

Neutrino Physics with the PINGU extension of IceCube

Monday, September 12, 2016 4:30 PM (20 minutes)

The Precision IceCube Next Generation Upgrade (PINGU) is a proposed low-energy in-fill extension to the IceCube Neutrino Observatory that will feature the world's largest effective mass of a few Mton for neutrinos at an energy threshold of a few GeV. The unprecedented statistical sample of GeV-scale atmospheric neutrinos will enable PINGU to quickly and at a modest cost investigate the following: determination of the neutrino mass ordering, non-maximal θ_{23} and an ensuing octant determination, and unitarity of the neutrino mixing matrix via ν_τ appearance. The physics topics extend beyond oscillation-based analyses to include tomography of the Earth's core and indirect dark matter searches.

The status of the project will be presented.

Summary

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Session Classification: Neutrinos

Track Classification: Neutrinos