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New GEM Test Chambers for the HL-LHC Upgrade in CMS

In preparation for the High Luminosity LHC, GEM detectors will be installed during Long Shutdown 2 (2018-2019) in the forward region of 1.6 < |eta| < 2.2 to improve trigger and tracking performance in the muon endcap, and maintain sensitivity to low pT muons. During the 2016-2017 year-end technical stop, five pairs of triple-foil GEM detectors were installed on the minus endcap of CMS as a demonstrator for the GEM detector design. This poster will report on the quality control tests of the front-end ASICs and GEM Electronics Boards used in this test, the installation of the chambers at CMS, and the ongoing commissioning of the detectors. The methods developed to calibrate and configure the front end electronics will be presented.

Experimental Collaboration

CMS

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