Contribution ID: **376** Type: **not specified**

Commissioning and Performance of the upgraded ATLAS Pixel Detector for Run2

Tuesday 4 August 2015 14:23 (23 minutes)

The Pixel Detector of the ATLAS experiment has shown excellent performance during the whole Run-1 of the Large Hadron Collider. Taking advantage of the long shutdown, the detector was extracted from the experiment and brought to surface, to repair modules and to ease installation of the Insertable B-Layer (IBL). The IBL is a fourth innermost layer of the pixel detector, and was installed in May 2014 between the existing Pixel Detector and the new smaller radius beam-pipe at a radius of 3.3 cm. To cope with the high radiation and pixel occupancy anticipated due to the proximity to the interaction point, a new read-out chip, two different silicon sensor technologies (planar and 3D) and off-detector electronics have been developed. A new mechanical support using lightweight staves and a CO2 based cooling system have been adopted to reduce the material budget. An overview of the refurbishing of the Pixel Detector and of the Insertable B-Layer (IBL) project as well as commissioning and performance tests using cosmic and beam data will be presented.

Oral or Poster Presentation

Oral

Author: HSU, Shih-Chieh (University of Washington, Seattle)

Presenter: HSU, Shih-Chieh (University of Washington, Seattle)

Session Classification: LHC Run-2 Detector Performance

Track Classification: LHC Run-2 Detector Performance