

P/SS Colloquium

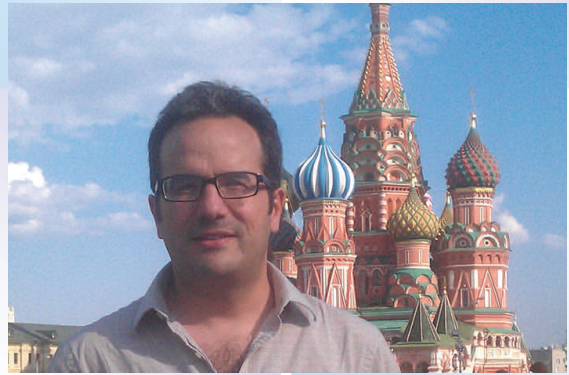
# IceCube: A New Window to the Universe

Friday, August 28, 2015

OPS 140

4:00 - 5:00 pm

Lite refreshments will be served



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The IceCube Observatory at the geographic South Pole was built to search for neutrinos from beyond the solar system. After a few years of data collection, multiple analyses have revealed an excess of high-energy neutrinos that is incompatible with their origin being atmospheric. This is interpreted as evidence for a flux of neutrinos from unresolved astrophysical sources. The detection of astrophysical neutrinos opens a new window to peer into the most extreme environments in the universe and can give us clues on the origin of cosmic rays. A secondary objective of IceCube is the study of the energy spectrum and composition of the cosmic ray flux with energies between  $10^{15}$  and  $10^{18}$  eV using IceTop, an array of detectors located on top of the ice. IceTop can also be used to identify neutrinos of astrophysical origin by detecting the air shower that produces the atmospheric neutrinos and muons. In this talk, I will give an overview of these and other results from the IceCube Observatory as well as the ongoing design studies for a next-generation Antarctic neutrino observatory.