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DUNE electronics, trigger and DAQ

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Deep Underground Neutrino Experiment (DUNE), which is consist of two neutrino detectors placed near and far of Fermilab, will address several questions in neutrino physics. In addition, It intends to facilitate the study of neutrinos from the supernova and search for proton decay.
The liquid argon time projection chamber (LArTPC) technology has been adopted to detect the neutrino interactions with argon atoms from neutrinos beams produced in Fermilab arriving at expected times to Sanford underground research facility.
The LArTPC can detect neutrinos with energies as low as a few MeV to GeV, by collecting the ionized electrons and photons produced by the interactions of charged particles in the liquid argon.
The combination of sample rate and a number of channels in TPC and photodetector readouts produce a very large volume of the data stream. In addition to the volume of data, the rarity of the presumable supernova's neutrinos and proton decay events will need more design requirements for the DUNE DAQ architecture like compression algorithms, an online trigger system and algorithms.
In this talk, I will review DUNE electronics from DAQ front-end read-out to the trigger along with the requirements and challenges that shaped the DUNE far-detector DAQ architecture.

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