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Data Quality Monitoring for the HL-LHC Upgrade to the CMS Outer Tracker

Monday 13 May 2024 17:00 (15 minutes)

The CMS detector will upgrade its tracking detector in preparation for the High Luminosity Large Hadron Collider (HL-LHC). The Phase-2 outer tracker layout will consist of 6 barrel layers in the center and 5 endcap layers. These will be composed of two different types of double-sensor modules, capable of reading out hits compatible with charged particles with transverse momentum above 2 GeV ("stubs"). Stubs are used in the back-end Level 1 track-finding system to form tracks that will be considered by the Level-1 trigger to select interesting events. An important part of this update is ensuring the tracker and the stub building step work correctly, which is where Data Quality Monitoring (DQM) comes in. Currently, there is no automated system to measure the performance of stub reconstruction. This talk focuses on the software development to ensure that we can monitor the performance of stub reconstruction, making use of Monte Carlo truth information.

Mini Symposia (Invited Talks Only)

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