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【361】 Performances of the upgraded CMS pixel detector

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CMS is a multi-purpose detector constructed to study high-energy particle collisions of the LHC at CERN. An all-silicon pixel tracker system provides CMS with excellent resolution for charged tracks and efficient tagging of b-jets. At the beginning of 2017, a new pixel detector has been installed anticipating the increase of instantaneous luminosity of the LHC to up to $2 \times 10^{34} \text{cm}^{-2} \text{s}^{-1}$, well surpassing the rate capabilities of the previous detector. The new pixel detector features four central barrel layers and three end-cap disks in forward/backward directions for robust tracking and tagging performance. This contribution gives an overview of the design of the CMS Phase-1 pixel detector, with a special focus on the tracker performance during 2017 data taking.

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