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BSM sources of CP violation at future long baseline experiments

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Neutrino Oscillations are one of the most important discoveries of the last thirty years. Many experiments looking at neutrinos from different sources were able to measure with a good precision almost all the oscillation parameters. However, considering parameters uncertainties, there is still room for the possibility of the presence of Beyond Standard Model (BSM) effects. Some of the most studied New Physics scenarios in the Neutrino Oscillations framework are sterile neutrinos, Non Standard Interactions and Non Unitarity models. We studied the potentialities of future long baseline experiments like DUNE to look for BSM sources of CP violation measuring only the CP asymmetries in different oscillation channels. The relatively easiness of the measurement of such quantities, the large amount of expected data and the great performances of LBL experiments could in principle provide a simple but powerful method to search for new physics effects.

Reference to paper (DOI or arXiv)

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