

Review of: "A Complete Quantum Mechanics"

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Potential competing interests: No potential competing interests to declare.

Thank you very much for inviting me to review Richard Oldani's paper on Complete Quantum Mechanics.

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Comment: "Complete Quantum Mechanics"

"Complete Quantum Mechanics" proposes Einstein's unfinished quantum theory: involving two coordinate systems K and K' to represent three processes of absorption and emission, discussing the necessity of integrating matrix mechanics and wave mechanics; and using this Propose "unified quantum mechanics" as the hypothesis that "quantum mechanics is incomplete".

1. This concept has been commented on many times as "interesting", but "unified quantum mechanics" is a serious topic; it is very necessary to conduct research in the development of quantum mechanics.

2. The EPR paper believes that the "Copenhagen Interpretation" is not complete enough and does not require more mathematical derivation, from "Planck's law", "Einstein coefficient", "matrix mechanics" to "wave mechanics", the quantum The mathematical calculations of mechanics are all correct; how to have a deeper understanding of the "physical meaning" of "abstract mathematics" computational representations: matrix mechanics and wave mechanics are two different mathematical forms, physical experiments and explanations of the same representation of steady state Description of observable invariant physical quantities! ?

3. Consider the thought experiment of the EPR paper and the relationship of the "Einstein coefficient"; matrix mechanics and wave mechanics are mathematically proven to be equivalent, and there must be some kind of "relationship" hidden between them. Einstein coefficients; in which the analysis integrates "different mathematical images visualized as part of a single physical model", it will be a picture of "unified quantum mechanics" that can be fully described.

4. "Wave function" It is complete; the Schrödinger picture under the representation of coordinate space, and the principle of matrix mechanics under the representation of energy: the measurements of the "phase diagram" of generalized coordinates all have the property of "normalization".

5. Probabilistic interpretation of quantum mechanics $|\Psi|^2$. In contemporary theoretical physics research, we should seek a deeper mathematical understanding of "physical equations", not just tool calculations.

