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Calibration and performance of the CMS pixel detector in LHC Run 2

The Compact Muon Solenoid (CMS) is one of two general-purpose detectors that reconstruct the products of high energy particle interactions at the Large Hadron Collider at CERN. The silicon pixel detector is the innermost component of the CMS tracking system. It determines the trajectories of charged particles originating from the interaction region with high resolution enabling precise momentum and impact parameter measurements in the tracker. It is designed to operate in the high particle density environment of the LHC. The calibration of the pixel detector plays an important role in its performance. The calibration constants follow the physical changes in the sensors that are mostly induced by irradiation. These constants are regularly updated, maintained in a calibration database and used for the event reconstruction. In this poster we will present details on the offline calibration procedures and their effects on detector performance during the Run 2 period of LHC.

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