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Operational Experience and Performance with the ATLAS Pixel detector at the Large Hadron Collider at CERN

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The tracking performance of the ATLAS detector relies critically on its 4-layer Pixel Detector, that has undergone significant hardware and readout upgrades to meet the challenges imposed by the higher collision energy, pileup and luminosity that are being delivered by the Large Hadron Collider (LHC), with record breaking instantaneous luminosities of 2 x 1034 cm-2 s-1 recently surpassed.
The key status and performance metrics of the ATLAS Pixel Detector are summarised, and the operational experience and requirements to ensure optimum data quality and data taking efficiency will be described, with special emphasis to radiation damage experience.
By the end of the proton-proton collision runs in 2018, the innermost layer IBL, consisting of planar and 3D pixel sensors, had received an integrated fluence of approximately $\Phi = 9 \times 1014$ 1 MeV neq/cm2.
The ATLAS collaboration is continually evaluating the impact of radiation on the Pixel Detector. A quantitative analysis of charge collection, dE/dX, occupancy reduction with integrated luminosity, under-depletion effects with IBL and effects of annealing will be presented and discussed, as well as the operational issues and mitigation techniques adopted during the LHC Run2 and the ones foreseen for Run3.

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