



D0 Status Report

6/19/2006

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Notable Events



- 6/12 (Mon)
 - Trigger list v15 download failed due to L3 download timeouts.
 - During store 4759, took Calorimeter calibration runs for the new L1Cal trigger with the A-layer PDT readout off.
 - Took global physics data with v15_L1L2Only-1.20 trigger and the A-layer PDT readout on.
- 6/13 (Tue)
 - Took a forward muon special run for a cross check of our luminosity measurement.
 - Trigger list download problem partially solved by trimming the list.
 - First version of v15 trigger global_CMT-15.00 downloaded successfully.
 - Took data with global_CMT-15.00 during Store 4760.



Notable Events



- 6/14 (Wed)
 - Took a central muon special run for muon yield measurement.
 - L3 trigger download timeout problem fully solved by optimizing the communication timeout.
 - Controlled access:
 - Replaced a Control Board in PDT 242.
 - Replaced a splitter card for L1 muon trigger and replaced a readout board for Forward muon.
 - An AFE II board tested on the platform.
- 6/15 (Thu)
 - Another forward muon special run for muon yield measurement.



Notable Events



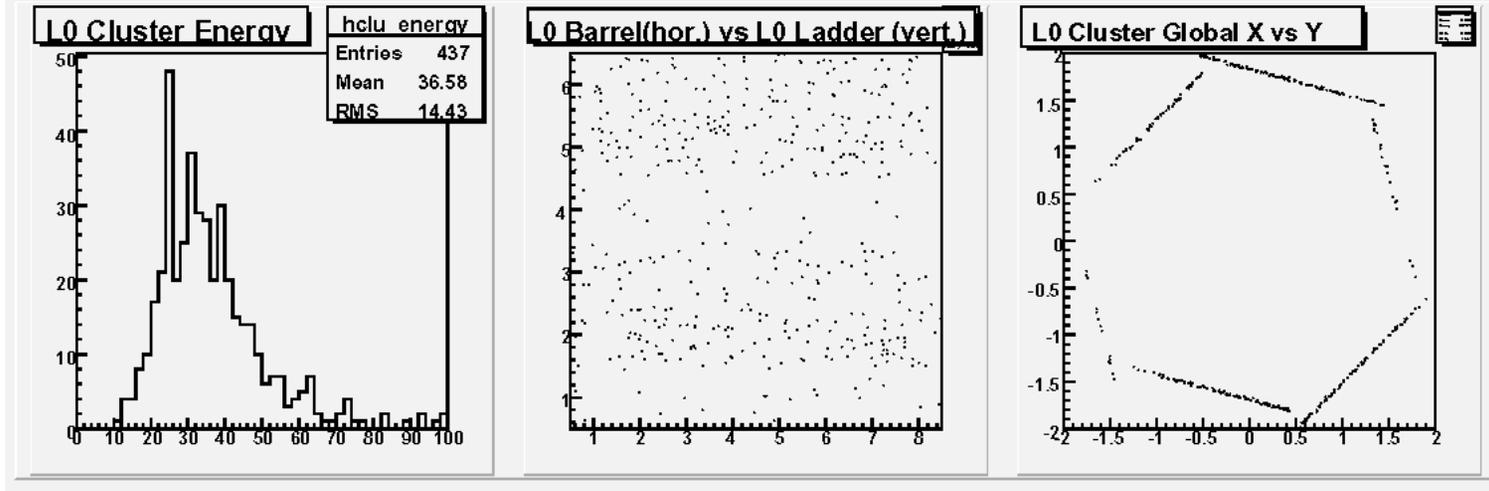
- 6/16 (Fri)
 - Controlled access:
 - Move the muon PDT control board with 53 MHz readout to a different location and reprogram two more boards.
 - Swapped a CTT board.
 - Replaced a daughter card and a BLS card.
 - Swapped two L1 muon cards.
 - A temporary fix for L1Cal MET trigger problem implemented.
 - MET trigger was not firing due to a incompatibility in firmware.
- 6/17 (Sat)
 - SMT cosmic runs for Layer 0 alignment taken with magnets on.
- 6/18 (Sun)
 - Controlled access:
 - Replaced a calorimeter BLS power supply.



SMT Layer 0



L0 clusters associated with GTracks(401) found in 29000 cosmic events

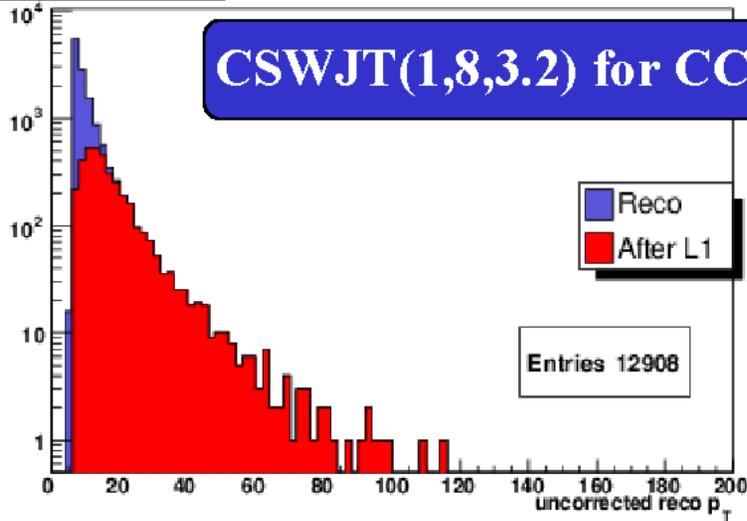




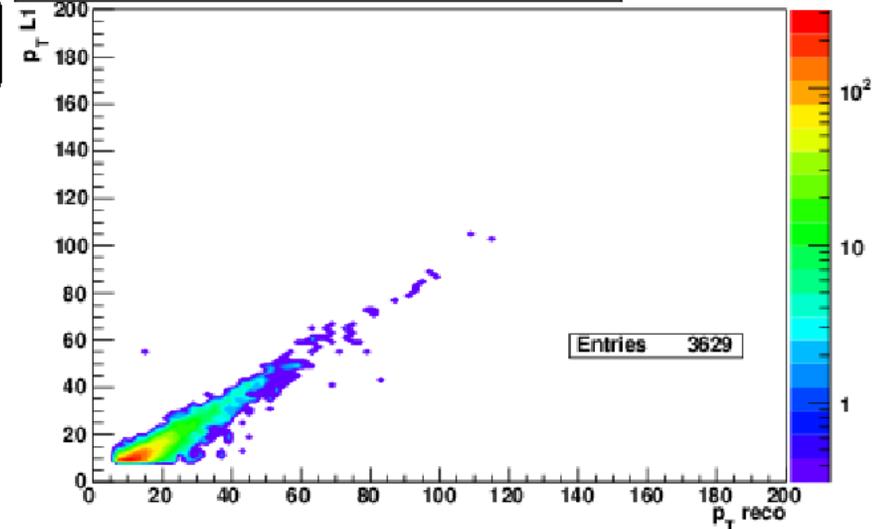
Preliminary Turn-On curve from new L1 Cal Trigger



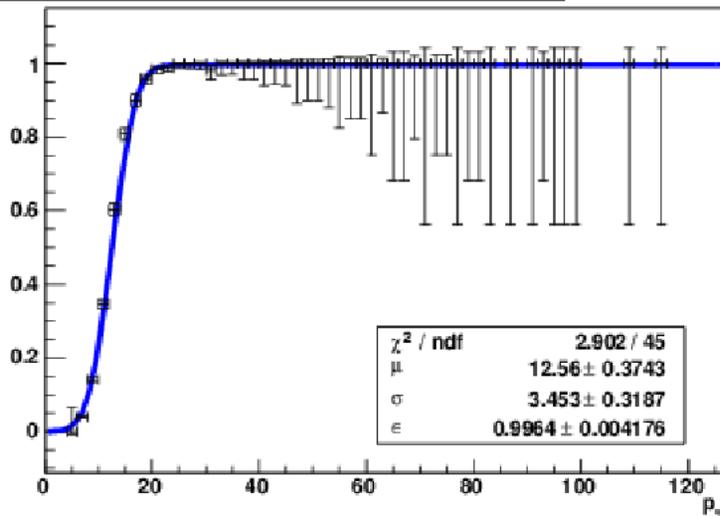
Good jet p_T in CC



$p_{T, L1}$ vs $p_{T, reco}$ for CSWJT(1,8,3.2)_ncu in CC



L1 Turnon = $f(p_T)$ for CSWJT(1,8,3.2)_ncu in CC

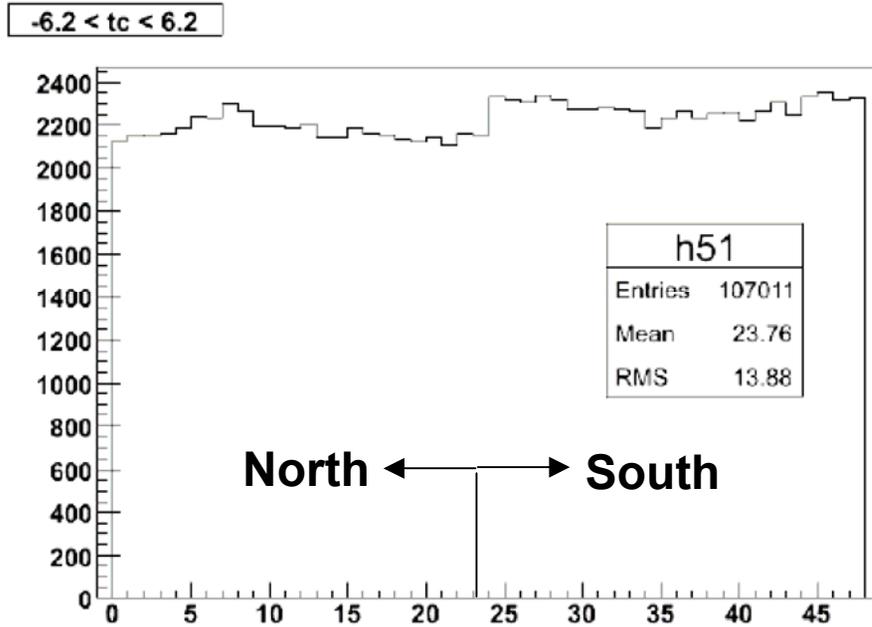


Cross check with MET studies to identify hot/dead towers which could affect the jet clustering

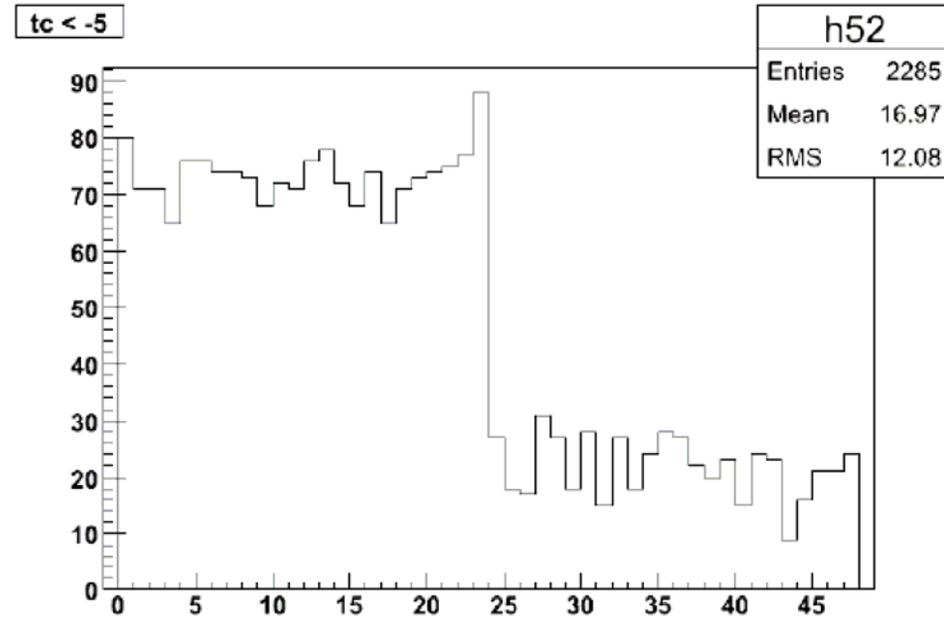
$$\epsilon(p_T) = \frac{\epsilon}{2} \left(1 + \text{Erf} \left(\frac{p_T - \mu}{\sigma \sqrt{2}} \right) \right)$$



Hit Distribution of new Luminosity counters



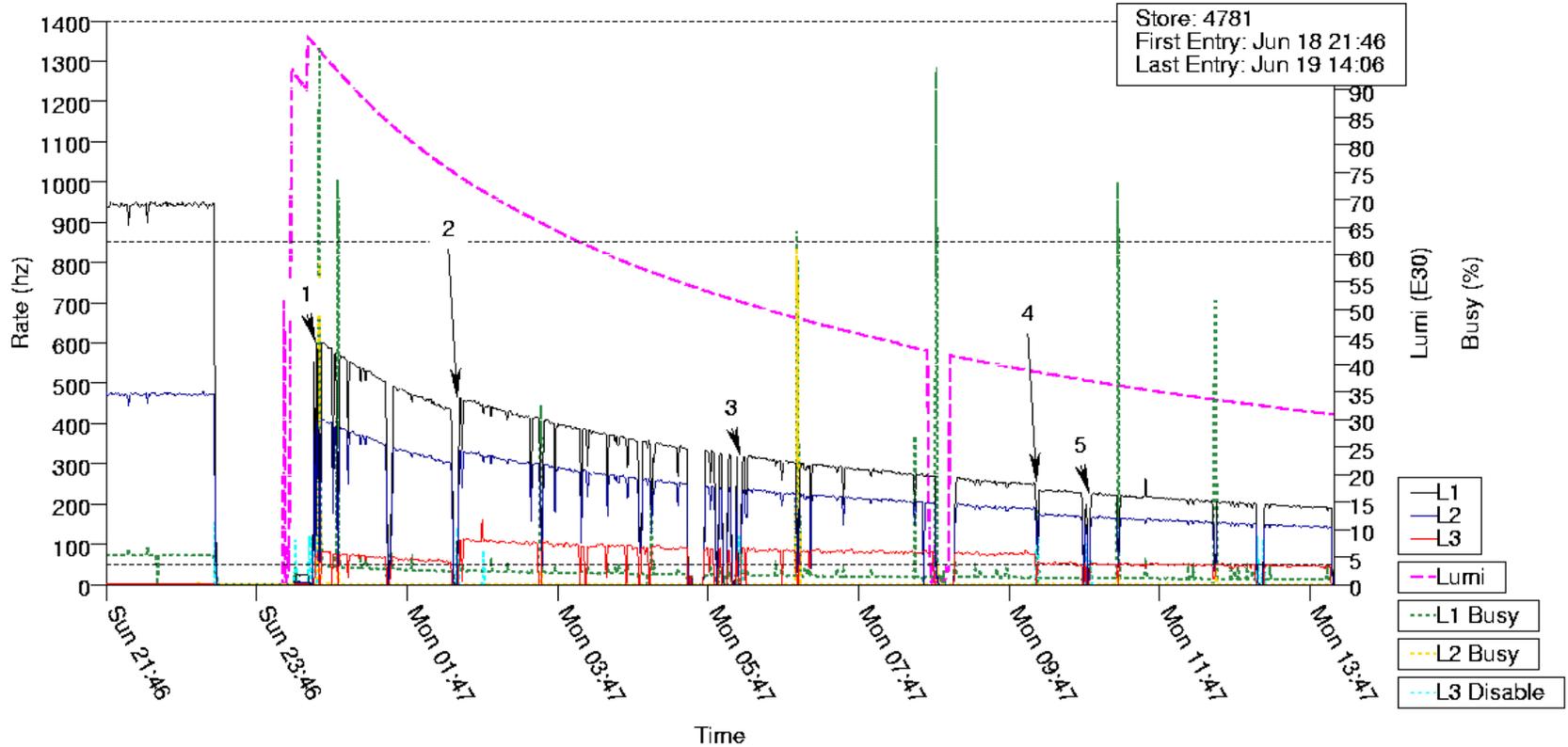
In time hit. South array has a higher occupancy from proton halo



Hit in early time. North array is from proton halo.



Rate Plot for Store 4781

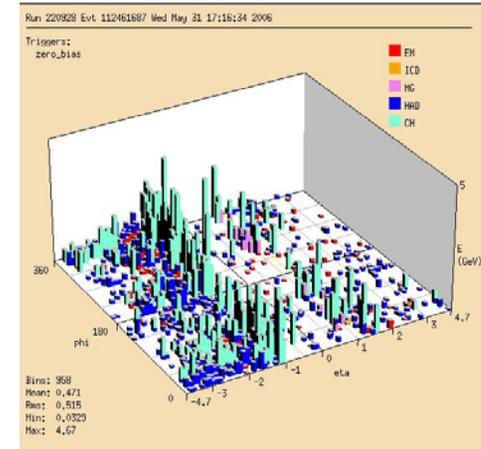




Calorimeter Noise and Muon A-layer PDT readout



- Calorimeter noise is clearly correlated to the readout clock speed (45 MHz) of Muon A-layer PDT.
- A Control Board modified to run with 53 MHz is installed and seems to work.
- Unfortunately the download procedure is not compatible with the upgraded IOC at the moment.
 - Experts are working on this.
- Once the download problem is fixed, we will modify all of the A-layer Control Boards. (2 shift access required)





Summary



- Layer 0, L1Cal and CTT upgrade are all working.
- Run IIb trigger list (v15 trigger list) successfully downloaded and run since store 4760.
- Took global physics runs and special runs for the L1Cal trigger calibration, the SMT layer 0 alignment and the luminosity measurement cross check.
- Have tested a modified control board for the muon A-layer PDT readout that reduces the noise in the calorimeter.