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New Measurement of Atmospheric Neutrino Oscillations with IceCube

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The DeepCore infill array of the IceCube Neutrino Observatory enables observations of atmospheric neutrinos with energies as low as 5 GeV. Using a set of 40,000 neutrino events with energies ranging from 5.6 - 56 GeV recorded during three years of DeepCore operation, we measure the atmospheric oscillation parameters θ_{23} and Δm^2_{32} with precision competitive with long-baseline neutrino experiments, by observing distortions in the neutrino energy-zenith angle distribution. Our measurements are consistent with those made at lower energies, and prefer a value of θ_{23} close to maximal.

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