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Liquid Argon Time Projection Chamber Trigger Development with MicroBooNE

Wednesday, May 26, 2021 8:06 AM (18 minutes)

The Micro Booster Neutrino Experiment (MicroBooNE) is a Liquid Argon Time Projection Chamber (LArTPC) neutrino detector at Fermilab that has been collecting data since 2015. It aims to perform ν-Ar cross-section measurements, explore the low-energy excess in the νe spectrum reported by the MiniBooNE experiment and perform a combined search for sterile neutrino oscillations as part of three LArTPCs that make up the Short Baseline Neutrino Program at Fermilab. Since MicroBooNE is currently in an R&D phase, it offers a unique opportunity for the implementation and testing of TPC-based triggers as an R&D towards Deep Underground Neutrino Experiment (DUNE). One of the technical challenges of DUNE that we aim to address with this study is that of efficient self-triggering of a LArTPC utilizing TPC signal information which will enable searches for rare processes in the DUNE. This talk will describe the MicroBooNE TPC readout system and ongoing R&D efforts to develop TPC-based triggering.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

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