

## Status and commissioning of the new GEM-based subsystem GE1/1 of the CMS muon system

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The upgrades of the LHC planned in the next years yield an increase of the instantaneous luminosity up to  $5 \times 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$  after Long Shutdown 3; a value about five times higher than the nominal one for which the CMS experiment was designed. The resulting larger rate of interactions will produce a higher pileup environment that will challenge the trigger system in its original configuration, in particular in the endcap region. As part of the upgrade program of the CMS muon endcaps, additional muon detectors based on Gas Electron Multiplier (GEM) technology will be installed, in order to be able to sustain a physics program during high-luminosity operation without performance losses. The installation of the GE1/1 station is scheduled for Long Shutdown 2; already a demonstrator composed of five superchambers has been installed during the “Extended Year-End Technical Stop” at the beginning of this year. Its goal is to test the system’s operational conditions and also to demonstrate the integration of the GE1/1 chambers into the trigger. This contribution will present the status of the installation and commissioning of the GE1/1 demonstrator.

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