Electron Neutrino Appearance in the MINOS Experiment
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The MINOS experiment has the potential to observe or set more stringent limits on the appearance of electron neutrinos. Critical to the ability to resolve a possible signal is an accurate prediction of the total background from all neutrinos at the MINOS Far Detector. Upon measuring the most significant background components at the MINOS Near Detector, it is possible to extrapolate and predict the number of background events expected at the MINOS Far Detector. The electron neutrino appearance sensitivity for the MINOS experiment is shown based on the data-driven estimates of the background obtained from the Near Detector data.