

Commissioning of the Phase I upgrade of the CMS pixel detector

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The Phase I upgrade of the CMS pixel detector is built out of four barrel layers (BPIX) and three forward disks in each endcap (FPIX). It comprises a total of 124M pixel channels, in 1,856 modules and it is designed to withstand instantaneous luminosities of up to $2 \times 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$. Different parts of the detector have been assembled over the last year and later brought to CERN for installation inside the CMS tracker. At various stages during the assembly tests have been performed to ensure that the readout and power electronics, and the cooling system meet the design specifications. After tests of the individual components, system tests have been performed before the installation inside CMS. In addition to reviewing these tests, we also present results from the final commissioning of the detector in-situ using the central CMS DAQ system, as well as results from cosmic rays data, in preparation for the data taking in pp collisions.

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