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Model-independent way to test the CPT violation using NOvA, T2K and INO experiments

Charge-Parity-Time (CPT) symmetry governs that the oscillation parameters for neutrinos and anti-neutrinos are to be identical. Different mass and mixing parameters for these particles may give us a possible hint for CPT violation in the neutrino sector. Using this approach, we discuss the ability of long-baseline and atmospheric neutrino experiments to determine the difference between mass squared splittings ($\Delta m_{32}^2 - \Delta \bar{m}_{32}^2$) and atmospheric mixing angles ($\sin^2 \theta_{23} - \sin^2 \bar{\theta}_{23}$) of neutrinos and anti-neutrinos. We show the joint sensitivity of the T2K, NOvA and INO experiments to such CPT violating observables in different possible combinations of octant for neutrinos and anti-neutrinos.

Mini-abstract

Model-independent way to test the CPT violation using NOvA, T2K and INO experiments

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