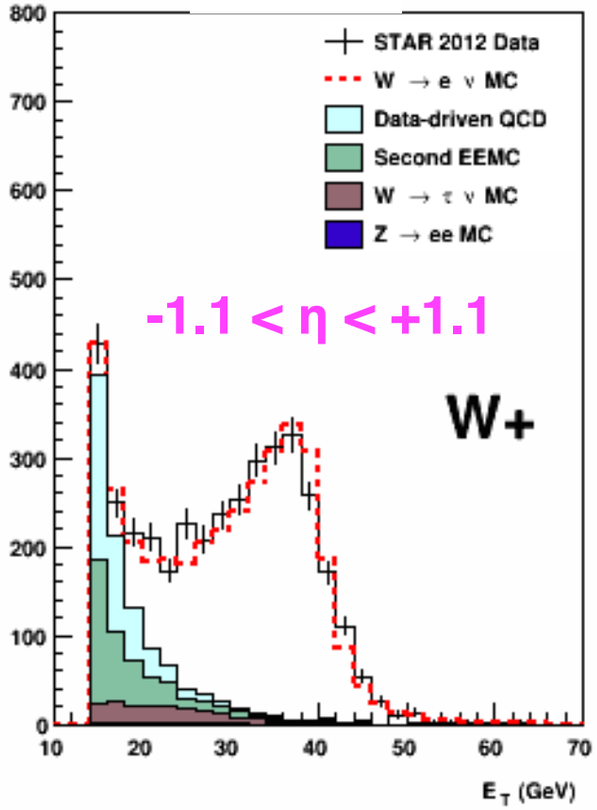
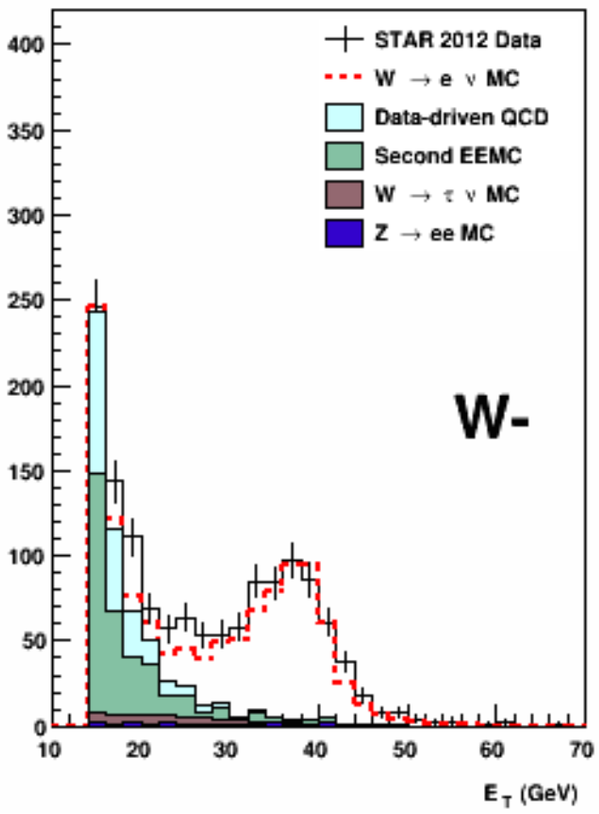
Analysis Updates

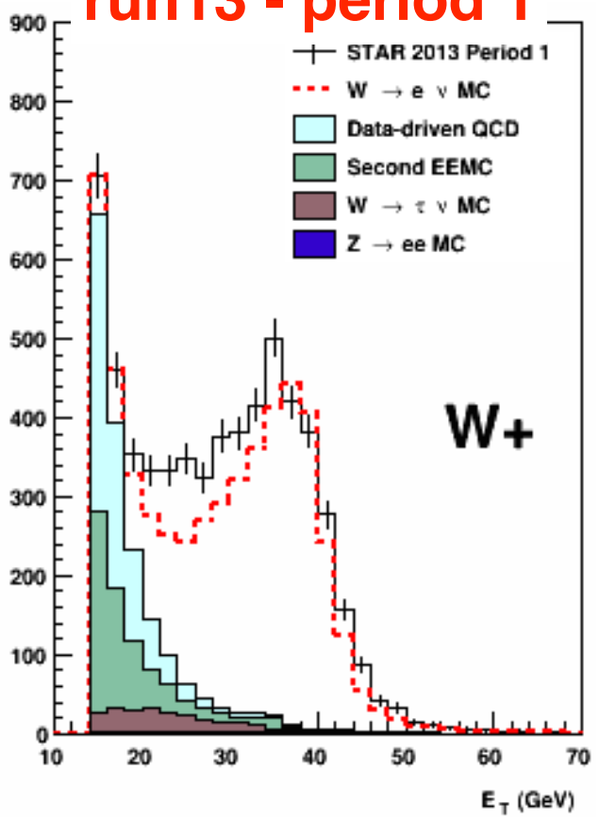
W meeting - 2/6/15

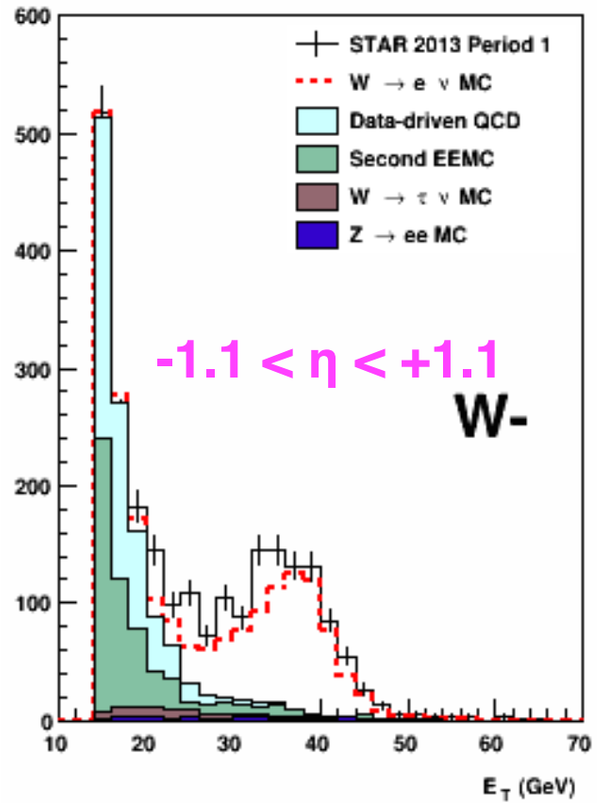
run 12



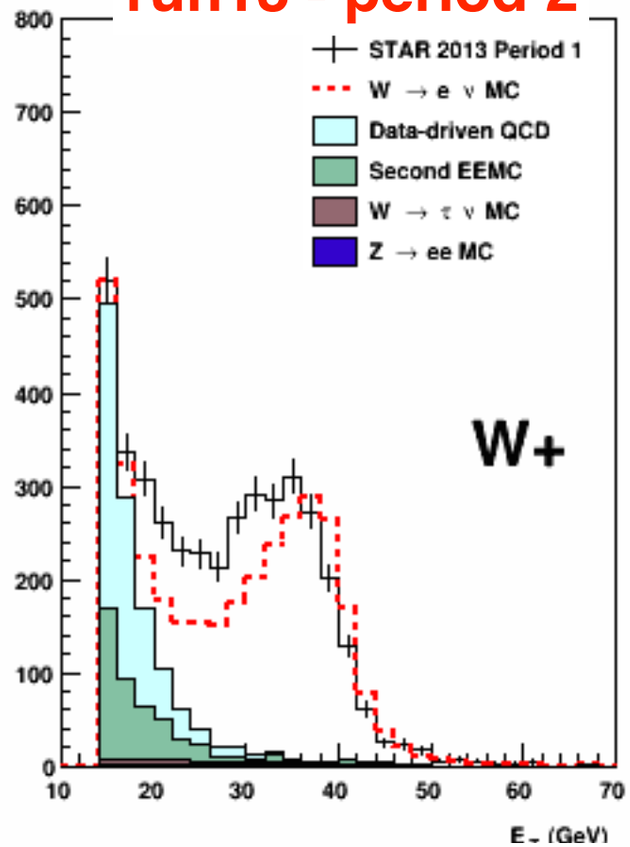


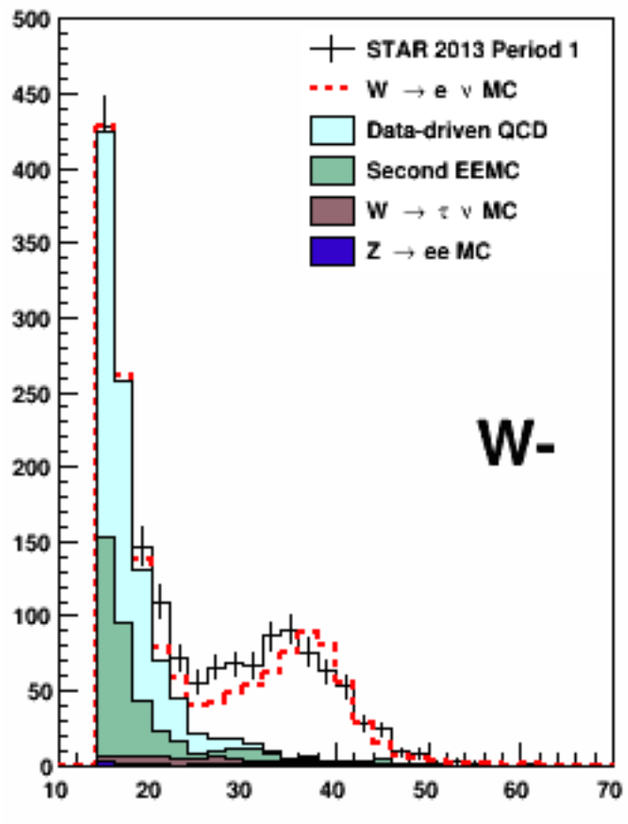
run13 - period 1





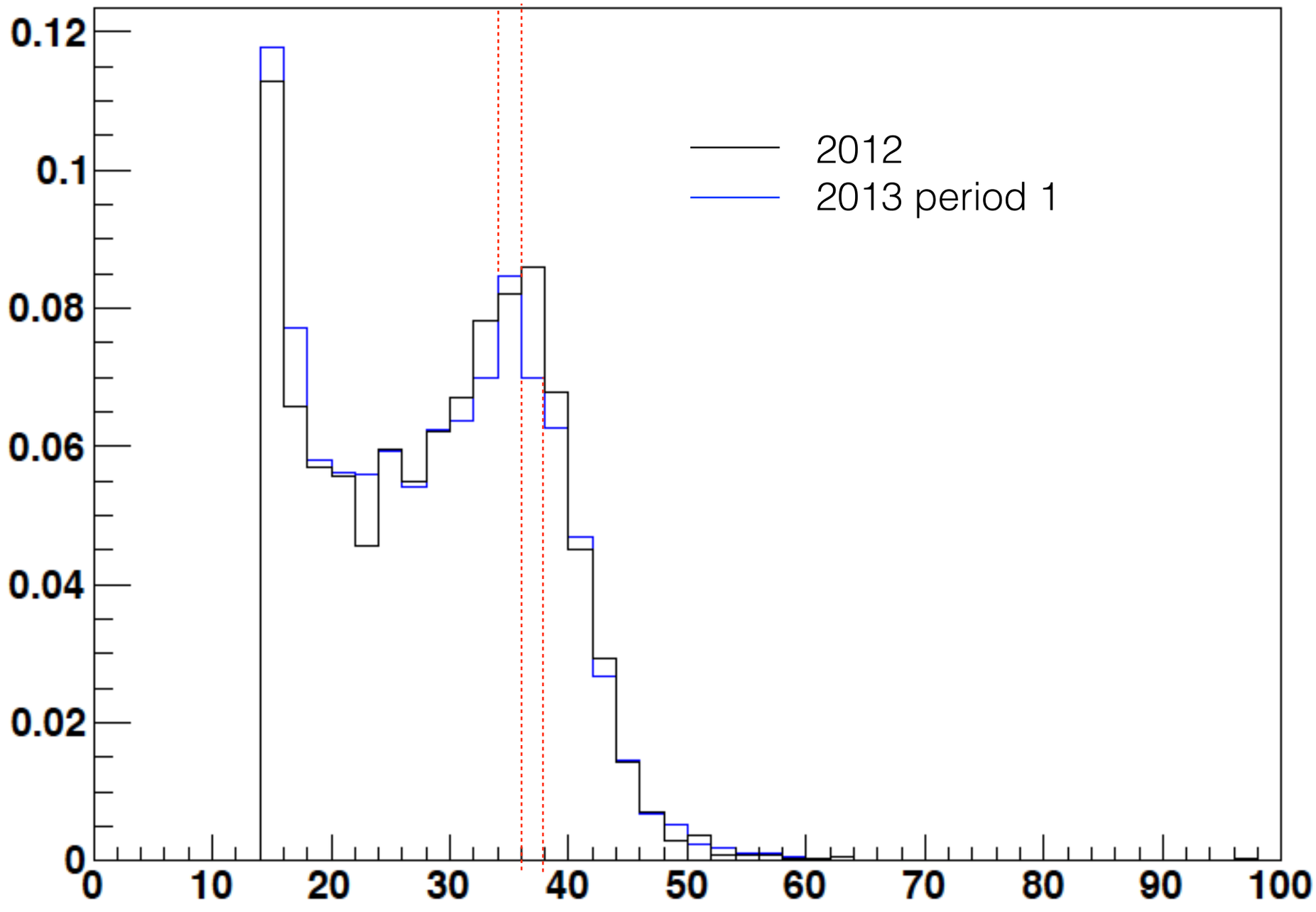
run13 - period 2





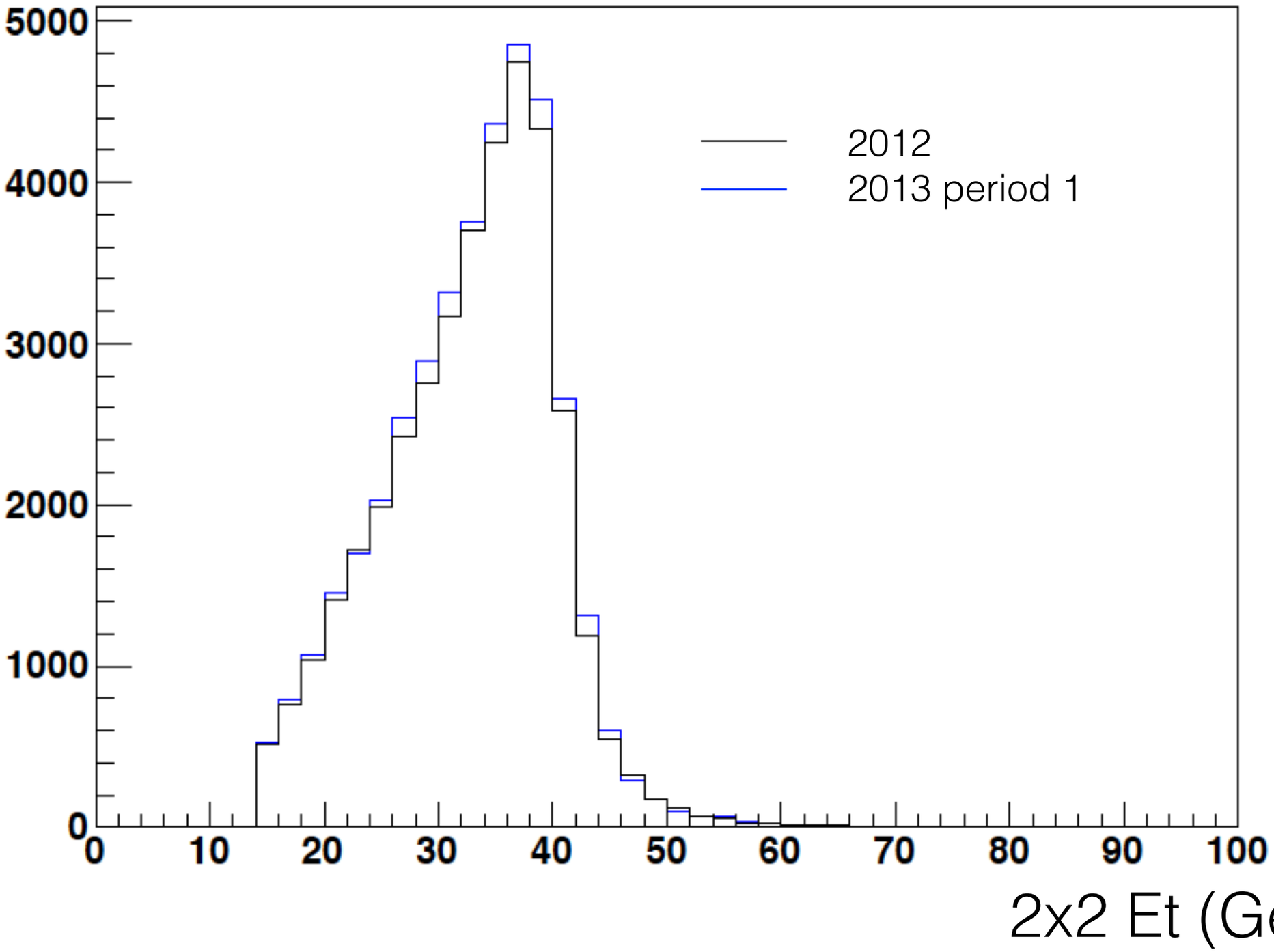
ET Distribution Comparisons

Barrel: pos_muclustpTbal_wE



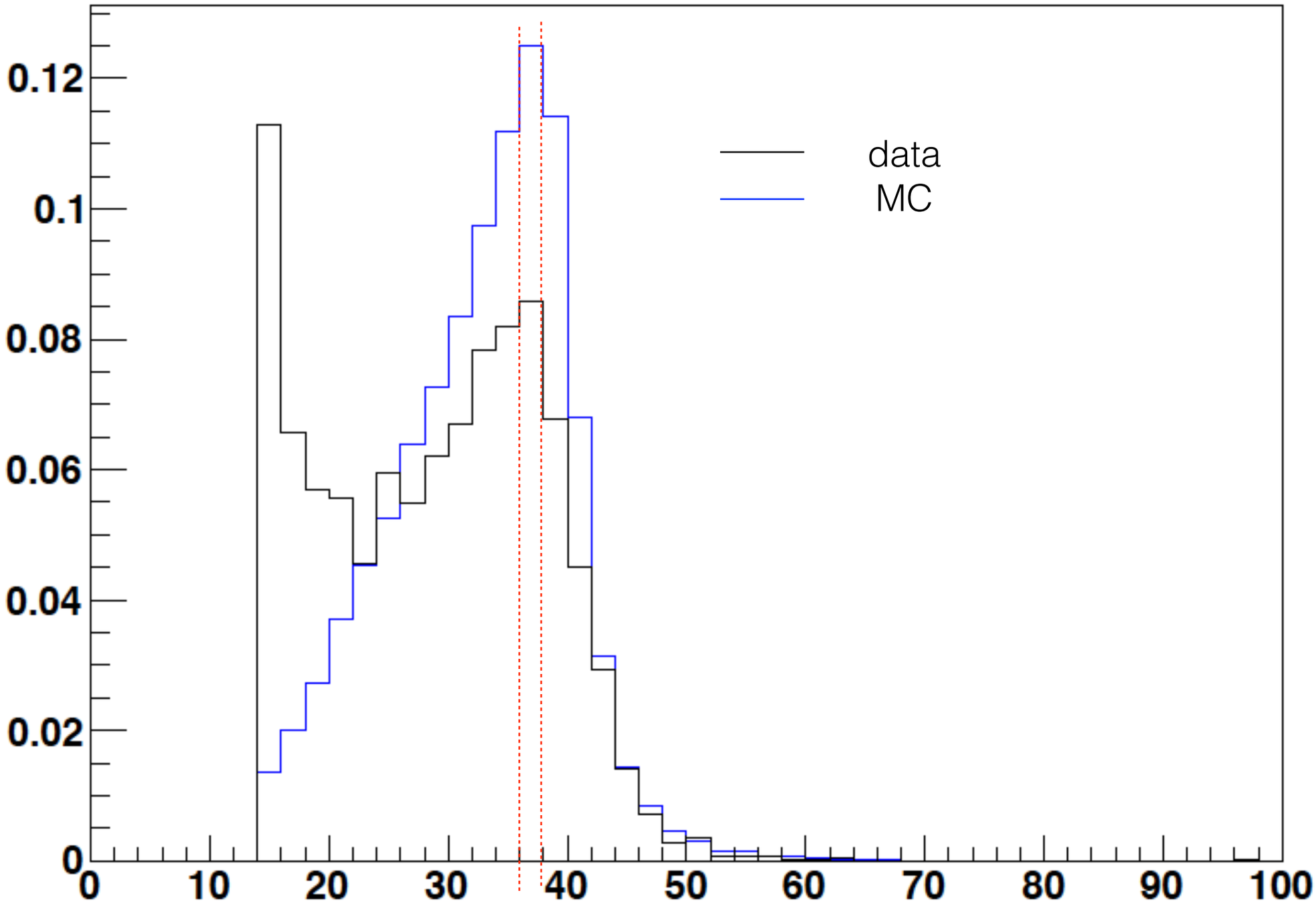
$W^+ \longrightarrow e^+\nu$ MC

Barrel: pos_muclustpTbal_wE



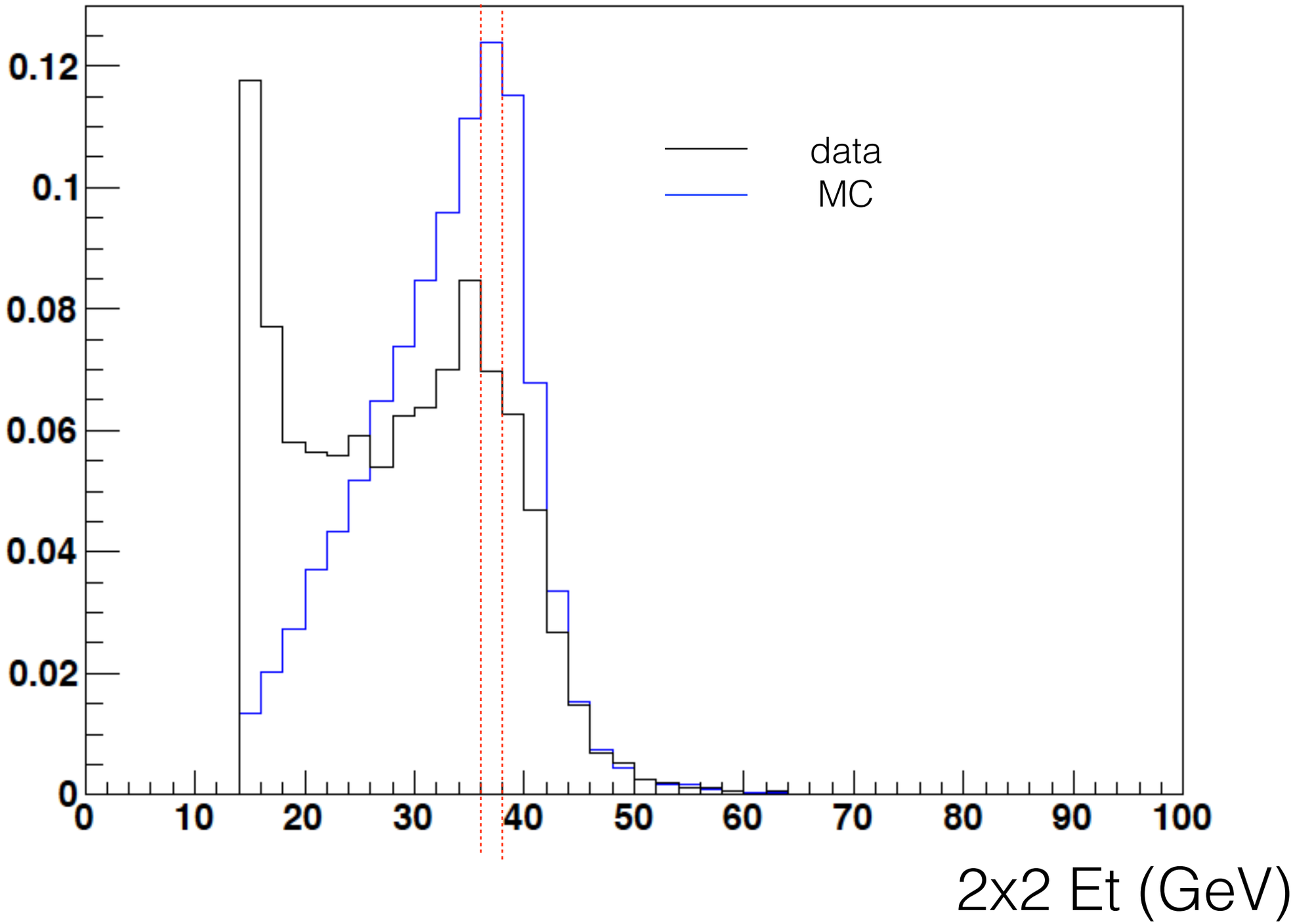
Run 12 Data and $W^+ \rightarrow e^+ \nu$ MC

Barrel: pos_muclustpTbal_wE



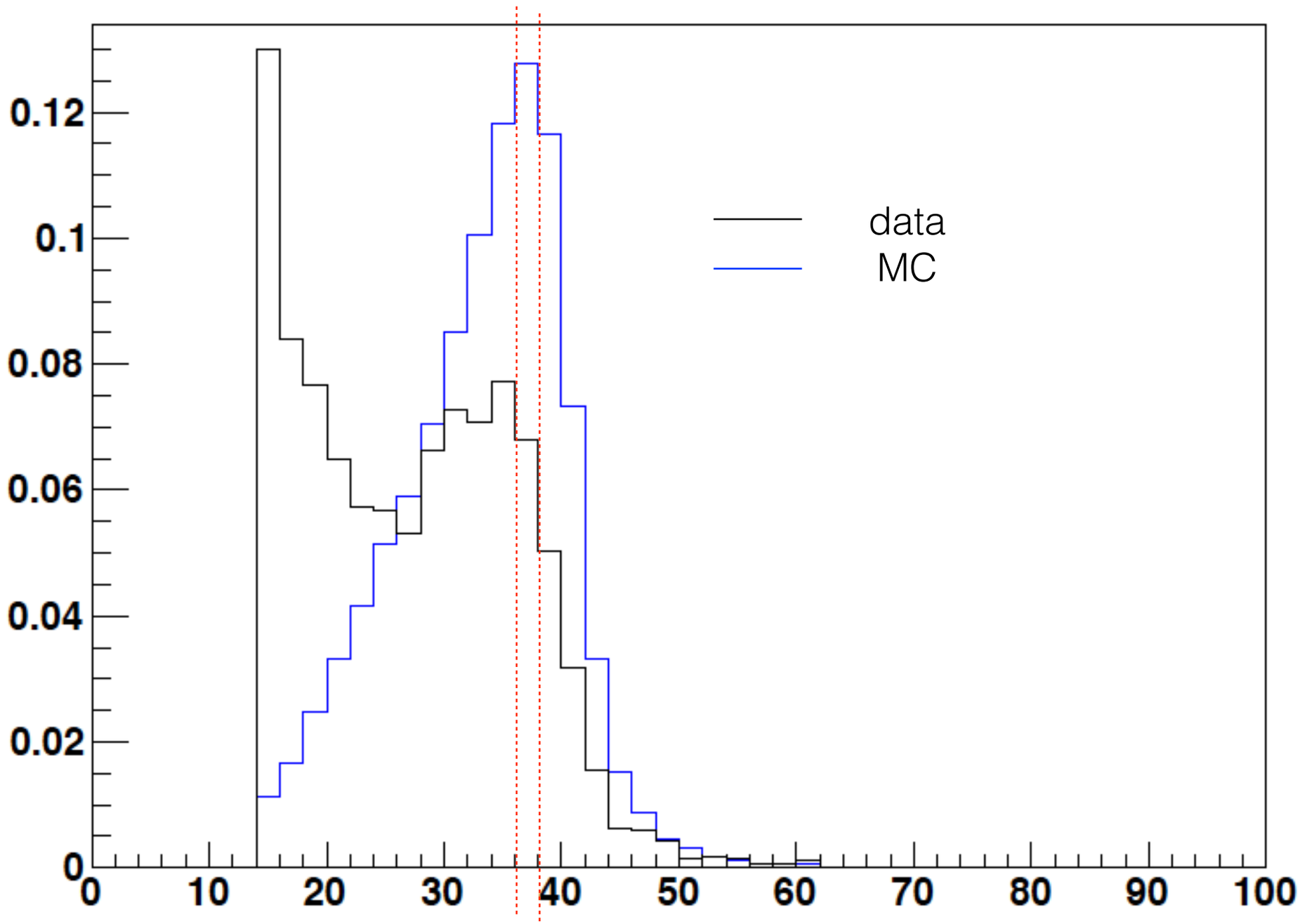
Run 13 period 1 Data and $W^+ \rightarrow e^+ \nu$ MC

Barrel: pos_muclustpTbal_wE

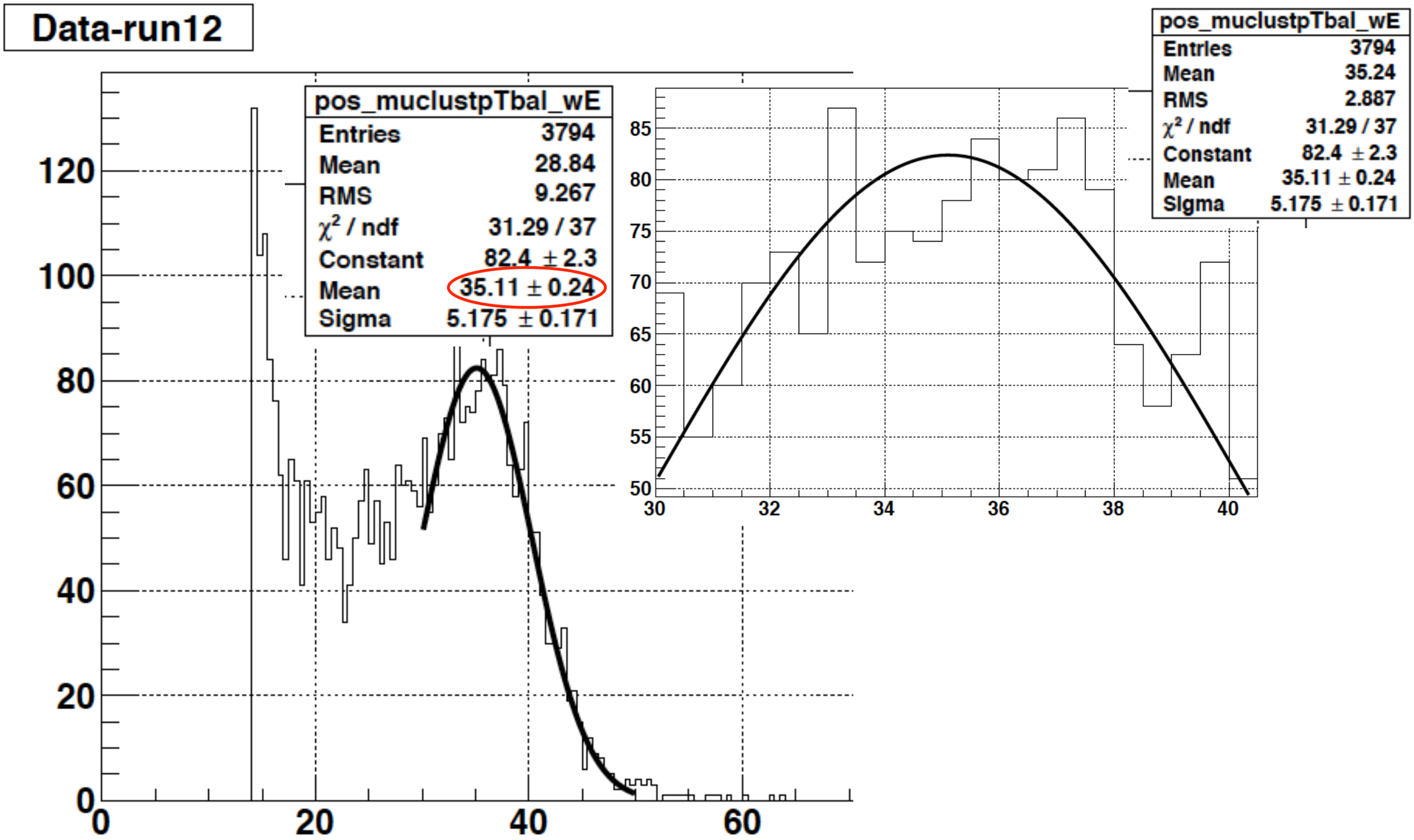


Run 13 period 2 Data and $W^+ \rightarrow e^+ \nu$ MC

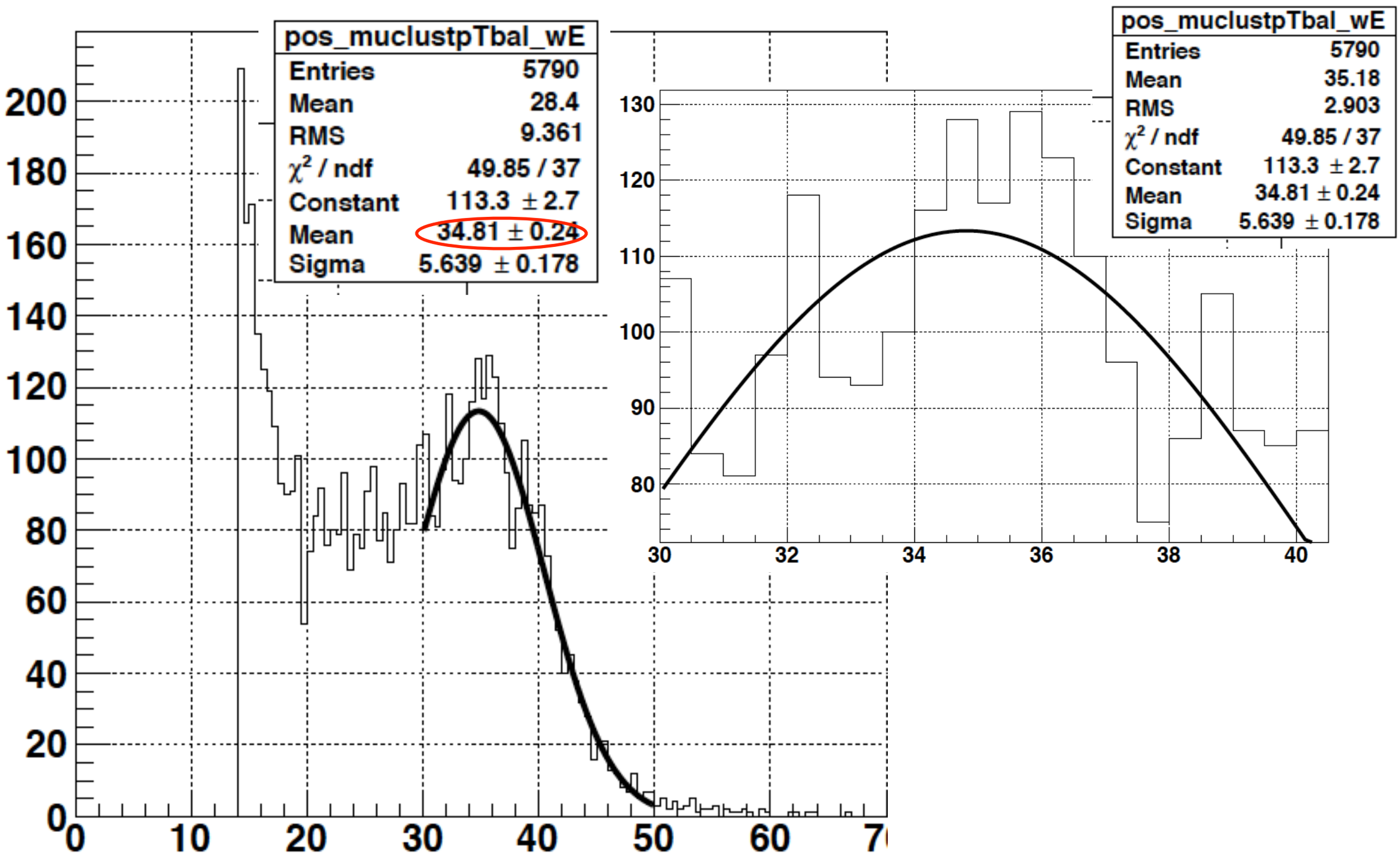
Barrel: pos_muclustpTbal_wE



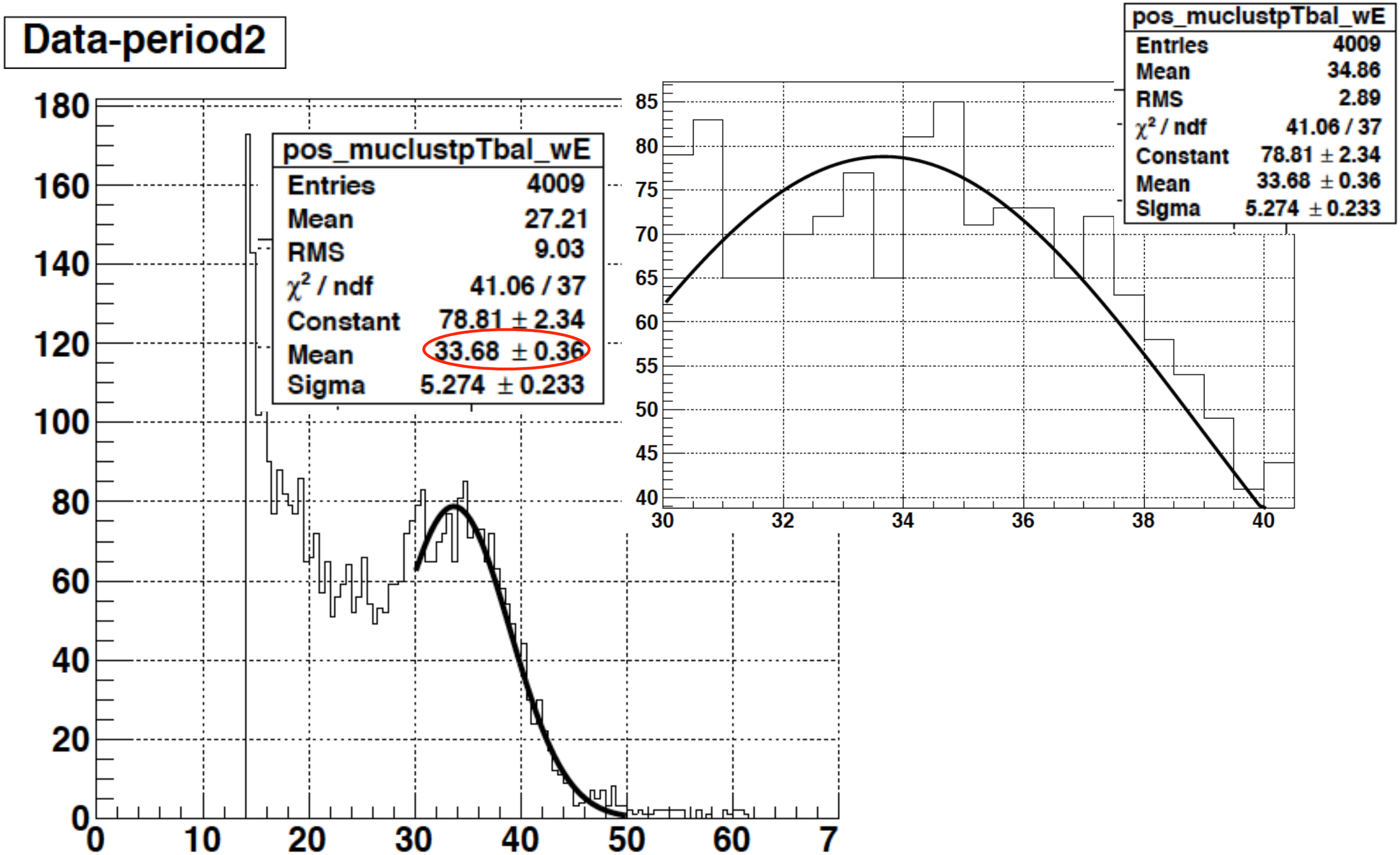
Run 12 “gaus” fit [30-50]



Run 13 period 1 “gaus” fit [30-50]

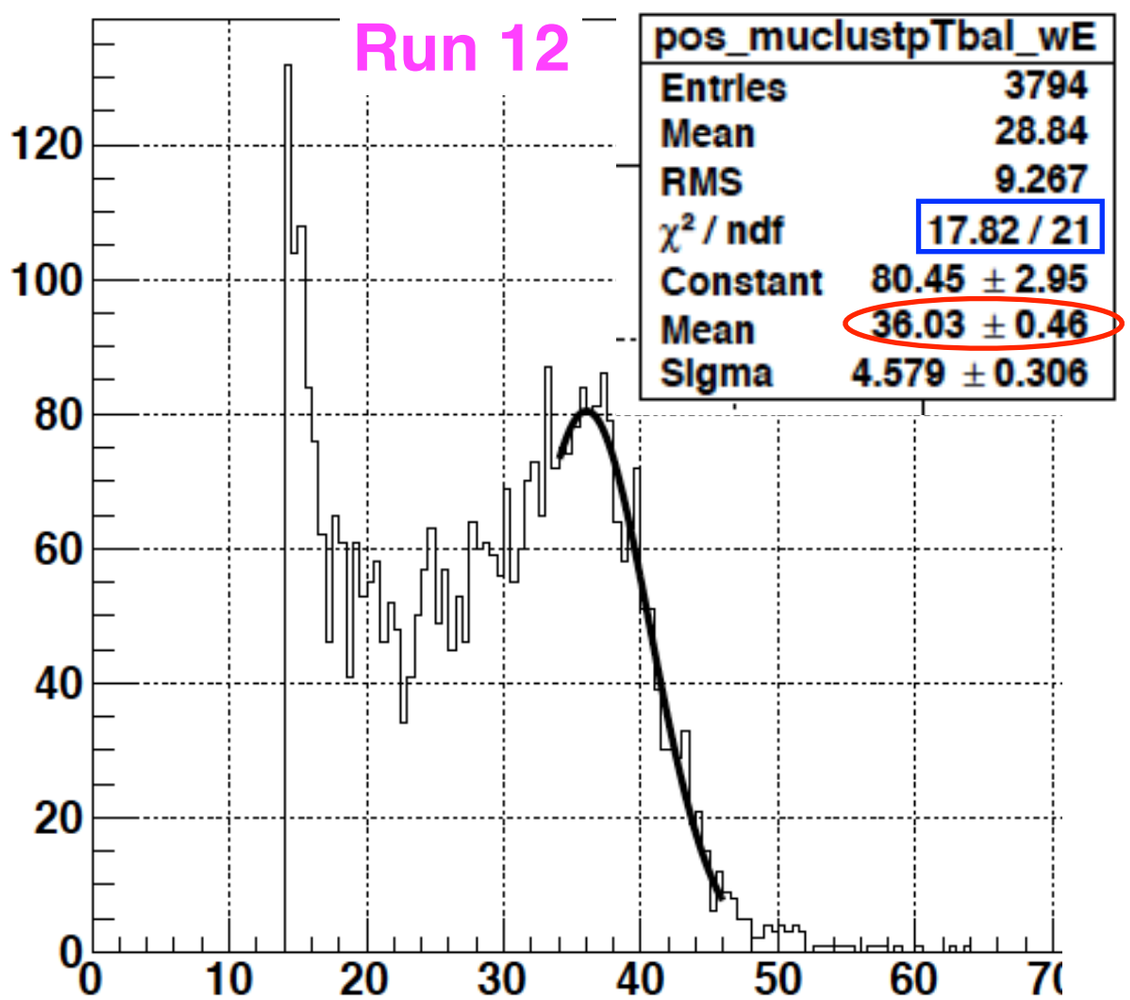


Run 13 period 2 “gaus” fit [30-50]

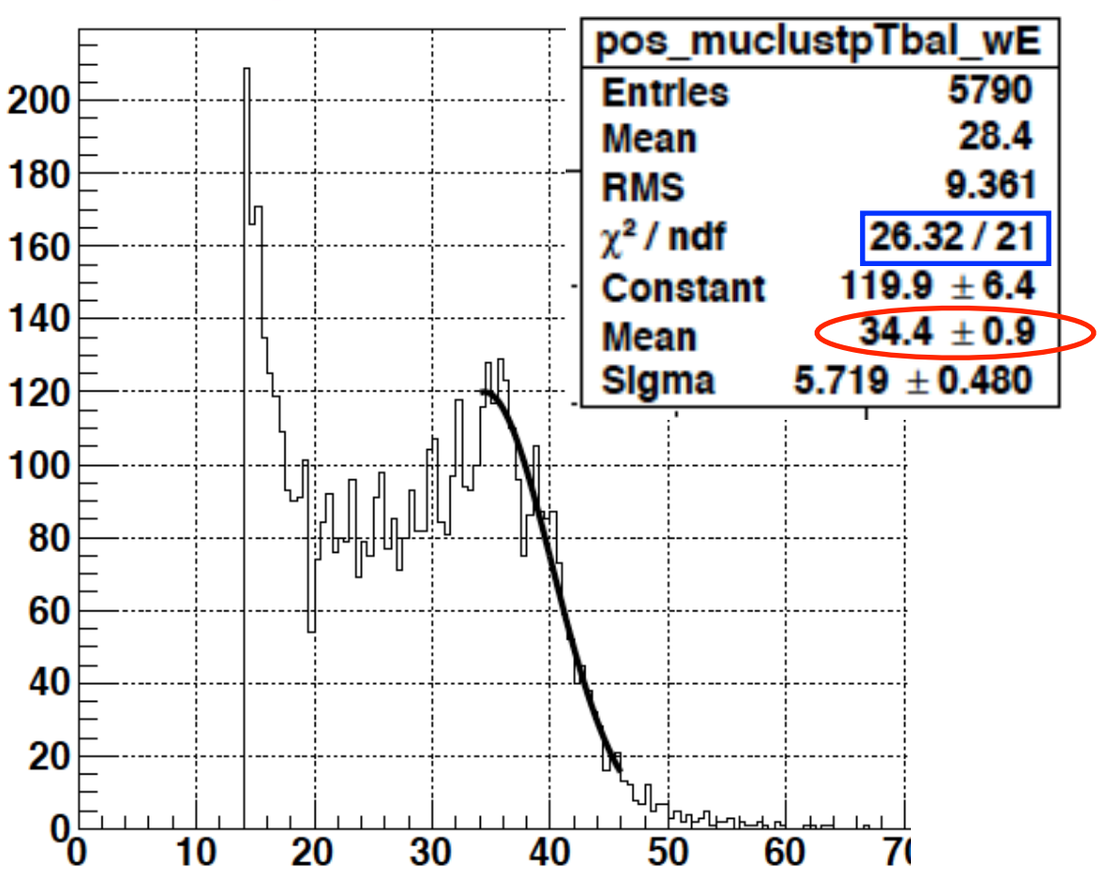


W^+ ET “gaus” fit [36-45] GeV

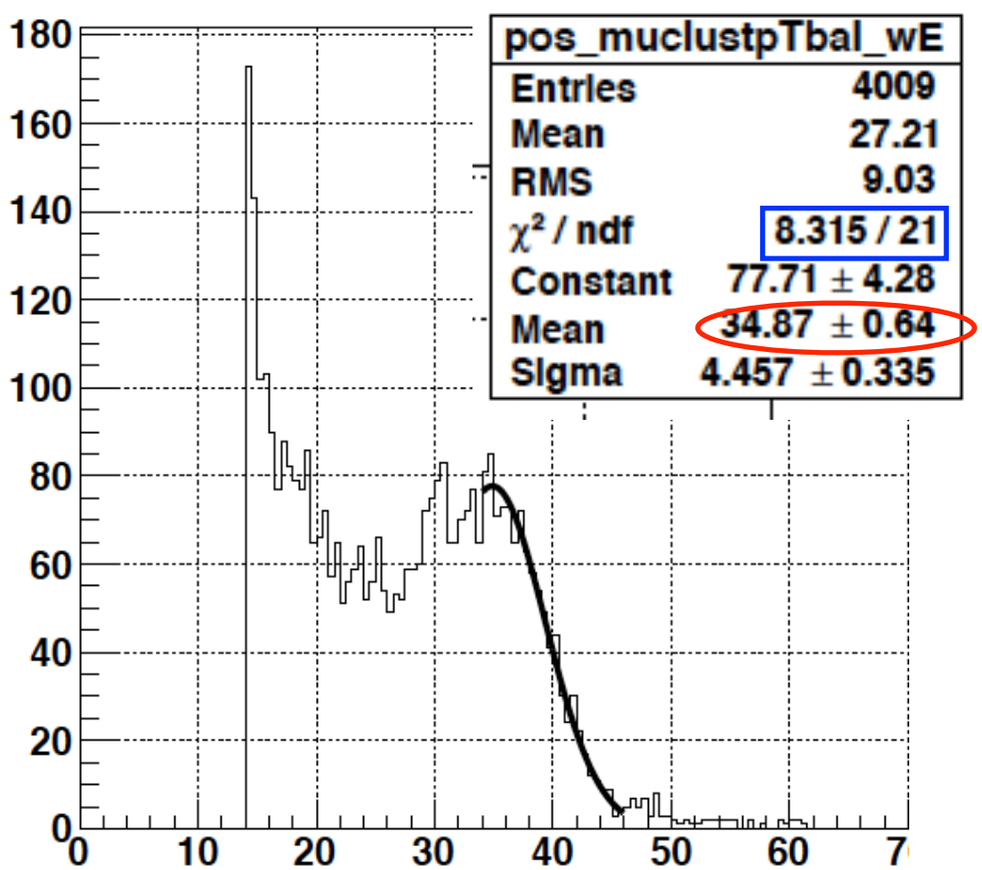
Run 12



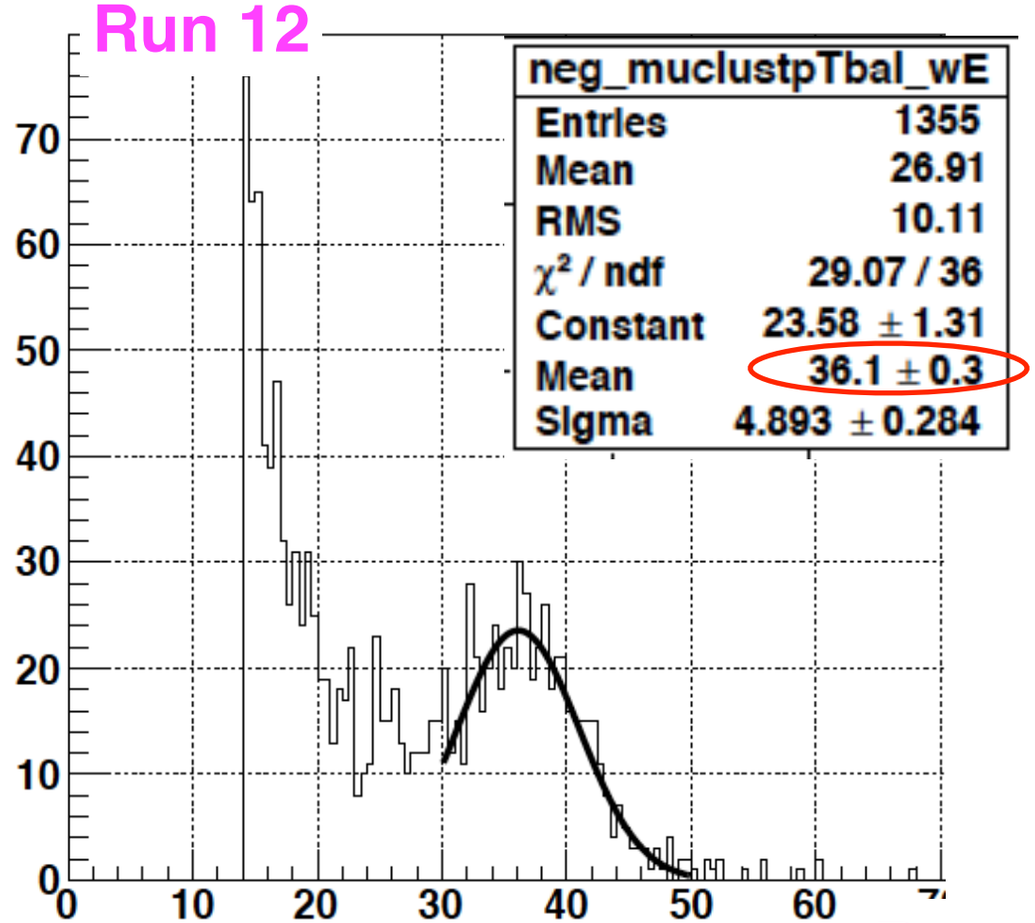
Run 13 period 1

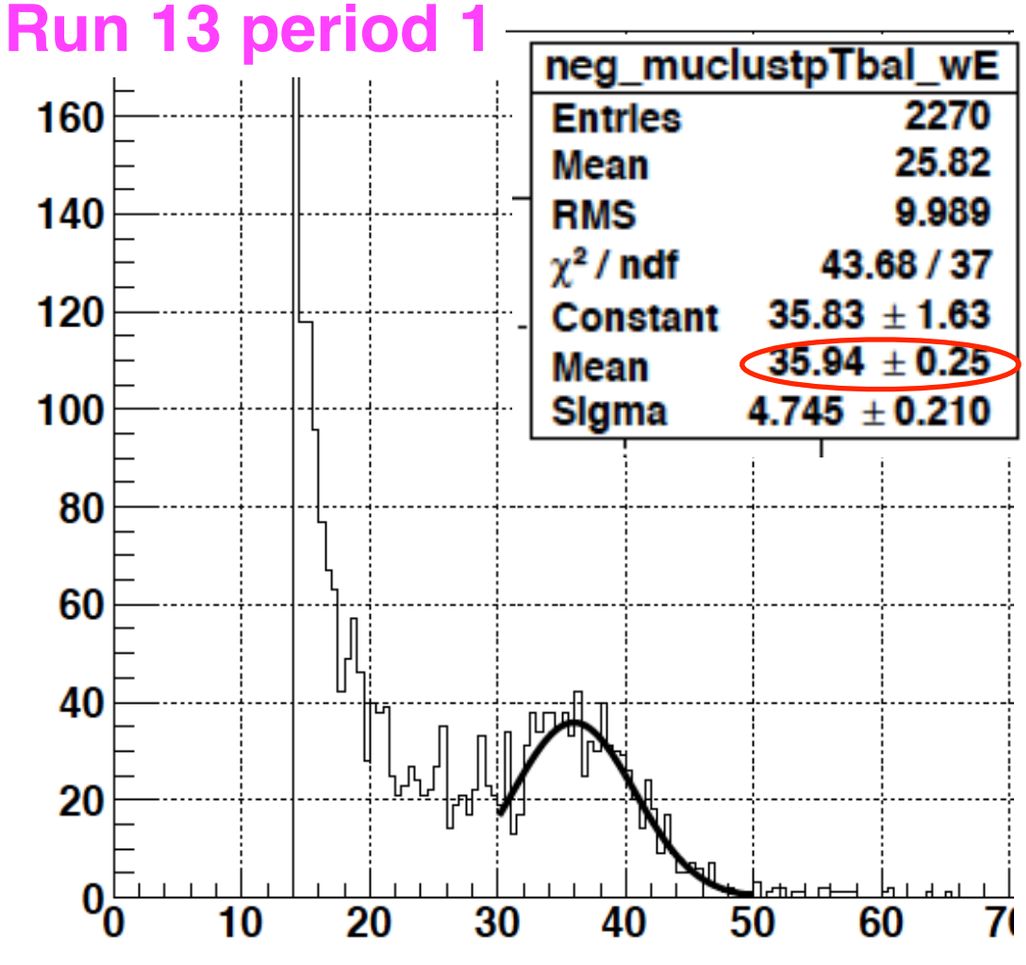


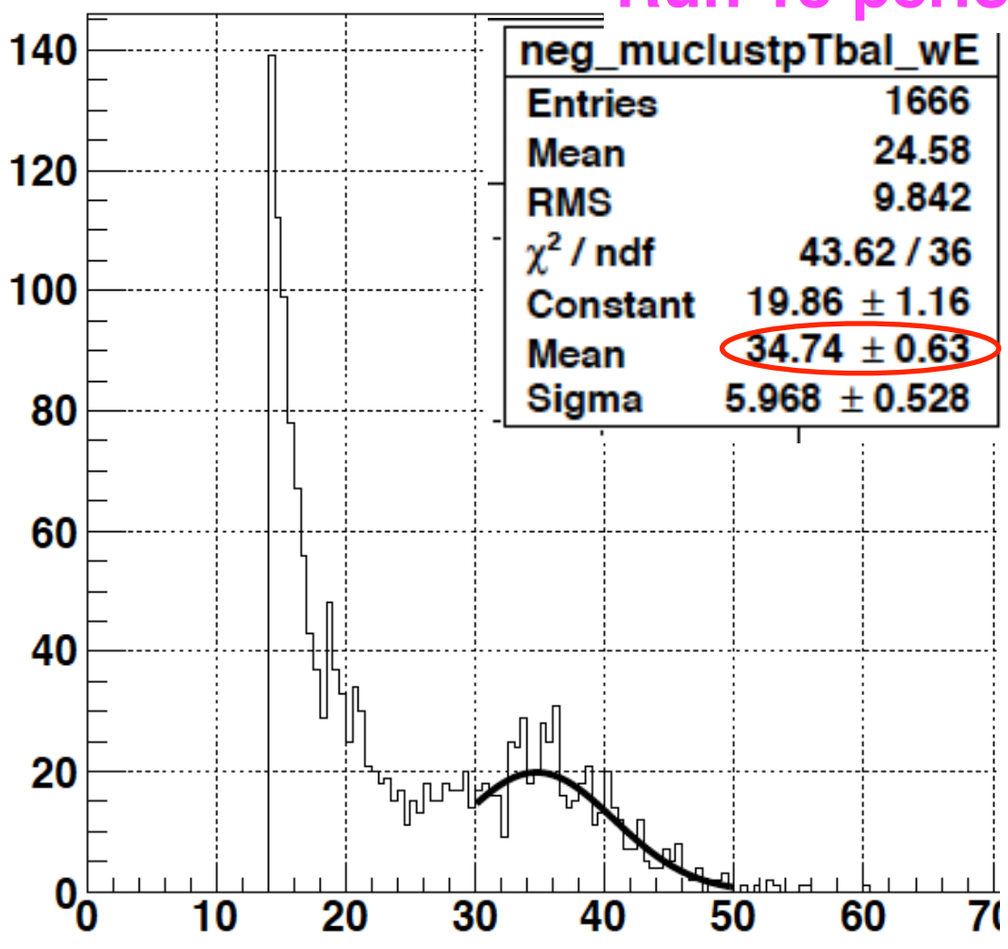
Run 13 period 2



W^- ET "gaus" fit [30-45] GeV

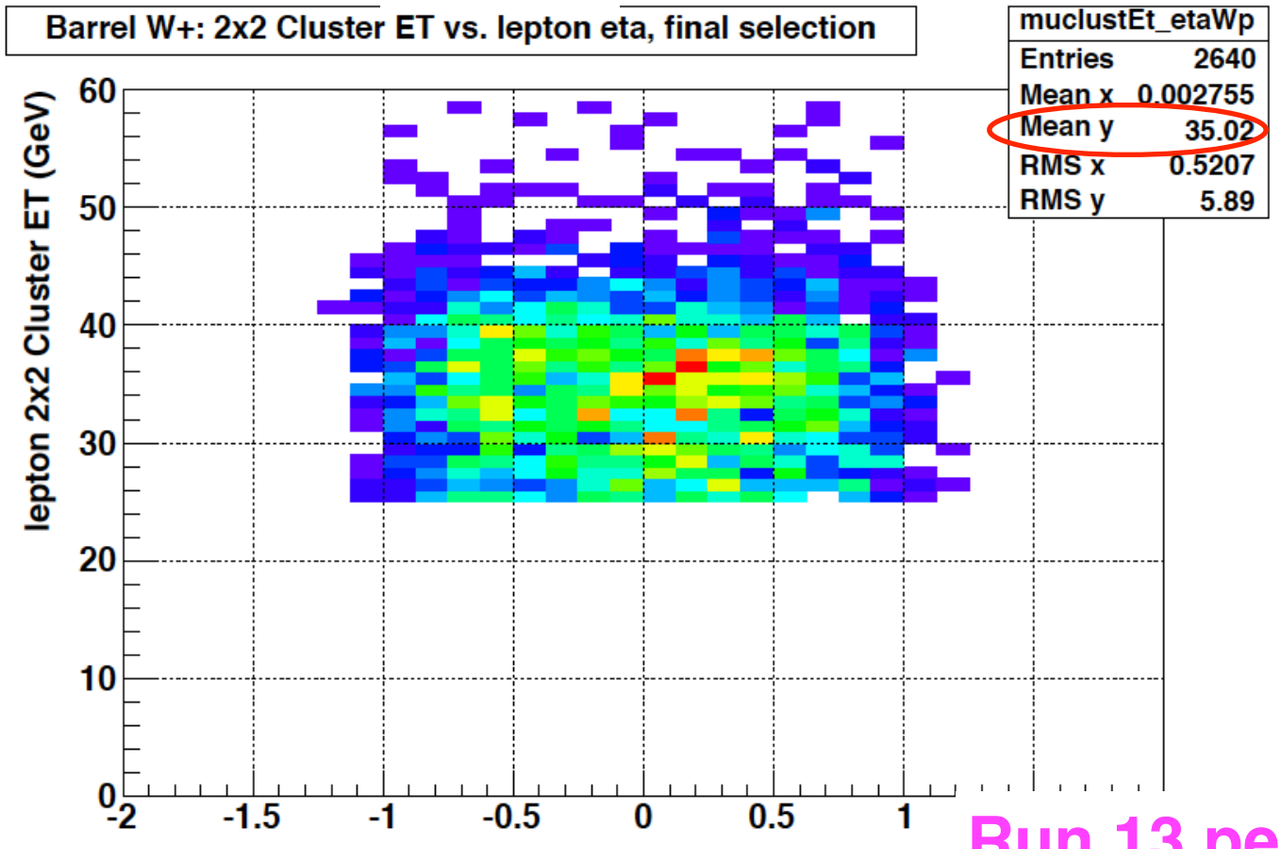




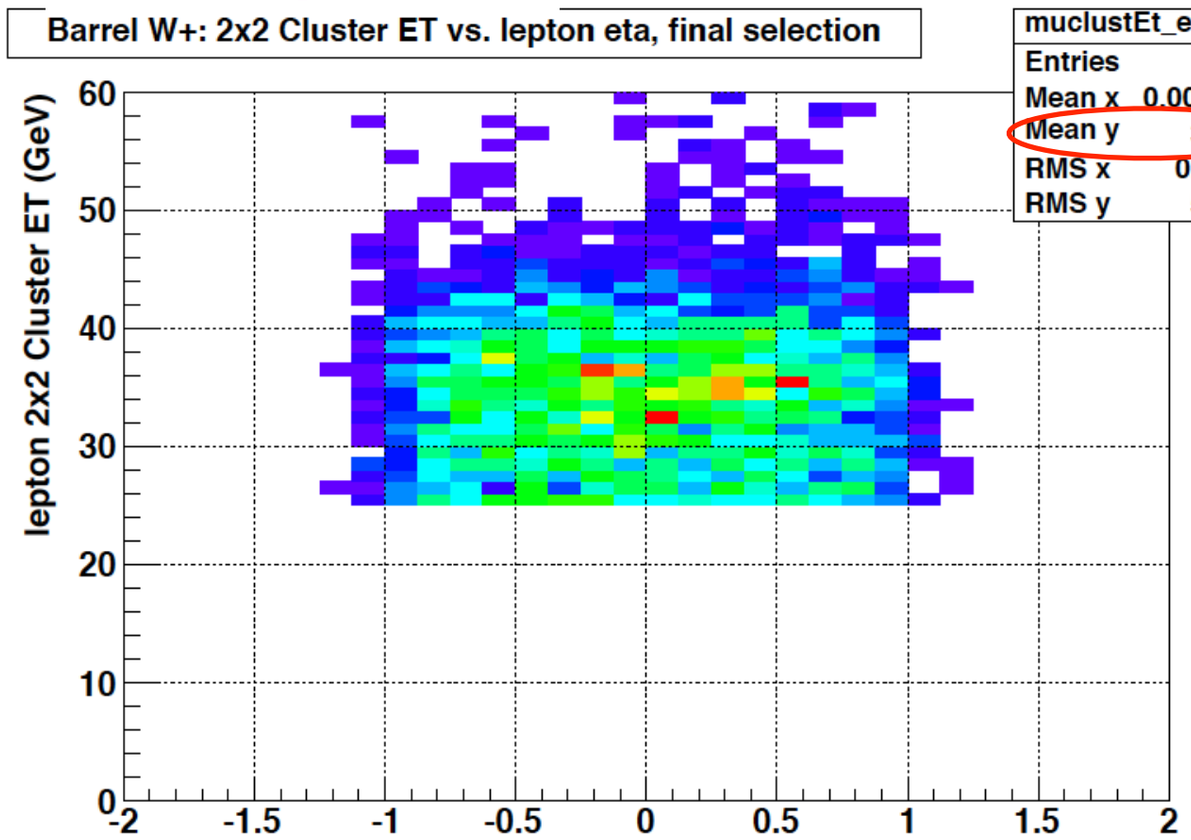


Final W 2x2 ET Vs lep eta

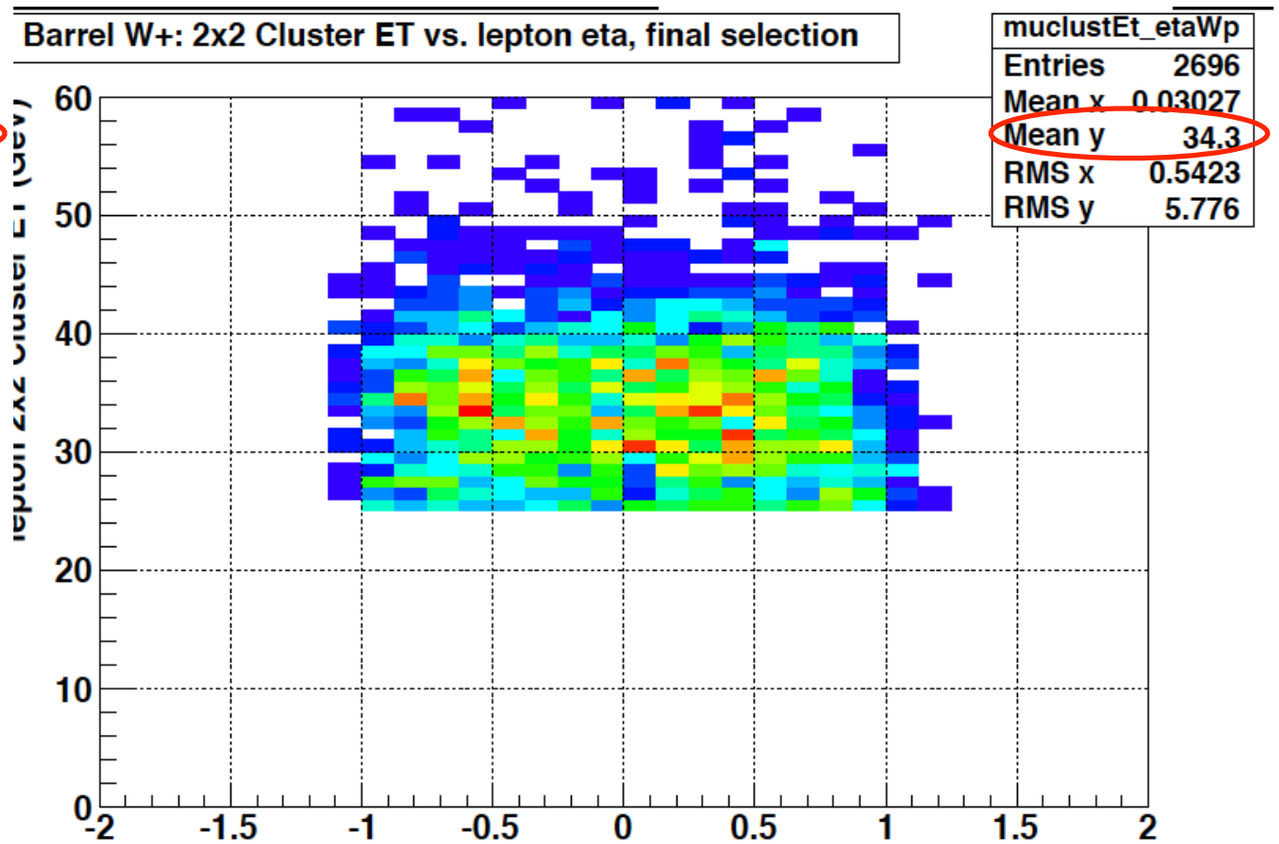
Run 12



Run 13 period 1

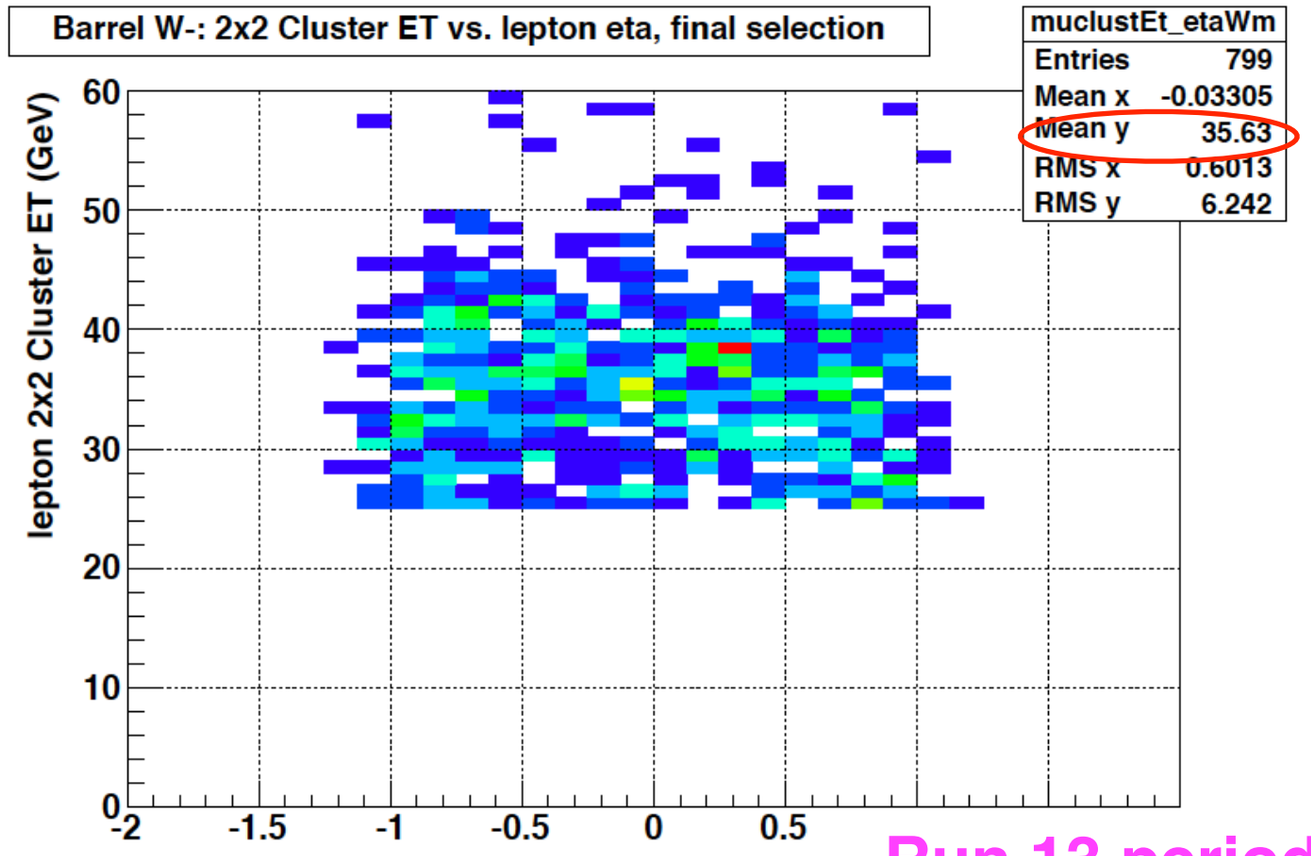


Run 13 period 2

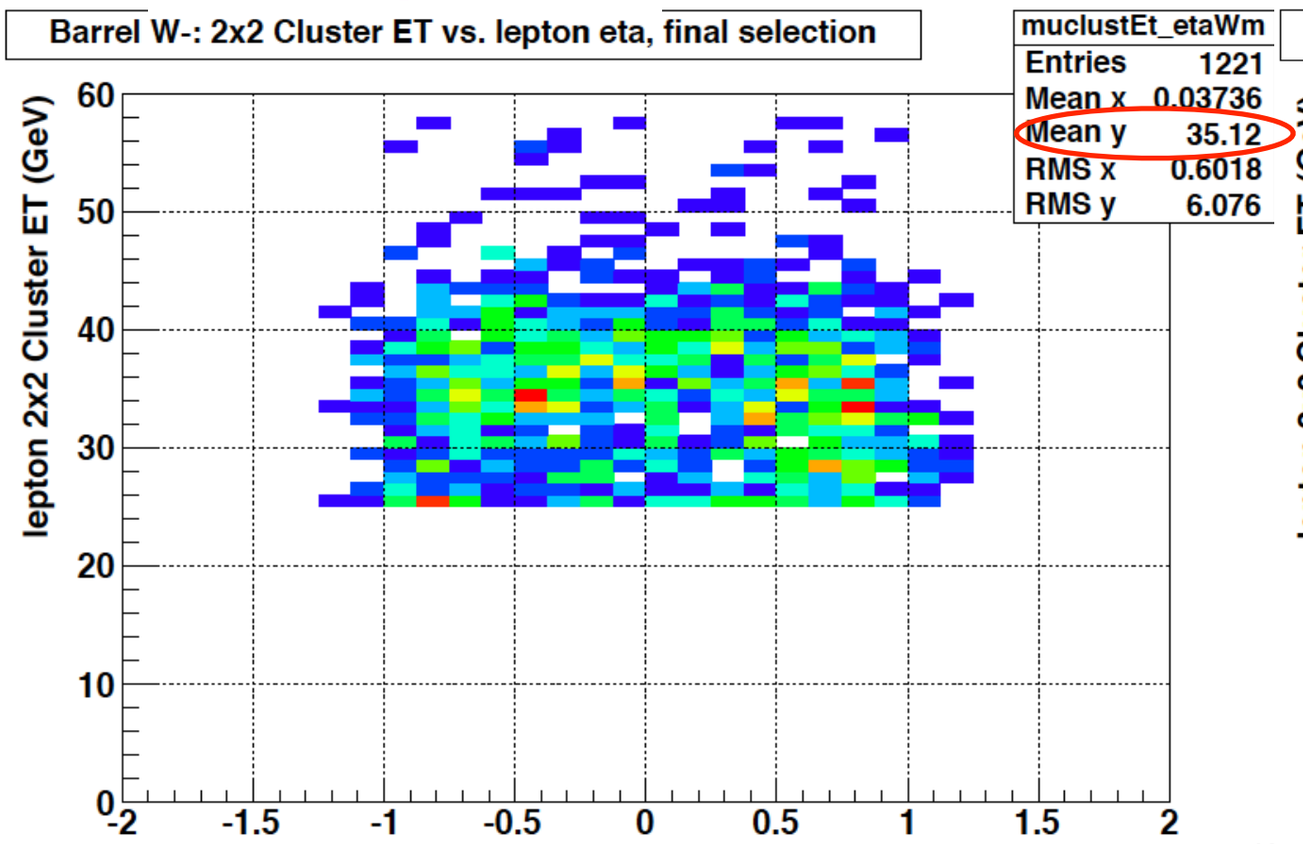


Final W 2x2 ET Vs lep eta

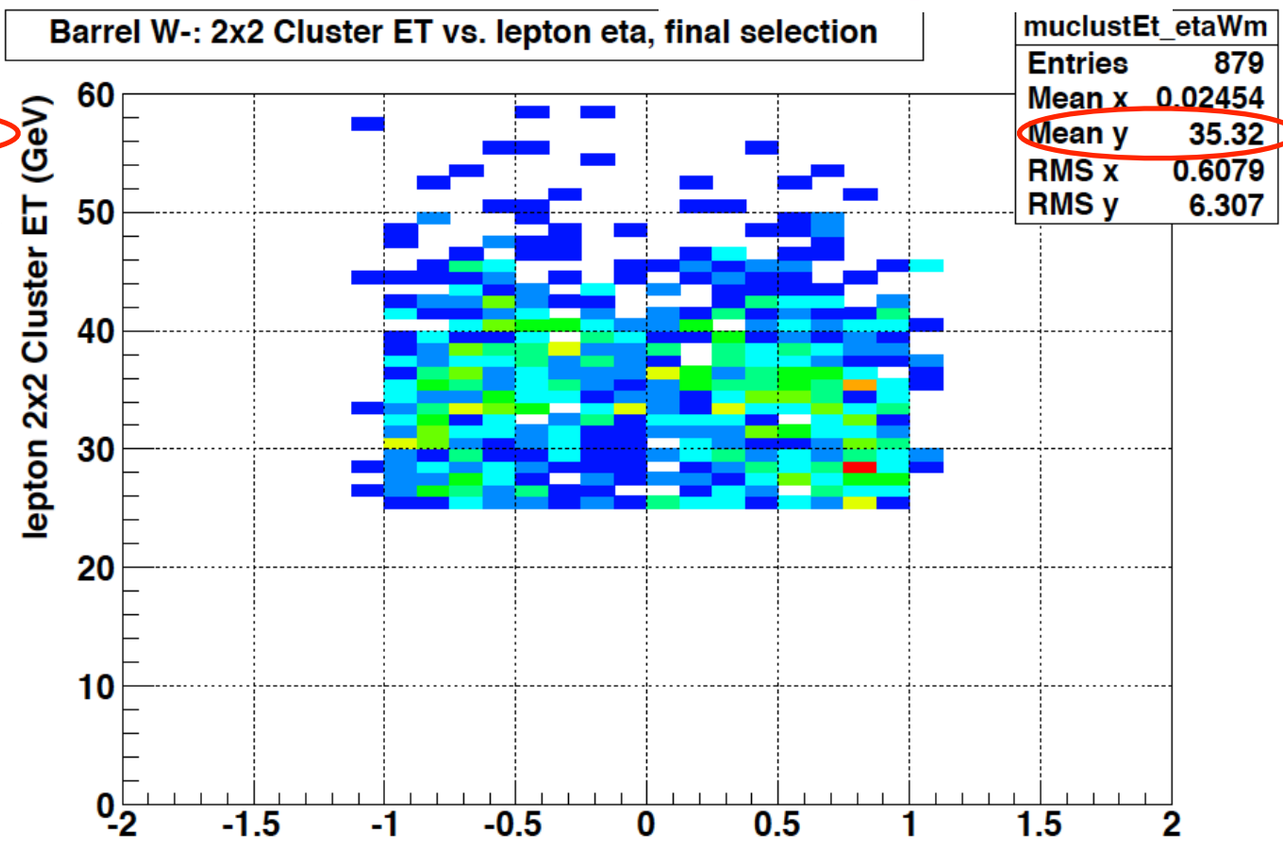
Run 12

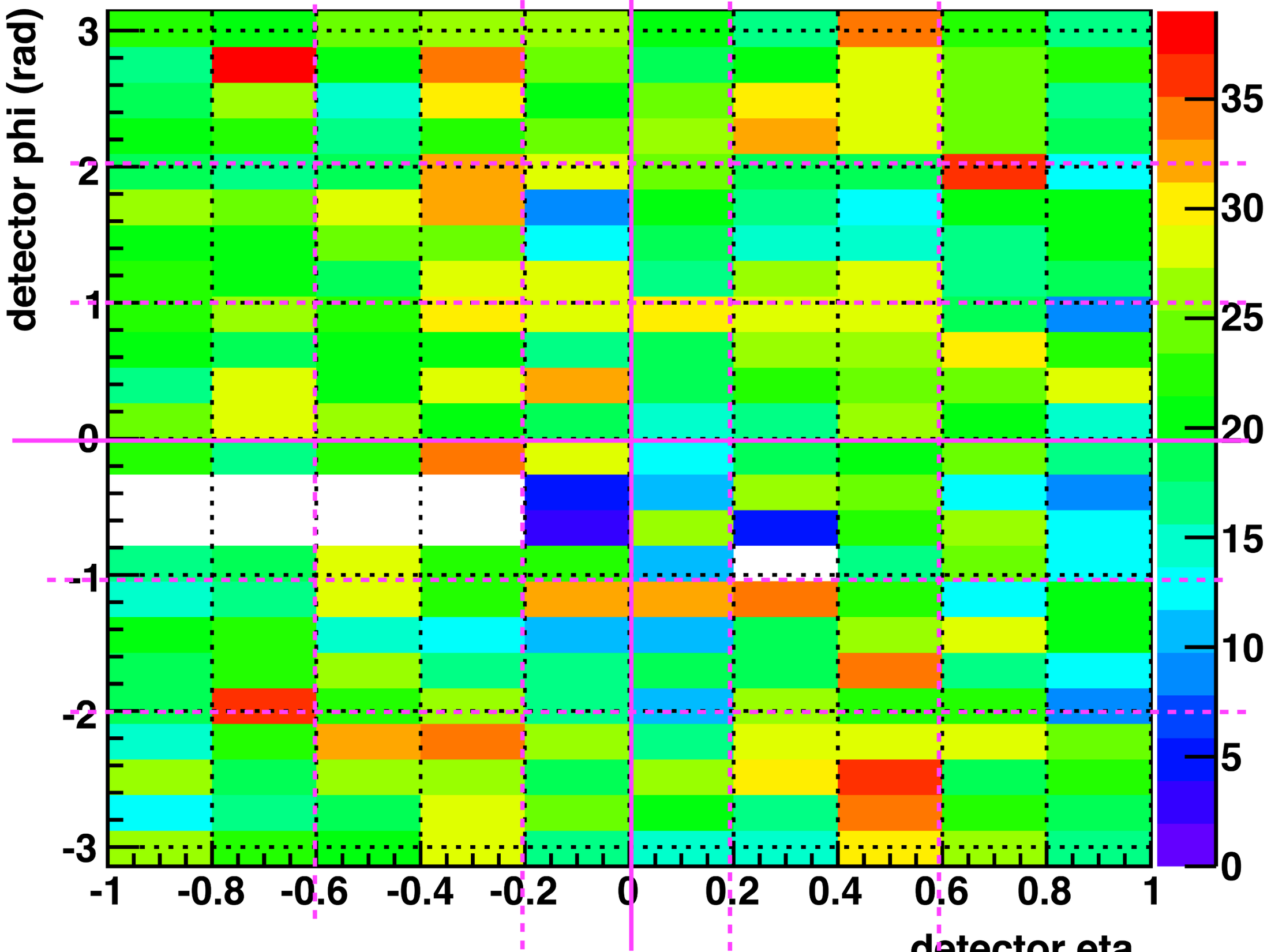


Run 13 period 1



Run 13 period 2

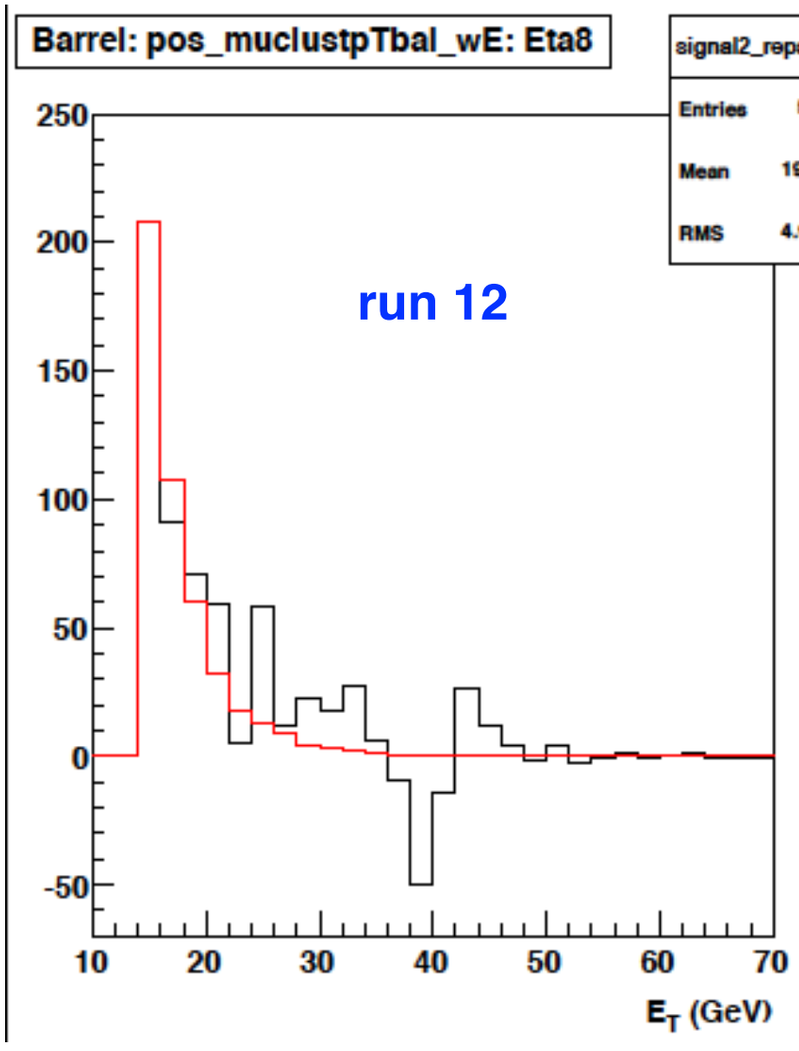


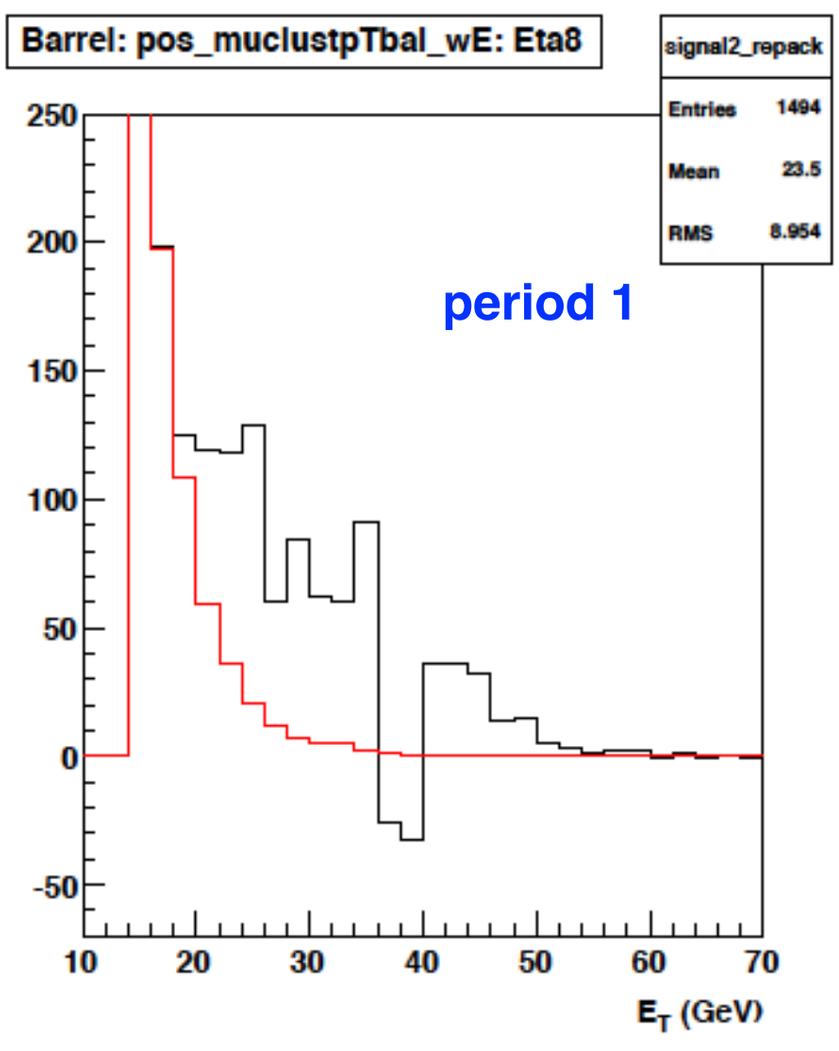

detector phi (rad)
3
2
1
0
-1
-2
-3
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
detector eta
35
30
25
20
15
10
5
0

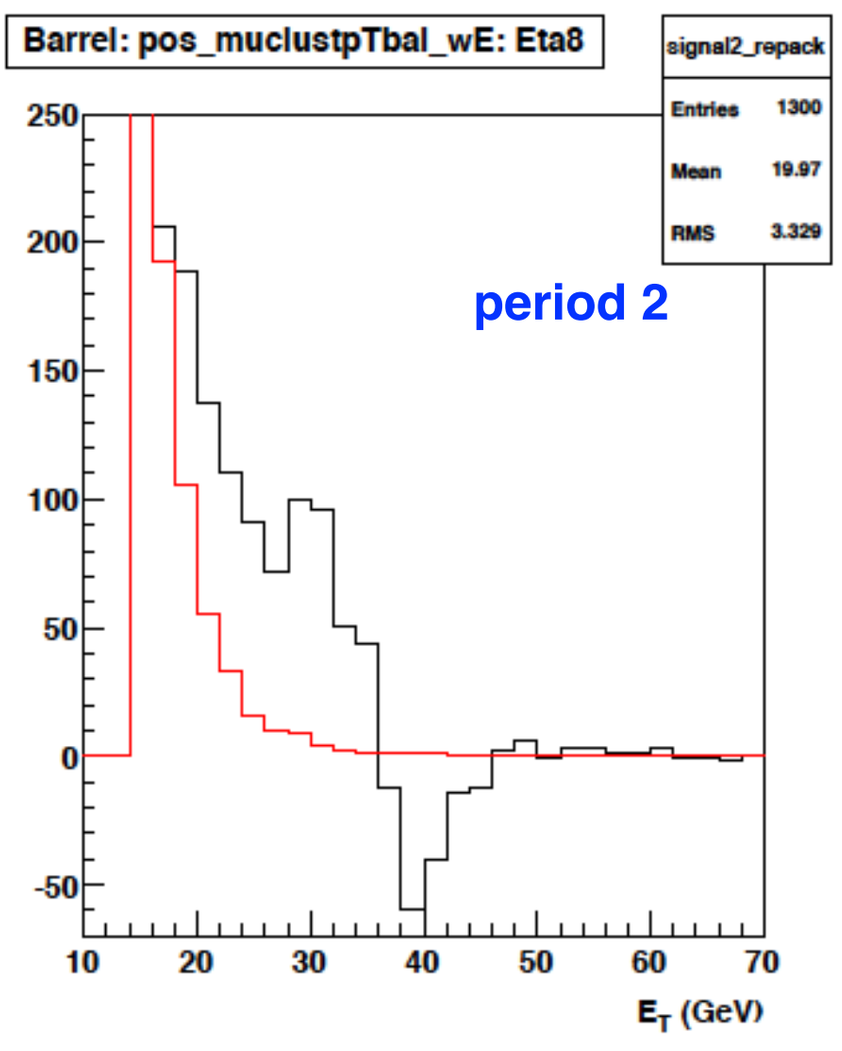
QCD shape

— - Raw - (MC + 2nd eemc + tau + zee)

— - data-driven QCD shape



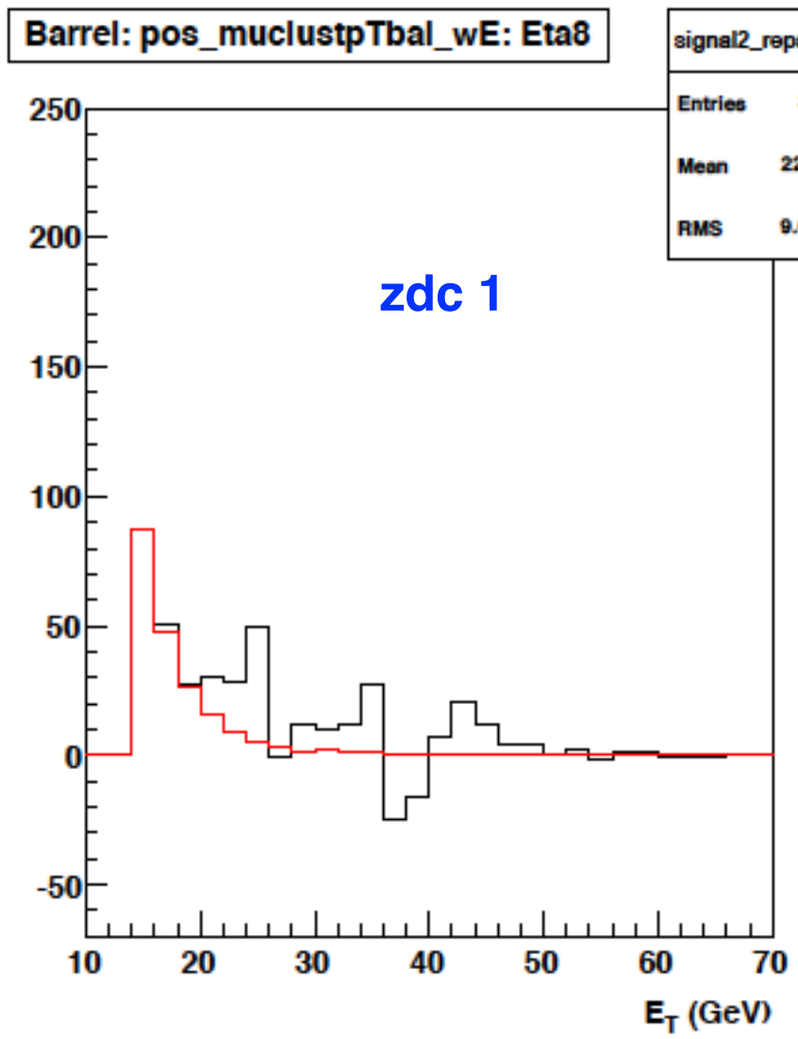


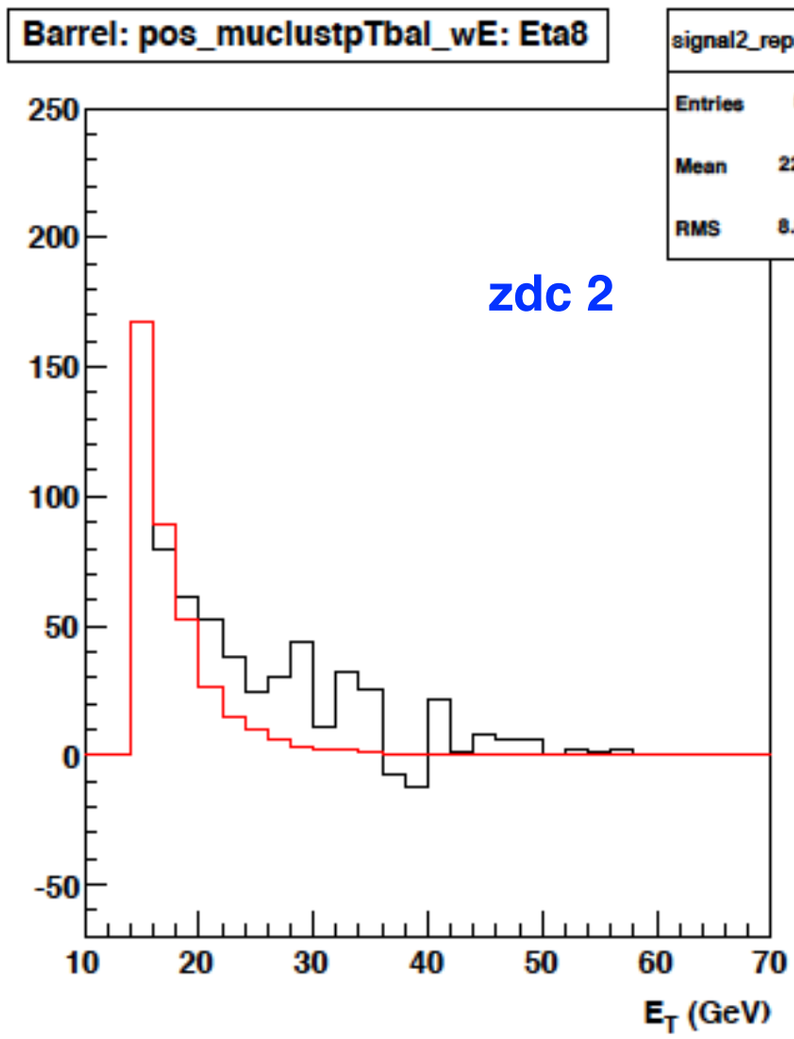


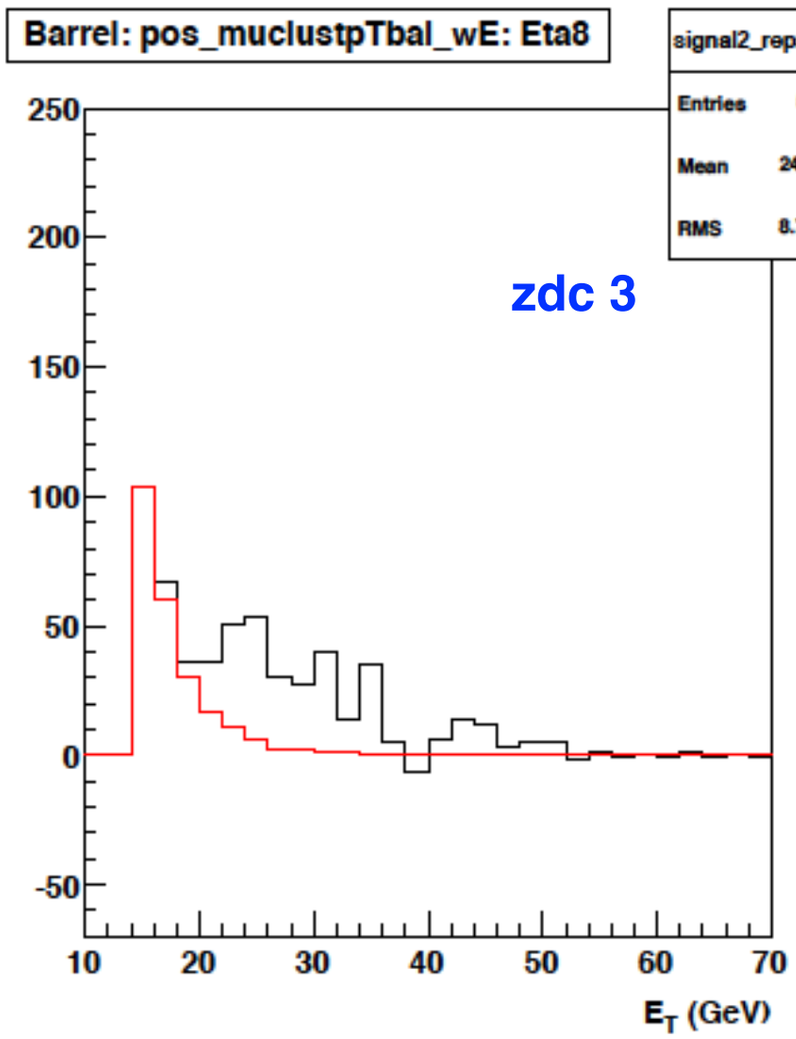
QCD shape

— - Raw - (MC + 2nd eemc + tau + zee)

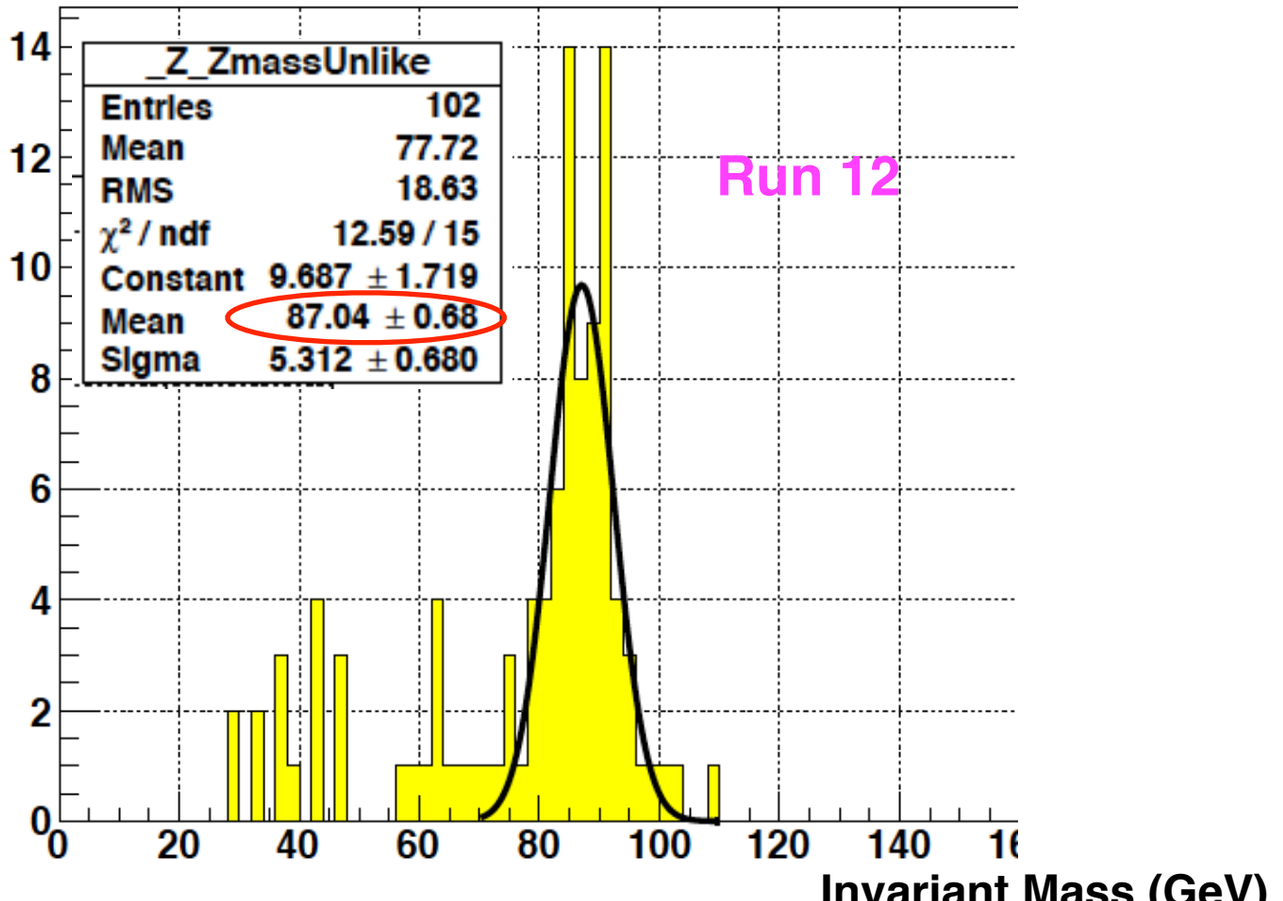
— - data-driven QCD shape

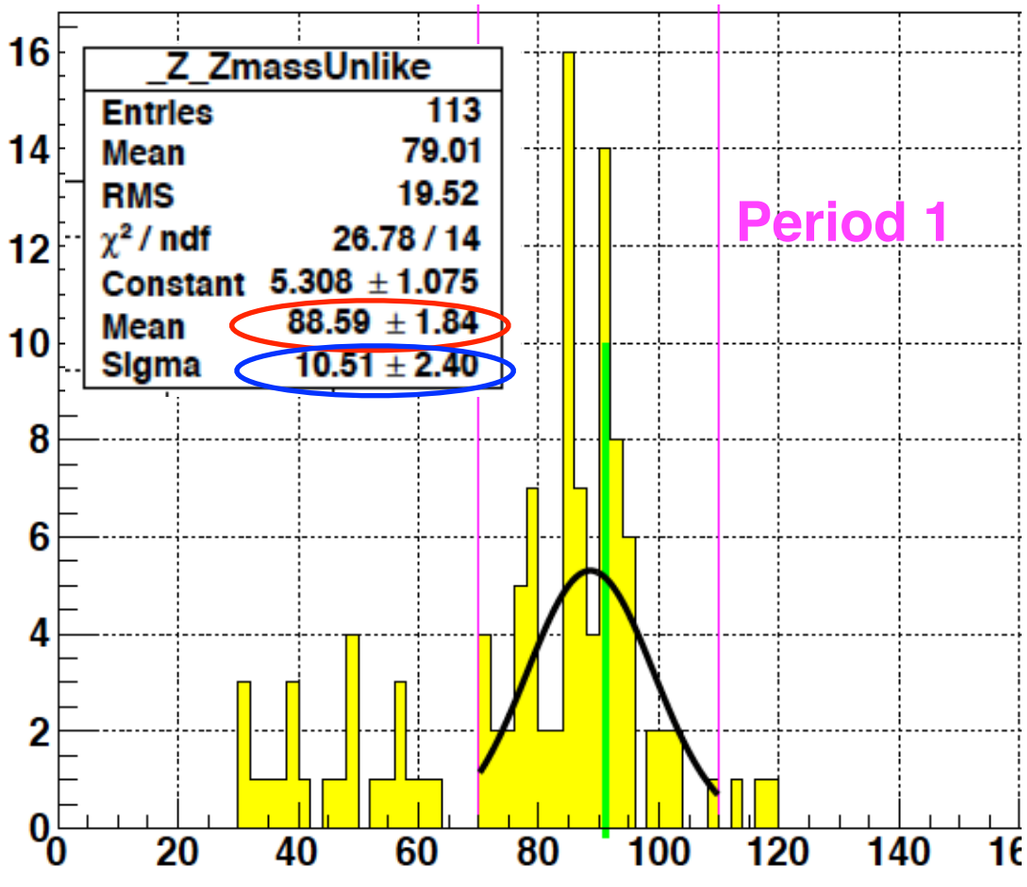


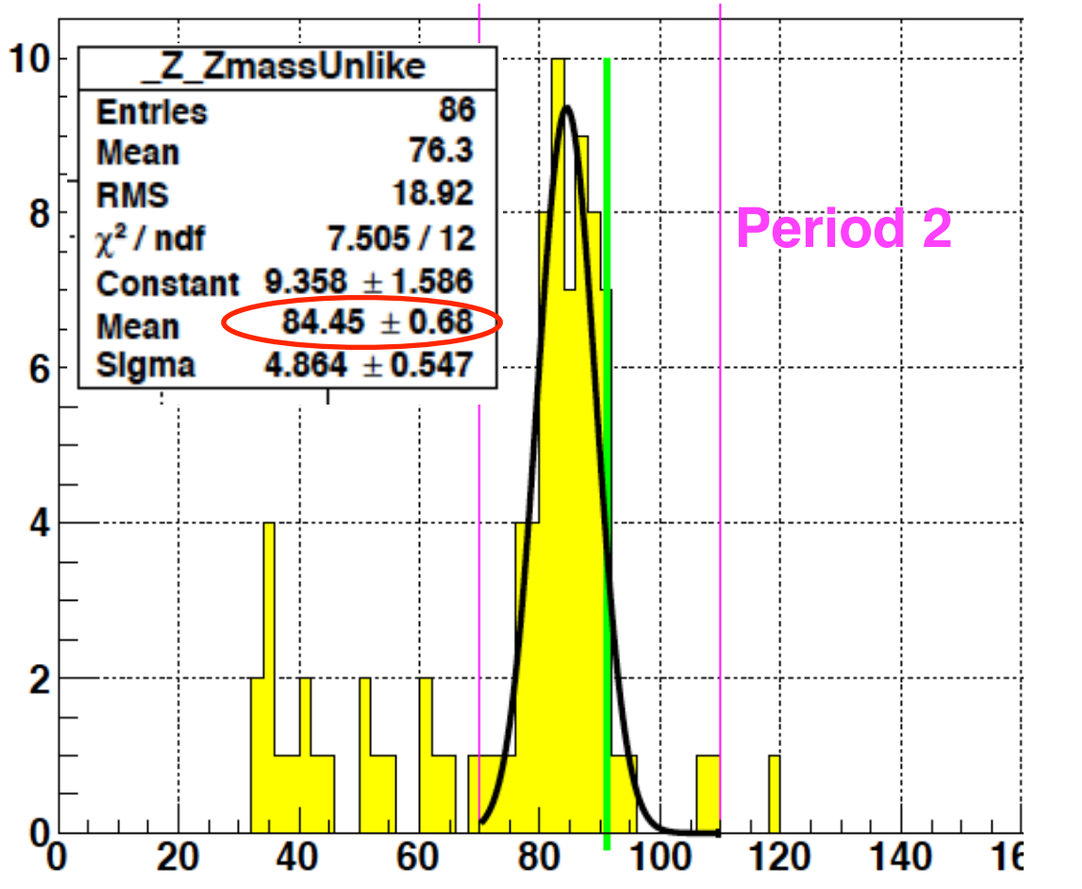




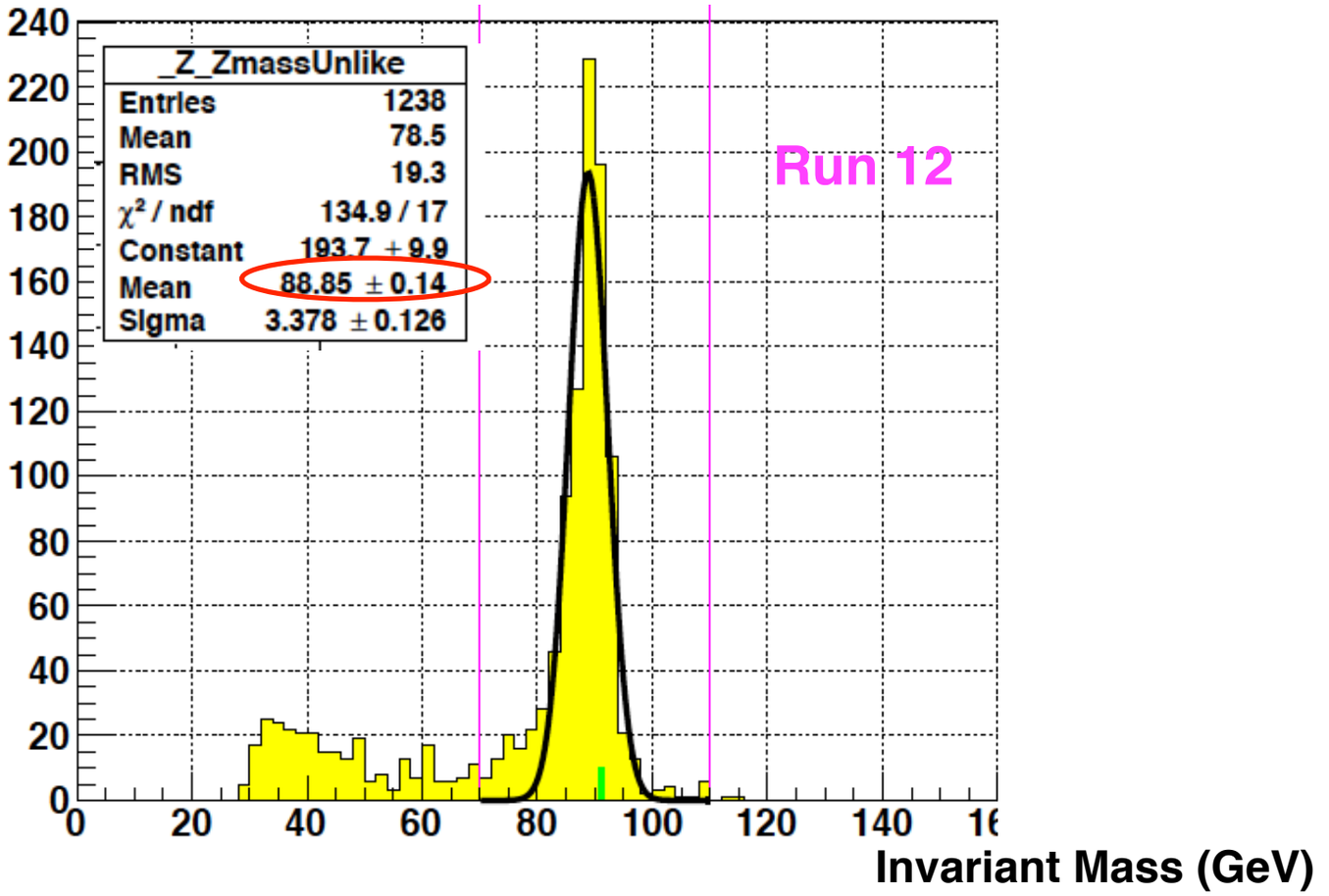
Z Mass Distribution (Unlike charge pairs) — Data

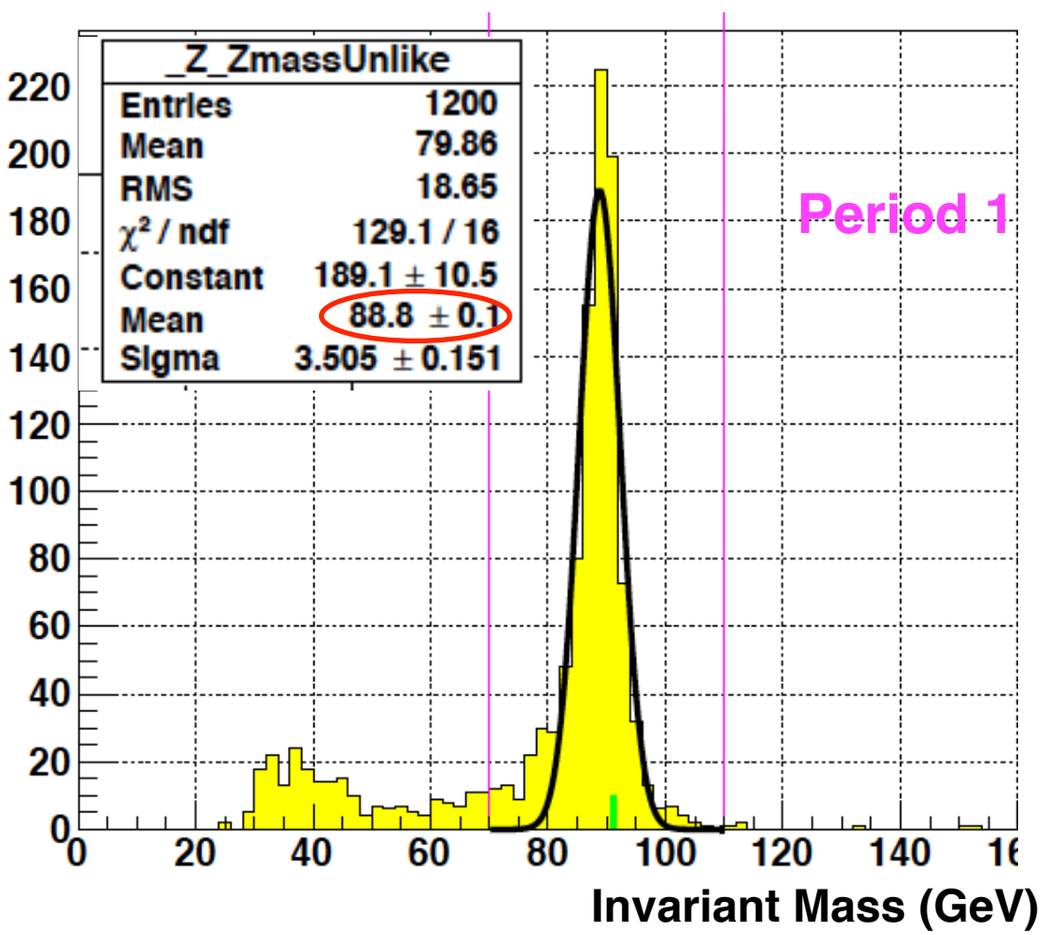


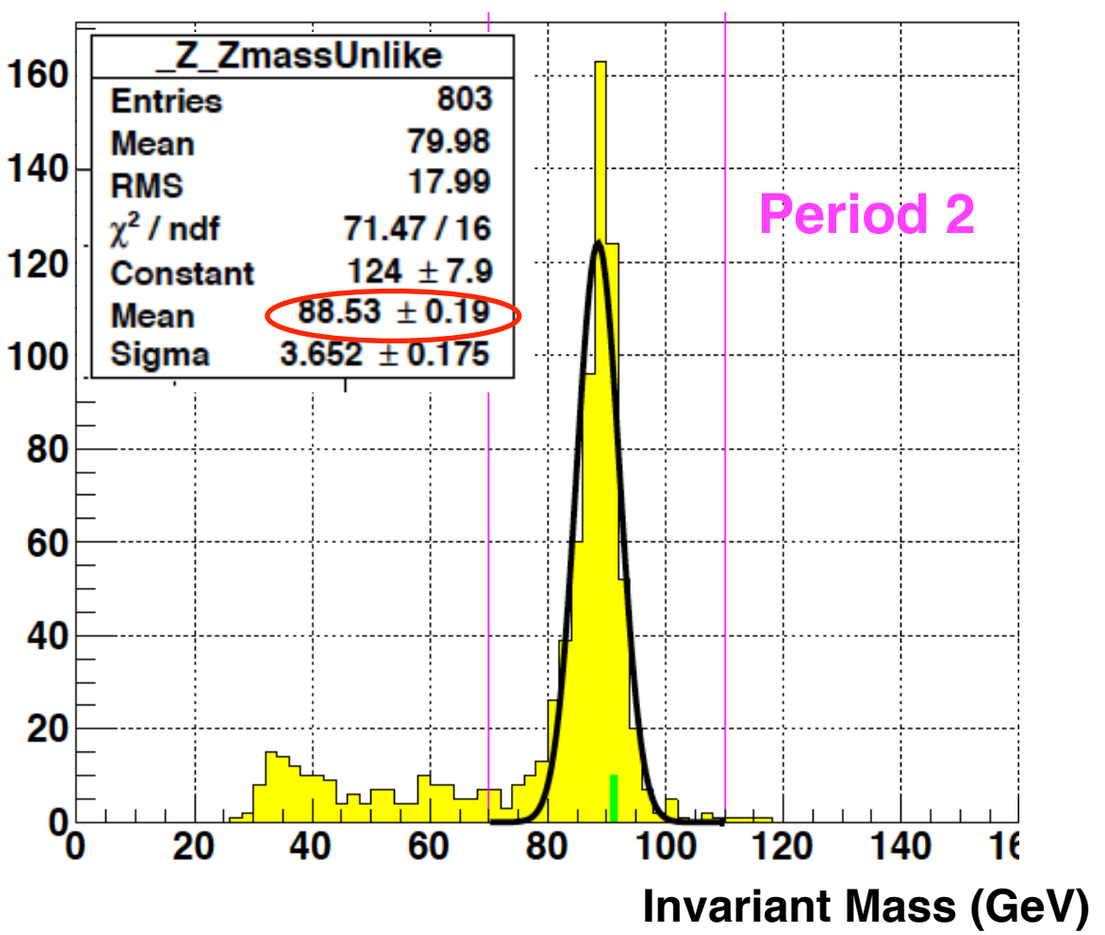




Z Mass Distribution (Unlike charge pairs) — Embedding







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