

Dark Matter Searches and Fundamental Neutrino Measurements with IceCube-DeepCore

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IceCube is a cubic kilometer neutrino telescope under construction at the South Pole, a successor to the first-generation AMANDA telescope designed to the search for astrophysical neutrino sources. IceCube is now three quarters complete with the full detector expected to be operating in early 2011. Data taken with the partially built detector already provides world-leading sensitivity on spin-dependent dark matter scattering cross-sections. The base design of IceCube now includes an infill array known as DeepCore, improving sensitivity to neutrinos at energies below 100 GeV. Plans for DeepCore, as well as estimates for the IceCube-DeepCore sensitivity to dark matter will be presented. Further, the possibility of studying atmospheric neutrino oscillations using will be discussed.

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