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# The End of Isomeric Second Order Dirac Hydrogen Equations

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Biedenharn and Wong wrote the Dirac equation in the form that the combination of the differential term and the function term is equal to zero, then changed the positive and negative sign of the mass term and removed the wave function to extract a mixing operator, and then used this mixing operator to act on the first-order Dirac equation. The resulting second-order equation is called the isomeric second-order Dirac equation. Because the equations in mathematical sense can be constructed arbitrarily, the isomeric second-order Dirac equation can exist as a pure differential equation. However, as the wave equation of quantum mechanics, the isomeric second-order Dirac equation advocated by famous journals seriously lacks scientific basis and destroys mathematical principles, and the processing of isomeric second-order Dirac equation is completely false calculation. Here, the real heterogeneous second-order Dirac equation is first derived, and it is proved that it is a system of equations composed of four non-solvable second-order partial differential equations of four wave function components. Then it is proved that the highly respected second-order Dirac equation of single-component wave function isomerism is forged, and the Dirac energy level formula of hydrogen atom pieced together is only a prop to cover up the above lies. Then it is proved that the most ideal isomeric second-order radial Dirac equation of hydrogen atom is also an unsolvable differential equation system composed of at least two partial differential equations, which further illustrates the fraud of the highly respected isomeric second-order Dirac equation of single-component wave function. Finally, it is proved that the mixed operator method for constructing the isomeric second-order Dirac equation destroys the unitary principle and leads to many confused and uncertain conclusions. The results of these rigorous calculations declare the end of the heterogeneous second-order Dirac equation and the mixed operator method itself used for the construction of heterogeneous wave equations.

**Keywords:** Dirac equation; Isomeric equation; Mixing operator; Spurious calculation; Spurious equation; Unsolvability.

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## 1 Introduction

The great influence of the Dirac equation[1-7] has led to the emergence of various named Dirac equations. The teratogenic simplified second order Dirac hydrogen equation has been terminated[8] because it actually has two contradictory solutions, one that meets the expectation and the other that does not meet the expectation. The solution that does not meet the expectation has been deleted by the excuse of decoupling, and the expected solution is retained. Even so, the reader can check that the expected solution of the reserved second order equation does not actually meet the corresponding first-order equations. To millions of articles of Dirac equation, we only need to test the wave function called the solution of the equation into the equation, and we will know that many calculations are not true. I call such untrue calculations false calculations.

As the development theory of the Dirac equation, the teratogenic equation makes us doubt the credibility of the praise of the Dirac equation expressed by the scientific community. Praise of modern physics often stays in the description of philosophical significance and evades the logical argument. For example, Dirac equation leads to the strange Dirac Sea[9], Dirac equation predicts the existence of antimatter[10], and Dirac equation naturally describes the spin of particles[11]. However, Dirac equation has no causal relationship with so many events, but it is described as an inevitable causal law. As a part of the Dirac equation, Dirac matrix[12,13] is usually bound with the Pauli matrix[14]. In fact, Dirac matrix is at least a fourth order matrix, while Pauli matrix is a second order matrix. When we combine the two to transform the Dirac equation of the fourth order matrix into the Dirac equation of the second order matrix, we should prove that there is an inevitable causal relationship between the Dirac fourth order matrix and the Pauli second order matrix, rather than blindly praising it. What is the actual situation? Too much praise of philosophical significance led physicists to focus on the

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cloning and interpretation of the highly praised theory and gave up the important process of scientific research such as conclusion and logical test imperceptibly.

Mathematics is the precise language of physics. But there are still great differences between the mathematical language of physics and pure mathematics. Pure mathematics can write an equation at will to discuss the solution of the equation, but physics cannot write an equation at will. Physical equations such as wave equations must be based on basic physical laws such as Newton's laws of motion. The solution of the differential equation in a pure mathematical sense only needs to satisfy the differential equation and the definite solution condition, while the solution of the physical differential equation only satisfying the differential equation and the definite solution condition is often not enough. This is because the definite solution condition is not necessarily unique. If the definite solution condition is not appropriate, the resulting solution may be a false solution. Some examples have been listed before. Pseudo solutions often hide irreconcilable logical contradictions. Although the pseudo solutions of wave equations often meet expectations after processing, it is the result of unreasonable calculation.

From a purely mathematical point of view, Dirac equation is really attractive. Its construction method is ingenious, and the equation processing hides variability, which will greatly enrich the content of mathematics. However, as a physical equation, the scientific basis of equation construction, the inevitable causal relationship between the result and the basic laws of physics, and the uniqueness of the solution of the equation need to be treated again with enough patience. Dirac equation gave birth to a large number of flashy equations. Here we discuss the isomeric second-order Dirac equation. Its construction process is to first move the function term in the original Dirac equation to one side, remove the wave function and get a mixing operator, then change the positive and negative sign of the quality in the mixing operator to construct a heteromorphic mixing operator, and then multiply the heteromorphic mixing operator by the original mixing operator, and the result acts on the wave function, claiming that the obtained second-order equation is a second-order Dirac equation. This paper proves that the isomeric second-order Dirac equation, which is highly praised by famous journals, is the result of false calculation and the so-called exact solution is only patchwork. Then the real isomeric second-order Dirac equation is given, and it is proved that the real isomeric second-order Dirac hydrogen equation is not solvable. Thus, the isomeric second-order Dirac equation and the isomeric method itself were also declared to be over.

## 2 Conclusions and comments

The theory of isomeric second-order Dirac equation advocated by famous journals is completely wrong. It does not really develop the theory of Dirac quantum mechanics. The founder of the theory seems to lack the applied mathematical foundation and necessary scientific logic. Instead, he made up a false theory that could not pass the calculation test by stating the false memory and quoting the celebrity equation without causal relationship, listing the false calculations and writing the so-called second-order Dirac equation of the single component wave function that did not exist in fact. The actual effect just exposed the hypocrisy and fraud of the peer review system. From a mathematical point of view, I give the real deduction of the isomeric second-order Dirac equation from the mixed Dirac operator, and the result is the second-order partial differential equation of the four wave function components that cannot be solved. It is further proved that the formula of Dirac energy level given by the isomeric second-order Dirac equation is a lie. The insolubility of the ideal hydrogen atom isomeric second-order radial Dirac equation declares the complete end of the theory of isomeric second-order Dirac equation. The construction of wave equations by mixed operators leads to the uncertainty of results, and the construction of wave equations by mixed operators leads to the confusion of physical conclusions, which is destructive to the unitary principle and declares the end of the method of constructing wave equations by mixed operators.

The end of the theory of isomeric second-order Dirac equation has cleared another obstacle for the correct understanding of Dirac electron theory. At the same time, the author reiterated the view expressed by studying the evolution of the angular motion law operator[]: the application scope of the quantum mechanics principle of constructing wave equations by operators is very limited, and the operators only act on the wave function, not the potential function and other functions. Some thorny problems in the processing of wave equations in quantum mechanics caused by this need to be considered from multiple perspectives, and the processing results conforming to the unitary principle are relatively reliable. Science has strict logic. Theoretical physics should draw conclusions from correct calculations. Cognitive errors or computational errors can be corrected eventually. When trying to establish a new physical theory, we should give up the establishment of the theory when we can't calculate, instead of avoiding calculation, focus on quoting the celebrity equation without causality that we have never read and tested, vividly describe personal fantasy, fabricate false logic, and create the illusion of scientific inference. Some theories, conclusions and experimental reports of modern physics are fabricated in this way and cannot pass the strict test of Dongfang's unitary principle. Some famous academic journals

flaunt academic ethics, but they have always tried to defend academic lies, strangle, slander and even plagiarize those groundbreaking and correct scientific discoveries. The experience of communication with scientific journals in the past 40 years has proved that many famous journals do not really care about new scientific discoveries but pay more attention to safeguarding the fame and interests of interest groups and individuals. The groundbreaking and great discoveries made by the bottom scientists can and can only be spread to the world with the lowest efficiency by means similar to leaflets.

To foretell a new conclusion that needs strong logic support: Dirac equation is not the ultimate answer to quantum mechanics, and its position in physics may gradually decline with the passage of time. However, the Dirac equation construction method is one of the most attractive methods for constructing partial differential equations. The Dirac equation will bring rich and colorful mathematical problems, which will gradually increase its position in mathematics. It is by no means easy to construct a truly scientific and widely applicable wave equation that can correctly describe the laws of nature. Construction of wave equation needs the support of basic laws of physics and mathematical principles. The wave equation that conforms to the unitary principle in a wider range derived from the basic laws of physics and mathematical principles will be the ultimate answer. Some wave equations constructed by the operator principle of quantum mechanics, such as Schrödinger equation, Klein-Gordon equation and the Dirac equation, may only be transitional equations of quantum theory. We need a unified quantum theory that conforms to the unitary principle from the field of mathematics to the field of physics, which is suitable for describing both macroscopic and microscopic laws of motion.


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