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Recent results from IceCube on astrophysical neutrino emission

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The IceCube Neutrino Observatory is a cubic-kilometer scale neutrino detector at the South Pole. IceCube consists of over 5000 photosensors deployed on cables deep in the Antarctic ice. The sensors detect neutrinos via the Cherenkov light emitted by secondary particles produced in neutrino interactions.

With the measurement of the isotropic astrophysical neutrino flux in the TeV-PeV energy range, IceCube has opened a new window into the high-energy universe.

During the past few years, IceCube has detected deviations from isotropy with neutrino emission from the blazar TXS056+056 and the Seyfert Galaxy NGC1068. The neutrino emission spectra of both objects differ substantially, hinting at differences in the underlying production mechanisms.

Adding to the complexity of the neutrino sky, IceCube has recently measured neutrino emission from the Galactic Plane, which offers valuable new information to the study of galactic cosmic ray production and transport.

In this contribution, we will present an overview of IceCube's results on the origin of galactic and extra-galactic neutrino emission.

Collaboration / Activity

IceCube

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