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Calibration of IceCube detectors

Friday 14 March 2025 16:05 (1h 55m)

This project aims to calibrate the Digital Optical Modules (DOMs) in the IceCube Neutrino Observatory using minimum ionizing muons. By analyzing simulated muon events in Monte Carlo data, we hope to determine the relative efficiency of which the DOMs have been simulated with. DOM efficiency is currently the third largest systematic uncertainty in IceCube, directly impacting event reconstruction and flux measurements. Reducing this uncertainty improves the accuracy of neutrino detection and enhances the detector's sensitivity. The results will contribute to more precise astrophysical neutrino measurements and support future IceCube upgrades.

Field of study

Astrophysics

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Session Classification: Poster session: Enjoy the posters!