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Enhancing the muon physics program of the CMS experiment during the high luminosity LHC with triple-foil GEM detectors in the forward region

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In order to cope with the increased background rate expected during the high luminosity running of the LHC, the muon system of the CMS experiment will install several upgrades. These upgrades will allow CMS to maintain the quality of its physics program by ensuring that the triggering performance does not degrade, and further extending the muon detector acceptance. This talk will focus on the first of these upgrades, triple-foil Gas Electron Multiplier (GEM) detectors installed in the innermost station of the CMS endcap muon system (GE1/1) during the 2019-2020 LHC long shutdown (LS2). A demonstrator system has been installed during the extended year-end technical stop of 2016-2017, and observations and first results will be reported.

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