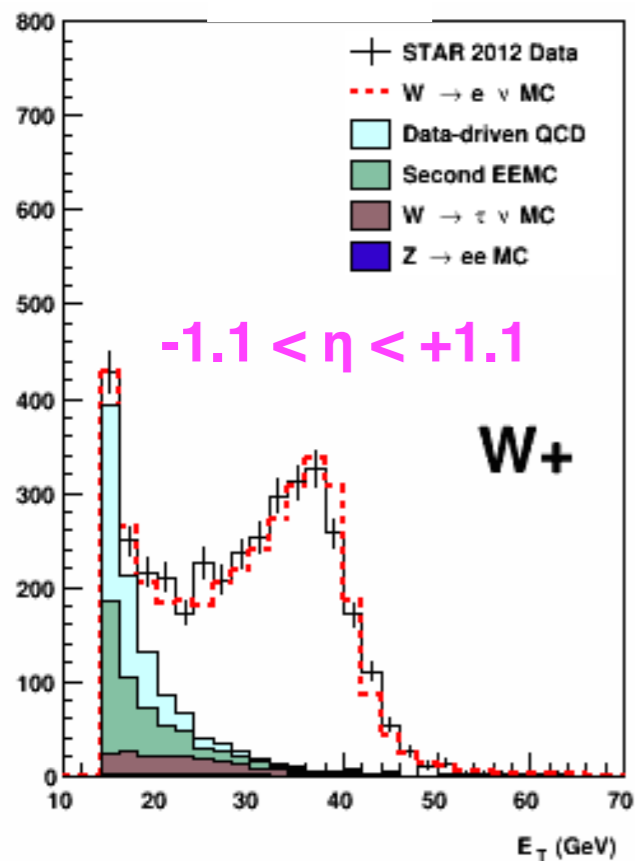


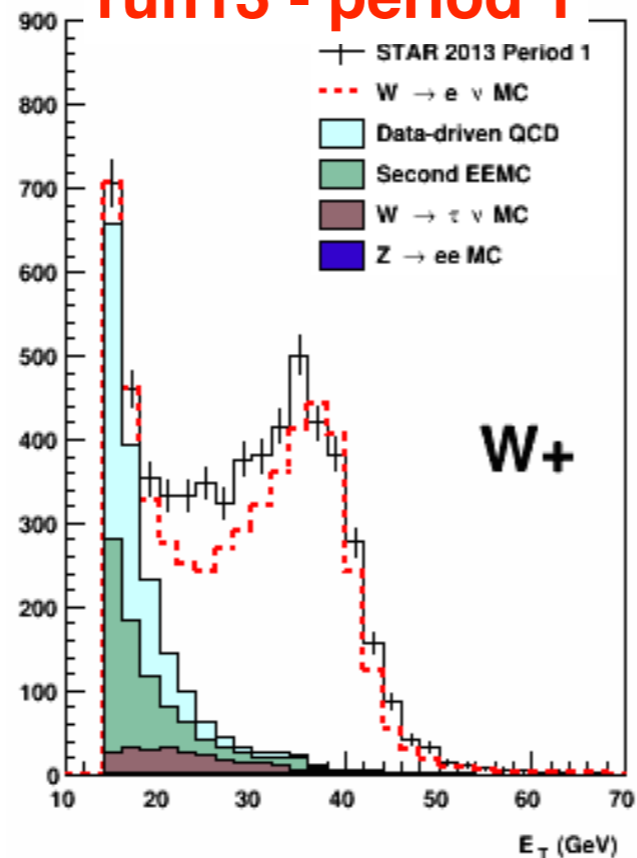
Analysis Updates

W meeting - 2/6/15

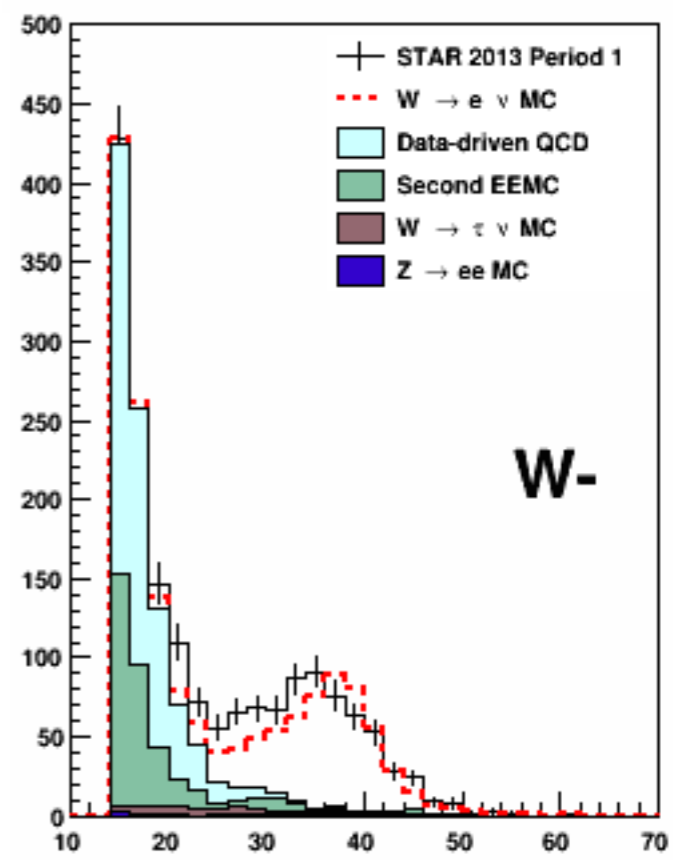
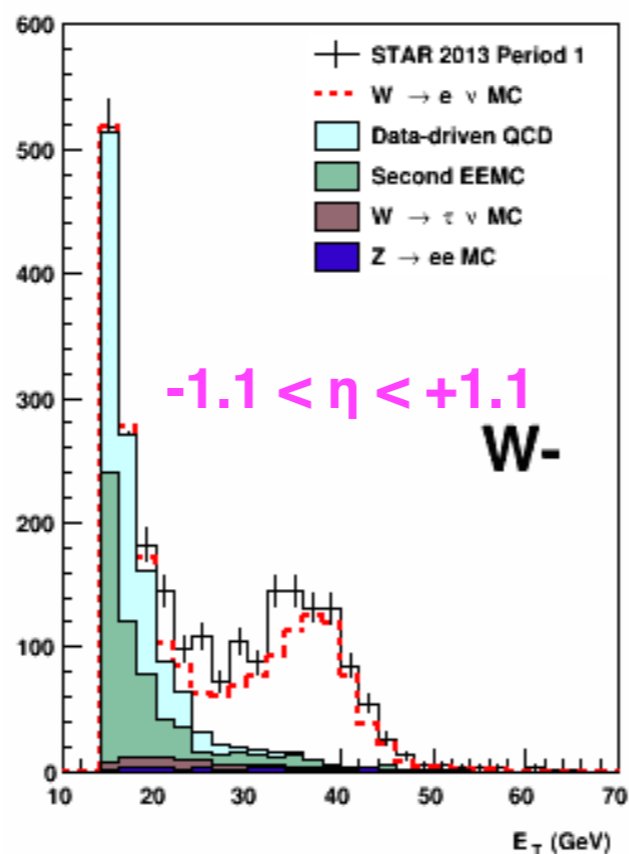
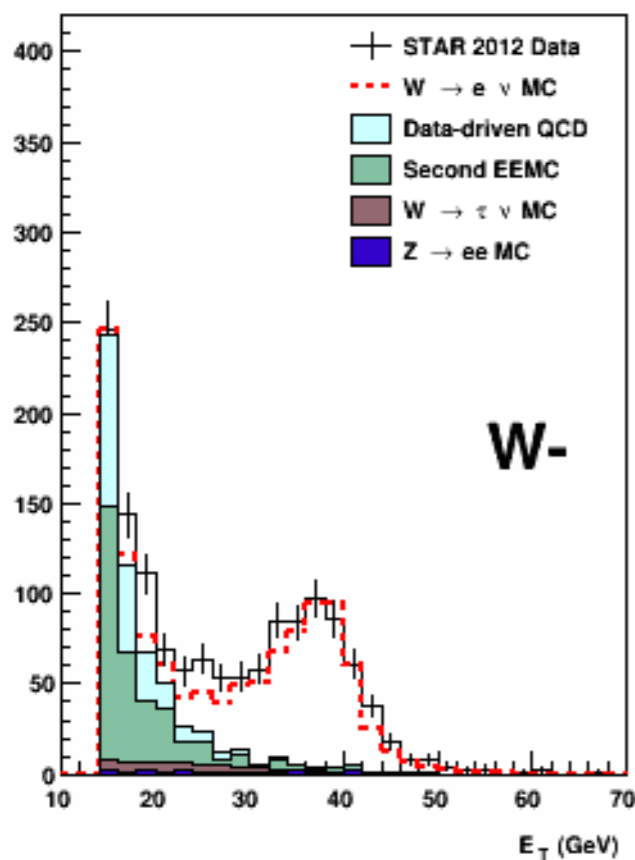
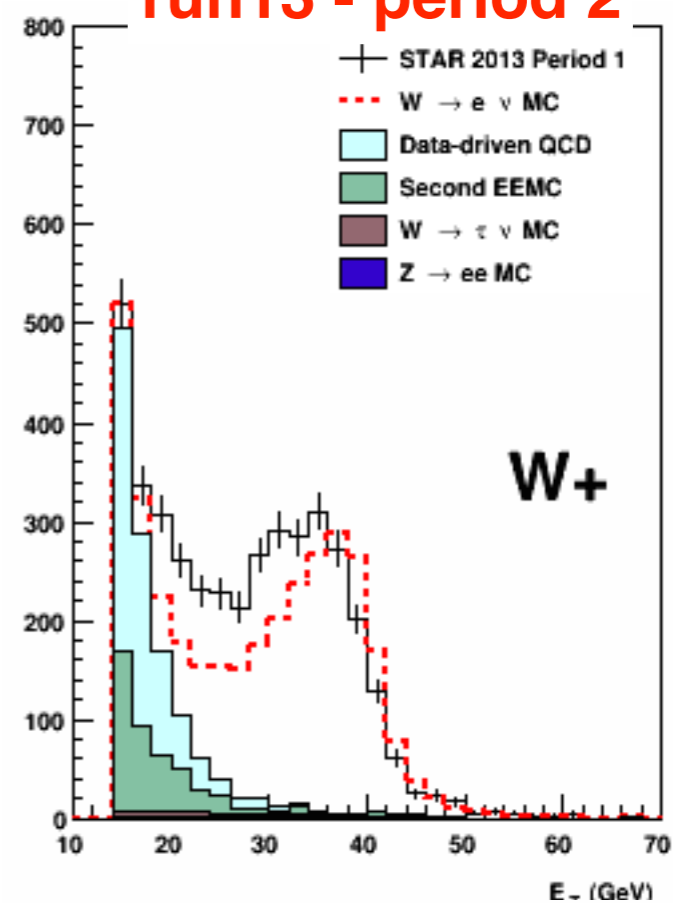
run 12



run13 - period 1

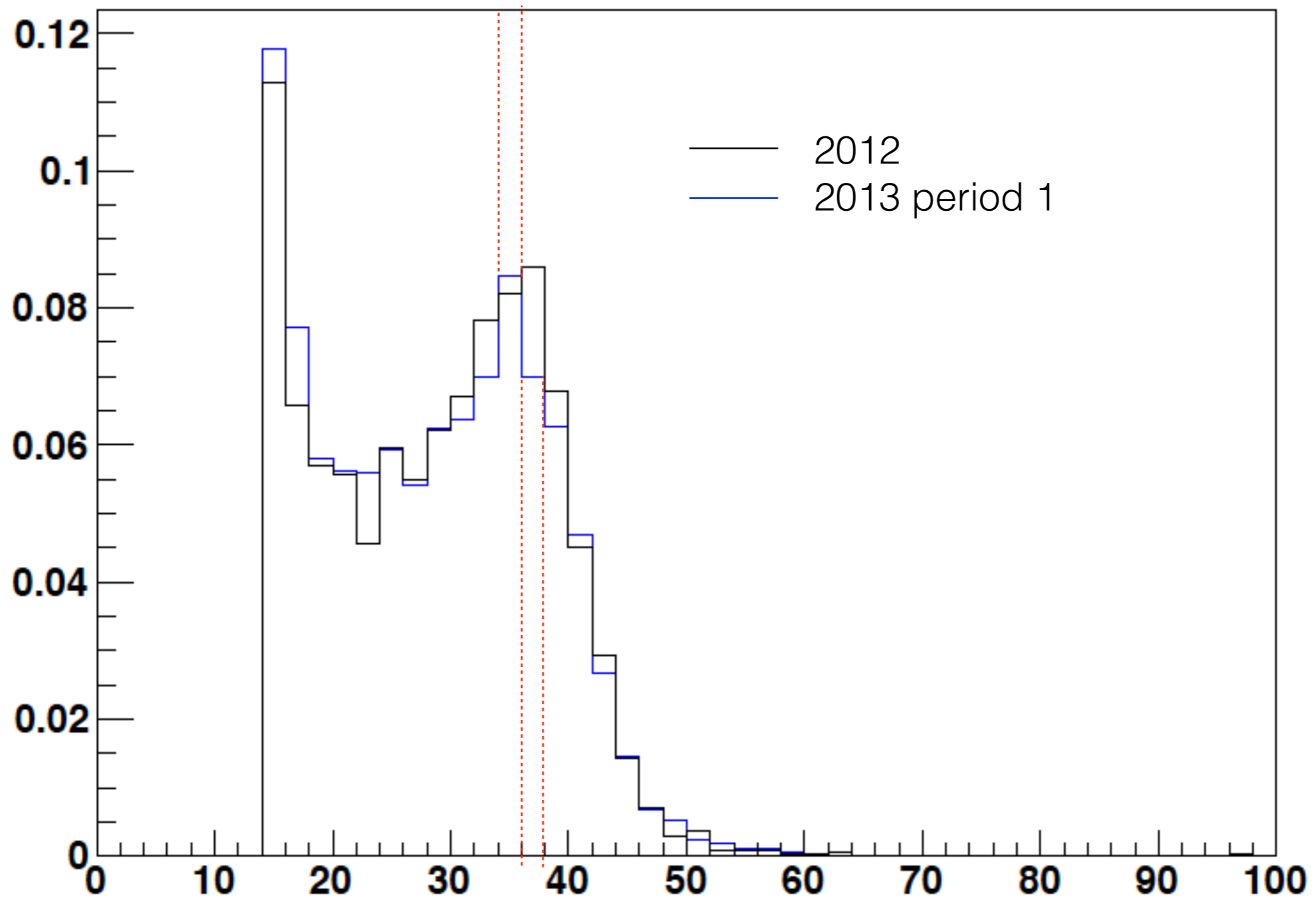


run13 - period 2



ET Distribution Comparisons

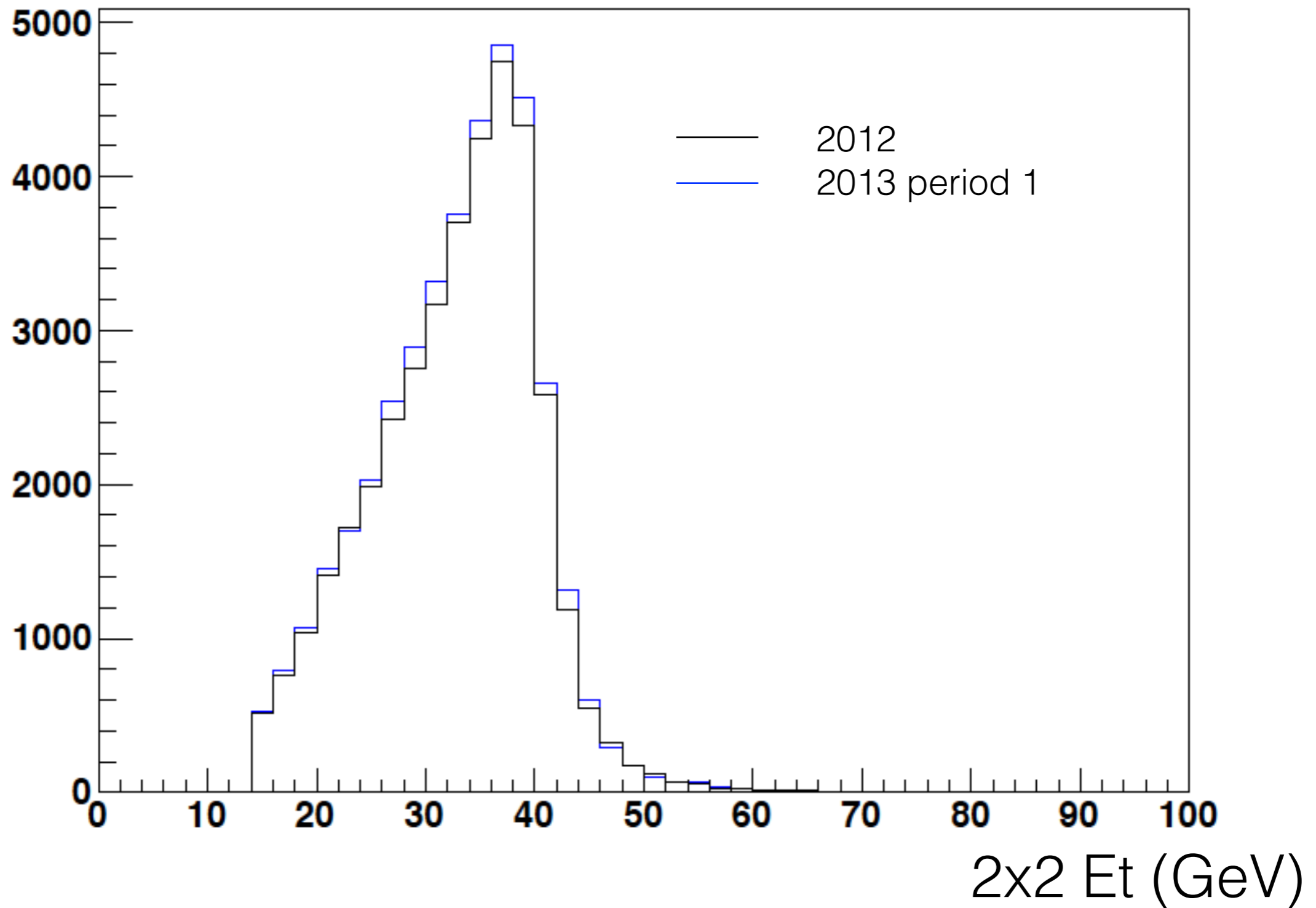
Barrel: pos_muclustpTbal_wE



2×2 Et (GeV)

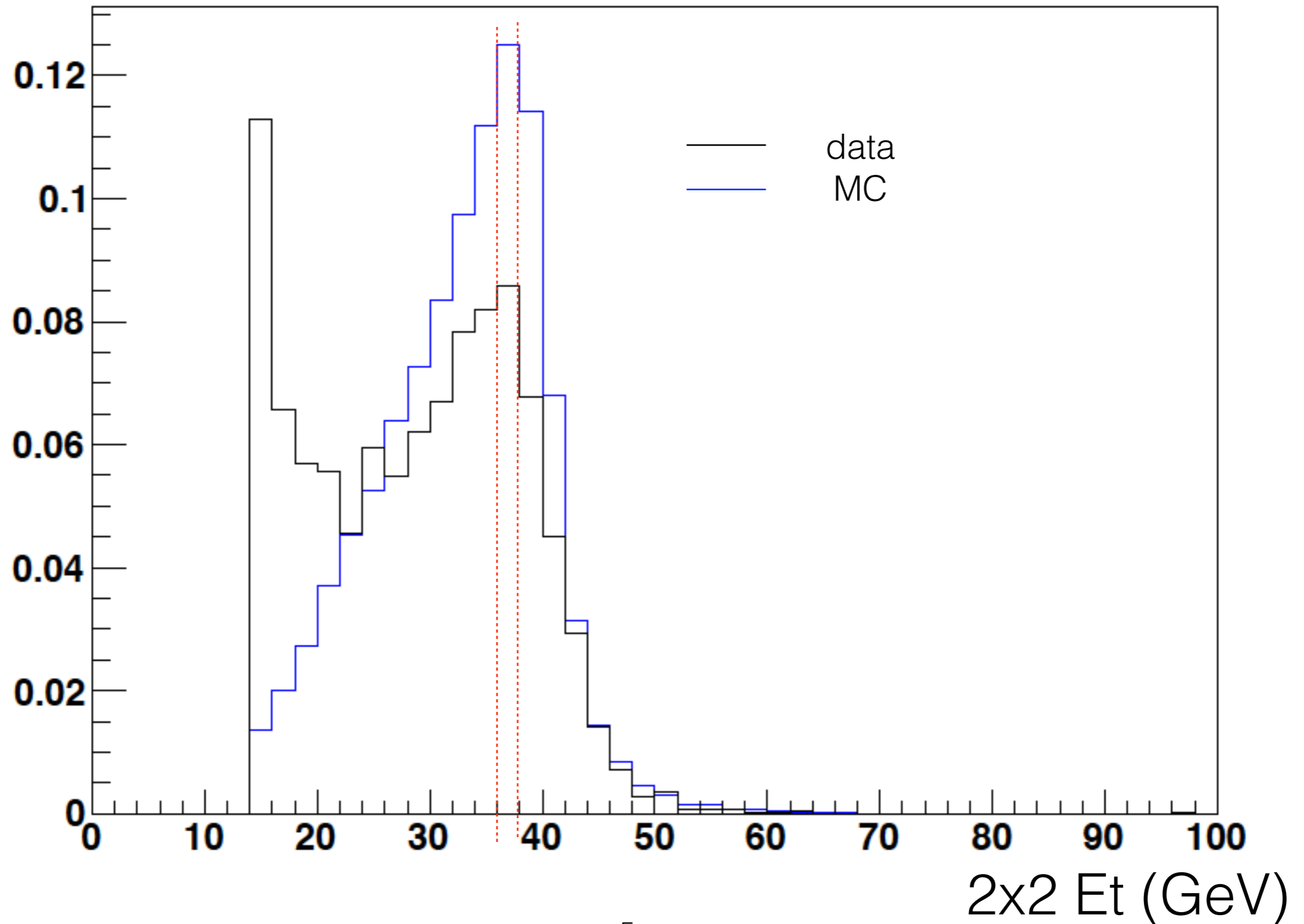
$$W^+ \longrightarrow e^+ \nu \quad \text{MC}$$

Barrel: pos_muclustpTbal_wE



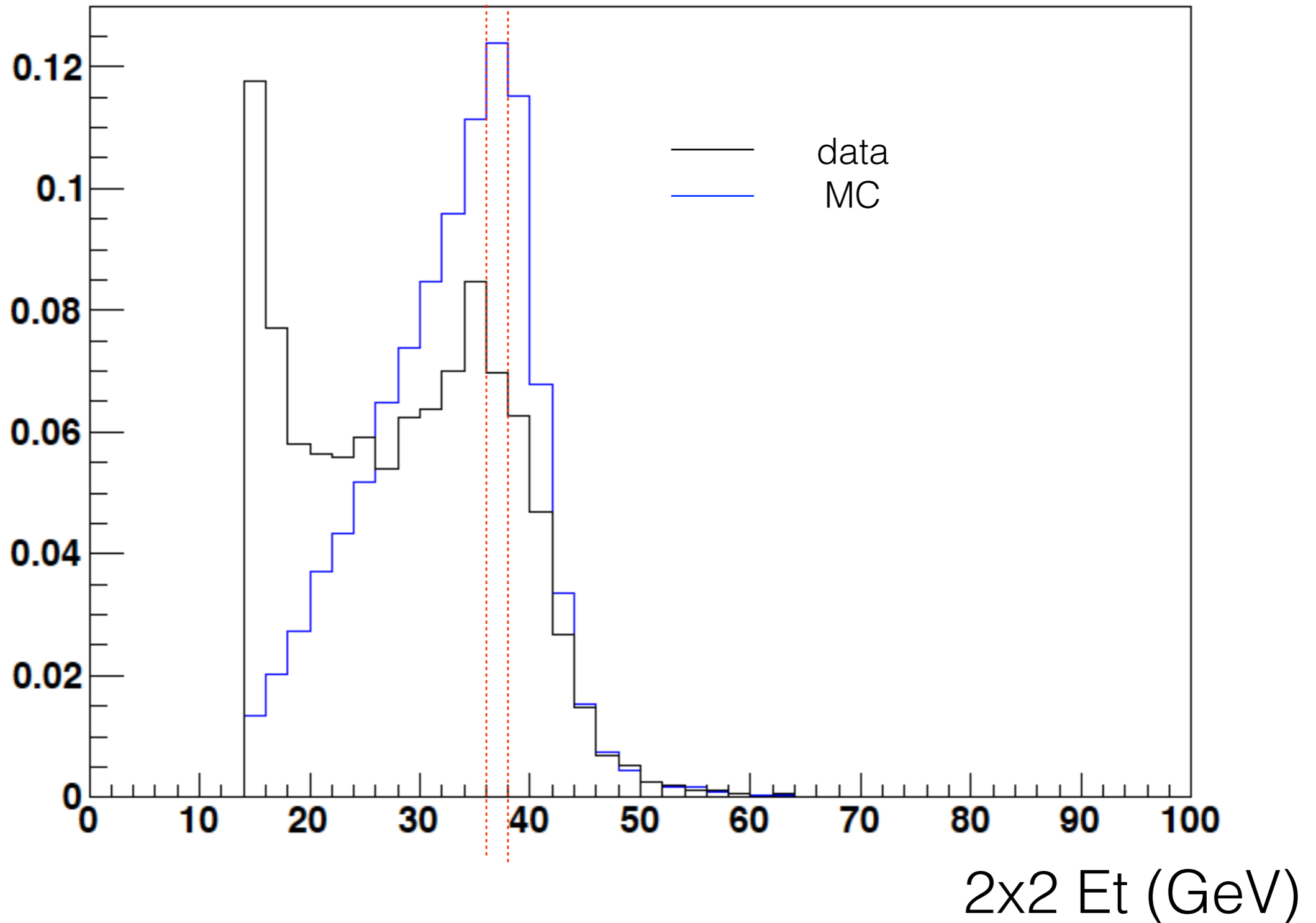
Run 12 Data and $W^+ \rightarrow e^+ \nu$ MC

Barrel: pos_muclustpTbal_wE



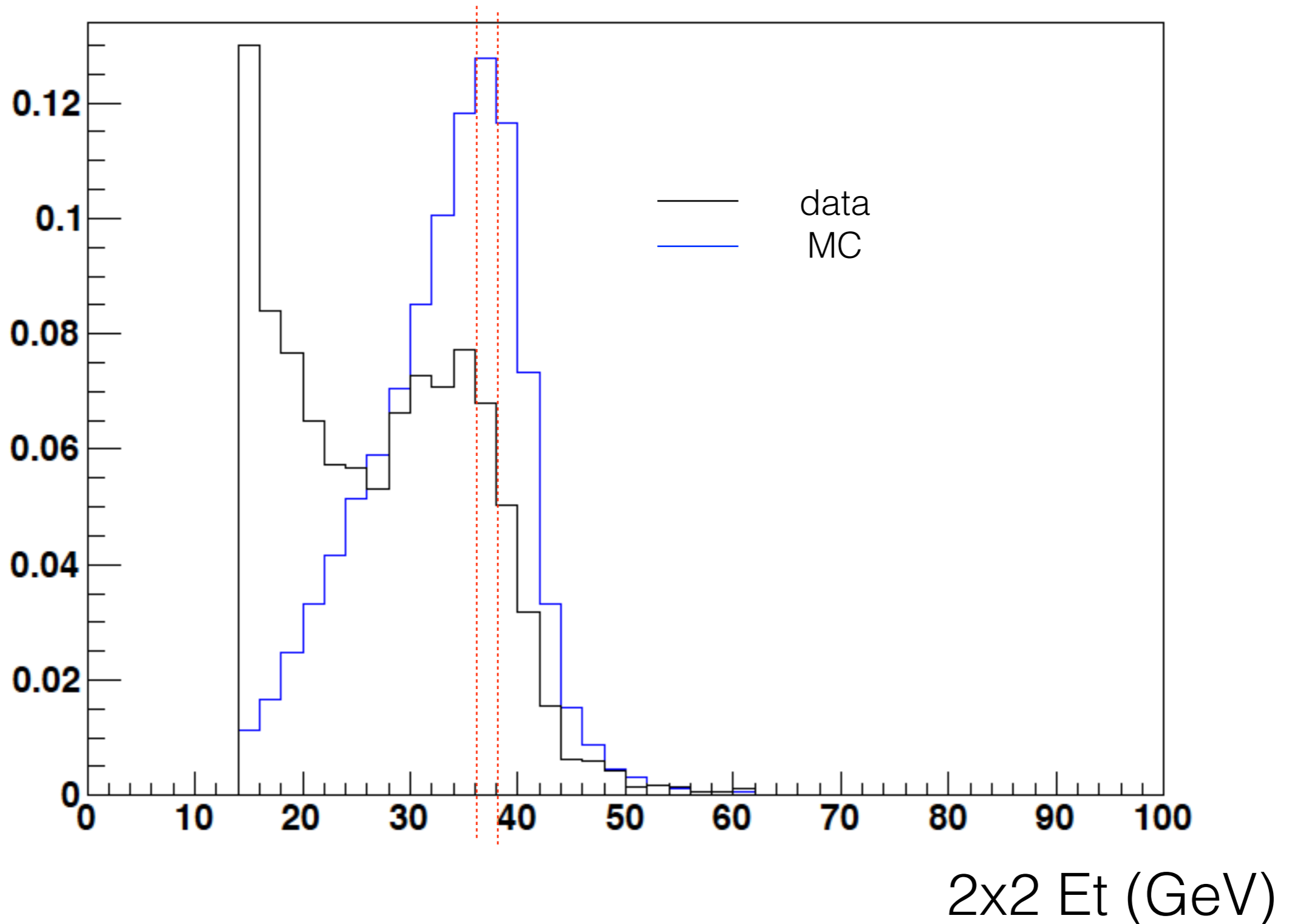
Run 13 period 1 Data and $W^+ \rightarrow e^+ \nu$ MC

Barrel: pos_muclustpTbal_wE



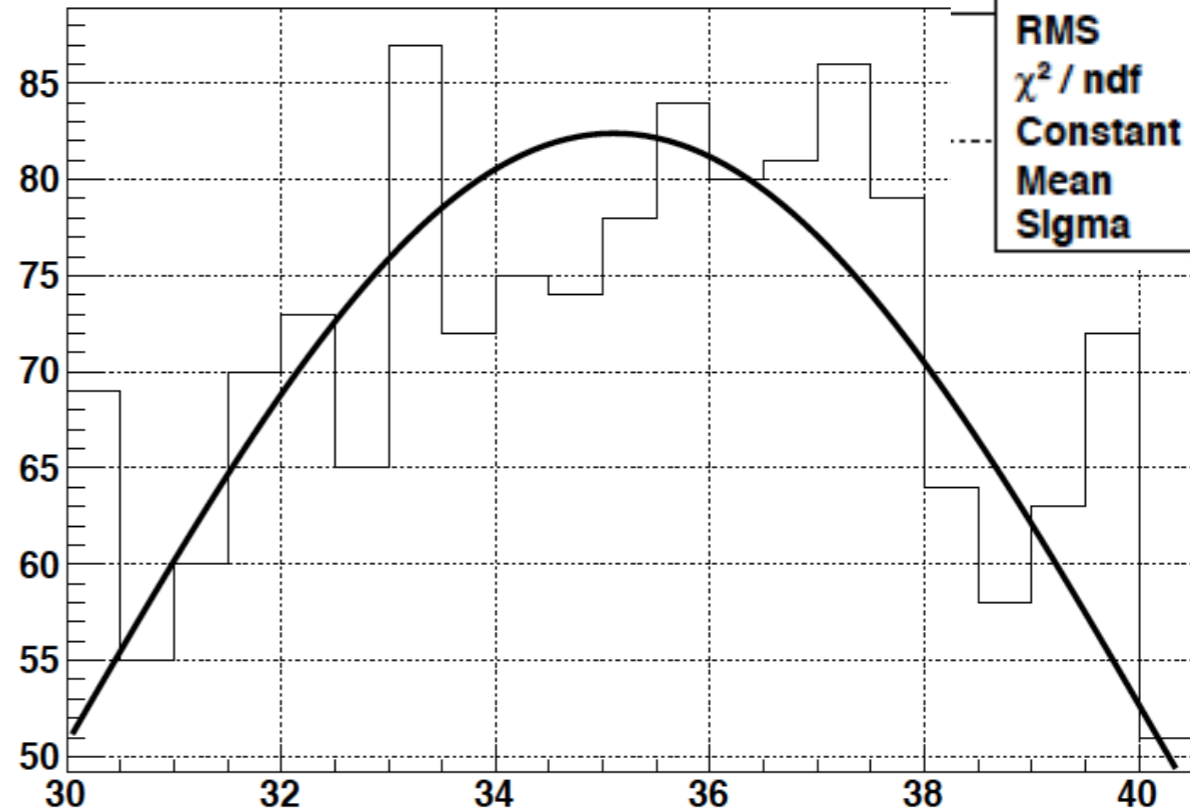
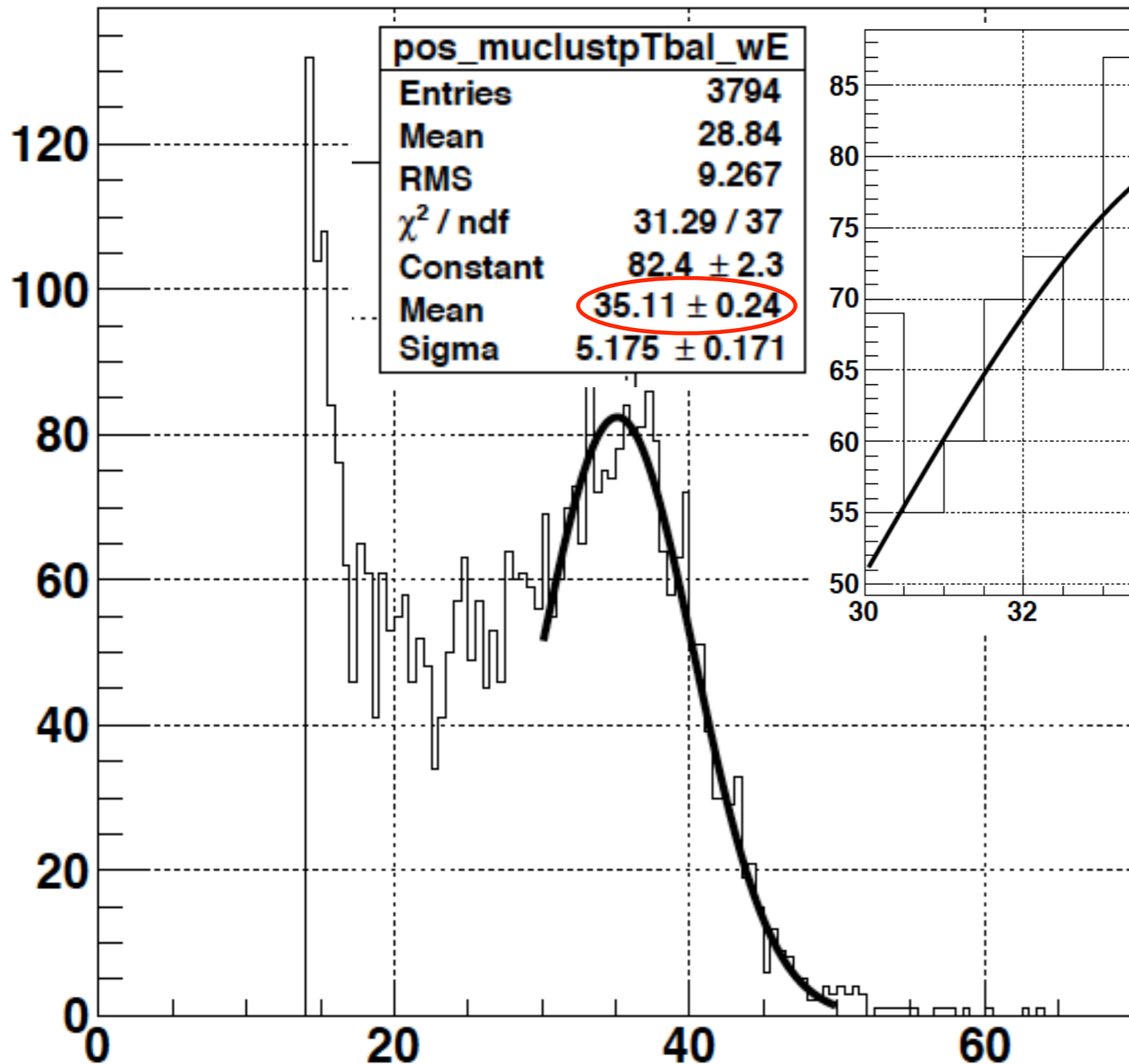
Run 13 period 2 Data and $W^+ \rightarrow e^+ \nu$ MC

Barrel: pos_muclustpTbal_wE

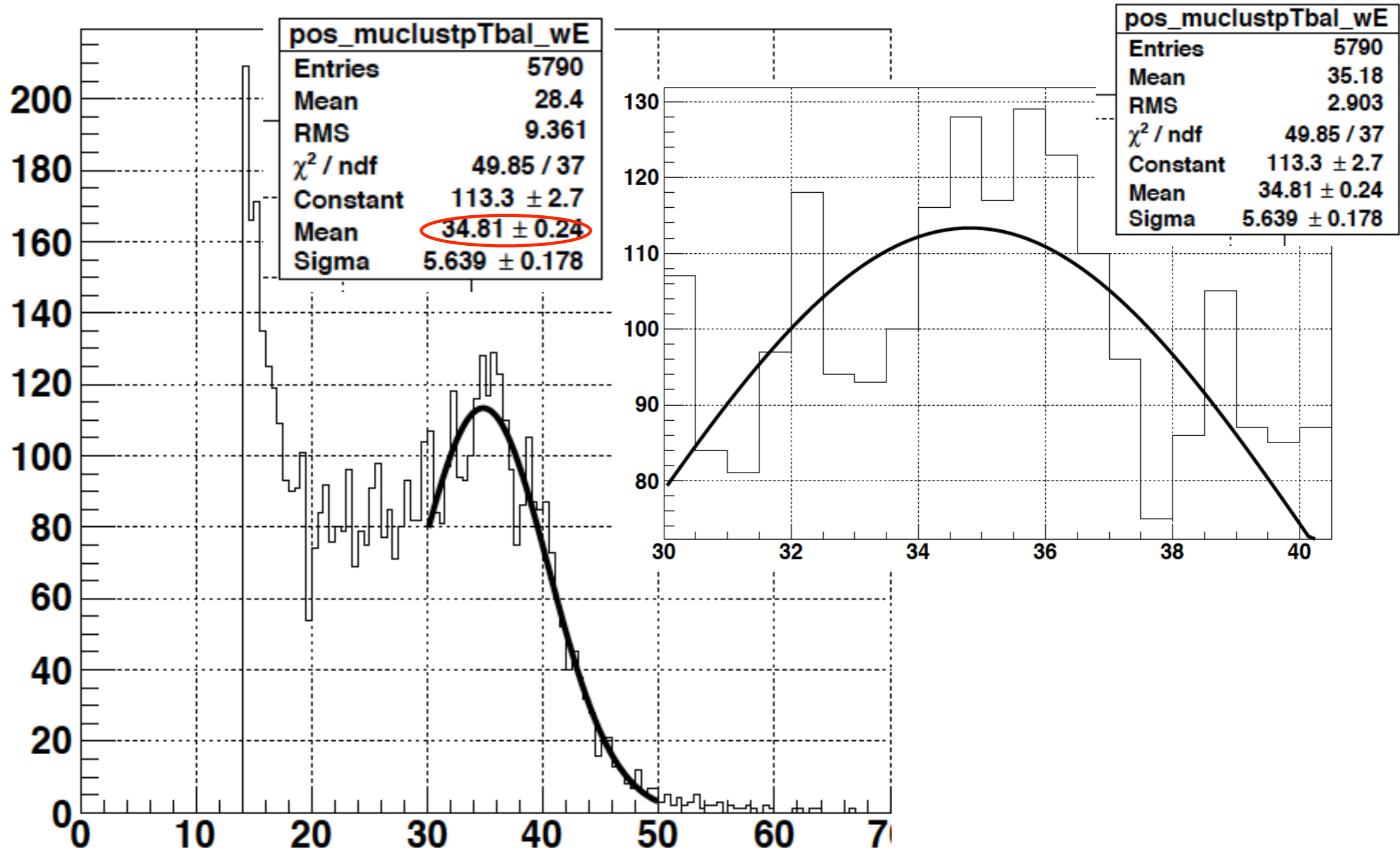


Run 12 "gaus" fit [30-50]

Data-run12

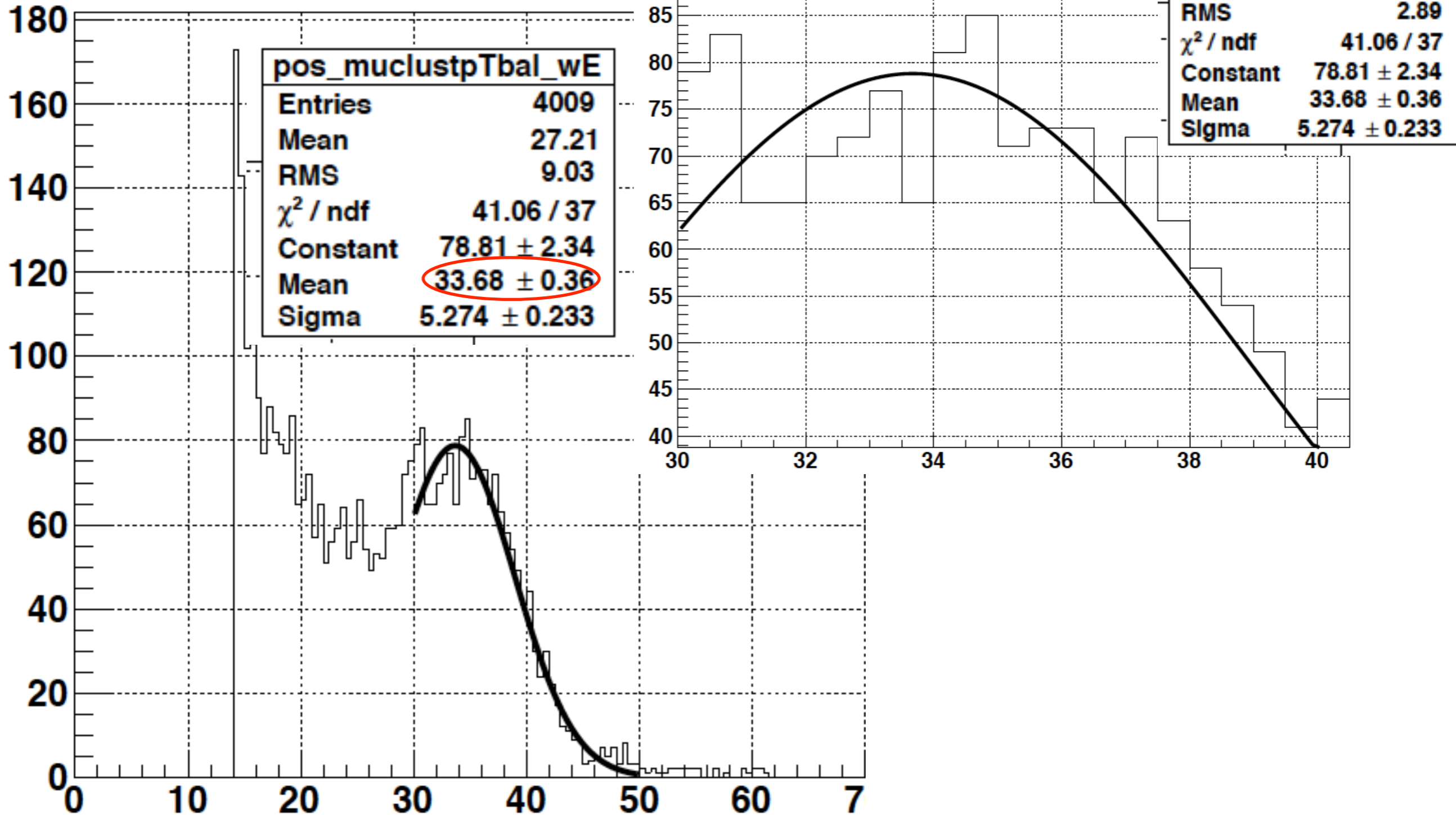


Run 13 period 1 “gaus” fit [30-50]

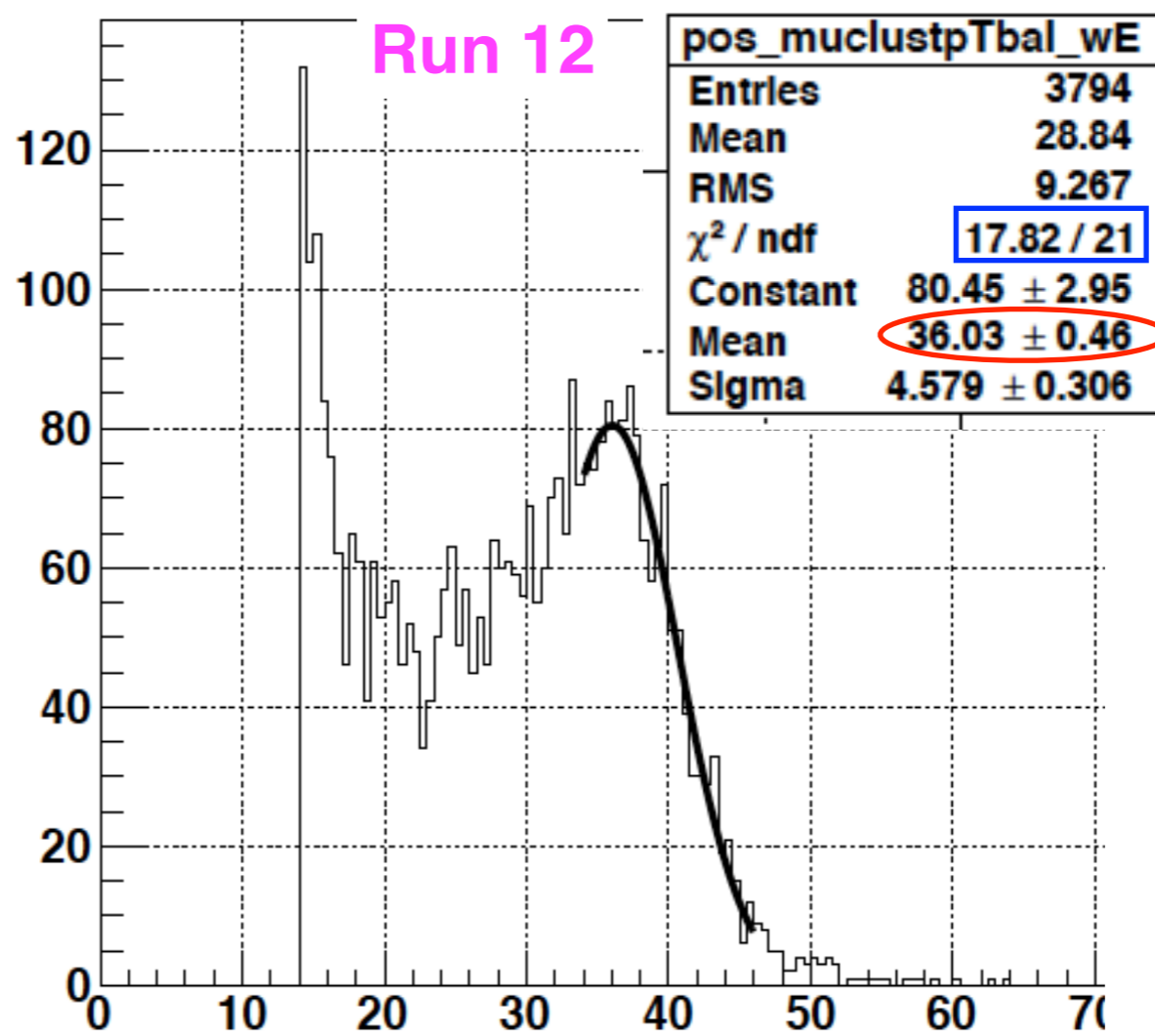


Run 13 period 2 “gaus” fit [30-50]

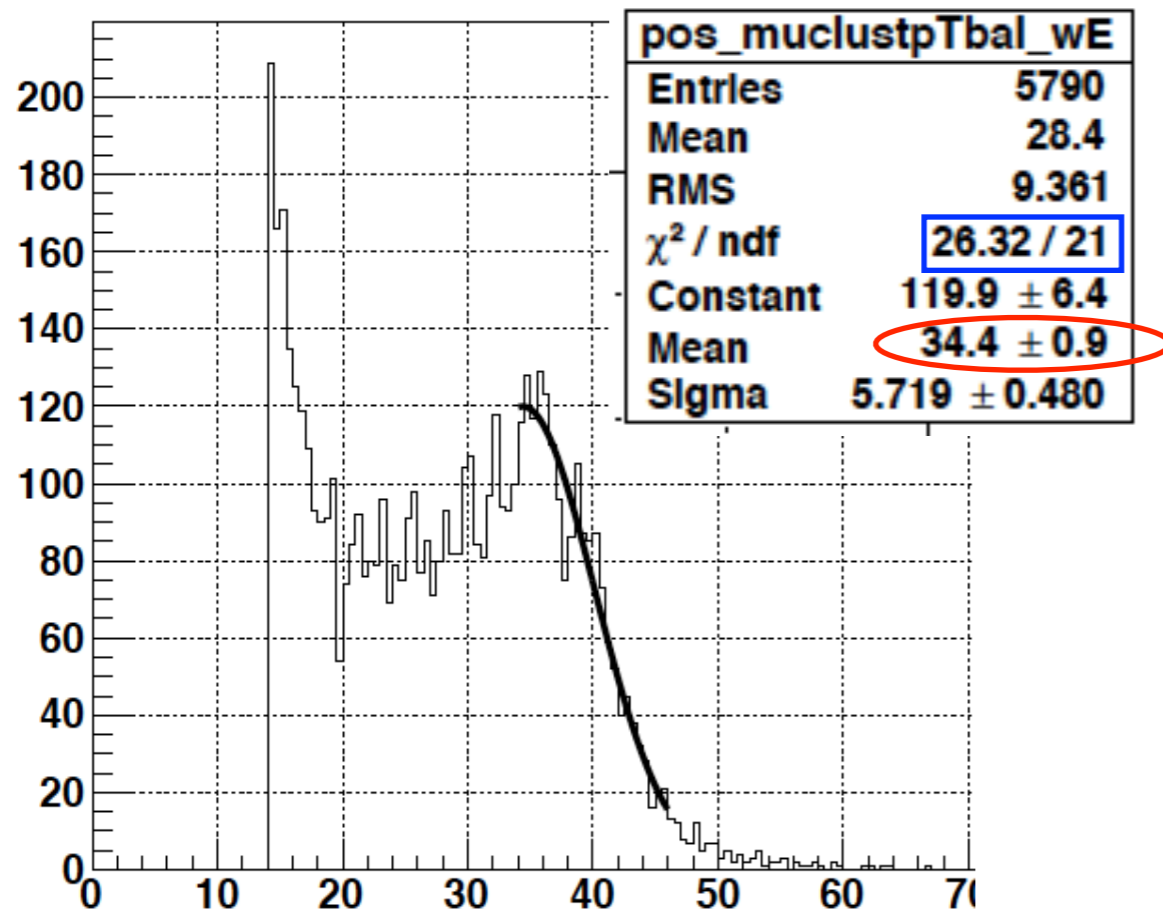
Data-period2



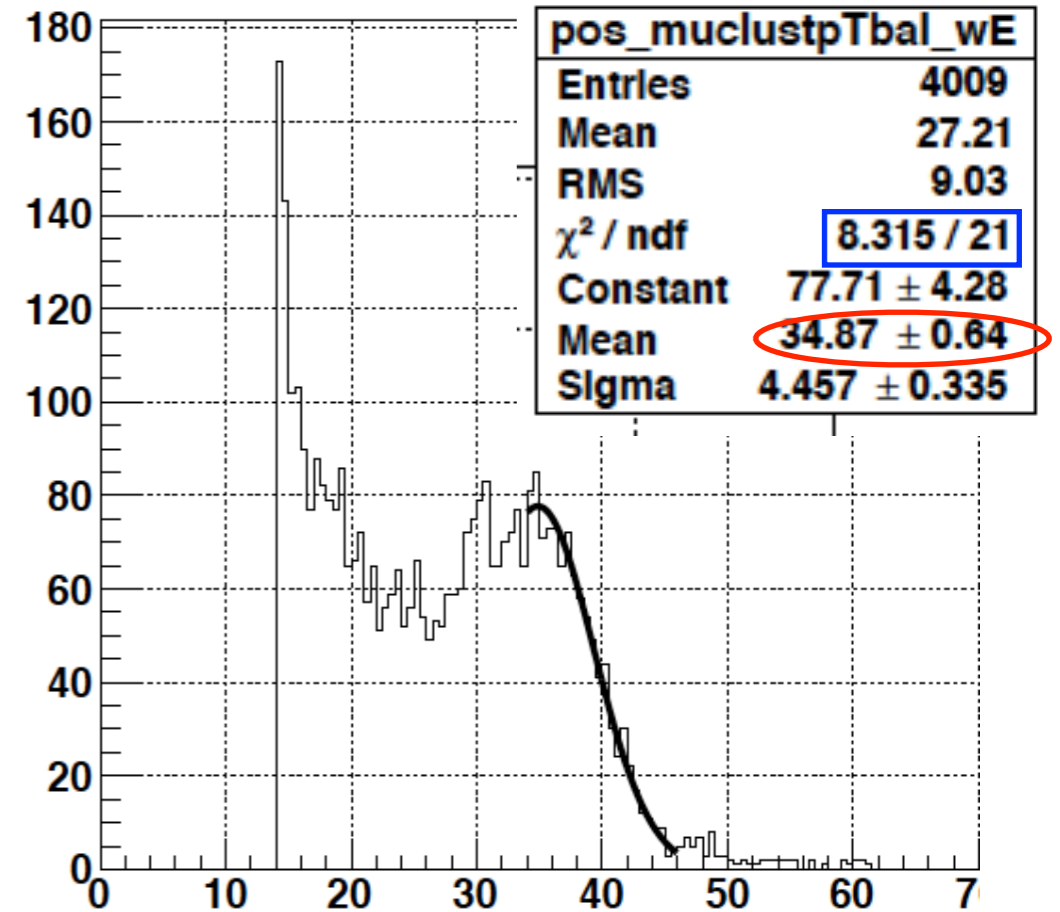
W⁺ ET
 “gaus” fit
 [36-45]
 GeV



Run 13 period 1

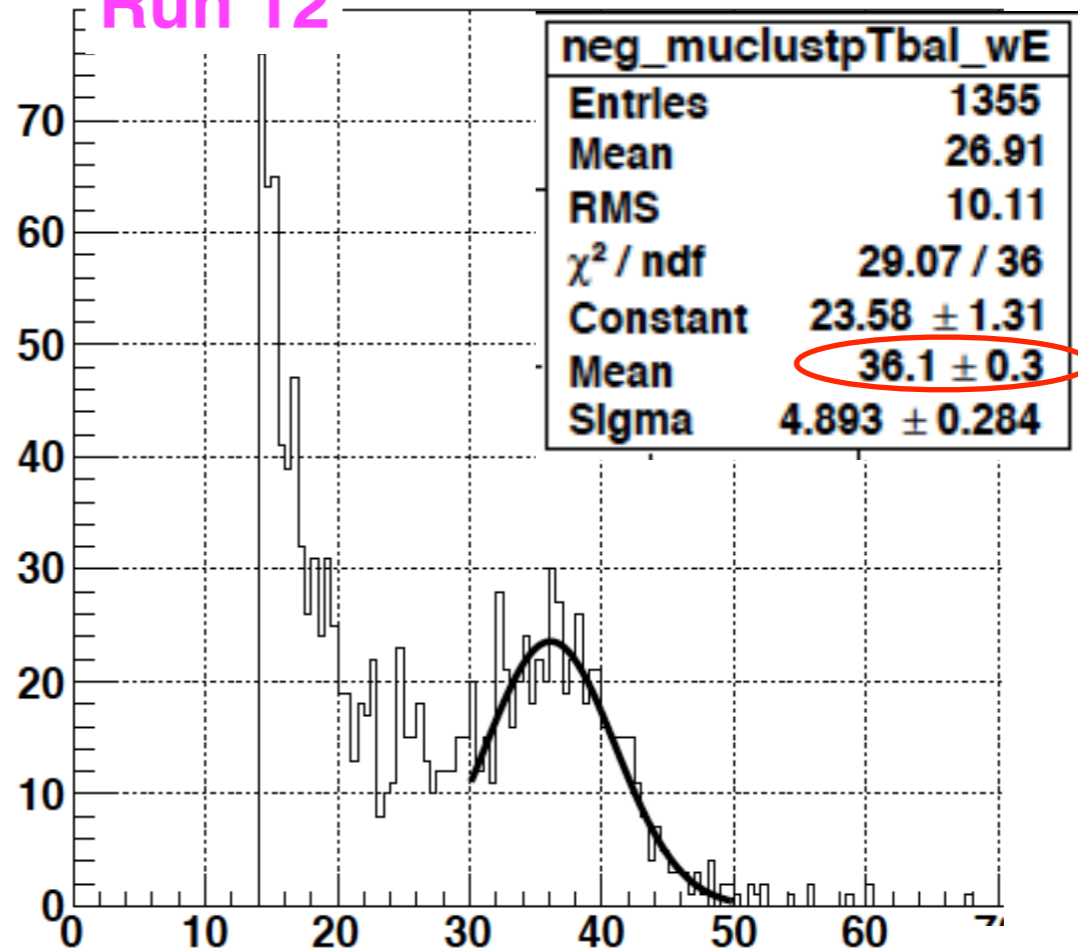


Run 13 period 2

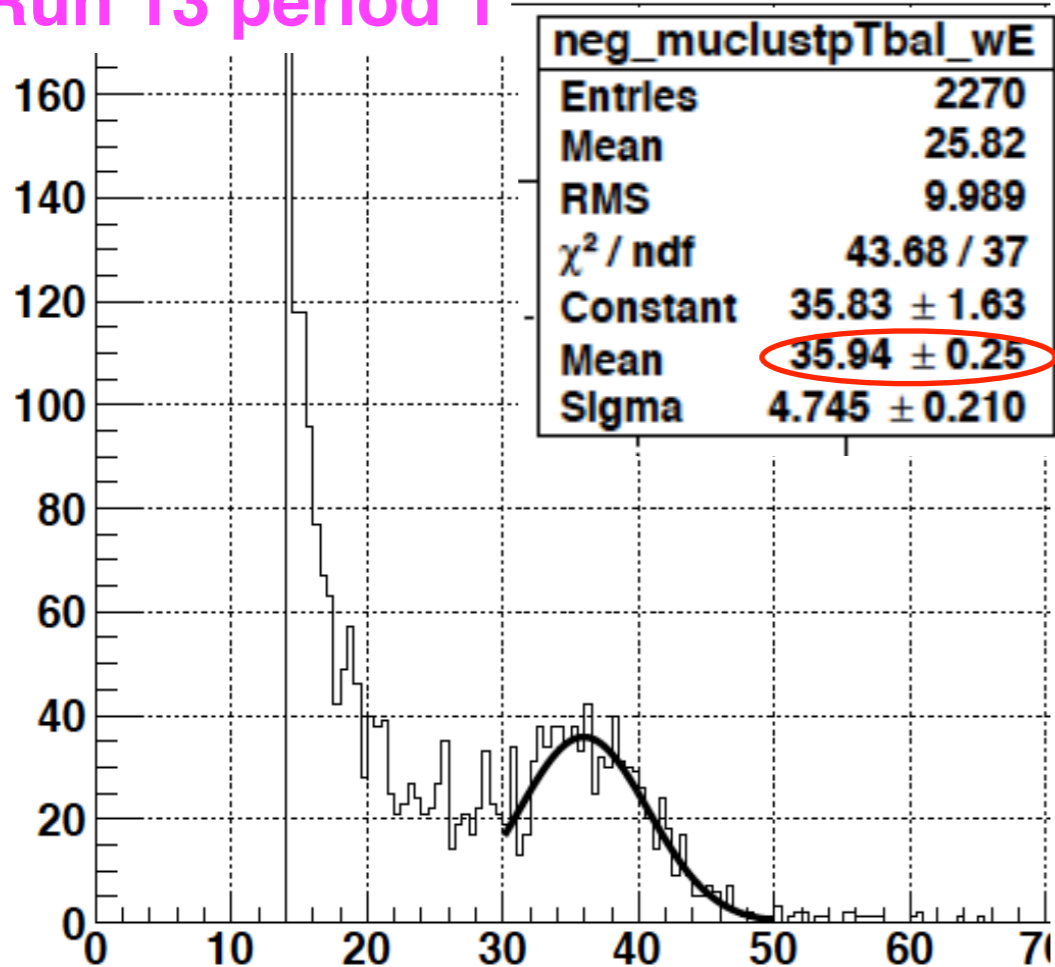


W⁻ ET “gaus” fit [30-45] GeV

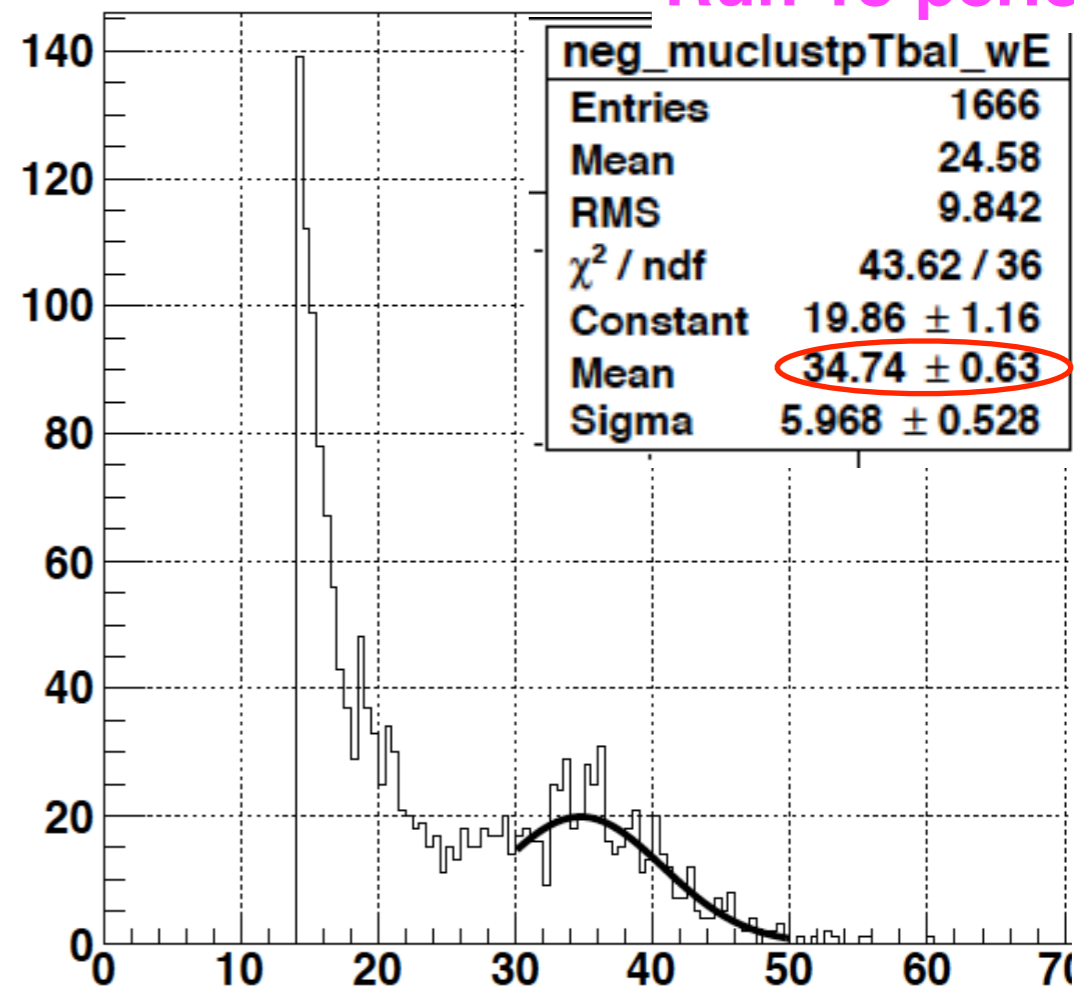
Run 12



Run 13 period 1

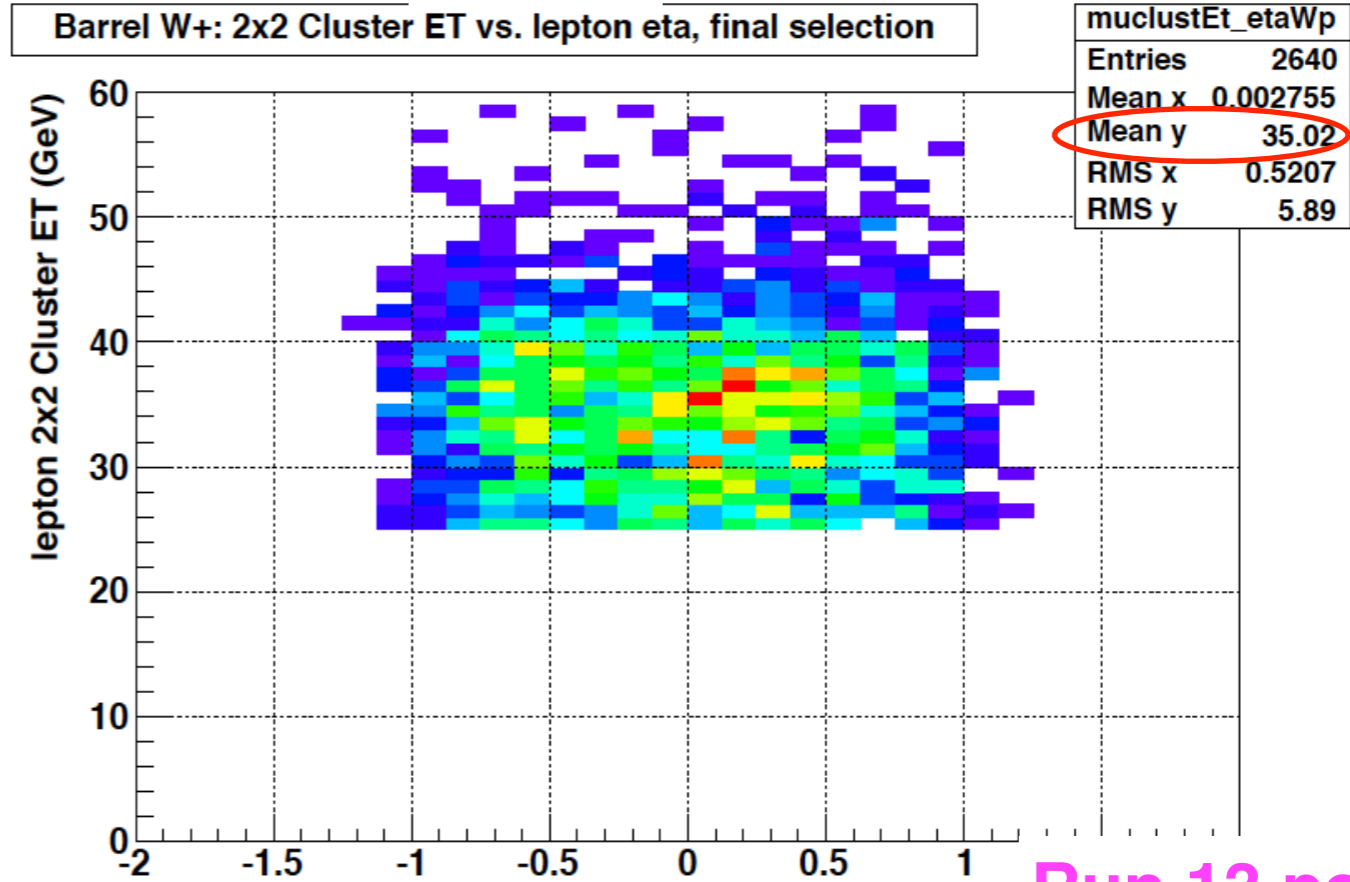


Run 13 period 2



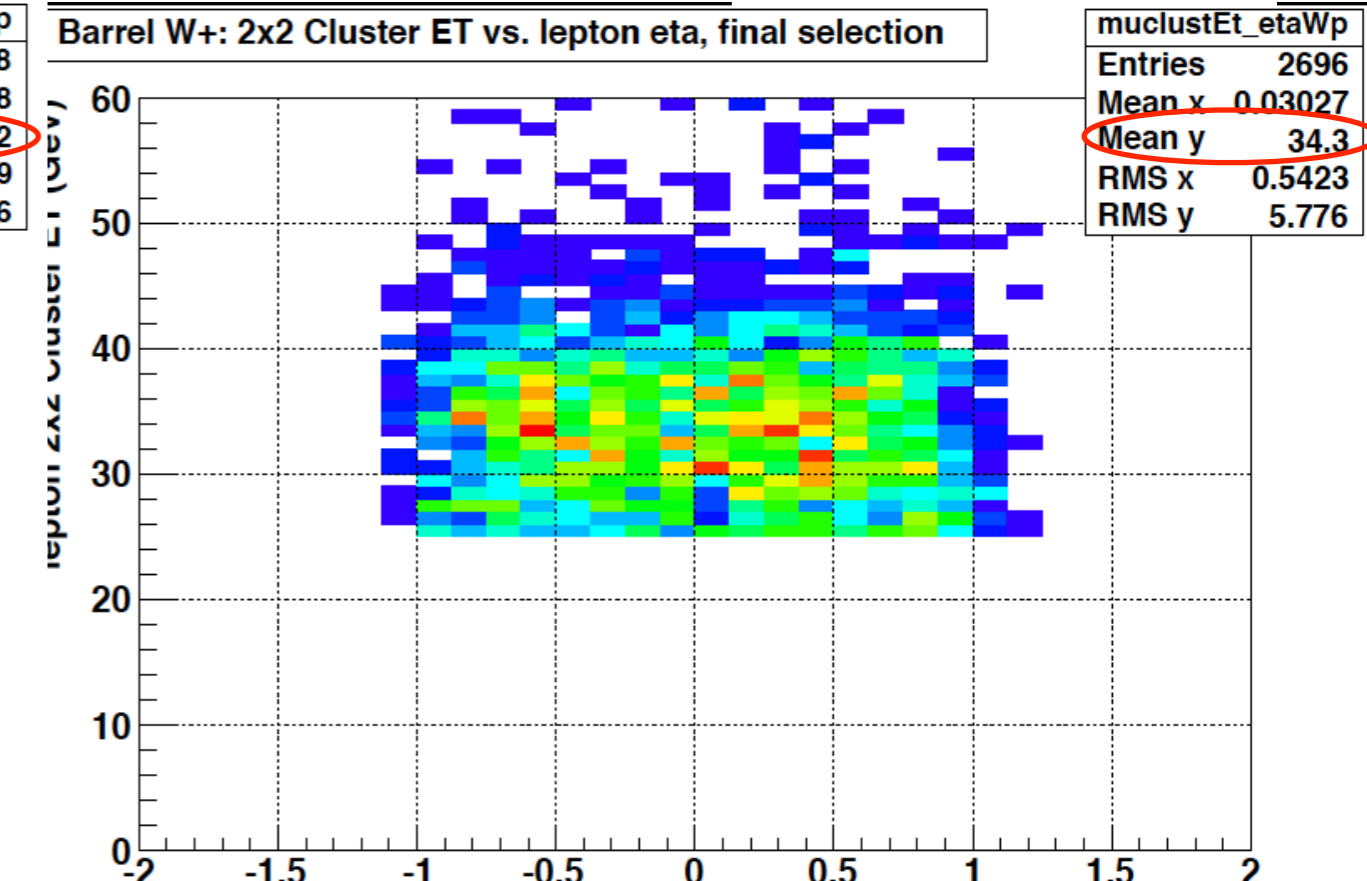
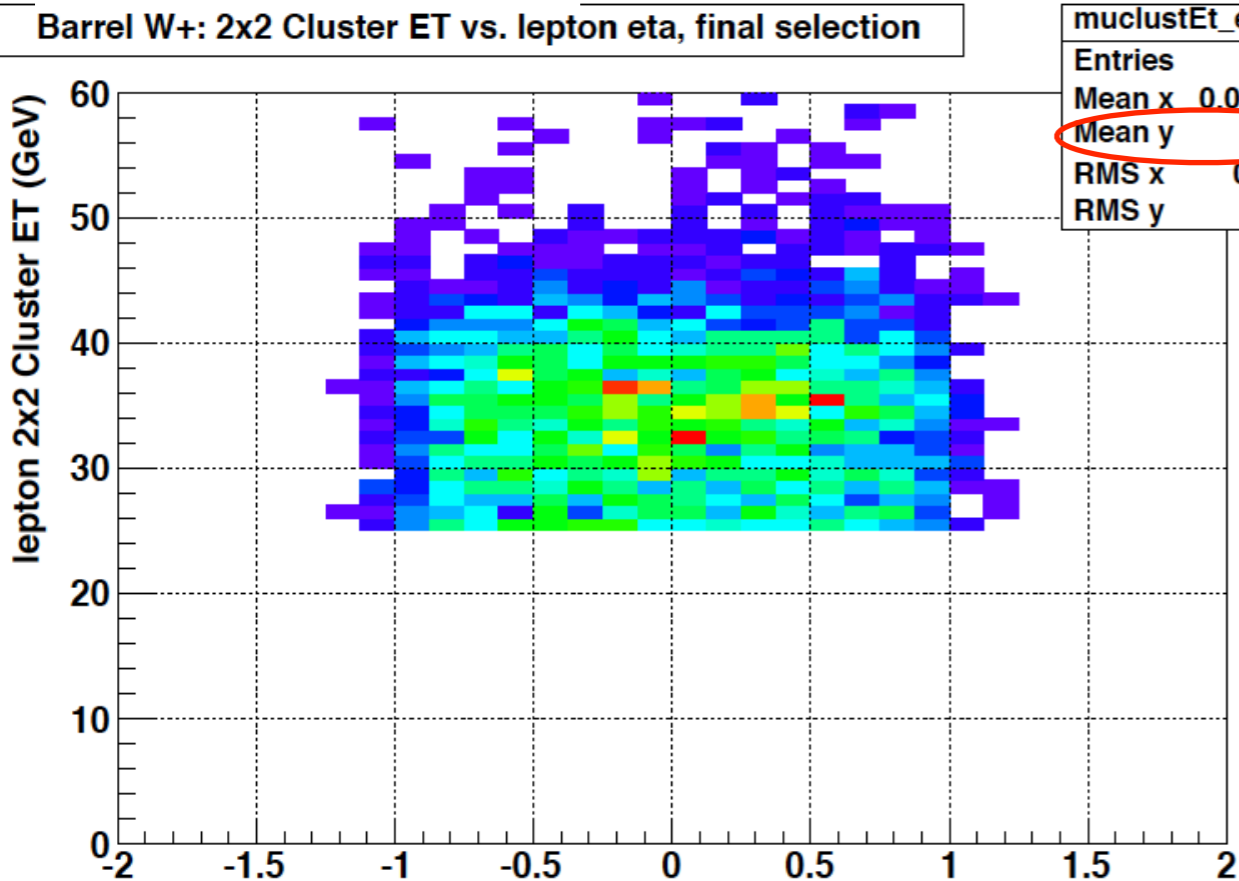
Final W 2x2 ET Vs lep eta

Run 12



Run 13 period 1

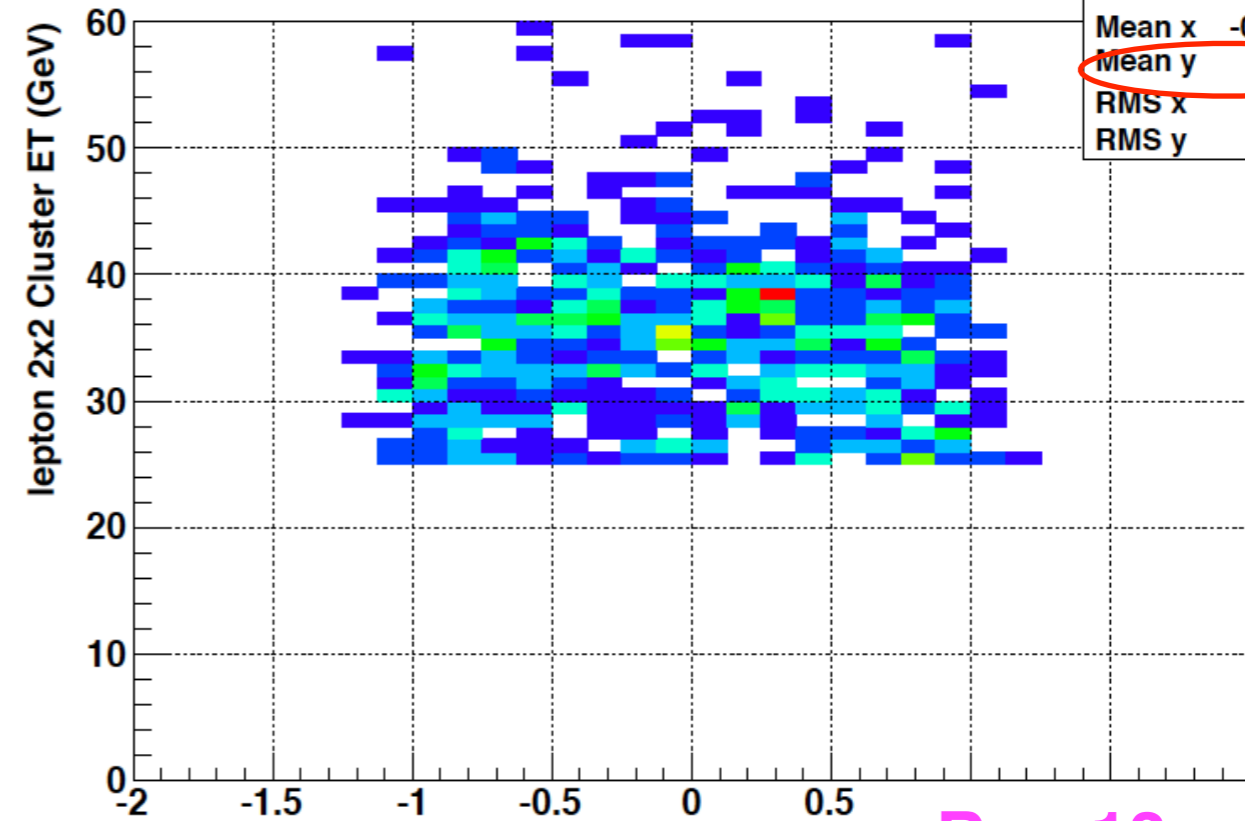
Run 13 period 2



Final W 2x2 ET Vs lep eta

Run 12

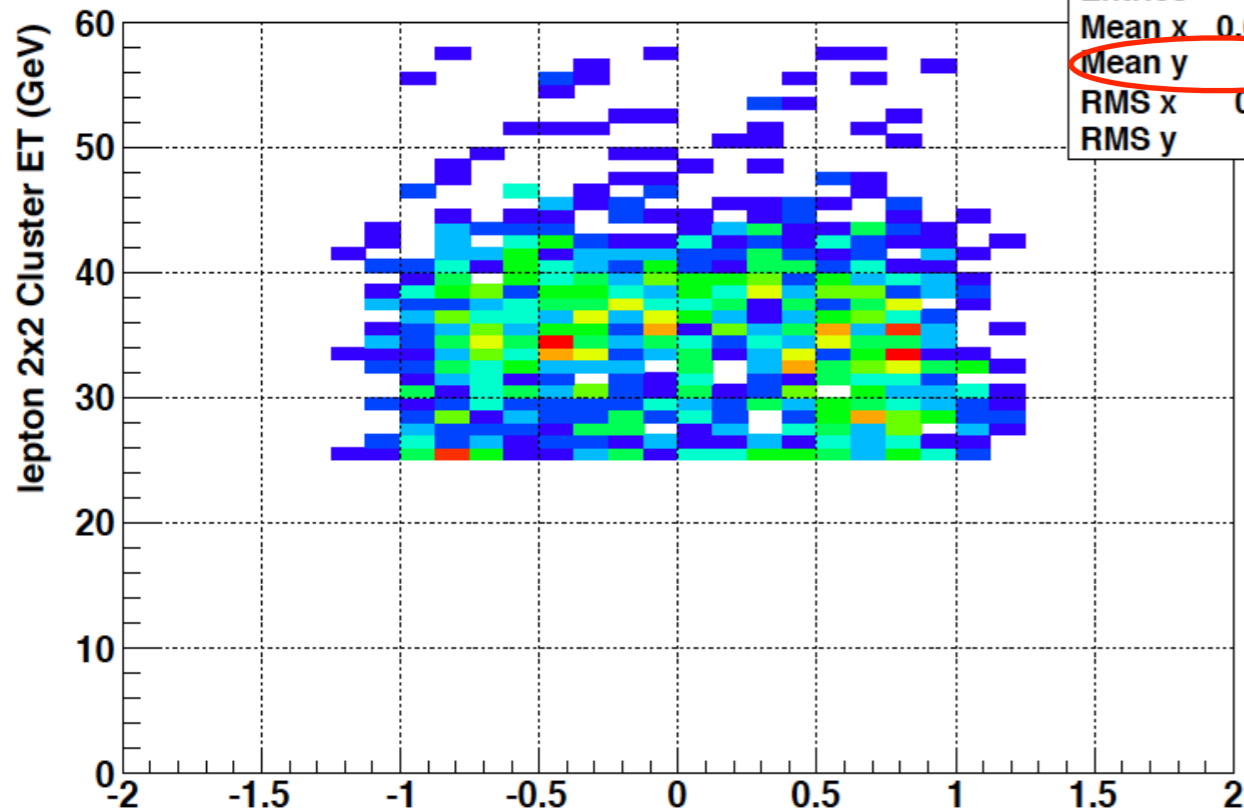
Barrel W-: 2x2 Cluster ET vs. lepton eta, final selection



muclustEt_etaWm	
Entries	799
Mean x	-0.03305
Mean y	35.63
RMS x	0.6013
RMS y	6.242

Run 13 period 1

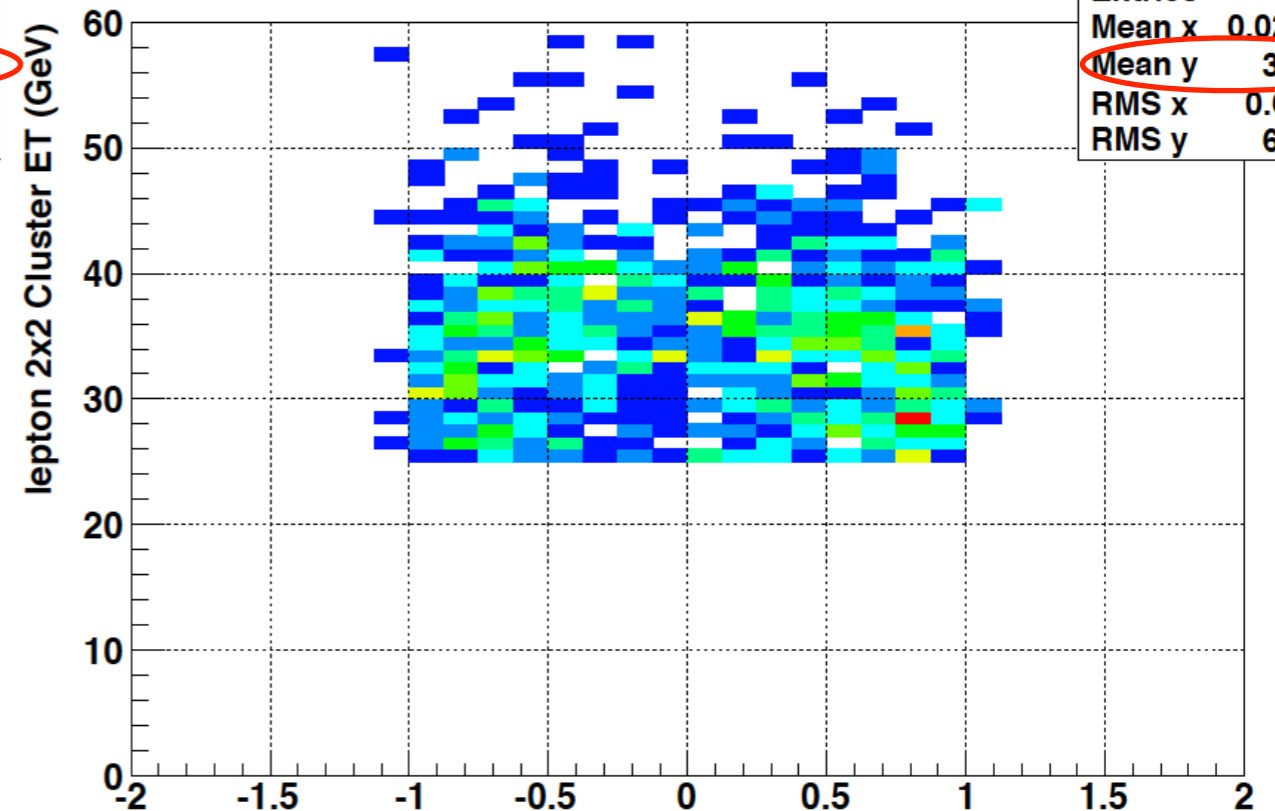
Barrel W-: 2x2 Cluster ET vs. lepton eta, final selection



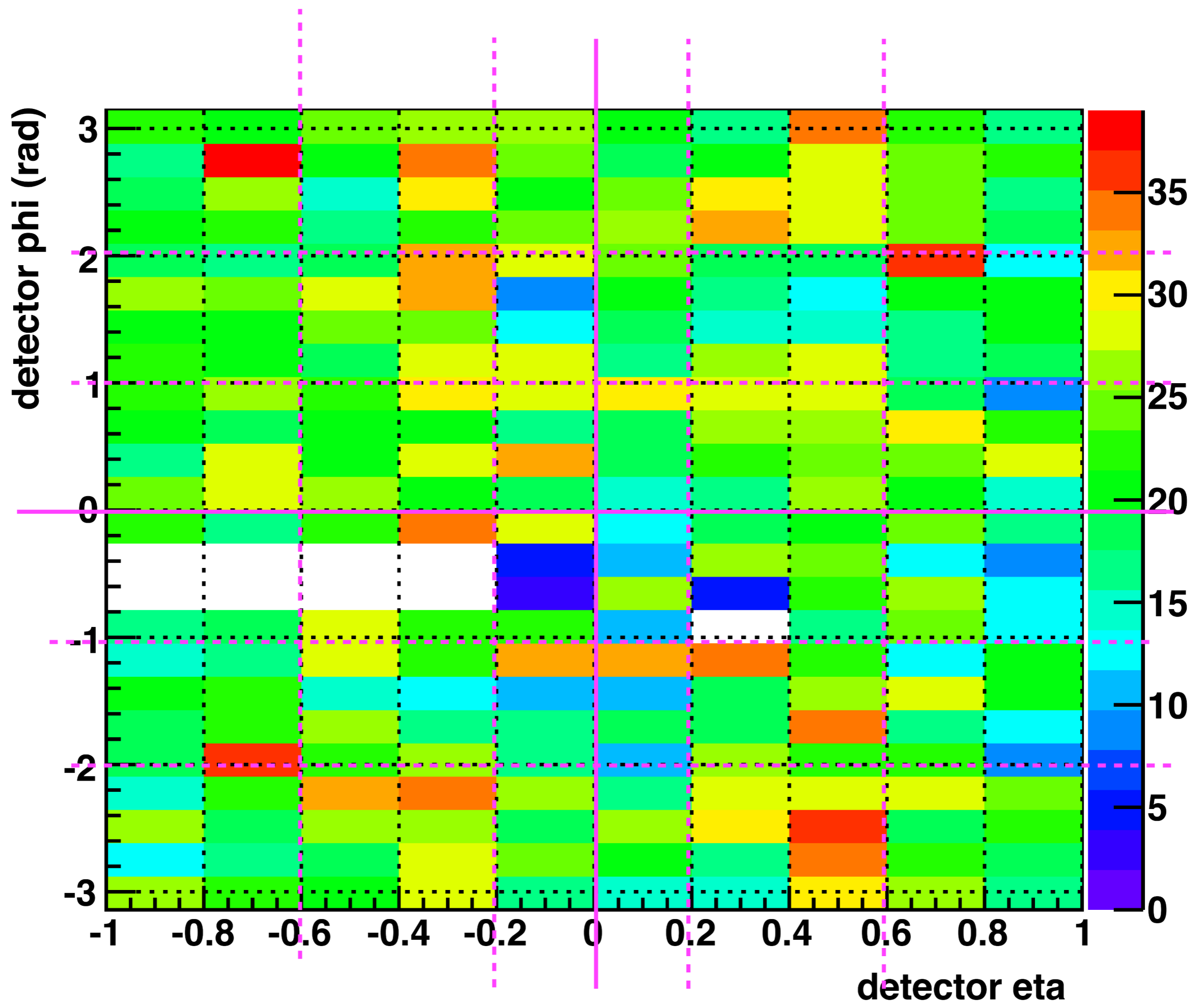
muclustEt_etaWm	
Entries	1221
Mean x	0.03736
Mean y	35.12
RMS x	0.6018
RMS y	6.076

Run 13 period 2

Barrel W-: 2x2 Cluster ET vs. lepton eta, final selection



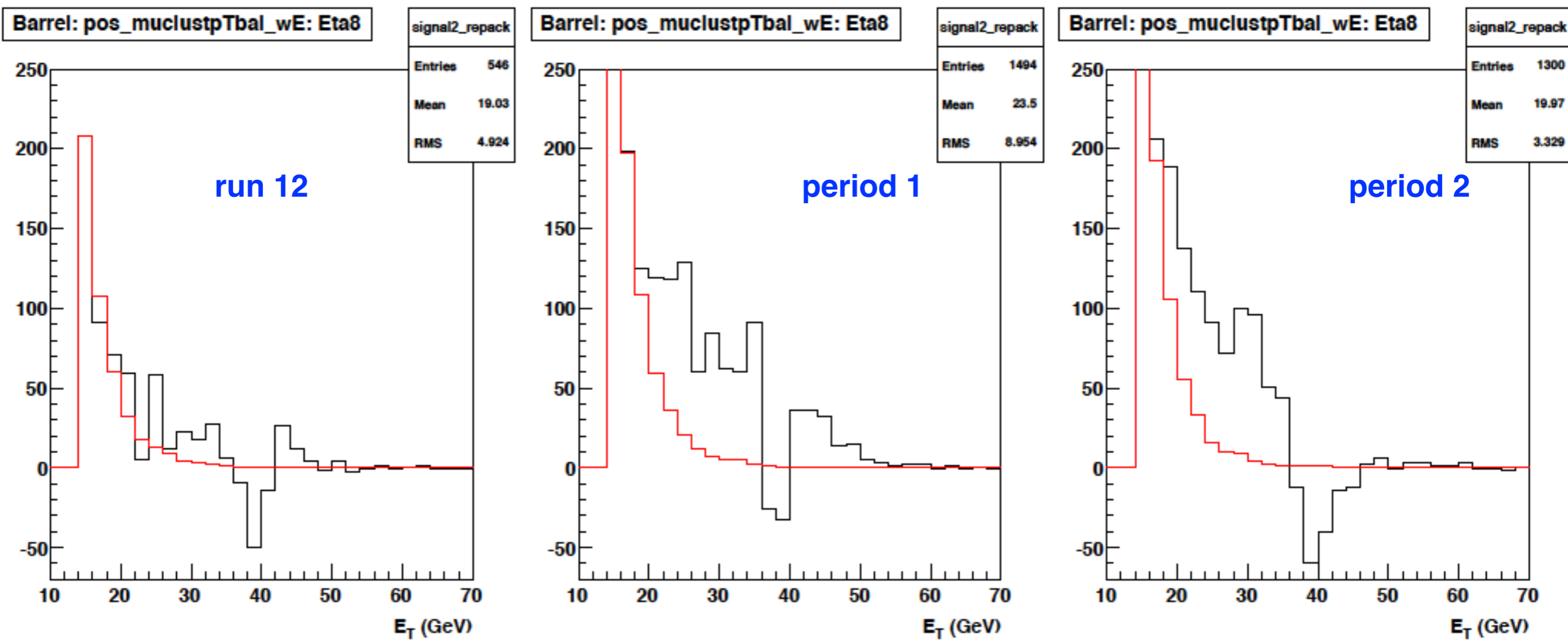
muclustEt_etaWm	
Entries	879
Mean x	0.02454
Mean y	35.32
RMS x	0.6079
RMS y	6.307



QCD shape

— - Raw - (MC + 2nd eemc + tau + zee)

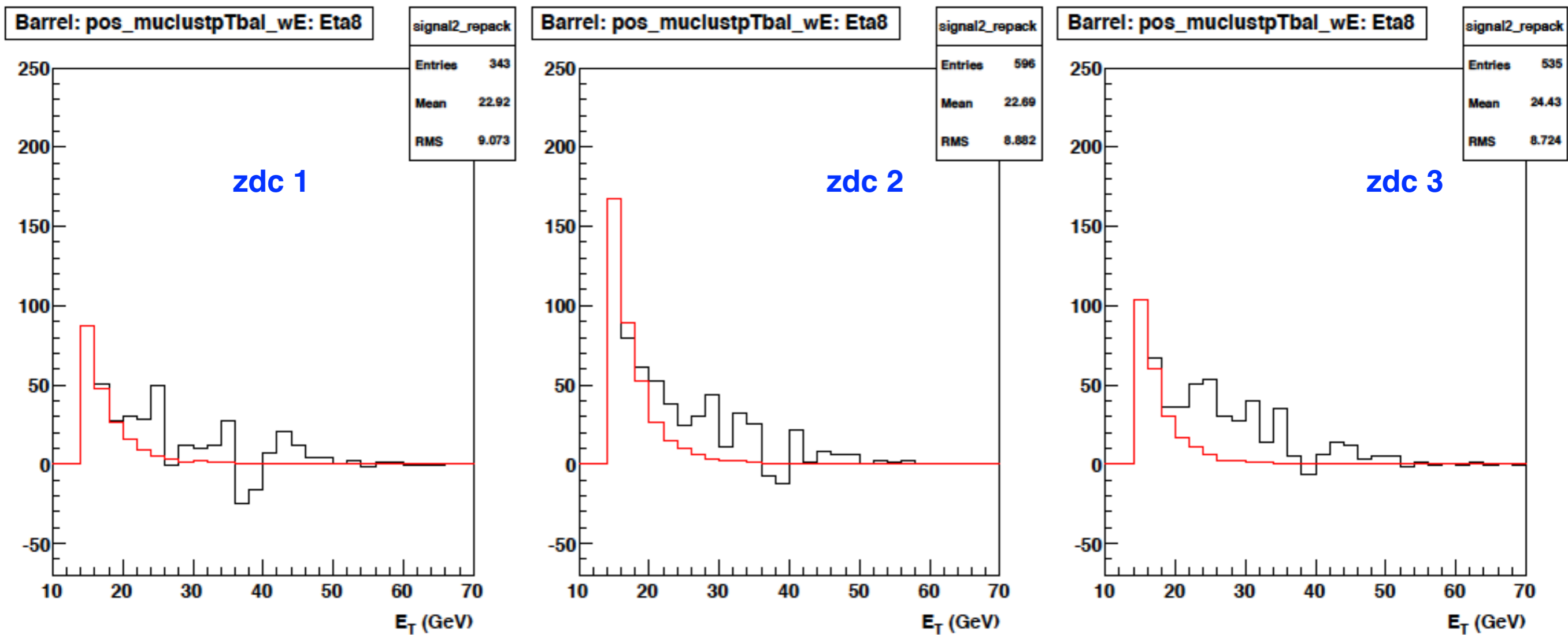
— - data-driven QCD shape



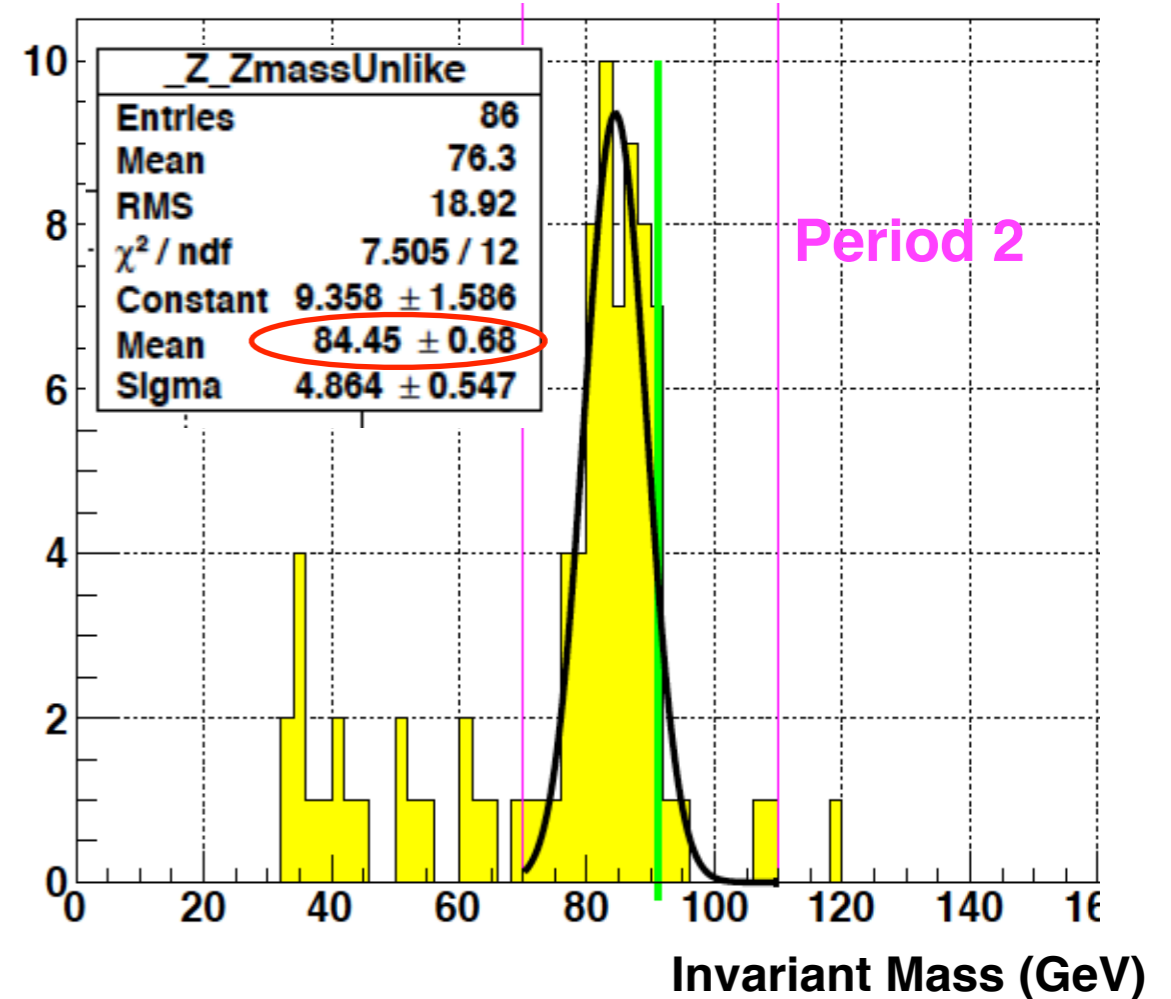
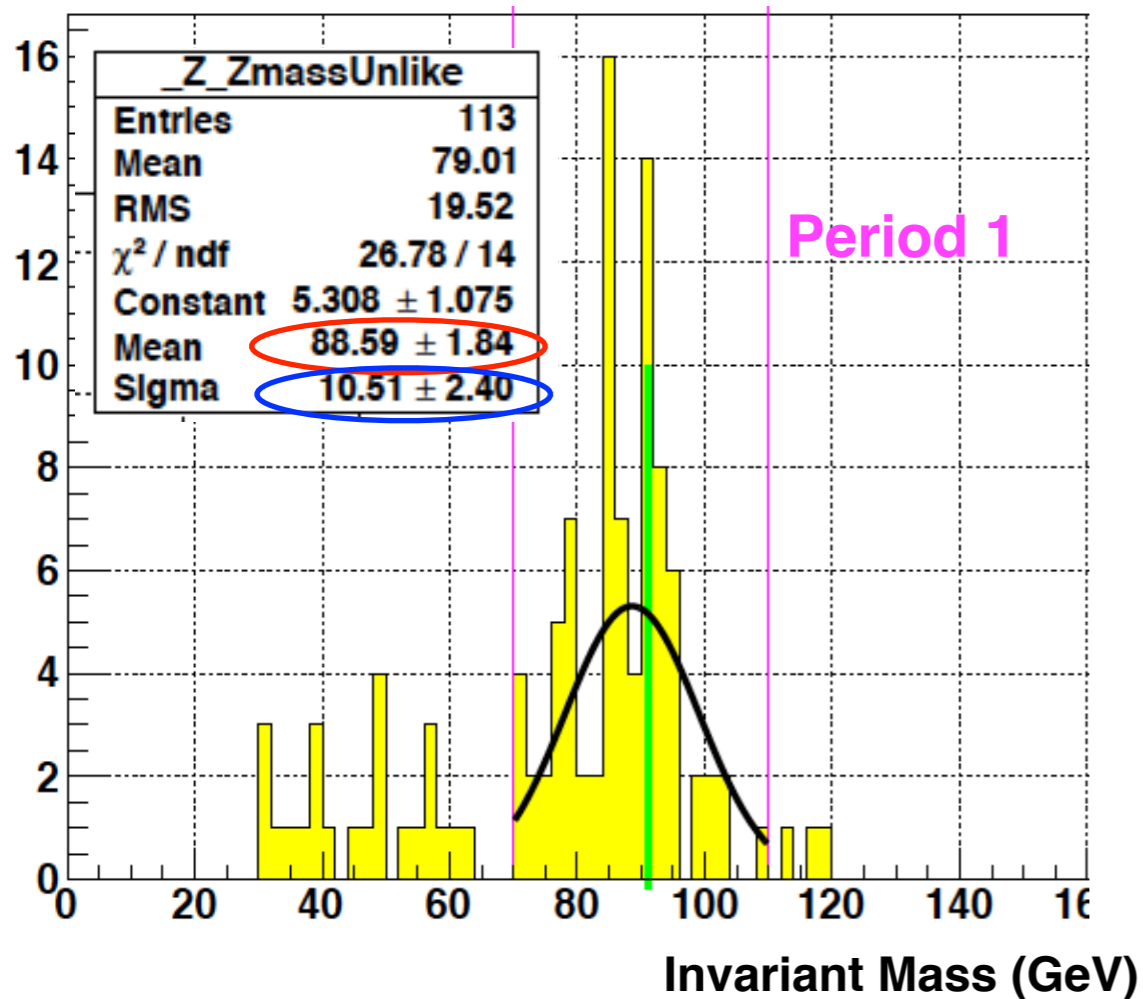
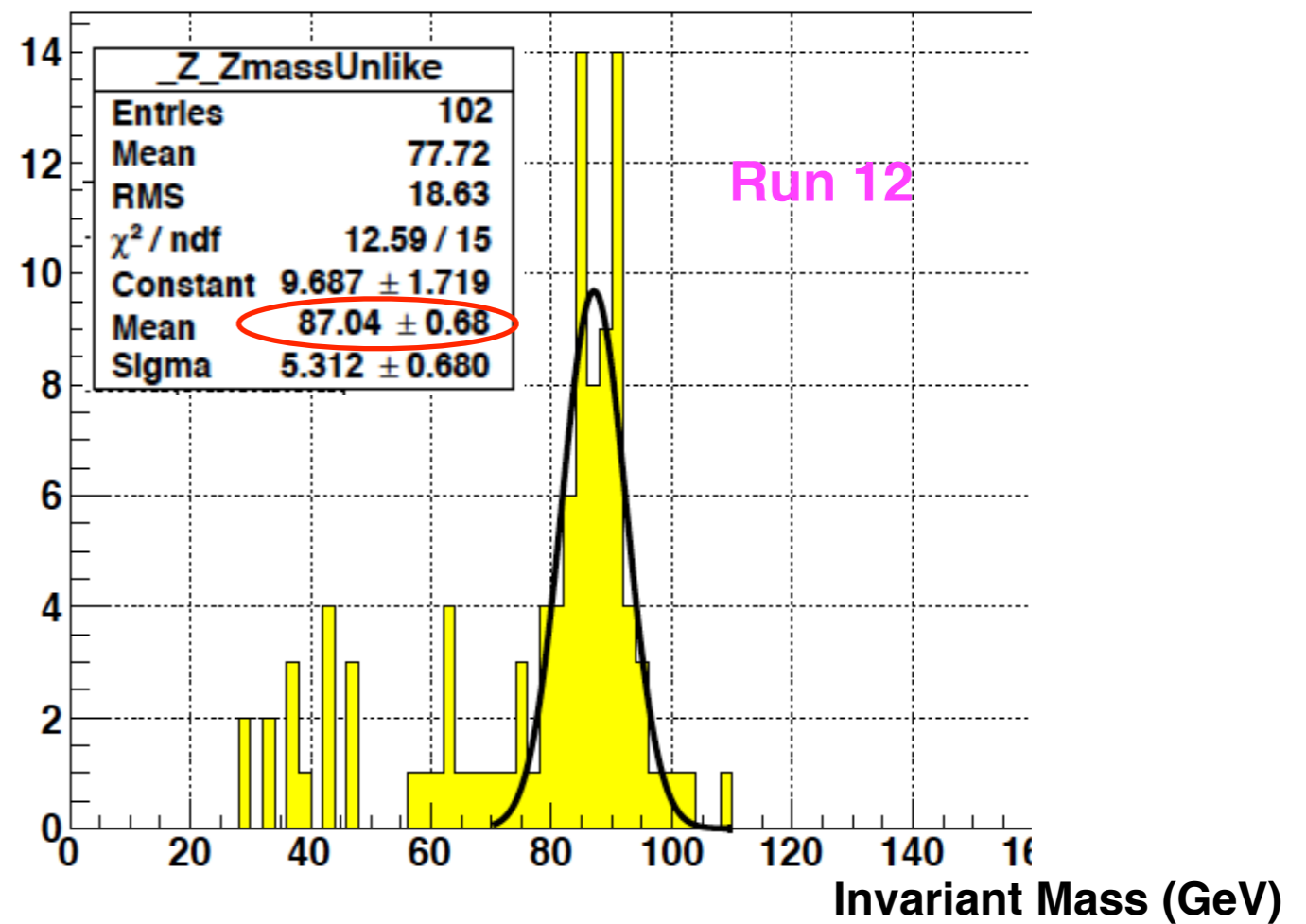
QCD shape

— - Raw - (MC + 2nd eemc + tau + zee)

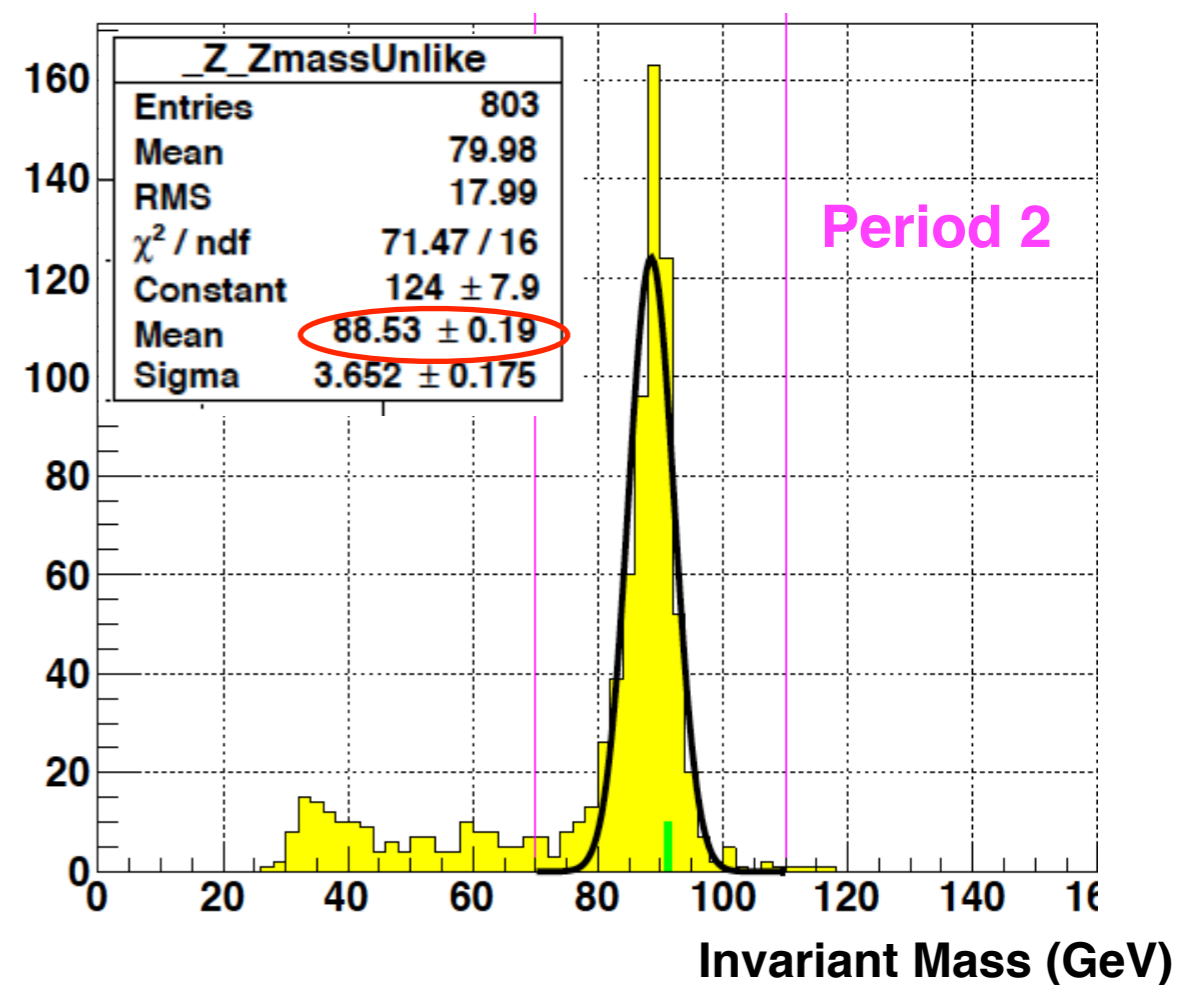
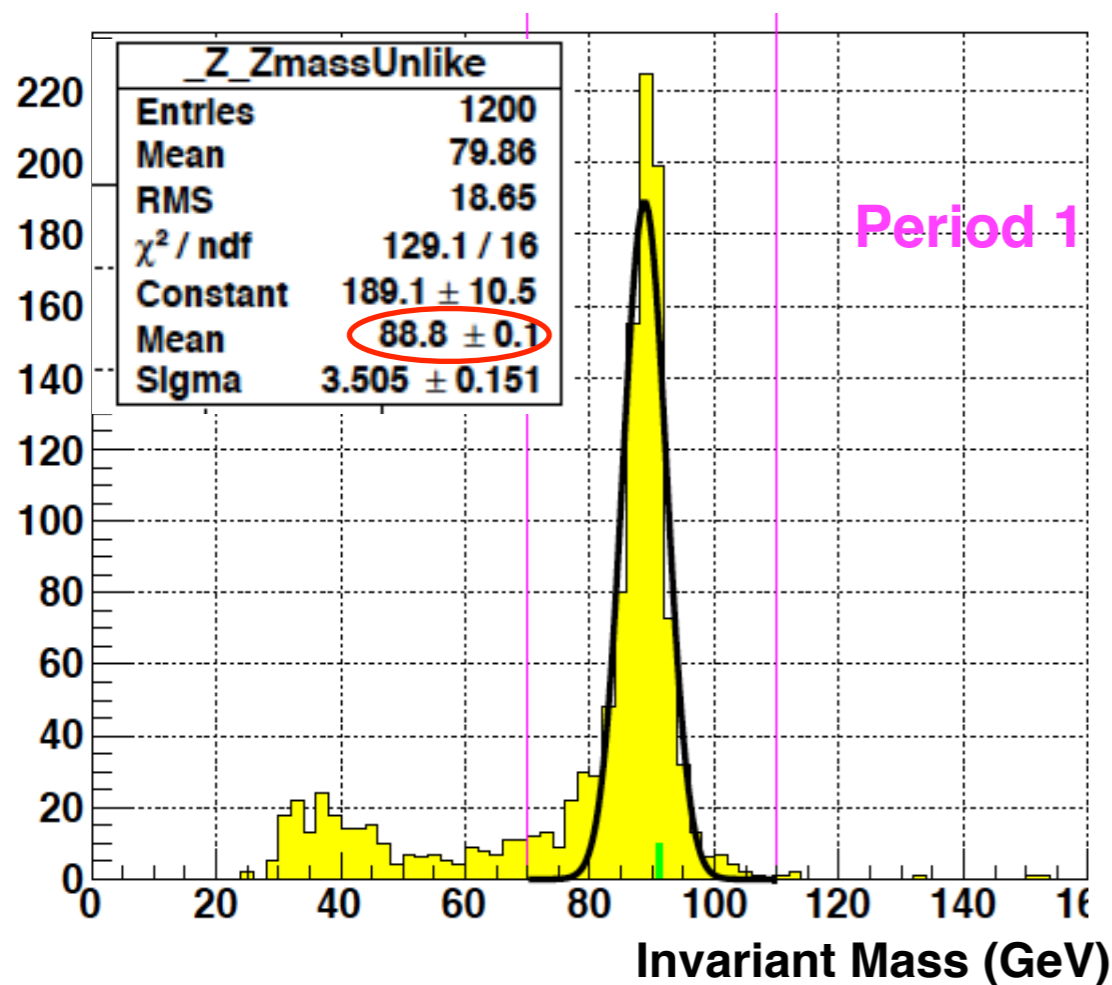
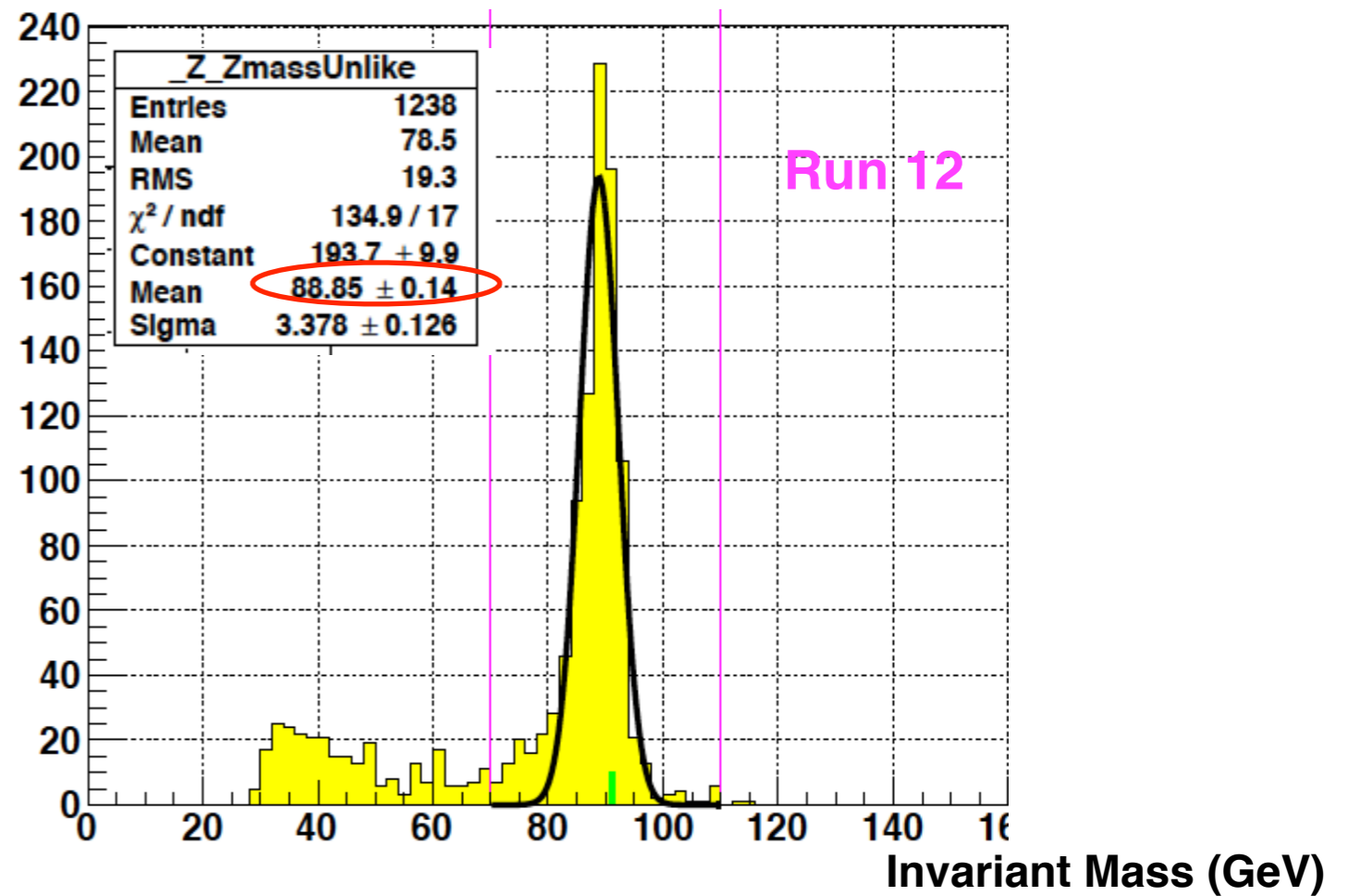
— - data-driven QCD shape



Z Mass Distribution (Unlike charge pairs) — Data



Z Mass Distribution (Unlike charge pairs) — Embedding



Summary

- It looks like some kind of gain shift is affecting the discrepancy between data and MC apart from miscalculated QCD BG
- Suggestion : Find an correction factor to apply at tower level (hard-code-calibration) and rerun the analysis