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Commissioning and Monitoring of the NOvA Far Detector

NOvA, the NuMI Off-axis Electron Neutrino Appearance experiment will study $\nu_{\mu} \rightarrow \nu_{e}$ oscillations, characterized by the mixing angle θ_{13} . A complementary pair of detectors are being constructed 14 mrad off beam axis to optimize the energy profile of the neutrinos. The far detector is a surface based 14 kTon liquid scintillator tracking volume located 810 km from the main injector source (NuMI) in Ash River, Minnesota. The first neutrinos to the Ash River site arrived in August 2014 following Fermilab accelerator upgrades with a partially instrumented far detector operating. Since then, the beam intensity has increased and the full detector has been completed. This poster highlights the commissioning and data quality monitoring efforts which have been crucial to understanding the initial performance characteristics of detector. Based on feedback from this work, the detector performance was improved and first neutrino events have been observed.

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Track Classification: Long Baseline Oscillations