

Jet/MET Trigger On-Call Report

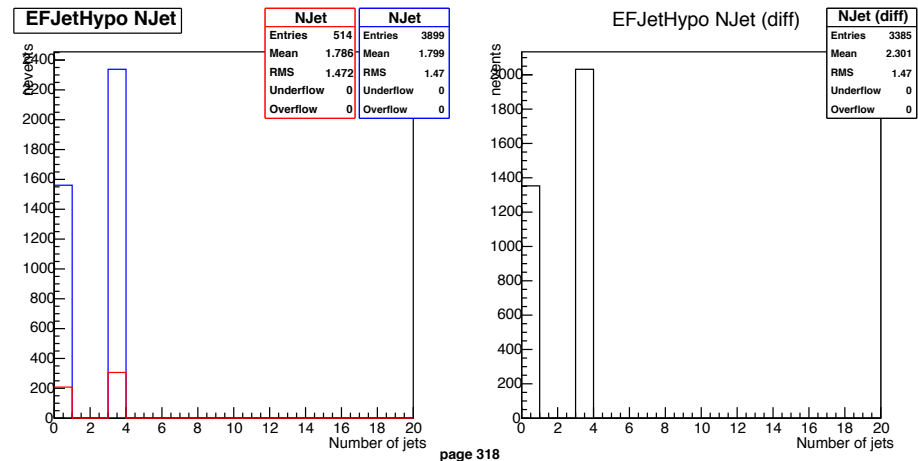
Ricardo Gonalo – LIP
Jet Trigger Meeting – 31/3/2015

Reprocessings

- EnhancedBias from 2012 run 212967
- <https://its.cern.ch/jira/browse/ATR-10486>
- Keys:
 - SM Key 38: MC_pp_v5_ATR10486
 - L1 PS Key 11: MC_pp_v5_default_prescale
 - HLT PS Key 22: MC_pp_v5_ATR10486
 - Release Key 9: 20.1.3.1
- Release: AtlasP1HLT,20.1.3.1
- Menu: MC_pp_v5
- Tags: r6470_p1831_p1831
- Reco release: AtlasProduction,20.1.3.3
- Different statistics in reference and reprocessed histos expected
- Looked at several chains and all seems fine

EFCentFullScanMultiJetHypo_1_0eta320_100_2_0eta320_55_a4_tc_em_subjes_FS/NJet
 r6490/HIST_HLTMON.05181160_000001.pool.root.1

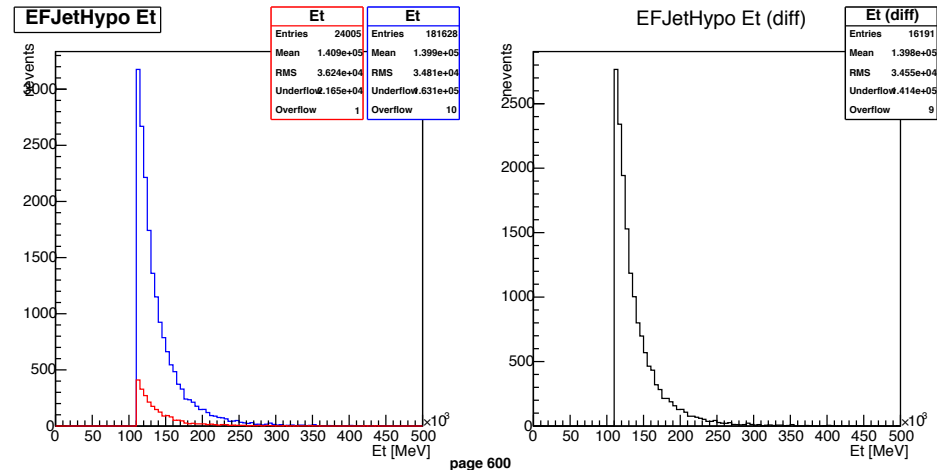
lata12_8TeV.00212967.physics_EnhancedBias.merge.HIST_HLTMON.r6470_p1831_p1831_tid04987459_00/HIST_HLTMON.04987459_000001



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EFJetHypo_j110000_0eta320_a4_tc_em_subjes_FS/Et
 r6490/HIST_HLTMON.05181160_000001.pool.root.1

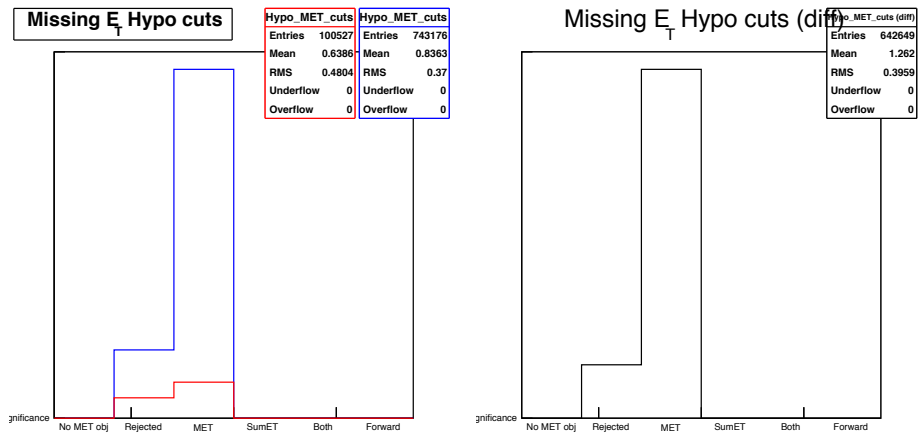
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EFMetHypo_Jets_xe0_tlcw/Hypo_MET_cuts
 r6490/HIST_HLTMON.05181160_000001.pool.root.1

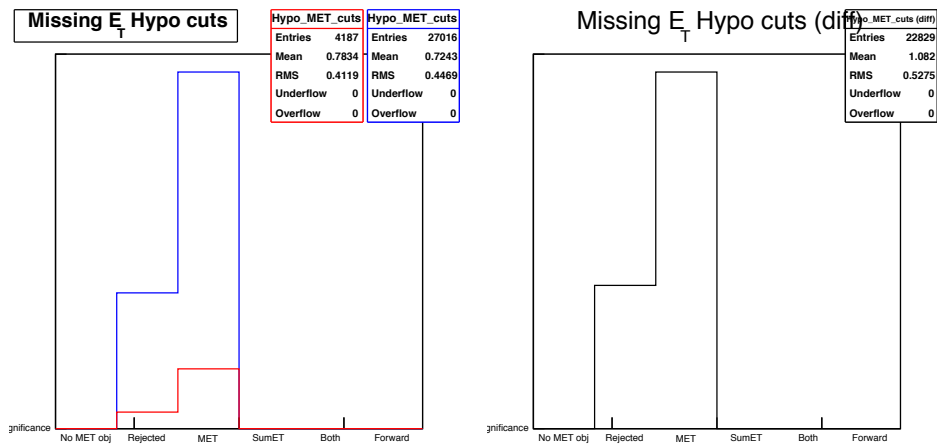
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EFMetHypo_Jets_xe35_tlcw_wMu/Hypo_MET_cuts
 r6490/HIST_HLTMON.05181160_000001.pool.root.1

lata12_8TeV.00212967.physics_EnhancedBias.merge.HIST_HLTMON.r6470_p1831_p1831_tid04987459_00/HIST_HLTMON.04987459_000001



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Run by Run

Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
258389	868.6m	Mon 09:26	13939343	OK	OK	Update web display
258504	58.2m	Mon 18:12	13571	--	--	No HLT chains
258513	27.4m	Mon 18:52	1303	Empty	Empty	Stats too low
258543	135.4m	Mon 22:42	1854183	OK	OK	spike eta=2 & phi=-2.9
258544	562.7m	Tue 08:13	7932891	OK	OK	Update web display
258617	31.7m	Tue 13:02	384599	Empty	Empty	No jet/MET active chain
258727	105.2m	Tue 20:59	1388601	OK	Empty	Stats very low
258745	29.4m	Tue 21:43	287543	OK	OK	Low stats
258764	140.0m	Wed 02:00	2803579	OK	OK	spike eta=2 & phi=-2.9
258769	429.8m	Wed 09:25	5748420	OK	OK	spike eta=2 & phi=-2.9
258800	138.0m	Wed 14:40	12941	Empty	Empty	Stats too low
258853	91.3m	Wed 20:31	1261266	Empty	Empty	No L1Calo
258865	668.5m	Thu 08:21	8497789	OK	OK	spike eta=2 & phi=-2.9

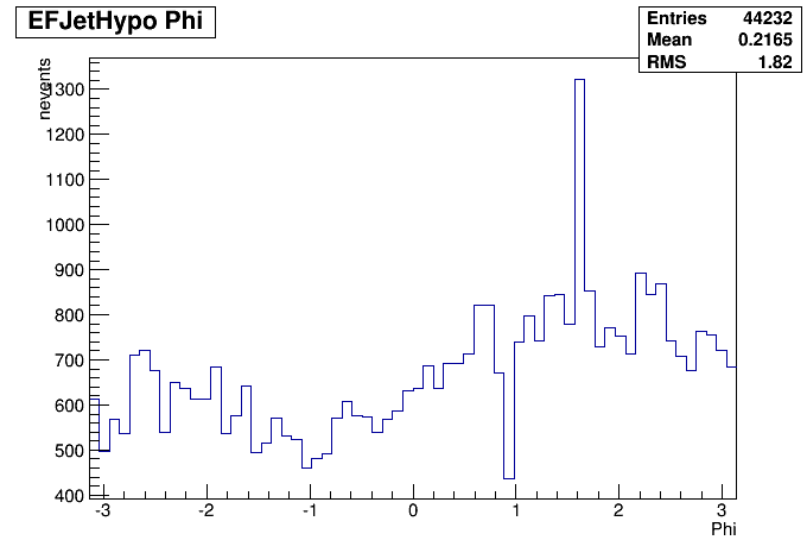
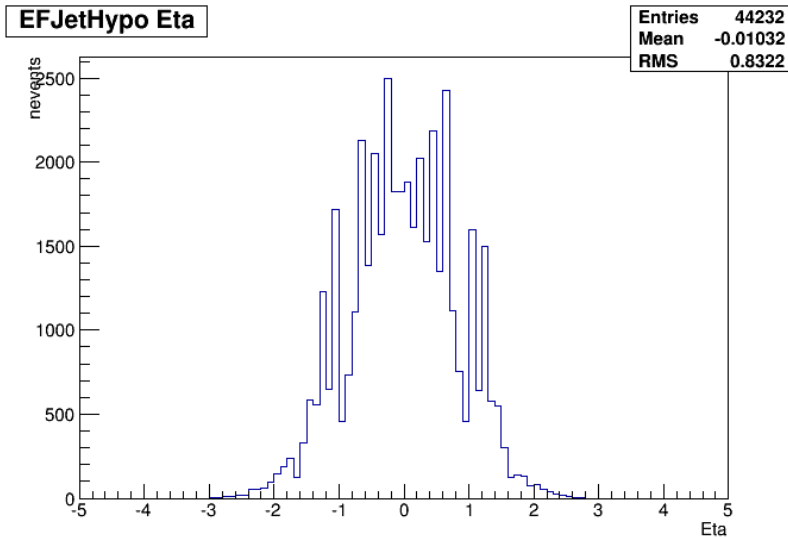
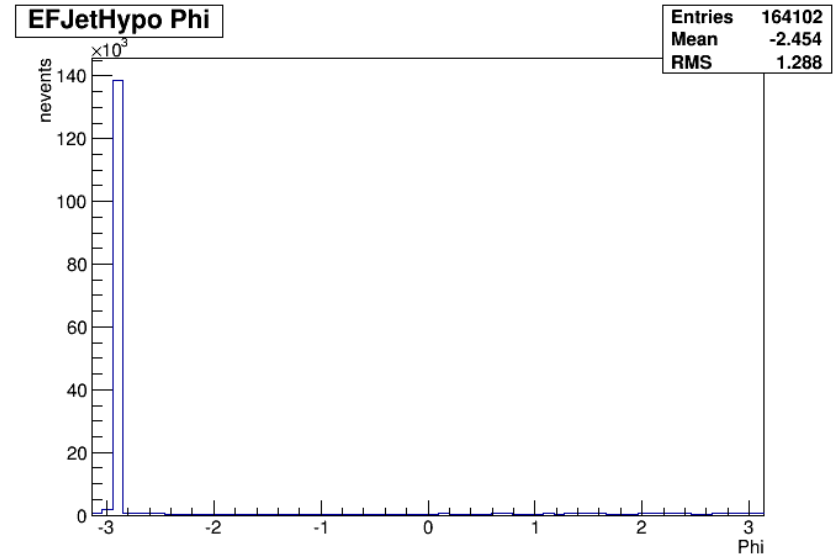
Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
259003	665.8m	Fri 09:19	8 732 033	xe0 rejects events	Jets ok MET empty	All xe0 chains reject events... https://its.cern.ch/jira/browse/ATR-10692
259101	792.4m	Sat 10:20	10759068	xe0 rejecting Jets ok	Histos need update	Updated xe online mon. Problem with HLT Lar (LArADC2MeVTool)
259103	44.0m	Sat 11:23	341720	Empty	Empty	Only muon chains
259117	283.4m	Sat 16:18	3921730	Empty	Empty	Only muon chains
259165	830.1m	Sun 08:30	10883786	Jet xe0 rejecting Jets ok	Jet ok MET empty	Only jet-based xe0 chain now misbehaves
259167	49.7m	Sun 10:25	614 012	empty	empty	Only mu chains
259168	251.2m	Sun 14:44	3 411 942	empty	empty	Only mu chains
259196	195.4m	Sun 18:38	2 149 472	empty	empty	Only mu chains
259237	813.5m	Mon 08:29	11 401 398	Jet xe0 & j0 reject	MET empty	

DQ run sign off

- Procedures for on-call shifters:
 - Sign off here <https://atlasdqm.cern.ch/defectentry/>
 - List of runs to sign off from atlasdqm@cern.ch – both **TRIG_HLT_MET** and **TRIG_HLT_JET** categories
 - Instructions to be updated soon in the Jet/MET Expert Shift Instructions page:
 - <https://twiki.cern.ch/twiki/bin/view/Atlas/JetMetExpertshiftInstructions>
 - Sign off on runs with no problems
 - Also sign off on runs which (justifiably!) have little stats
 - Create DEFECTS for runs with clear problems
 - Follow up on problems before either signing off or creating defects
- Runs signed off:
 - 258389 – comment: spike eta=2 & phi=-2.9
 - 258504 – no HLT
 - 258513 – low stats
 - 258517 – no jet/met chains
 - 258543 – spike eta=2 & phi=-2.9
 - Etc...
- Current list of missing runs to sign off:
 - 256721 257577 257585 257588 257667 257687 257710 257728 257739 257764 257810 258225
258229 258242 258262 258263 258274 258303 258337 258342 258356 258513 259003 259055
259059 259065 259080 259097 259101 259103 259117 259165 259167 259168 259196 259237

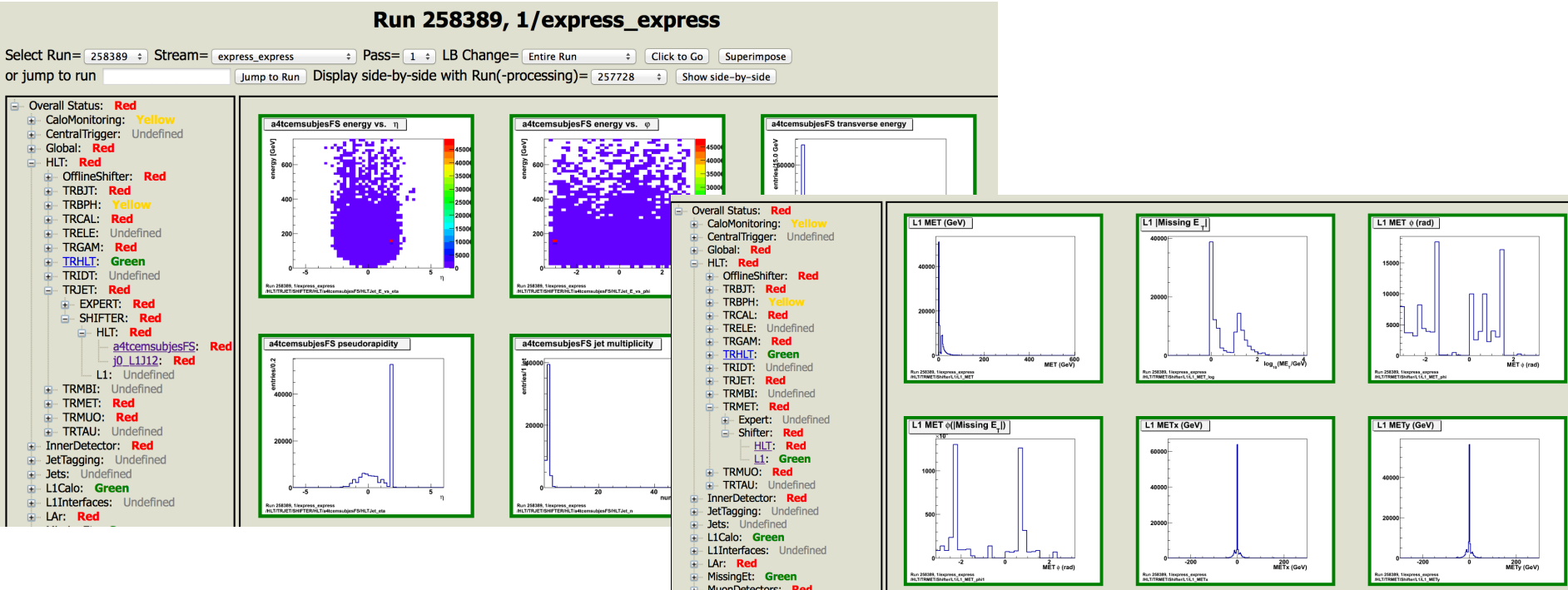
Run 258389

- Online histos:
- Spike in eta=2 phi=-2.9
- Seen e.g. in HLT_j0_a10_nojcalib and several other FS chains (right)
- NOT in j0 PS chain! (bottom left)
 - Same for run 258743 etc



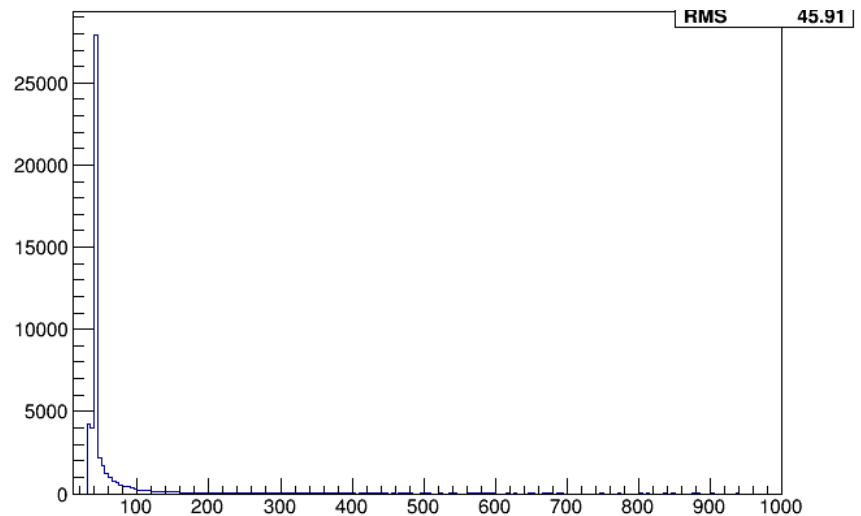
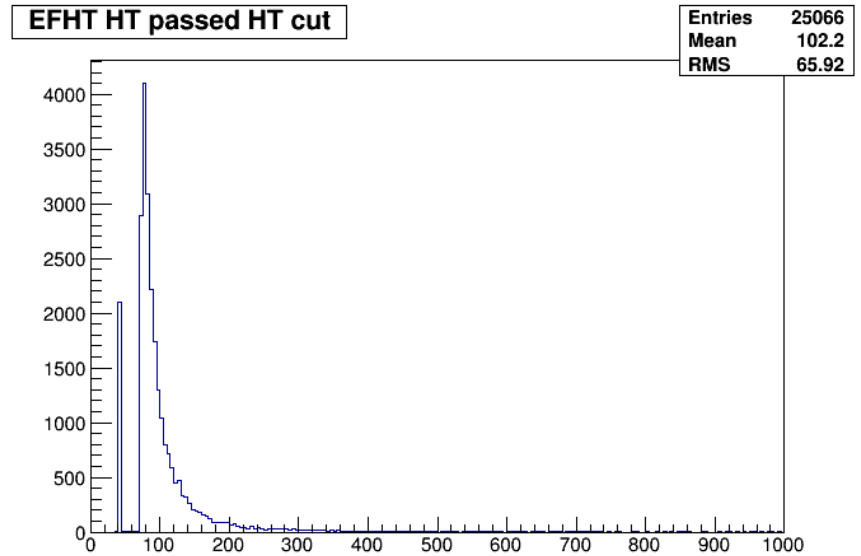
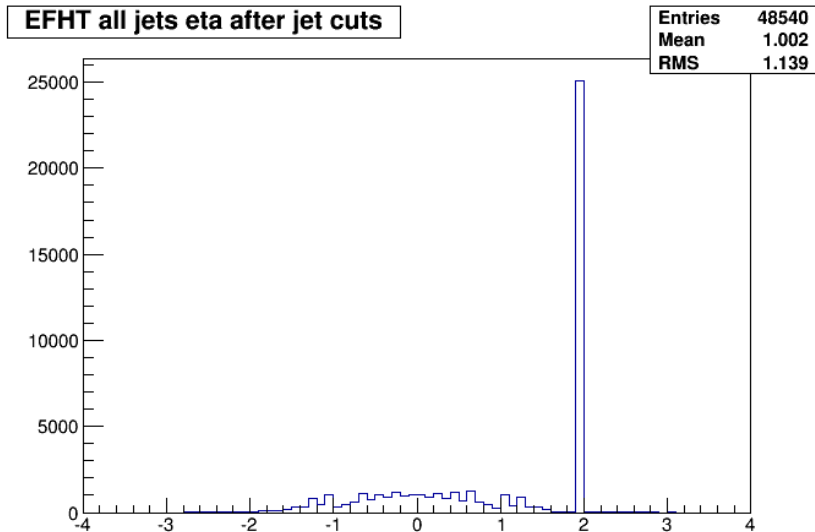
Offline Monitoring

- Offline histos from DQ web display
 - Jet: one histo empty (eta vs phi)
 - Configuration will be updated when 20.1.3.4 goes to Tier0
 - MET: Ony L1 generally filled (and seem ok)



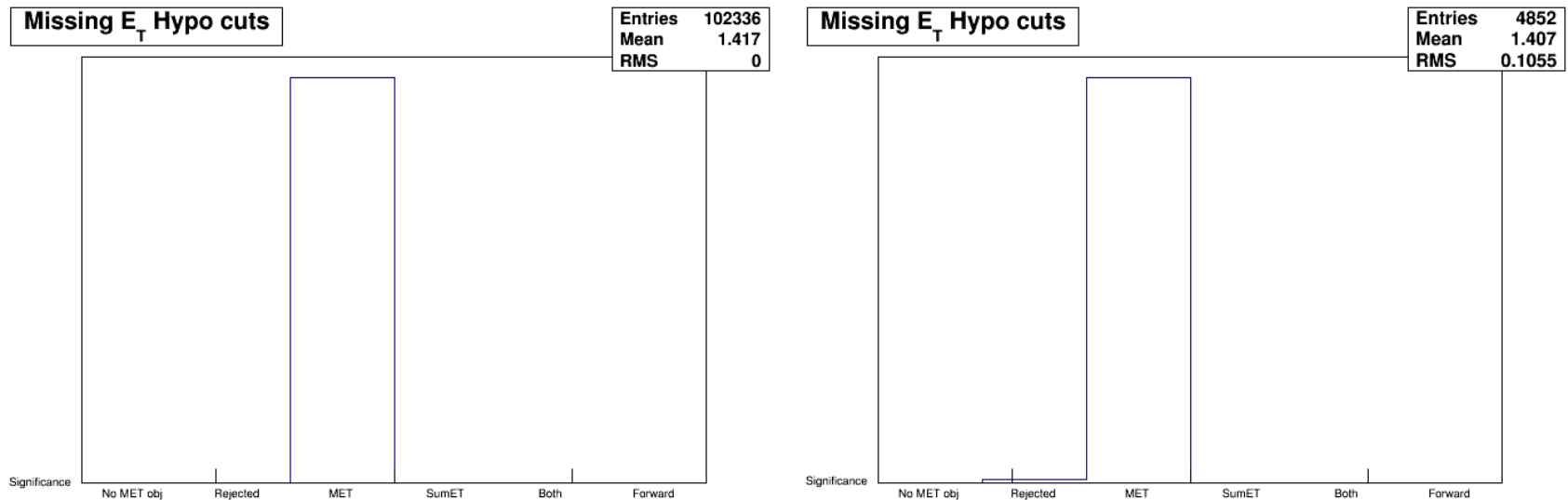
Run 258544

- HT chain – low-HT spike visible in jet ET



258544

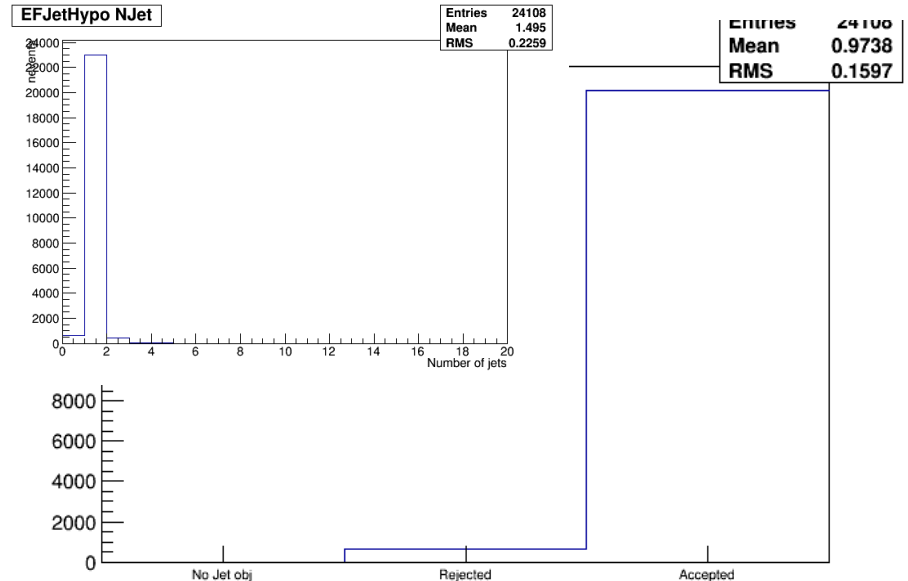
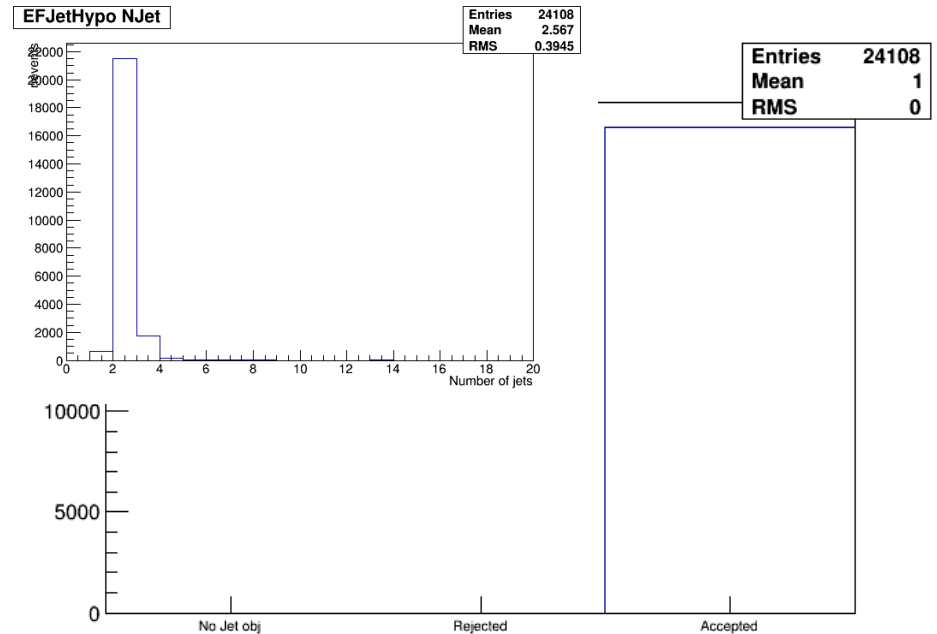
- Normal behaviour of MET chains:
 - HLT xe35 (right) rejects some events – see comparison with xe0 (left)



258769

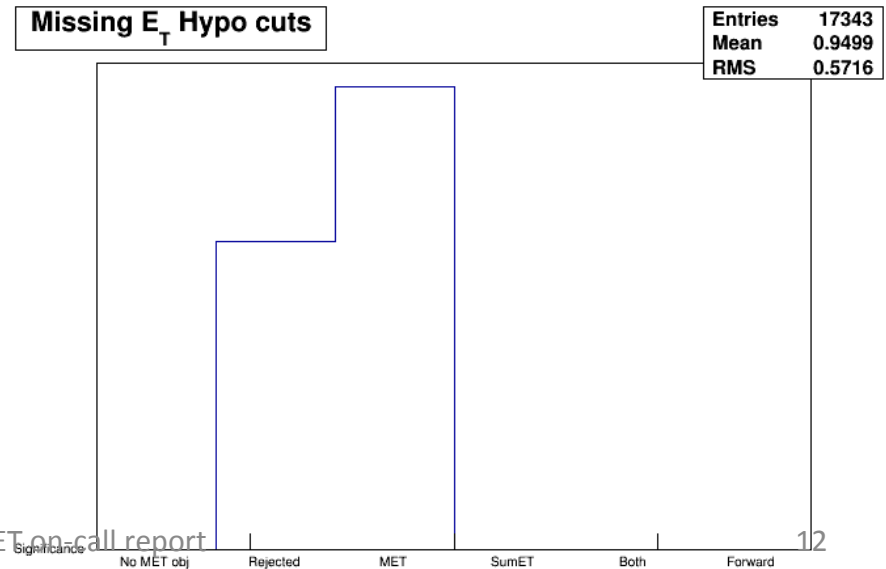
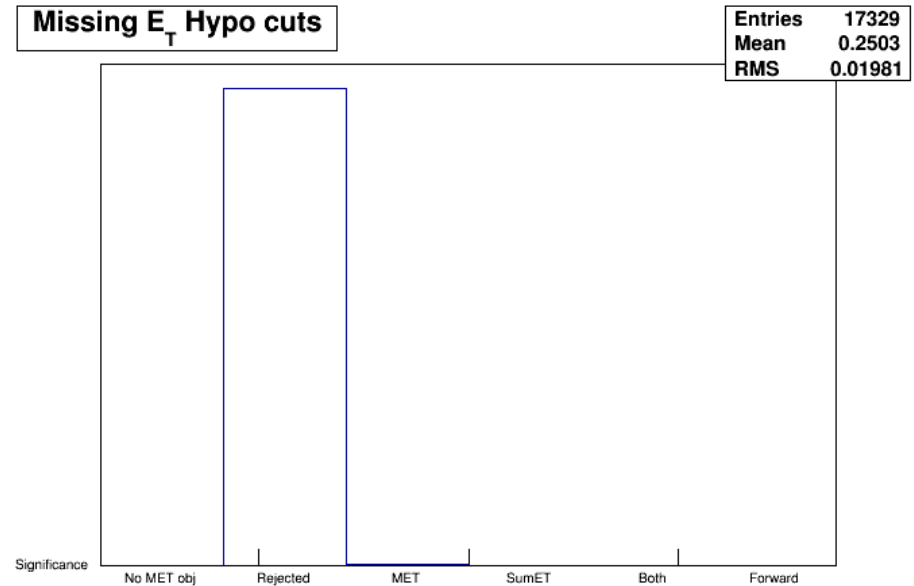
- PS chain with 0 cut rejects events
- I.e. some events have 0 jets in PS but not in FS

- Above:
EFJetHypo_j0_0eta320_
a4_tc_em_jes_FS
- Below:
EFJetHypo_j0_0eta320_
a4_tc_em_jes_PS



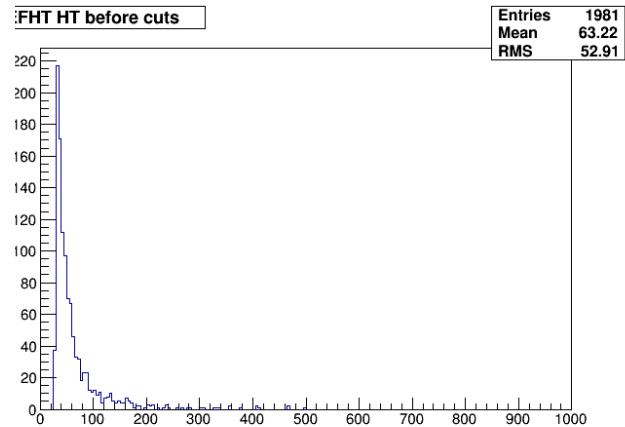
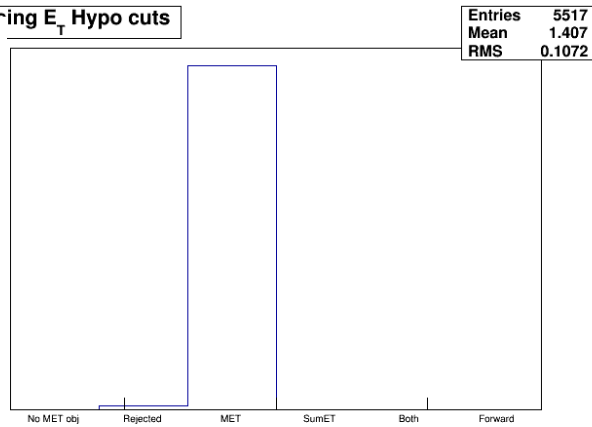
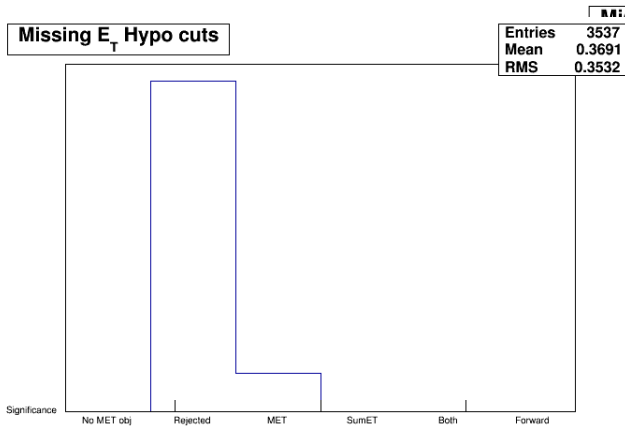
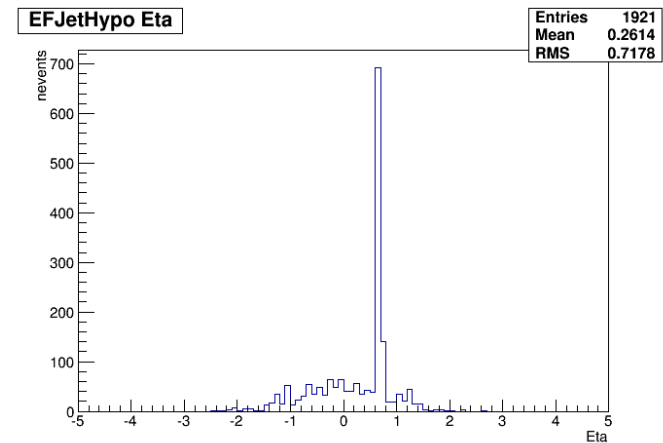
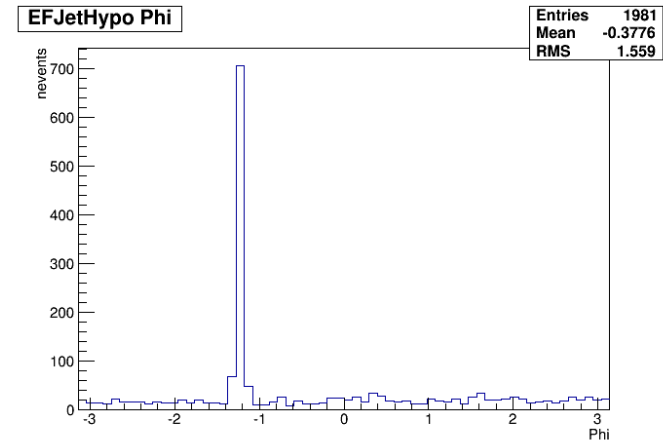
258853

- MET chains rejecting many events
- elisa log 255694 says this run had no L1Calo – (histo comes from HLT_xe0_tc_lcw_L1All chain?)
- Almost all events rejected in **EFMetHypo_Jets_xe0_tclcw** (up)
- Many more than usual rejected in **EFMetHypo_TCPS_xe0_tclcw**
- Zero events in xe35 histos



259003 - 259237

- Old calorimeter hot cell moved to $\phi=-1.2$, $\eta=0.8$ (top and middle right) for 259101
- Distorted HLT XE plots for jet->xe chains
 - xe0 (bottom left) reject a higher fraction than xe35 (bottom centre)
 - <https://its.cern.ch/jira/browse/ATR-10692>
- A lot more monitoring xe plots than before! 😊
- Spike at 40GeV in HT less visible or gone
- LAr ERROR: LArADC2MeVTool: Cannot load LArADC2DAC object with key...
 - See: <https://atlasop.cern.ch/elisa/display/255952>



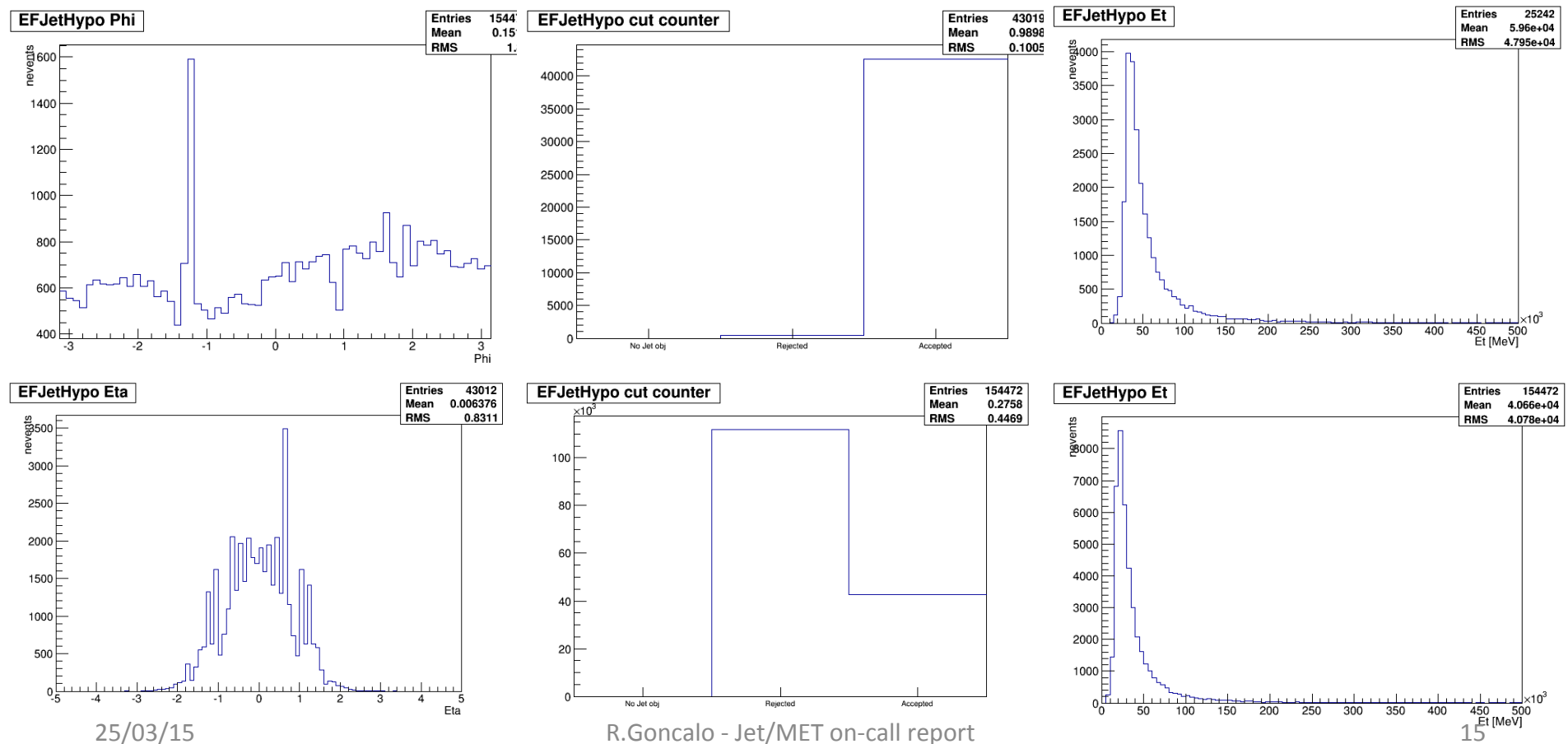
MET monitoring

/EXPERT/EFMissingET_Fex_2sidednoiseSupp/EF_MET_lin
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/EXPERT/EFMissingET_Fex_2sidednoiseSupp/compStatus

- Many new MET FEX online monitoring plots
- Expert plots
- May need documentation
- But in principle very useful to debug issues

259237

- Top: j0_0eta320_a10_tc_em_nojcalib_FS
- Bottom: j0_0eta320_a4_tc_em_jes_FS



Summary

- Going to AtlasP1HLT-20.1.3.4 today in principle (if it works)
- One reprocessing – all fine
- New MET monitoring plots
- Run 258769: difference in behaviour of PS and FS (not unexpected)
- Mysteries for Aparajita:
 - From run 259003: possible problem in MET:
 - xe0 chains (seeded by L1All) rejecting events
 - Jira: <https://its.cern.ch/jira/browse/ATR-10692>
 - Run 259237:
 - j0 chain rejecting more events than usual