Upper limit on the flux of tau- and electron-neutrinos using the HiRes detector

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Air-fluorescence detectors such as the High Resolution Fly’s Eye (HiRes) detector are very sensitive to ultrahigh energy neutrino-induced showers. A search for neutrino-induced showers has yielded a null result. The expected cosmogenic neutrino fluxes derived from our best fit to the measured HiRes cosmic-ray spectrum are given. We report on Monte Carlo simulations of electron-neutrino interactions in the Earth and in the atmosphere using the Landau-Pomeranchuk-Migdal (LPM) effect and of tau-neutrino interactions in nearby mountains resulting in showers produced after the decay of tau leptons. We present upper limits on the flux of high-energy neutrinos.

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