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Enhanced violation of Leggett-Garg Inequality in three flavour neutrino oscillations via non-standard interactions

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Neutrino oscillations occur due to non-zero masses and mixings and most importantly
they are believed to maintain quantum coherence even over astrophysical length scales. In the present study, we explore the quantumness of three flavour neutrino oscillations by studying the extent of violation of Leggett-Garg inequalities (LGI) if non-standard interactions are taken into account. We report an enhancement in violation of LGI with respect to the standard scenario for appropriate choice of NSI parameters.

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