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Expected tracking and related performance with the future ATLAS Inner Tracker at the HL-LHC

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To extend the potential of discoveries for new physics beyond the Standard Model as well as precision measurements the High Luminosity (HL) phase of the large hadron collider at CERN aims to deliver an integrated luminosity of up to 4000 fb^{-1} . To face the challenging environment associated with the high number of collisions per bunch crossing, the current inner detector will be replaced with a new all-silicon Inner Tracker (ITk) which will cover up to $|\eta| < 4$. This poster presents results of the expected tracking performance as well as some representative high-level object reconstruction and identification, including primary vertices, jet flavour-tagging, electrons, and converted photons using an updated layout of the ITk pixel detector.

In-person participation

Yes

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