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New sensitivties for eV-scale Sterile Neutrino Searches with IceCube

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Various short-baseline neutrino oscillation experiments have yielded unexpected results, which hint at the existence of light sterile neutrinos. IceCube has performed a unique search for sterile neutrinos by exploiting matter-enhanced resonant oscillations, which can be probed using atmospheric and astrophysical neutrinos in the TeV energy regime. The analysis uses the world's largest sample of Earth-crossing muon neutrino events from eight years of IceCube data with a purity above 99.9%. We present new sensitivities in this analysis using both new event selection and energy reconstruction based on machine learning techniques.

Attendance type

In-person presentation

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