

Calibration and performance of the CMS Electromagnetic Calorimeter in LHC Run 3

Friday 19 July 2024 15:00 (15 minutes)

The electromagnetic calorimeter (ECAL) of the CMS experiment at LHC is crucial for many physics analyses, from Higgs measurements to new physics searches. A precise calibration of the detector and its individual channels is essential to achieve the best possible resolution for electron and photon energy measurements, as well as the measurement of the electromagnetic component of jets and the contribution to energy sums used to obtain information about particles leaving no signal in the detectors. To ensure the stability of the energy response over time a laser monitoring system is employed to measure radiation induced changes in the detector and compensate for them in the reconstruction. Also, each channel is calibrated with physics events. This talk will summarize the techniques used for the ECAL energy and time calibrations and it will present a new system developed to automatically execute the calibration workflows. The ECAL performance achieved in 2022 and 2023 will be discussed.

Alternate track

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Yes

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