



Contribution ID: 212

Type: Poster

Complementarity between DUNE and T2HK: gateway to improved CP coverage

Thursday 15 December 2022 14:00 (1 hour)

In this work, we focus on the complementarity between the two upcoming long-baseline experiments: DUNE and T2HK, in establishing the leptonic CP violation at 3σ C.L. for at least 75% of the Dirac CP phase (δ_{CP}). We find that DUNE + T2HK combinedly can achieve the desired CP coverage of 75% with only half of their individual nominal exposures, while independently, they both fail to attain the same even with full exposure. Further, we also elaborate on both individual and complementary performance in establishing CP coverage as a function of optimal choice of run-time, systematic uncertainties, and the subsequent effect of exposure in our study. We also explore the crucial role of disappearance mode in establishing the CP violation. We also incorporate the effect of having a probable second detector in Korea (T2HKK). We realize that although T2HKK has better sensitivity towards CP coverage than individual DUNE and T2HK, but it is still less than DUNE + T2HK, whatever be the octant of θ_{23} .

Session

Neutrino Physics

Authors: GIARNETTI, Alessio (Università di Roma Tre); Prof. MELONI, Davide (Università di Roma Tre); SINGH, Masoom (Utkal University and Institute of Physics); Prof. KUMAR AGARWALLA, Sanjib Kumar (Institute of Physics, HBNI); DAS, Sudipta (Institute of Physics, HBNI)

Presenter: SINGH, Masoom (Utkal University and Institute of Physics)

Session Classification: Poster - 3