

Searching for Neutrino to Antineutrino Oscillations in MINOS

MINOS is a long-baseline neutrino oscillation experiment composed of two detectors along Fermilab's high-intensity NuMI neutrino beam. In addition to studying oscillation between different flavours of neutrinos, MINOS is also capable of studying the possibility of oscillations between neutrinos and antineutrinos. The observation of such a signal would indicate the violation of Lorentz and CPT symmetry in the neutrino sector. We present the analysis techniques developed to study the muon neutrino to muon antineutrino oscillations, including event selection and prediction of the Far Detector spectrum. The systematic uncertainties affecting the analysis and the expected sensitivity to the Lorentz and CPT violating parameters are also discussed.

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