

Jet Trigger News and some validation checks



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Jet Trigger Signature Group Meeting
5 May 2015

News from Point 1

ALTAS' Program

Combined run configuration: ALL sub-systems included, data_cos15
CTP deatime settings:simple 4, complex: 42/381 (TRT), 8/360 (LAr), 15/370 (L1calo)

Monday May 4th

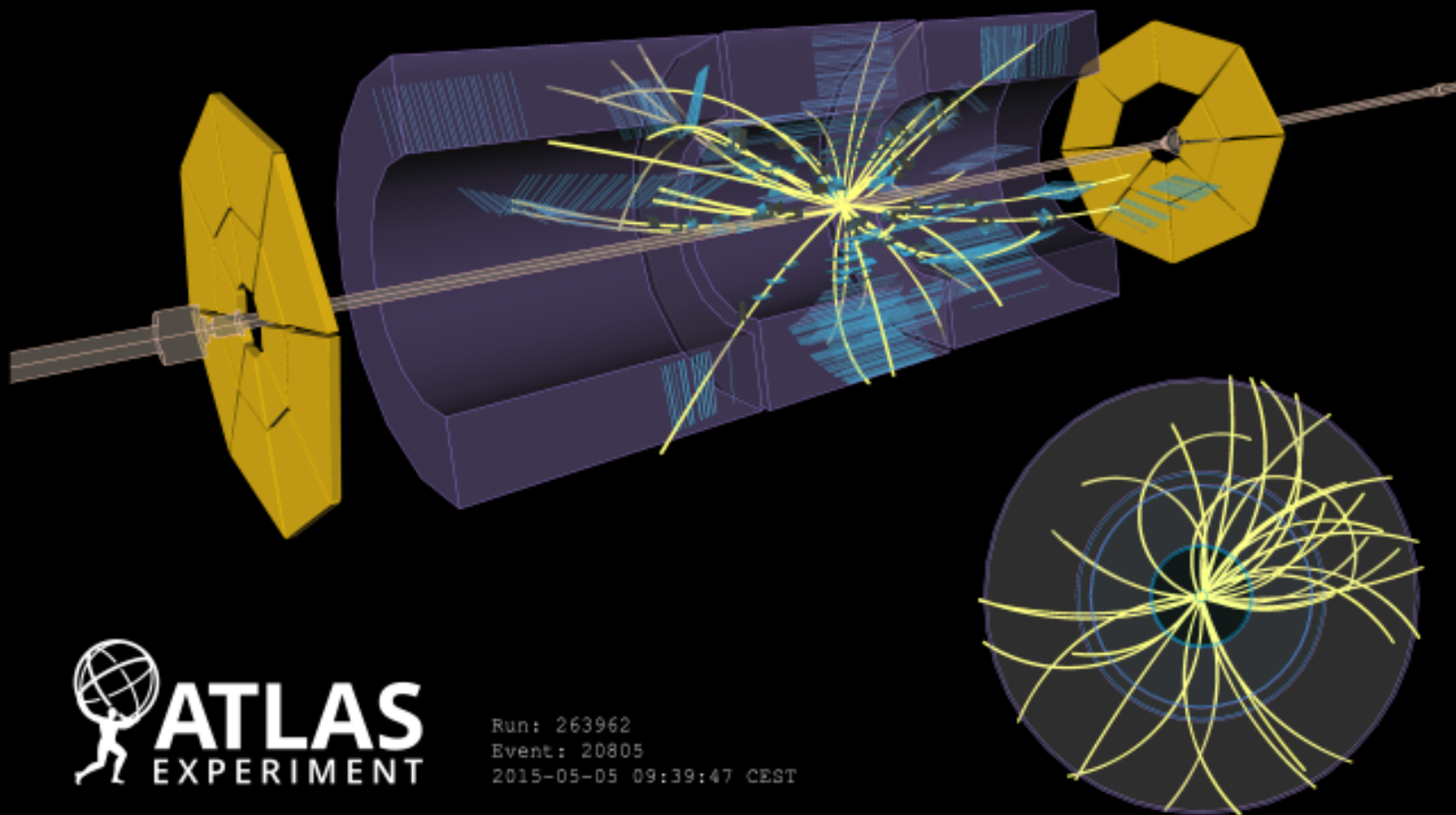
- TRT LAr L1Calo out during the day
- Systems can go out at 10:00 and must come back at 18:00
- Switch LAr complex deadtime (ask CTP expert on-call) setting to 8/350 (bucket 2)
- 9:00 Stop combined run to allow standalone tests
- 1:00pm Validation of TGC in ATLAS partition -- done
- 2:00pm -- 4:00pm Access for RPC, TRT, RadMon -- done
- 4:00pm -- 18:30pm Ramp up of the Solenoid (Toroid stays off) -- done
- 4:30 - 5:30 L1calo L1topo tests with CTP-- to do(?)
- 18:30 Start overnight run (ALL - ALFA) -- run ongoing

Tuesday May 5th

- Tuning for Luminosity and 6 hours of Collisions at 450 GeV expected: Run Configuration Guidelines collected [here](#)
- 9:00am (ALL - ALFA),required to stay in the global partition as LHC plans to have collisions at 450 GeV (2 bunches, 1 colliding) -- to do
- Start combined run with all detectors in and dead time as above to do

First LHC Run-II Collisions!

Display of one of the first collision events recorded at 900 GeV centre-of-mass energy on 5 May, 2015. Tracks are reconstructed from hits in the SCT and TRT detectors.



Jet Trigger Readiness Review

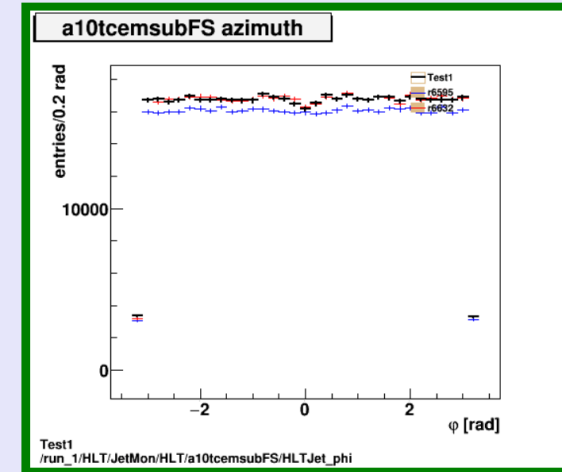
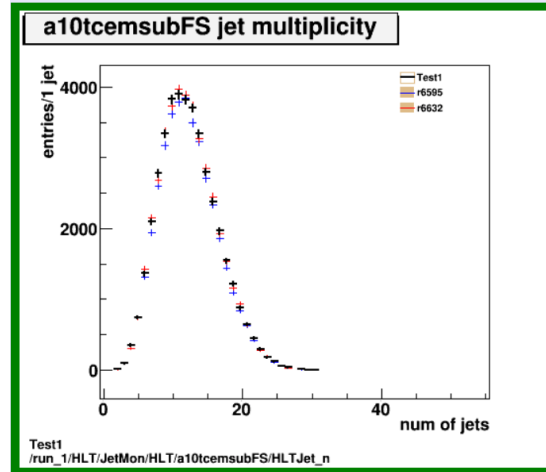
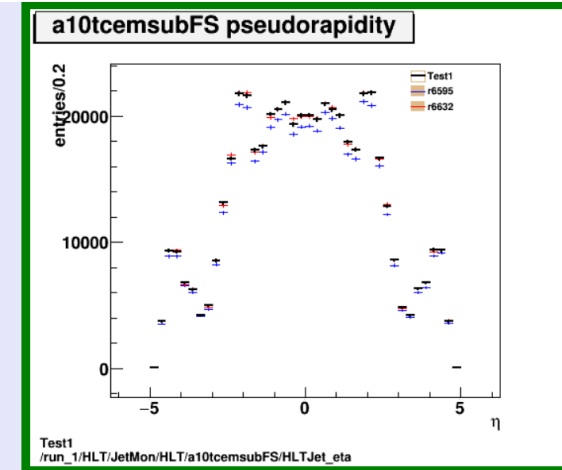
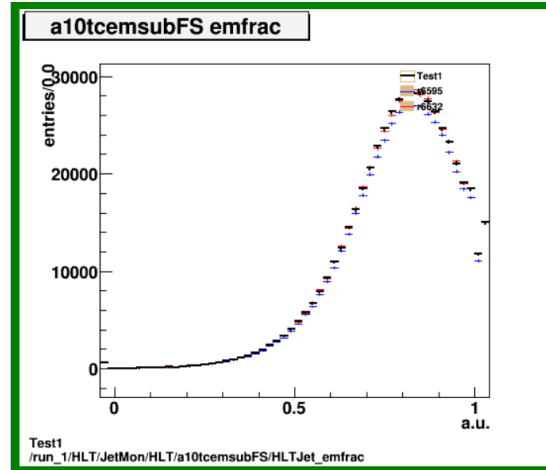
- Propose to hold a readiness review ½ day or day meeting at the end of May (26th?)
 - See where we are and what still needs work
 - Prepare future work
- Ideas? Problems? Agreement? Disagreement? Otherwise?
- Draft programme:
 - Software and validation
 - Jet trigger software walkthrough to review where we are and give people a better understanding of the software
 - Close look at validation tools to see where we can make validation easier and more robust
 - Data scouting , GSC and cleaning
 - Operations and monitoring
 - Walkthrough to look at the monitoring (online and offline)
 - Look at on-call shift together with MET and HLTCalo - anything missing?
 - Menu and performance
 - Overview of the menu
 - Trigger JES
 - Readiness to get performance estimates with first collision data
 - Future developments
 - Pending actions from the Lisbon workshop last year (still): E/p trigger; particle flow; use cases for tracking in jet triggers; groomed jets, usage of Mj at L1 or HLT; b-tagging, and overlap with EF HT
 - Anything else
 - Documentation
 - Quick review of what wikis etc need more work
 - Preparation for: INT note on the jet menu and software; CONF note on initial performance

Sample A ttbar alidation for MC15a

Task	Test	Container	?
1	1	run_1/HLT/JetMon/HLT/a10tcemsubFS	OK
Ref: 1) AthenaMP (r6595) 2) As 1) but with updated digi-window (r6632) Test: Full MC15 setup (AthenaMP) in 20.1.4.7 incl. digi window update; same pileup as test		run_1/HLT/JetMon/HLT/a4tcemjesFS	OK
		run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK
1	2	run_1/HLT/JetMon/HLT/a10tcemsubFS	OK
Ref: 1) AthenaMP (r6595) 2) As 1) but with updated digi-window (r6632) Test: Full MC15 setup (AthenaMP) in 20.1.4.7 incl digi window update; slightly updated pileup distribution		run_1/HLT/JetMon/HLT/a4tcemjesFS	OK
		run_1/HLT/JetMon/HLT/a4tcemjesPS	OK
		run_1/HLT/JetMon/HLT/a4tcemsubFS	OK
		run_1/HLT/JetMon/HLT/a4tcemsubjesFS	OK
		run_1/HLT/JetMon/HLT/a4tclcwjesFS	OK

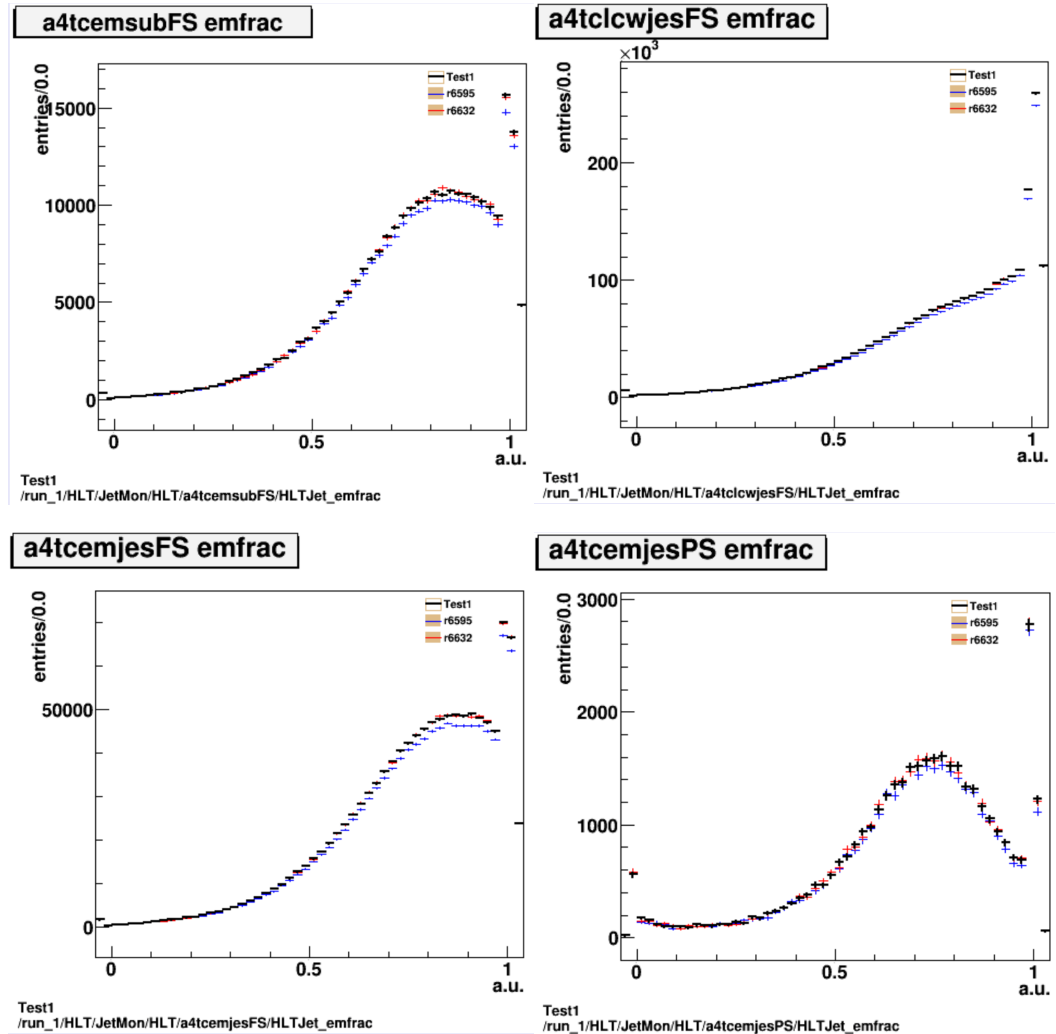
Test 1

- **Ref:**
 - 1) R6595
 - 2) r6632: as 1) but with updated digi-window
- **Test:** incl. digi-window update; same pileup as ref
- Slightly less **events** with jets passing L1 in **ref.1**
- Consistent with same digi. window in ref.2 and test?



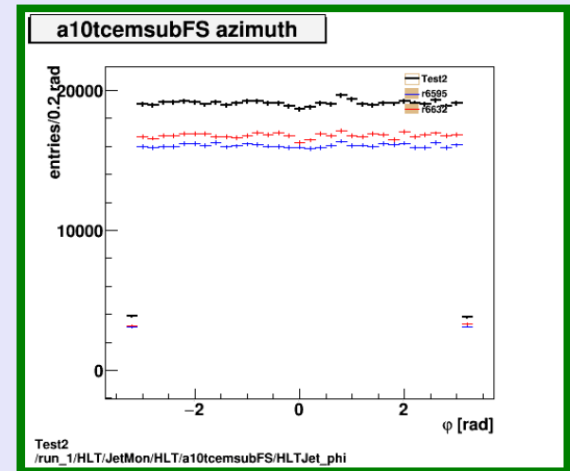
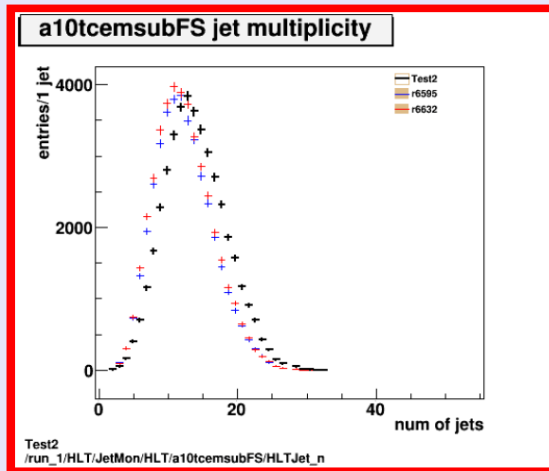
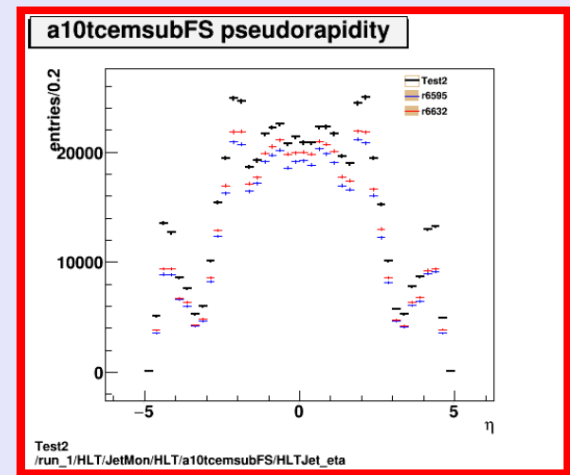
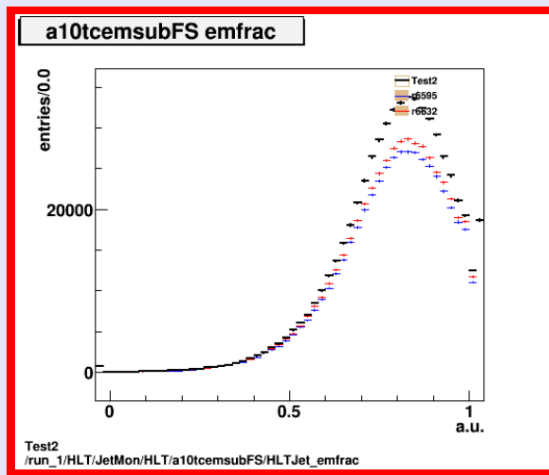
Test 1

- **Ref:**
 - 1) R6595
 - 2) r6632: as 1) but with updated digi-window
- **Test:** incl. digi-window update; same pileup as ref.
- Differences in EMfrac between EM and LCW calibrations as expected



Test 2

- **Ref:**
 - 1) R6595
 - 2) r6632: as 1) but with updated digi-window
- **Test:** Full MC15 setup (AthenaMP) in 20.1.4.7 incl digi window update; slightly **updated pileup**
- More jets in test, consistent with **more pileup** on average



Validation Summary

- **Ref:**
 - 1) R6595
 - 2) r6632: as 1) but with updated digi-window
- **Test 1:** includes updated digi-window
- **Test 2:** updated pileup
- **Conclusions:**
 - Looks essentially fine
 - Small doubt about what to expect from difference digitization window in test 1