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The ATLAS ITk Tracking and Vertexing performance at the HL-LHC HAORAN ZHAO, SHIH-CHIEH HSU, KE LI, University of Washington — The High-Luminosity LHC (HL-LHC) is expected to reach the peak instantaneous luminosity of $7.5 \times 10^{34}\text{cm}^{-2}\text{s}^{-1}$ at a center-of-mass energy of $\sqrt{s} = 14$ TeV. This leads to an extremely high density environment with up to 200 interactions per proton-proton bunch crossing. Under these conditions event reconstruction represents a major challenge for experiments. To meet the HL-LHC requirements, the ATLAS Phase-II Upgrade Program foresees the complete replacement of the current Inner Detector with a new all-silicon Inner Tracker (ITk). In this talk, the latest results on the expected performance of tracking and primary vertex reconstruction with the ITk will be presented.

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