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Probing the intrinsic Lorentz violating parameters at DUNE

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The Deep Underground Neutrino Experiment (DUNE) is a promising international effort in neutrino physics and aims to discover leptonic CP violation and determine the mass hierarchy by using neutrino oscillations. This experiment will have the ability to probe sub-dominant effects introduced by new physics such as CPT and Lorentz violating interactions, - among others. In this work we discuss about how DUNE can constrain these Lorentz violating parameters, - particularly in the $e\mu$ and the $e\tau$ sector, - which are most relevant for DUNE. We also discuss about the possible correlations (among themselves and also with the standard oscillation parameters δ and θ_{23}) related to these new physics parameters, - by analysing the new allowed regions of sensitivity they introduce.

Content of the contribution

Theory

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