

The ICARUS experiment

Wednesday, 4 October 2017 09:00 (15)

The 760 ton liquid argon ICARUS T600 detector performed a successful three-year physics run at the underground LNGS laboratories, studying neutrino oscillations with the CNGS neutrino beam from CERN, and searching for atmospheric neutrino interactions in cosmic rays. A sensitive search for LSND like anomalous ν_e appearance was performed, contributing to constrain the allowed parameters to a narrow region around $\Delta m^2 \sim \text{eV}^2$, where all the experimental results can be coherently accommodated at 90% C.L. The T600 detector will be redeployed at Fermilab, after a significant overhauling, to be exposed to the Booster Neutrino Beam acting as the far station to search for sterile neutrino within the SBN program. The proposed contribution will address ICARUS LNGS achievements and the ongoing analyses also finalized to the next physics run at Fermilab.

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Session Classification : Neutrino and Astroparticle Physics - 2

Track Classification : Neutrino and astroparticle physics