Contribution ID: **44** Type: **not specified**

Observation of type-inversion in the innermost tracking layer of the ATLAS Pixel Detector

Wednesday 14 November 2012 11:30 (20 minutes)

Due to the increasing radiation dose accumulated by the ATLAS Pixel Detector at the LHC, the effects of radiation damage are now clearly observable. Macroscopic effects are induced from the creation of silicon crystal defects and key parameters such as leakage current and effective depletion voltage are routinely monitored. Measurements of the effective depletion voltage show a general trend of reduction due to the decrease of the effective n-doping concentration until the summer of 2012. More recent measurements exploiting a novel track based method reveal a subsequent rise in the effective depletion voltage, indicating type-inversion has occurred in the innermost layer of the Pixel Detector. The results are quantitatively compared with radiation damage models.

Presenters: SCHORLEMMER, Andre Lukas (CERN / Georg-August-Universitaet Goettingen (DE)); GIBSON, Stephen (CERN)

Session Classification: Radiation Damage in LHC detectors