were full of god*; Anaximenes called it the air; Anaximander called it the *Apeiron*; Parmenides called it the *being*; Xenophanes called it *God* (which he meant the existence that humans created according to their image and the Truth that cannot clearly express using human language); Heraclitus called it *logos* and that *everything flows*; Democritus called it the *void*, etc., but they all pointed toward that knowledge on the Essence of the Universe, which they tried hard to pass on [6] [7] [8].

#### 4. The Essence of the Universe According to Classical Physics

Western (non-ancient Greek) philosophy on the Essence of the Universe is generally based on ontology and phenomenology, influenced by physics. However, in the significant contributions to the exploration of space and time brought by physics, one of the most spectacular debates between science and philosophy happened between Gottfried Leibniz and Samuel Clarke during their correspondence from 1715 to 1716.

In his work *Mathematical Principles of Natural Philosophy*, Newton divided time into two separate concepts. The first was the “absolute, true, and mathematical” time, to which the flow of time remained equal [1]. The other time was the “relative, apparent, and common” time, to which was “sensible and external measure (precise or imprecise) of duration by motion” [1]. Examples of such common time are hours, days, months, and years.

Newton defined the absolute space as “a space in its own nature, without regard to anything external, remains always similar and immovable” [1], and defined the relative space as “some movable dimension or measure of the absolute spaces; which our senses determine by its position to bodies; and which is vulgarly taken for immovable space; such is the dimension of a subterraneous, an aerial, or celestial space, determined by its position in respect of the earth” [1]. Newton defined the difference between the absolute and relative space as although having “the same in figure and magnitude; but they do not remain always numerically the same” [1]. Newton subsequently gave the example of the earth that, “for instance, moves, a space of our air, which relatively and in respect of the earth remains always the same, will at one time be one part of the absolute space into which the air passes; at another time it will be another part of the same, and so absolutely understood, it will be perpetually mutable” [1]. It is obvious that Newton did not clearly express the concept of absolute space here. Hence, Leibniz started a heated discussion on this subject in the form of correspondences with Samuel Clarke, a firm supporter of Newtonian physics [9]. Ironically, it was Leibniz who truly and clearly described the absolute space, during his exchange with Clarke, as something with an absolute homogeneity, such that, if deprived of matters, would have no difference between one point in space to another [10].

Newtown described a part of space taken by any bodies as the place of a body, and they too were divided into absolute and relative, depending on the characte-

ristics of the space [1]. Newton referred to this space taken as only a part and “not the situation, nor the external surface of the body” because “for the places of equal solids are always equal; but their superficies, by reason of their dissimilar figures, are often unequal” [1]. Therefore, Newton claimed that place “is internal, and in the whole body” [1]. The definitions of time, space, and place gave by Newton became the foundation of classical physics and will be subject to discussions later in this work.

## 5. Discussion

The sage Protagoras believed that “Man is the measure of all things: of the things that are, that they are, of the things that are not, that they are not” [11], and Plato interpreted it as *individuals decide what deem to be the Truth true* [12]. Today, the action of people seemed to confirm this saying of Protagoras.

In the West, the thinking on cosmic space and the Universe stopped around Aristotle in the 4th century BC, that is, after he classified thinking on the cosmos of his predecessors as metaphysics and declared the Essence of the Universe to be an act of God [8] [13]. He then focused on more tangible physical science and left the exploration of the Essence of the Universe to religions deep within humans’ minds [14]. Centuries later, philosophy and religions ceded their leadership position to science and physics, which had led to the progress of human civilizations at their places to this day. This role of leadership of science was a good thing for humankind for its exponential technological leap. However, when science reached some stage in the study of matters, it might lead human thinking astray.

Looking at the thinking and ideologies of human ancestors, they all hold the same principle, that the myriad things in the Universe are three-dimensional, existing within the Essence of the Universe, which is the cosmic space, a zero-dimensional existence that is also the dynamic of the Universe [1] [8] [9] [10]. However, in the present, absolute space is often interpreted together with relative space, as shown in the theory of relativity proposed by Einstein, despite being one of the most significant physics theories in modern history. Matters also are often confused with space. Another example is the M-theory, itself being a mathematical interpretation of space, that led the majority to believe that the Universe was eleven-dimensional and further promoted subsequent theories on higher-dimensional Universe [15] [16]. The M-theory had brought significant impacts to the fundamental of philosophy and religions, and calls into question the validity of some modern physics theories, such as relativity and M-theory, on the cosmic space and matters. However, is that humankind has yet to discover a higher-dimensional Universe, and the science community should scrutinize the validity of the M-theory. The present situation was not due to a problem related to scientific development but rather philosophical based.

In his work [3], Liu proposed that all matters carry information, and defined it as Intelligent Energy, the primordial energy of all. During Newton’s time, the

extent of information was limited in comparison to the present day, and therefore, such discussions are only possible in the present day. The question on the action the author made the following assumptions:

First, the cosmic space was an absolute space of zero-dimension that remained unchanged in the three-dimensional Universe. The features of its essence included that it was limitless in both macroscopic and microscopic scales, to retain its form within the three-dimensional Universe, to exist both within and outside three-dimensional matters, and perform the crucial function that emits and perceives information within matters' structure.

Second, there existed two types of primordial energies within the dimensional space: Fundamental Energy and Intelligent Energy. In his work [3], Liu referred to them as the essence of the four and five-dimensional Universe. However, in [4], Liu proposed the hypothesis of the zero-dimensional space in intention to negate the existence of higher spatial and the fourth dimension (time) and argued that they were artificial dimensions. Liu also postulated that the *cause* of the Intelligent Energy, or information carried by matters, was the primordial energy of all discovered energies. It is their essence and the dynamic to the formation of all three-dimensional matters [4].

Third, time and forces are part of information of the Universe and the *cause* of Intelligent Energy, where forces are the First Souls of a material Universe, and time an attachment to the process of existence of matters.

Last, matters can be regarded as a form of condensed energy, which, under the influence of information and the record of the time, and a combination of energy and mass, matters came into existence in the Universe. This process of creation had a time frame far exceeding the lifespan of humans, which rendered humans unaware of this natural process until the discovery of the energy-mass relationship described by the equation  $E = mc^2$  and the advent of the nuclear age, and only after the onset of the electronic information age, humans finally understood the true meaning of this information.

## 6. The Essence of Time

Time was a very particular thing in the Universe because if humans had not existed, then time would become only the *cause* of the existence of matters and naturally exist under the influence of information of the Universe. Time is a piece of natural information that only became a numerical representation of the existence of matters through the existence of humans and their perceptions.

When humans came onto the stage, time suddenly became an existence for humans' perception. Measures of time, such as year, month, day, hour, and second were invented. In 1967, Thirteenth International Congress of Weights and Measures redefined seconds as "duration of 9,192,631,770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the caesium-133 atom at a temperature of 0 K" [17]. This great resolution unified the perception of time, a *cause* of the Universe.

To discuss time, it must first be understood that time is not a dimension, but rather a factor of energy, then, it must also be understood that time is eternal and unchanging. The thing that changes were matters under the effect of information, and from this, the measures of matter-energy conversion, including its external dimension and spatial dimension, could be observed. Time itself is an absolute entity that is a directionality vector, and it does not change or curve, nor being part of a spatial dimension, and can never become negative. The only two forms of time were non-existing in the void and existing in the material Universe. Until now, no one understood the non-existing form of time inside the void. The author proposed a hypothesis that the Essence of non-existing time might be an energy-field of the Intelligent Energy [3]. Different from the Newtonian definition of absolute time, where time was the numerical representation of the process of existence of matters, the author believes that time is a factor in the existence of matters [1]. For the existing form of time in the material Universe, the author proposed the hypothesis that it is absolute but different from the Newtonian absolute time, and it is a field. The author proposes that time had the following states:

First, the existing time was in the natural state, which is an inherent concept in human perception, such as years, months, days, hours, and seconds. Such time existed day after day, year after year over millions of years. However, analyzing the existence of matters, including humans, it was clear that the Universe had installed a *cause* dictating the course of their existence during their creation. The course of the existence of any matter, whether the life cycle of humans and animals, the life cycle of plants, the oxidation cycle of minerals, or the life cycle of stars, have been flawlessly clocked in nature.

The second state of time is the artificial state, in which humans input information into matter to decide the length and the structure of existing of that matter, becoming the gods of matter in the process. The progress of human technologies went through the age of thermal energy to electromagnetic energy, and finally to nuclear energy and computer age. It is now entering the fourth industrial revolution, based on Newtonian mechanics, where humans used nuclear energy and informational energy to refine natural radiating minerals to transform it into the void's energy. At that time, humans will be forced to face the void. It is time for the humankind to come to this realization.

The third form is expressed by Einstein's mass-energy expression  $E = mc^2$ . If any mass accelerates to the Speed of Light within one second, its mass will convert entirely into void's energy. From a human perspective, it represented the total elimination of matters. Similarly, any energy information that accelerates matters into this extreme limit will convert the mass of matters into Fundamental Energy. Based on these properties of time, it is conceivable that four-dimensional spacetime is the nature of matter and not a spatial concept.

## 7. The Essence of Space

Space is an absolute conceptual existence. In *Newton's Principia*, Newton classi-

fied the space into three different concepts: the absolute, true, and mathematical space (absolute space), relative space, and place, which was space occupied by bodies [1].

The relative space was the measured space between matters that were decided by the position of the matter. According to Newton, the spatial relationship between matters has mathematical distance, dimension and are measurable [1]. By definition, the relative space is defined by the position of the matter [1]. Thus, it can be regarded as a tangible three-dimensional space. On the other hand, the place proposed by Newton defines the space occupied by bodies of matter [1]. Since all matters are three-dimensional, the space occupied by matters must equally be three-dimensional. This equality then extrapolated to that all space must be three-dimensional, which is incorrect.

Arguably, three-dimensional matters in space came from the congregated energy, which, in turn, came from the zero-dimensional energy of the void. Similar theories, in which they proposed that the Universe came from nothing or some other dimension, have been advanced by scientists in recent years as well [18] [19]. The absolute space, in turn, like stated by Leibnitz in his correspondence with Clarke, is a zero-dimensional void deprived of any matters that can bear an infinite amount of three-dimensional matters. However, the progress of science after Newtonian mechanics had treated the perception of space in such a way that all space was regarded the same way as place proposed by Newton. Regrettably, science progressed based on a flawed hypothesis of the real space. Until now, there is still much to uncover on space, the greatest essence of the Universe and mother to all beings. Is science entitled to criticize and judge philosophies and religions based on scientific proofs? Scientists must remember that science, philosophy, and religion all strived continuously to explore to Truth of the Universe, although on different paths, and that there is no unique Theory of Everything.

In the debate between Leibniz and Clarke, ironically, Leibnitz, as a non-believer of absolute space, stated the true essence of the absolute space [9]. Unfortunately, he did not pursue his research in the real space. If he would have continued, there might not be a conflict between quantum mechanics and relativities. In past and current studies, the goals of four-dimensional research remained focused on possible matters the four-dimensional Universe contains and not on the space itself. On the other hand, quantum mechanics studies the chaos stage of the Universe, focusing on the period of the Universe where primordial matters, with spatial properties, formed the bulk of three-dimensional matters. When winding back in history, ancient sages such as Plato, Laozi, Liezi, and Heguanzi also proposed similar ideologies in their works [12] [20] [21] [22].

In the principle of Intelligent Energy, Liu combined Monadology's and oriental knowledge's theories to propose his hypothesis on Intelligent Energy, Fundamental Energy, and the zero-dimensional space [3] [5] [23] [24]. Intelligent Energy, as Liu had defined, is the Creator to all existing beings in the Universe that can exist in space as well as combine with the myriad things and human

beings, and it is zero-dimensional. It served as the carrier of information, whether it is force, time, or light waves. Finally, Intelligent Energy also commands matter to make relative changes in space, that is the change in four-dimensional spacetime described by modern physics.

The absolute time and space remain unchanged. The thing that changes accordingly is the existence of matters, namely the numerical interpretation of time and the outer appearance of matters, such as the place proposed by Newton. The process of existence of matters started from zero-dimension and traversing to the three-dimension space before ending in zero-dimensional space again. There is no real higher dimension in the Universe and time should not classify as a dimension by itself. In the Universe, only matters are three-dimensional, and space is zero-dimensional.

This work does not serve as a refutation to Professor Witten's M-theory. On the contrary, M-theory is a crucial factor in the development of physics researches. However, the M-theory is not a knowledge of space. This work does not intend to study religions and only used segments on the Essence of the Universe from religious and philosophical systems. These ideologies on the Essence of the Universe were mostly developed during the Axial Age in the history of humankind where prominent schools of thought, such as the philosophical thoughts in Buddhism, Greek philosophy, and philosophical ideologies in Daoism, came to light.

## 8. Conclusions

This work used the Oriental knowledge in philosophy and religions to propose a new direction, that the Universe is zero-dimensional in the research of space. The author also proposed the three states of time to refute the theory that time is the fourth dimension. He pointed out that time is a factor of Intelligent Energy perceived by humans being. The last hypothesis explored was that there should exist an absolute space and that Universe exists regardless of the existence of matter inside of it. Perhaps these hypotheses were inaccurate or even incorrect, but regardless, the search for the Truth through discussion and scientific verifications, as long as it remained peaceful, for humankind had reached a point that any further world-level conflict might announce the end for humanity. As an intelligent species that created the concept of God and learned to harness the power of God, humankind needs to transcend to a higher level of thoughts and spirit. Otherwise, there will be no future.

This is the revelation of the zero-dimension.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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