ICRC2015

ICRC
The Astroparticle Physics Conference
34th International Cosmic Ray Conference
July 30 - August 6, 2015
The Hague, The Netherlands

Contribution ID: **786** Type: **Poster contribution**

Generation-2 IceCube Digital Optical Module and DAQ

Thursday, 30 July 2015 15:30 (1 hour)

With recent exciting observations of astrophysical TeV- to PeV-energy neutrinos and new competitive measurements of GeV-energy atmospheric neutrino oscillations in the IceCube neutrino observatory at the South Pole, the design of a second generation Antarctic neutrino observatory, IceCube-Gen2, is underway. The design calls for two new instrumented volumes, one a denser in-fill array to extend the sensitivity of IceCube to energies low enough to gain sensitivity to the neutrino mass hierarchy, and one approximately ten times larger than IceCube, about 10 cubic kilometers in extent, to improve the sensitivity of IceCube to high energy astrophysical neutrinos and their sources. The detectors will share many common hardware elements and will leverage the successful hardware and software of the first generation experiment. They will feature updated data acquisition electronics using commercially available components and taking advantage of advances in embedded computing power. We will look at the status of the modernized in-ice Digital Optical Module (DOM) and the supporting surface electronics and data acquisition components.

Collaboration

IceCube

Registration number following "ICRC2015-I/"

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Session Classification: Poster 1 DM and NU

Track Classification: NU-IN