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## Impact of Neutrino Decay on Sterile Neutrino Search in IceCube

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Anomalies in short-baseline neutrino experiments have suggested the existence of a  $\sim 1$  eV sterile neutrino. IceCube, an ice-Cherenkov neutrino detector at the South Pole is an ideal testing ground for such neutrinos, but recent searches have found no evidence for them. In a 3+1 sterile neutrino model, decay of the heaviest mass eigenstate to lighter eigenstates is largely unconstrained and could modify the results of the searches in IceCube. We present the results of a phenomenological study where neutrino decay is included as a sub-leading effect to oscillation in a 3+1 model in IceCube.

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