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An optimized signal selection for a θ_{13} search in the MINOS experiment RUTH TONER, University of Cambridge, MINOS COLLABORATION — MINOS is a long-baseline neutrino oscillation experiment situated along Fermilab's high-intensity NuMI neutrino beam. MINOS is capable of conducting a search for muon neutrino to electron neutrino transitions. Observation of this signal would indicate a nonzero value for the neutrino mixing angle θ_{13}. A new analysis will incorporate several improvements to the selection of electron neutrino events in the detector. In particular, the talk will discuss a novel pattern recognition technique for signal selection and the subsequent gains in sensitivity for a measurement of θ_{13}.

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