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Study of cosmic rays in the ICARUS-T600 detectors

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The ICARUS detectors have proven the effectiveness of LArTPC technology with a successful three-year long run at INFN-LNGS, establishing the power of a liquid argon detector on a neutrino beam. Currently, ICARUS-T600 is collecting data at Fermilab Booster Neutrino Beam in the SBN program. A light detection system, based on PMTs deployed behind the TPC wire chambers, is in place to detect vacuum ultraviolet photons produced by ionizing particles in LAr. This system is fundamental for the detector operation, providing an efficient trigger and contributing to the 3D reconstruction of events. Moreover, since the TPC is exposed to a huge flux of cosmic rays due to its operation at shallow depths, the light detection system allows for the time reconstruction of events, contributing to the identification and to the selection of neutrino interactions within the beam spill gates.
This contribution will primarily focus on the cosmic track-light coincidences analysis, and the neutrino interaction selection, with an overview of the current analysis status and its first results.

Submitted on behalf of a Collaboration?

Yes

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