



Contribution ID: 20

Type: not specified

## The upgrade of the CMS muon system for the High Luminosity LHC

*Thursday, 22 January 2026 14:55 (35 minutes)*

The current CMS muon system employs a combination of detector technologies, each optimized for specific regions. Drift Tubes (DT) and Resistive Plate Chambers (RPC) are deployed in the barrel, while the endcap utilize cathode strip chambers (CSC) and RPC. To address the anticipated higher background rates in the endcap, new detector stations will be installed. These stations will utilize triple gas electron multiplier (GEM) and improved resistive plate chambers (iRPC) technologies, offering enhanced time and spatial resolution and improved rate capability. The GE1/1 station, based on GEM technology, was installed in the endcap region during LS2, covering the pseudorapidity range  $1.55 < |\eta| < 2.18$ . Two additional GEM stations, GE2/1 and ME0, are planned for future installation to further enhance muon reconstruction in the endcap and extend the muon system's coverage up to  $|\eta| 2.8$ . This presentation will present an overview of the new triple-GEM (GE2/1, ME0) and iRPC (RE3/1, RE4/1) detector stations that will be installed before Long Shutdown 3.

**Author:** ASSRAN, Yasser (Prof at CTP, BUE)

**Presenter:** ASSRAN, Yasser (Prof at CTP, BUE)