

Abstract Submitted
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Sterile Neutrino Searches using the NOvA Detector LOUISE SUTER, Argonne Natl Lab — The three-neutrino flavor paradigm has been used to model neutrino oscillations with almost universal success, but evidence arising from the LSND and MiniBooNE experiments, as well as from the reactor and gallium neutrino anomalies, suggests additional physics yet to be explained. These anomalous results can be explained by the existence of an additional sterile neutrino, with a mass of around 1 eV. So far, the evidence for this new particle has been inconclusive, as measurements that have observed a rate of neutrinos in excess of the three-flavor prediction consistent with sterile neutrino mixing are in strong tension with null results from experiments that looked for the corresponding deficit. The NOvA (NuMI Off-Axis ν_e Appearance) experiment is a long-baseline off-axis neutrino oscillation with a Near Detector located 1 km from the target and a Far Detector 810 km distant. This talk will discuss the additional vital information that NOvA can bring to this picture through searches for disappearance of active neutrinos from the NuMI (Neutrinos from the Main Injector) beam and present preliminary results and sensitivities.

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