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# Operational Experience with the ATLAS Pixel Detector

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The ATLAS Pixel Detector is the innermost detector of the ATLAS experiment at the Large Hadron Collider at CERN. During Run-I, the detector provided hermetic coverage with three cylindrical layers and two endcaps with three disk layers each. It consisted of 1744 n+-in-n silicon modules with a total of about 80 million pixels that were individually read out via chips bump-bonded to the silicon substrate. The ATLAS Pixel Detector started to record data since the first LHC collisions and since the beginning of its operation it performed very well. The operational challenges included the maximization of data taking efficiency, dealing with single event upsets, and the recovery of lost modules. The data acquisition techniques also had to adapt to the rapidly changing LHC beam conditions. In order to maximize the physics potential and the quality of the data, online and offline calibrations were performed on a regular basis. The calibrations ensured maximal hit and charge collection efficiency. The position resolution was improved by pixel charge thresholds, gain and various other online calibrations. With increased luminosity delivered by the LHC, radiation damage effects have been observed in the silicon sensors: an increase in leakage current and change of the depletion voltage, in agreement to the predictions. By the end of Run I, 5% of the modules were not operational, most of which have been already recovered during the current shutdown. In this talk the operational challenges of the silicon pixel detector in Run I are presented, and the expectations for the next LHC data taking period in 2015 are discussed.

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