

Peer Review

Review of: "Questioning the Reasonableness of the Quantum Nonlocality Debate"

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Review of the preprint 'On the unreasonableness of the quantum nonlocality debate' by Justo Lambare.

I agree fully with Justo Lambare that the Bell-CHSH inequality requires no counterfactual reasoning. Given a hidden variable model, it is just based upon the fact that all responses are -1 or +1, pure algebra.

The purpose of the article is not to argue for or against any statement regarding the nonlocality of quantum mechanics, but to describe certain unjustified interpretations given in the literature. This is done by listing 6 fallacies related to the Bell theorem and to the violation of the Bell-CHSH inequality in practice.

The definitions of nonlocality and of realism look very reasonable. In the latter definition, Lambare also refers to the famous definition of realism in the EPR paper. This involves the phrase 'predicting with certainty', which Lambare in a parenthesis calls 'determinism'. I would personally define determinism in another way. Prediction involves some person who makes the prediction, thus an element of subjectivity. To me, determinism should somehow refer to an objective property of the phenomenon under discussion.

But in all, I regard this paper as a useful reminder. Nonlocality and locality are important concepts, but care should be taken when using these concepts in relation to Bell's theorem.

Declarations

Potential competing interests: No potential competing interests to declare.