
Contribution ID: **4** Type: **not specified**

# LHC Phase 2 upgrade of the ATLAS Pixel Detector

*Friday, 10 October 2014 10:00 (20 minutes)*

From 2024, the HL-LHC will provide unprecedented pp luminosities to ATLAS, resulting in an additional integrated luminosity of around 2500 fb-1 over ten years. This will present a unique opportunity to substantially extend the mass reach in searches for many signatures of new physics, in several cases well into the multi-TeV region, and to significantly extend the study of the properties of the Higgs boson. The increased luminosity and the accumulated radiation damage will render the current Inner Tracker no longer suitable for long term operations. It will need to be replaced with a new all silicon tracker to maintain tracking performance in the high occupancy environment and to cope with the increase of approximately a factor of ten in the total radiation fluence. New technologies are used to ensure that the system can survive this harsh radiation environment and to optimise the material distribution. Present ideas and solutions for the pixel detector will be discussed in this talk.

**Primary authors:** TRONCON, Clara (Milano Universita e INFN (IT)); MORETTINI, Paolo

**Presenter:** MORETTINI, Paolo (INFN Genova)

**Session Classification:** Upgrading LHC Experiments