

Toward the Identification of the Cosmic Neutrino Origin

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To reveal the origin of diffuse PeV neutrinos observed in IceCube, we need to identify a single source. I discuss various possibilities in light of current and future neutrino detectors, and show that many of the proposed scenarios including dark matter models can be critically tested. A natural and intriguing possibility is that >0.1 PeV neutrinos originate from cosmic-ray reservoirs like starburst galaxies and galaxy clusters. We emphasize that identifying gamma-ray counterparts is necessary to establish that they are neutrino emitters.

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