

Calibrating the MicroBooNE Photomultiplier Tube (PMT) Array with Michel Electrons from Cosmic Ray Muons

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MicroBooNE is a neutrino experiment at Fermilab designed to investigate the 3 sigma low-energy electron candidate events measured by the MiniBooNE experiment. Neutrinos from the Booster Neutrino Beam are detected by a 170-ton (total) liquid argon time projection chamber, which is expected to start taking data in 2014. MicroBooNE measures both the ionization electrons and scintillation light produced by neutrino interactions in the liquid argon. The scintillation light is collected by an array of 30 PMTs located at one side of the detector. This array can be calibrated using Michel electrons from stopping cosmic ray muons, by fitting the measured PMT response with the theoretical expectation. I will report on the progress of the PMT calibration software that has been developed using the MicroBooNE Monte Carlo.

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