Jet/MET/HLTCalo On-Call Report

Ricardo Gonçalo – LIP

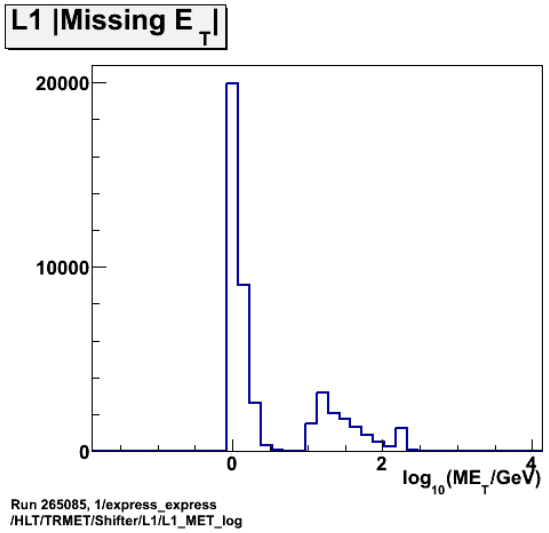
E_T^{miss} Trigger Meeting – 27/5/2015

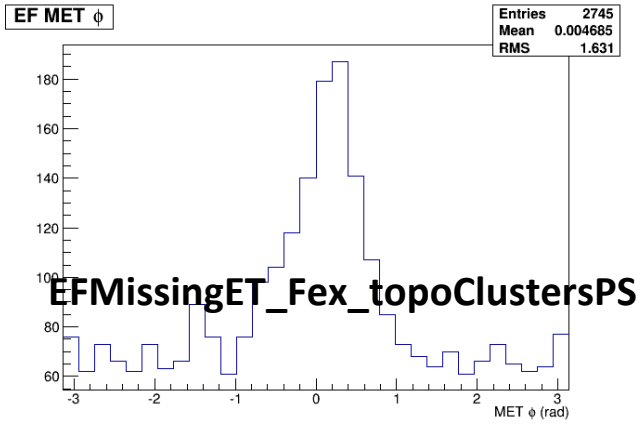
Run by Run DQ Summary

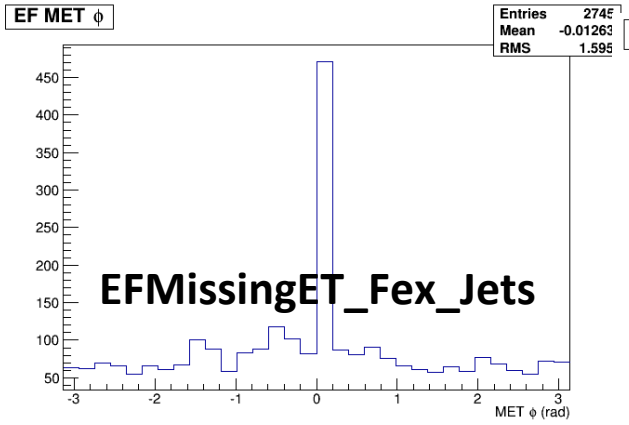
Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
265085	500.9m	Mon 08:48	1902928	MET 2 peak Jet ok Calo ok	Jets ok MET ok	Some spikes in calo
265171	21.9m	Mon 17:22	3386435	Empty	Empty	Low stats
265182	789.2m	Tue 08:55	1616881	Calo ok Met ok Jet ok	Jets ok Met ok	Jet spike η,ϕ=0.6,-1 Calo spikes η=±2, ϕ=-3 TC/Jet-MET spike at ϕ=0
265270	35.9m	Tue 18:43	1471540	Empty	Empty	Low stats
265309	31.4m	Tue 22:02	303364	Calo ok Met ok Jet ok	Met ok Jet ok	Jet spike η=-0.2, ϕ=1.7 Calo spike η=-0.2, ϕ=1.7
265311	91.2m	Tue 23:41	674661	Calo ok Met ok Jet ok	Met ok Jet ok	Jet spike η=-0.2, ϕ=1.7 Calo spike η=-0.2, ϕ=1.7

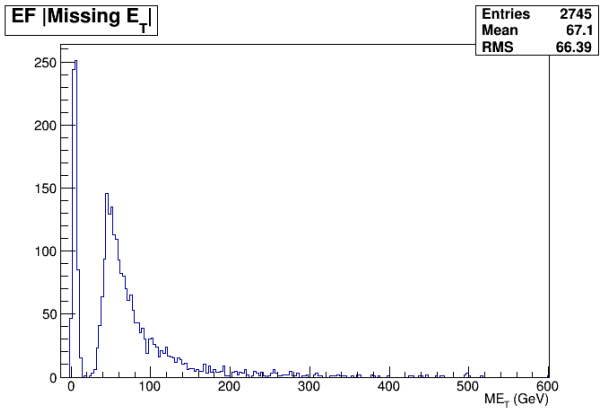
Run 265085

- Spike in zero MET still there https://its.cern.ch/jira/browse/ATR-11175
- But also in L1 from random trig
- New mystery: also peak around phi=0?!



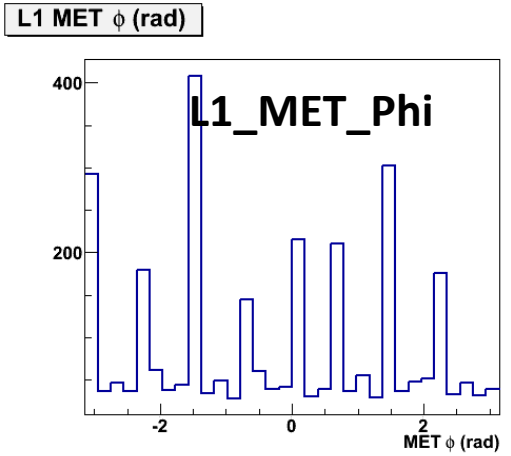


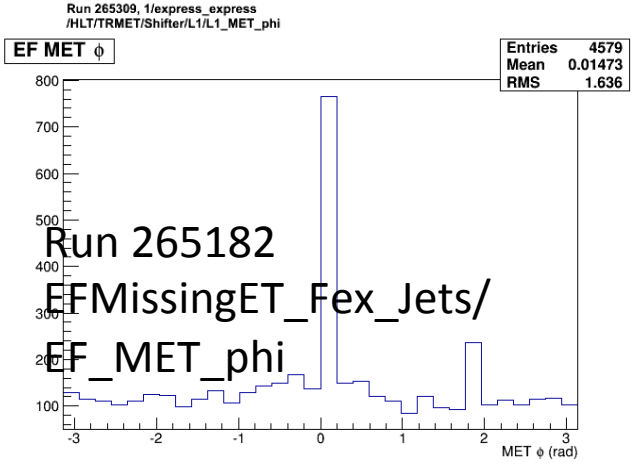


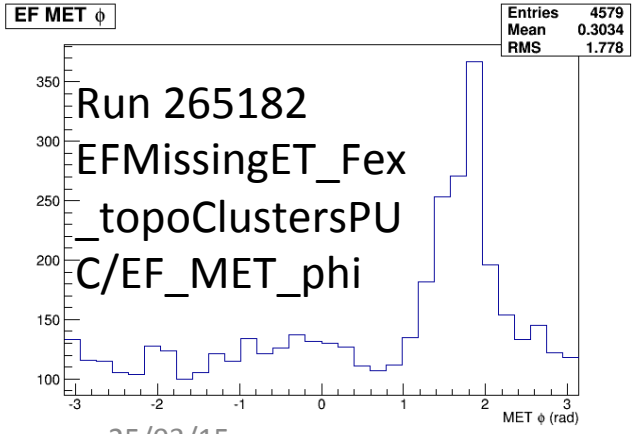


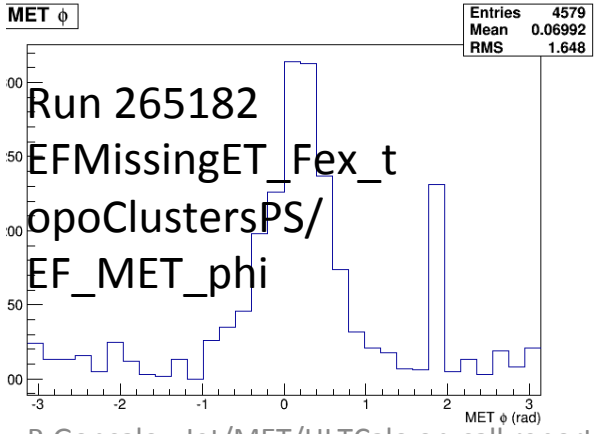
MET peak at phi=0?

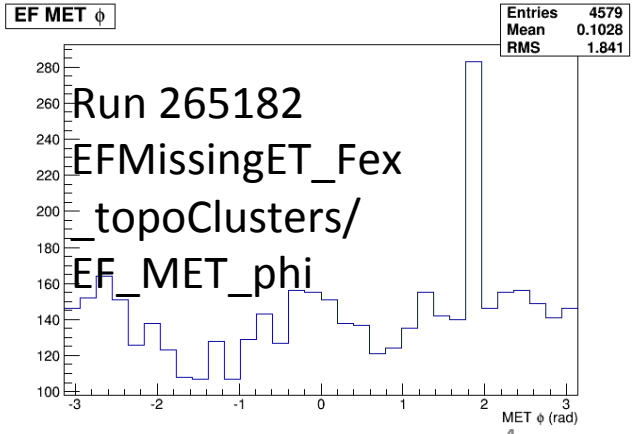
- Not in TopoCluster-based and PU MET – (but note there is a small spike)
- Still there in jet-based MET and Pileup Suppressed MET from TopoClusters
  - Note spike in same place as TC-based MET
- Also in L1_XE
- Will follow up with MET experts









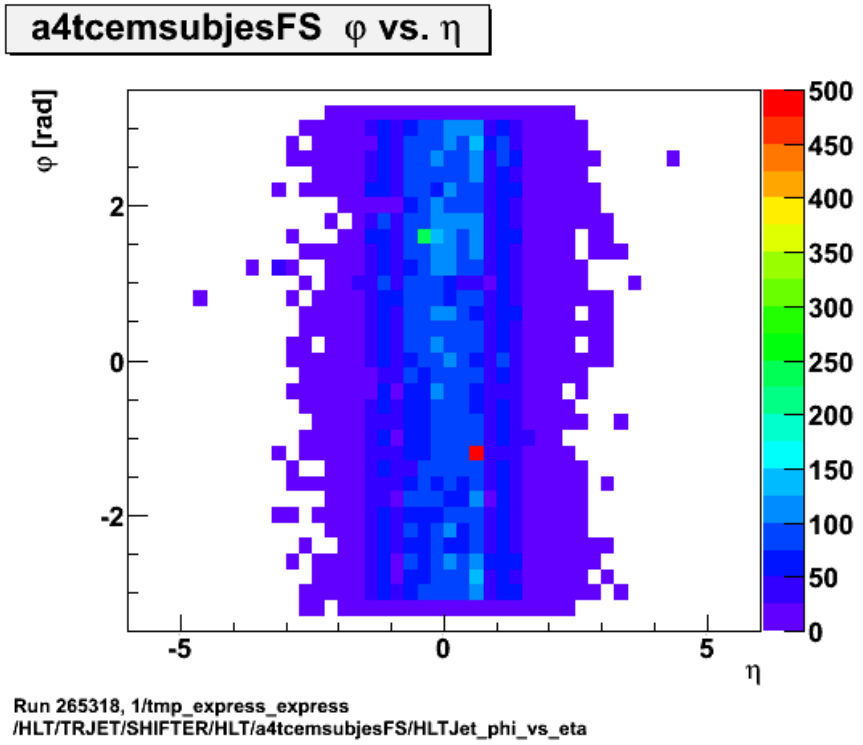


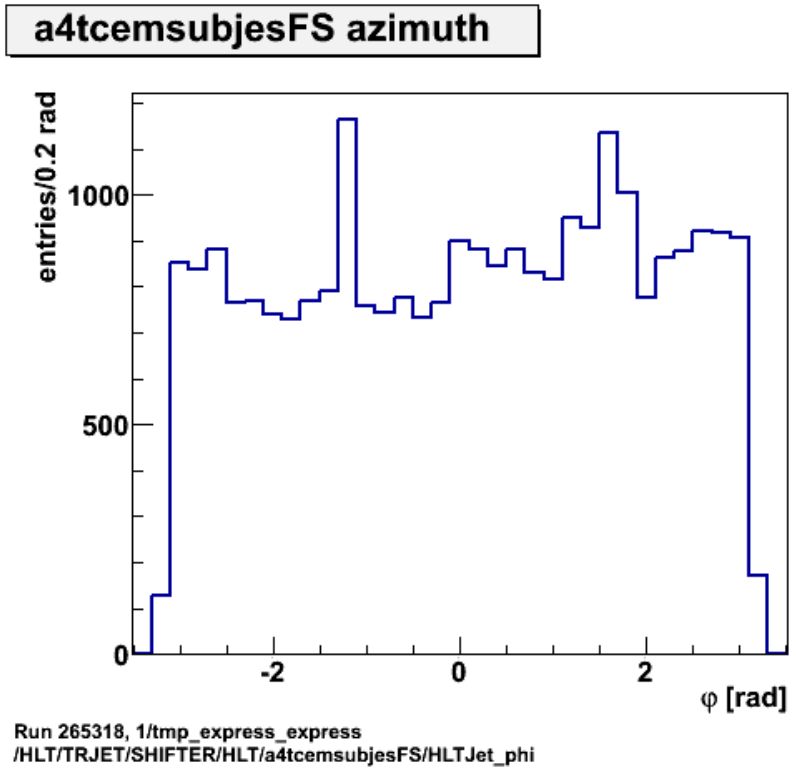
Run by Run DQ Summary

Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
265318	470.3m	Wed 09:08	4509748	Met ok Calo ok Jet ok	Jet ok Met ok	Jet spike η,ϕ=0.6,-1 (and iscontinuity in ϕ=0??) Met 2 peaks; spike ϕ=2; peak aroun ϕ=0 for TC Calo TC spike η,ϕ=0.8,-2.5; excess –ϕ
265321	71.2m	Wed 10:28	535868	Jet xs: ϕ = 0 & ±π	Spikes: ϕ = 0 & ±π	Calo spikes at: η=2, -1.8, -2.2, -2.5; : ϕ = 0 and ±π
265529	58.3m	Wed 19:22	220326	Calo, jet, met empty	empty	No HLT
265660	698.9m	Fri 09:01	3445341	Calo/jet spike Met	Jet ok Met ok	Calo/jet spike η,ϕ=0.6,-1 tcem cluster spikes: η=2, -1.8, -2.2, -2.5;

Run 265318

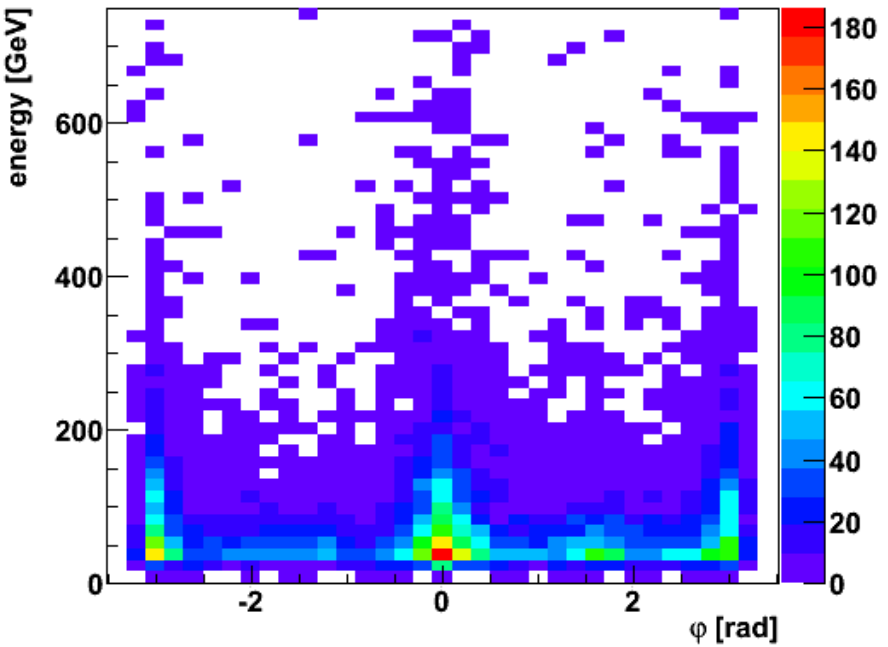
- Jets: Discontinuity in phi=0??

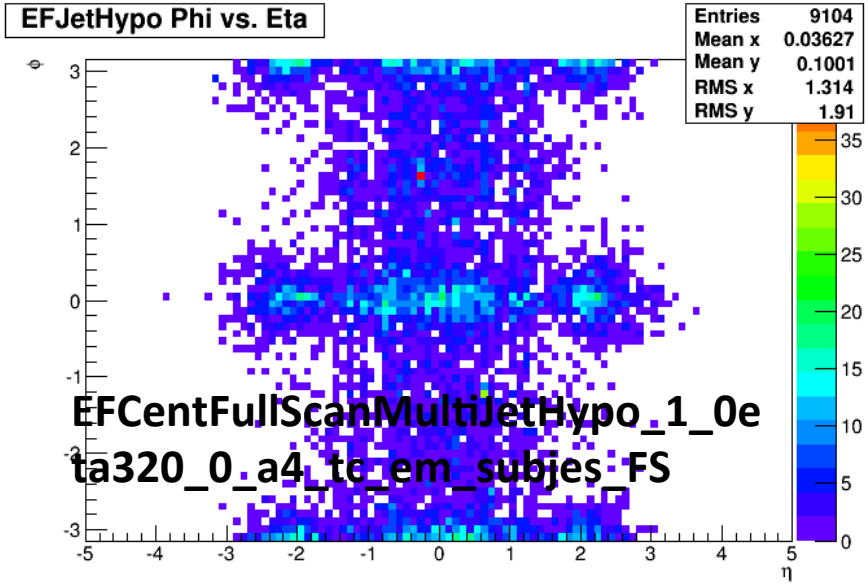


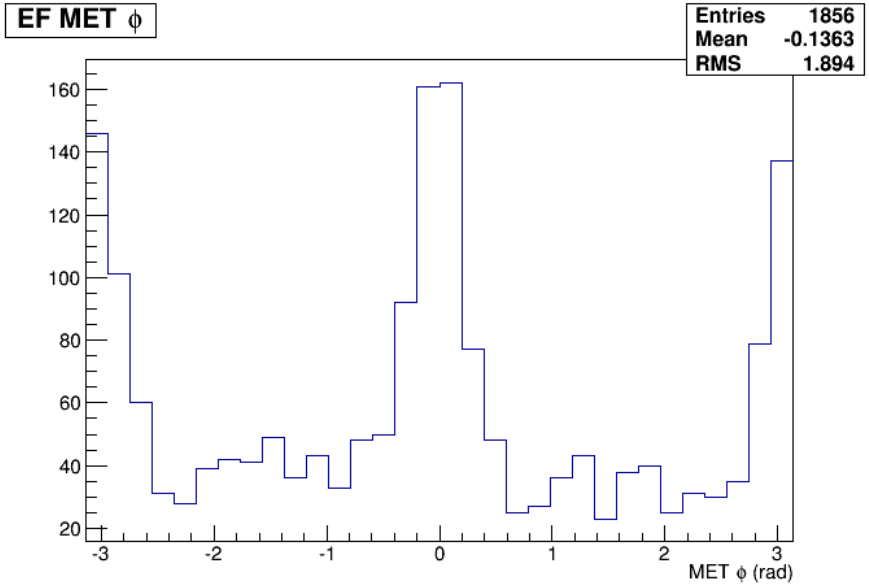


Run 265321

- MET spikes in Phi=0 and ±π
- Can also be seen in jet distribution, so perhaps detector related?
- Appears in several MET flavours, e.g.:
  - EFMissingET_Fex_2sidednoiseSupp
  - EFMissingET_Fex_topoClusters







Sign-off/defects

Run	HLTCalo	Jet	MET
265321	Spikes at $\phi = 0$ & $\pm\pi$	Spikes at $\phi = 0$ & $\pm\pi$	Spikes at $\phi = 0$ & $\pm\pi$

Run by Run DQ Summary

Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
265661	106.0m	Fri 11:08	443244	Jet/ MET spikes at $\phi = 0$ & $\pm\pi$	Met ok Jet spikes at: $\phi = 0$ & $\pm\pi$	Calo spikes at $\phi = 0, 2$ & -3
265811	581.8m	Sat 08:19	3064474	Calo/jet spike η,ϕ=0.6 ,-1	Jet spike Met ok	Calo spikes at $\phi = 0, 2$ & -3 Jet spike η,ϕ=0.6,-1
265813	46.7m	Sat 09:39	201618	Some spikes	Some spikes	Low stats
265814	248.6m	Sat 13:58	1041133	Jet/Met ok	Empty	HLT disabled in express stream
265843	130.8m	Sat 16:27	23930481	empty	Empty	HLT disabled in express stream

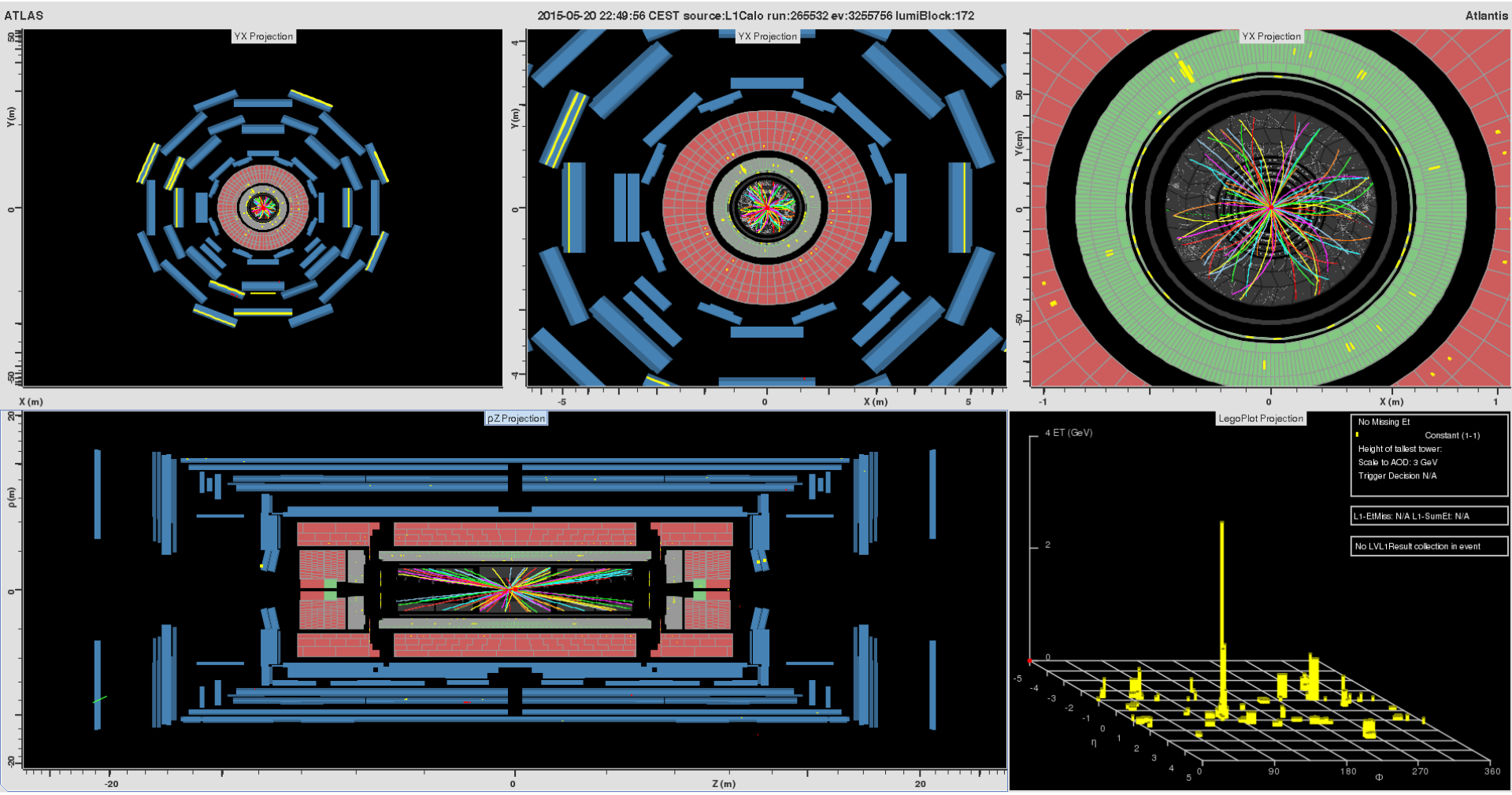
Run by Run DQ Summary

Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
265881	814.0m	Sun 09:06	6758471	Jet ok Met ok Calo ok Spikes…	Jet ok Met ok	Calo spikes at: η=2, 0.8, -1.8, -2.2, -2.5 and ϕ = 0, 2 & -3 Jet spike η,ϕ=0.6,-1 j15 now active but empty
265882	585.7m	Sun 19:08	2284406	Calo tclcw empty Met and jet empty	Met ok Jet empty	Very low stats for em clusters!?? tcem clusters: spikes at ϕ = 1, 2 & -2 tclcw plots empty

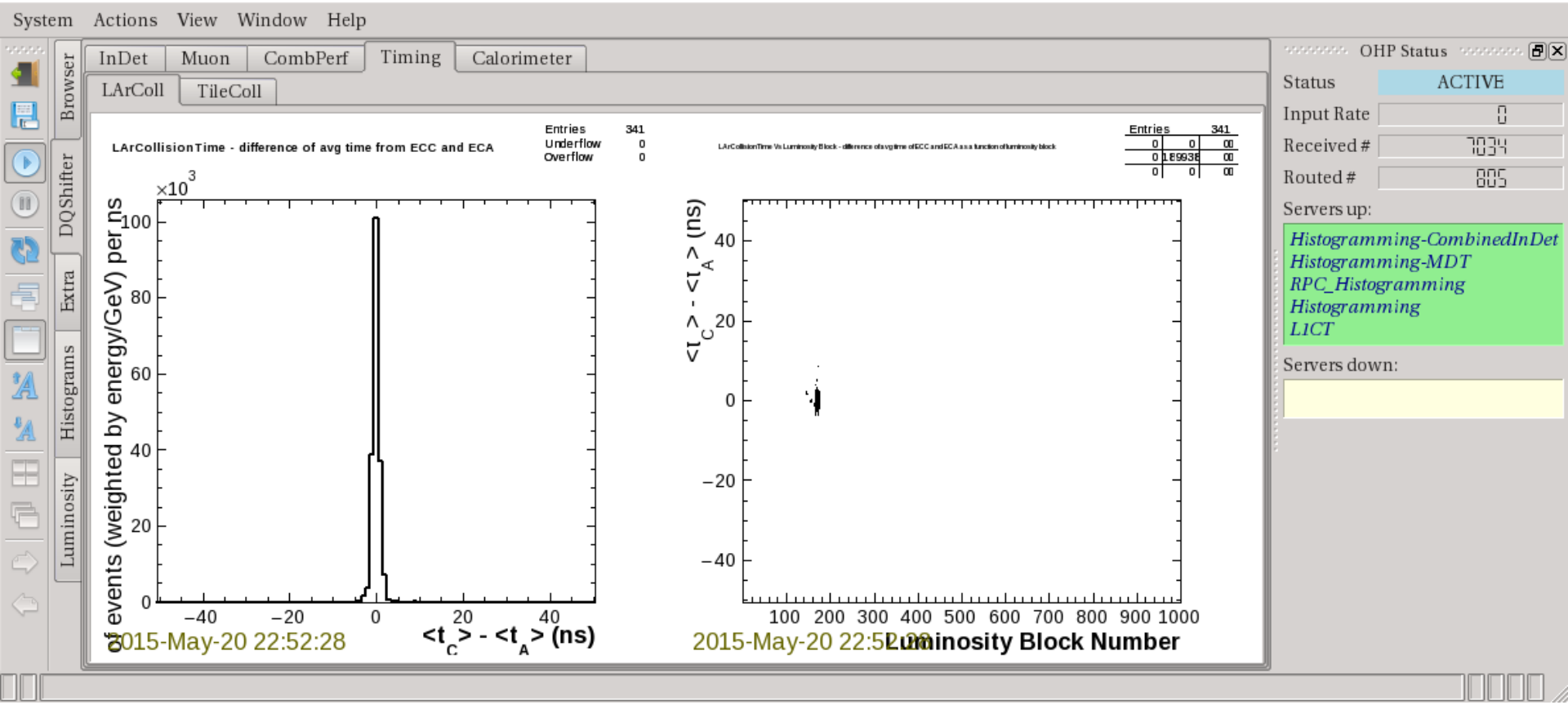
Collision runs

Run	Duration	Ended	Events	Online Hist.	Offline Hist.	Obs.
263962						900GeV collisions!
263964	130m	Tue 12:41	1808555	No HLT	Ok jet Ok met	900GeV collisions!
263965	225m	Tue 15:09	3289095	No HLT	Ok jet Ok met	900GeV collisions!
265532		Wed 20:04	5052417	Empty	Empty	13TeV collisions; no HLT
265545		Thu 08:37	5408249	Empty	Empty	13TeV collisions; no HLT
265573		Thu 10:55	12482144	Empty	Empty	13TeV collisions; no HLT

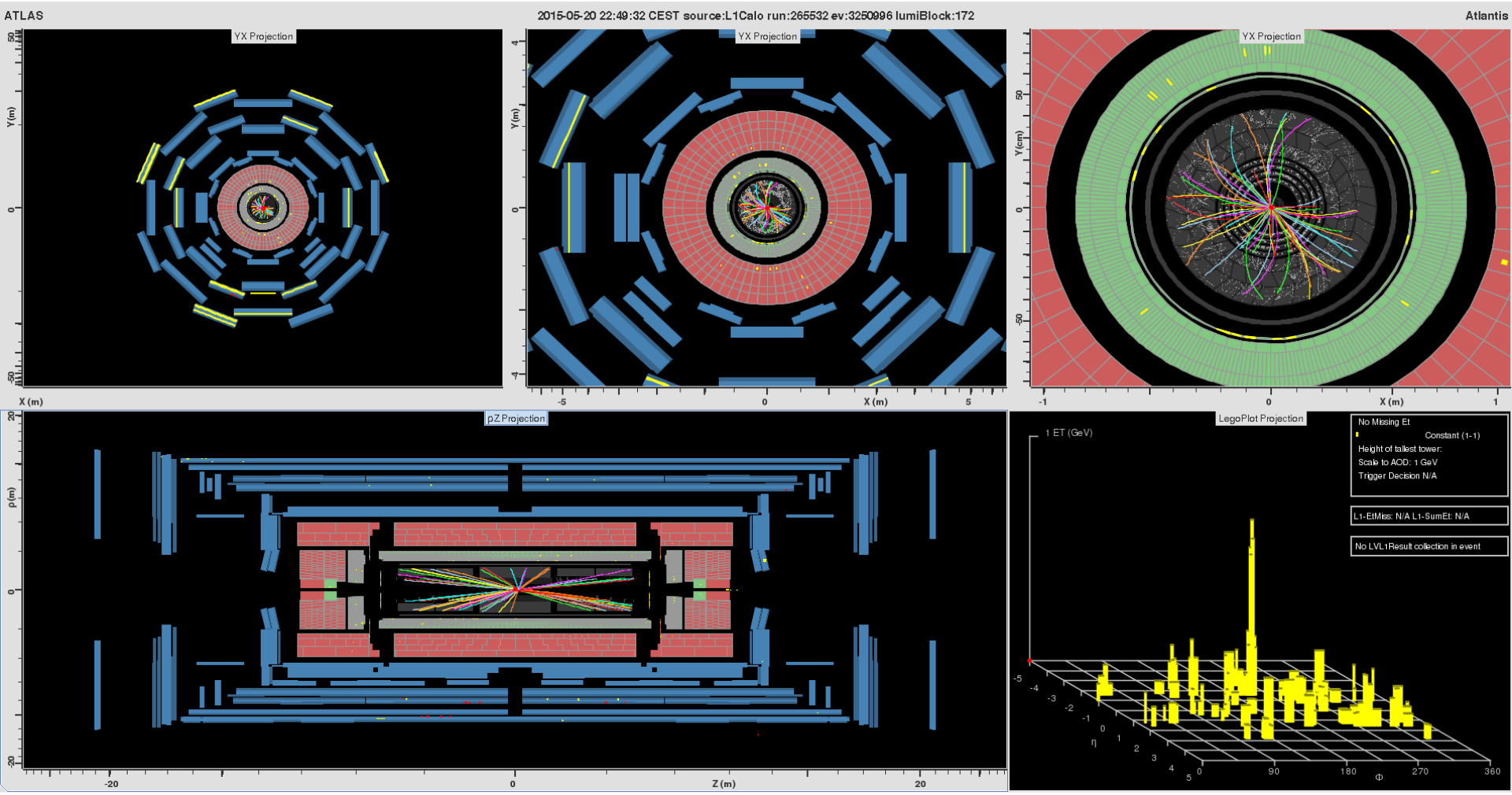
20/5/2015 – first 13TeV collisions



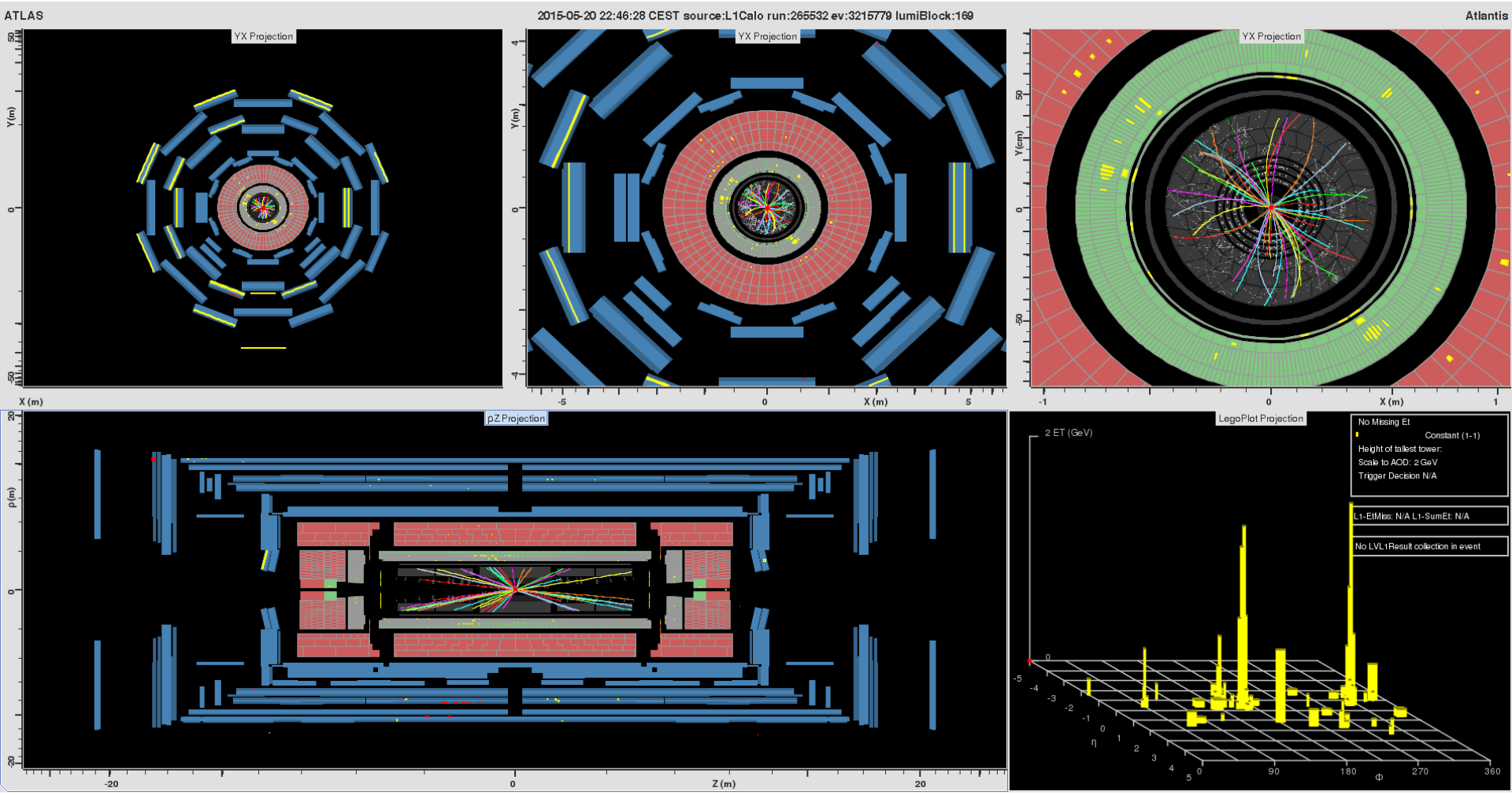
20/5/2015 – first 13TeV collisions



MET?


ATLAS
2015-05-20 22:49:32 CEST source:L1Calo run:265532 ev:3250996 lumiBlock:172
Atlantis
YX Projection
YX Projection
YX Projection
pZ Projection
LegoPlot Projection
1 ET (GeV)
No Missing Et
Constant (1-1)
Height of tallest tower:
Scale to AOD: 1 GeV
Trigger Decision N/A
L1-EtMiss: N/A L1-SumEt: N/A
No LVL1Result collection in event
X (m)
Y (m)
Y (cm)
Z (m)
ρ (m)
η
Φ

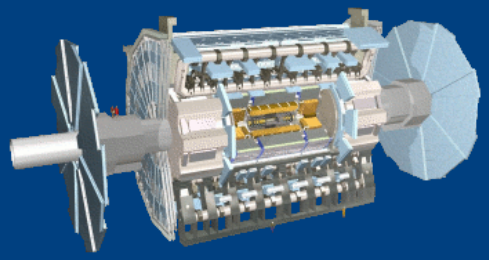
Are those jets?



Back | NO USER | 21-05-2015 12:10:45

LHC

LUMINOSITY	READY	OK
ATLAS LUMINOSITY	READY	OK
LHC LUMINOSITY	READY	OK



Zoom: 100

3D View | All connected

LHC | Back

ATL_LHC

State	Status
READY	OK

Accelerator Mode	Beam Mode
BEAM SETUP	ADJUST
Machine setup with beam	Adjust beam on flat top

Inst.Luminosity

LHC	0.00e+00
ATLAS	1.28e-01

LHC_BIS	READY	OK
LHC_INS	READY	OK
LHC_BKG	READY	OK
LHC_LREG	READY	OK
LHC_LUMI	READY	OK

ID		CALO		MUON		SERVICE	
PIX	W	LAR	OK	MDT	OK	CIC	???
SCT	E	TIL	OK	RPC	OK	EXT	W
TRT	OK			TGC	OK	TDQ	OK
IDE	W			CSC	OK	FWD	OK
						SAF	OK

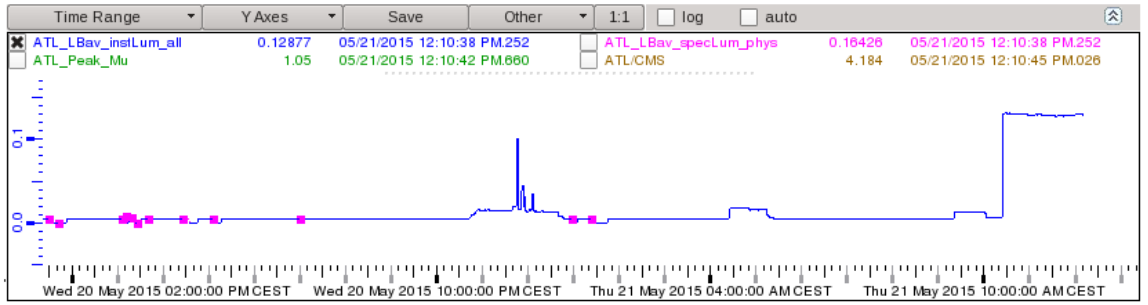
S | Object | Time | 0 | W | E | F | D | U

LUMINOSITY

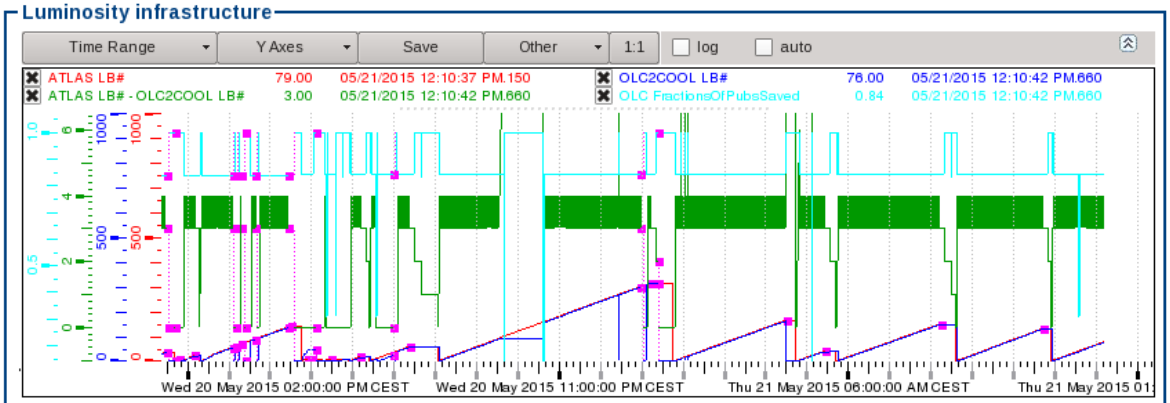
RUN MODE: **PROTON** DISPLAY: **DEFAULT**

Switch to ATLAStoLHC

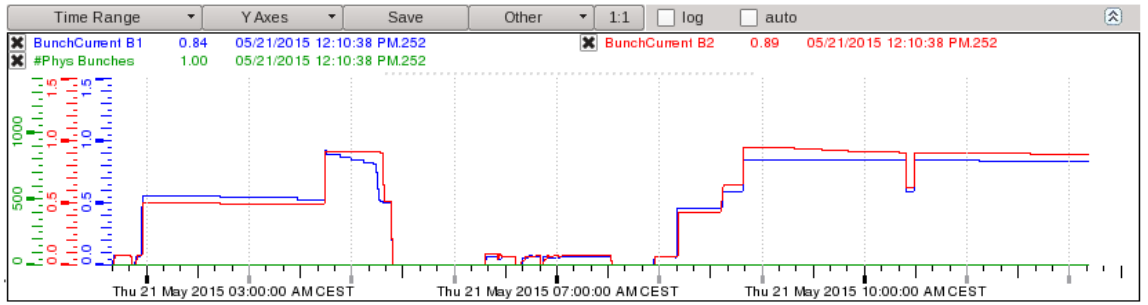
LB Averaged Instantaneous Luminosity (10^30 cm^-2 s^-1)



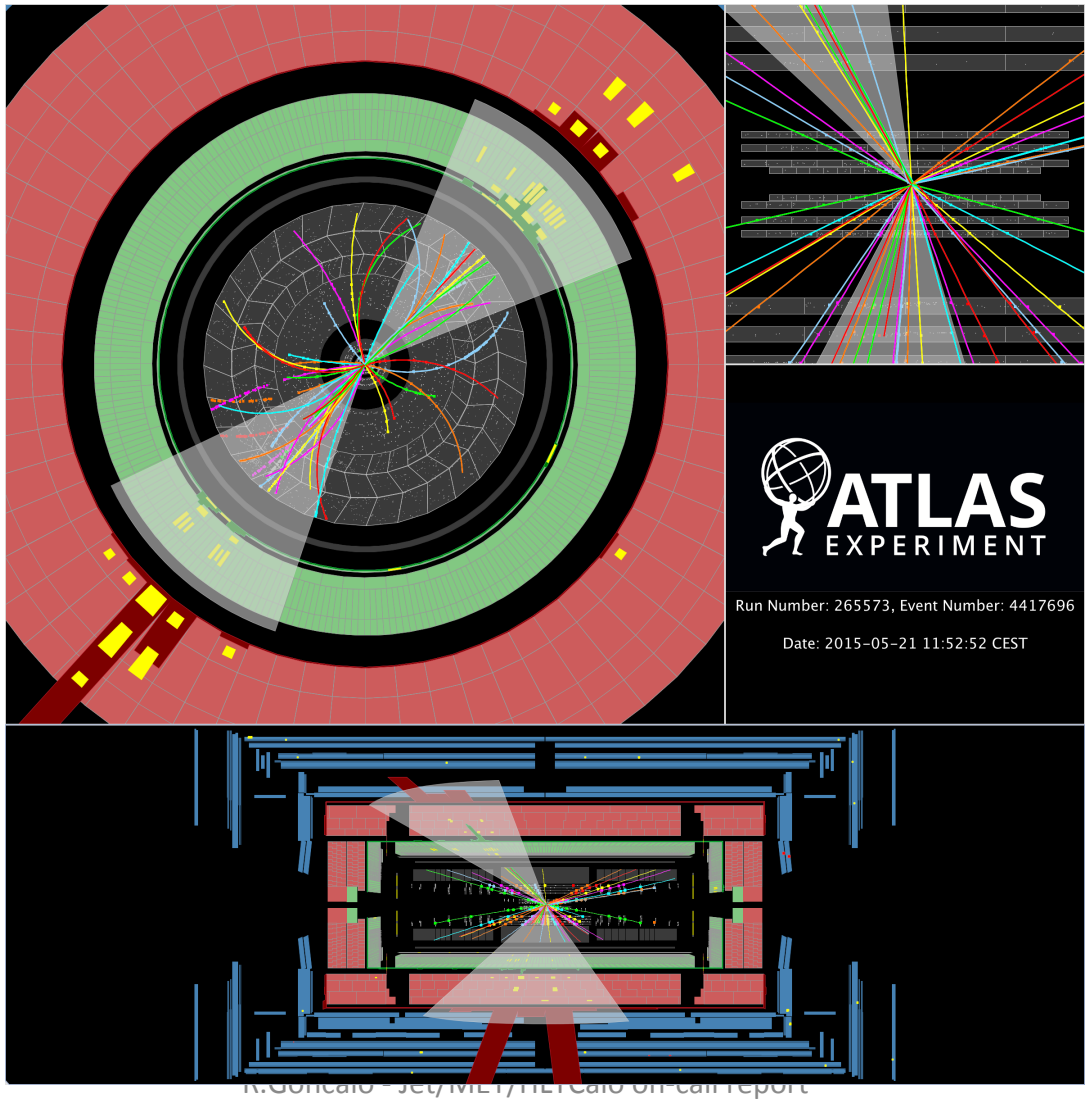
Luminosity infrastructure



LB Averaged Bunch Currents (physBG)



Di-jets in 13TeV Collisions!!!



Reprocessing – 1

- https://its.cern.ch/jira/browse/ATR-11131
- Purpose: Tune procedures for week 1 with ADC
  - Release: AtlasP1HLT,20.2.1.2
  - Menu: Physics_pp_v5
  - Run: 263993
  - Stream: physics_Main
  - Prescales: [default]
  - Apply L1 prescales?: no
  - Rerun L1?: no
  - Reconstruction?: no
  - Reco release: n/a
  - Reco Outputs: n/a
  - Reference reprocessing: n/a
- Split into:
  - https://its.cern.ch/jira/browse/ATR-11205
  - https://its.cern.ch/jira/browse/ATR-11209

Reprocessing – 2

- https://its.cern.ch/jira/browse/ATR-11189
- Purpose: Reprocessing to validate AtlasCAFHLT,20.2.1.2.2
  - Release: AtlasCAFHLT,20.2.1.2.2
  - Menu: MC_pp_v5
  - Run: 212967
  - Stream: EnhancedBias
  - Prescales: [default]
  - Apply L1 prescales?: no
  - Rerun L1?: yes
  - Reconstruction?: first (for fast turn-around) without then with
  - Reco release: AtlasProduction, 20.1. ~~4~~ 5 . ~~11~~ 1
- Checked histos from HIST_HLTMON file produced
  - Just checked that all (well, maybe 95% of the) plots from each chain looked ok. Did not compare to reference
  - All fine
- Also a RECO part to sign off soon

Reprocessing – 3

- https://its.cern.ch/jira/browse/ATR-11194
- Purpose: HLT reprocessing of 264034/L1Calo stream with offline outputs for ID trigger studies
  - Release: AtlasCAFHLT,20.2.1.2.2
  - Menu: MC_pp_v5
  - Run: 264034
  - Stream: L1Calo
  - Prescales: [default]
  - Apply L1 prescales?: no
  - Rerun L1?: no
  - Reconstruction?: yes
  - Reco release: AtlasProduction,20.1.5.1
  - Reco Outputs: n/a
  - Reference reprocessing: None

Reprocessing – 4

- https://its.cern.ch/jira/browse/ATR-11155
- Purpose: Reprocessing to validate AtlasCAFHLT,20.2.1.2.1
  - Release: AtlasCAFHLT,20.2.1.2.1
  - Menu: MC_pp_v5
  - Run: 212967
  - Stream: EnhancedBias
  - Prescales: [default]
  - Apply L1 prescales?: no
  - Rerun L1?: yes
  - Reconstruction?: yes
  - Reco release: AtlasProduction,20.1.4.11
  - Reco Outputs: HIST.AOD.ESD.NTUP_TRIGRATE.NTUP_TRIGCOST.NTUP_TRIGEBWGHT
  - Reference reprocessing: https://its.cern.ch/jira/browse/ATR-11022

Reprocessing – 5

- https://its.cern.ch/jira/browse/ATR-11205
- Purpose: Test procedures, tools and measure turnaround time
  - Release: AtlasP1HLT,20.2.1.2
  - Menu: MC_pp_v5
  - Run: 265532
  - Stream: physics_Main
  - Prescales: [default]
  - Apply L1 prescales?: no
  - Rerun L1?: yes
  - Reconstruction?: no
  - Reco release: n/a
  - Reco Outputs: n/a
  - Reference reprocessing: none

Reprocessing – 5

- https://its.cern.ch/jira/browse/ATR-11209
- Purpose: Test procedures, tools and measure turnaround time
  - Release: AtlasCAFHLT,20.2.1.2.2
  - Menu: Physics_pp_v5
  - Run: 265545
  - Stream: physics_Main
  - Prescales: [default]
  - Apply L1 prescales?: no
  - Rerun L1?: yes
  - Reconstruction?: no
  - Reco release: n/a
  - Reco Outputs: n/a
  - Reference reprocessing: n/a

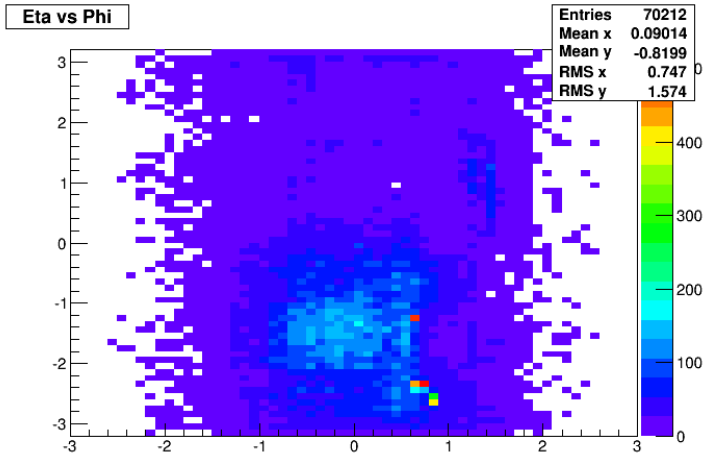
Reprocessing – 6

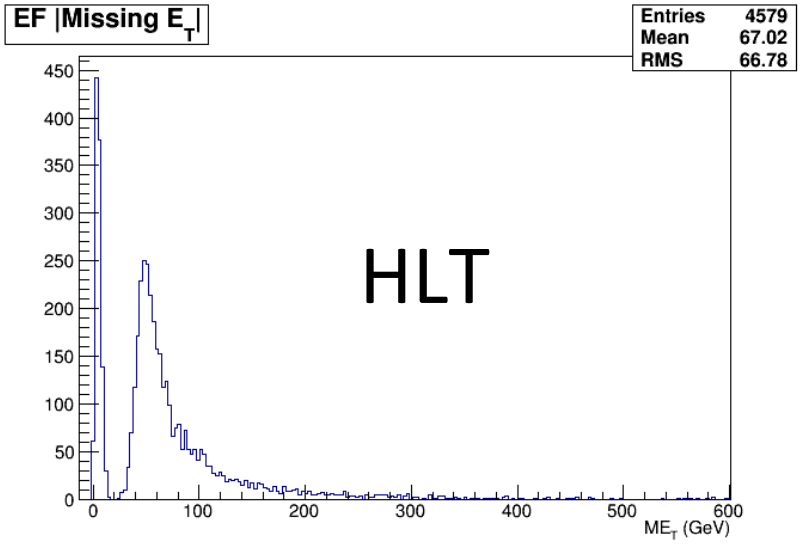
- https://its.cern.ch/jira/browse/ATR-11214
- Purpose: test saving BS output and running subsequent RAW toCOST and ESDtoAOD steps separately
  - Release: AtlasCAFHLT,20.2.1.2.2
  - Menu: MC_pp_v5
  - Run: 212967
  - Stream: EnhancedBias
  - Prescales: [default]
  - Apply L1 prescales?: no
  - Rerun L1?: yes
  - Reconstruction?: yes
  - Reco release: AtlasProduction,20.1.5.1
  - HLT Outputs: HIST_HLTMON.BS
  - Reco outputs: all
  - Allow pilots to run and the "finish" H:LT+RECO leaving subsequent stepos to complete.

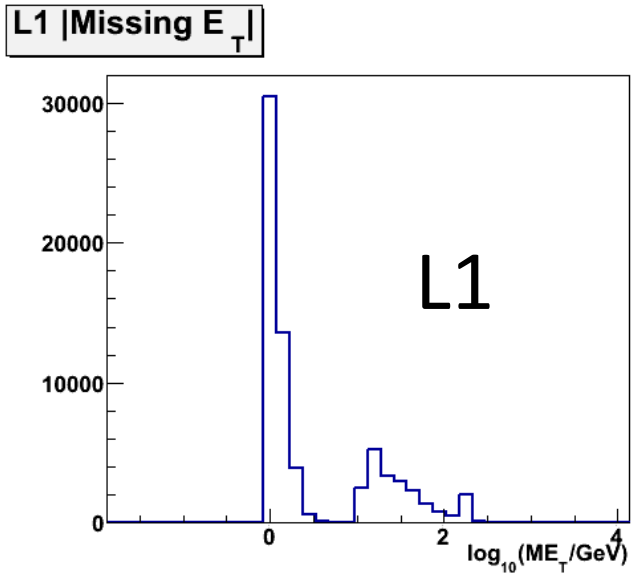
Bonus slides

Run 265182

- Latest solved mysteries..
- Excess in TrigCaloClusterMaker_topo Eta_vs_Phi from L1Muon-seeded tau chains
- Two-peak structure in xe35 from L1_RD0







Run 265182, 1/express_express
/HLT/TRMET/Shifter/L1/L1_MET_log