IO tracking efficiency

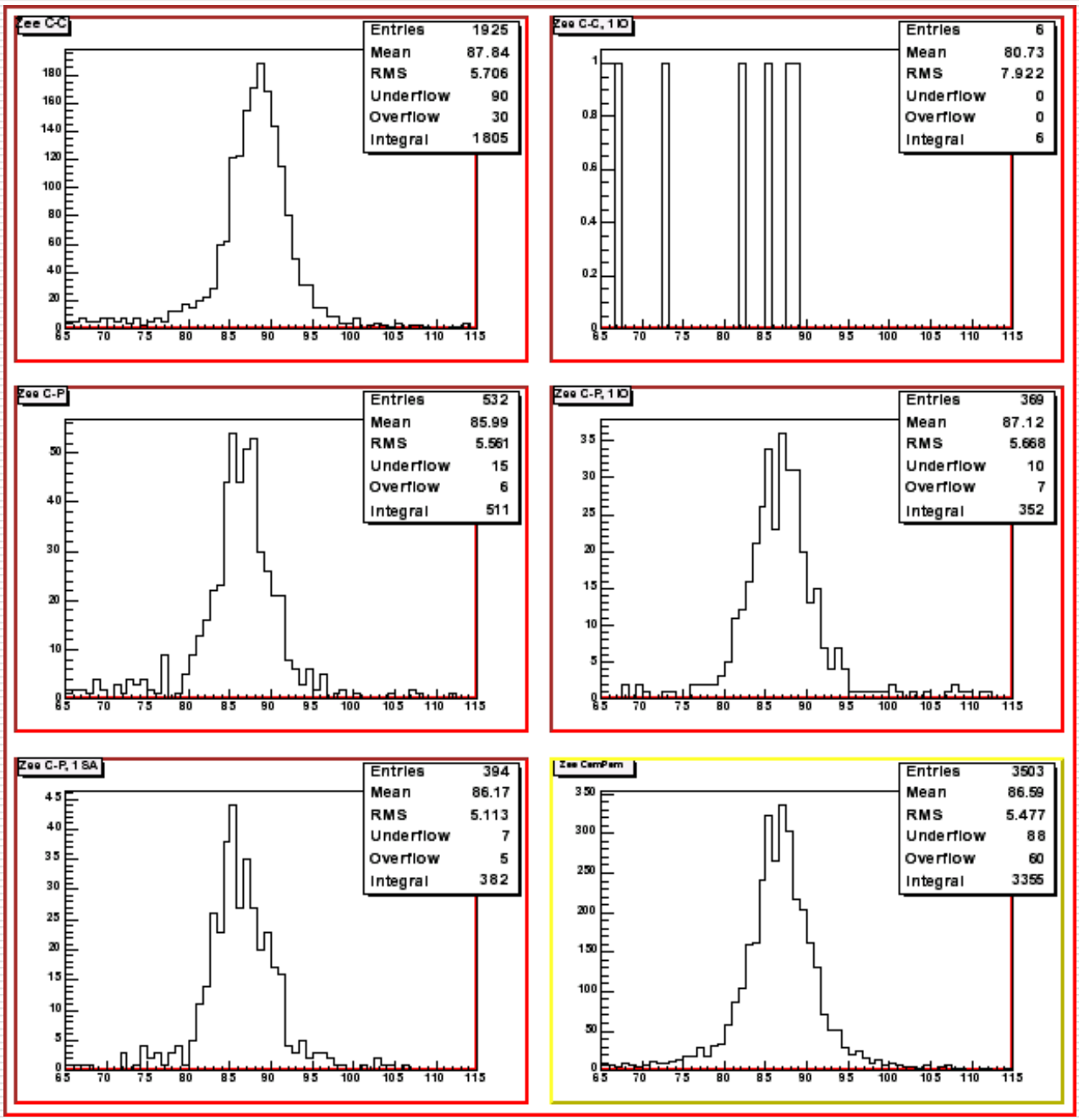
Yimei Huang
Duke university

Tracking meeting
27/08/03

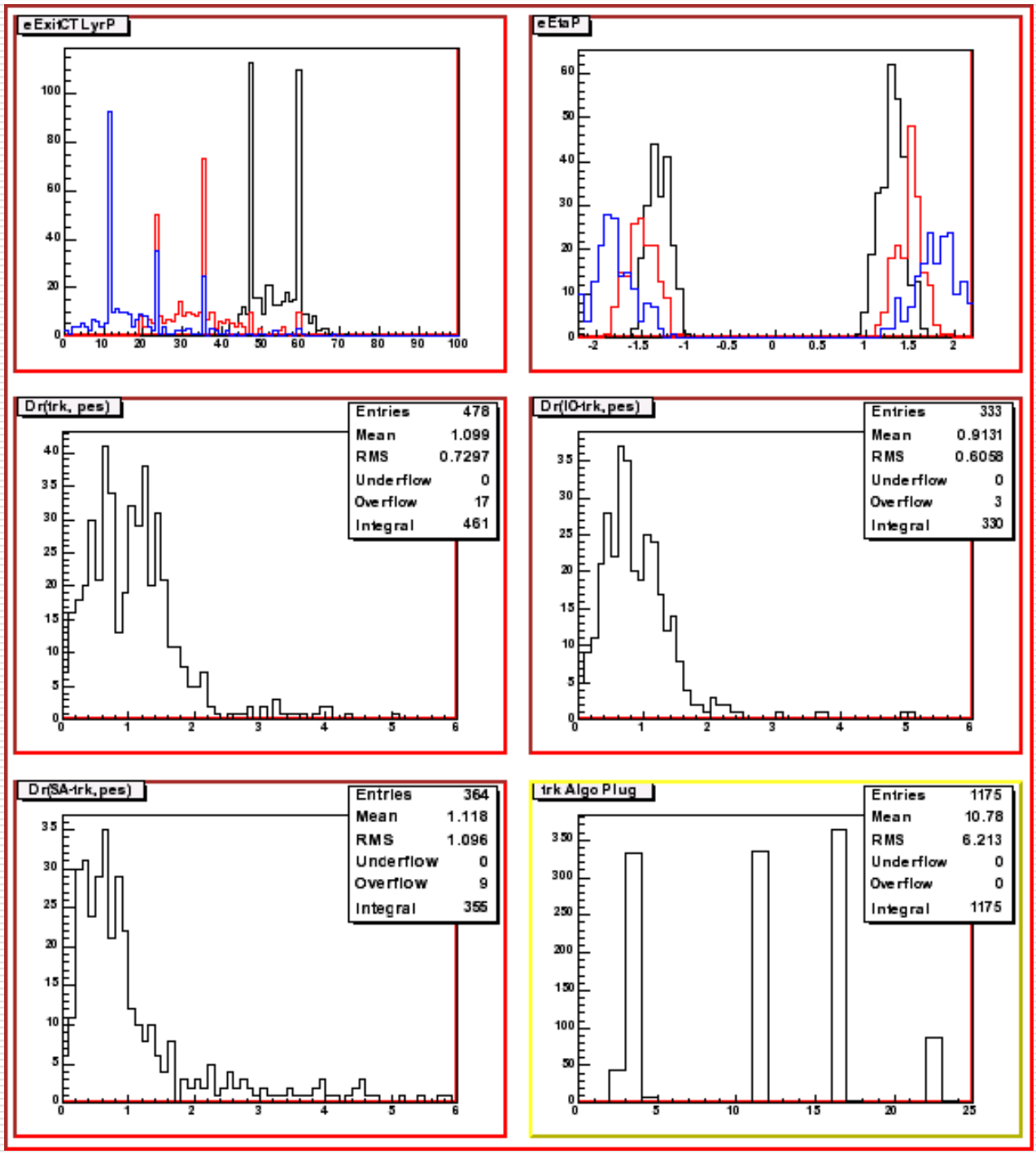
strategy

- z→ ee events
  - Z-ele-loose_4104_REMAKE_* sample from top group.
  - Remade tracking in 5.1.0pre2
- Event selection
  - Select events with one of the two legs in the plug
  - Standard baseline CEM selection to the central leg, except no track quality requirement
  - Standard pem selection applied to plug leg
    - Cluster Et calculated using pes cluster position, and track z0, if matched to a track. Otherwise, used Beate's z-vertex
    - No requirement on the quality of the matched track
  - Use events with 75<M(ee)<100 for tracking study
- Define tracking efficiency as the probability to associate a track to an emcluster passing all pem criteria.

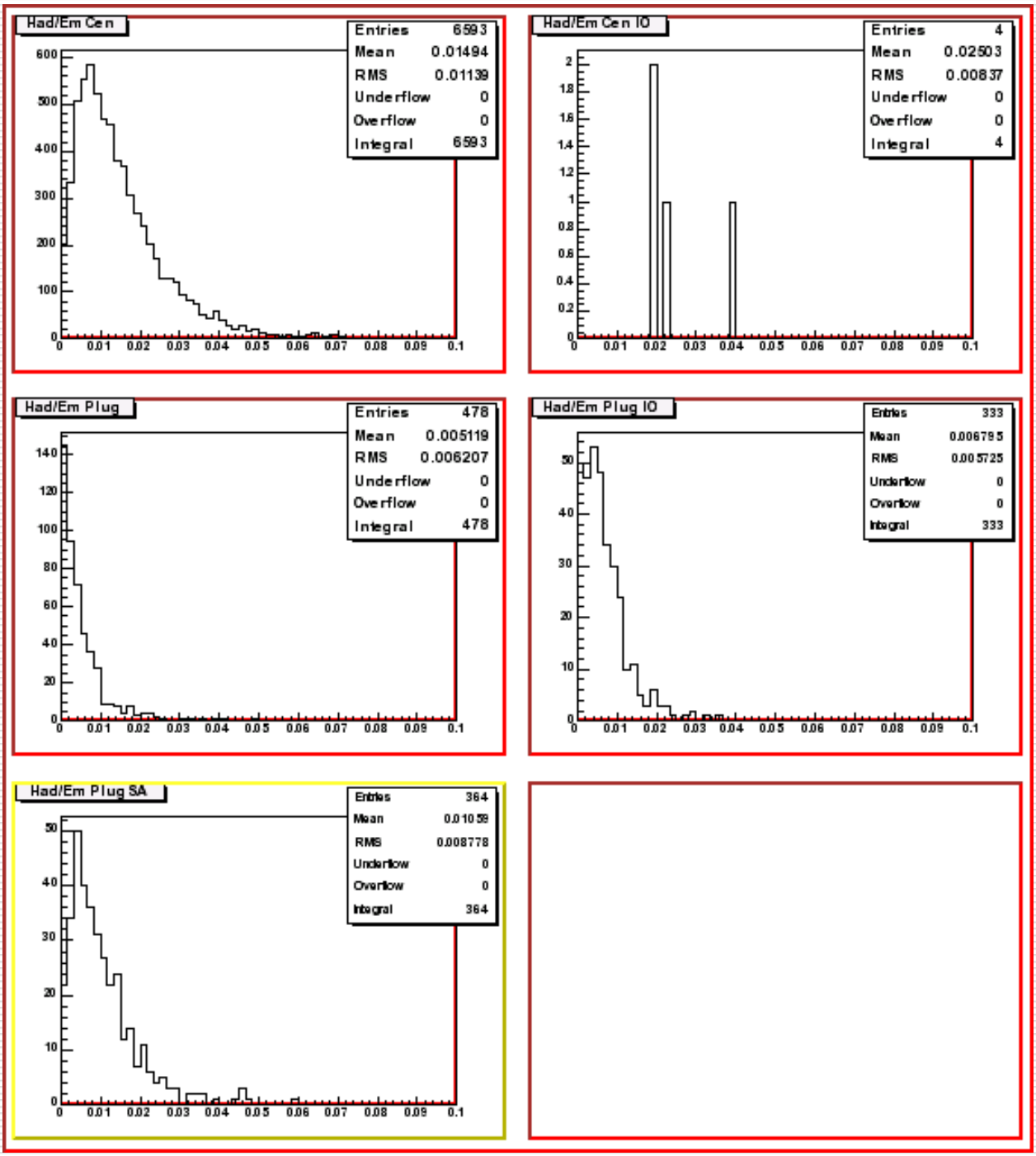
M(ee)


Zee C-C
Entries 1925
Mean 87.84
RMS 5.706
Underflow 90
Overflow 30
Integral 1805
Zee C-C, 1 ID
Entries 6
Mean 80.73
RMS 7.922
Underflow 0
Overflow 0
Integral 6
Zee C-P
Entries 532
Mean 85.99
RMS 5.561
Underflow 15
Overflow 6
Integral 511
Zee C-P, 1 ID
Entries 369
Mean 87.12
RMS 5.668
Underflow 10
Overflow 7
Integral 352
Zee C-P, 1 SA
Entries 394
Mean 86.17
RMS 5.113
Underflow 7
Overflow 5
Integral 382
Zee CenPem
Entries 3503
Mean 86.59
RMS 5.477
Underflow 88
Overflow 60
Integral 3355

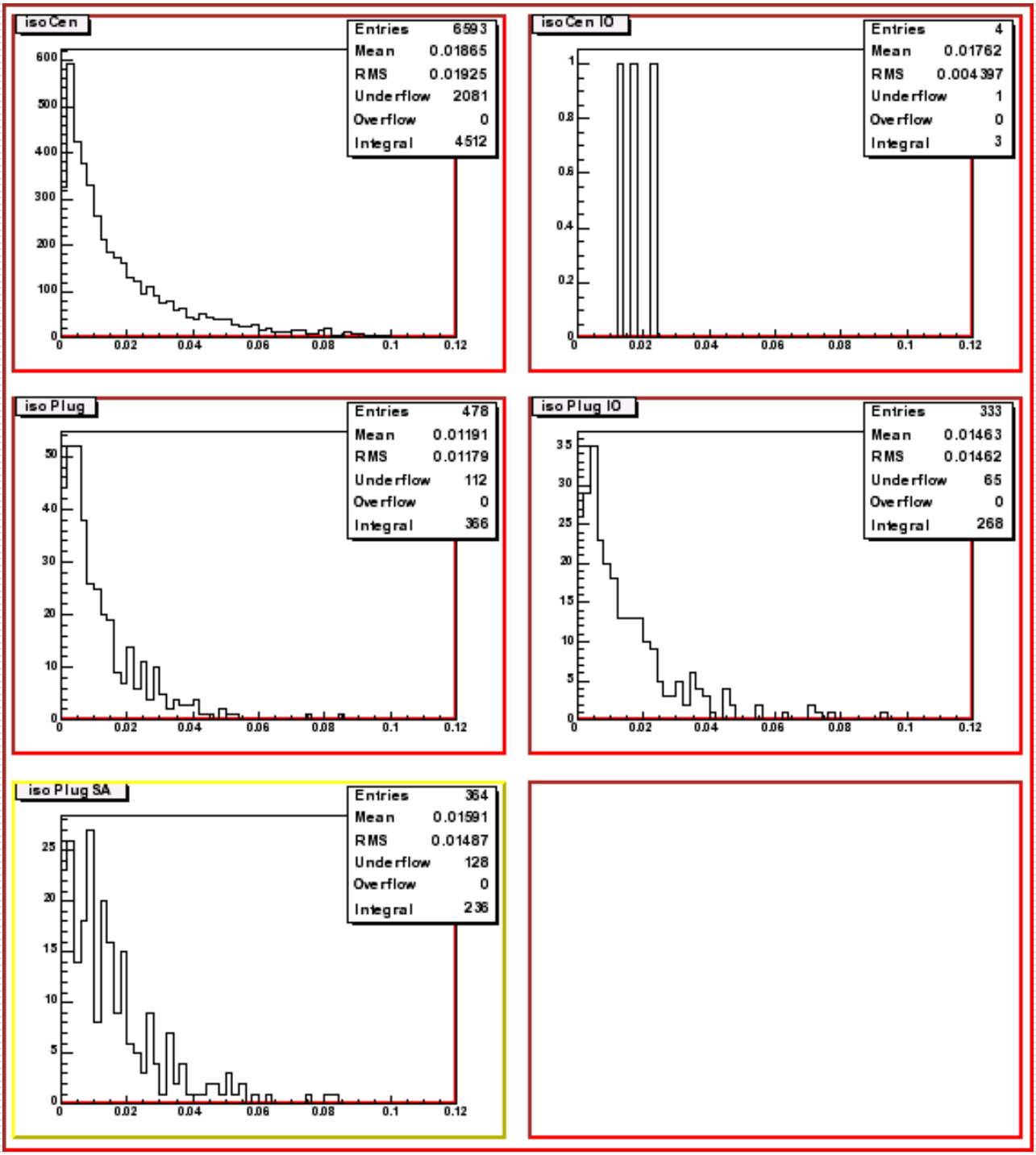
Exit Ct Layer, trk η, dr(trk,pes), trk algo



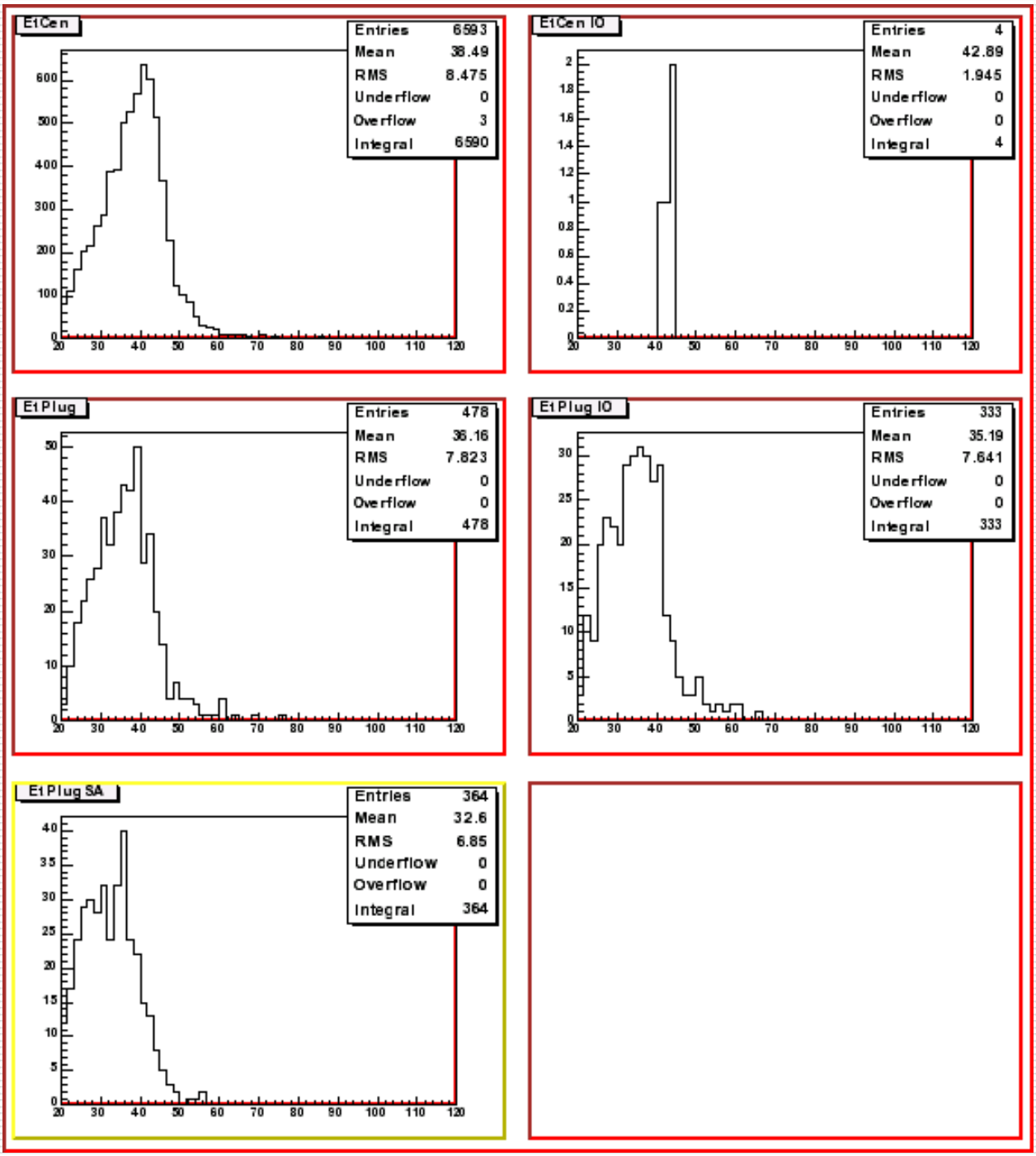
hadE/emE


Had/Em Cen
Entries 6593
Mean 0.01494
RMS 0.01139
Underflow 0
Overflow 0
Integral 6593
Had/Em Cen IO
Entries 4
Mean 0.02503
RMS 0.00837
Underflow 0
Overflow 0
Integral 4
Had/Em Plug
Entries 478
Mean 0.005119
RMS 0.006207
Underflow 0
Overflow 0
Integral 478
Had/Em Plug IO
Entries 333
Mean 0.006795
RMS 0.005725
Underflow 0
Overflow 0
Integral 333
Had/Em Plug SA
Entries 364
Mean 0.01059
RMS 0.008778
Underflow 0
Overflow 0
Integral 364

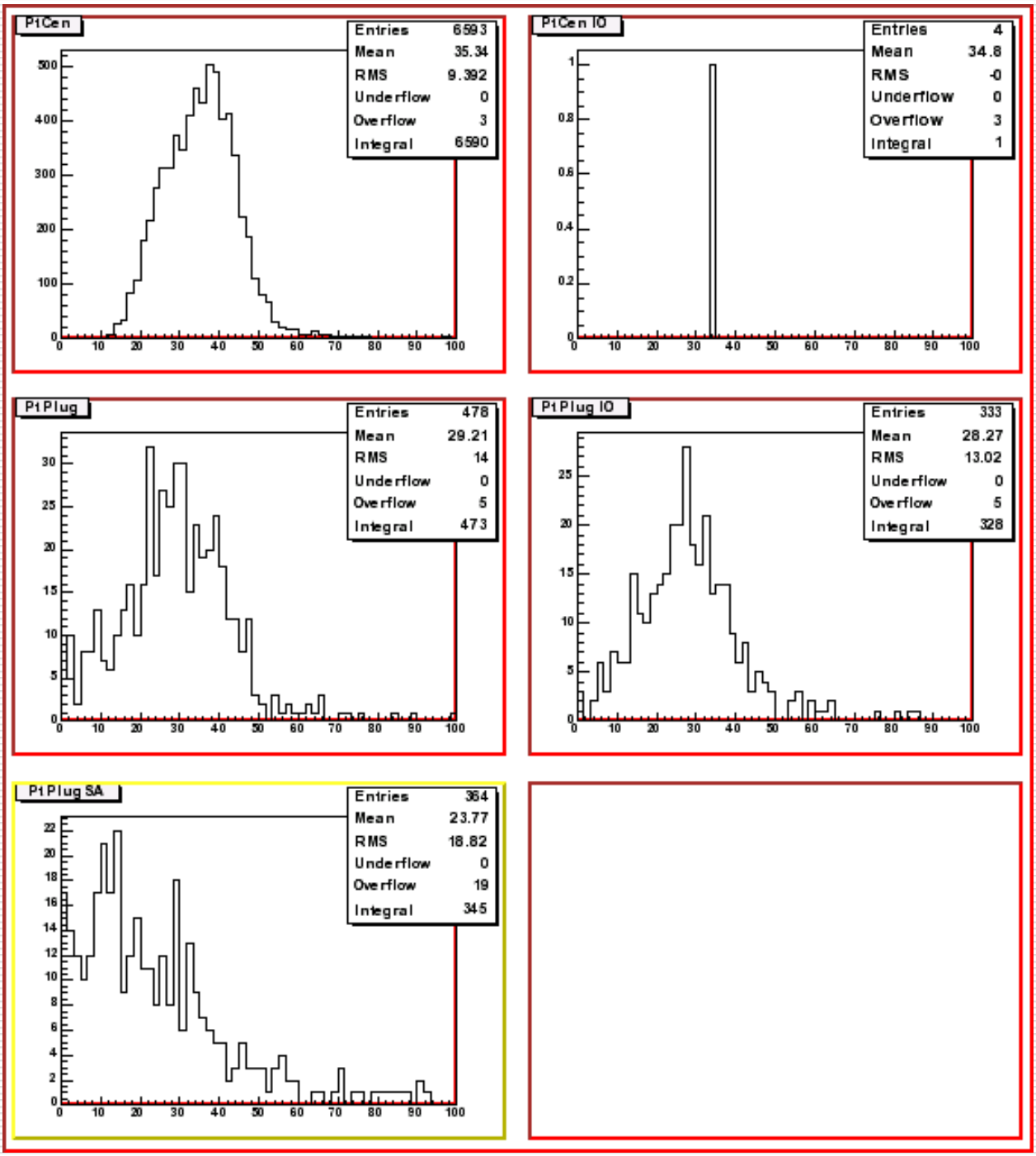
Isolation


isoCen
Entries 6593
Mean 0.01865
RMS 0.01925
Underflow 2081
Overflow 0
Integral 4512
isoCen IO
Entries 4
Mean 0.01762
RMS 0.004397
Underflow 1
Overflow 0
Integral 3
isoPlug
Entries 478
Mean 0.01191
RMS 0.01179
Underflow 112
Overflow 0
Integral 366
isoPlug IO
Entries 333
Mean 0.01463
RMS 0.01462
Underflow 65
Overflow 0
Integral 268
isoPlug SA
Entries 364
Mean 0.01591
RMS 0.01487
Underflow 128
Overflow 0
Integral 236

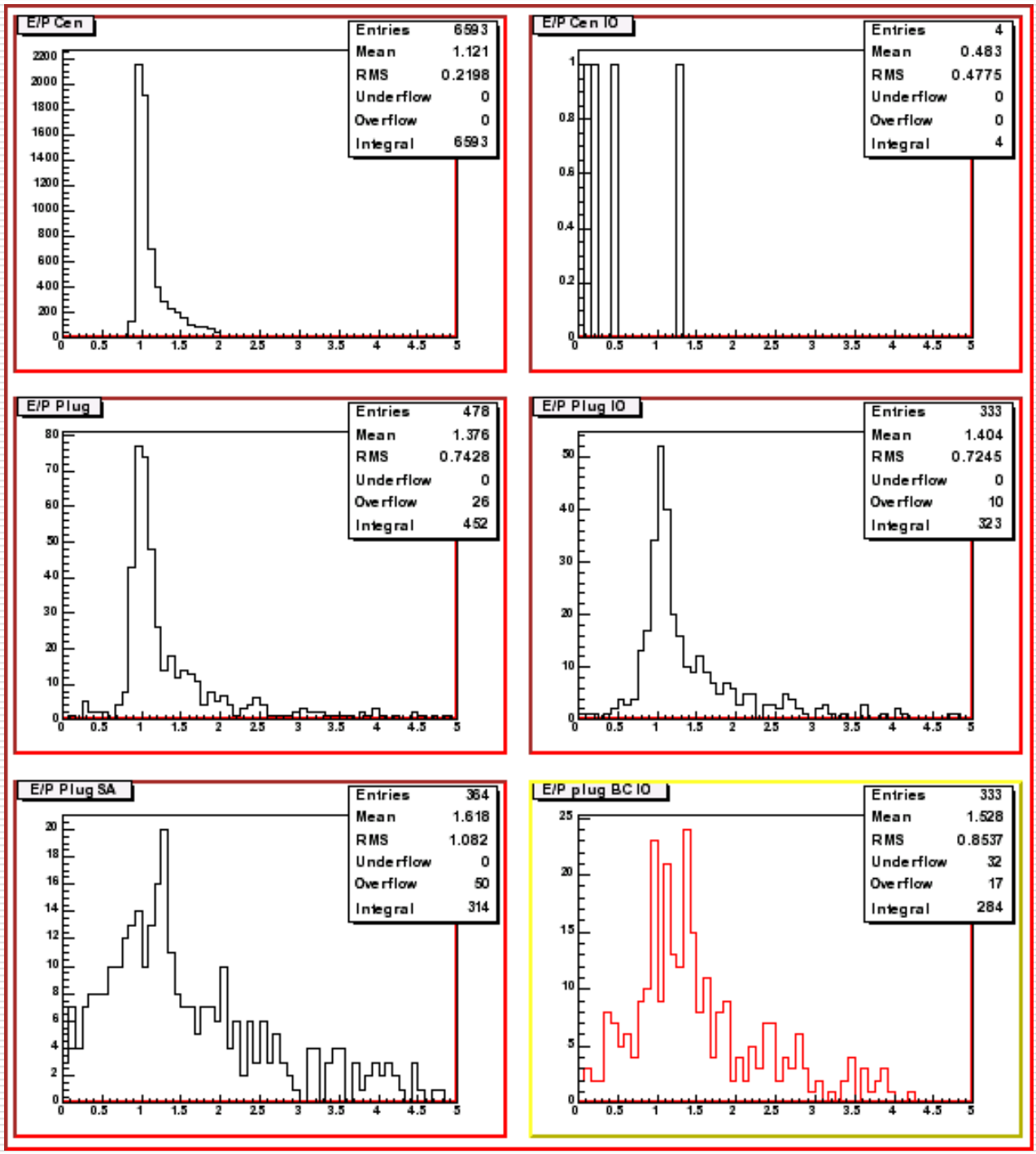
EmEt


EtCen
Entries 6593
Mean 38.49
RMS 8.475
Underflow 0
Overflow 3
Integral 6590
EtCen IO
Entries 4
Mean 42.89
RMS 1.945
Underflow 0
Overflow 0
Integral 4
EtPlug
Entries 478
Mean 36.16
RMS 7.823
Underflow 0
Overflow 0
Integral 478
EtPlug IO
Entries 333
Mean 35.19
RMS 7.641
Underflow 0
Overflow 0
Integral 333
EtPlug SA
Entries 364
Mean 32.6
RMS 6.85
Underflow 0
Overflow 0
Integral 364

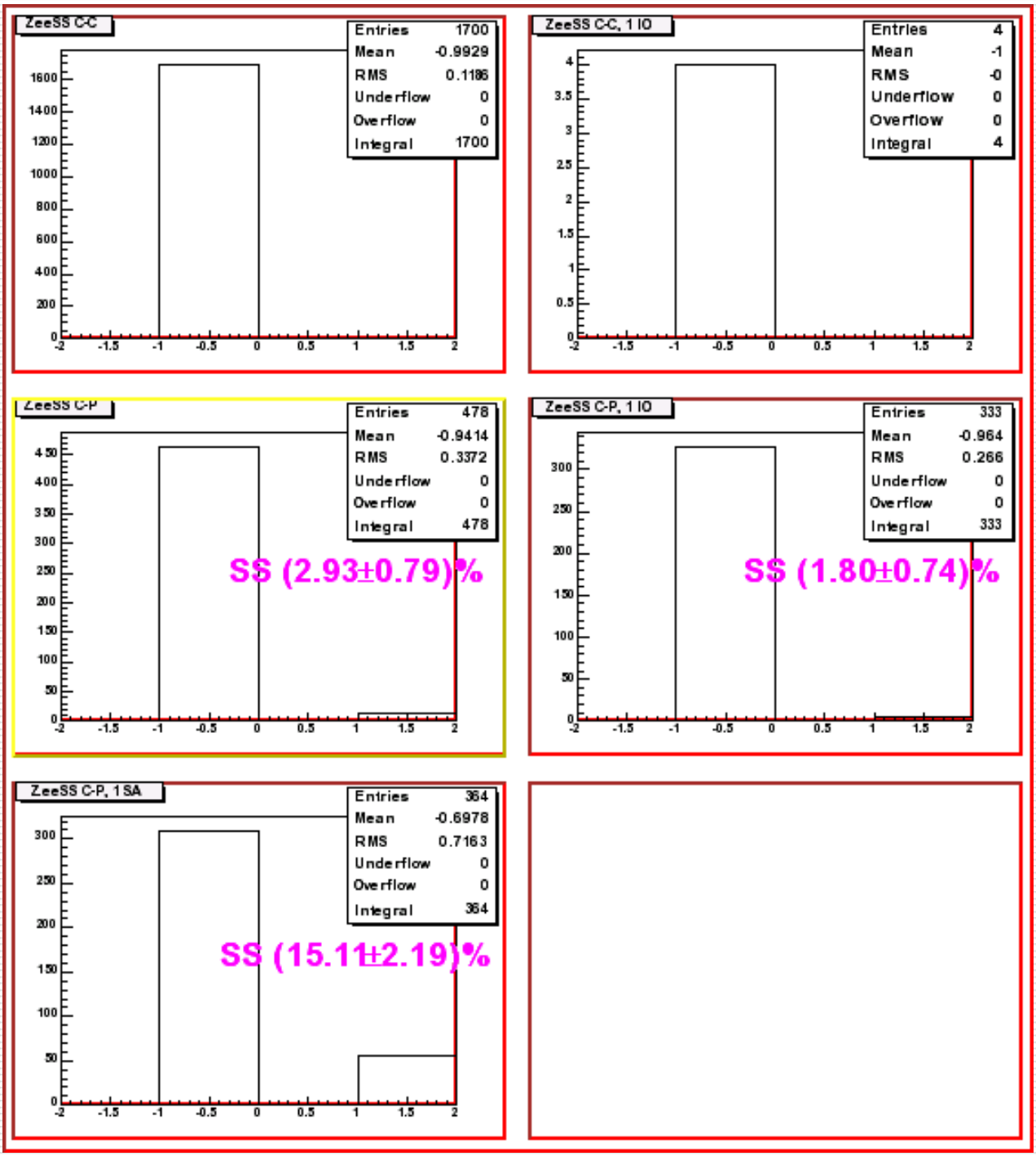
Pt


PtCen
Entries 6593
Mean 35.34
RMS 9.392
Underflow 0
Overflow 3
Integral 6590
PtCen IO
Entries 4
Mean 34.8
RMS -0
Underflow 0
Overflow 3
Integral 1
PtPlug
Entries 478
Mean 29.21
RMS 14
Underflow 0
Overflow 5
Integral 473
PtPlug IO
Entries 333
Mean 28.27
RMS 13.02
Underflow 0
Overflow 5
Integral 328
PtPlug SA
Entries 364
Mean 23.77
RMS 18.82
Underflow 0
Overflow 19
Integral 345

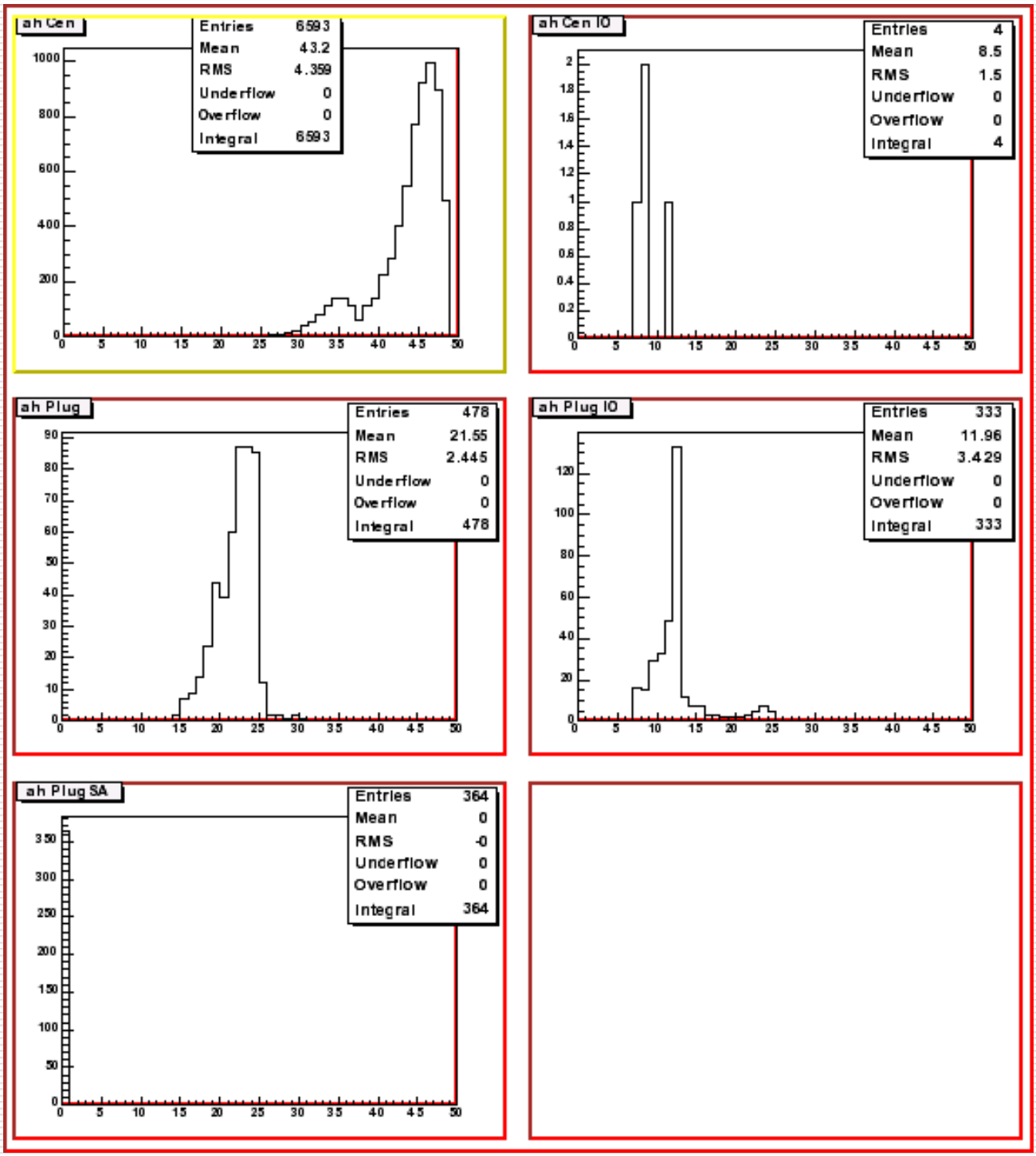
E/p


E/P Cen
Entries 6593
Mean 1.121
RMS 0.2198
Underflow 0
Overflow 0
Integral 6593
E/P Cen IO
Entries 4
Mean 0.483
RMS 0.4775
Underflow 0
Overflow 0
Integral 4
E/P Plug
Entries 478
Mean 1.376
RMS 0.7428
Underflow 0
Overflow 26
Integral 452
E/P Plug IO
Entries 333
Mean 1.404
RMS 0.7245
Underflow 0
Overflow 10
Integral 323
E/P Plug SA
Entries 364
Mean 1.618
RMS 1.082
Underflow 0
Overflow 50
Integral 314
E/P plug BC IO
Entries 333
Mean 1.528
RMS 0.8537
Underflow 32
Overflow 17
Integral 284

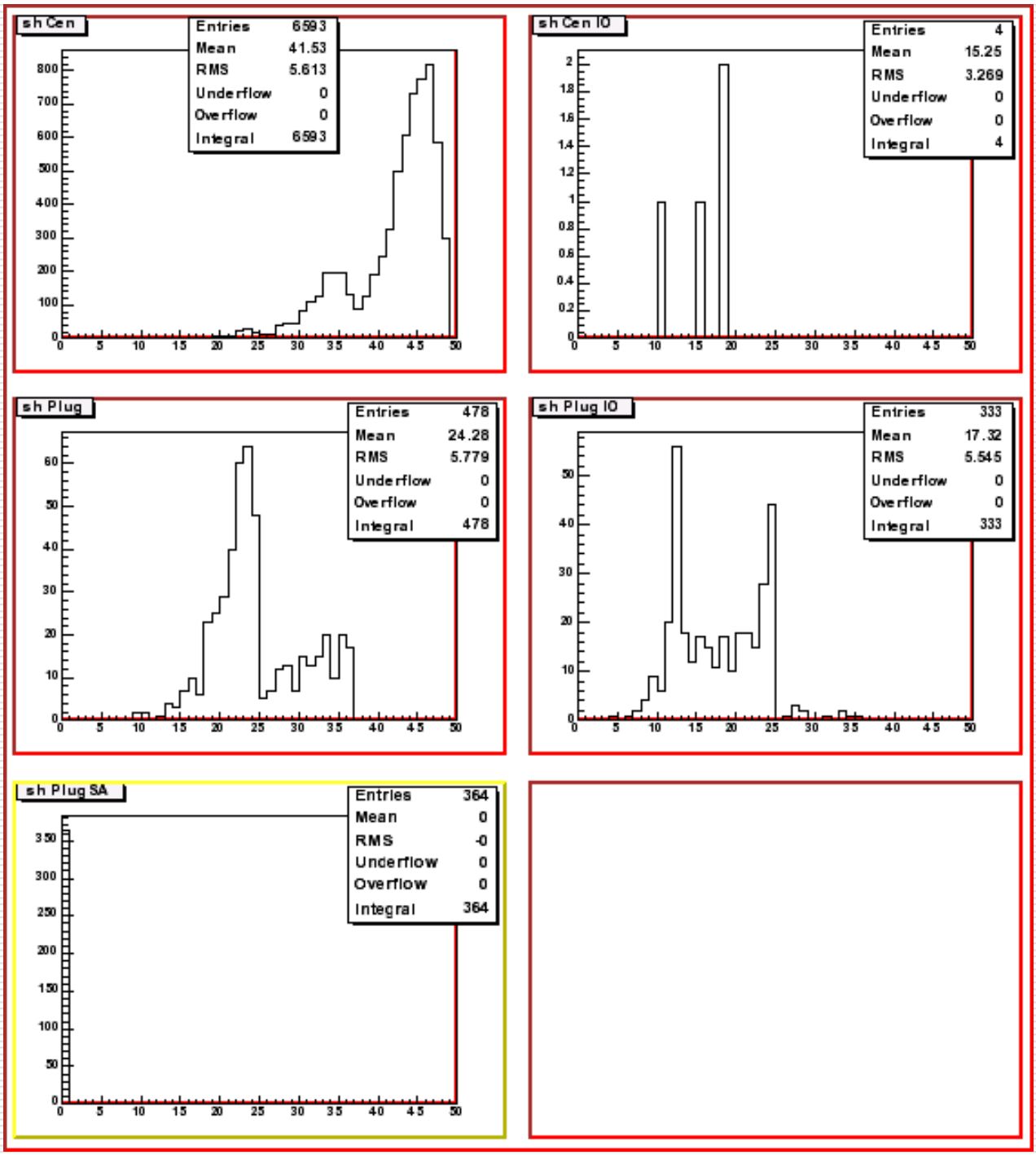
Charge identification



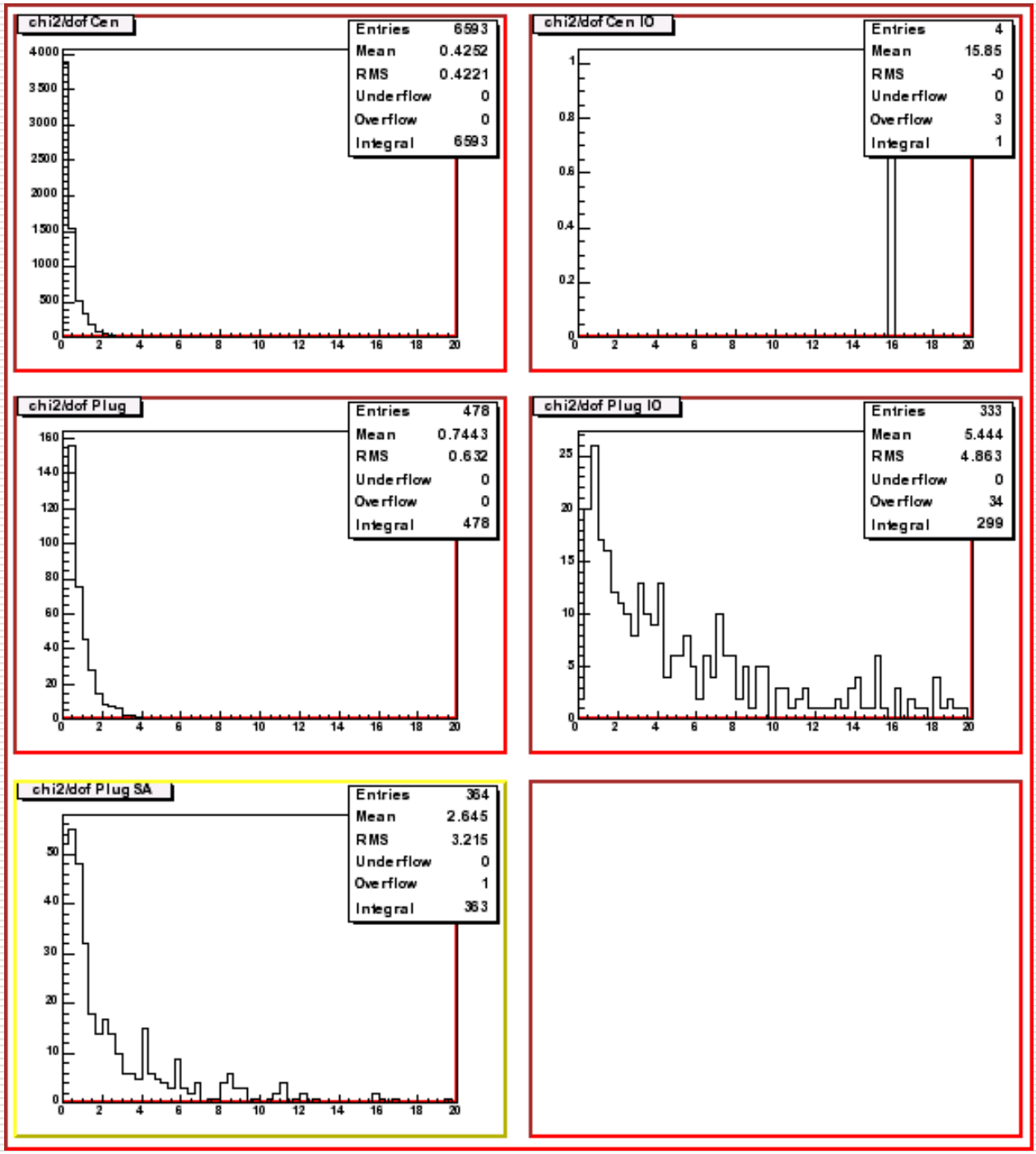
Axial cot hits



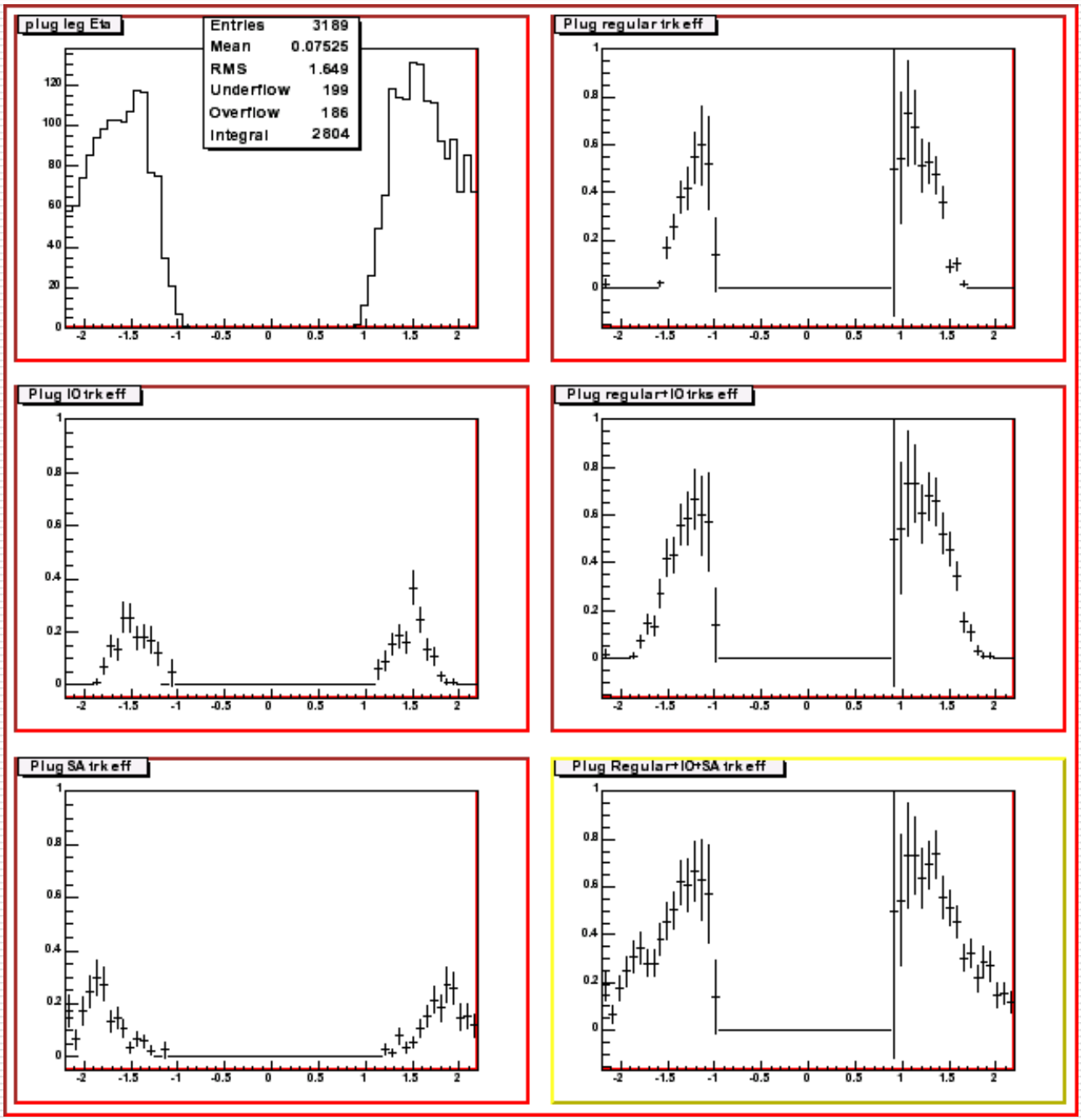
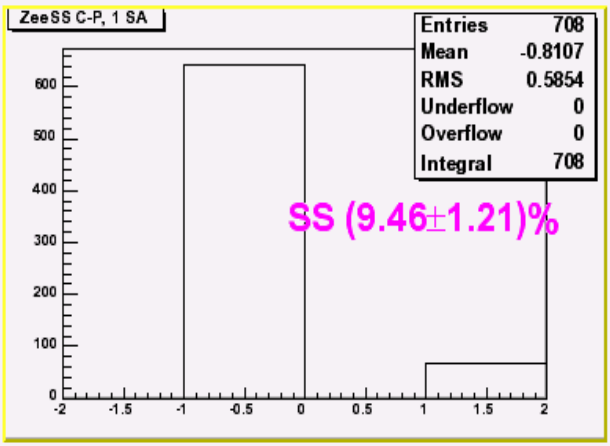
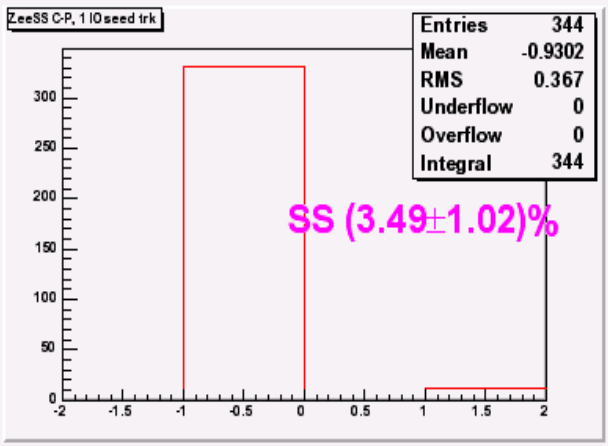
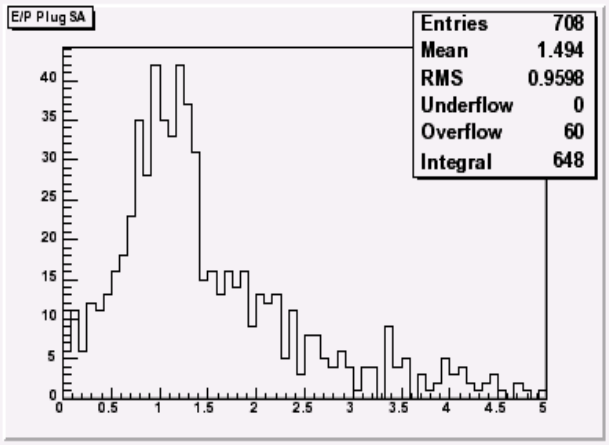
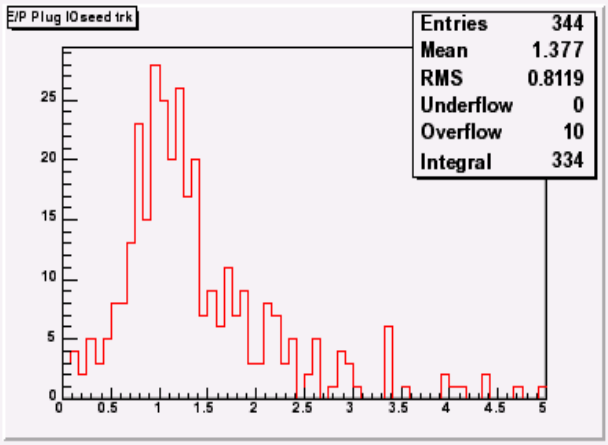
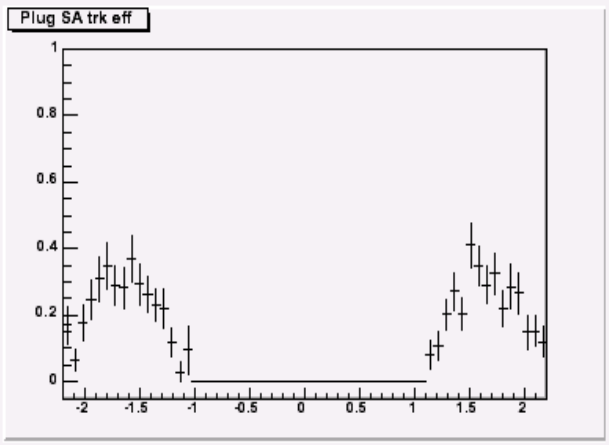
Stereo cot hits



Chi2/dof


chi2/dof Cen
Entries 6593
Mean 0.4252
RMS 0.4221
Underflow 0
Overflow 0
Integral 6593
chi2/dof Cen IO
Entries 4
Mean 15.85
RMS -0
Underflow 0
Overflow 3
Integral 1
chi2/dof Plug
Entries 478
Mean 0.7443
RMS 0.632
Underflow 0
Overflow 0
Integral 478
chi2/dof Plug IO
Entries 333
Mean 5.444
RMS 4.863
Underflow 0
Overflow 34
Integral 299
chi2/dof Plug SA
Entries 364
Mean 2.645
RMS 3.215
Underflow 0
Overflow 1
Integral 363

Tracking efficiency



With IO tracking turned off