

Review of: "On Qubits and Quantum Information Technologies"

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Innovation and bold repudiation from the root of a system has always made sense. The main argument of this article appears to be based on the assertion that quantum superpositions, including qubits, do not have physical counterparts in the real world. The argument is grounded in the idea that the three-dimensional Euclidean space, which describes our physical world, has properties that make precise time and space coordinates unattainable by measurement.

However according to standard quantum mechanics, it is possible to provide certain time or spatial coordinates during the measurement process:

1. Time Evolution: In quantum mechanics, the system's state evolves over time, and the wave function describes the system's state. When making a measurement, a specific moment in time is usually chosen for observation, and it can be said that the system's state is "projected" onto a particular time point. Although the system's state is determinate at a specific moment during measurement, the measurement results may exhibit a certain degree of randomness. Based on the concept of wave function collapse, the appearance of measurement results is probability-based, and the specific outcome is determined only at the time of measurement.

2. Spatial Coordinates: For spatial coordinates, if the system involves a position measurement, then the system's position can be determined at the moment of measurement. However, according to the uncertainty principle, for certain conjugate variables, such as position and momentum, they cannot be simultaneously precisely determined.

In summary, the measurement process of quantum systems can be associated with precise time or spatial coordinates, but quantum mechanics introduces the concepts of probability and wave function collapse, making the measurement results exhibit a certain level of randomness. This randomness is not due to the inability to determine precise time or spatial coordinates but is a consequence of the probabilistic nature of the system's state before measurement and the measurement process itself.

Certainly, these issues in quantum mechanics are indeed fascinating and thought-provoking. To enhance persuasiveness, it is desirable for the article to provide more specific and technically detailed arguments.