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Precision Timing with the upgraded CMS ECAL for High-Luminosity LHC

Friday, 21 April 2017 17:00 (1 hour)

Outstanding time resolution will be an asset at the High Luminosity Large Hadron Collider (HL-LHC), where locating the primary interaction vertex will be extremely challenging due to the large number of interactions per bunch crossing. The upgrade of the Compact Muon Solenoid (CMS) crystal electromagnetic calorimeter (ECAL), which will operate at the HL-LHC, will achieve a timing resolution of around 30 ps for high energy photons and electrons. In this talk we will discuss the benefits of precision timing for the ECAL event reconstruction. Simulation and test beam studies carried out for the timing upgrade of the CMS ECAL will be presented and the prospects for a full implementation of this option will be discussed.

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