PSF12-2012-000053

Abstract for an Invited Paper
for the PSF12 Meeting of
the American Physical Society

IceCube - Performance and first results

ALBRECHT KARLE, University of Wisconsin - IceCube

The IceCube detector, which completed construction in December 2010, is the first km^3 scale instrument to become operational with the primary mission of observing high energy neutrinos from astrophysical sources. All three flavors of neutrinos are detectable with IceCube over a wide energy range. The detector is also being used for studying atmospheric neutrinos, cosmic rays and other physics. I will discuss some performance characteristics of the completed detector and report on results from the partially completed detector on searches for diffuse astrophysical neutrinos, astrophysical point sources of neutrinos and neutrino emission coincident with gamma ray bursts. I will also present results on the observation of neutrino oscillations and discuss the potential program for neutrino oscillation studies.