Contribution ID: **24** Type: **Contributed Talk**

MicroBooNE as a supernova neutrino detector: using the SNEWS alert as delayed trigger

Sunday 16 June 2019 16:00 (15 minutes)

MicroBooNE is a liquid argon time projection chamber (LArTPC) in the Booster neutrino beamline at Fermilab. In addition to the beam-related physics program, MicroBooNE features a dedicated readout for detection of core-collapse supernova neutrinos and associated R&D. Being a near-surface detector exposed to an intense cosmic ray flux, MicroBooNE does not attempt to self-trigger on the supernova neutrinos. Instead, a continuous readout of the detector has been developed, for which the data is stored temporarily in disk up to a few days, using the SNEWS alert as delayed trigger to initiate the permanent storage of the data. In order to handle the large data rates generated by the LArTPC, FPGA-based compression algorithms have been developed. This talk will describe the MicroBooNE continuous readout stream design and its performance.

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Session Classification: Contributed talks VII