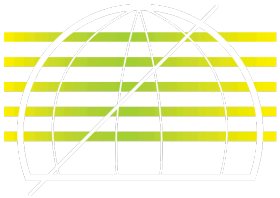

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Improved Resistive Plate Chambers for Phase 2 upgrade of CMS

Monday 26 September 2022 11:50 (25 minutes)

In view of HL-LHC, the CMS muon system will be upgraded to sustain efficient muon triggering and reconstruction performance. Resistive Plate Chambers (RPC) serve as dedicated detectors for muon triggering due to their excellent timing resolution. RPC system will be extended up to pseudo rapidity of 2.4. Before long shutdown 3 (LS3), RE3/1 and RE4/1 stations of the forward muon system will be equipped with new improved Resistive Plate Chambers (iRPCs) having different design and geometry w.r.t present RPC system and 2D readout. The iRPC geometry configuration allows to improve the rate capability and hence to survive the harsh background condition during HL-LHC. iRPC demonstrator is installed in CMS during LS2 to study the detector behavior under real LHC conditions. This talk summarizes the iRPC project and its schedule including the status of the iRPC production sites, details of the quality control procedures and results of the commissioning of the demonstrator.

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