

Real time algorithms in the ATLAS tau trigger system at 7 TeV center of mass energy

The ATLAS tau trigger system runs very challenging real time algorithms on commodity computers. Whilst in the second level trigger (L2) fast and specialized algorithms are used, in the third level trigger (Event Filter -EF-) sophisticated and detailed reconstruction algorithms run. The performance of both types of algorithms can be decoupled because they both start from the information provided by first level (L1) hardware-based system. For both cases, data from the whole detector can be used, and in fact there are dedicated separate algorithms processing the calorimeter data and the data from the tracking detectors.

In this contribution we focus on the online performance of the L2 and EF algorithms during 2011 data taking period at the LHC, with special emphasis on the fast calorimeter selection. We present the overall performance and robustness of the operation of such algorithms during its use at the LHC. Finally, we outline the plans for future operations in light of the experience accumulated during this year's running.

Primary authors: Mr PETER, Kadlecik (Theoretical High Energy Phys. Dept. (NBI)-Niels Bohr Inst. Astr); Dr CASADO LECHUGA, Pilar (IFAE - Institut de Física d'Altes Energies-Universitat Autònoma)

Presenter: Mr PETER, Kadlecik (Theoretical High Energy Phys. Dept. (NBI)-Niels Bohr Inst. Astr)

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