Contribution ID: **676** Type: **Parallel session talk**

Calibration and Performance of the CMS Electromagnetic Calorimeter in LHC Run 2

Tuesday, May 25, 2021 10:42 AM (18 minutes)

Many physics analyses using the Compact Muon Solenoid (CMS) detector at the LHC require accurate, high resolution electron and photon energy measurements. The CMS electromagnetic calorimeter (ECAL) is a fundamental instrument for these analyses and its energy resolution is crucial for the Higgs boson mass measurement. Recently the energy response of the calorimeter has been precisely calibrated exploiting the full Run2 data, aiming at a legacy reprocessing of the data. A dedicated calibration of each detector channel has been performed with physics events exploiting electrons from W and Z boson decays, photons from pi0/eta decays, and from the azimuthally symmetric energy distribution of minimum bias events. This talk presents the calibration strategies that have been implemented and the excellent performance achieved by the CMS ECAL with the ultimate calibration of Run II data, in terms of energy scale stability and energy resolution.

TIPP2020 abstract resubmission?

Yes, this would have been presented at TIPP2020.

Funding information

Primary author: WANG, Jin (Chinese Academy of Sciences (CN))

Co-author: CMS COLLABORATION

Presenter: WANG, Jin (Chinese Academy of Sciences (CN))

Session Classification: Experiments: Calorimeters

Track Classification: Experiments: Experiments: Calorimeters