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Measurements of the neutrino-nucleon cross section with IceCube

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As the neutrino-nucleon cross section increases with energy, a diffuse isotropic flux of high-energy neutrinos at Earth's surface will be modified by interactions with matter in the Earth. The transmission probability depends on the neutrino energy, arrival direction, and cross section. Currently, IceCube has detected a statistically significant sample of neutrinos at energies above a TeV, making it uniquely positioned to make measurements of the neutrino-nucleon cross section at these energies. Here, I present some recent IceCube results of the cross section at TeV scales and higher.

Summary

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