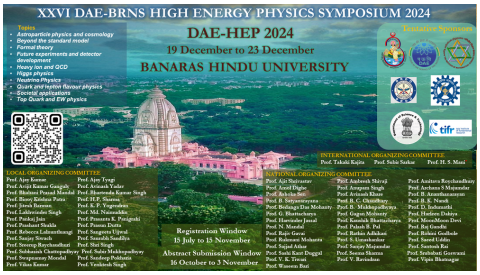

Contribution ID: **313** Type: **Postar**

Temporal correlations in two flavor neutrino oscillations with quantum decoherence effects and the nature of neutrino

The nature of neutrinos, i.e, whether they are Dirac or Majorana fermions is one of the most intriguing questions in present day particle physics. In the standard oscillation framework, the Majorana phase does not appear in the expression for oscillation probability and hence it is generally believed that it is difficult to probe the nature of neutrino via oscillation experiments. It turns out that in the presence of quantum decoherence effects, the neutrino oscillation probability may carry explicit dependence on the Majorana phase appearing in the mixing matrix. For the simple case of two neutrino flavors, we show that the temporal correlations of the Leggett-Garg type allow us to deduce the nature of neutrino via the Majorana phase dependent terms in the probability.

Field of contribution

Theory

Authors: RUSHIYA, KRITIKA (Jawaharlal Nehru University, New Delhi); Dr MEHTA, Poonam (Jawaharlal Nehru University, New Delhi); Ms PRAVEEN, Sabila (Jawaharlal Nehru University, New Delhi)

Presenter: RUSHIYA, KRITIKA (Jawaharlal Nehru University, New Delhi)

Track Classification: Neutrino Physics