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Title:	Search for Lorentz and CPT Vi- olation in Neutrino Sector
Authors:	Pillai, Nitheesh S. (/jspui/browse?type=author&value=Pillai%2C+Nitheesh+S.)
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Abstract:	The Standard Model has been a well-celebrated achievement for the physicists. Although it is a successful theory, there are certain cases and phenomena which are beyond its scope. This issue demands the search for a more general theory. Lorentz and CPT violation in the neutrino sector is an area to look for new physics - physics beyond the Standard Model. This thesis project is an attempt to learn the scope of this route. The project focuses on Lorentz and CPT violating theories, their application to the neutrino physics (oscillation phenomena, to be precise), and ways to detect the violation parameters experimentally. We have reviewed the phenomena of neutrino oscillation and theory of neutrino masses. In the context of neutrino oscillation, various Lorentz and CPT violating models have been discussed. As an example, we have chosen Puma model, in paricular, c_8 a 5 m model to fit the experimentally observed neutrino oscillation data collected at MiniBooNE. In our analysis, we have fixed the neutrino mass and have varied CPT and Lorentz violating parameters c_8 and a_5. Our one-parameter analysis implies that 1σ allowed region for c_8 is $[2.16, 2.69] \times 10^{-16}$ GeV^{-4}, while the corresponding region for a_5 is $[1.18, 1.71] \times 10^{-19}$ GeV^{-1}.
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