

CP Violation at Long-Baseline Neutrino Experiments

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The nature of CP violation in the lepton sector is one of the biggest open questions in particle physics. Long-baseline accelerator neutrino experiments have the opportunity to determine if CP is violated in the mass matrix. I will look at the most recent NOvA and T2K data which show a slight and very interesting tension. While this tension possibly indicates a flipping in the mass ordering, it is better fit by new physics such as non-standard neutrino interactions (NSI) with an additional source of CP violation. The strength of this NSI can be easily estimated analytically and I will present a numerical analysis of the preferred regions which are generally consistent with other constraints.

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