

Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Anti-fiducial Muons in MINOS MATTHEW STRAIT, University of Minnesota, MINOS COLLABORATION — The primary physics goal of the MINOS experiment is to measure the neutrino mixing parameters Δm_{23}^2 and $\sin^2 2\theta_{23}$. MINOS currently has the world's most precise measurement of Δm_{23}^2 . The primary MINOS analysis determines these parameters using charged current beam neutrino interactions in the fiducial volume of the far detector. However, half of the beam events observed in MINOS occur in the non-fiducial region of the detector and in the surrounding rock. These events can be used to provide an independent and complementary measurement. Challenges facing this analysis include separating rock events from detector events, correctly modeling the surrounding rock and exterior of the MINOS detector, quantifying the increased systematic error from cross section uncertainties and beam modeling, and extracting the maximum information from these events, many of which include only a single muon. Preliminary results of this analysis and a combined fit which demonstrates the improvement in sensitivity will be presented.

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Date submitted: 22 Oct 2009

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