

Abstract for an Invited Paper
for the APR06 Meeting of
The American Physical Society

Recent Results from the MINOS Experiment¹

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MINOS is a long baseline neutrino oscillation experiment using a neutrino beam from the Fermilab Neutrinos at the Main Injector (NuMI) facility. It is a two detector experiment with a 980 ton Near Detector at Fermilab and a 5400 ton Far Detector at a distance of 735 km in the Soudan mine in northern Minnesota. MINOS is a precision experiment to measure the oscillation parameters associated with the atmospheric neutrino mass splitting previously explored by the SuperKamiokande and K2K experiments. The experiment will also extend the existing limits on sub-dominant muon to electron neutrino oscillations and make the first neutrino/ anti-neutrino separated measurements of atmospheric neutrino oscillations. MINOS began data taking in the NuMI beam in March 2005 and has recorded data from over $1e20$ protons on target. The performance of the MINOS detectors and the NuMI beam during the first year of operations will be described, and preliminary results from beam neutrinos in the Near and Far detectors are presented. This is the largest sample of neutrino interactions collected in a long baseline detector to date.

¹for the MINOS Experiment. This work was supported by the U.S. Department of Energy, the U.K. Particle Physics and Astronomy Research Council, the U.S. National Science Foundation, and the State and University of Minnesota.