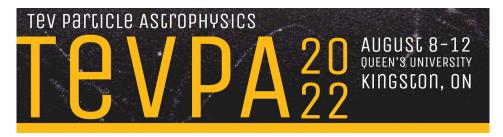
**TeVPA 2022** 



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Type: Parallel Talk

## IceCube Matter-Enhanced Sterile Neutrino Searches

Tuesday 9 August 2022 15:50 (20 minutes)

The IceCube Neutrino Observatory has sensitivity to sterile neutrino oscillations through matter-enhanced oscillation occurring in the few TeV energy range for eV<sup>2</sup>-scale mass-squared splittings. I will present previous measurements of these effects in  $\nu_{\mu}$  disappearance, which has strong sensitivity to the mixing angle  $\theta_{24}$  via  $\bar{\nu}_{\mu} \rightarrow \bar{\nu}_{s}$  transitions. I will also discuss ongoing work towards measuring the sterile neutrino mixing angles  $\theta_{14}, \theta_{24}$ , and  $\theta_{34}$  through the previously unexplored  $\bar{\nu}_{\mu} \rightarrow \bar{\nu}_{e}$  and  $\bar{\nu}_{\mu} \rightarrow \bar{\nu}_{\tau}$  cascade appearance channels.

## **Collaboration name**

IceCube

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Track Classification: Neutrinos