Jet/MET Trigger On-Call Report
And some validation as well

Ricardo Gonçalo – LIP
Jet Trigger Meeting – 20/4/2015

14 April – pre-run meeting

Jets:

- Aparajita: running same chains and fom
- 261182 - Same behavior as yesterday's run 261141
  - Check if jet menu is ok in recent runs
  - Naoko seeing problems in cluster monitoring
- Runs to check:
  - 261182 (ptag data15_cos, duration 901.4m, 4388397 events, ATLAS Ready lumi 0.00/nb, ended Mon 09:49)
  - 261308 (ptag data15_cos, duration 92.3m, 2226448 events, ATLAS Ready lumi 0.00/nb, ended Mon 19:59)
- DQ Backlog:
  - TRIG_HLT_JET 259565 259566 259745 259756 259771 259921 260095 260272 260273 260466 260653 260758 261070 261141 261142
  - TRIG_HLT_MET 259565 259566 259745 259756 259771 259921 260095 260272 260273, 260466 260653 260758 261070 261141 261142

Others:

- We're going to move to the new monitoring configuration soon – need to check all DQ runs
- Problem reported in https://its.cern.ch/jira/browse/ATR-10559 with EtaHypo_HEC_larhec_L1J12_FIRSTEMPTY - Carlos taking care of it
- Offline: Problems with offline reprocessing – cannot do any reprocessing at the moment – Jiri will follow up
- Releases:
  - Soon deploying new Physics_pp_v5 menu online – currently problems in deploying L1 menu
  - >100 new tags swept into P1CAFHLT – but looks ok

Last validation towards MC15a

Strategy for 20.1.4.5 validation

- **Task 1 - no pileup (20.1.4.5 s/w test)**
  - (All with 03-01-00 GEO, reduced digi time window and trigger split and have 25ns calo reco settings)
  - Ref: No pileup test 3 from task 1 from yesterday's meeting: s2578_r6540 (19.2.3.3, 20.1.4.3)
  - Test1: As ref but in 20.1.4.5 : s2578_r6588 (19.2.3.3, 20.1.4.5)
  - Test2: As test one but latest SDR-28 conditions : s2578_r6589 (19.2.3.3, 20.1.4.5)
- **Task 2 - 50ns pileup**
  - (All with 03-01-00 GEO, reduced digi time window and trigger split)
  - Ref: No pileup test 1 from task 1 : s2578_r6588 (19.2.3.3, 20.1.4.5)
  - Test 1: 20.1.4.5 with 50ns pileup - s2578_r6590 (19.2.3.3, 20.1.4.5)
  - Effect of pileup clearly visible
  - Test 2: As test 1 but with digi window from --pileupFinalBunch = 6 - s2578_r6591 (19.2.3.3, 20.1.4.5)
  - Test 3: As test 1 but with SDR-26 for updated LCW for jets - s2578_r6593 (19.2.3.3, 20.1.4.5)
  - Test 4 As test 3 but with SDR-28 to test deads maps and b-tag calib - s2578_r6594 (19.2.3.3, 20.1.4.5)
  - Test 5: as test 4 but with AthenaMP - s2578_r6595 (19.2.3.3, 20.1.4.5) - direct clone of r6582
  - Check with the ttbar sample as soon as we have it
  - Submit to normal memory queue with corecount = 8
- **Task 3 - 25ns pileup**
  - (All with 03-01-00 GEO, reduced digi time window and trigger split)
  - Ref1: No pileup test 1 from task 1 : s2578_r6588 (19.2.3.3, 20.1.4.5)
  - Ref2: 50 ns pileup test 1 from task 2: s2578_r6590 (19.2.3.3, 20.1.4.5)
  - Test 1: 20.1.4.5 with 25ns pileup - s2578_r6596 (19.2.3.3, 20.1.4.5)
  - All histograms with p1878

Sample A ttbar alidation for MC15a

Task	Test	Tags / container	?
1	1	**s2578_r6588 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
no pileup with 25ns calo reco as reference (20.1.4.3) but with 20.1.4.5		**s2578_r6588 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6588 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6588 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6588 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6588 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK
1	2	**s2578_r6589 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
no pileup with 25ns calo reco as test 1 but SDR-28 cond.: LCWs, dead channel maps		**s2578_r6589 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6589 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6589 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6589 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6589 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK

Sample A ttbar validation for MC15a

Task	Test	Tags / container	?
2	1	**s2578_r6590 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
50 ns pileup		**s2578_r6590 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6590 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6590 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6590 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6590 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK
2	2	**s2578_r6591 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
as test 1 but digitization time window set via pileupFinalBunch = 6		**s2578_r6591 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6591 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6591 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6591 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6591 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK

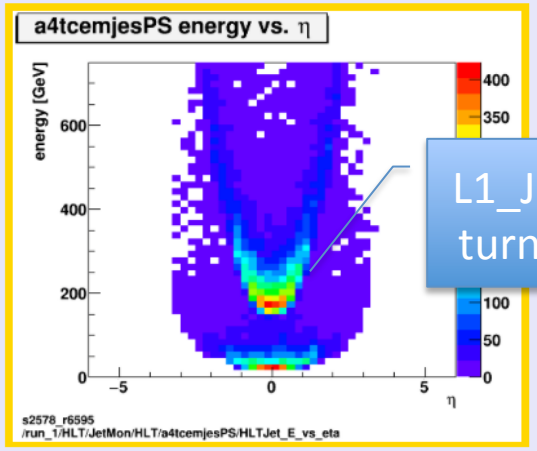
Sample A ttbar validation for MC15a

Task	Test	Tags / container	?
2	3	**s2578_r6593 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
50 ns pileup		**s2578_r6593 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6593 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6593 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6593 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6593 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK
2	4	**s2578_r6594 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
50 ns pileup		**s2578_r6594 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6594 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6594 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6594 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6594 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK

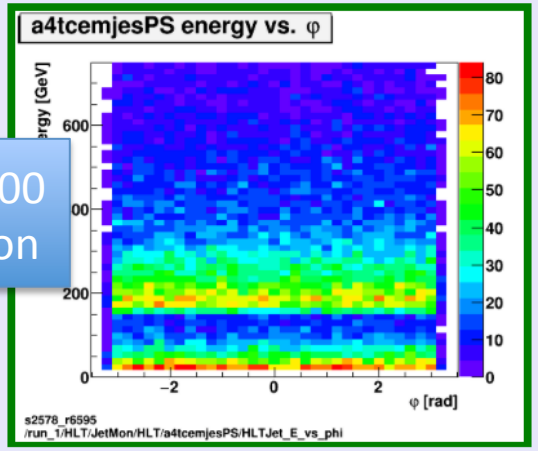
Sample A ttbar validation for MC15a

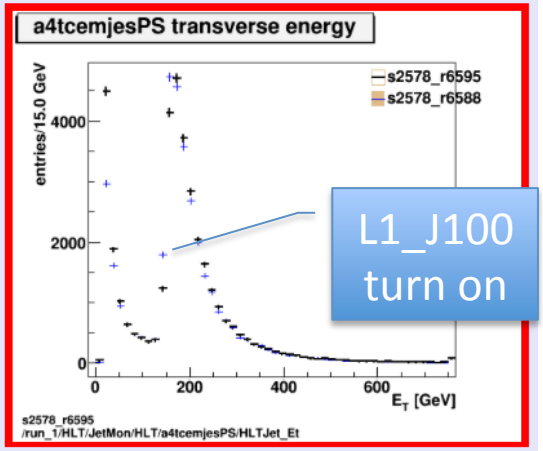
Task	Test	Tags / container	?
2	5	**s2578_r6595 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
25 ns pileup		**s2578_r6595 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6595 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6595 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6595 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6595 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK
3		**s2578_r6596 run_1/HLT/JetMon/HLT/a10tcemsubFS**	OK
25 ns pileup		**s2578_r6596 run_1/HLT/JetMon/HLT/a4tcemjesFS**	OK
		s2578_r6596 run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		s2578_r6596 run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		s2578_r6596 run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		s2578_r6596 run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK

s2578_r6595 run_1/HLT/JetMon/HLT/a4tcemjesPS

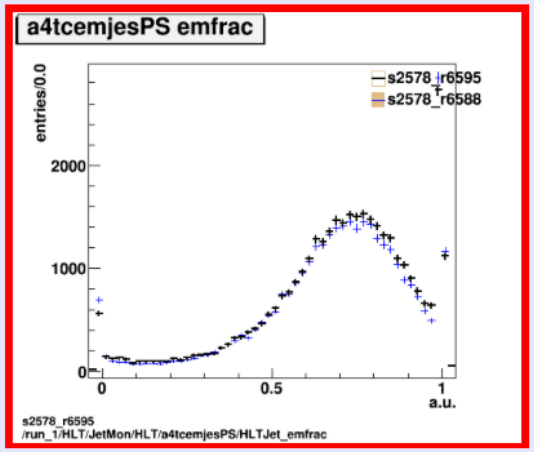


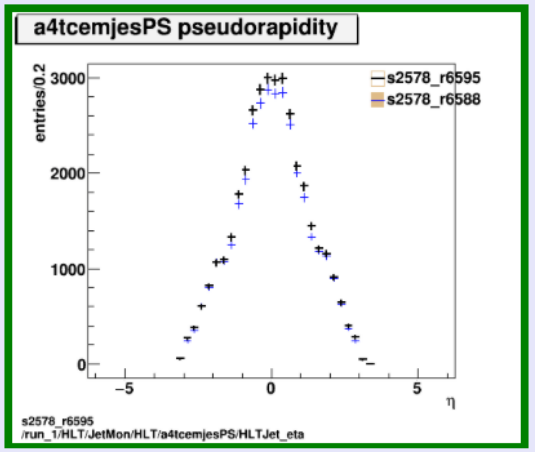
L1_J100 turn on

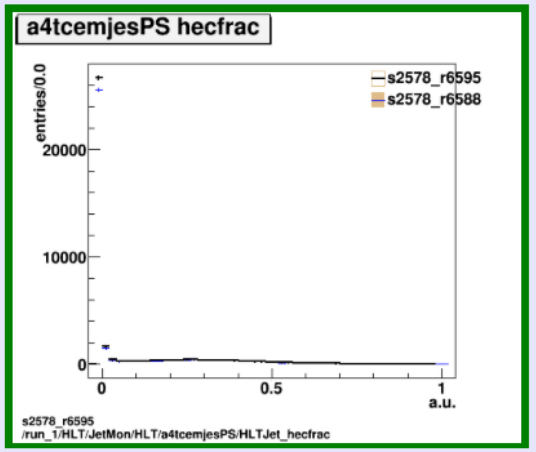


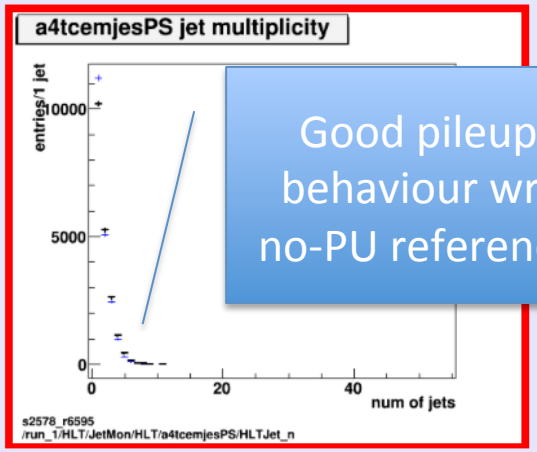


L1_J100 turn on

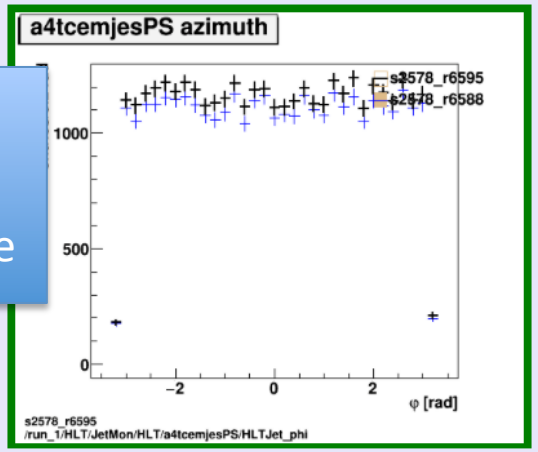


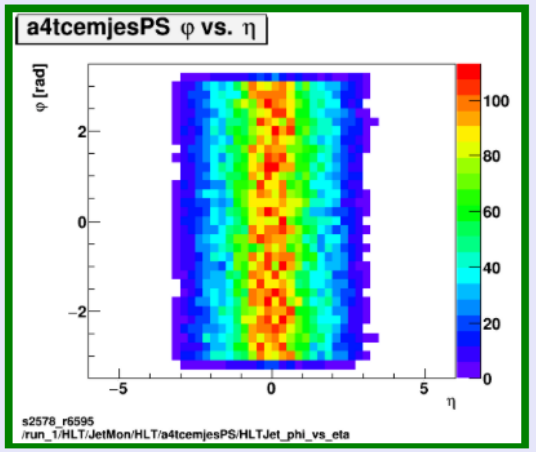




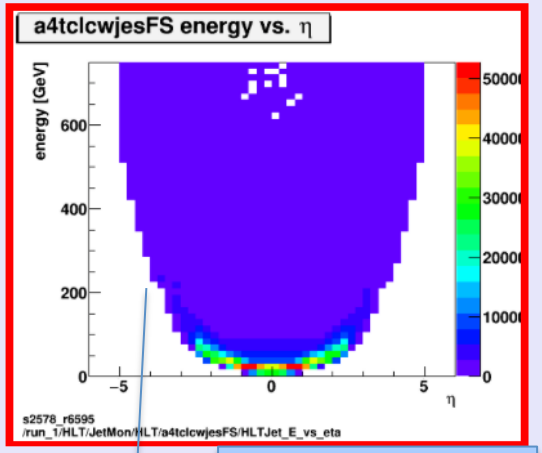


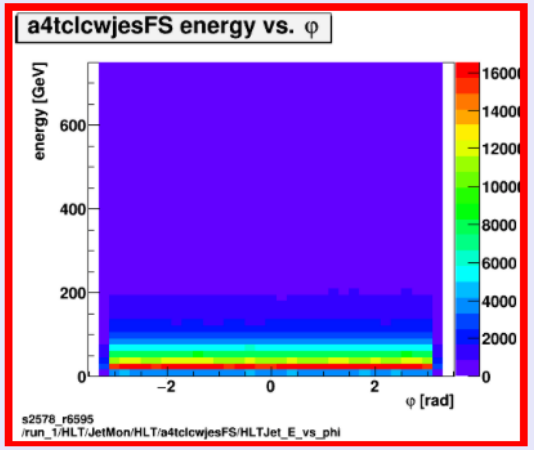
Good pileup behaviour wrt no-PU reference

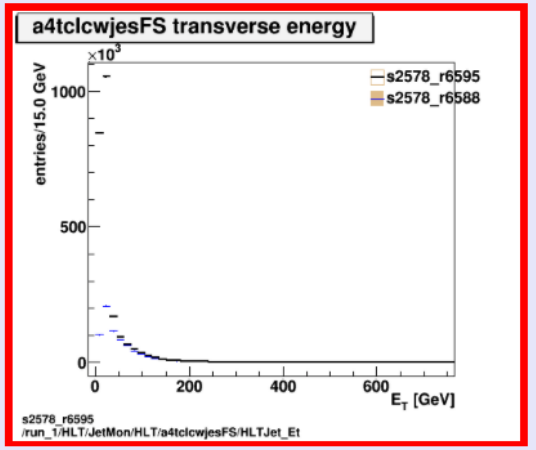




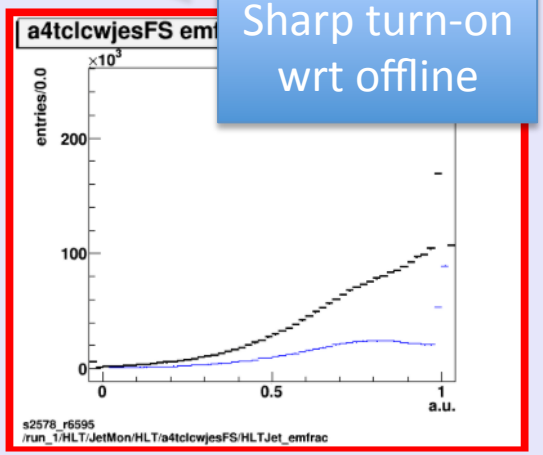
s2578_r6595 run_1/HLT/JetMon/HLT/a4tclcwjesFS

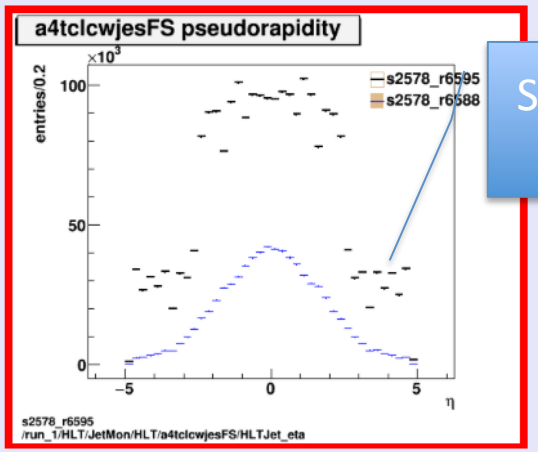




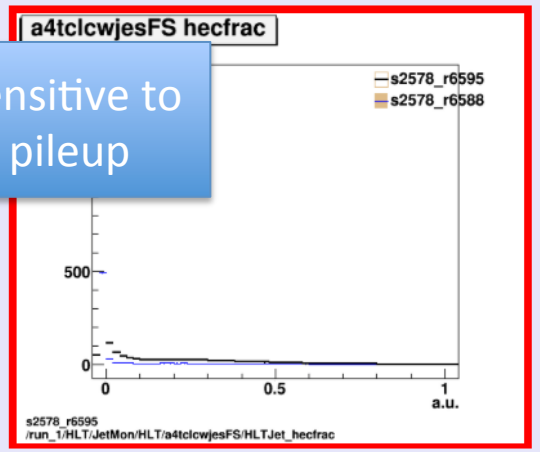


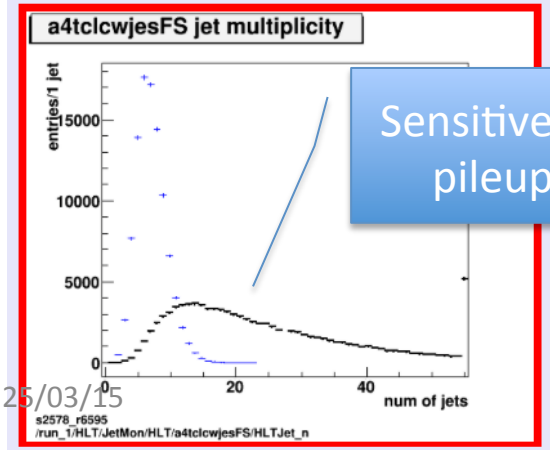
Sharp turn-on wrt offline



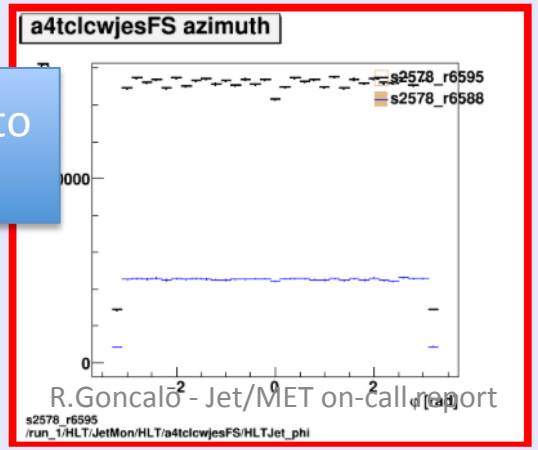


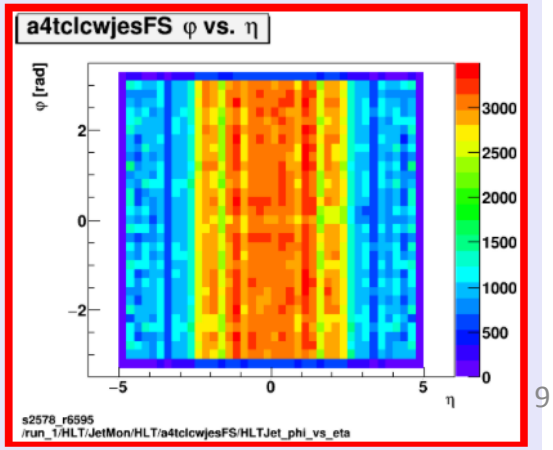
Sensitive to pileup



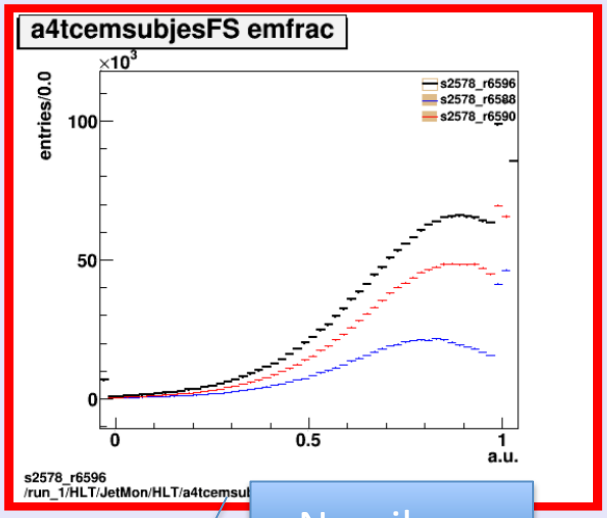


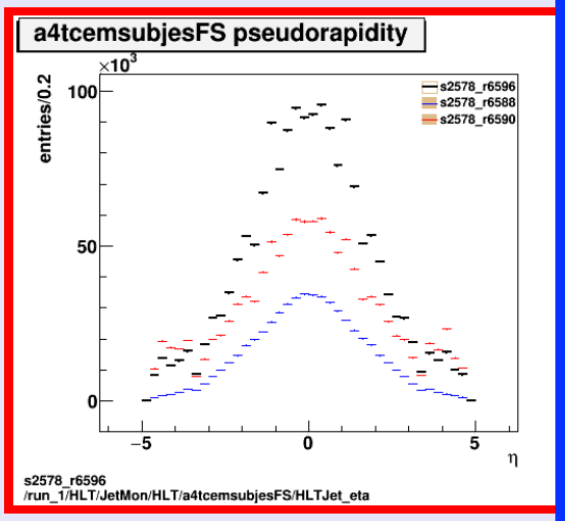
Sensitive to pileup

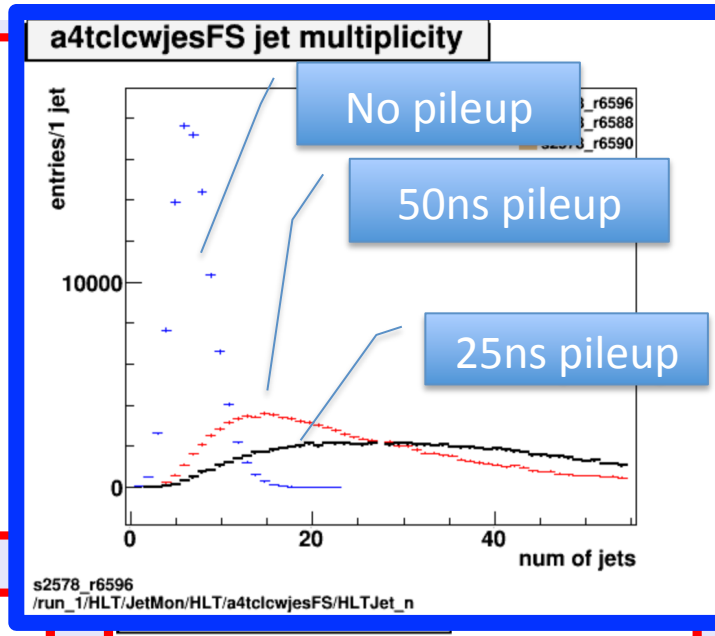




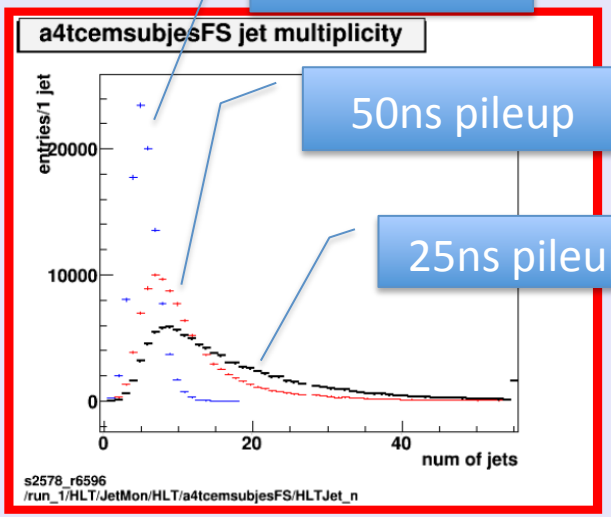
Histograms

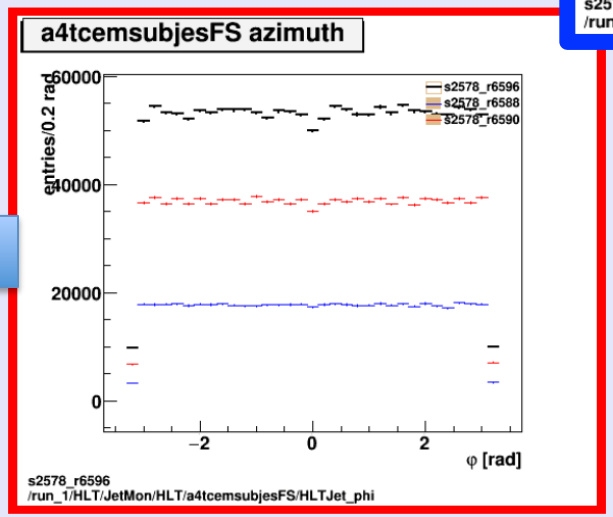


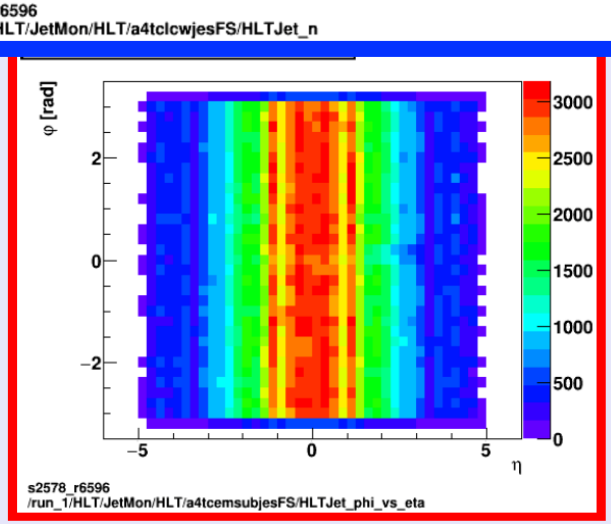




No pileup







s2578_r6596 run_1/HLT/JetMon/HLT/a4tcemsubjesFS

Run by Run DQ Summary

Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
261182	901.4m	Mon 09:49	4388397	Empty	OK	Only perf chains running
261308	92.3m	Mon 19:59	2226448	Empty	OK	Only perf chains running
261320	791.4m	Tue 09:21	3928412	Empty	OK	Only perf chains running
261456	846.4m	Wed 10:08	4718001	Empty	OK	Only perf chains running
261615	639.6m	Thu 09:03	3590430	OK	OK	j0 and ht0 now active
261921	716.6m	Fri 08:46	3851449	OK	OK	j0 and ht0 active
261939	60.4m	Fri 10:25	273820	Empty	OK	j0 and ht0 deactivated!
262088	515.2m	Sat 10:02	2758593	Empty	OK	j0 and ht0 deactivated!
262094	173.5m	Sat 13:12	881611	OK?	OK?	Low stats; j0/ht0 ok now
262153	782.4m	Sun 10:02	4164054	OK	OK	
262163	145.6m	Sun 12:52	761893	Empty	Empty	Low stats; no j0 or ht0
262166	62.0m	Sun 14:01	306861	Empty	Empty	Low stats; no j0 or ht0
262192	81.5m	Sun 17:53	406989	Empty	Empty	Low stats; j0, ht0 active
262194	977.0m	Mon 10:44	5273906	OK		j0 & ht0; not yet j0_lcw ok

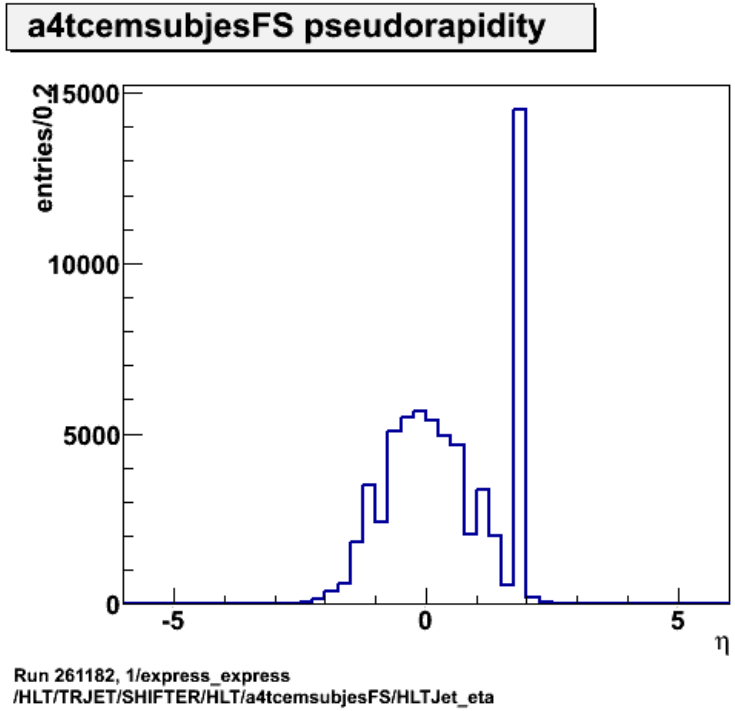
Sign-off/defects

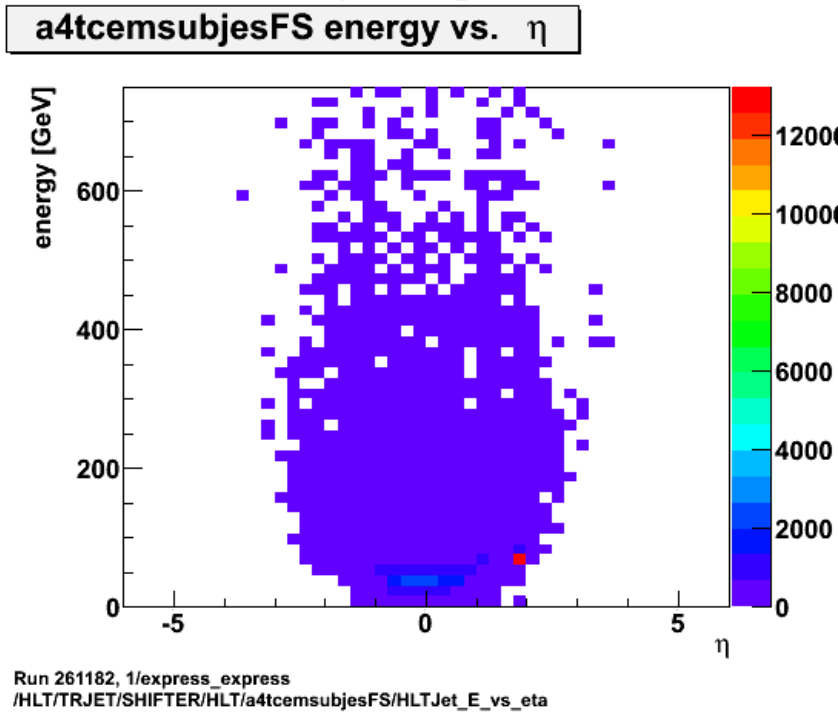
- Old runs (offline histos only): 260095 260272
- 261182 – ok
  - Only j0_perf and ht0_perf active
  - Calo spike in (eta,phi)=(2,-3)
- 261308 – ok
  - New calo spike at (eta,phi)=(-2,1)
- 261320 – ok
  - Calo spike at (eta,phi)=(2,-3)
  - Disappeared: calo spike at (eta,phi)=(-2,1)
  - Smaller calo spike at (eta,phi)=(2,-0.7)
- 261456 – ok
  - Calo spike at (eta,phi)=(2,-3)
- 261615 – ok
  - j0 and ht0 chains (from L1_J12) now re-activated
  - Just small calorimeter spikes at phi=-1.2 and 1.6 (hard to see in eta)
- 261921 – ok
  - Calo spike at (eta,phi)=(2,-0.7)
  - Calo spike at (eta,phi)=(2,-3)
- 261039 – ok
  - Low stats
- 262088 – ok
  - Low stats
- 262095 – ok
  - Low stats
- 262153 – ok
  - Calo spike at (eta,phi)=(-0.5,1.7)
- 262163 – ok
  - Low stats
- 262166 – ok
  - Low stats
- 262192 – ok
  - Low stats
- 262194 – ok
  - Calo spike at (eta,phi)=(-1.2,-0.5)
  - Calo spike at (eta,phi)=(1.5,-0.5)

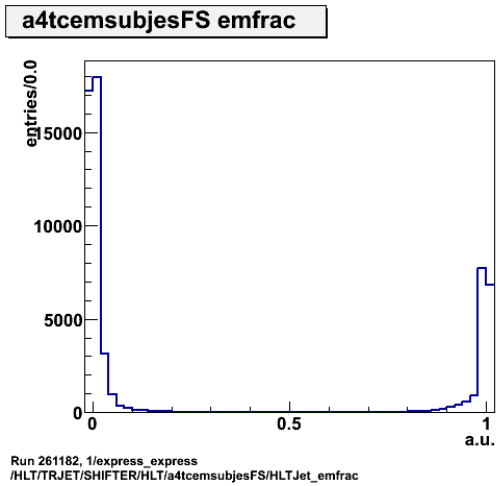
Run 261182

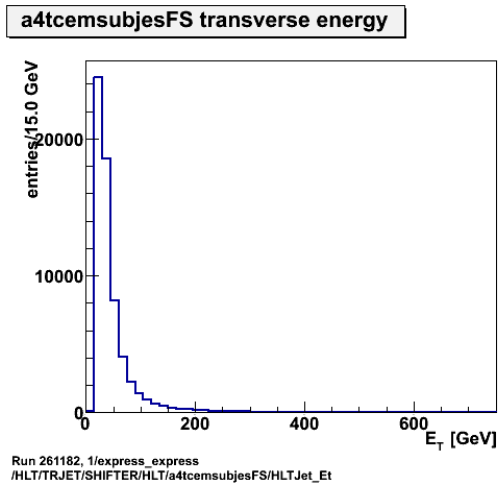
- Jets menu:
  - Running only j0_perf_L1J12 and ht0_perf_L1J12
- MET menu:
  - Running xe35, xe35_tc_lcw, xe35_tc_em, xe35_pueta, xe35_pufit, HLT_xe35_l2fsperf_wEFMuFEB_wEFMu, xe35_mht, xe35_L2FS

- Offline histos ok:
- a4tcemsubjesFS in express stream
- Calorimeter spike at (eta,phi)=(2,-3)









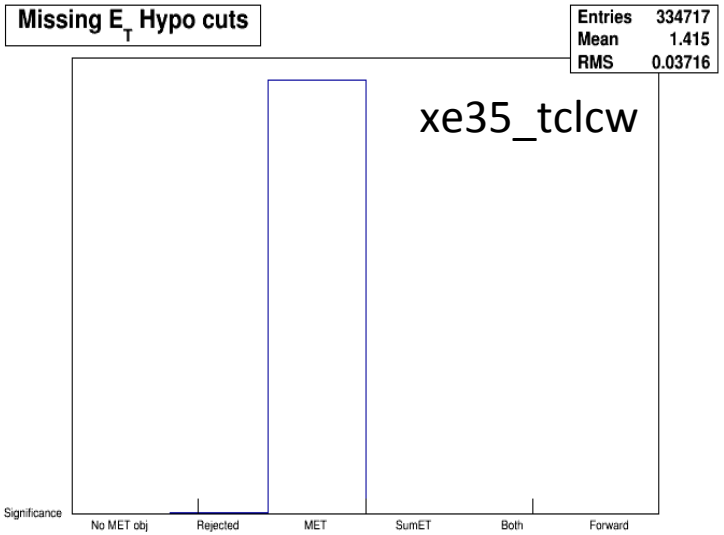
Run 261182 Menu

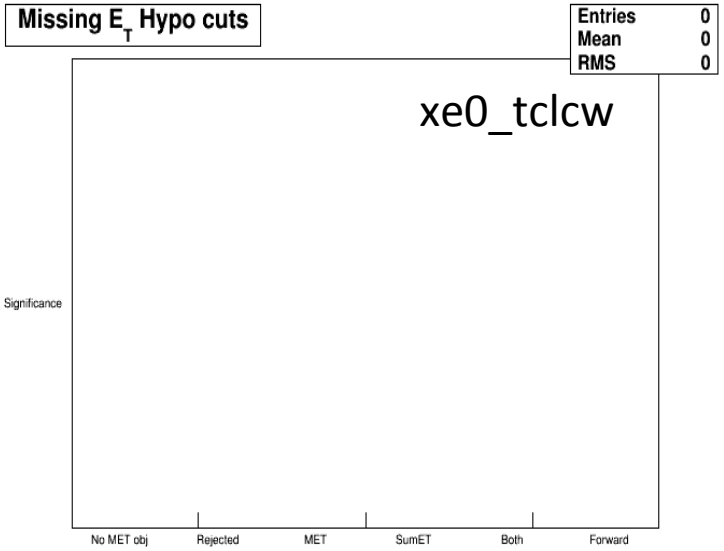
- Running only
  - j0_perf_L1J12 and ht0_perf_L1J12
- These are prescaled out:
  - HLT_j0_L1J12
  - HLT_j0_jes_L1J12
  - HLT_j0_lcw_jes_L1J12
  - HLT_j0_sub_L1J12
  - HLT_j0_nojcalib_L1J12
  - HLT_j0_jes_PS_L1J12
  - HLT_j0_a10_nojcalib_L1J12
  - HLT_j0_a10_lcw_sub_L1J12
  - HLT_j0_a10r_lcw_sub_L1J12
  - HLT_ht0_L1J12
  - HLT_j0_a10_nojcalib_L1RD0_EMPTY
  - HLT_j0_a10r_lcw_sub_L1RD0_EMPTY
  - HLT_j15_L1J12
- Created Jira to request activation of remaining chains:
  - https://its.cern.ch/jira/browse/ATR-10816
  - Only j0_L1J12 and ht0_L1J12 activated since this is now the STANDBY menu – from run 261615

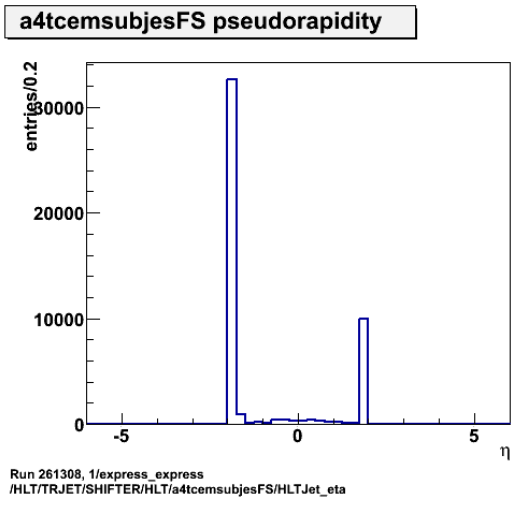
- MET menu looks better:
- Running:
  - xe35, xe35_tc_lcw, xe35_tc_em, xe35_pueta, xe35_pufit, HLT_xe35_l2fsperf_wEFMuFEB_wEFMu, xe35_mht, xe35_L2FS
- These are prescaled out:
  - HLT_xe0_L1All
  - HLT_xe0_L1XE35
  - HLT_xe0_tc_lcw_L1All
  - HLT_xe0_tc_lcw_L1XE35
  - HLT_xe0_tc_em_L1All
  - HLT_xe0_tc_em_L1XE35
  - HLT_xe0_tc_pueta_L1All
  - HLT_xe0_tc_pueta_L1XE35
  - HLT_xe0_tc_pufit_L1All
  - HLT_xe0_tc_pufit_L1XE35
  - HLT_xe0_tc_mht_L1All
  - HLT_xe0_tc_mht_L1XE35
  - HLT_xe0_L2FS_L1Al
  - HLT_xe0_L2FS_L1XE35
  - HLT_xe0_l2fsperf_wEFMuFEB_wEFMu_L1All
  - HLT_xe0_l2fsperf_wEFMuFEB_wEFMu_L1XE35

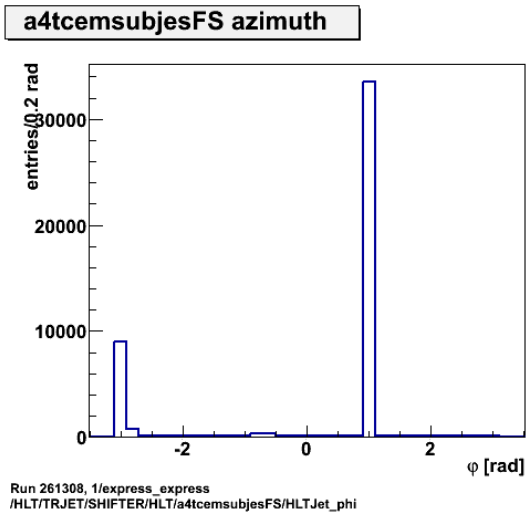
Run 261308

- Same as 261182:
- Only j0/ht0_perf active
- No xe0 chains active
- Old calo spike at (eta,phi)=(2,-3)
- New calo spike at (eta,phi)=(-2,1)



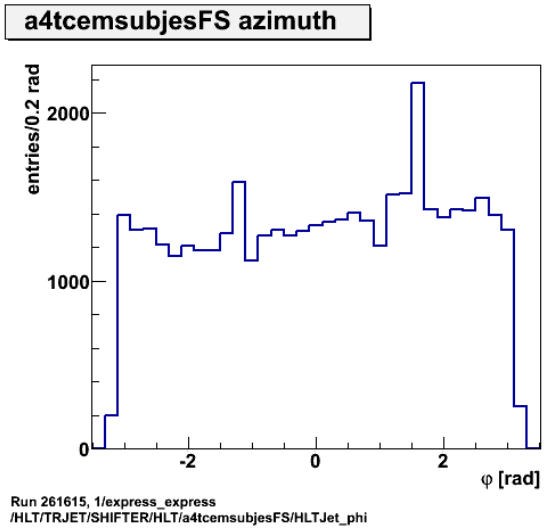


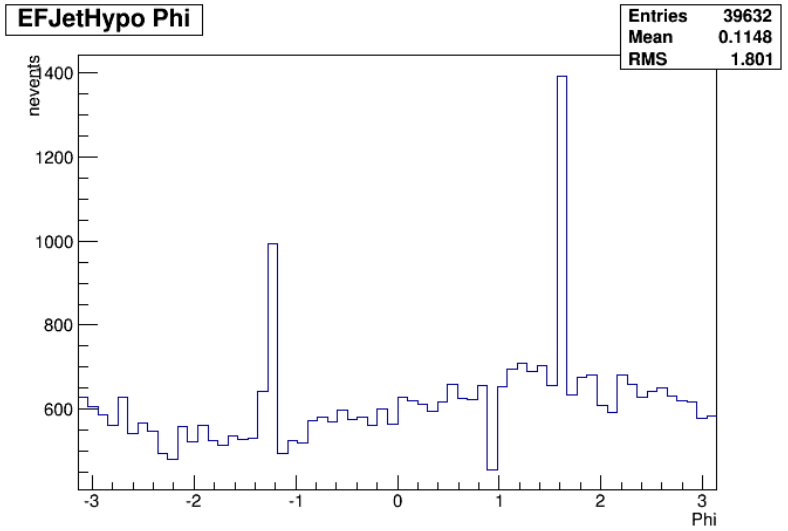


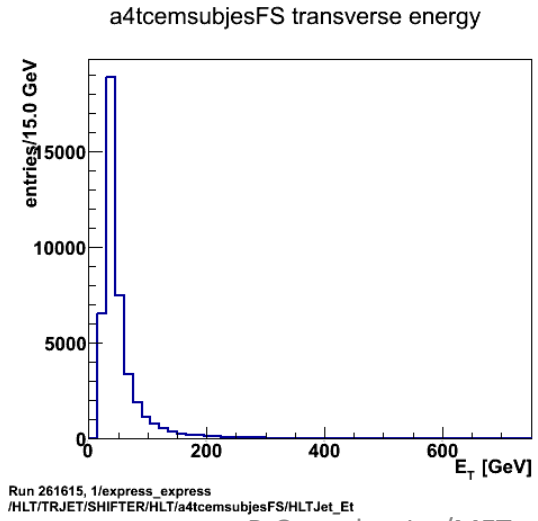


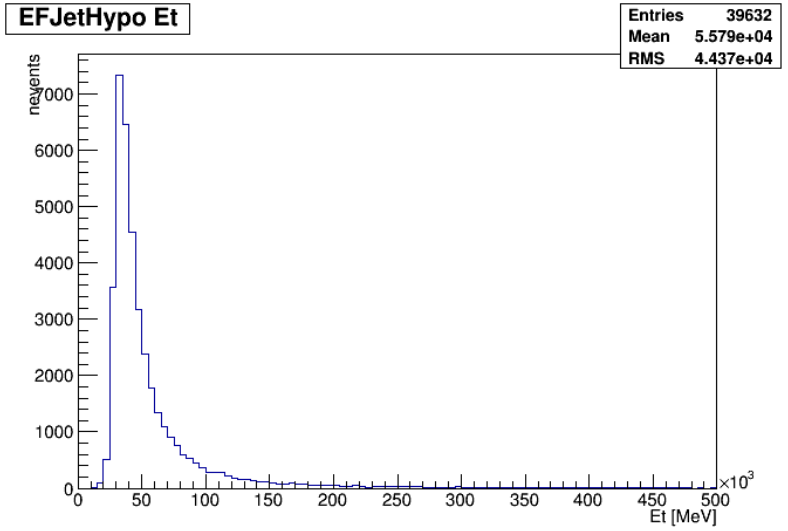
Run 261615

- All OK
- Re-activated chains: j0_L1J12, ht_L1J12
- Small calo spikes (not visible in phi)
- All looks ok also for MET
- Naoko brought up: we should re-activate also lcw chain









Summary

- Sample A validation on ttbar:
  - Features of different calibrations etc clearly visible in plots
  - Effect of different pileup scenarios also clear:
    - 50ns pileup increases number of jets
    - 25ns pileup results in even more jets
    - LCW seems more sensitive to pileup jets than EM+JES
  - No bad surprises; is performance ok?

- Offline on-call shift:
  - No reprocessings
  - j0_L1J12 and ht0_L1J12 chains now in online standby menu
  - j0_lcw_jes_L1J12 requested by HLTCalo and us:
    - To monitor LCW TopoClusters
    - Already in nightlies but not in any run checked (last ended Monday am)
    - Not in imminent base release, so requested for the first cache
    - Followed in: https://its.cern.ch/jira/browse/ATR-10628