Type: Poster

Particle Flow reconstruction in the Level-1 trigger at CMS for the HL-LHC

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With the planned addition of the tracking information in the Level 1 trigger in CMS for the HL-LHC, the algorithms for Level 1 trigger can be completely reconceptualized. Following the example for offline reconstruction in CMS to use complementary subsystem information and mitigate pileup, we explore the feasibility of using Particle Flow-like and pileup per particle identification techniques at the hardware trigger level. We present the challenges of adapting these algorithm to the timing and resource constraints of the Level 1 trigger, the first prototype implementations, and the expected performance on physics object reconstruction.

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