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Measurement of Neutrino Energy Spectra via Deconvolution with IceCube

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IceCube is a cubic kilometer neutrino detector located at the geographic South Pole. Neutrino events in IceCube are detected via Cherenkov light emitted by charged leptons, produced in charged- or neutral current interactions with nuclei in the ice or the bedrock. As these interactions are stochastic processes, the energy of the neutrino cannot be accessed directly, but has to be inferred using the reconstructed energy of the leptons or other energy estimators. Additional smearing effects, introduced by particle propagation and the detector itself, further complicate the problem. This talk will discuss spectral measurements by IceCube obtained using various deconvolution/unfolding analyses as well as their development over time.

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Session Classification: Talks