Some Update on Trigger Studies
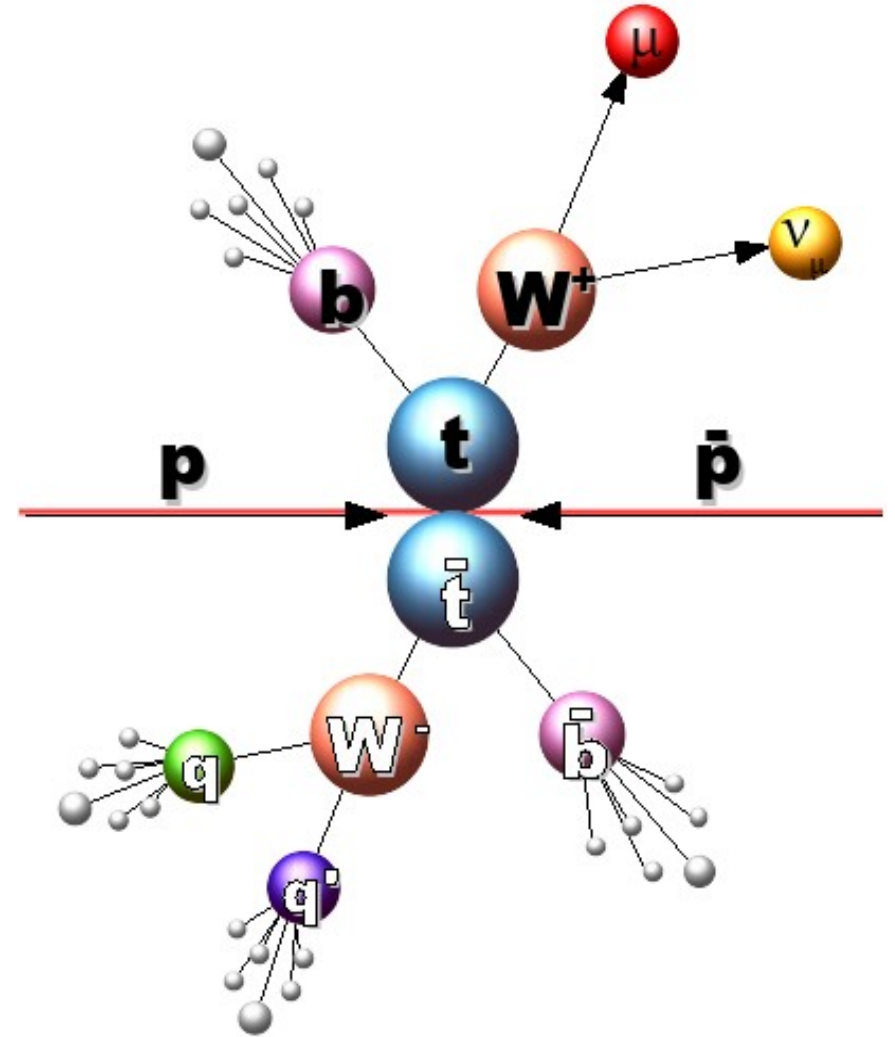
Sascha Mehlhase

Deutsches Elektronen-Synchrotron DESY
Zeuthen

DESY Zeuthen Meeting
May 6th 2008
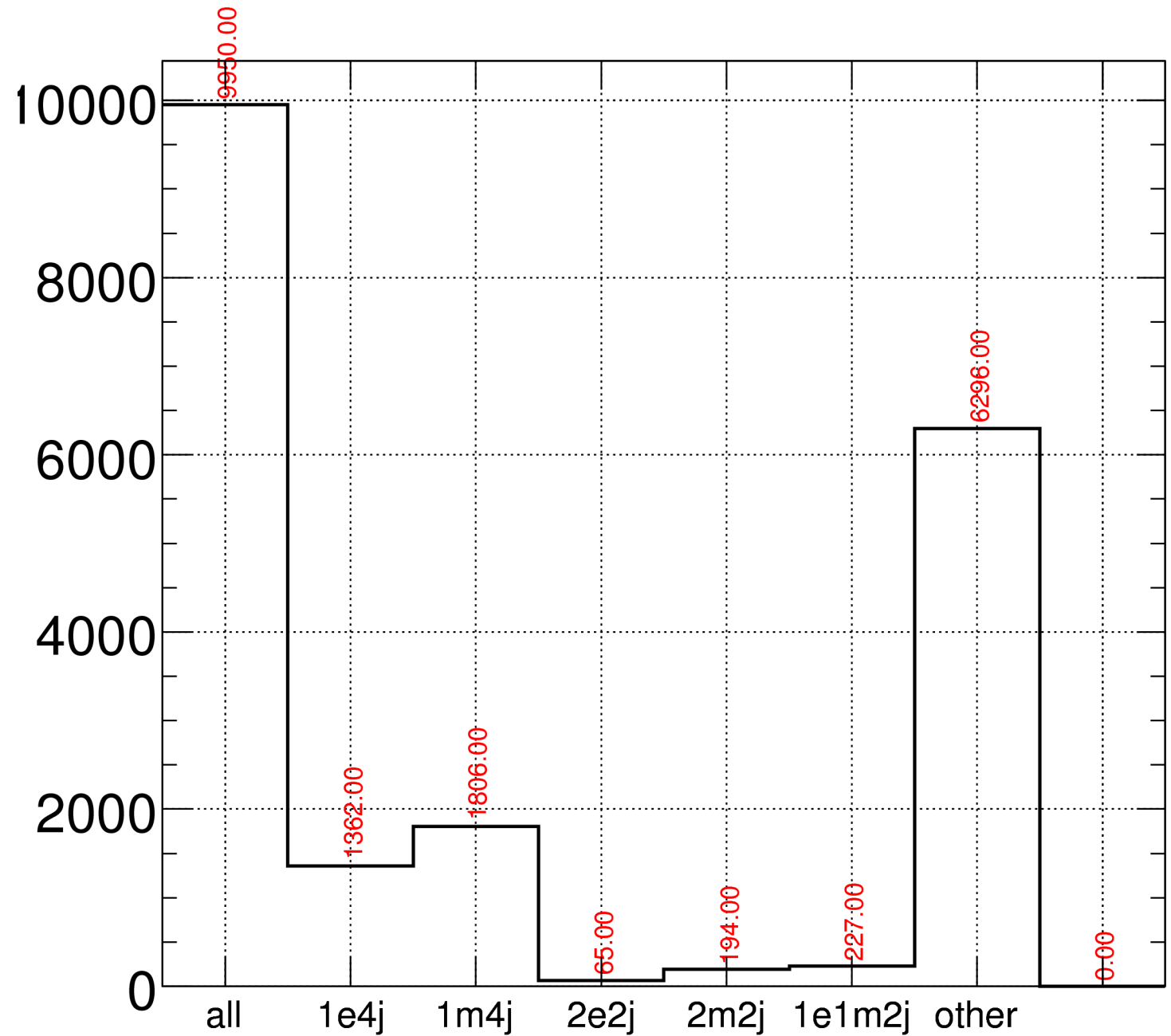
Outline

- Eventtypes

- P_T and Eta distributions of Trigger Objects

- 'Simple' Monitoring

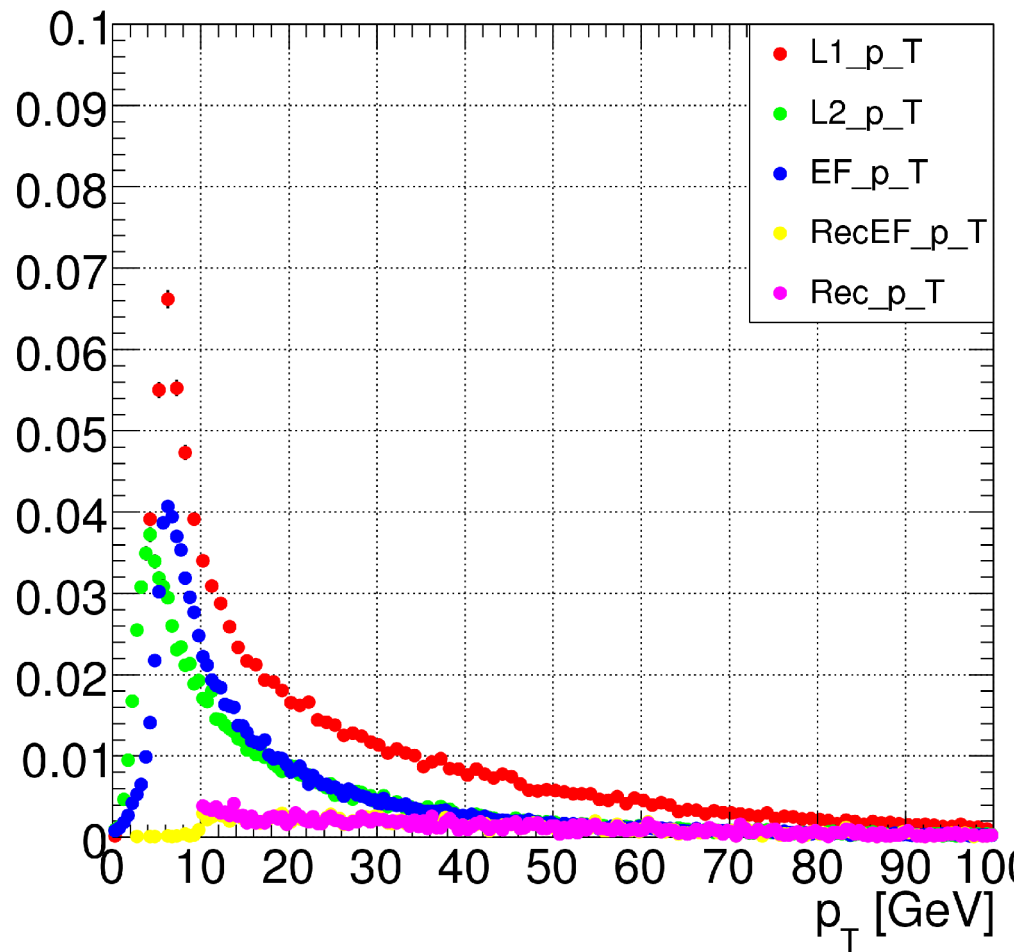- Looking At Final States

- 'Detailed' Look At Some Triggers

Eventtypes
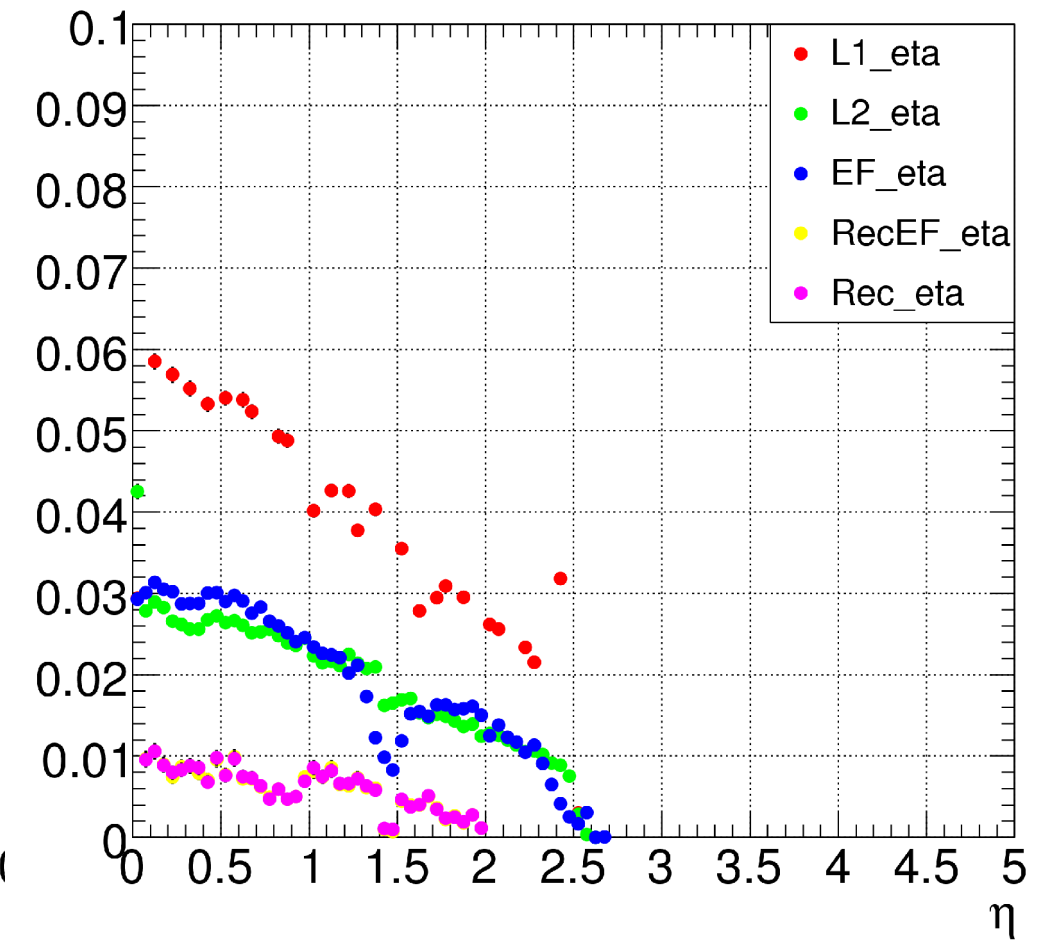
- ...

P_T and Eta distributions of Trigger Objects
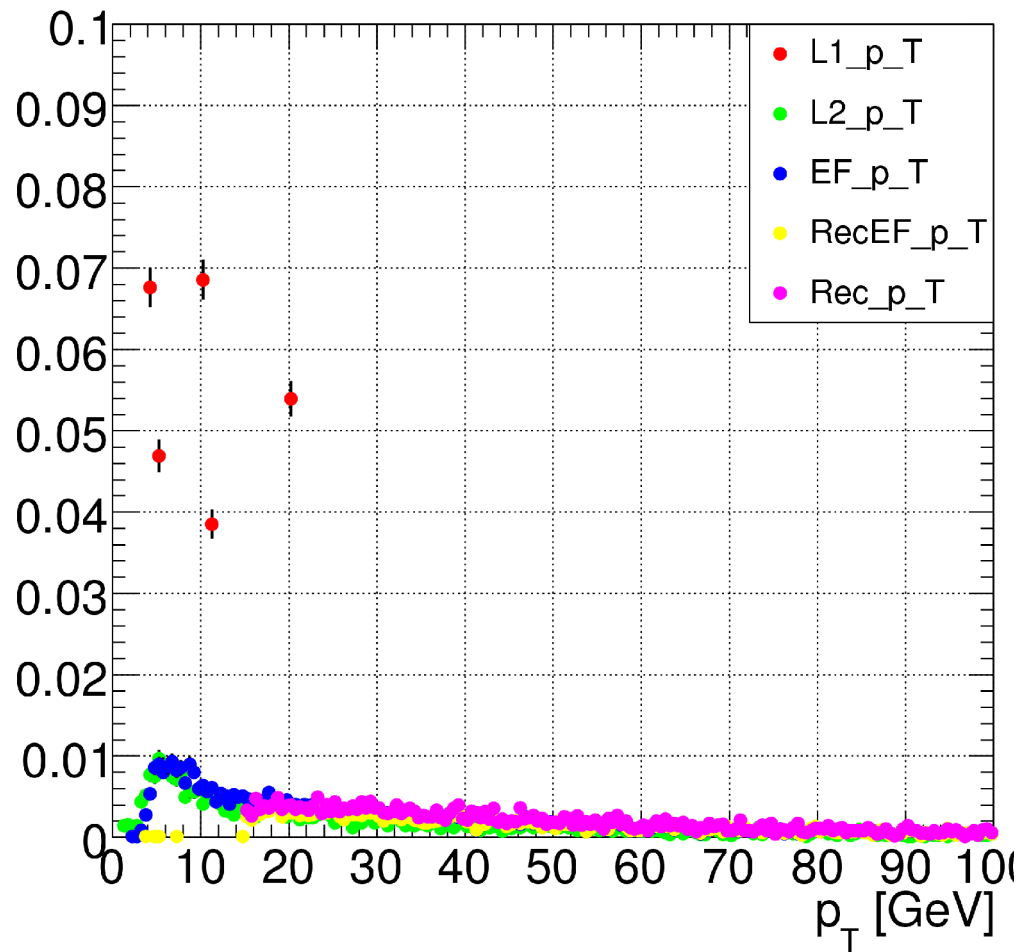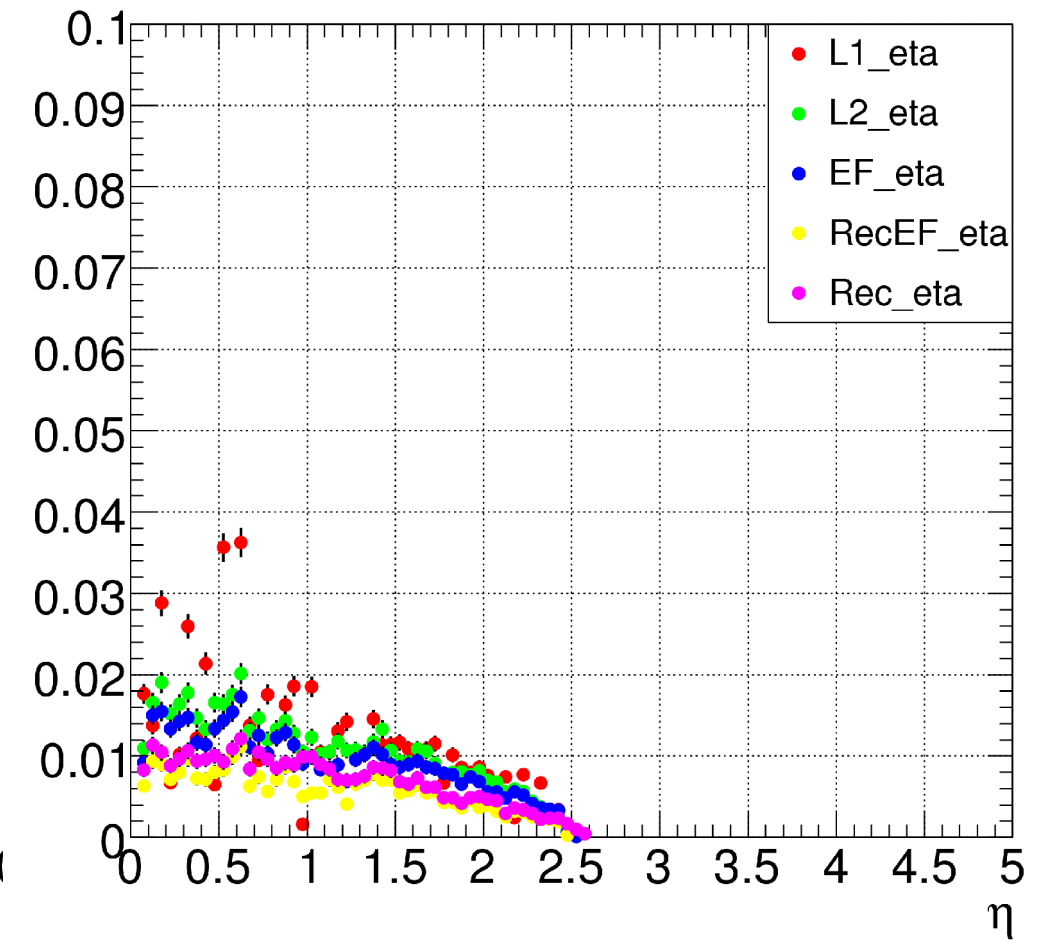
- Electrons

Debug/Electron_p_T   Debug/Electron_eta

P_T and Eta distributions of Trigger Objects
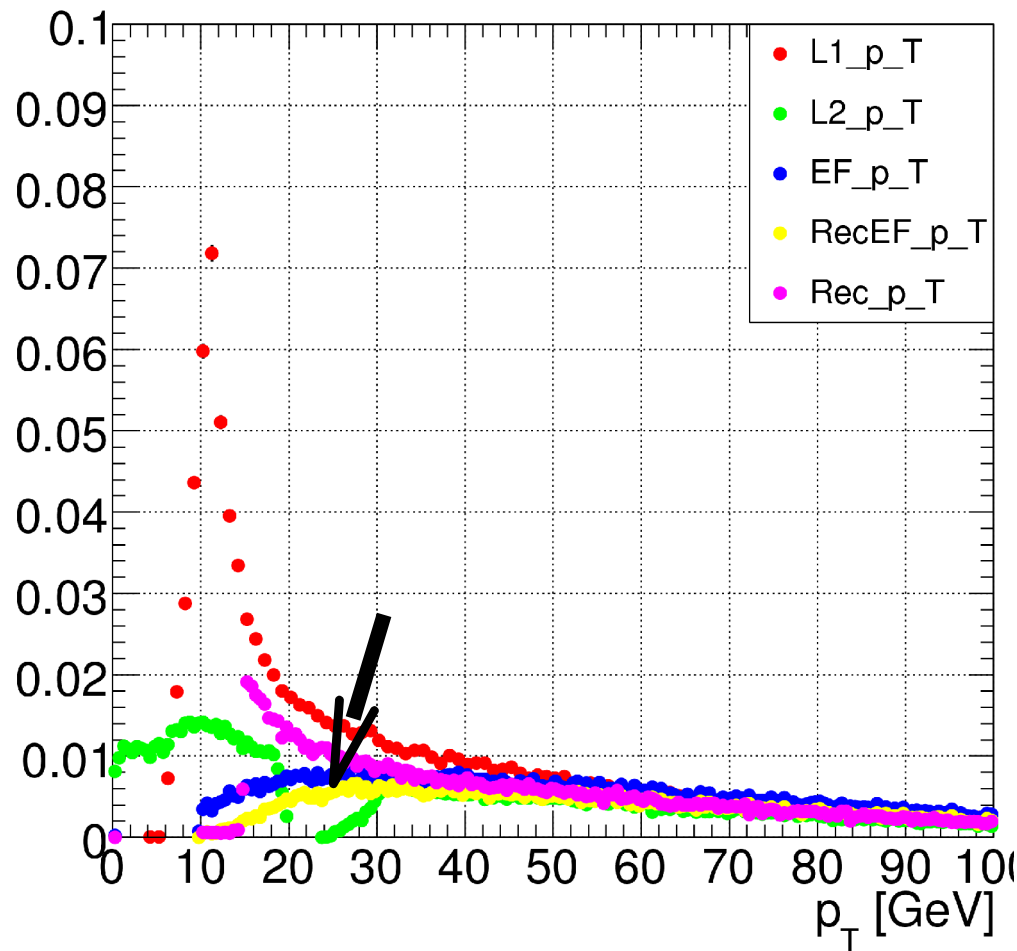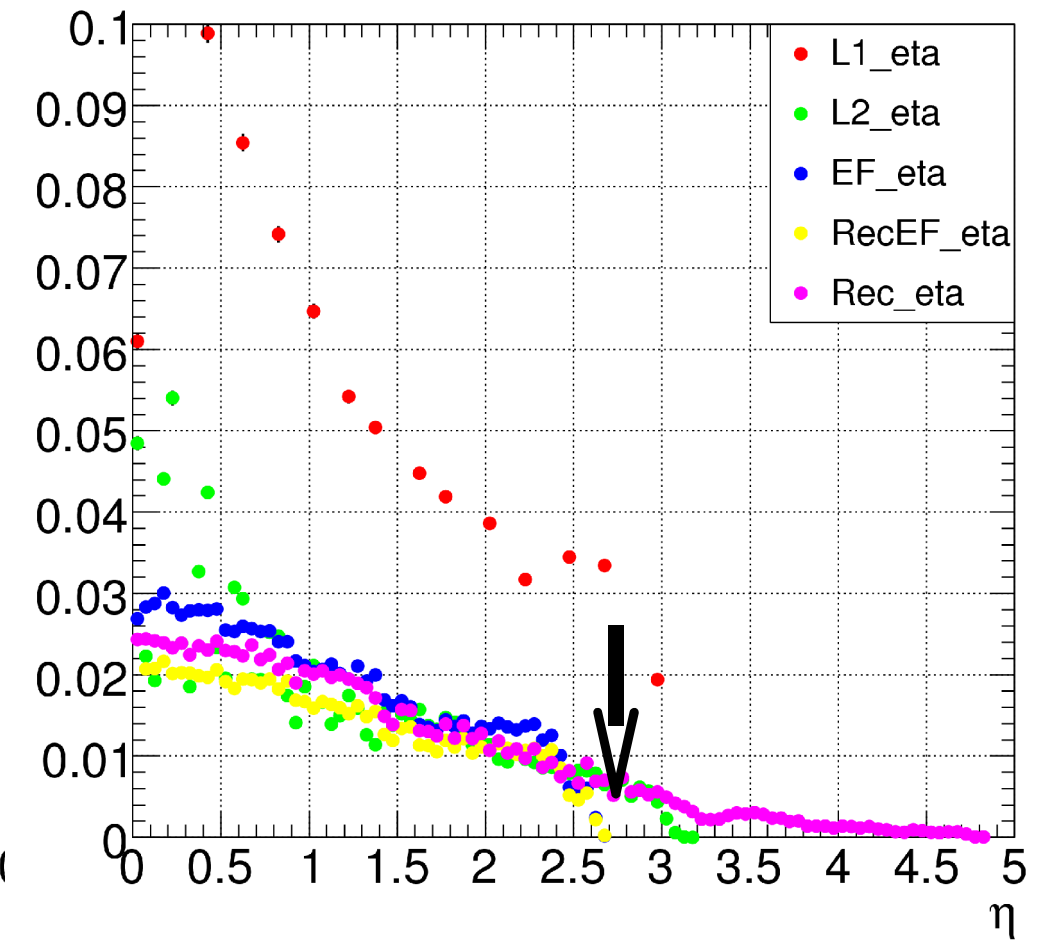
- Muons

Debug/Muon_p_T

Debug/Muon_eta

P$_T$ and Eta distributions of Trigger Objects

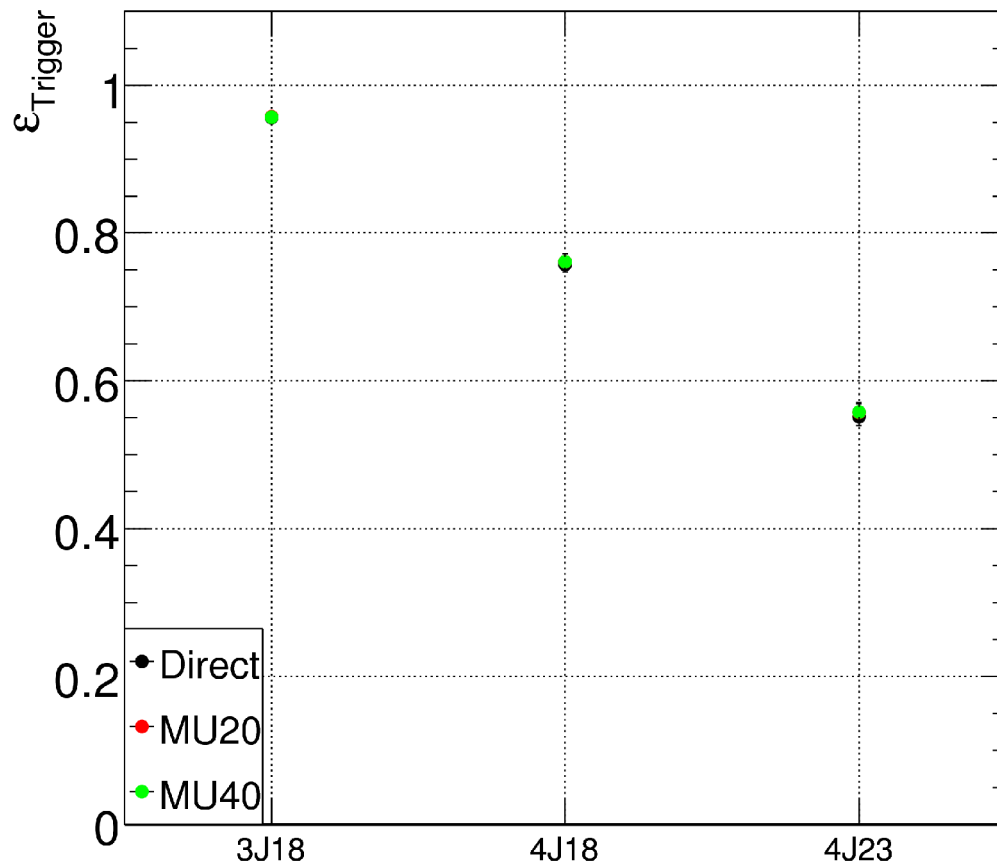- Jets (some issues not understood yet, might be the sample, or not!?)
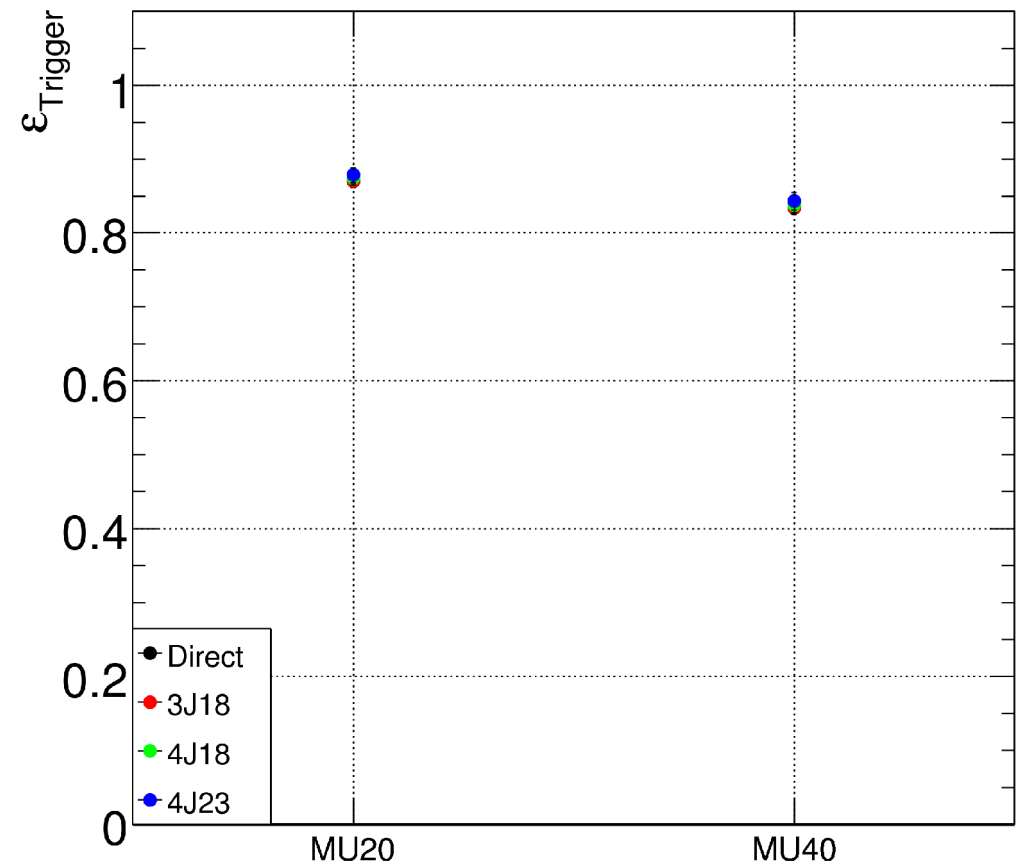

Debug/jet_p_T

Debug/Jet_eta

'Simple' Monitoring

- For 1m4j Events at Level One (muon trigger against jet trigger and vice versa)
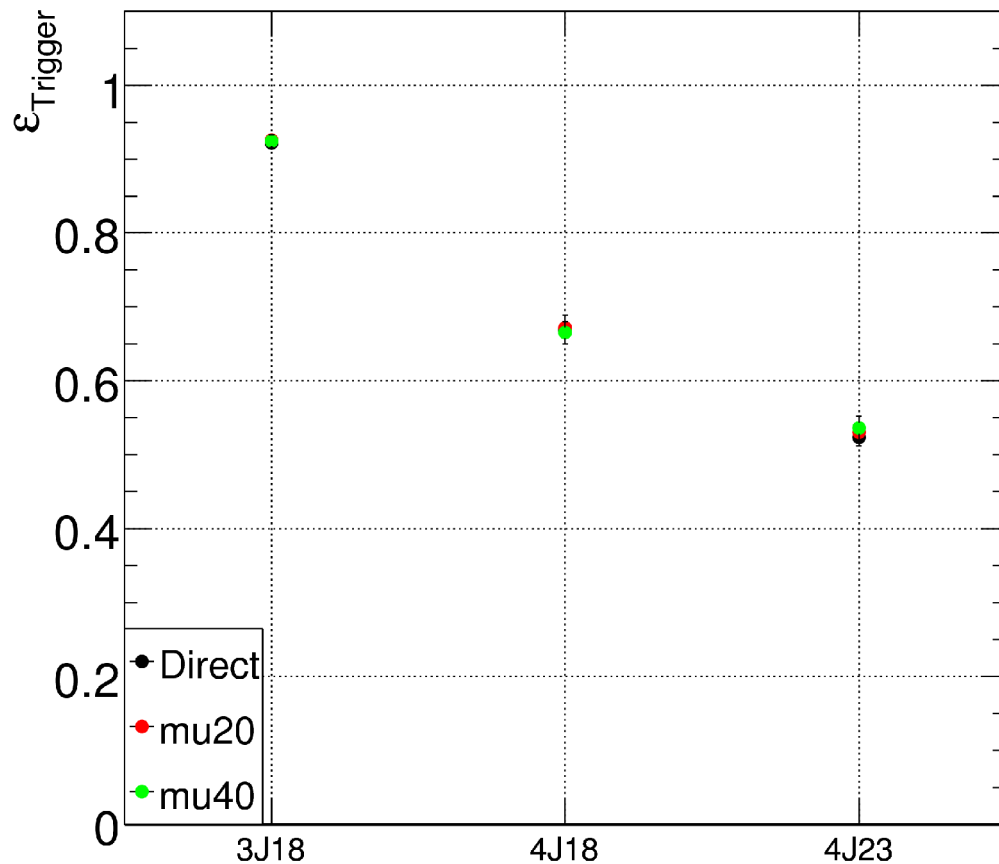

L1/1m4j/Jets

L1/1m4j/muon

'Simple' Monitoring

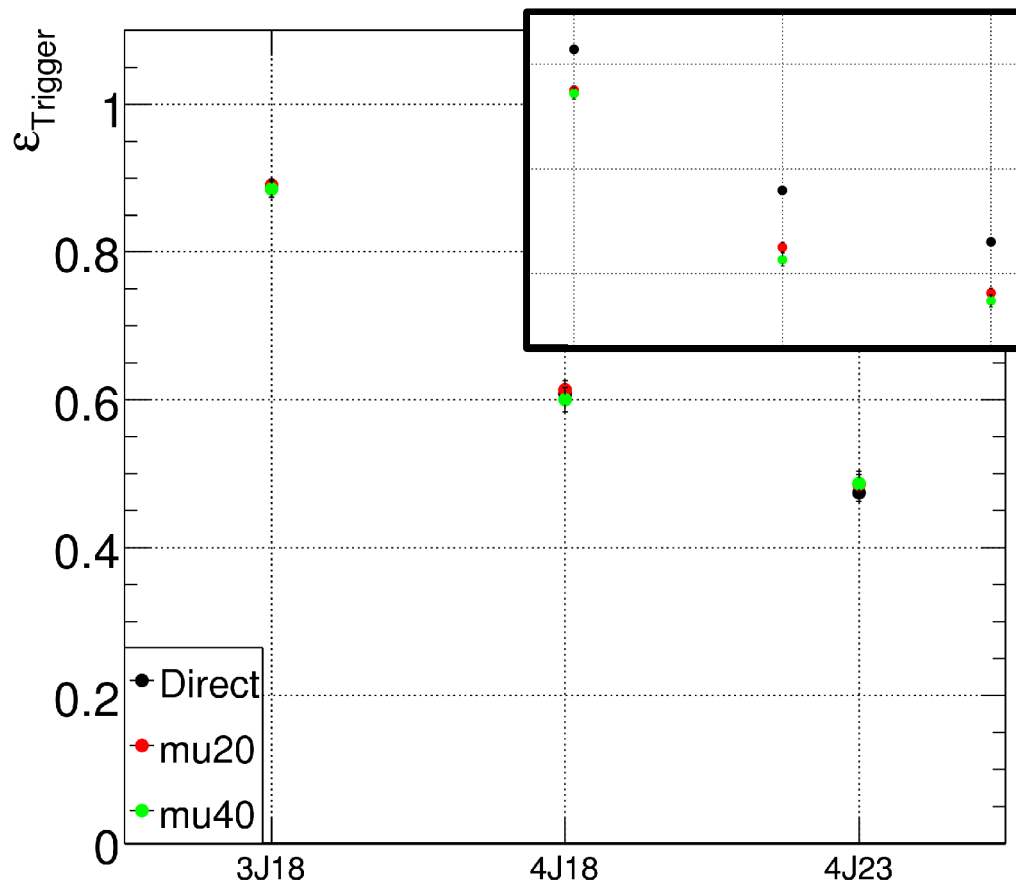- For 1m4j Events at Level Two (muon trigger against jet trigger and vice versa)
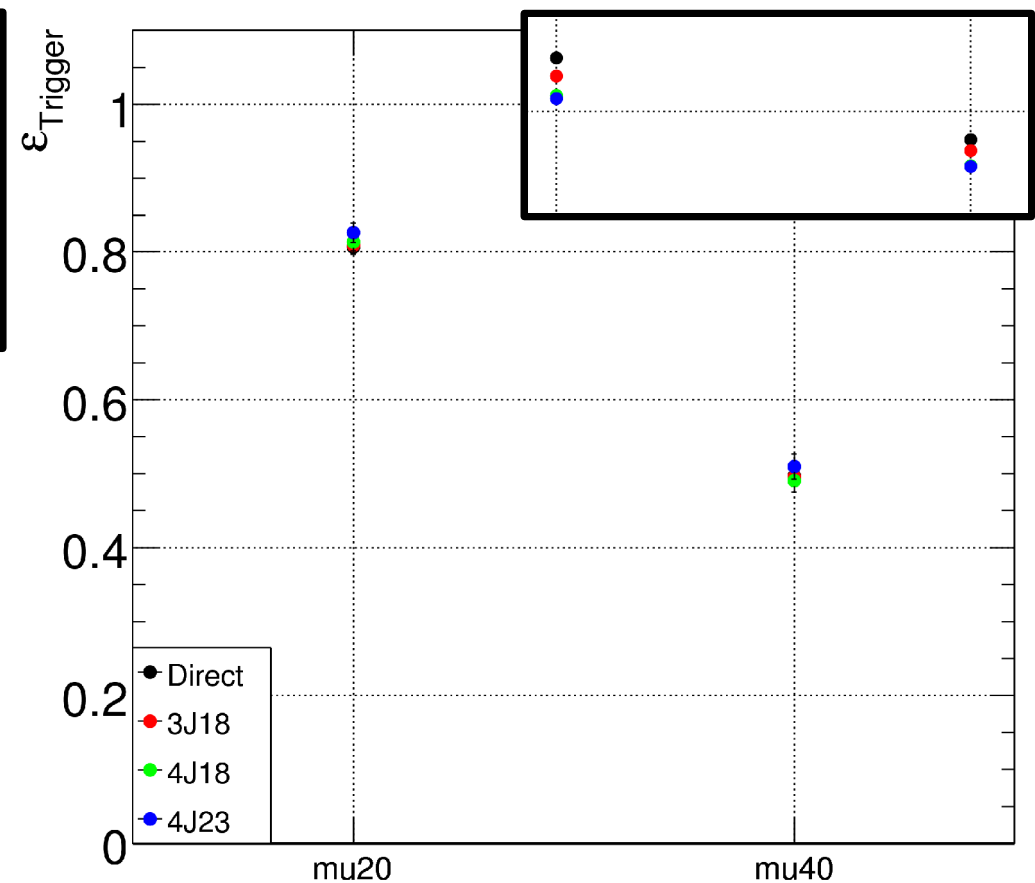

L2/1m4j/Jets
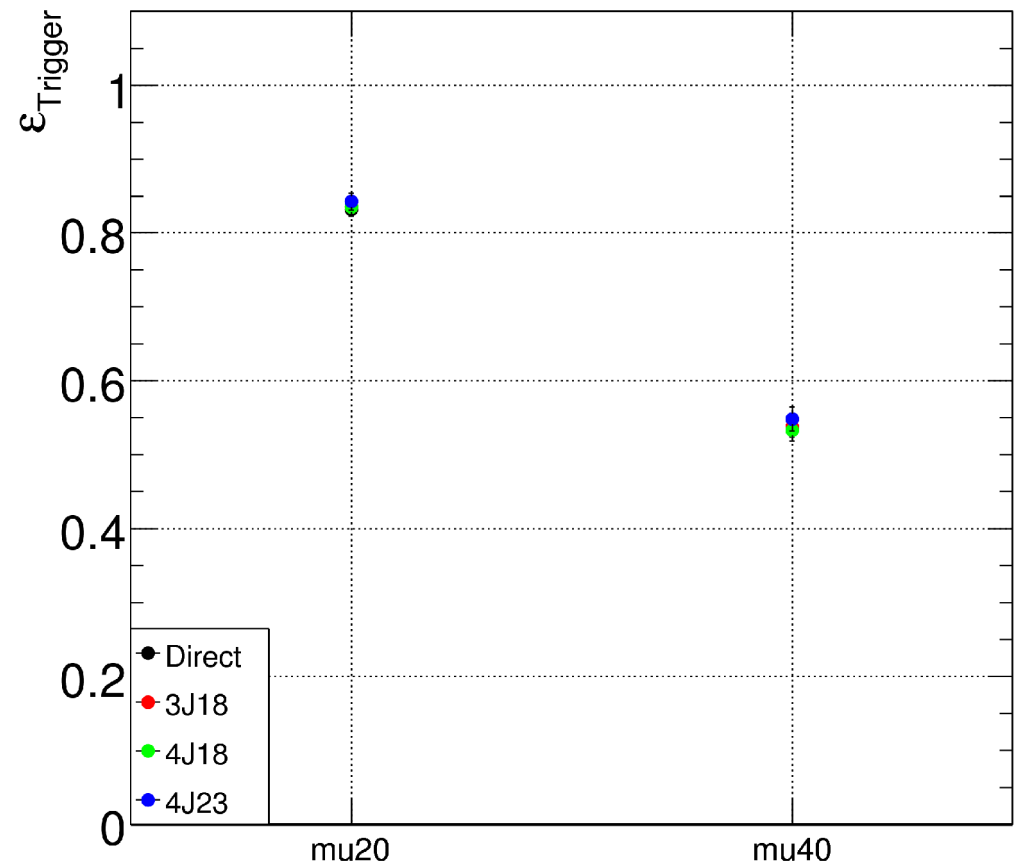
L2/1m4j/muon

'Simple' Monitoring

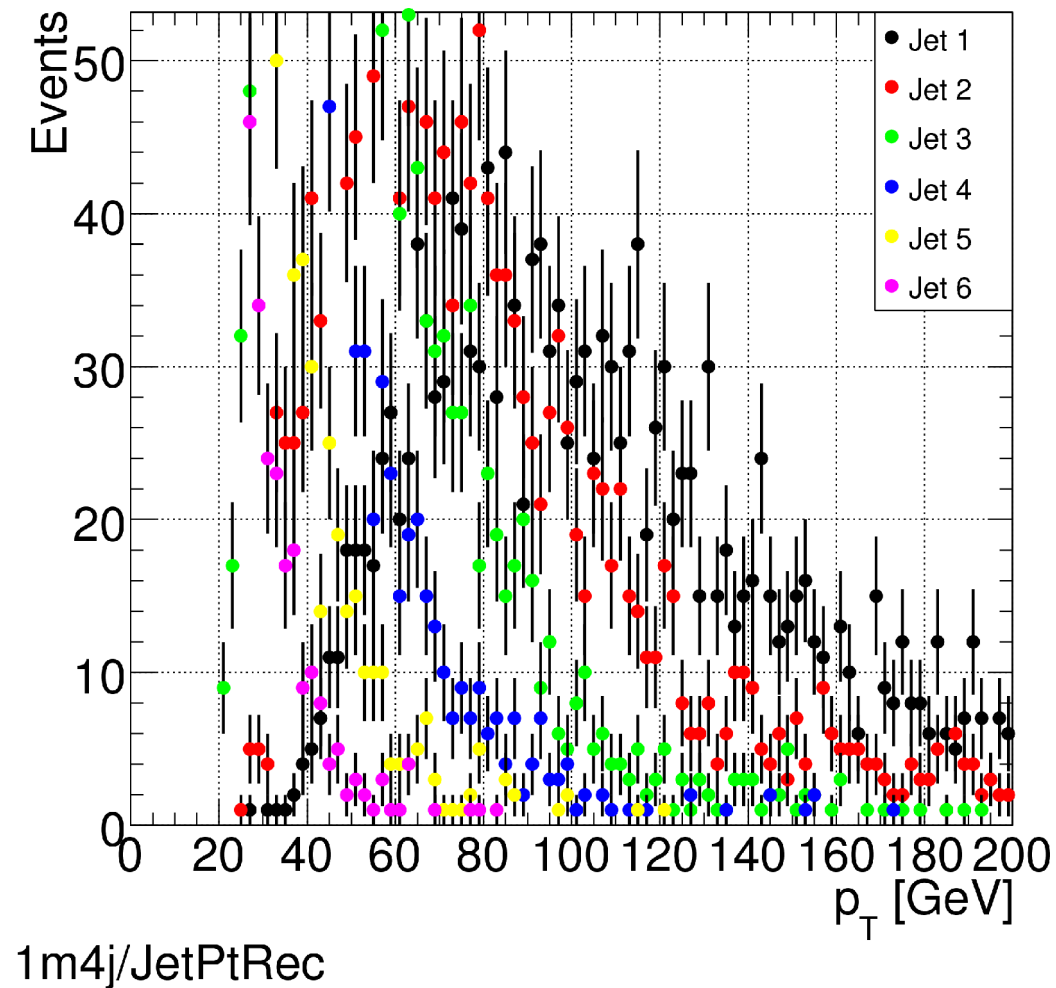- For 1m4j Events at EventFilter (muon trigger against jet trigger and vice versa) (for comparison: all Events in the boxes)
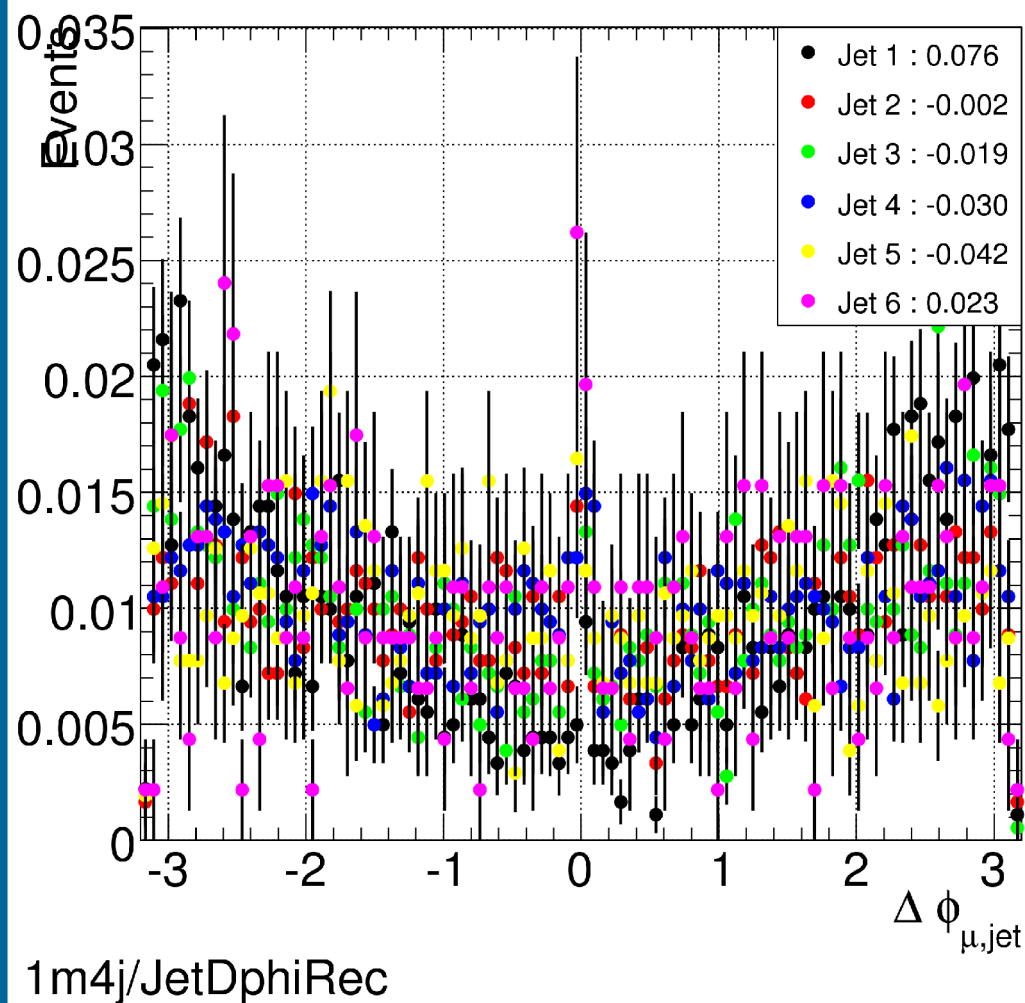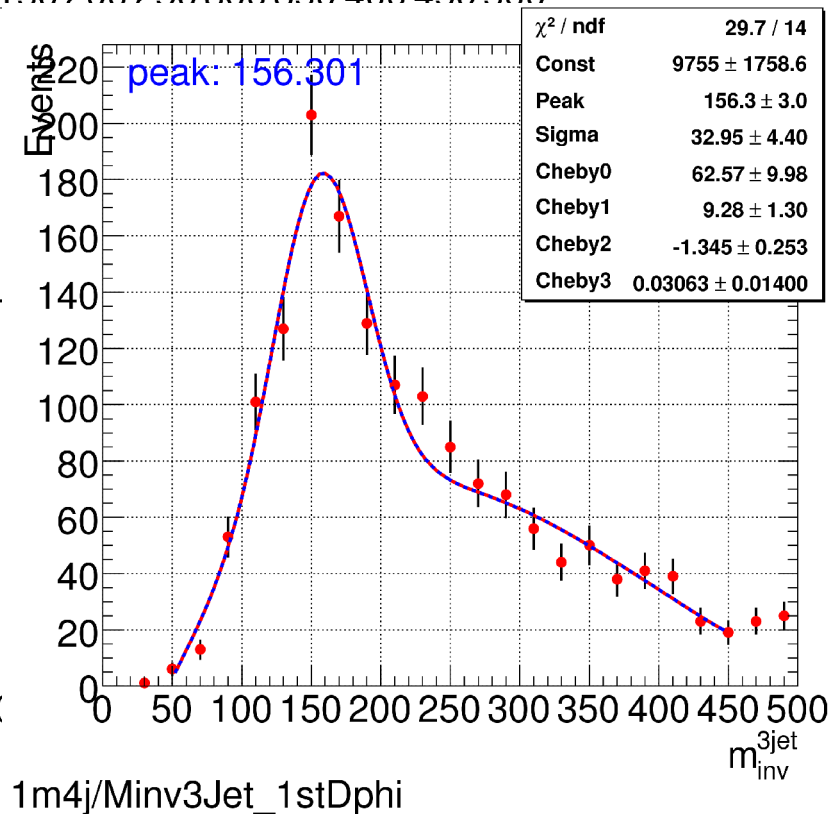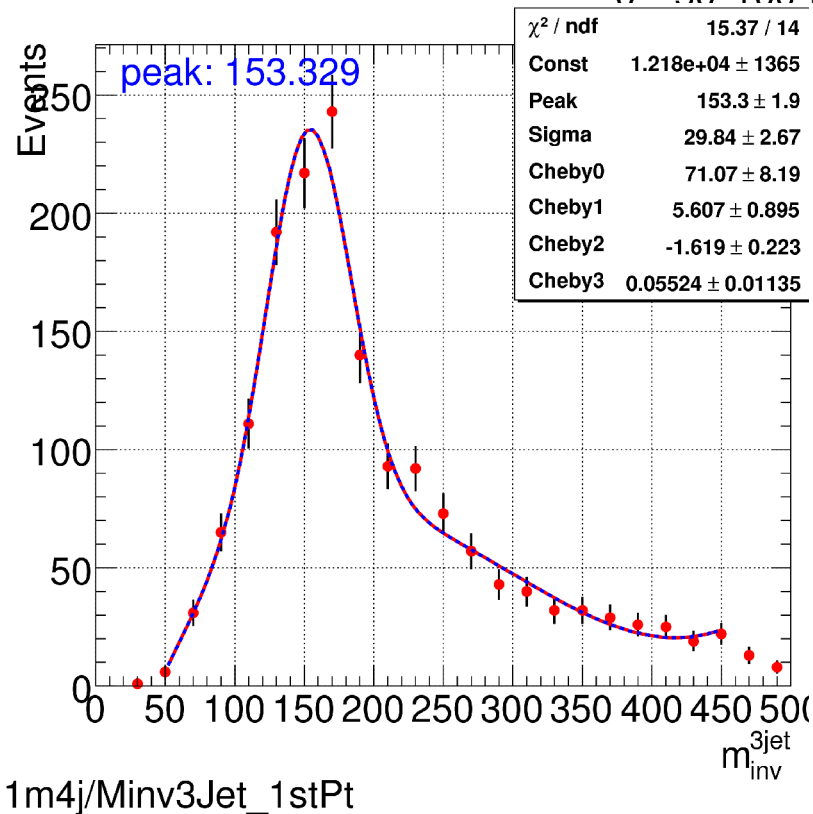

EF/1m4j/Jets

EF/1m4j/muon

Looking At Final States

- 'Relation' between Lepton and Jets (ordered by p_T) for 1m4j Events

1m4j/JetDphiRec

1m4j/JetPtRec

Looking At Final States

- M_{inv}^{3Jet} for all, highest pT, and highest Dphi 3Jet-Combinations

peak: 250.000

χ^2 / ndf	67.27 / 14
Const	$8.45e{+}04 \pm 6299$
Peak	155.6 ± 1.2
Sigma	34.55 ± 1.70
Cheby0	962.8 ± 36.8
Cheby1	118 ± 6.4
Cheby2	-27 ± 1.8
Cheby3	0.9292 ± 0.0992

peak: 153.329

χ^2 / ndf	15.37 / 14
Const	$1.218e{+}04 \pm 1365$
Peak	153.3 ± 1.9
Sigma	29.84 ± 2.67
Cheby0	71.07 ± 8.19
Cheby1	5.607 ± 0.895
Cheby2	-1.619 ± 0.223
Cheby3	0.05524 ± 0.01135

1m4j/Minv3Jet_1stPt

peak: 156.301

χ^2 / ndf	29.7 / 14
Const	9755 ± 1758.6
Peak	156.3 ± 3.0
Sigma	32.95 ± 4.40
Cheby0	62.57 ± 9.98
Cheby1	9.28 ± 1.30
Cheby2	-1.345 ± 0.253
Cheby3	0.03063 ± 0.01400

1m4j/Minv3Jet_1stDphi

'Detailed' Look At Some Triggers

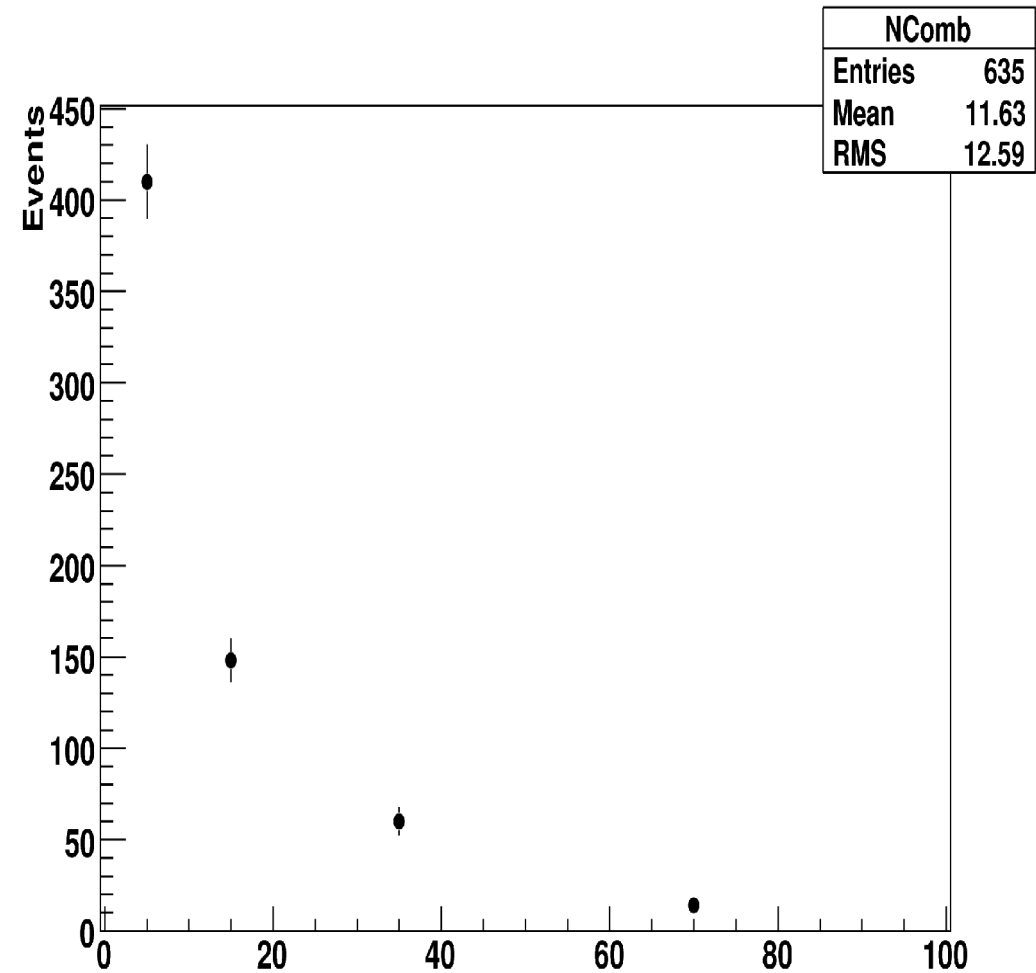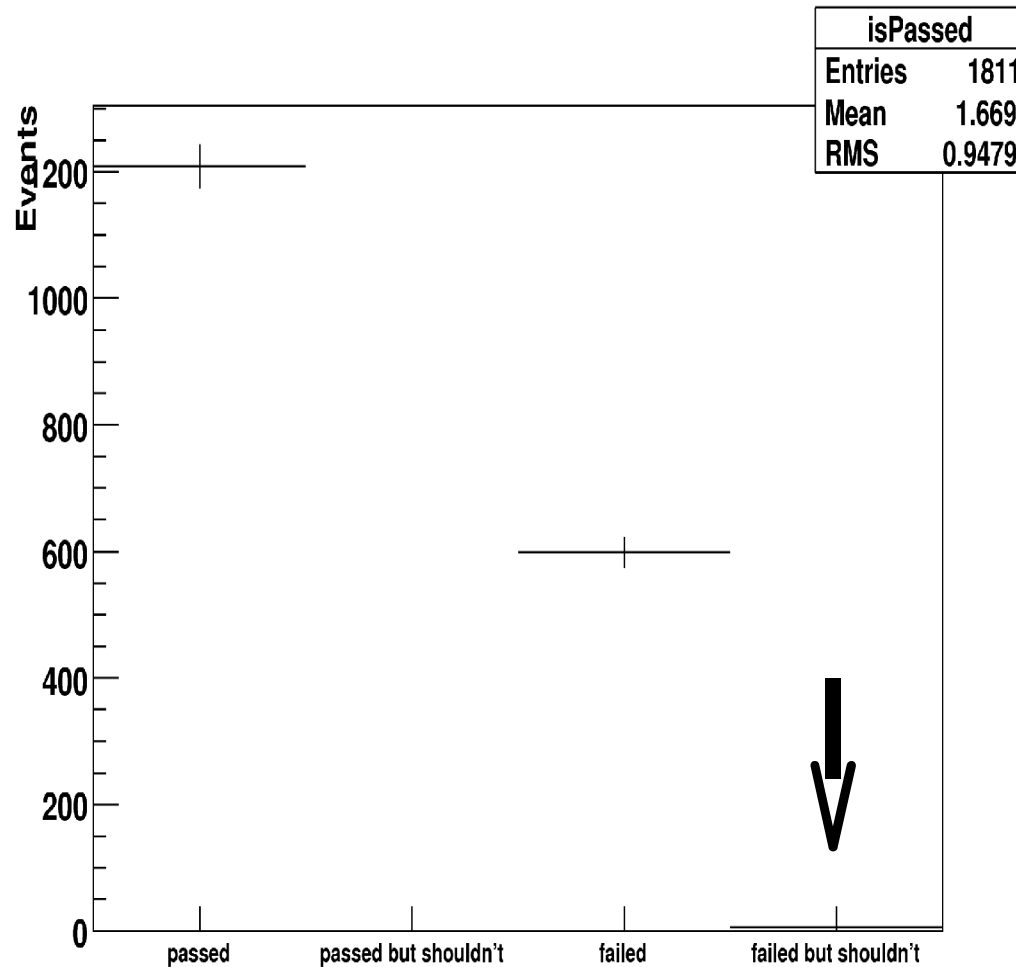- Level One Muon 20 GeV [L1_MU20] (comparing trigger objects with TrigDecision) and getting the number of possibilities that could have fired the trigger (zero excluded)

isPassed	
Entries	1830
Mean	1.27
RMS	0.6737

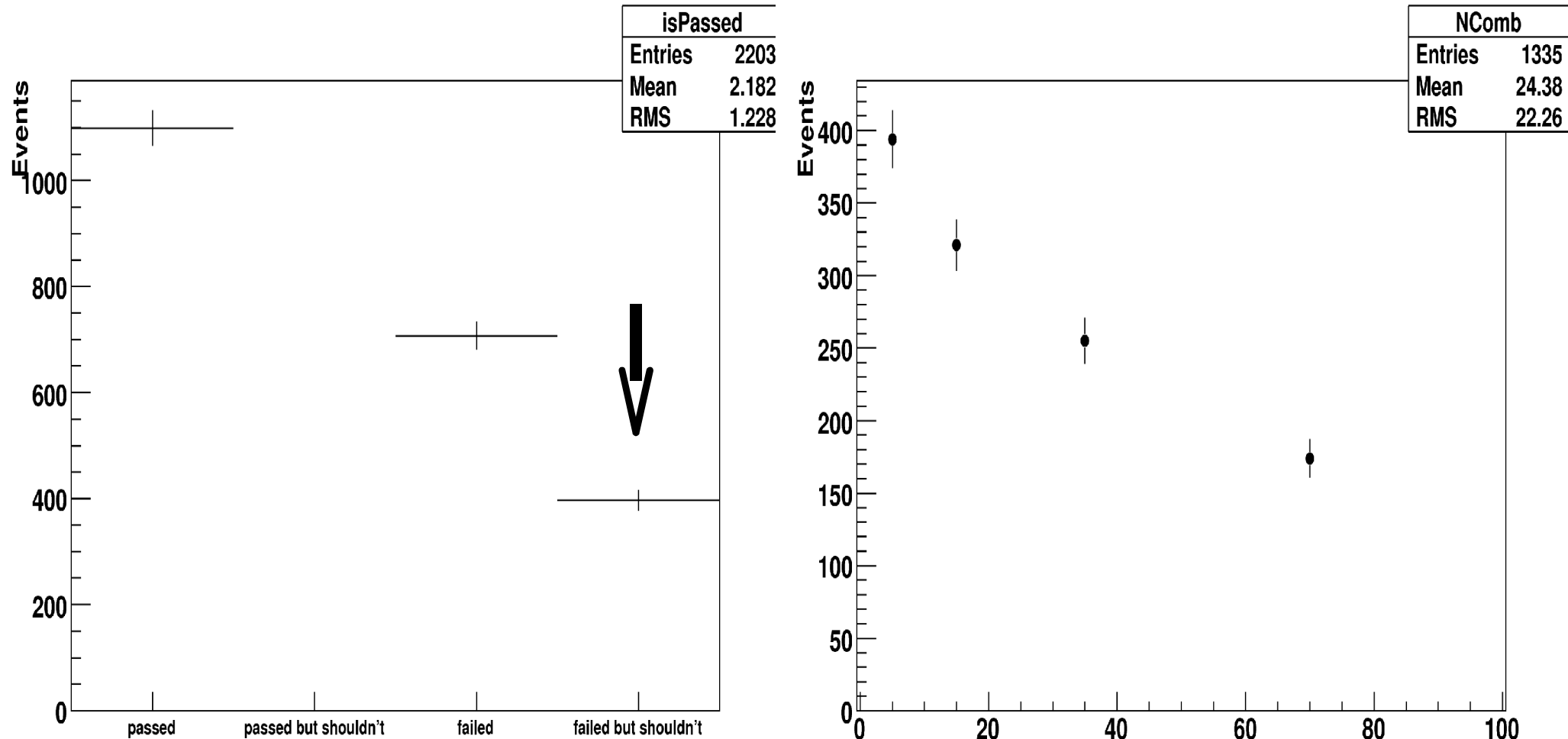| NComb	
Entries	137
Mean	2.058
RMS	0.2638
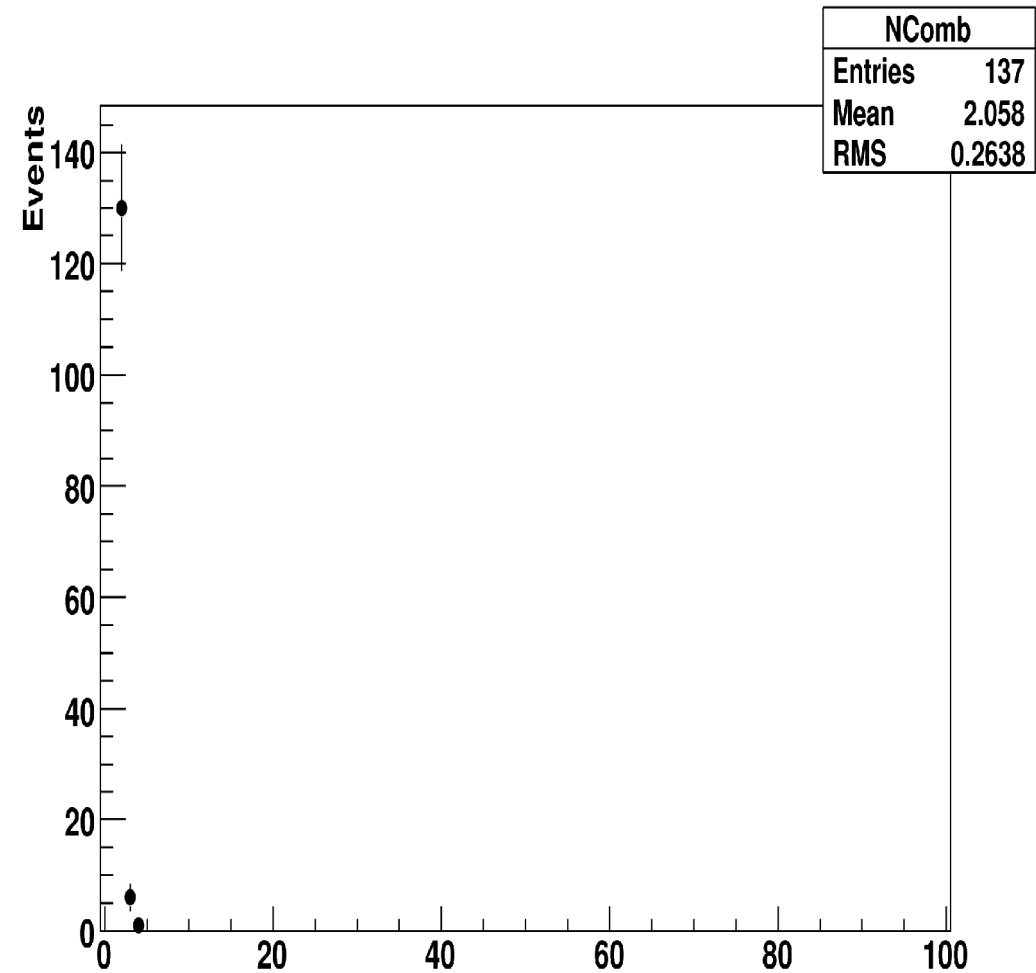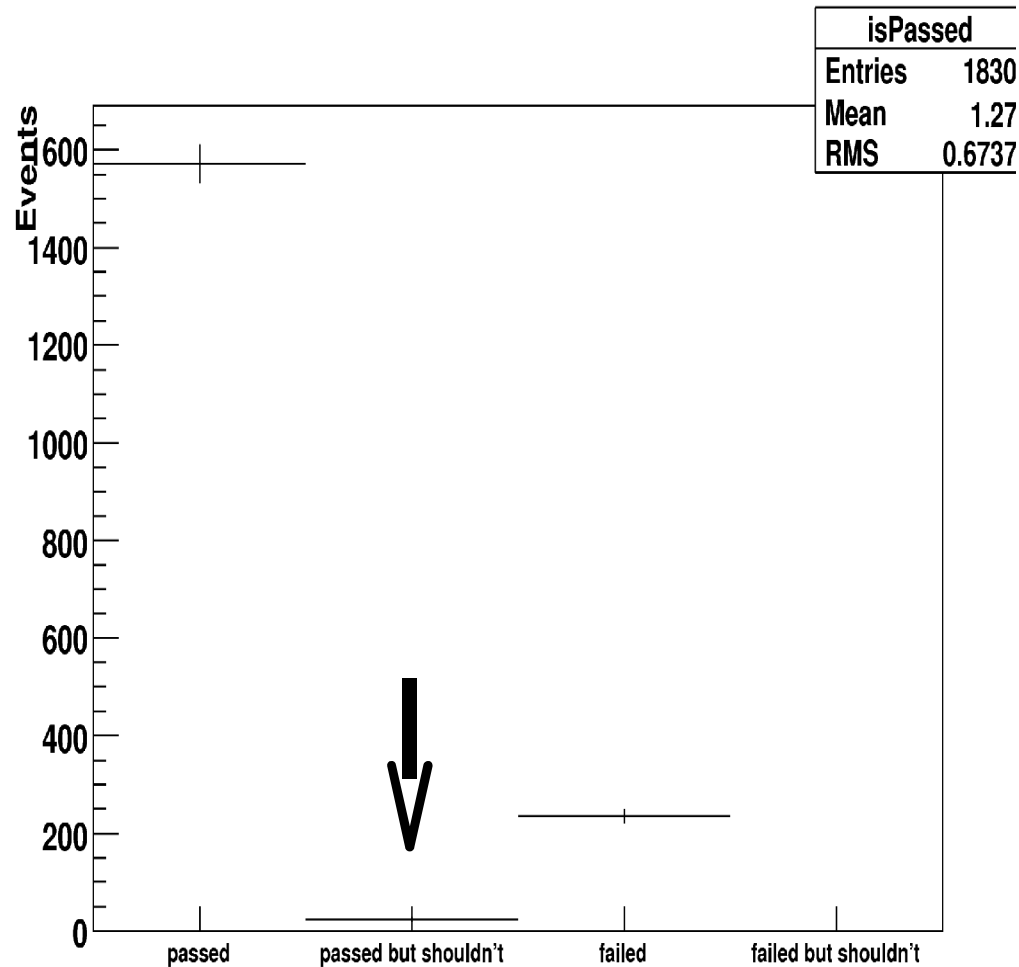
'Detailed' Look At Some Triggers

- Level Two 4 Jets 18 GeV [L2_4J18] (comparing trigger objects with TrigDecision) and getting the number of possibilities that could have fired the trigger (zero excluded)

'Detailed' Look At Some Triggers

- Eventfilter 3 Jets 18 GeV [EF_3J18] (comparing trigger objects with TrigDecision) and getting the number of possibilities that could have fired the trigger (zero excluded)

The End