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Tau Appearance from High-Energy Neutrino Interactions

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High-energy muon and electron neutrinos yield a non-negligible flux of tau neutrinos as they propagate through Earth. In this talk, the impact of this additional component in the PeV and EeV energy regimes is addressed for the first time. This contribution is predicted to be significantly larger than the atmospheric background above 300 TeV, and so effects future cosmic tau neutrino flux discovery in current/future neutrino telescopes. Further we demonstrate that Earth-skimming neutrino experiments, designed to observe tau neutrinos, will be sensitive to cosmogenic neutrinos, even in extreme scenarios without a primary tau neutrino component.

Collaboration name

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