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Sterile Neutrinos at DUNE (15' + 3')

Saturday 6 August 2016 16:50 (18 minutes)

I discuss the sensitivity of the proposed DUNE experiment to the existence of new neutrino mass eigenstates. I allow for a large range of new mass-squared difference, from values smaller than 10^{-6}eV^2 to values larger than 1eV^2 and discuss the sensitivity to new sources of CP-invariance violation. I also address how well DUNE can disentangle different new physics scenarios, including the existence of a fourth neutrino, non-standard neutrino interactions, and the existence of extra-dimensions of space. Finally, I comment on the complementarity of DUNE and other next-generation long-baseline neutrino experiments.

Primary author: DE GOUVEA, Andre (Northwestern University)

Presenter: DE GOUVEA, Andre (Northwestern University)

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