

Abstract Submitted
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Testing of Lorentz and CPT violation with LSND TEPPEI KATORI, Indiana University, LSND COLLABORATION — Lorentz/CPT violation is one of the predicted signals of Planck-scale physics. The recently developed formalism of the Standard-Model Extension (SME)¹ for neutrino oscillation is used to analyze the sidereal time variation of the neutrino event excess observed in the LSND experiment. It is found that several SME parameter combinations that reproduce the LSND signal, including combinations with and without sidereal variations. Using the maximum likelihood method, coupled SME parameter values are extracted and the scale of Lorentz and CPT violation for LSND is determined to be of order $10^{-19} GeV$ for the coupled SME parameters a_L and $E \times c_L$. In addition, predictions for future experiments such as MiniBooNE will be presented.

¹V.A. Kostelecký and M. Mewes, Phys. Rev. D **69**, 016005 (2004)

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