Quantum Physics

Complete proof of Gisin's theorem for three qubits

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Gisin's theorem assures that for any pure bipartite entangled state, there is violation of Bell-CHSH inequality revealing its contradiction with local realistic model. Whether, similar result holds for three-qubit pure entangled states, remained unresolved. We show analytically that all three-qubit pure entangled states violate a Bell-type inequality, derived on the basis of local realism, by exploiting the Hardy's non-locality argument.

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