Contribution ID: **35** Type: **Parallel session talk**

ECAL trigger performance in Run 2 and improvements for Run 3

Thursday, 28 May 2020 09:36 (18 minutes)

This presentation will summarize the ECAL trigger performance achieved during LHC Run 2 (2015-2018). It will describe the methods that are used to provide frequent calibrations of the ECAL trigger primitives during LHC operation. These are needed to account for radiation-induced changes in crystal and photodetector response and to maintain stable trigger rates and efficiencies up to |eta|=3.0. They also minimize the spurious triggering on direct signals in the photodetectors used in the barrel region (|eta|<1.48). Both of these effects have increased relative to LHC Run 1 (2009-2012), due to the higher luminosities experienced in Run 2. 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. The main features of these improved algorithms will be described and preliminary estimates of the expected performance gains will be presented.

Funding information

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Session Classification: Readout: Trigger and DAQ

Track Classification: Readout: Trigger and DAQ