

## **Status of the present ATLAS RPC system and overview towards HL-LHC.**

*Monday 19 February 2018 14:00 (20 minutes)*

The RPC system covers the barrel region of the ATLAS muon spectrometer in the pseudo-rapidity range of  $|\eta| < 1.05$  with six independent detector layers, and solely provides the L1 trigger signal and the track coordinate in the non-bending plane of the muon candidates.

The system has been designed to operate up to the nominal LHC luminosity ( $10^{34} \text{cm}^{-2} \text{s}^{-1}$ ) which has been already exceeded thanks to the excellent performance of the collider.

The experience in operating the present RPC system, up to the maximum instantaneous luminosity of  $2.05 \times 10^{34} \text{cm}^{-2} \text{s}^{-1}$  reached in 2017, is reported. The performance of the system, in the severe background and pileup conditions of the last data taking period, is presented together with the improved tools implemented in order to have an effective monitoring of the detector status.

The plans to successfully operate the present system during the HL-LHC phase are also introduced.

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