

ECAL trigger performance in Run 2 and improvements for Run 3

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The CMS electromagnetic calorimeter (ECAL) is a high resolution crystal calorimeter operating at the CERN LHC. It is read out at 40 MHz (the proton-proton collision rate) in order to provide information to the hardware-level (Level-1) trigger system, which decides whether the full CMS detector must be read out for each collision. The ECAL trigger performance achieved during LHC Run 2 (2015-2018) will be presented. The increased luminosity with respect to the LHC Run 1 has required frequent calibrations during LHC operation to account for radiation-induced changes in crystal and photodetector response. Further improvements in the energy and time reconstruction of the CMS ECAL trigger primitives are being explored for LHC Run 3 (2021-23), using additional features implemented in the on-detector readout. In this presentation, we will review the ECAL trigger performance during LHC Run 2 and present improvements to the ECAL trigger system for LHC Run 3.

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Yes, this would have been presented at TIPP2020.

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