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Deep Core and PINGU - Studying Neutrinos in the Ice

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IceCube and its low energy extension DeepCore have been deployed at the South Pole and taking data since early 2010. Originally designed to search for high energy (on the order of PeV) events, IceCube has recently published the detection of the highest energy events ever recorded. At the same time, enhancements to the detector have been installed to focus on lower energy events. With a neutrino energy threshold of about 10 GeV, DeepCore allows IceCube to access a rich variety of physics including searching indirectly for WIMP dark matter and studying atmospheric neutrinos. A proposed new in-fill array, named PINGU, will continue to lower the threshold for neutrino detection. This will in turn provide the potential to study a great deal of new physics, including the determination of the neutrino mass ordering. This talk will discuss the PINGU detector and the new physics it makes available with a focus on the determination of the ordering.

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