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Level-1 track triggering at CMS for the HL-LHC

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The High Luminosity LHC (HL-LHC) is expected to deliver luminosities of 5x10ˆ34 cmˆ2/s, with an average of about 140 overlapping proton-proton collisions per bunch crossing. These extreme pileup conditions place stringent requirements on the trigger system to be able to cope with the resulting event rates. A key component of the CMS upgrade for HL-LHC is a track trigger system which would identify tracks with transverse momentum above 2 GeV already at the first-level trigger. This talk presents a proposal for implementing the L1 tracking using tracklets for seeding. The expected performance and the use of L1 tracks for triggering is discussed.

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