

The Low-Energy electron/positron Beam for the MINERvA Test Beam Second Run

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Abstract

MINERvA is a neutrino scattering experiment (<http://minerva.fnal.gov>). Its main detector is on the way of the NuMI beam at Fermilab. It is focused on the measurement of low energy neutrino interactions and on the study of the dynamics of nucleons of different materials that affects these interactions. To calibrate the detector's response to electrons, pions and protons, a down-scaled detector was built: the MINERvA Test Beam detector. It already took data in the 0.4-2.0 GeV region (first run), and it is currently taking in the 1.55-8 GeV region (second run); overlapping both stages. This work presents some characteristics of the low-energy electron/positron beam (1.55-7 GeV) used for such calibration. These characteristics are: beam linearity; measurement of the electron/positron content; and difference between polarities. This study was accomplished using a Lead glass electromagnetic calorimeter and a Cherenkov detector.

Title

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