

Expected Performance of Cosmic Muon Veto Detector at IICHEP, Madurai, India.

Thursday 18 July 2024 20:40 (20 minutes)

The INO-ICAL collaboration has built a prototype detector called miniICAL at IICHEP, Madurai, India. A Cosmic Muon Veto detector (CMVD) based on an extruded plastic scintillator (EPS) is being built on top of the miniICAL detector to investigate the feasibility of constructing a large-scale neutrino experiment at shallow depths. All the individual components of the veto walls, e.g. SiPM & its readout, WLS fibre as well as the reconstruction of muon trajectory in the miniICAL have been well established.

Using these developments, this work examines the performance of building such a large veto system around the miniICAL detector using the GEANT4 toolkit by incorporating all the known detector parameters in the simulation.

The algorithm to study the performance of the CMVD detector is optimized with and without magnetic field. The talk will describe the detailed performance of the hardware components and the expected performance of the CMVD around the miniICAL.

Alternate track

1. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors

I read the instructions above

Yes

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Track Classification: 13. Detectors for Future Facilities, R&D, Novel Techniques