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Muon Monitors for the Long-Baseline Neutrino Experiment

The proposed Long-Baseline Neutrino Experiment (LBNE) will use a new neutrino beamline at Fermilab to send an intense beam composed primarily of muon neutrinos (antineutrinos),while focusing positive (negative) mesons into the decay region, to a massive detector in South Dakota. A suite of muon detectors is being proposed to characterize the flux of muons that exit the decay tunnel. These measurements are designed to provide data on the pulse-to-pulse variation of the beam to monitor beam and to constrain the neutrino flux at the near and far detectors. The current designs for ionization detectors, stopped muon detectors, and a threshold gas Cherenkov detector will be presented. Prototypes of some of these designs have been deployed in the muon alcoves of the NuMI beamline at Fermilab and preliminary results from these devices will be shown.

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Track Classification: Long Baseline Oscillations