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MINOS+ Appearance Searches

MINOS was among the first long baseline experiments to measure nu_mu -> nu_e appearance by using a 5.4 kiloton steel-scintillator tracking calorimeter located in the Soudan Mine in Northern Minnesota. With the shift to a higher energy beam configuration in the MINOS+ era, there is a renewed effort to explore the possibilities of an electron neutrino appearance search. The multivariate selection technique has been retuned for the new beam configuration. We will outline the improvements made to the selector, present the signal-to-background rates in the standard oscillation framework, and investigate the potential of a sterile neutrino search in the nu_e appearance channel.

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Track Classification: Long Baseline Oscillations