ATLAS Fast Physics Monitoring: \textit{TADA}

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ATLAS Fast Physics Monitoring System: TADA

- TADA runs as part of the ATLAS prompt data processing at Tier0
- Analysis level calibration have been applied, such that analysis level data quality can be monitored
- TAG ntuples with condensed informations are analyzed in a hybrid C++/python software approach
- Monitors many signatures for early signs of new physics in the data
Data quality monitoring

- TADA allows to automatically monitor many different aspects of detector calibrations and their stability during the year
- Jet energy calibration:
  - A selection of γ-jet back-to-back events is implemented in TADA to monitor the $p_T$ balance defined as $p_T^{jet} / (p_T^\gamma \cos(\Delta \phi))$
- New runs are automatically added to the plots directly after the Tier-0 processing has finished
TADA: Fast search for new physics

- Many channels sensitive to broad spectrum of new physics are implemented in TADA, grouped by:
  - SM, top, Higgs, exotics and SUSY searches
  - Distributions, as invariant mass of ee and di-jet events, are displayed on the TADA webpage
  - TADA provides as well a built-in event viewer to inspect interesting events

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**ATLAS Online**
Fast Physics Monitoring

- Data 2015 \((#s = 13\, \text{TeV})\)
- Standard Model
- \(\chi^2/\text{dof} = 0.93\)
- \(p = 0.686\)

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