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SiPM characterisation for cosmic muon veto detector of mini-ICAL

The prototype detector of Iron CALorimeter (ICAL) experiment at the India-based Neutrino Observatory i.e., mini-ICAL is currently running at IICHEP Madurai, India. An active cosmic muon veto (CMV) detector is going to house the mini-ICAL from top and sides except the front side. CMV consists of 5cm wide extruded plastic scintillators with embedded two WLS fibres to propagate scintillation light and SiPM at both ends of fibres as photosensors for detecting photons. The SiPM will be calibrated using an LED ultrafast driver. A small experimental setup is built to characterise the SiPM along with an extruded scintillator strip to optimise the operating over voltage, threshold of SiPM signals and the veto criteria by observing muon signal and the noise rate in SiPM. These optimisations along with other characteristics of SiPM, e.g. cross-talk, afterpulse, recovery time etc will be presented in this talk.

Collaboration / Activity

INO collaboration

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