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Tracking performance with the HL-LHC ATLAS detector

The High Luminosity LHC (HL-LHC) aims to increase the LHC data-set by an order of magnitude in order to increase its potential for discoveries. The high pileup at the HL-LHC presents a highly challenging environment to particle detectors. To cope with this, the current Inner Detector of the ATLAS experiment will be replaced with a new all-silicon Inner Tracker (ITk). In this poster the expected tracking performance of this new subdetector is presented and impact of the tracking performance on physics object reconstruction is shown. These studies were done for two options of the pixel sensor pitch.

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