



Muon fast Track Tag : A muon trigger upgrade for CMS at the HL-LHC

Saturday, 7 July 2012 18:00 (1 hour)

In the high luminosity LHC scenario (HL-LHC) with a luminosity up to ten times higher than at LHC and running at 14 TeV centre-of-mass energy, it will be important to rely on a more accurate transverse momentum resolution in order to keep the trigger rate under control and reach low p_T thresholds. In order to improve the transverse momentum resolution the idea is to combine the high precision tracking information from the inner Tracker detector with a reliable muon trigger. An additional detector layer behind the CMS magnet and in front of the first muon stations could be realized by fast plastic scintillator tiles read out by silicon photomultipliers (SiPMs), possibly via wave length shifting fibres. In addition to tag a selective Tracker readout region, the MTT layer helps to resolve ambiguities at high muon rates in the innermost muon stations. The poster will discuss the development of a MTT prototype module and concentrates on the characterization of SiPMs in combination with fast plastic scintillators. Different possible scenarios are presented.

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