dileptons in pion (0.7 GeV/c) beam

e+e- (inclusive) identification

PE target

(days: 196-198, 232-239)

484 Mevents

99 hours
e\(^+\)e\(^-\) invariant mass, CB

- #all: 119000
- #CB: 59000
- M\(_{ee}\) > 0.14
- #all: 989
- #CB: 554
e^+e^- invariant mass (\(\alpha_a > 9\) deg), CB

Counts

\(e^+e^-\) invariant mass [GeV/c^2]

#all: 8450
#CB: 4300
\(M_{ee} > 0.14\)
#all: 989
#CB: 554
$e^+e^-$ 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

$\#_{\text{all}}: 4140$

$M_{ee} > 0.14$

$\#_{\text{all}}: 435$
e^+e^- missing mass (ALL, CB)

\[
e^+e^- \text{ missing mass [GeV/c}^2] \quad \text{for all } M_{ee}
\]

#all: 119000
#CB: 5900
$e^+e^-$ missing mass (CB subtracted)

\#all: $\sim113000$

$0.9 < M_{\text{miss}} < 1.0 \quad - \quad 9000$

for all $M_{ee}$
e^+e^- missing mass (ALL, CB)

for $M_{ee} > 0.14$

#all: 990
#CB: 554
e+e- missing mass (CB subtracted)

# all: 436
for 0.9 < M_{miss} < 1.0
# 230

for M_{ee} > 0.14
e^+e^- missing mass (ALL,CB), \( \text{oa} > 9\text{deg} \)

for \( M_{ee} > 0.14 \)

\#all: 990
\#CB: 554
$e^+e^-$ miss mass (CB subtr), $oa > 9$

for $M_{ee} > 0.14$

#all: 436

$0.9 < M_{miss} < 1.0 : 230$
$e^+e^-$ inv. mass (CB subtr.) - no oa cut

$0.9 < \text{ee missing mass} < 1.0 \quad \text{CUT}$
$M_{ee} > 0.14$

#sig: 211

$0.9 < ee$ missing mass $< 1.0$  CUT
no PID cuts, RICH correlation only
e+ (without/with RICH correlation)

**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 \{\text{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)

- Left graph: ~80,000 counts
- Right graph: ~80,000 counts
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
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
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