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**A Search for Lorentz Violation in the T2K Near Detectors**

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— Lorentz symmetry violation (LV) arises when the behavior of a particle depends on its direction or boost velocity. This fundamental symmetry violation is expected to occur at the Planck scale ( $\sim 10^{19}$  GeV). The Standard Model Extension (SME) is a general theoretical framework that includes both General Relativity and the Standard Model while also allowing for the spontaneous breaking of Lorentz symmetry through a set of coefficients. As predicted by the SME, neutrinos couple to a background tensor field and can exhibit LV behaviors due to a sidereal time dependence in the neutrino oscillation probabilities. Time-dependent perturbation methods are used to extract the LV neutrino oscillation probabilities in the SME at baselines shorter than the neutrino oscillation length. A search for LV at the T2K near detectors with baselines of 280 m is presented. A Fast Fourier Transform analysis of the T2K data using the protons on target normalized neutrino event rate at the T2K near detectors is used to search for LV. A binned log-likelihood fit is performed to extract limits on the relevant SME coefficients or, in the case of LV detection, extract the values of the SME coefficients.

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