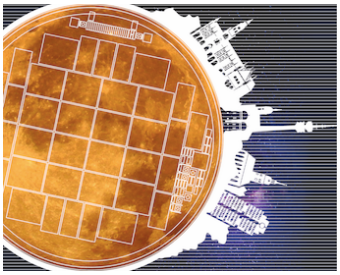

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The CT-PPS project: detector hardware, operational experience and prospects for 2018

The CMS-TOTEM Precision Proton Spectrometer (CT-PPS) allows extending the LHC physics program by detecting protons in the very forward regions of CMS. CT-PPS consists of tracking and timing detectors installed along the beam line at ˜210 m from the CMS interaction point on both sides of the LHC tunnel. In 2017 the tracking system consisted of a station of silicon strip detectors and a station of silicon pixel detectors on each side, this latter composed of six planes of 3D silicon pixel sensors, bump-bonded to the PSI46dig chip developed for the CMS Phase1 Pixel Tracker upgrade. The plan for 2018 is to replace the present strip stations with pixel ones in order to ensure better performances in multi-track event reconstruction. In 2017 each timing station was made of three planes of diamond detectors plus one of Ultra-Fast Silicon Detector (UFSD), while the plan for 2018 is to install double-sided diamond detectors. This contribution will describe the hardware characteristics and the status of the CT-PPS project. The operational experience during the 2017 data taking will be presented, along with the prospects for 2018.

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