



Contribution ID: 811

Type: **Experimental poster**

Study of the correlation between the construction parameters of the MM readout boards and performance of the Micromegas detectors

Tuesday, May 17, 2022 7:00 PM (1 hour)

The ATLAS experiment is being upgraded to take advantage of the improved running conditions foreseen for the Run 3 and High Luminosity LHC operation phase. Part of this upgrade consists in removing the original Small Wheels located in the Muon Spectrometer, and replacing them with two New Small Wheels (NSWs). The exploited technologies for the upgrade are Small-Strips Thin Gap Chambers (sTGC) and MicroMegas (MM). The readout boards of the MicroMegas detectors, before being installed in the final detector, underwent a detailed QA/QC at CERN, during which many construction parameters were measured and stored in databases. Then, the boards have been mounted in Double Wedges and moved to BB5 integration site at CERN, where their final performance and operation have been validated with cosmic rays. Studies of the correlation between several construction parameters of the MM readout boards, as minimum resistance, surface resistivity, pillar height, and operational parameters, as maximum reachable HV per sector, are presented.

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Session Classification: Poster Session I

Track Classification: Upgrade & Future Projects