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Antineutrinos at MINOS ALEXANDER HIMMEL, Caltech, MINOS COLLABORATION — The NUMI muon neutrino beam used by MINOS has a 6% antineutrino component. Using this intrinsic antineutrino flux, a number of interesting questions can be investigated. The antineutrino cross-section can be studied at low energies for which there is limited current data. The detectors' charge separation capabilities can be used to place a limit on neutrino to antineutrino transitions for which the intrinsic flux is a principal background. However, these antineutrino studies present significant challenges because the horns defocus most of the antineutrino parents. This means that for antineutrino measurements, the standard neutrino analysis techniques must be modified to take into account the limited momentum range of the parents and the interactions in the decay pipe and other material in the neighborhood of the target. There is also a possibility under examination to reverse the horn focusing so that the beam is primarily antineutrinos, allowing antineutrino oscillation and CPT violation to be studied.

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