

# dileptons in pion (0,7 GeV/c) beam

**PRELIMINARY**

**e<sup>+</sup>e<sup>-</sup> (inclusive)  
identification**

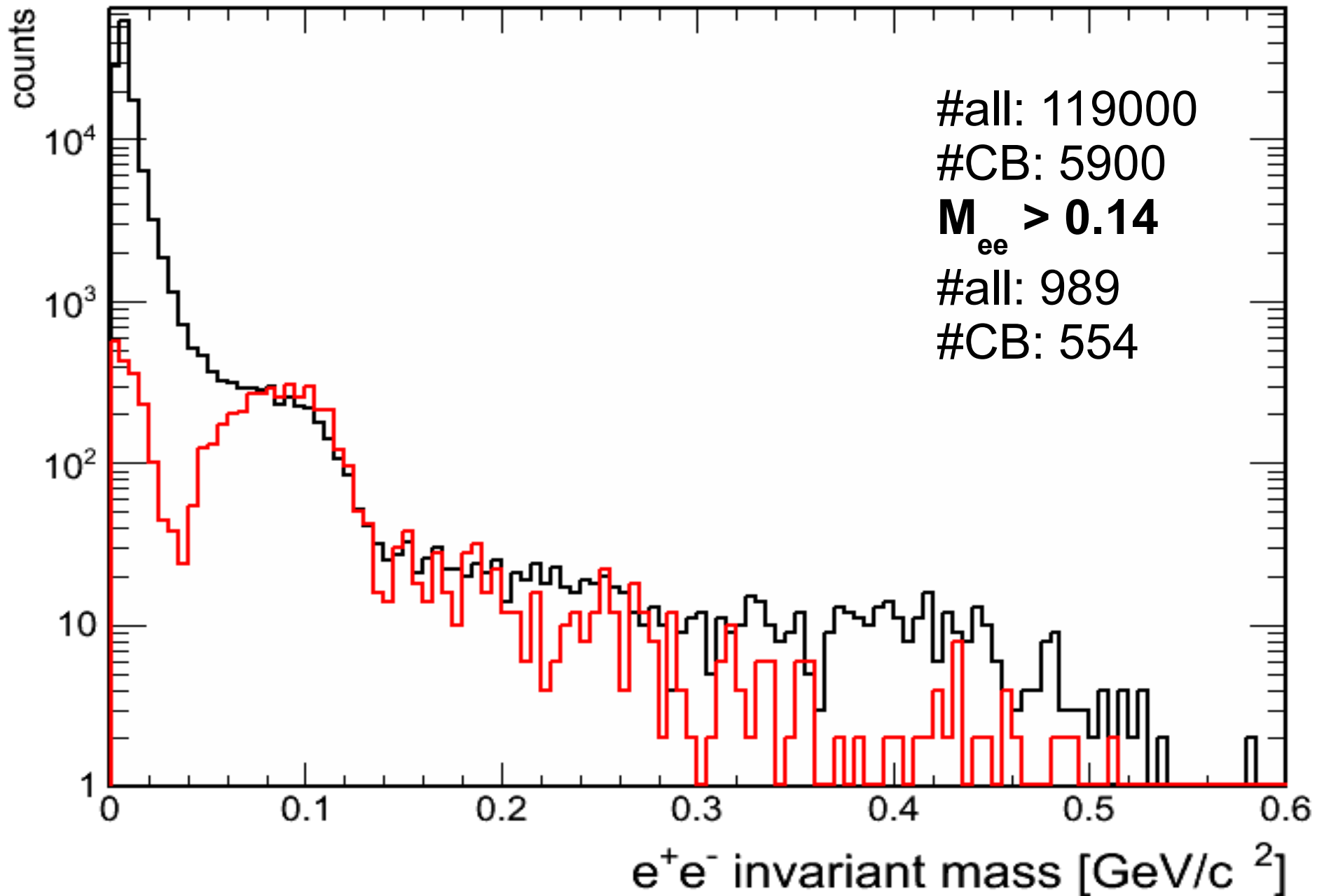
**PE target**

(days: 196-198, 232-239)

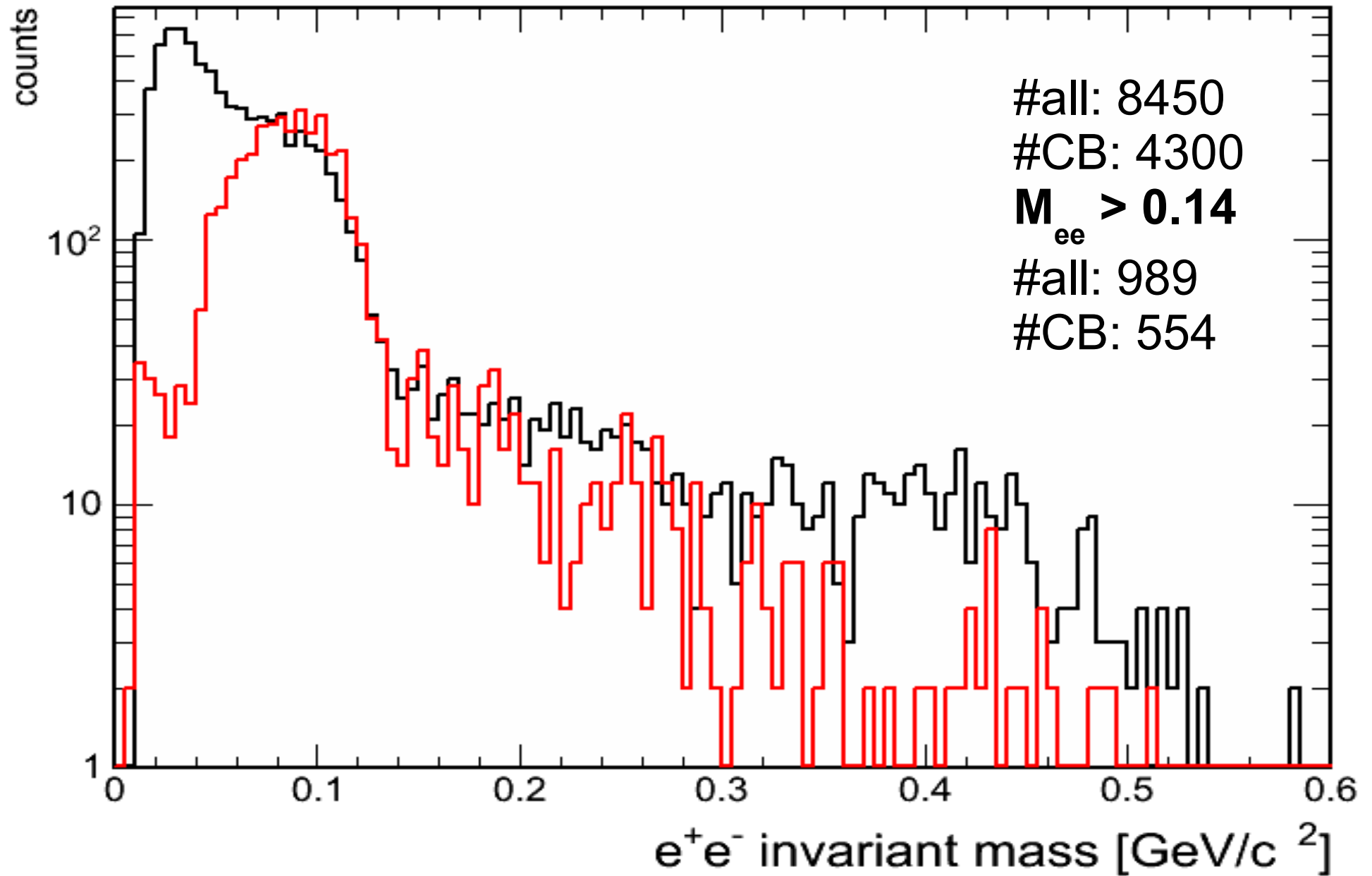
**484 Mevents**

**99 hours**

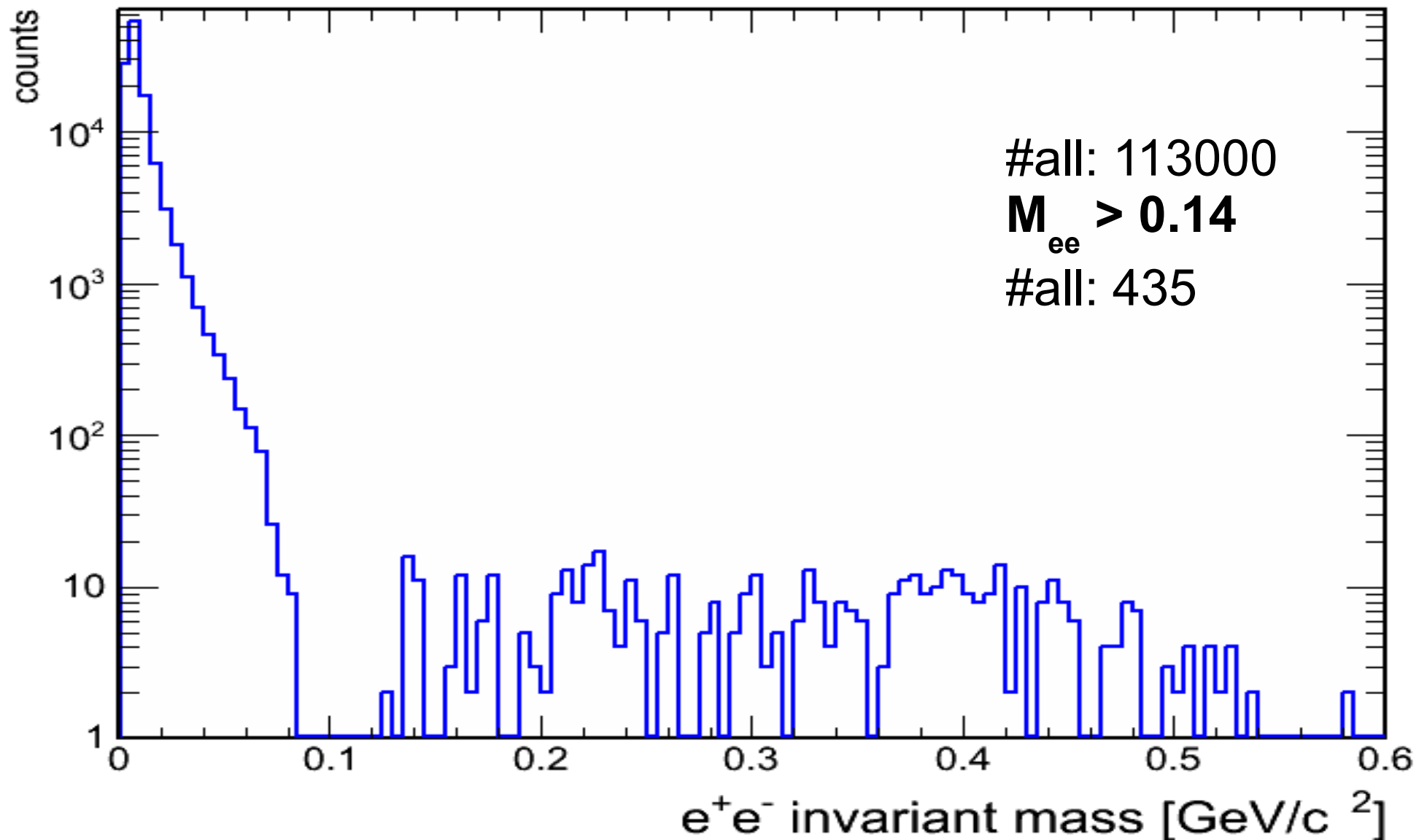
# e<sup>+</sup>e<sup>-</sup> invariant mass, CB



# e<sup>+</sup>e<sup>-</sup> invariant mass (oa > 9 deg), CB

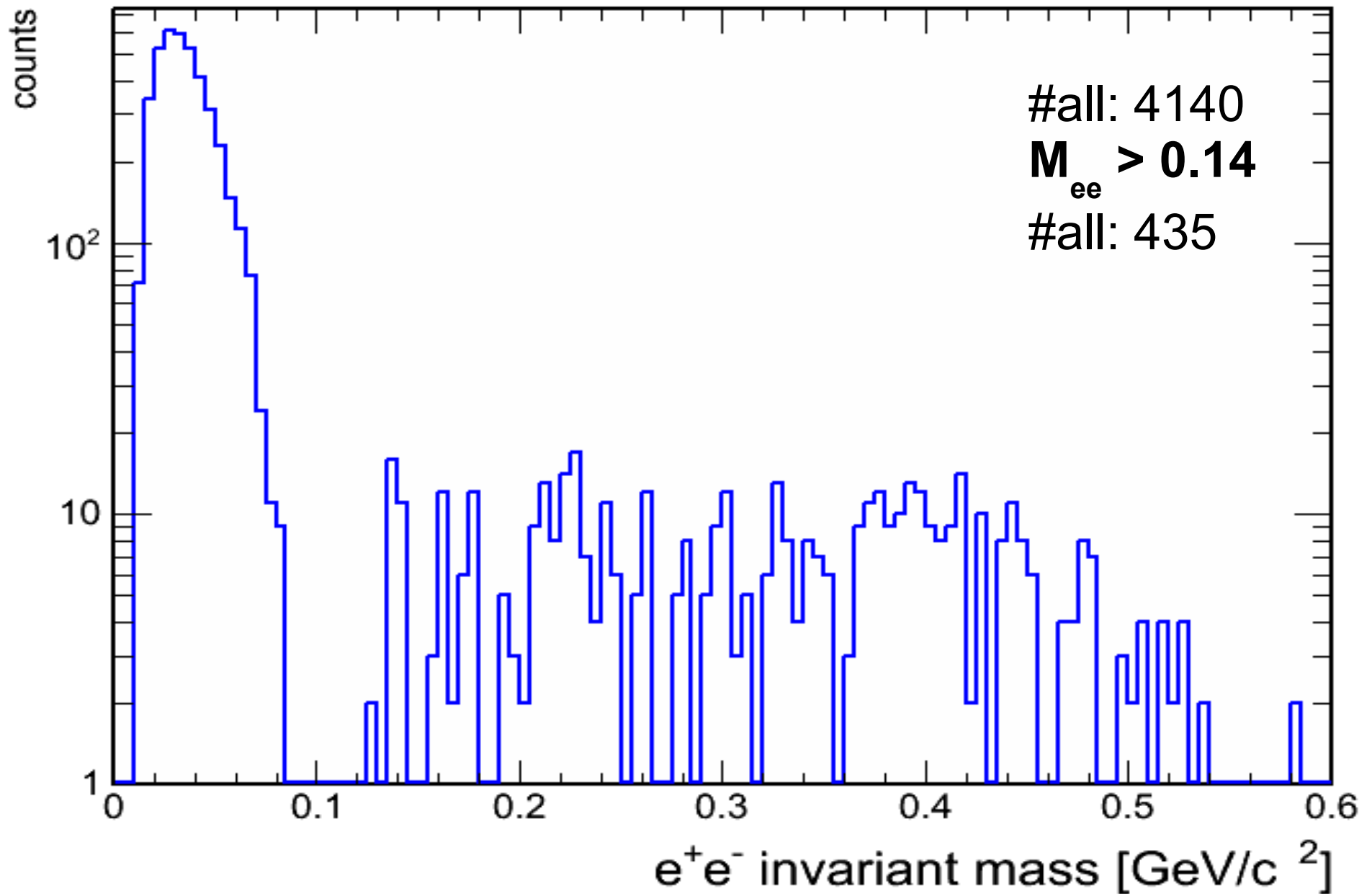


# $e^+e^-$ signal (CB subtracted)

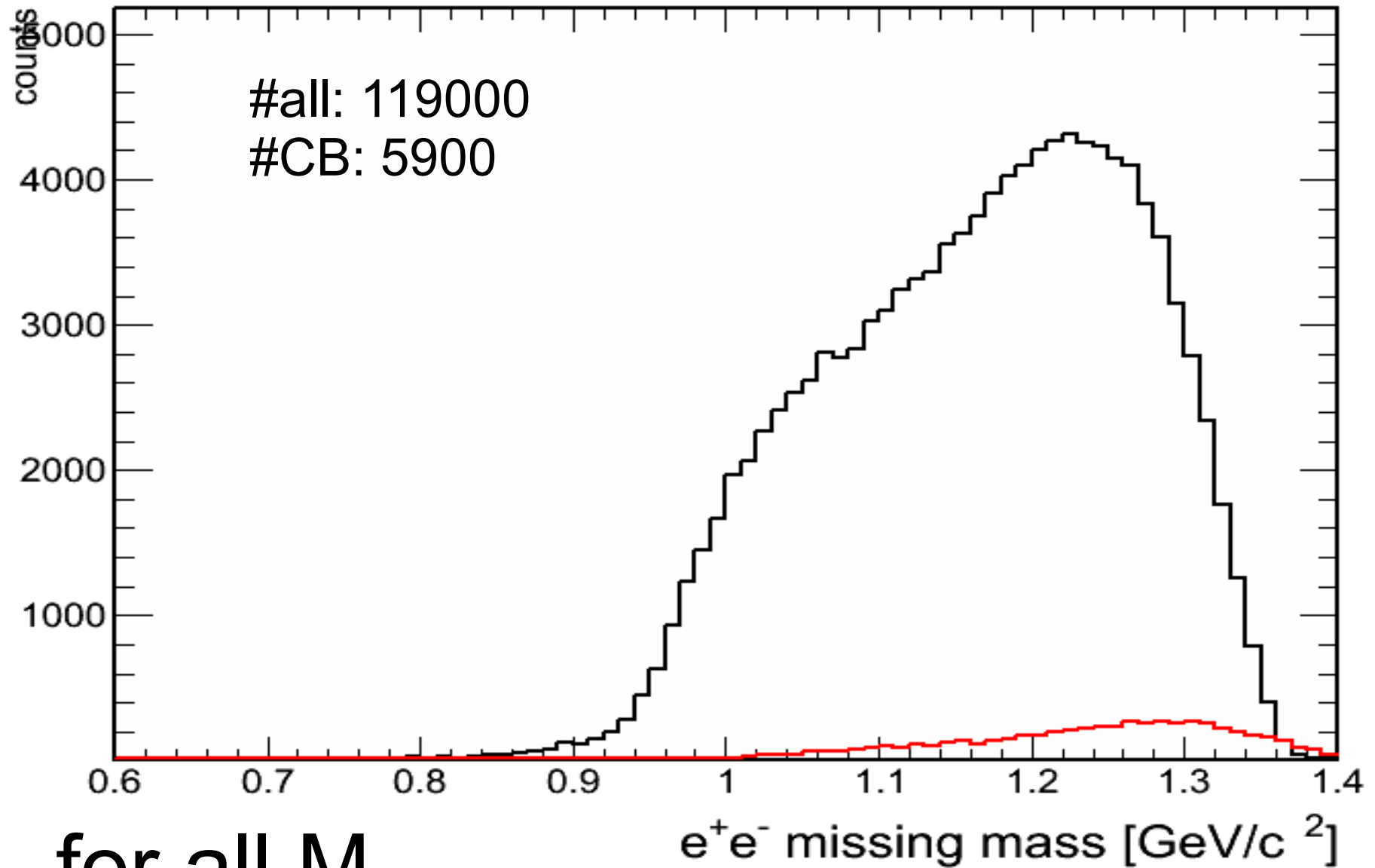


for  $M_{ee} > 140 \text{ MeV}/c^2$  number of counts: about **435**

# e+e- signal (CB subtracted) $\theta_a > 9$ deg

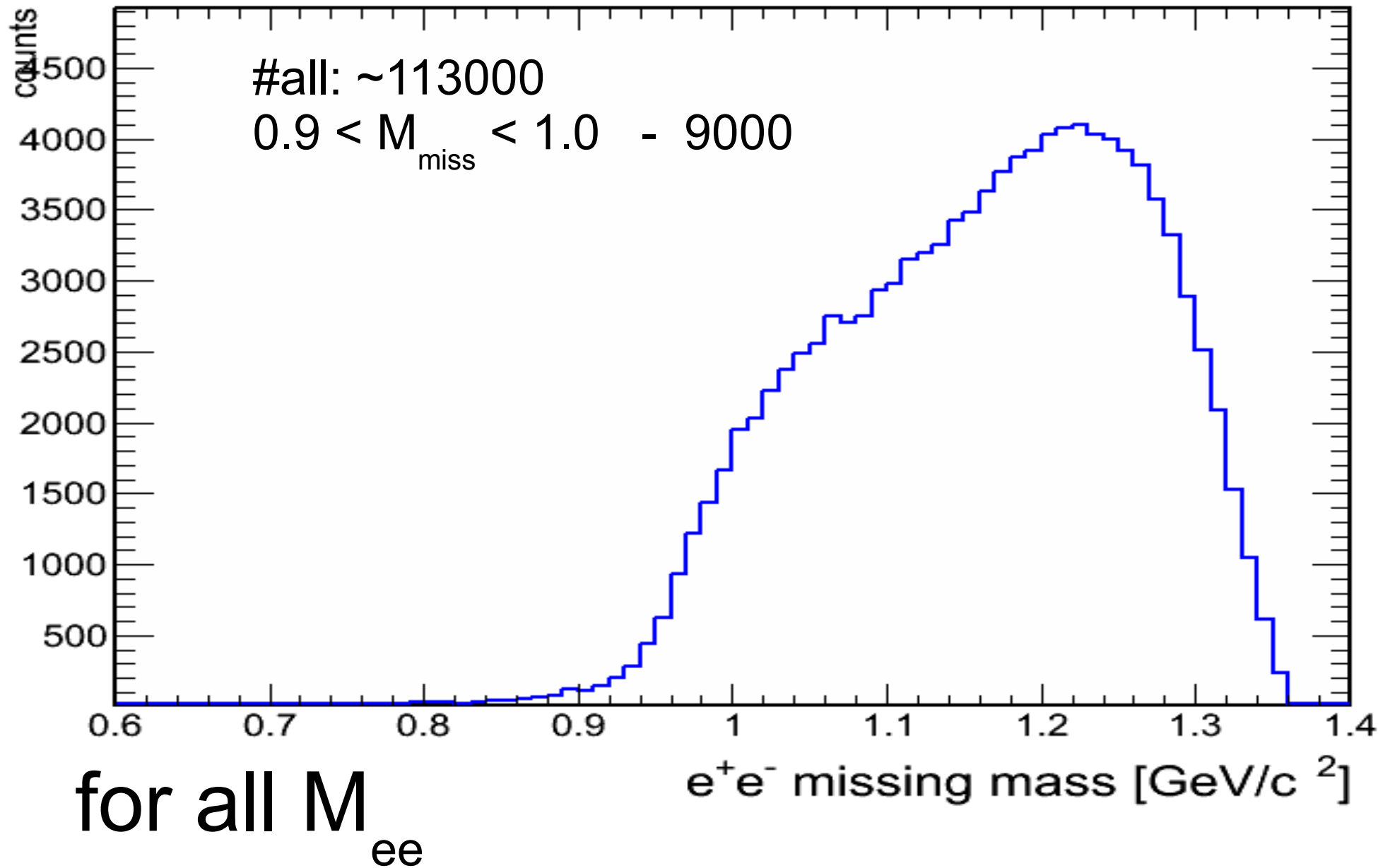


# e<sup>+</sup>e<sup>-</sup> missing mass (ALL, CB)

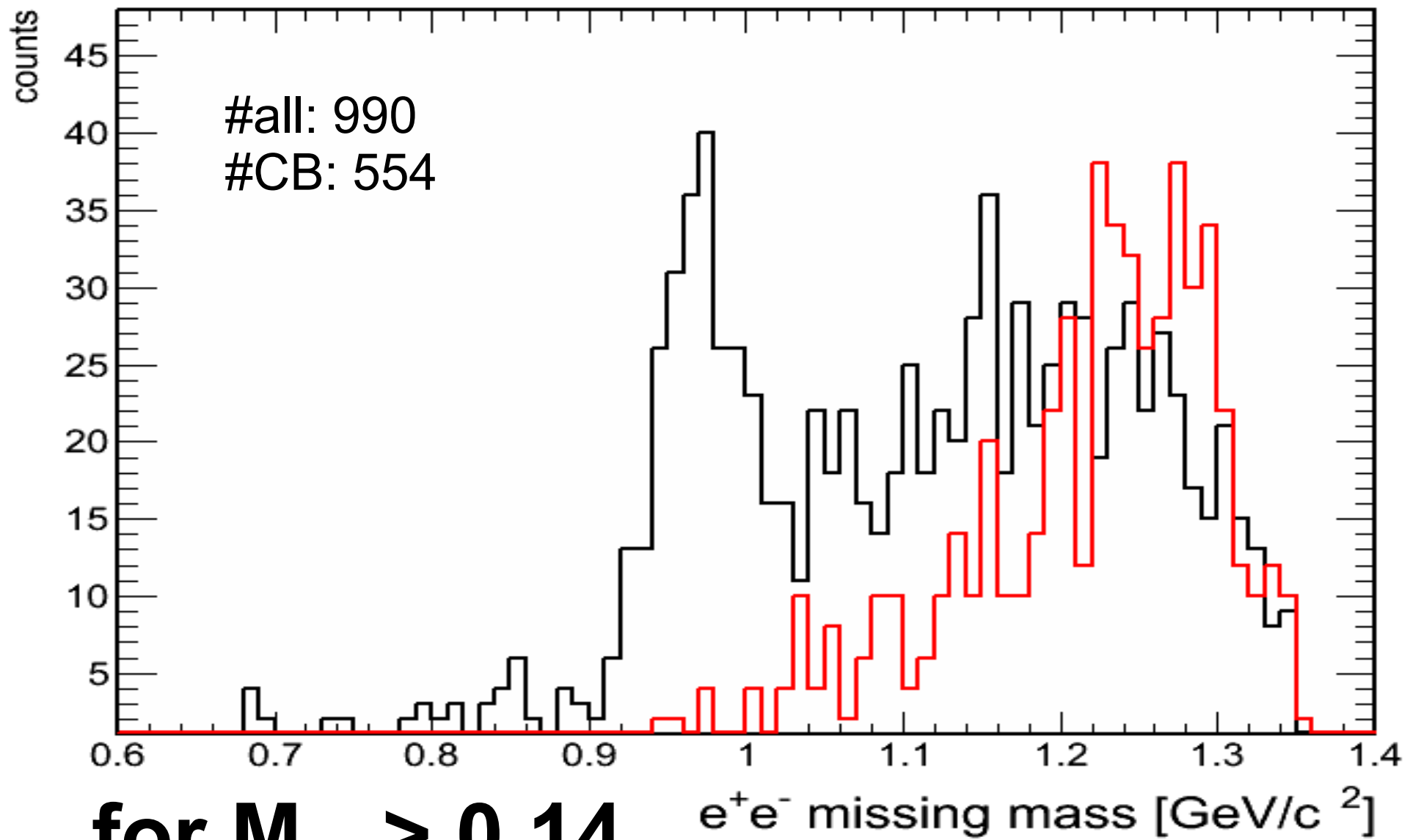


for all  $M_{ee}$

# $e^+e^-$ missing mass (**CB subtracted**)



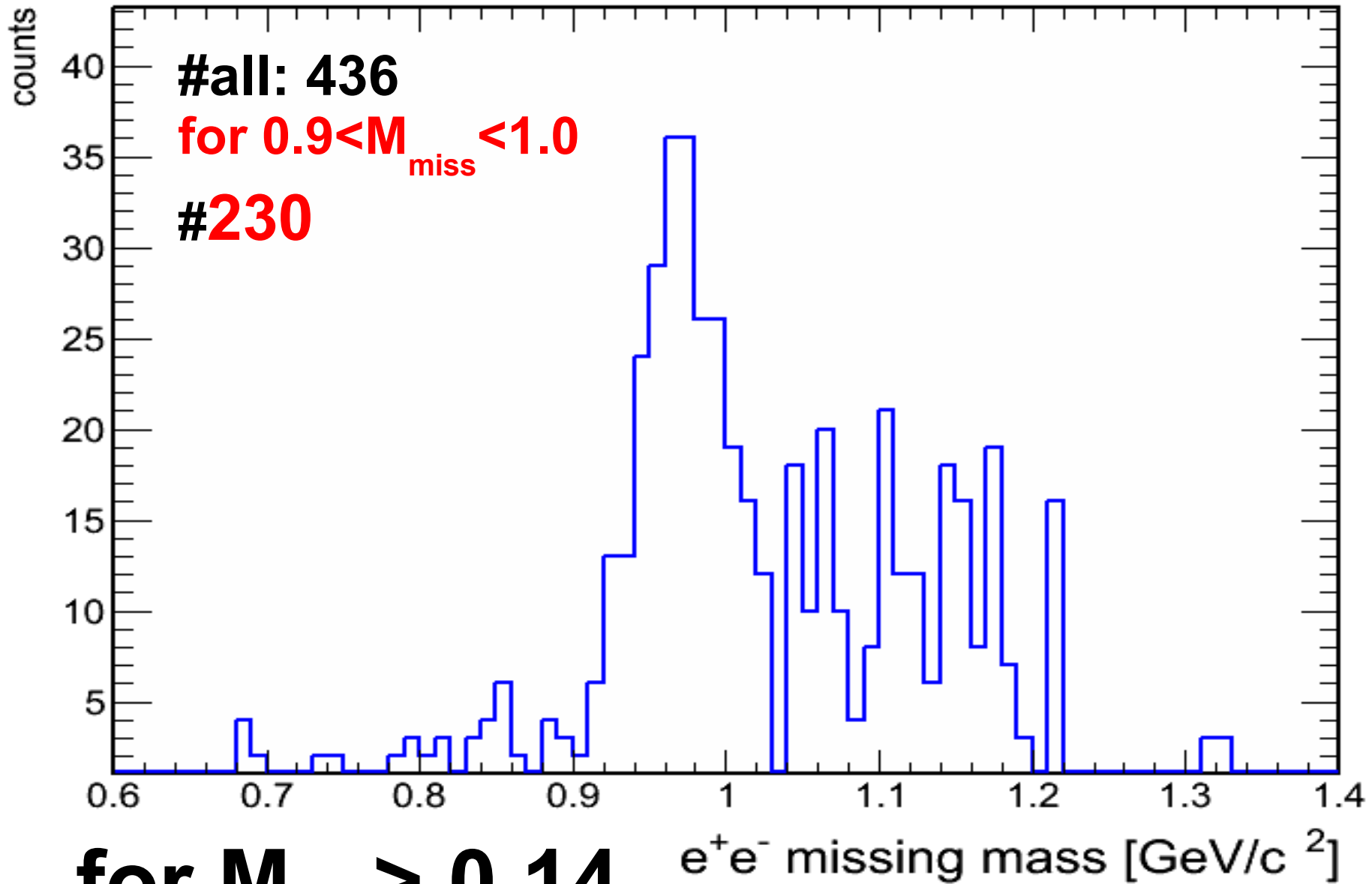
# $e^+e^-$ missing mass (ALL, CB)



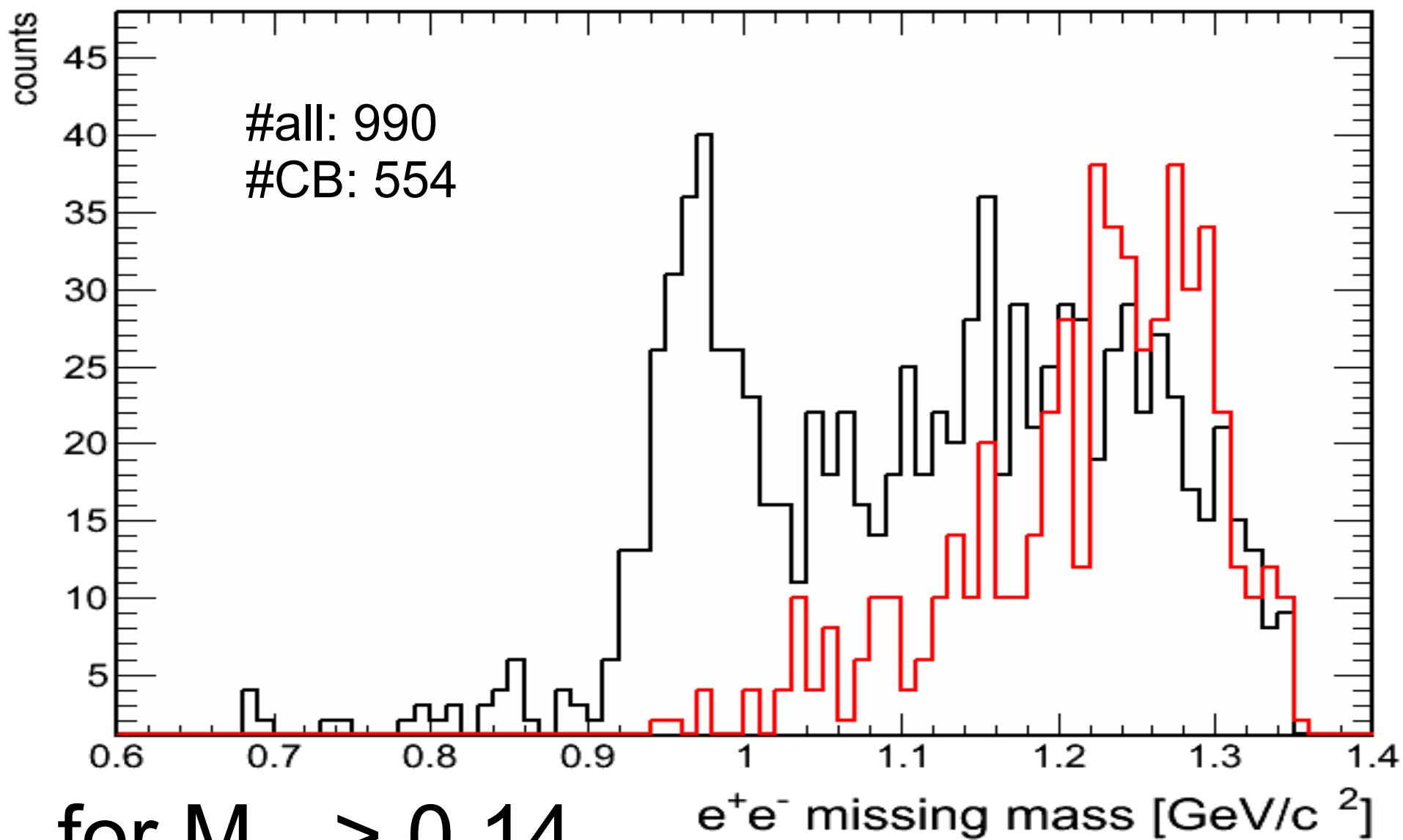
**for  $M_{ee} > 0.14$**



# $e^+e^-$ missing mass (CB subtracted)

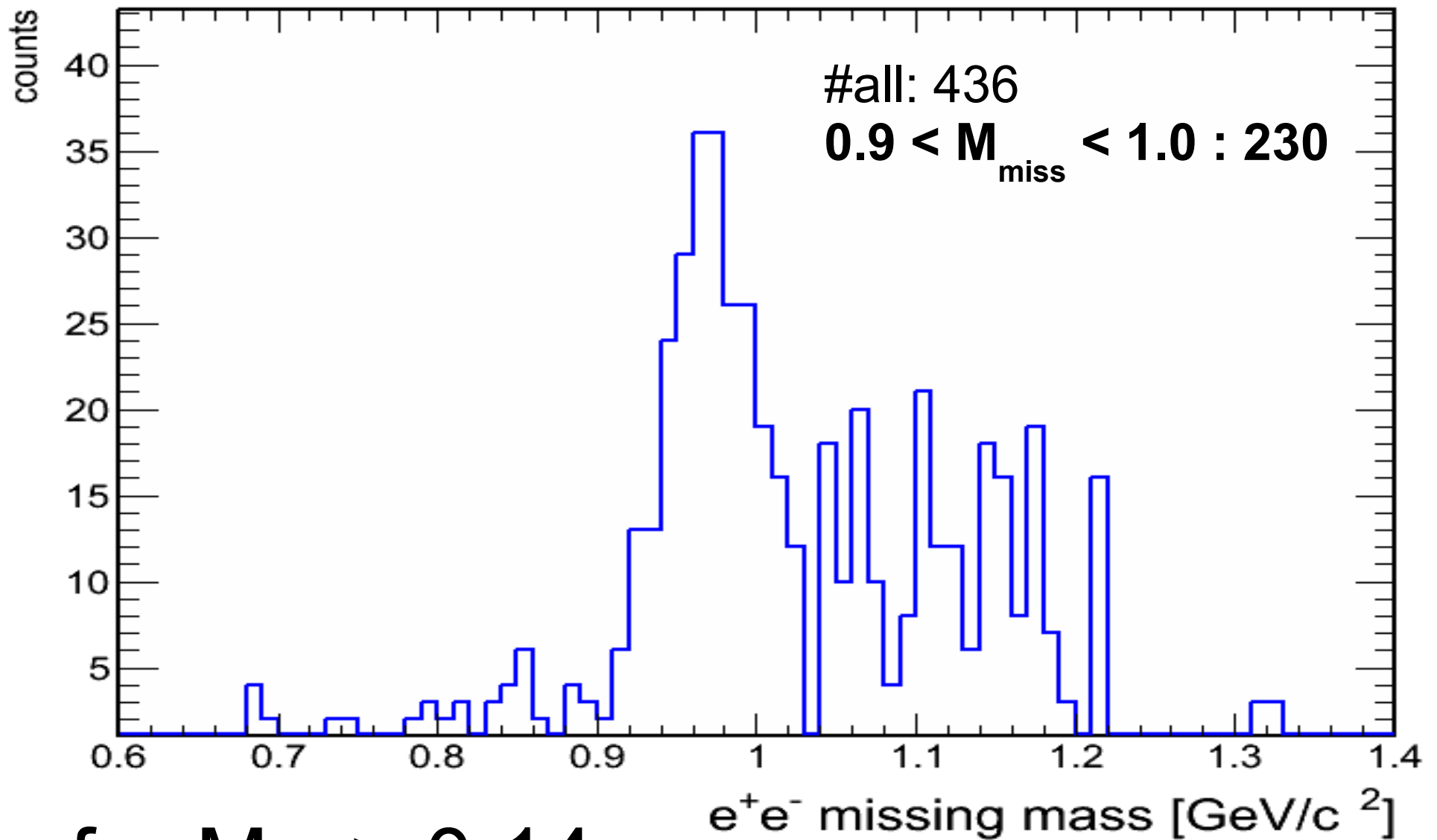


# $e^+e^-$ missing mass (ALL, CB), $\theta_a > 9\text{deg}$



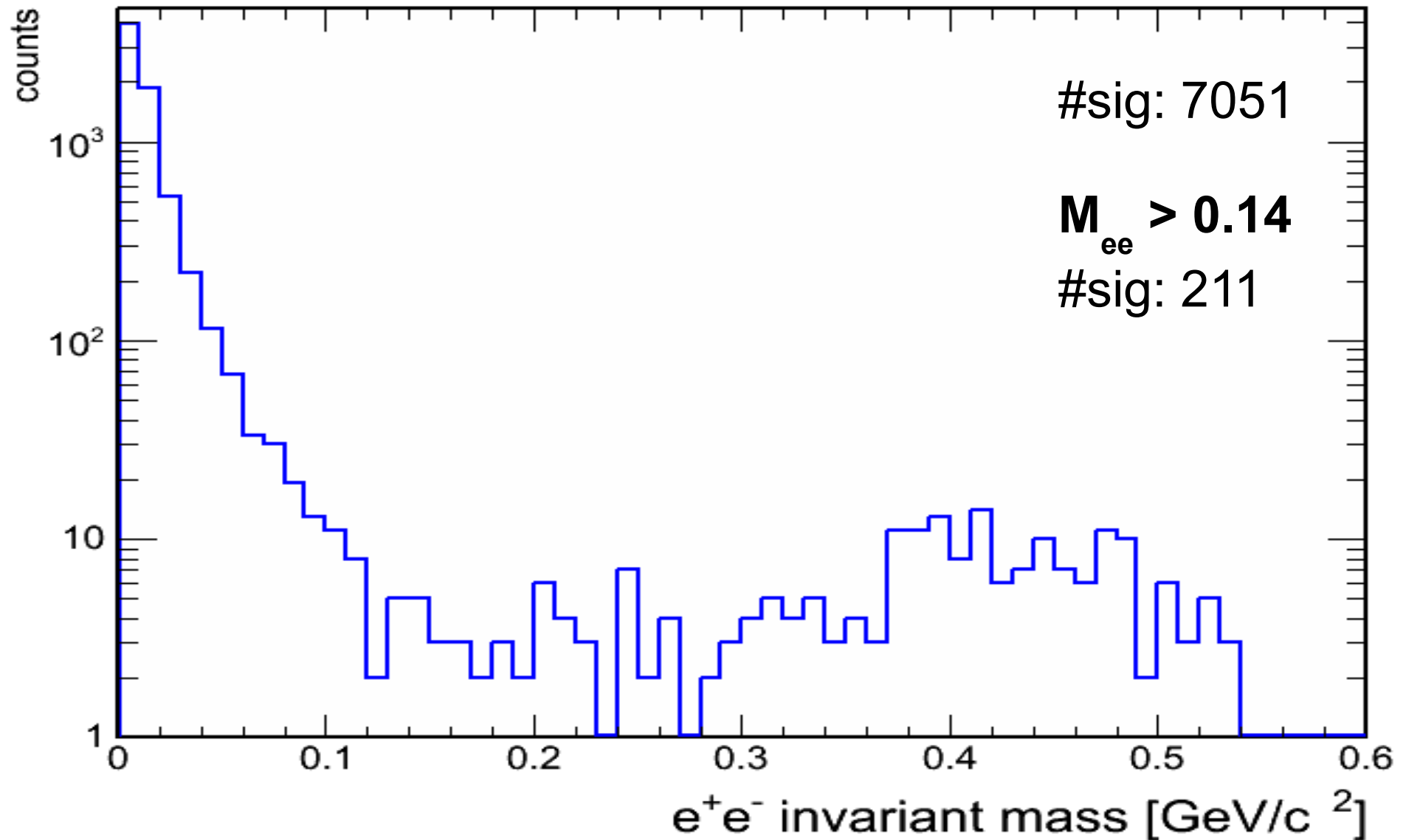
for  $M_{ee} > 0.14$

# $e^+e^-$ miss mass (CB subtr), $oa > 9$



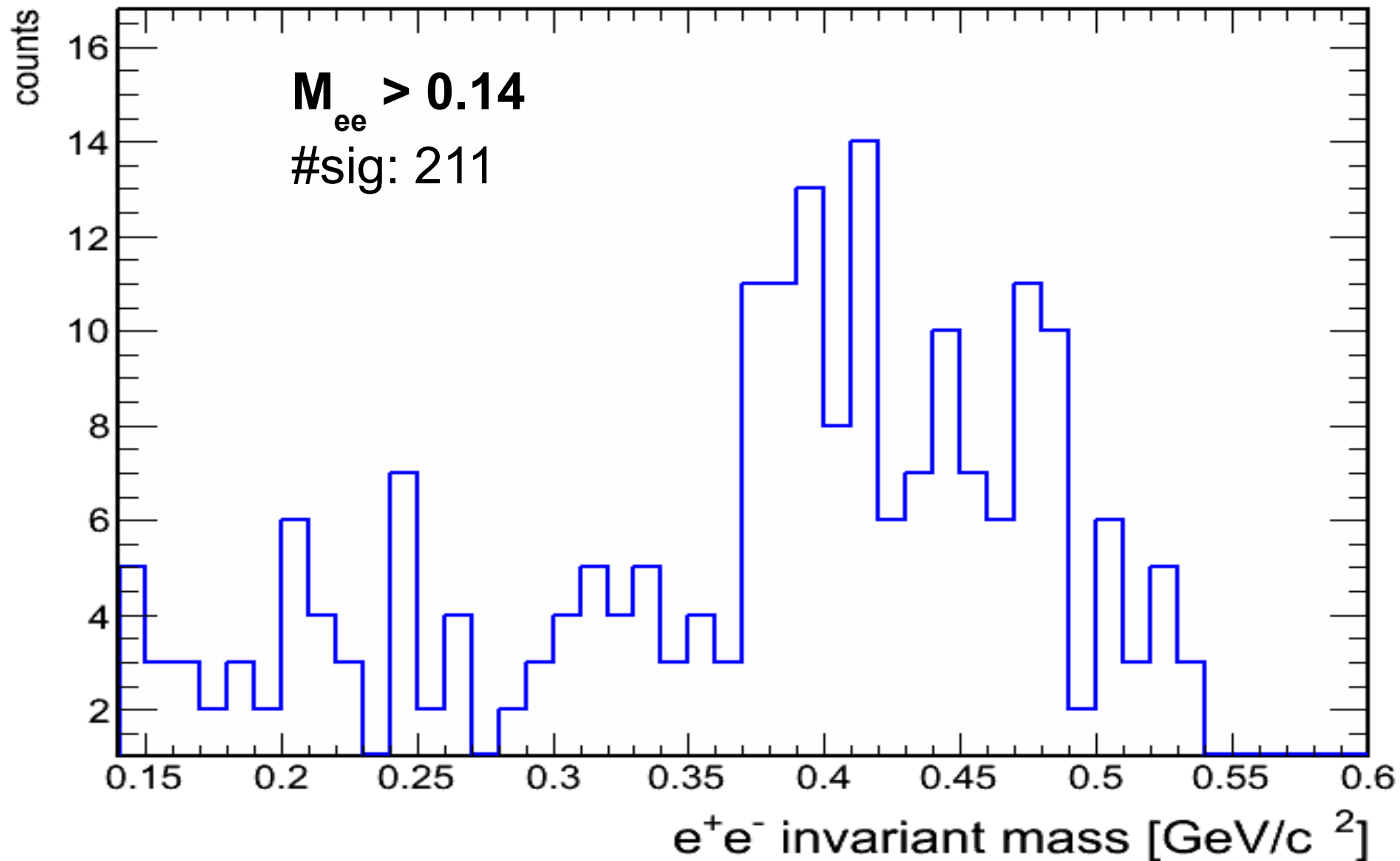
for  $M_{ee} > 0.14$

# $e^+e^-$ inv. mass (CB subtr.) - no oa cut



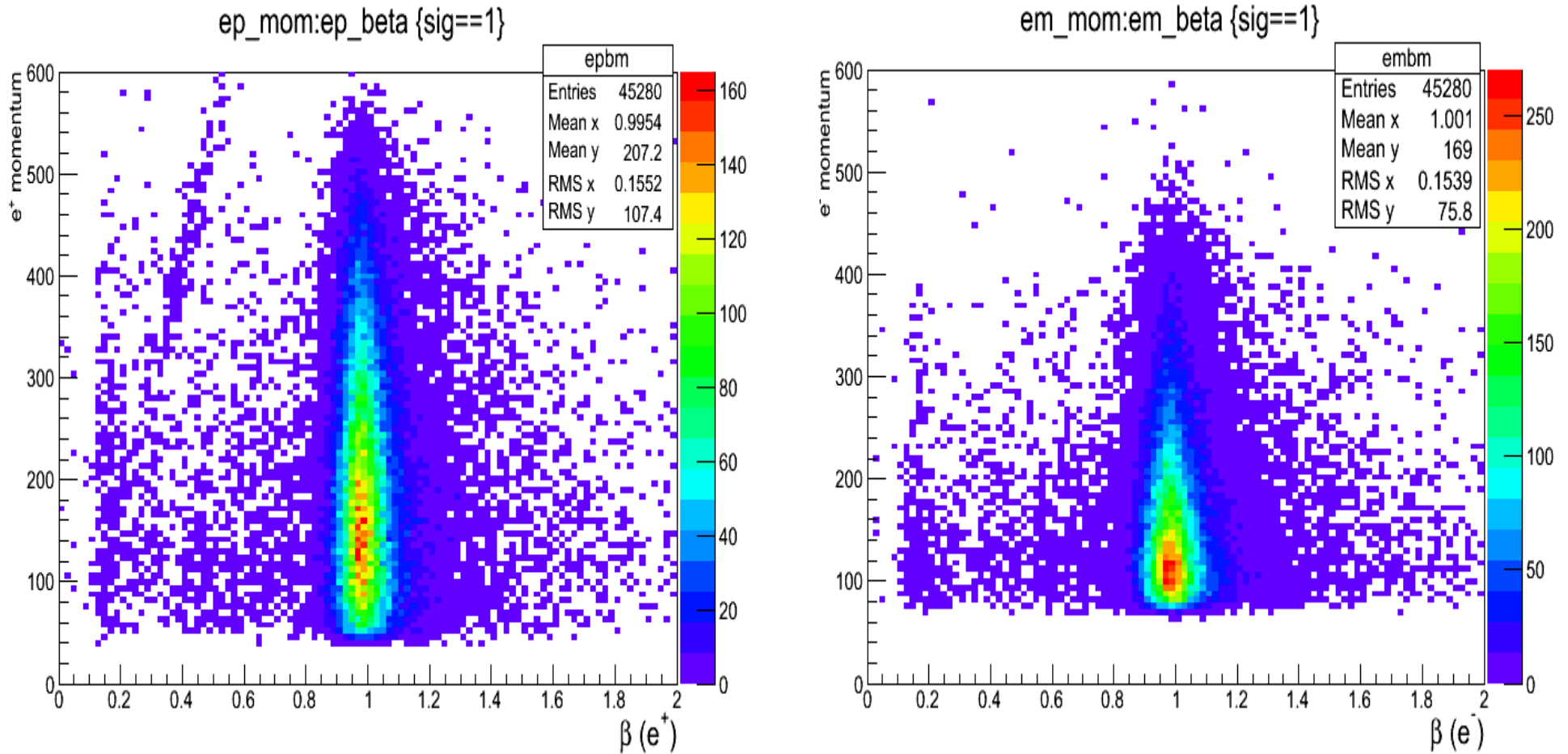
**$0.9 < ee$  missing mass  $< 1.0$  CUT**

# $e^+e^-$ inv. mass (CB subtr)



**$0.9 < ee$  missing mass  $< 1.0$  CUT**

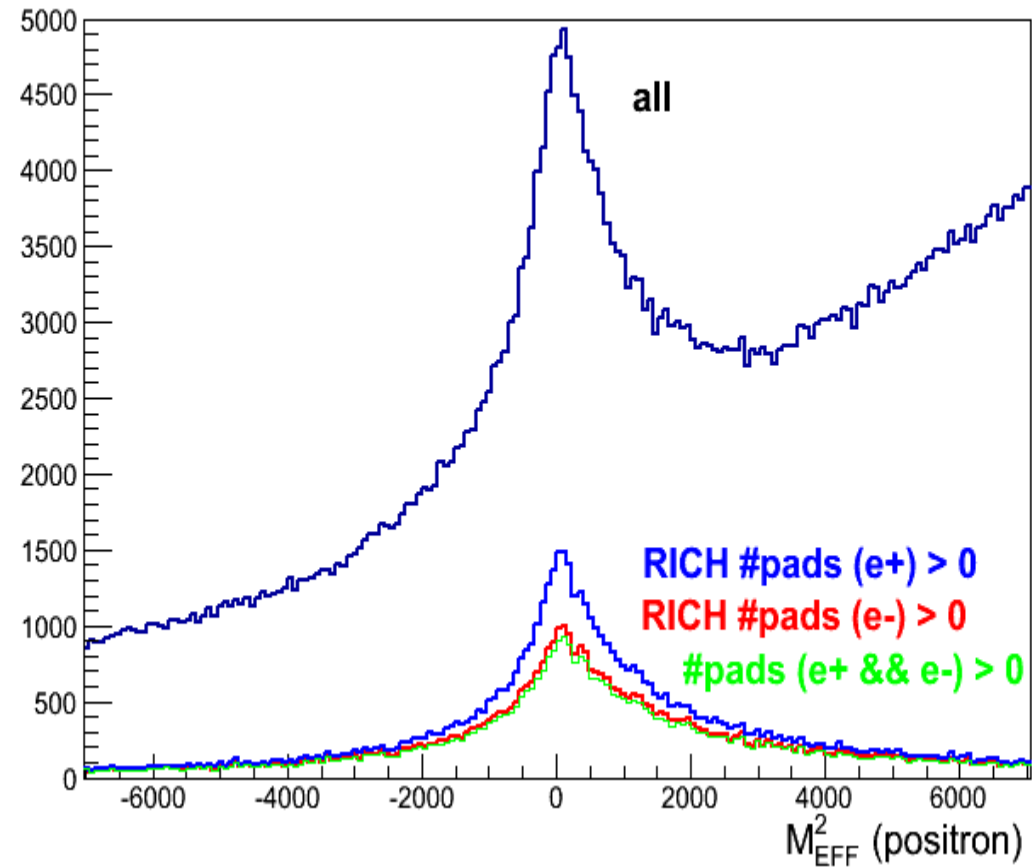
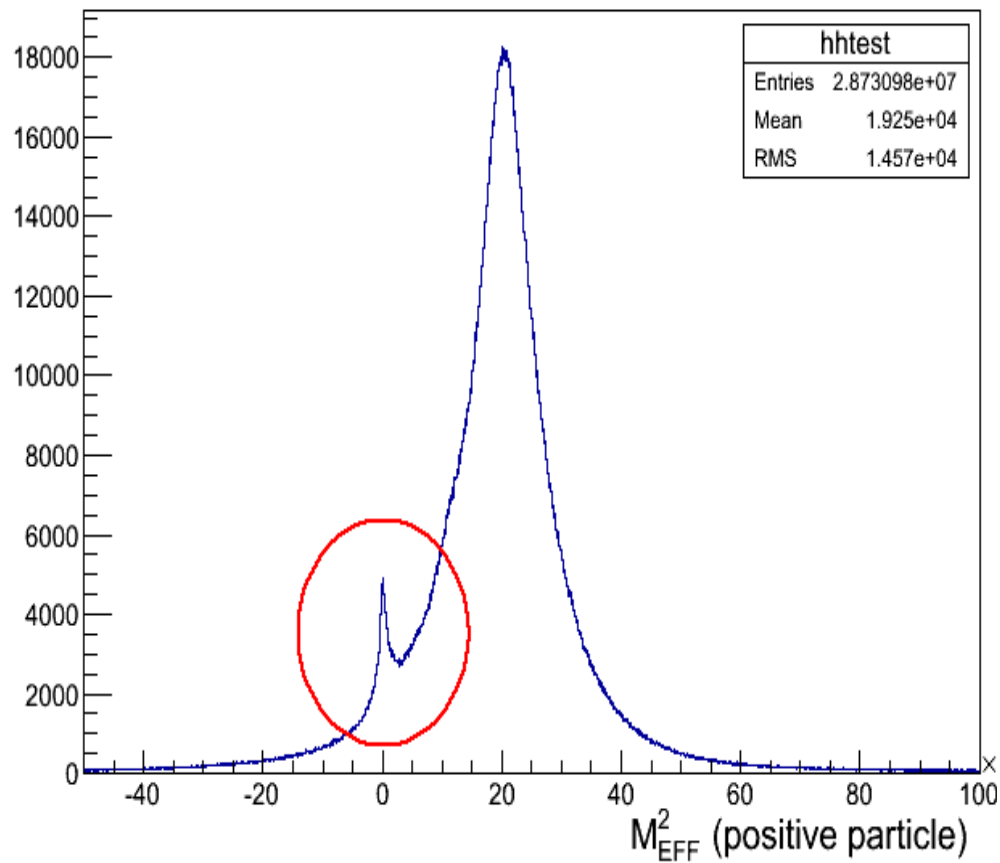
# e+e- hypothesis



**no PID cuts, RICH correlation only**

# e+ (without/with RICH correlation)

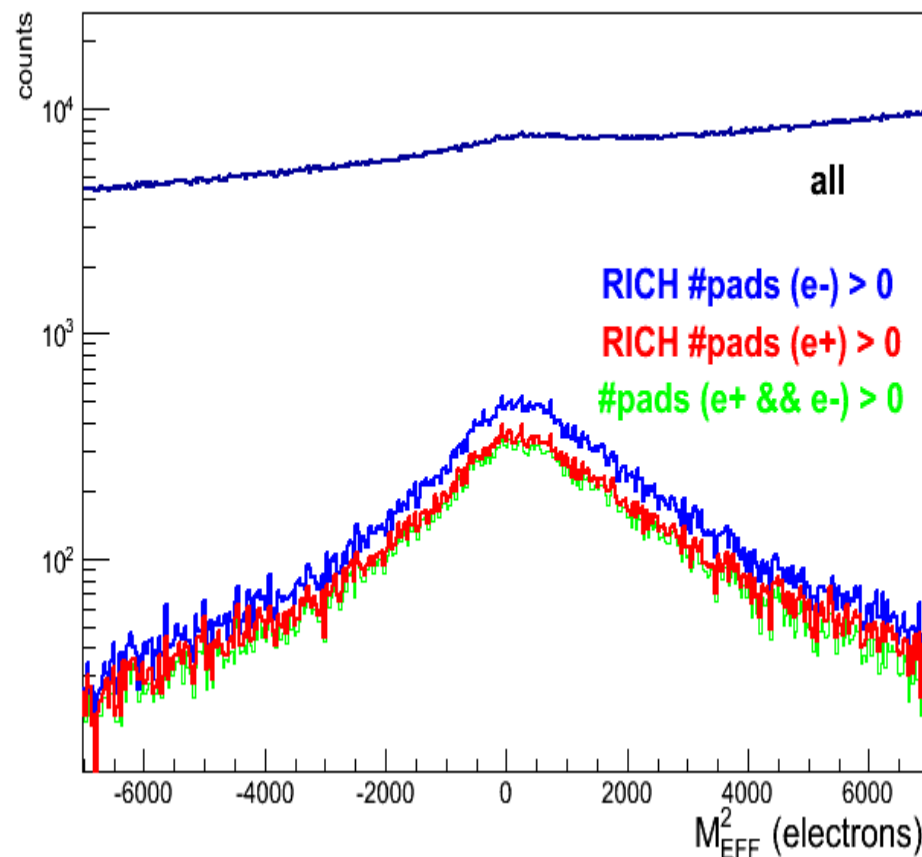
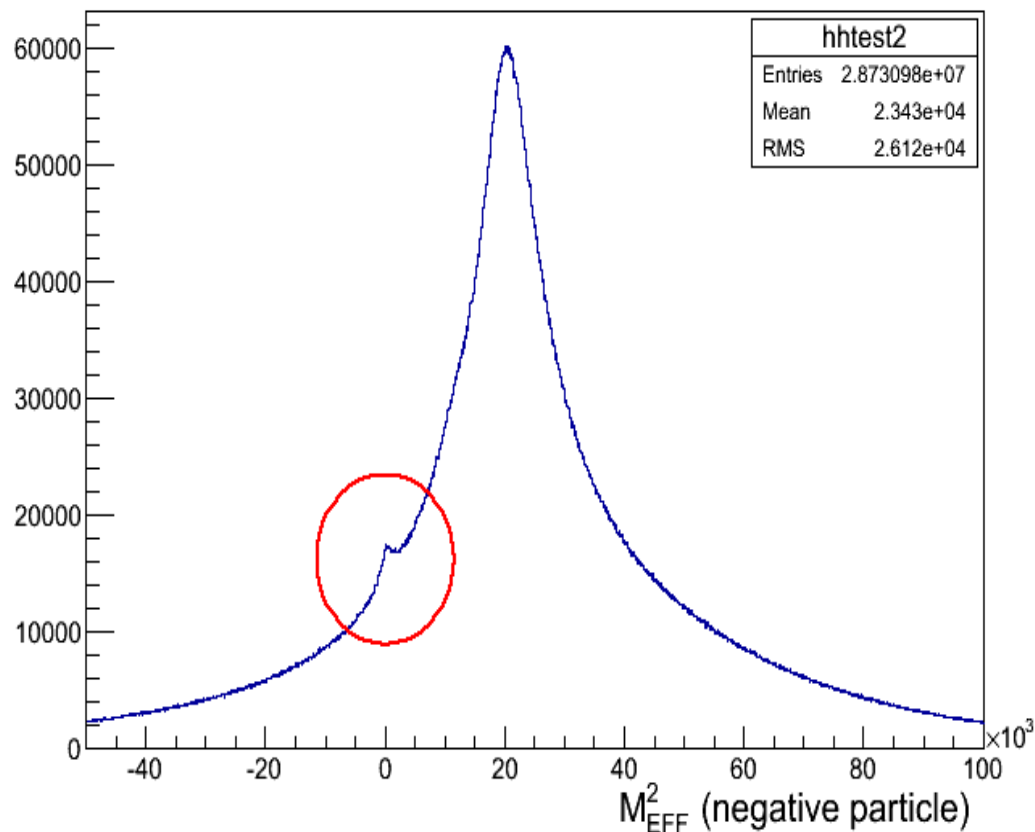
ep\_m {sig==1}



**left:** positive-negative particle combinations (without asking for RICH correlation)  
**right:** asking for > 0 number of pads in e+ candidate (also e-, and both)

# e- (with/without RICH correlation)

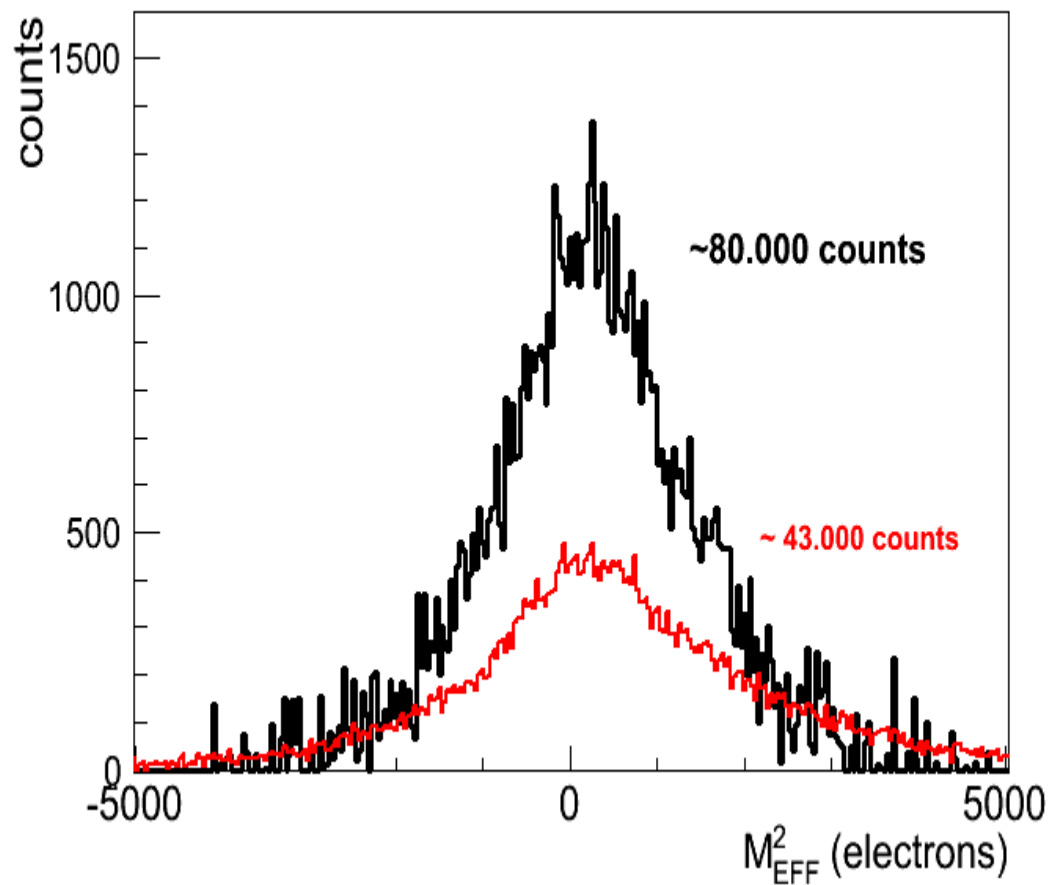
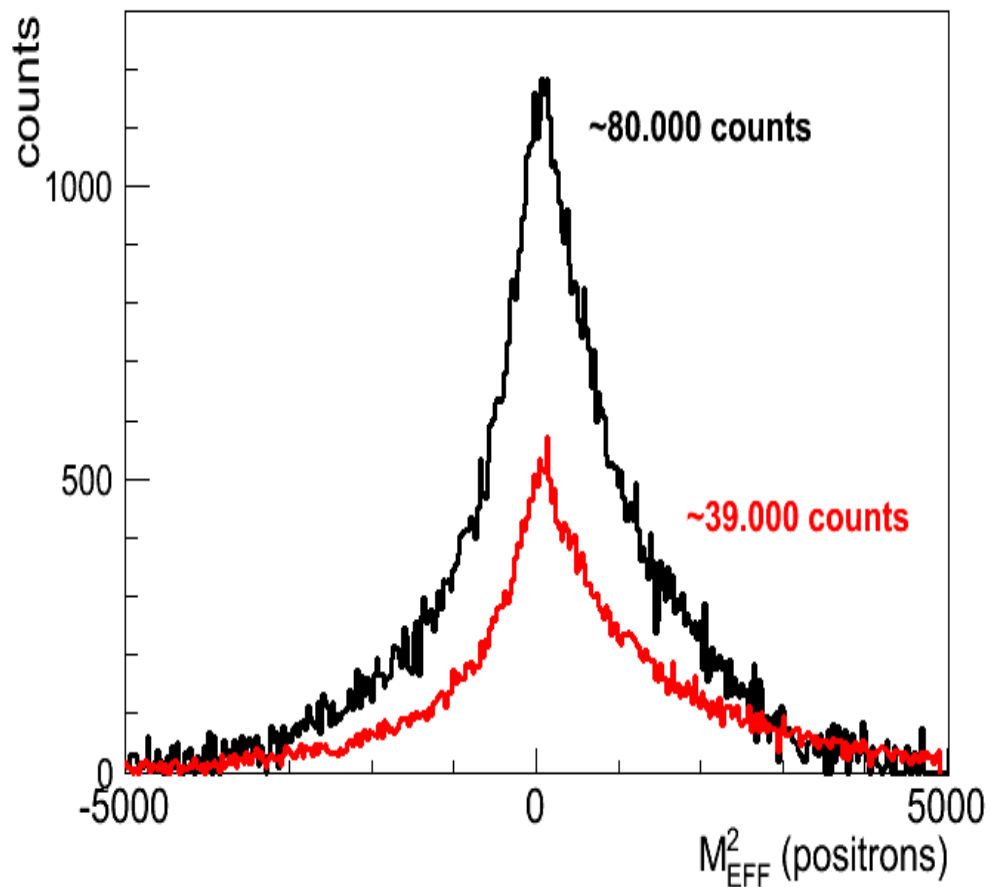
em\_m {sig==1}



**Note (right picture): log scale, many more pions ( $\pi^-$ ) - huge background**  
**left:** positive-negative particle combinations (without asking for RICH correlation)  
**right:** asking for > 0 number of pads in e- candidate (also e+, and both)



# e+ and e- after background fit



**black:** e+ or e- signal after (coarse) background fit and subtraction

**red:** e+ or e- after background fit and subtraction and with RICH correlation (#pads>0)

# BACKUP SLIDES - STATISTICS

- **CARBON TARGET (for background)**
- Day 195 (14-JUN-2014)
- Runs 3
- Files 26
- Total kilo events 4806
- Total run time 1.79 hours

# BACKUP SLIDES - STATISTICS

- **PE target (for all slides below)**
- Day 196 (15-JUN-2014)
- Runs 6
- Files 30
- Total kilo events 4629
- Total run time 1.38 hours

# BACKUP SLIDES - STATISTICS

- Day 197 (16-JUN-2014)
- Runs 60
- Files 202 (DST: 178)
- Total kilo events 50583
- Total run time 8.86 hours

# BACKUP SLIDES - STATISTICS

- Day 198 (17-JUN-2014)
- Runs 49
- Files 165 (DST: 147)
- Total kilo events 41486
- Total run time 6.97 hours

# BACKUP SLIDES - STATISTICS

- Day 232 (20-AUG-2014)
- Runs 23
- Files 69
- Total kilo events 6083
- Total run time 1.99 hours

# BACKUP SLIDES - STATISTICS

- Day 233 (21-AUG-2014)
- Runs 168
- Files 502
- Total kilo events 49467
- Total run time 10.77 hours

# BACKUP SLIDES - STATISTICS

- Day 234 (22-AUG-2014)
- Runs 14
- Files 42
- Total kilo events 4090
- Total run time 1.76 hours



# BACKUP SLIDES - STATISTICS

- Day 235 (23-AUG-2014)
- Runs 265
- Files 796
- Total kilo events 76104
- Total run time 15.72 hours
- SUM: 232442 kevents & 47.45 h

# BACKUP SLIDES - STATISTICS

- Day 236 (24-AUG-2014)
- Runs 239
- Files 714
- Total kilo events 68762
- Total run time 14.4 hours
- SUM: 301204 kevents && 61.85 h

# BACKUP SLIDES - STATISTICS

- Day 237 (25-AUG-2014) - part
- Runs 264
- Files 792
- Total kilo events 77449
- Total run time 15.22 hours
- SUM: 378653 && 77.07 h

# BACKUP SLIDES - STATISTICS

- Day 238 (26-AUG-2014)
- Runs 196
- Files 588
- Total kilo events 57454
- Total run time 12.61 hours
- SUM: 436107 && 89.68 h

# BACKUP SLIDES - STATISTICS

- Day 239 (27-AUG-2014) - part
- Runs 162
- Files 486
- Total kilo events 47658
- Total run time 9.6 hours
- SUM (part): 483765 && 99.28 h