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DUNE and ProtoDUNE trigger and data acquisition systems

Thursday 16 May 2024 17:00 (15 minutes)

The Deep Underground Neutrino Experiment (DUNE) is a next-generation long-baseline neutrino experiment currently under construction in the US. The experiment consists of a broadband neutrino beam from Fermilab to the Sanford Underground Research Facility (SURF) in Lead, South Dakota, a high-precision near detector, and a large liquid argon time-projection chamber (LArTPC) far detector. The protoDUNE experiment located at CERN serves as the prototype for DUNE to validate the technology. The Trigger and Data Acquisition (TDAQ) systems are responsible for the acquisition and selection of data produced by the DUNE detectors and for their synchronization and recording. The main challenge for the DUNE-TDAQ lies in developing effective, resilient software and firmware that optimize the performance of the underlying hardware. The TDAQ is composed of several hardware components. A high-performance Ethernet network interconnects all the elements, allowing them to operate as a single, distributed system. At the output, the high-bandwidth Wide Area Network allows the transfer of data.

Mini Symposia (Invited Talks Only)

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