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Latest results from IceCube on neutrino properties and flux types

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The IceCube Neutrino Observatory is a cubic kilometer ice Cherenkov neutrino detector, located at the geographic South Pole, detecting neutrinos down to energies of about 10 GeV. Thanks to its size, IceCube can probe small fluxes of high-energy neutrinos (10 TeV) and in the last couple of years it has established the existence of a high-energy astrophysical neutrino flux at the level of $0.5{-}2.5{\cdot}10^{-18}(E/100\,\mathrm{TeV})^{-\gamma}$ GeV cm^{-2}s^{-1}sr^{-1} per flavor and a spectral index γ of $2.0 - 2.7$ depending on the energy range of the specific analysis. DeepCore, a region of denser instrumentation at the lower center of the detector, detects low-energy atmospheric neutrinos (100 GeV), which are used to study neutrino oscillations with a precision comparable to that of the leading experiments in the field. The latest results on both of these topics are discussed.

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