

Commissioning the CMS Alignment and Calibration Framework

Tuesday, March 24, 2009 8:00 AM (20 minutes)

The CMS experiment has developed a powerful framework to ensure the precise and prompt alignment and calibration of its components, which is a major prerequisite to achieve the optimal performance for physics analysis. The prompt alignment and calibration strategy harnesses computing resources both at the Tier-0 site and the CERN Analysis Facility (CAF) to ensure fast turnaround for updating the corresponding database payloads. An essential element is the creation of dedicated data streams concentrating the specific event information required by the various alignment and calibration workflows. The resulting low latency is required for feeding the resulting constants into the prompt reconstruction process, which is essential for achieving swift physics analysis of the LHC data. The presentation discusses the implementation and the computational aspects of the alignment & calibration framework. Recent commissioning campaigns with cosmic muons, beam halo and simulated data have been used to gain detailed experience with this framework, and results of this validation are reported.

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