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Expected performance of tracking and vertexing with the HL-LHC ATLAS detector

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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. Starting from the middle of 2026, the HL-LHC is expected to reach the peak instantaneous luminosity of $7.5 \cdot 10^{34} cm^{-2} s^{-1}$ which corresponds to about 200 inelastic proton-proton collisions per beam crossing. To cope with the large radiation doses and high pileup, the current ATLAS Inner Detector will be replaced with a new all-silicon Inner Tracker. In this talk the expected performance of tracking and vertexing with the HL-LHC tracker is presented. Comparison is made to the performance with the Run2 detector. Ongoing developments of the track reconstruction for the HL-LHC are also discussed.

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