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Progress in Solar Atmospheric Neutrino Searches with 9 Years of IceCube Data

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Cosmic rays interact with nucleons in the solar atmosphere to create pions, kaons, and other particles which decay to produce a flux of high-energy neutrinos. Although this flux is predicted in the literature, it has yet to be observed experimentally. This flux is an irreducible background for current solar WIMP searches. The detection of these neutrinos would improve the sensitivity floor for these searches, and would allow neutrino telescopes to measure neutrinos in yet-unprobed oscillation regimes, characterized by a ratio of baseline to the energy of $L/E \sim 1\text{e}5\text{km/GeV}$. In this contribution, we will present recent progress in a new IceCube analysis optimized to detect solar atmospheric neutrinos.

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