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Operational Experience with the CMS Pixel Detector

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Since the beginning of its operation the CMS Silicon Pixel detector performed very well. The operational challenges included the maximization of data taking efficiency, dealing with beam gas interactions and 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 maximise the physics potential and the quality of the data, online and offline calibrations were performed on a regular basis. The timing calibration which took place in the commissioning periods ensured maximal hit and charge collection efficiency. The position resolution was improved by pixel charge thresholds, gain and various other online calibrations. By the end of Run I, 3.7% of the modules were not operational of which most 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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