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Current Status and Future Prospects of the ICARUS Experiment

Thursday 7 December 2023 12:05 (25 minutes)

The ICARUS T600 LArTPC detector successfully ran for three years at the underground LNGS laboratories, providing a first sensitive search for LSND-like anomalous electron neutrino appearance in the CNGS beam. After a significant overhauling at CERN, the T600 detector has been placed in its experimental hall at Fermilab, fully commissioned, and the first events observed with full detector readout. Regular data taking began in May 2021 with neutrinos from the Booster Neutrino Beam (BNB) and neutrinos 6 degrees off-axis from the Neutrinos at the Main Injector (NuMI). As the far detector of the Short-Baseline Neutrino (SBN) Program, the ICARUS experiment's capability in searching for both muon neutrino disappearance and electron neutrino appearance will allow for unprecedented sensitivity to light sterile neutrinos with eV-scale mass. Exposure to both the BNB and NuMI beams provides a broad program of neutrino interaction measurements and searches for physics beyond the Standard Model. This talk will summarize the current status and future prospects of the ICARUS experiment.

Name of collaboration or list of co-authors

ICARUS Collaboration

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