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Nonlocality arguments in the temporal Clauser-Horne-Shimony-Holt scenario

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Abstract content
 (Max 300 words)

For testing the existence of superposition of macroscopically distinct

quantum states, Leggett and Garg [Leggett A J, Garg A 1985 Phys. Rev. Lett. 54 857], proposed an inequality based on the assumptions of macroscopic realism',noninvasive measurabilty' and 'induction'. These assumptions in a slightly dierent form have been used to derive a temporal version of Bell's inequality [Brukner C, Taylor S, Cheung S, Vedral V (e-print quant-ph/0402127)]. This inequality is violated in Quantum Mechanics and thus establishes non-locality of quantum correlations in time. We compare various nonlocality arguments in this temporal scenario.

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