

Highlights: Resource usage and rate predictions in the ATLAS High Level Trigger

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On behalf of the ATLAS
Collaboration

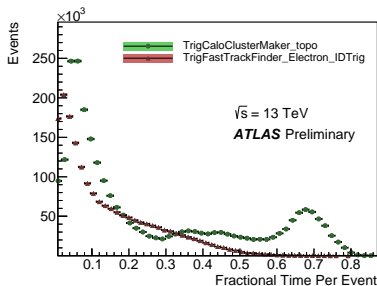
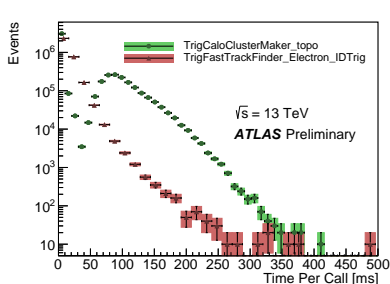
University of Warwick

10 October 2016

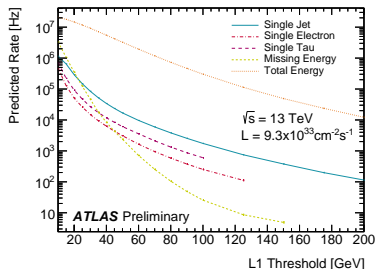
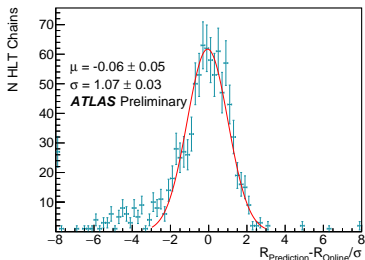
Monitoring High Level Trigger Algorithm CPU Usage

Granular offline monitoring of execution details in the ATLAS High Level Trigger.

Made available automatically to the collaboration within 24h of a run's end.



Enhanced Bias Data for Rate Predictions



'Enhanced Bias' datasets allow for **data-driven** determination of **arbitrary** trigger-selection rates to be computed offline using a 1M event dataset.

Conclusions: ATLAS-DAQ-PUB-2016-002

Detailed monitoring data from the ATLAS High Level Trigger are processed automatically within 24h of run finish & made available to the collaboration via web portal.

Offline execution monitoring of the HLT at a **high-level**, including the *total execution time* and at a **low-level**, including *per-algorithm monitoring*. Allows for optimisations, monitoring & future planning.

The 'Enhanced Bias' mechanism allows for compact datasets (~ 1 million events) with the statistical power to evaluate rates for arbitrary HLT selections.

Rate predictions are calculable for individual trigger chains, groups of chains, the total rate, unique rates, overlaps between triggers.

Validate an entire trigger menu **before** it is deployed on the live system.