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The CMS electron and photon trigger for the LHC Run 2 and plans for Run 3

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The Compact Muon Solenoid (CMS) experiment implements a sophisticated two-level triggering system composed of the Level-1, instrumented by custom-design hardware boards, and a software High Level Trigger. A new Level-1 trigger architecture with improved performance is now being used to maintain high physics efficiency for the more challenging conditions experienced during Run II. We present the performance of the upgraded CMS electron and photon trigger in the context of Higgs boson decays into final states with photons and electrons. The calorimeter trigger system plays a central role in achieving the ambitious physics program of Run II. The upgraded trigger benefits from an enhanced granularity of the calorimeters to optimally reconstruct the electromagnetic trigger objects. The performance of the new trigger system will be presented, based on proton-proton collision data collected in Run II. The selection techniques used to trigger efficiently on these benchmark analyses will be presented, along with the strategies employed to guarantee efficient triggering for new resonances and other new physics signals involving electron/photon final states. Plans for the LHC Run III optimizations will be described.

Author: MEYER, Arnd (Rheinisch Westfaelische Tech. Hoch. (DE))

Presenter: KOLOSOVA, Marina (University of Cyprus (CY))

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