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Uncovering Secret Neutrino Interactions at Tau Neutrino Experiments

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In this talk, I would like to investigate the excellent potential of future tau neutrino experiments in probing non-standard interactions and secret interactions of neutrinos. Due to its ability identifying tau lepton, DUNE far detector could have superior sensitivity in probing the secret neutrino interactions by observing downward-going atmospheric neutrinos, compared to the short-baseline experiments in Forward Physics Facility (FPF) at CERN. In probing the non-standard interactions, the large volume experiments such as HK, KNO, or ORCA could provide the dominant sensitivities. However, the inclusion of tau neutrino observation of DUNE could raise its sensitivity comparable to those larger volume experiments. Hence we point out the importance of increasing the tau lepton identification efficiencies in future experiments.

Mini Symposia (Invited Talks Only)

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