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Neutrinos searches with the IceCube telescope

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The IceCube Neutrino Observatory is a kilometer-scale detector located in the South Pole. The full detector comprises 5,160 photomultipliers deployed along 86 strings at depths between 1.5-2.5 km in the ice. Muon tracks arriving in the detector from neutrino interactions are reconstructed using the time and charge information detected by the array of PMTs. In this contribution we present the latest results of time-integrated and time-dependent searches for astrophysical neutrino sources. The entire sky is scanned for accumulations of neutrino signal events incompatible with the atmospherical background.

The detection of these astrophysical neutrinos will help to settle the unresolved questions about the origin and nature of cosmic rays. Among possible sources of neutrino emissions blazars are one of the main candidates. Assuming that neutrinos and γ-rays are produced in dominant pp or pγ interactions and that the total power in them equals, IceCube limits and Fermi observations can be used to constrain the main parameters of these hadronic models.

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