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Sterile Neutrino Searches with NOvA

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The existence of light sterile neutrinos would have profound implications for both particle physics and cosmology. The NOvA (NuMI Off-Axis ν_e Appearance) experiment is sensitive to new neutrino flavors through searches for the disappearance of the known active neutrinos from the NuMI beam over a baseline of 810 km.

We describe the method used by NOvA to look for oscillations into sterile neutrinos, with a focus on the disappearance of neutral-current (NC) neutrino events. We present the results from the first NC Disappearance analysis using $6.05E20$ POT of neutrino data, and discuss the status and outlook for ongoing and future sterile neutrino searches with NOvA, at both long and short baselines.

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