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NuMI neutrino-Ar cross-section measurements @ ICARUS

These days, experimental neutrino physics is going through a fascinating time due to the high-precision measurements, in huge detectors, expected from experiments to come, e.g. DUNE. At Fermilab, there is a Short-Baseline Neutrino program (SBN) searching for sterile neutrino signatures. This program consists of near and far detectors that use the LAr TPC technology, positioned along the axis of the Booster Neutrino Beam (BNB). ICARUS is the far detector of the SBN program and has a broader wealth of physics measurements, for example beyond standard model searches and cross-section measurements. ICARUS, in particular, is situated off-axis of the NuMI beam and will be sensitive to a large amount of muon and electron neutrino interactions, from the order of a few hundred MeV to multi-GeV (an energy range close to the one we expect in DUNE). This poster will discuss aspects and goals of NuMI cross-section measurements with ICARUS and highlight some of the status and plans of the effort, for example, reconstruction, muon neutrino inclusive selection, and analysis.

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