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CMS High Level Trigger performance in LHC Run 2 and Run 3

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The CMS experiment at CERN uses a two-level triggering system to select and store important events for physics. This system is made of the Level-1 (L1) stage, based on custom-designed electronics, and the High Level Trigger (HLT) stage, a sped-up version of the offline software reconstruction running on a computer farm. New trigger algorithms, coupled with advanced technological developments such as heterogeneous computing in GPUs and an optimized trigger menu at the HLT level, are essential to successfully record the events at higher data loads due to increasing luminosity and pileup at the LHC in Run 3. The performance of the CMS HLT during the entire Run 2 data-taking phase will be presented in this talk, together with the improvements and performance of this system in the ongoing LHC Run 3.

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