Contribution ID: **8** Type: **not specified**

Status of the Triple-GEM Project for the Upgrade of the CMS Muon System

Monday 1 July 2013 11:40 (25 minutes)

The CMS GEM collaboration is developing a system of triple-GEM detectors for the endcap muon system (1.6 < |eta| < 2.4) of the CMS experiment at the LHC. GEM micro-pattern gas detectors are well-suited for the particle rates expected in that region at the planned high-luminosity LHC. With spatial resolution of order 100 microns, GEMs would enhance trigger capability and muon reconstruction. The status of the project is reviewed, highlighting achievements since its start in 2009. Several small and full-size prototypes were constructed with different geometries and techniques. resulting in the current baseline design. Measurements are reported for these prototypes using an X-ray source, a radioactive source, and a particle beam at the CERN SPS. The front-end and readout electronics design will be presented.

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Session Classification: Monday (MPGD mid-morning session)