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## Attaining the optimal performance of the CMS lead tungstate Electromagnetic Calorimeter in the Run3 of LHC

The Compact Muon Solenoid (CMS) detector at the LHC requires optimal performance in electron and photon reconstruction for many physical analyses. The excellent energy resolution of its Electromagnetic Calorimeter (ECAL) is crucial for studies of Higgs boson decays with electromagnetic particles in the final state, for instance for the Higgs mass measurement in two-photons decay channel, as well as searches for very high mass resonances decaying to energetic photons or electrons. The energy and timing response of each ECAL channel is precisely calibrated; this talk will summarize the calibration techniques and the performance obtained during LHC Run3. The speaker will present also a new method for the time reconstruction with which, similarly to the amplitude reconstruction method used since Run2, the presence of out of time pile-up is taken into consideration in the modeling of the time signal. Finally, the new system, developed to automatically execute the calibration workflows during data taking, will be described; it aims to reduce the time needed to provide the best possible performance for physics analyses by one order of magnitude.

## Secondary track

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