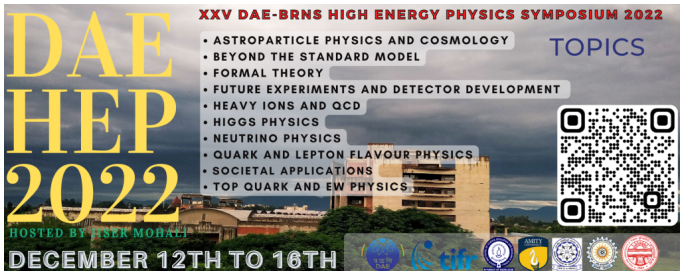

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Effects of NSI on non-local correlation measures in neutrino oscillations

Friday 16 December 2022 14:00 (1 hour)

Non-local correlations are typically measured in terms of the Bell's inequality parameter. It was shown that the non-local advantage of quantum coherence (NAQC) is a better measure of non-locality than the Bell's inequality parameter in neutrino systems [1]. We investigate the effects of nonstandard interaction (NSI) on these measurements in the context of many accelerator and reactor experiments for two flavour neutrino oscillation scenario. We observe that the effects of NSI are enhanced in the KamLAND experimental setup. Furthermore, we demonstrate that, while NAQC is a more powerful measure of non-locality, Bell's inequality parameter is more susceptible to NSI effects [2].

1.M. L. Hu, X. M. Wang, and H. Fan.,
Phys. Rev. A **98**, no. 3, 032317 (2018).
2. B. Yadav, T. Sarkar, K. Dixit, and A. K. Alok, Eur. Phys. J. C, no. 5, 1-10 (2022).

Session

Beyond the Standard Model

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