

Cathode Strip Chamber upgrade for the CMS Endcap at the HL-LHC

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The High Luminosity LHC accelerator upgrade will provide five times higher instantaneous luminosity than the current LHC. This boost in luminosity will allow the Compact Muon Solenoid (CMS) experiment to probe the properties of the newly discovered Higgs boson and extend the search for new physics beyond the Standard Model. In order to handle the increased data rate and maintain high trigger efficiency for pseudorapidity up to 2.4, the readout and trigger electronics of the Cathode Strip Chamber (CSC) muon detectors in the CMS endcap are undergoing an upgrade. This talk will discuss the design of the new level-1 trigger electronics based on the new generation of FPGA technologies and fast optical links, the ongoing commissioning and system integration of new readout and trigger electronics for the ME1/1 system, as well as the results of testing for stability at high radiation levels expected in the HL-LHC environment. In conclusion, we will discuss plans for early commissioning of the system and the expected improvements in system performance.

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