ICRC2015

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

Contribution ID: **687** Type: **Poster contribution**

PINGU camera

Thursday, July 30, 2015 3:30 PM (1 hour)

IceCube is the world's largest neutrino telescope located at the geographic South Pole, that utilizes more than 5000 optical sensors to observe Cherenkov light from neutrino interactions. A hot water drill was used to melt holes in the ultra-pure Antarctic ice, in which strings of optical sensors were deployed at a depth of 1500m to 2500m. The recent observation of high energy neutrinos consistent with astrophysical origin, as well as measurements of neutrino oscillation parameters and world-leading searches for dark matter, have demonstrated the great potential of this detector type. Extensions to the IceCube detector are now being considered. Ice properties, including the refrozen hole ice, have emerged as major source of uncertainty for event reconstruction. A camera system integrated with optical sensor modules could be tremendously beneficial in order to better understand ice properties and interpret calibration measurements. In this presentation we will describe the merits of the camera system and present a preliminary design. The preliminary design foresees a system of high resolution cameras located inside the DOM, to study the refrozen and surrounding ice. The impact of the camera system on geometry calibration, sensor location and orientation will be discussed.

Collaboration

IceCube

Registration number following "ICRC2015-I/"

169

Primary author: BOSE, Debanjan (Sungkyunkwan University)

Co-author: ROTT, Carsten (Sungkyunkwan University)

Presenters: ROTT, Carsten (Sungkyunkwan University); BOSE, Debanjan (Sungkyunkwan University)

Session Classification: Poster 1 DM and NU

Track Classification: NU-IN