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The new GEM station GE1/1 of the CMS muon detector: status, commissioning and early performance studies

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During Run 3 the LHC will deliver instantaneous luminosities of 5*10ˆ34 cmˆ-2 sˆ-1 or even 7*10ˆ34 cmˆ-2 sˆ-1. To cope with the high background rates and to improve the trigger capabilities in the forward region, the muon system of the CMS experiment has been upgraded with a new station of detectors based on triple-GEM technology, named GE1/1. The station, which has been installed in 2020, consists of 72 ten-degree chambers, each made up of two layers of triple-GEM detectors. GE1/1 provides two additional muon hit measurements which will improve muon tracking and triggering performance. This contribution will describe the status of the ongoing commissioning phase of the detector together with the preliminary results obtained from cosmic-ray events. Detector and readout electronics operation, stability and performance will be discussed, as well as the preparation for Run 3 of the LHC.

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