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The upgrade of the CMS muon system with Triple-GEM detectors

During the High Luminosity Large Hadron Collider (HL-LHC) program, the Compact Muon Solenoid (CMS) muon spectrometer will face challenging conditions. The instantaneous luminosity will increase up to approximately ten times the value expected when CMS was originally designed. To ensure redundancy in the region closest to the beam line and to extend the detector coverage, three new stations utilizing triple Gas Electron Multipliers (GEM) have been installed in the CMS muon system: GE1/1, GE2/1, and ME0.

This poster will present the extensive contribution of the Pavia group to many phases of the project, including quality controls for validating the single chambers and their commissioning, as well as the construction of the low-voltage power system. Data taking and the development of tests aimed at improving operations or investigating issues observed in CMS will also be discussed.

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