Contribution ID: **59** Type: **Parallel session talk**

Development of the ATLAS Liquid Argon Calorimeter Readout Electronics for the HL-LHC

Monday, 25 May 2020 14:18 (18 minutes)

To meet new TDAQ buffering requirements and withstand the high radiation doses at the high-luminosity LHC, the ATLAS Liquid Argon Calorimeter readout electronics will be upgraded. The calorimeter signals are amplified and shaped by analog electronics over a dynamic range of 16 bits, with low noise and excellent linearity. Developments of radiation-hard, low-power preamplifiers and shapers and a 40 MHz ADC to meet these requirements are ongoing. The signals will be sent off-detector at 40 MHz where FPGAs connected through high-speed links will perform energy and time reconstruction. Reduced data are sent with low latency to the first level trigger, while the full data are buffered until the reception of trigger accept signals. The data-processing, control and timing functions will be realized by dedicated boards. Results of tests of prototypes of front-end components will be presented, along with design studies on the performance of the off-detector readout system.

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