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Searches for astrophysical sources of neutrinos using cascade events in IceCube

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The IceCube neutrino observatory has observed a flux of high-energy astrophysical neutrinos using both track events from muon neutrino interactions and cascade events from interactions of all neutrino flavors. Searches for astrophysical neutrino sources have focused on track events due to the significantly better angular resolution of track reconstructions. To date, no such sources have been confirmed. In this talk we turn our attention to complementary and statistically-independent source searches using cascade events with deposited energies as small as 1 TeV. Compared to the classic approach using tracks, the cascade channel offers improved sensitivity to sources in the southern sky, especially if the emission is spatially extended or follows a soft energy spectrum. We will show results from a first search using 263 cascades collected from May 2010 to May 2012, as well as projected sensitivity estimates for an upcoming analysis of six years of data.

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