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The Phase-2 Upgrade of the CMS Endcap Muon Trigger

Thursday, 28 May 2020 14:36 (18 minutes)

The CMS muon endcap trigger is being upgraded to prepare for data taking at the high-luminosity Large Hadron Collider. The upgrades are needed to cope with the increasing data rate in a challenging environment and to improve the sensitivity of the detector to physics beyond the standard model with displaced muons. Through the mid 2020s, the muon endcap system will be instrumented with new Gas Electron Multipliers and improved Resistive Plate Chambers in the forward region. In addition, the existing muon chambers will be equipped with new optical electronics and trigger algorithms. Furthermore, novel Machine Learning algorithms will be deployed on advanced FPGAs to reconstruct prompt and displaced muons at the same time. This talk will discuss the design and performance of the upgraded muon endcap trigger.

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