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Commissioning of the upgraded ATLAS Pixel Detector for Run2 at LHC

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The Pixel Detector of the ATLAS experiment has shown excellent performance during the whole Run-1 of LHC. Taking advantage of the long shutdown, the detector was extracted from the experiment and brought to surface, to equip it with new service quarter panels, to repair modules and to ease installation of the Insertable B-Layer (IBL), a fourth layer of pixel detectors, installed in May 2014 between the existing Pixel Detector and a new smaller radius beam-pipe at a radius of 3.3 cm. To cope with the high radiation and pixel occupancy due to the proximity to the interaction point, a new read-out chip and two different silicon sensor technologies (planar and 3D) have been developed.

An overview of the refurbishing of the Pixel Detector and of the IBL project as well as early performance tests using cosmic rays and beam data will be presented.

Collaboration

ATLAS

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