Review of: "On Einstein-Bohr Debate and Bell's Theorem"

Mohammad Reza Pourkarimi

Potential competing interests: No potential competing interests to declare.

I cannot admit the manuscript because of two main issues.

1. The author claims that quantum randomness is responsible for quantum mechanics effects such as uncertainty relations or violation of Bell inequality. If I understand correctly, quantum randomness happens in Euclidean space. As far as I know, there are some quantities in quantum mechanics that have no counterpart in Euclidean space and they must just be defined in Hilbert space, such as half spin. Hence, the results cannot be extended to all quantum states, even if quantum randomness is a correct assumption.

2. Bell inequality is a kind of inequality for correlated probability distributions with some assumptions, and it is independent of physical objects. This inequality can be violated for specific states called entangled states, and quantum mechanics (based on Hilbert space) predicts such violation before measurement. Thus, it seems quantum randomness is irrelevant to the Bell inequality.