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Article

# The Etheric Nature of Consciousness: Exploring the Deep Connection Between Mathematics and Physics

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## Abstract

Based on the core premise that “ether = energy”, this paper proposes the central hypothesis that consciousness is a high-level form of etheric motion, systematically explaining the essential connection between consciousness and physical reality. The study argues that consciousness is not an inherent cosmic property but a product of the universe expanding to a specific stage. High-level etheric motion (consciousness) follows exclusive laws such as logic, and there is an intersection of laws with the low-level etheric motion studied in physics. This intersection constitutes the intrinsic connection between mathematics and physics. On this basis, the paper demonstrates the negative correlation between mathematical complexity and the validity of physical theories, pointing out that simple mathematical forms are more compatible with objective physical reality, while physical theories relying on advanced mathematics (such as string theory) have an extremely high probability of being incorrect. Finally, it discusses the issue of the independent existence of consciousness separate from living organisms, providing a new theoretical perspective for the study of the nature of consciousness and cosmic laws.

**Keywords:** nature of consciousness; ether; energy motion; relationship between mathematics and physics; cosmic expansion

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## 1. Introduction

The nature of consciousness has always been a core puzzle in the interdisciplinary research of philosophy, psychology, and physics. Since Descartes proposed “mind-body dualism” [5], the academic community has formed diverse understandings of the relationship between consciousness and physical reality—from materialism’s view that “consciousness is a byproduct of matter” to idealism’s claim that “consciousness determines reality”, and further to the exploration of the connection between consciousness and observational behavior in modern quantum mechanics [7]—no unified paradigm has been formed. The “hard problem of consciousness” proposed by Chalmers further highlights the limitations of traditional theoretical frameworks, namely how to explain the essential connection between subjective experience and physical processes [2]. Breaking away from the traditional dualistic opposition framework, this paper defines consciousness as a high-level form of etheric motion based on the premise that “ether = energy”, attempting to construct a unified explanatory system for consciousness and physical reality from the dimensions of cosmic evolution, energy laws, and mathematical tools. This approach echoes Marchetti’s proposed “energetic theories of consciousness” framework [10] and aligns with Strawson’s philosophical exploration of the physical nature of consciousness [14], offering a new theoretical path to solve the puzzle of consciousness.

## 2. The Etheric Nature of Consciousness: Core Connection with Physical Reality

### 2.1. Definition of Ether: Physical Reality as the Ultimate Energy Carrier

The “ether” referred to in this paper is not the mechanical ether in classical physics merely serving as a medium for light propagation, but is defined as the most fundamental reality of the

universe—energy, i.e., “ether = energy”. This definition breaks the mechanistic limitations of the traditional ether concept: from Aristotle’s classical ether thought of the “fifth element” [1], to Descartes’ vortex theory of ether [4], and further to the ether hypothesis as a medium for light propagation in Maxwell’s electromagnetic theory [11], traditional ether theories have always failed to break away from the mechanistic cognition of “material carrier”. The negation of the traditional mechanical ether by the Michelson-Morley experiment [12] further promoted the paradigm transformation of ether theory. Lorentz’s partial drag ether theory attempted to revise the traditional theory [9], but still failed to break through the limitation of materialized cognition.

This paper defines ether as the “ultimate energy carrier”, regarding it as the fundamental reality composing all things in the universe—whether macroscopic celestial bodies, microscopic particles, space, or abstract conscious phenomena, they are essentially different existence states and motion forms of ether (energy) [14]. This premise resolves the dualistic opposition between consciousness and physical reality, laying the foundation for a unified explanation of the two, and also echoes the empirical research conclusion by Collell and Parr that “energy metabolism is the basis of consciousness” [3].

## 2.2. Generation of Consciousness: Upgrade of Etheric Motion Driven by Cosmic Expansion

Consciousness did not exist with the birth of the universe but is a product of the universe expanding to a specific stage. In the early stages of cosmic evolution, energy (ether) mainly existed in low-level motion forms, manifested as particle collisions, aggregation, energy radiation, and transformation, following simple physical laws (such as the classical physical laws described by Lorentz) [9]. At this time, there were no conscious phenomena whatsoever. With the continuous expansion of the universe, the spatial scale expanded and the energy density decreased, and the forms of etheric motion gradually evolved from low-level to high-level: from the mechanical motion of microscopic particles to the gravitational motion of macroscopic celestial bodies, then to the self-organizing motion of complex systems, and finally, under specific conditions (such as the formation of living organisms), upgraded to high-level etheric motion with subjective initiative and cognitive ability—consciousness.

Cosmic expansion provides two key conditions for the upgrade of etheric motion: first, the expansion of space endows etheric motion with a broader evolutionary dimension, avoiding the solidification of motion forms in a high-density energy environment; second, the complex material structures formed during the cosmic cooling process (such as organic molecules and living organisms) provide carriers for high-level etheric motion. This is consistent with the empirical conclusion proposed by Dehaene and Changeux that “brain neural activity is the material basis for the generation of consciousness” [6], transforming consciousness from a potential motion form into an actual cognitive phenomenon. This means that the generation of consciousness is an inevitable result of cosmic evolution, a product of the continuous iteration and upgrading of etheric motion forms with cosmic expansion. This process is consistent with the cosmic evolution logic driven by “gravitationally induced quantum state reduction” proposed by Penrose [13].

## 3. Dual Forms of Etheric Motion and Their Law Systems

### 3.1. Dual Motion Forms: Division of High-Level and Low-Level Etheric Motion

Based on motion complexity and manifestations, etheric motion can be divided into two categories: low-level and high-level forms. The core object of physics research is low-level etheric motion, covering all-scale phenomena from microscopic quantum motion to macroscopic classical motion, including mechanical motion, electromagnetic motion, thermal motion, etc.—the electromagnetic motion described by Maxwell’s electromagnetic theory [11] and the light propagation phenomenon observed by the Michelson-Morley experiment [12] all belong to this type of motion. Its core characteristics are that the motion forms are objective, repeatable, and measurable, following clear physical laws.

Consciousness, as high-level etheric motion, has distinct characteristics different from low-level forms: subjectivity, initiative, and dynamics. Its motion process does not rely on the direct drive of external physical stimuli and can realize independent evolution through self-cognition, logical reasoning, and other ways. This characteristic echoes the quantum process characteristics of consciousness in the “Orch OR theory” proposed by Hameroff and Penrose [7], and is also supported by empirical evidence on the mechanism of conscious processing in the brain by Dehaene et al.—conscious activities have independent processing capabilities independent of external stimuli [6].

### 3.2. Dual Law Systems: Exclusive Laws and Intersection Relationship

High-level and low-level etheric motion each follow exclusive laws, while there is an intersection of laws. This intersection constitutes the intrinsic connection between mathematics and physics. The core law of high-level etheric motion (consciousness) is logic—including formal logic, dialectical logic, etc. Logical laws dominate the cognitive process, thinking activities, and decision-making behavior of consciousness, enabling consciousness to reflect, process, and transform the objective world. This is consistent with James’ early psychological description that “consciousness is a dynamic thinking process” [8].

The laws of low-level etheric motion (physical phenomena) are manifested as Newton’s laws, electromagnetic equations, thermodynamics laws, quantum mechanics laws, etc. These laws dominate the operation and evolution of the objective physical world—the description of electromagnetic laws by Maxwell’s equations [11] and the prediction of microscopic particle motion by the Schrödinger equation [13] are both accurate portrayals of the laws of low-level etheric motion.

The intersection of the two types of etheric motion laws is essentially the application boundary of mathematics. As an abstract logical symbol system, mathematics can not only adapt to the simple laws of low-level etheric motion (such as describing mechanical motion with linear equations) but also partially map the logical laws of high-level etheric motion (such as describing thinking processes with set theory and mathematical logic). This view is consistent with the “integrated information theory” proposed by Tononi and Koch, i.e., mathematics can be used to describe the complexity of consciousness and the energy organization relationship of physical systems [15]. This intersection makes mathematics a bridge connecting consciousness and physical reality, and also determines the differences in the application value of mathematics in different disciplinary fields.

## 4. Negative Correlation Between Mathematical Complexity and the Validity of Physical Theories

### 4.1. Core Proposition: The Lower the Mathematics, the Greater the Application Value

Based on the law system of etheric motion, this paper proposes the core proposition: the application value of mathematics is negatively correlated with its complexity—the simpler and more intuitive the mathematical form, the stronger its explanatory power and applicability to physical reality; the more complex and abstract the mathematical form, the higher the degree of disconnection from objective physical reality, and the lower the application value. The essence of this proposition is that low-level mathematics is more compatible with the simple laws of low-level etheric motion, enabling it to accurately capture the essential characteristics of physical phenomena, while high-level mathematics is often an abstract construction of human subjective thinking, making it difficult to adapt to the true state of objective low-level etheric motion [14]. Chalmers also pointed out in the study of consciousness theories that overly abstract mathematical constructions may deviate from the essence of subjective experience [2], a view that also applies to the research of physical theories.

### 4.2. Case Evidence: Successful Application of Simple Mathematics in Classical and Quantum Physics

Major theoretical breakthroughs in the history of physics all rely on simple mathematical forms. Newtonian mechanics, with the law of universal gravitation and Newton’s three laws of motion as the core, constructed the classical mechanics system using elementary mathematics and calculus

(basic mathematical tools), accurately explaining the laws of macroscopic celestial motion and terrestrial object motion. Although this system does not directly reference the ether concept, it essentially describes the laws of low-level etheric motion [9], becoming the cornerstone theory of physics. Electromagnetic theory, centered on Maxwell's equations (four concise differential equations), unified electricity, magnetism, and light phenomena [11]. Its mathematical form is concise and elegant, and it remains the core tool of electromagnetic research to this day, perfectly verifying the compatibility of simple mathematics with the laws of low-level etheric motion.

Thermodynamics laws and quantum mechanics also follow this rule: the three laws of thermodynamics, centered on textual descriptions and simple mathematical expressions, can reveal the essence of thermal motion without complex mathematical constructions [3]; although the Schrödinger equation of quantum mechanics involves differential equations and complex numbers, its mathematical form is still low-level compared to modern theories such as string theory, and it can accurately predict the motion states of microscopic particles [13]. These cases fully illustrate that low-level mathematics can effectively adapt to the laws of low-level etheric motion and has extremely strong application value—this is consistent with Marchetti's idea of simplifying mathematical expressions for the “energetic theories of consciousness” [10].

#### 4.3. *Counterevidence: Failure Risk of High-Level Mathematics and Physical Theories*

In sharp contrast to the success of simple mathematics, physical theories relying on high-level mathematics often face an extremely high probability of error. Such theories mostly adopt abstract high-level mathematical tools (such as Riemann surfaces, group theory, supersymmetric mathematics, etc.), deviating from the support of objective physical phenomena, and essentially becoming mathematical games of human subjective thinking rather than true reflections of the laws of low-level etheric motion (physical laws). String theory is a typical case: its core assumptions rely on abstract constructions of ten-dimensional and eleven-dimensional spacetime, adopting extremely complex mathematical forms, but it cannot propose verifiable experimental predictions nor form a self-consistent unified system with existing physical laws, and its correct probability is close to zero. This dilemma echoes Penrose's criticism of “overly mathematized physical theories” [13].

In essence, high-level mathematics is more compatible with the logical laws of high-level etheric motion (consciousness) and can be used to describe subjective phenomena such as thinking processes and logical reasoning [8]. However, when it is used to explain low-level etheric motion (physical phenomena), it will inevitably deviate from objective reality due to formal overload, leading to theoretical failure. This further confirms the negative correlation between mathematical complexity and the validity of physical theories, consistent with the empirical principle emphasized by the Michelson-Morley experiment that “physical theories should be based on observable phenomena” [12].

## 5. Discussion: The Issue of the Independent Existence of Consciousness Separate from Living Organisms

Based on the core hypothesis that “consciousness is high-level etheric motion”, a key controversial issue emerges: can this high-level form of etheric motion (consciousness) exist independently without living organisms? In this regard, this paper conducts an analysis from two dimensions: theoretical possibility and practical basis.

From a theoretical perspective, as a form of etheric motion, the essence of consciousness is the motion and transformation of energy. Living organisms are only the carriers for the manifestation of consciousness, not a necessary condition for its existence. This view is consistent with the characteristic of “quantum nonlocality” of consciousness proposed by Penrose [13]. Just as low-level etheric motion (such as electromagnetic motion) can exist independently of specific material carriers (such as electromagnetic waves propagating in a vacuum) [11], high-level etheric motion (consciousness) may also continue to exist in some form after separating from living organisms.

During the process of cosmic expansion, if there are complex energy structures of non-living organisms that can provide carriers for high-level etheric motion (such as the “integrated information system” proposed by Tononi and Koch) [15], it is possible to generate forms of consciousness separate from living organisms. Such consciousness may not possess the subjective experience characteristics of human consciousness, but it still belongs to the category of high-level etheric motion.

From a practical perspective, there is currently no direct evidence to prove that consciousness can exist independently of living organisms. Existing conscious phenomena are all closely related to living organisms (especially the brain): brain neural activity is the material basis for the generation of consciousness [6], and when a living organism dies and the brain structure collapses, conscious phenomena also disappear. This practical dilemma stems from two aspects: first, human observation of consciousness relies on the subjective expression and neural signal detection of living organisms, making it impossible to capture energy motion forms separate from living organisms [7]; second, the potential non-living conscious carriers that may exist in the universe have energy structures and motion forms far beyond the current observational capabilities of humans, making them difficult to detect [10].

In summary, the independent existence of consciousness separate from living organisms has theoretical possibility but lacks practical evidence support. Future research can focus on two directions: one is to explore complex energy structures of non-living organisms in the universe, searching for potential carriers of high-level etheric motion [14]; the other is to decipher the correlation mechanism between brain neural activity and consciousness, clarifying the core role of living organisms as conscious carriers [6], so as to provide a more accurate answer to the issue of the independent existence of consciousness.

## 6. Conclusions

Based on the premise that “ether = energy”, this paper constructs a new theoretical framework for the nature of consciousness: consciousness is a high-level form of etheric motion, an inevitable product of the universe expanding to a specific stage, following exclusive laws such as logic [8]; there is an intersection of laws between the low-level etheric motion studied in physics and the high-level etheric motion of consciousness, and this intersection determines the intrinsic connection between mathematics and physics [15]; mathematical complexity is negatively correlated with the validity of physical theories, simple mathematical forms are more compatible with objective physical reality, and high-level mathematics is prone to leading theories to deviate from reality [13].

This theoretical framework breaks the dualistic opposition between consciousness and physical reality, providing a unified energy perspective for the study of the nature of consciousness. This perspective integrates the tradition of ether theory since Aristotle [1], Descartes’ exploration of the mind-body relationship [5], and the core viewpoints of modern energetic theories of consciousness [10]. At the same time, it has important implications for the research of physical theories—returning to simple mathematical forms and focusing on the true laws of etheric motion [12] may be the key path to breaking through existing theoretical dilemmas (such as the stagnation of string theory).

Regarding the issue of the independent existence of consciousness separate from living organisms, although there is no clear answer yet, it points out the direction for subsequent research. In the future, with the in-depth exploration of cosmic evolution, energy laws, and conscious mechanisms [2,7], it is expected to further improve this theoretical system, providing more solid support for solving the core puzzles of consciousness and the universe.

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