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ATLAS Data Preparation in Run 2

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In this presentation, the data preparation workflows for Run 2 are presented. Online data quality uses a new hybrid software release that incorporates the latest offline data quality monitoring software for the online environment. This is used to provide fast feedback in the control room during a data acquisition (DAQ) run, via a histogram-based monitoring framework as well as the online Event Display. Data are sent to several streams for offline processing at the dedicated Tier-0 computing facility, including dedicated calibration streams and an "express" physics stream containing approximately 2% of the main physics stream. This express stream is processed as data arrives, allowing a first look at the offline data quality within hours of a run end.

A prompt calibration loop starts once an ATLAS DAQ run ends, nominally defining a 48 hour period in which calibrations and alignments can be derived using the dedicated calibration and express streams. The bulk processing of the main physics stream starts on expiry of the prompt calibration loop, normally providing the primary physics format after a further 24 hours. Physics data quality is assessed using the same monitoring packages, allowing data exclusion down to a granularity of one luminosity block or 1 minute. Meanwhile, the primary reconstruction output is passed to the ATLAS data reduction framework, providing data to users typically within 5 days of the end of a DAQ run, and on the same time scale as the data quality good run list.

Tertiary Keyword (Optional)

Computing facilities

Secondary Keyword (Optional)

Monitoring

Primary Keyword (Mandatory)

Data processing workflows and frameworks/pipelines

Author: LAYCOCK, Paul James (University of Liverpool (GB))

Presenter: LAYCOCK, Paul James (University of Liverpool (GB))

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