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CMS High Level Trigger performance in Run 2

Tuesday 1 October 2019 10:00 (30 minutes)

The CMS experiment selects events with a two-level trigger system, the Level-1 (L1) trigger and the High Level trigger (HLT). The HLT is a farm of approximately 30K CPU cores that reduces the rate from 100 kHz to about 1 kHz. The HLT has access to the full detector readout and runs a streamlined version of the offline event reconstruction. In Run 2 the peak instantaneous luminosity reached values above 2×10^{34} cm^{-2} sec^{-1}, posing a challenge to the online event selection. An overview of the object reconstruction and trigger selections used in the 2016-2018 data-taking period will be presented. The performance of the main trigger paths and the lessons learned will be summarized, also in view of the coming Run 3.

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