Contribution ID: **81** Type: **not specified**

# Expected Performance of the ATLAS Inner Tracker at the High-Luminosity LHC

*Wednesday, 5 April 2017 17:00 (20 minutes)*

The large data samples at the High-Luminosity LHC will enable precise measurements of the Higgs boson and other Standard Model particles, as well as searches for new phenomena such as supersymmetry and extra dimensions. To cope with the experimental challenges presented by the HL-LHC such as large radiation doses and high pileup, the current Inner Detector will be replaced with a new all-silicon Inner Tracker for the Phase II upgrade of the ATLAS detector. The current tracking performance of two candidate Inner Tracker layouts with an increased tracking acceptance (compared to the current Inner Detector) of $|\eta|<4.0$, employing either an 'Extended'or 'Inclined'Pixel barrel, is evaluated. The forward coverage will enable track-based rejection of forward pileup jets, which is particularly beneficial for studies of vector boson scattering and Higgs boson production through vector boson fusion, amongst other advantages.

**Primary authors:** ESCALIER, Marc (LAL-Orsay (FR)); CALACE, Noemi (Universite de Geneve (CH))

**Presenter:** CALACE, Noemi (Universite de Geneve (CH))

**Session Classification:** WG7 Future of DIS

**Track Classification:** WG7) Future of DIS