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Exploring High-Energy Neutrino Universe from the South Pole with IceCube

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The Amundsen-Scott South Pole Station is an ideal location for studying the universe of high-energy particles by detecting neutrinos. The IceCube Neutrino Observatory measures neutrinos emitted from sources of cosmic rays, which are the most energetic background radiation in the universe. In this talk, we present our latest findings on the neutrino sky, covering a broad range of energies from EeV to TeV using IceCube. We highlight the updated measurements of the high-energy neutrino spectrum in the cosmic background radiation. We also introduce the recent endeavours initiating multi-messenger observations to probe the origins of cosmic-rays.

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