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Radio Detection of Neutrino-Induced Tau Lepton Air Showers at Altitude

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Cosmogenic neutrinos produced by cosmic rays during propagation are expected to arrive at Earth in roughly equal ratios of electron, muon, and tau neutrinos. Due to the cyclic regeneration of tau neutrinos and tau leptons, radio-based experiments are sensitive to the air showers produced by tau leptons emerging from the interaction of Earth-skimming tau neutrinos. We present a study of the sensitivity and optimization of radio detectors at altitudes to tau-lepton showers and discuss prospects for future mountain-top or balloon-borne instruments.

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