

The CMS Electromagnetic Calorimeter calibration and performance during LHC Run 2

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The CMS electromagnetic calorimeter (ECAL) of the Compact Muon Solenoid (CMS) is a high granularity lead tungstate crystal calorimeter operating at the CERN Large Hadron Collider. The ECAL is designed to achieve excellent energy resolution which is crucial for studies of Higgs boson decays with electromagnetic particles in the final state, as well as for searches for new physics involving electrons and photons. Recently the energy response of the calorimeter has been precisely calibrated exploiting the full Run 2 data, with the goal of achieving the most optimal performance. A dedicated calibration of each detector channel has been performed with physics events using electrons from W and Z boson decays, photons from π^0/η decays, and the azimuthally symmetric energy distribution of minimum bias events. We will describe the calibration strategies that have been implemented and the excellent performance achieved by the CMS ECAL with the ultimate calibration of Run 2 data, in terms of energy scale stability and energy resolution.

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