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Calibration of the TA Fluorescence Detectors with Electron Light Source

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The Electron Light Source (ELS) is a linear accelerator used to perform energy calibration of the fluorescence detectors (FD) in the Telescope Array experiment. The ELS shoots a beam of 40 MeV electrons into the atmosphere 100 m in front of the Black Rock Mesa FD. Air fluorescence light is detected from nitrogen molecule excitation by the ELS electron beam. An end-to-end calibration from generation of fluorescence by air to detection of fluorescence photon by FD PMT camera is achieved. We present the calibration method and the comparison between beam data and Monte Carlo simulation.

Collaboration

Telescope Array

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