

The ATLAS ITk Strip Detector System for the Phase-II LHC Upgrade

Thursday 18 July 2024 12:12 (18 minutes)

The HL-LHC is expected to provide an integrated luminosity of 4000 fb⁻¹, that will allow to perform precise measurements in the Higgs sector and improve searches of new physics at the TeV scale. ATLAS is currently preparing for the HL-LHC upgrade, and an all-silicon Inner Tracker (ITk) will replace the current Inner Detector, with a pixel detector surrounded by a strip detector. The strip system consists of 4 barrel layers and 6 EC disks. After completion of final design reviews in key areas, such as Sensors, Modules, Front-End electronics and ASICs, a large scale prototyping program has been completed in all areas successfully. We present an overview of the Strip System, and highlight the final design choices of sensors, module designs and ASICs. We will summarise results achieved during prototyping and the current status of production on various detector components, with an emphasis on QA and QC procedures.

Alternate track

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Session Classification: Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors

Track Classification: 12. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors