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Performance and prospects of the PPS tracking system.

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The CMS-TOTEM Precision Proton Spectrometer (PPS) consists of tracking and timing detectors installed along the LHC beam line between 210 and 220 m from the interaction point on both sides of the CMS experiment. The aim of the apparatus is to measure the position, direction and time-of-flight of protons which emerge intact from the pp collision. Fully integrated in the CMS data acquisition system, PPS has taken data in standard high luminosity conditions during the LHC-Run2 (2016-2018), with different detector configurations. 3D pixel sensors, produced by CNM in double-sided technology, bump bonded to the PSI46dig ROC, were used in 2 of the 4 tracking stations in 2017 and in all of them in 2018. In this contribution the performance of the PPS tracking system during the LHC-Run2 will be discussed, with special focus on the effects produced on 3D pixel detectors by the operation at a few millimetres from the beam, in highly non-uniform irradiation environment. PPS will take data in the LHC-Run3 with all tracking stations equipped with 3D pixel detectors. The new sensors produced by FBK in single-sided technology will be presented.

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