Contribution ID: **296** Type: **Parallel**

Upgrade of the ATLAS Monitored Drift Tube Frontend Electronics for the HL-LHC

Thursday, 5 July 2018 16:30 (12 minutes)

To cope with large amount of data and high event rate expected from the planned High-Luminosity LHC (HL-LHC) upgrade, the present ATLAS monitored drift tube (MDT) readout electronics will be replaced. In addition, the MDT detector will be used at the first-level trigger to improve the muon transverse momentum resolution and reduce the overall trigger rate. A new trigger and readout system has been proposed. Prototypes for two frontend ASICs and a data transmission board have been designed and tested, and detailed simulation of the trigger latency has been performed. We will present the overall design and focus on latest results from different ASIC and board prototypes.

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Session Classification: Detector: R&D for Present and Future Facilities

Track Classification: Detector: R&D for Present and Future Facilities