

The MINERvA Test Beam Experiment

The MINERvA experiment aims to make precision measurements of low energy neutrino interactions, both in support of neutrino oscillation experiments and as a pure weak probe of the nuclear medium. Hence the MINERvA Test Beam (TB) experiment was designed to serve as a calibration for the calorimetric observables used in the analysis of interactions in MINERvA. A low-energy tertiary beam line was especially designed for this experiment and is now part of the Fermilab Test Beam Facility. The beam line provided identified charged particles (muons, pions and protons) within a momentum range of 0.4-1.2 GeV. The TB detector, a replica of the MINERvA detector on a smaller scale, took data in this beam line from June-July 2010, in two different configurations - tracking and calorimetric.

The goal is to provide MINERvA with a precise calibration of the hadronic response. In this poster, we present preliminary results on the calibrations of the TB detector from data taken during the 2010 detector run. We also report on the in-situ calibration of the MINERvA detector and how the TB energy scale measurements help set the energy scale of the neutrino detector.

Primary author: MARSHALL, Chris (University of Rochester)

Presenter: MARSHALL, Chris (University of Rochester)