

Characterisation of Hamamatsu SiPM for cosmic muon veto detector at IICHEP

Tuesday, May 25, 2021 5:12 AM (18 minutes)

A miniature version of ICAL experiment at the India-based Neutrino Observatory, mini-ICAL is running at Madurai, India. A Cosmic Muon Veto detector on top of mini-ICAL is going to be made with extruded plastic scintillators with embedded WLS fibers to propagate light and SiPM as photon transducers. A test setup is built to characterise the SiPM along with the muon detection efficiency of the scintillator detector. The SiPM will be calibrated using LED source, but also alternate calibration procedure using radio-active source as well as noise data is also tested as alternate procedures. The SiPM is operated at various overvoltage (Vov) to choose the operational Vov by optimising the muon detection efficiency and noise rate. The muon position along the length is measured using timing information on both sides of the fibre. These results along with specific characteristics of SiPM, e.g. after pulse, cross-talk, recovery time etc will be presented in this talk.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

Funding information

Primary author: JANGRA, mamta

Co-authors: Mr SARAF, Mandar (Tata Institute of Fundamental Research, INDIA); Prof. MAJUMDER, Gobinda (Tata Institute of Fundamental Research, INDIA); BHEESETTE, Satyanarayana; Mr UPADHYA, S.S (Tata Institute of Fundamental Research, INDIA)

Presenter: JANGRA, mamta

Session Classification: Sensor Posters: Photodetectors

Track Classification: Sensors: Sensors: Photo-detectors