

Light signal study of cosmic rays in the ICARUS detector

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The ICARUS LArTPC, currently placed at Fermilab, is collecting data exposed to Booster Neutrino and Numi off-axis beams within 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 operations 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 comparative study (data vs. MC) of light signal of cosmic muons to validate the light emulation. An overview of the current analysis status and its first results will be reported.

Alternate track

1. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors

I read the instructions above

Yes

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