Contribution ID: **534** Type: **Parallel session talk**

Expected performance of the ATLAS ITk detector for HL-LHC

Thursday 18 July 2024 14:30 (18 minutes)

The increased instantaneous luminosity levels expected to be delivered by the High-Luminosity LHC (HL-LHC) will present new challenges to High-Energy Physics experiments, both in terms of detector technologies and software capabilities. The current ATLAS inner detector will be unable to cope with an average number of 200 simultaneous proton-proton interactions resulting from HL-LHC collisions. As such, the ATLAS collaboration is carrying out an upgrade campaign, known as Phase-II upgrade, that foresees the installation of a new all-silicon tracking detector, the Inner Tracker (ITk), designed for the expected occupancy and fluence of charged particles. The new detector will provide a wider pseudorapidity coverage and an increased granularity. In this contribution the expected performance of the ITk detector will be presented, with emphasis on the improvements on track reconstruction resulting from the new detector design.

Alternate track

I read the instructions above

Yes

Authors: DELIOT, Frederic (Université Paris-Saclay (FR)); HAYWARD, Helen (University of Liverpool (GB))

Presenter: HAYWARD, Helen (University of Liverpool (GB))

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

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