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Operation and performance of the CMS Resistive Plate Chambers during LHC run II

Abstract

The Resitive Plate Chambers (RPC) at the Compact Muon Solenoid (CMS) experiment at the CERN Large Hadron Collider (LHC) provide redundancy to the Drift Tubes (DT) in the barrel and Cathode Strip Chambers (CSC) in the endcap regions. Consisting of 1056 double gap RPC chambers, the main detector parameters and environmental conditions are carefully monitored during the data taking period. At a center of mass energy (\sqrt{s}) of 13 TeV, the luminosity reached record levels which was challenging from the operational and performance point of view. In this work, the main operational parameters are discussed and the overall performance of the RPC system is reported for the LHC run II data taking period. With a low amount of inactive chambers, a good and stable detector performance was achieved with high efficiency.

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