Disproof of Bell's Theorem: Further Consolidations

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Abstract

The failure of Bell's theorem for Clifford algebra valued local variables is further consolidated by proving that the conditions of remote parameter independence and remote outcome independence are duly respected within the recently constructed exact, local realistic model for the EPR-Bohm correlations. Since the conjunction of these two conditions is equivalent to the locality condition of Bell, this provides an independent geometric proof of the local causality of the model, at the level of microstates. In addition to local causality, the model respects at least seven other conceptual and operational requirements, arising either from the predictions of quantum mechanics or the premises of Bell's theorem, including the Malus's law for sequential spin measurements. Since the agreement between the predictions of the model and those of quantum mechanics is quantitatively precise in all respects, the ensemble interpretation of the entangled singlet state becomes amenable.

Keywords:	Bell's Theorem; Local Causality; Local realism; EPR-Bohm Correlations; Quantum Mechanics
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