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## Background estimation for the electron neutrino appearance analysis in NOvA

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The NOvA experiment is an off-axis, two-detector experiment designed to study electron neutrino ( $\nu_e$ ) appearance in the NuMI beam from Fermilab. The 300-ton Near Detector is 1 km from the target, and allows the study of the neutrino beam spectrum and composition before oscillations, while the larger (14,000 ton) Far Detector, situated on the surface 810 km away, observes the oscillated beam. The main backgrounds to  $\nu_e$  appearance in the Far Detector arise from the intrinsic beam- $\nu_e$  contamination, and mis-classified neutral current and muon neutrino charged current interactions. This poster describes the techniques we use to predict such beam-induced backgrounds in the NOvA Far Detector based on the observed Near Detector data.

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