Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Characterizing Backgrounds in the NuMI Muon Monitors JESSE CHVOJKA, University of Rochester, MINERVA COLLABORATION — The NuMI beam is a high intensity muon neutrino beam used for neutrino oscillation and neutrino cross section experiments, both of which require a well-known flux. The accompanying muon from pions and kaons decaying to a muon and muon neutrino can be used to estimate the muon neutrino flux. Muons are measured with three helium ion chambers ("muon monitors") in alcoves upstream of the MINOS near detector. Delta rays scattered off from rock and neutrons originating in the beam hadron absorber are a significant background within the monitors. We use GEANT4 to simulate the muon monitors and the effect of delta rays on measurements taken with the monitors. We also simulate the effect of inserting absorbers in front of the monitors to compare to future tests which would allow us to validate this Monte Carlo.

Jesse Chvojka
University of Rochester

Date submitted: 09 Jan 2008 Electronic form version 1.4