

Pixel detector Data Quality Monitoring in CMS

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The silicon pixel detector in CMS contains approximately 66 million channels, and will provide extremely high tracking resolution for the experiment. To ensure the data collected is valid, it must be monitored continuously at all levels of acquisition and reconstruction. The Pixel Data Quality Monitoring process ensures that the detector, as well as the data acquisition and reconstruction chain, is functioning properly. It is critical that the monitoring process not only examine the pixel detector with high enough granularity such that potential problems can be identified and isolated, but also run quickly enough that action can be taken before much data is compromised. We present a summary of the software system we have developed to accomplish this task. We focus on the implementation designed to maximize the amount of available information, and the methodology by which we store persistent information such that known problems can be recorded and historical trends preserved.

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