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ATLAS ITk upgrade for the HL-LHC

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The Large Hadron Collider (LHC) is preparing to enter the high-luminosity era in a few years, where the ATLAS detector will operate under unprecedented conditions, with up to 200 proton-proton collisions per bunch crossing. This gives rise to technical challenges such as increased radiation damage, higher data rates, and detector occupancy, which require significant upgrades. To address these issues, ATLAS has designed and constructed a new all-silicon Inner Tracker (ITk) to replace the current Inner Detector. Many Canadian institutes play a leading role in the construction and commissioning of the ITk project. This talk provides an overview of the ITk layout, the current upgrade status, and the ATLAS collaboration's efforts in preparing for this new detector integration in both hardware and software.

Keyword-1

ATLAS

Keyword-2

Itk

Keyword-3

Particle Physics

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