

Commissioning and installation of a new generation of Resistive Plate Chambers for the phase-1 BIS78 upgrade of the ATLAS muon spectrometer

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In preparation for the coming years of LHC running at higher luminosity, two upgrade projects of the ATLAS Muon spectrometer have been developed: the New Small Wheel project, improving the trigger in the end-cap regions, and the BIS78 project, dedicated to the transition region between barrel and the endcaps ($1 < |\eta| < 1.3$). The BIS78 project will add 32 RPC triplets along z on the edges of the inner barrel sectors where the ATLAS toroid is present.

These new generation of RPCs are characterized by thinner gas gaps (1mm vs 2mm of the legacy RPCs) as well as thinner resistive electrodes, together with a new high gain front-end electronics with a lower operating voltage.

16 BIS78 stations have been already installed in the ATLAS Muon spectrometer between 2020 and 2021 and are being commissioned during this year. The state of art of the project, the status of the commissioning as well as the overall performances of the installed RPCs will be presented.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

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