

Scintillation light DAQ and trigger system for the ICARUS T600 at Fermilab.

The ICARUS T600 LAr-TPC detector (474 t of active mass) is being installed at Fermilab to be exposed to the Booster and NuMI neutrino beams in the framework of the SBN program for the ultimate search of sterile neutrinos.

The high rate of cosmic rays impinging on the detector due to its shallow depth operation requires the development of innovative trigger and DAQ systems. ICARUS trigger will exploit the coincidence of the prompt signals from the scintillation light in the LAr-TPC, recorded by 360 PMTs, in correspondence to the arrival time of neutrinos provided by the beams.

This system allows to read-out, during the entire TPC drift time, the whole waveform of each PMT in order to reconstruct with ns resolution the absolute time t_0 to each interaction occurring the TPC volume. High performance FPGA modules processing the discriminated PMT signals in association with the beam gates will be exploited to generate the ICARUS trigger.

Authorship annotation

for the ICARUS collaboration

Session and Location

Monday Session, Poster Wall #121 (Auditorium Gallery Left)

Poster included in proceedings:

yes

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Track Classification: Poster (not participating in poster prize competition)