



# Operations Post Mortem

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- Calibration Scripts
- Calibration Trends
- Tools for Operations
- Online Software



# Calibration Scripts

- Combined calo calibration script in use since 2011
  - Stable from user point of view
    - Though various internal changes to improve bookkeeping
  - Extra calibrations added for LUCID & Tile+ZDC
- Recently extended to muons
  - CSC & TGC OK
  - MDT some issues...
- Run Calo+Muon together?
  - If ATLAS shift crew is significantly reduced for 2015...

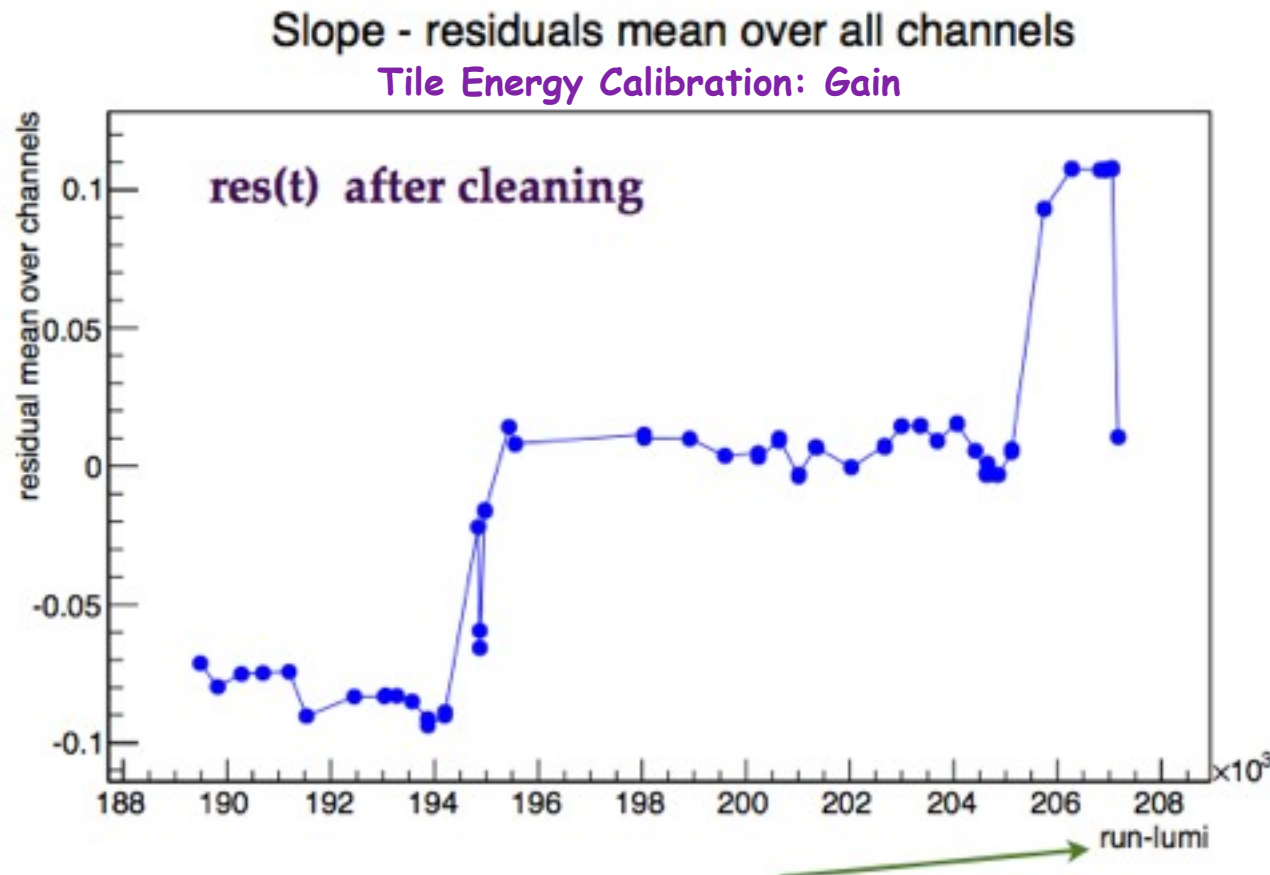
The screenshot shows the 'Calorimeter Calibration Panel' with a yellow background. At the top right are 'Help (Twiki)' and 'Expert Phones' buttons. Below the title, a message says 'Please check here, and with the shift leader, that it is OK to take calibrations now'. The status bar shows 'LHC UNKNOWN', 'ATLAS ABSENT', 'DetMask' with green indicators, and 'Magnets SOL TOR'. The 'Daily Shifter Schedule' section has tabs for 'L1Calo', 'LAr', 'Tile', and 'Forward', with 'L1Calo' selected. Below this is a row of days from 'Mon' to 'All'. The main section is titled 'Standard Set of Calibrations for MONDAY's' and contains a table of calibration tasks. Each row has a checkbox, a timestamp, a task name in a blue button, a dropdown menu, a status button (ABSENT), a 'DQ' button, a duration and run count, and an 'Abort' button. The tasks are: 'LUCID' (08:27, 45 Mins (5 Runs)), 'LAr Daily' (00:57, 50 Mins (16 Runs)), 'LAr Weekly' (13:01, 80 Mins (24 Runs)), and 'L1+Tile' (10:54, 15 Mins (4 Runs)). Below this table is a section for 'Extra calibrations - if there is time after doing the ones above', which includes 'Tile+ZDC' (21:46, 15 Mins (2 Runs)). At the bottom is a 'Messages' section with a large empty text area. The footer shows a 'Clear' button, a status '3 Calibrations (50 Mins)', and an 'Abort All' button.

Do All Selected Calibrations (in Parallel)							
<input checked="" type="checkbox"/>	13 Feb 08:27	LUCID	-	ABSENT	DQ	45 Mins (5 Runs)	Abort
<input checked="" type="checkbox"/>	12 Feb 00:57	LAr Daily	-	ABSENT	DQ	50 Mins (16 Runs)	Abort
<input type="checkbox"/>	12 Feb 13:01	LAr Weekly	-	ABSENT	DQ	80 Mins (24 Runs)	Abort
<input checked="" type="checkbox"/>	11 Feb 10:54	L1+Tile	-	ABSENT	DQ	15 Mins (4 Runs)	Abort
Extra calibrations - if there is time after doing the ones above							
	13 Feb 21:46	Tile+ZDC	-	ABSENT	DQ	15 Mins (2 Runs)	Abort



# Calibration Trending Tools (1)

- calibMonitor tool developed by Giacomo
  - Presented last year
    - [indico.cern.ch/getFile.py/access?contribId=33&sessionId=4&resId=0&materialId=slides&confId=183314](https://indico.cern.ch/getFile.py/access?contribId=33&sessionId=4&resId=0&materialId=slides&confId=183314)
- Included in L1Calo online SW (calibTools package)





# Calibration Trending Tools (2)

- **calibMonitor features:**

- Analyse history of one or more attributes of a COOL folder
- Produces many histograms
  - History of attribute(s) per channel (residuals from channel mean)
  - History of all "residuals" (global shifts)
  - Distributions of means, RMS, min, max: 1D plots and 2D maps (PPM only)
  - Optional "cleaning" to remove bad calibrations to see smaller details
- Remaining issues:
  - Needs complete history in one COOL database
    - Energy scans still write separate sqlite file per calibration
      - Script exists to combine them into single sqlite file - run manually
  - Hadronic FCAL mapping still not fixed
- Documentation note being written...



# Tools For Operations: P1

- Issues with shifter tools (control room desktop PCs)
  - Calibration panel: OK?
  - L1CaloMap
    - Mappings too detailed for shifters?
    - Only one layer shown at a time
  - Monitoring: OHP
    - Maintenance of references?
    - Descriptions?
    - Which plots to keep if we have no trigger shifter in 2015?
  - Monitoring: DQMF
    - Lot of work to add rates & pedestal tracking (by Taylor/Sarah/Rohin)
      - Represents >98% of L1Calo OKS database, ~30% of entire ATLAS partition OKS database!
        - L1Calo is the largest subdetector in terms of OKS files in the ATLAS partition (more than the HLT)
    - But is it really used?
      - TriggerMonitor MRS messages and OHP pedestal monitoring seem to be more useful



# Tools For Operations: Web

- Expert “on call” page: <https://atlasop.cern.ch/oncall/l1calo/>
  - Developed by Taylor, extended to CTP/L1Muon
  - L1Calo section now also has L1CaloMap rates & RunCtrl tree
    - L1CaloMap: both layers (inc FCAL) on one page
    - Fewer controls, less mapping info
    - Get shifters to look at this one in future?
  - What additional information would be useful?
  - NB there is now also a combined calorimeter portal for P1
    - <https://atlasop.cern.ch/calor/> (so far L1Calo has not joined this)
- Training for on call experts?
  - Minimal documentation at the moment
    - Summary twiki page, set of links, etc
  - Training generally done in person by more expert person
  - We could improve a lot for 2015
    - Assuming we havent forgotten our operational expertise by then!



# Online Software

- Very stable for pp running
  - A few releases installed for minor changes
- Main changes in 2012 were for heavy ions
  - Support for fine eta CP/jets and restricted eta TE thresholds
    - Several iterations to get it right
- Also added initial versions of phase 0 packages
  - cmxServices, cmxSim, topoServices
    - So far no topoSim package
- But the stable phase is over
  - Many TDAQ upheavals foreseen (several releases planned)
    - And move from SLC5-SLC6 this autumn at point 1
  - L1Calo new modules and ATCA support, etc