



Contribution ID: 951

Type: **Parallel Talk**

The upgrading of the ICARUS T600 detector

Saturday, 8 July 2017 12:00 (15 minutes)

The ICARUS T600 detector is the largest LAr-TPC operated to date. It 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.

After an intense refurbishing operation, the entire apparatus will be transferred to FNAL (USA), where it will become the far detector of the Short Baseline Neutrino (SBN) program to investigate the possible presence of sterile neutrino states. The T600 detector has undertaken a significant overhauling process at CERN. This introduces new technological developments while at the same time maintaining the already achieved performance. The overhauling covers important technical sections: the realization of new vessels and the review of the cryogenic system; the improvement of the cathodes planarity; the upgrade of the light detection system; the renovation of the read-out electronics. In this contribution, the main activities of the refurbishing operation will be described in details, highlighting the major changes that will affect the ICARUS T600 physics run in the United States.

Experimental Collaboration

ICARUS collaboration

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