

MiniBooNE Motivation

The Mini Booster Neutrino Experiment (MiniBooNE) is designed to address the unconfirmed oscillation signal seen by the Liquid Scintillator Neutrino Detector (LSND) experiment at Los Alamos. MiniBooNE will search for the appearance of electron neutrinos in a beam of muon neutrinos.

Milestones Since Last Review

- ◆ July 2004: The pion focusing horn dies after a record-breaking 96 million pulses.
 - Fortunately, the horn failed less than one month before the shutdown.
 - The second horn was installed in time for the November startup.
 - A third horn is presently under construction.
- ◆ Dec 2004: First published paper on MiniBooNE analysis techniques.
 - Roe et al., “*Boosted decision trees as an alternative to artificial neural networks for particle identification*”, NIM 543A, pp 577-84
- ◆ March 2005: First NuMI beam events observed in MiniBooNE detector.
- ◆ April 2005: The booster delivers a total of 5×10^{20} POT to MiniBooNE.
 - This is more POT than previously delivered to all experiments combined.
 - MiniBooNE is now more than halfway to the desired goal of 1×10^{21} POT.
- ◆ April-May 2005: Two theses based on MiniBooNE analysis are defended.
 - Dr. Michel Sorel, “*Search for Sterile Neutrinos Using the MiniBooNE Beam*”
 - Dr. Jen Raaf, “*A Measurement of the Neutrino Neutral Current π^0 Cross Section at MiniBooNE*”

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