Status of neutral reconstruction in test detector sidloi3

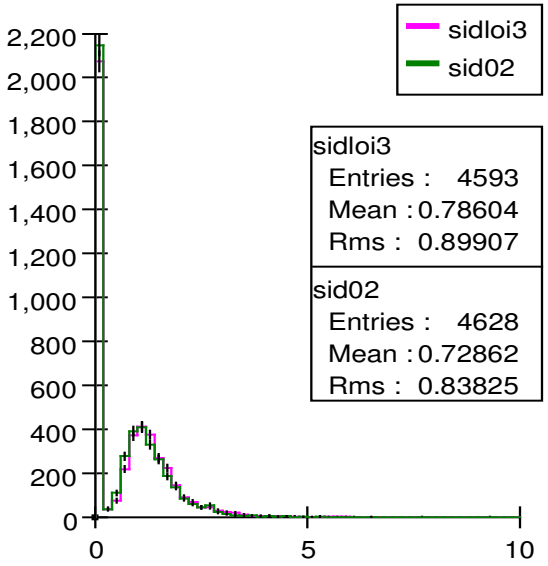
Ron Cassell

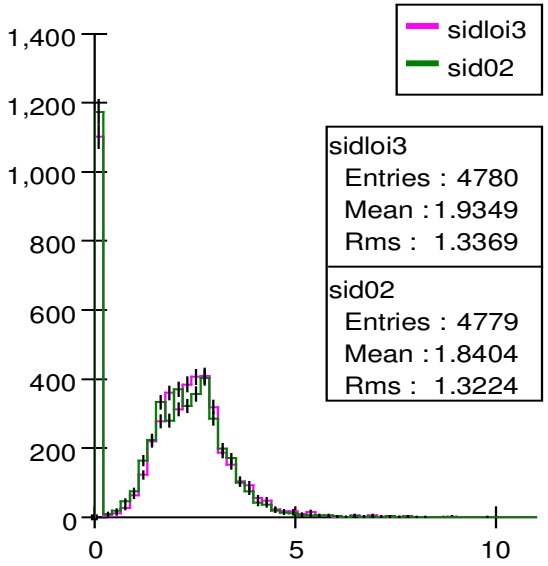
3/11/10

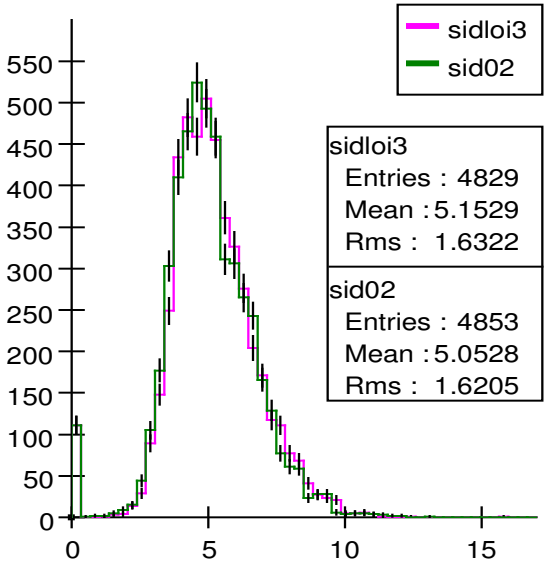
Code updates

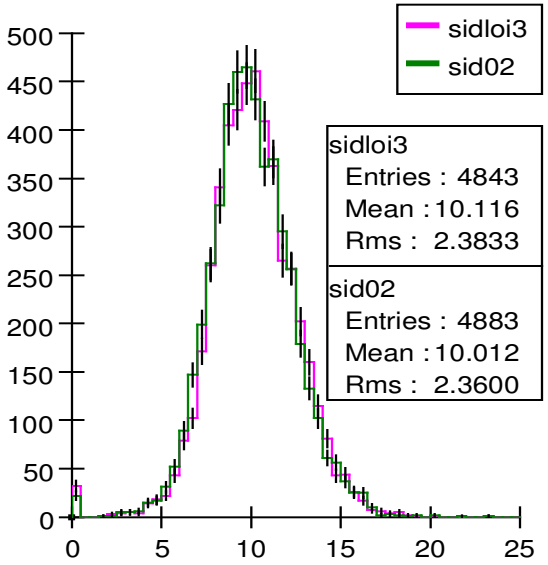
- Tried to locate layer usage and change to Vlayer where appropriate.
- Especially tricky in mip finding.
- Have NOT: calibrated, changed photonID algorithm, updated scoring.

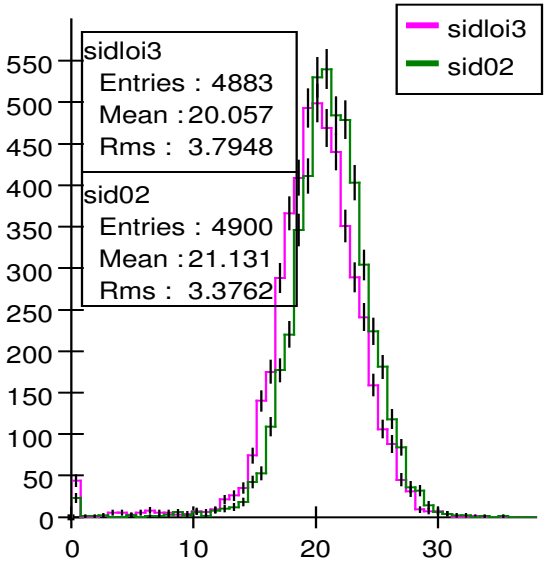
Total Reconstructed Energy: K0L





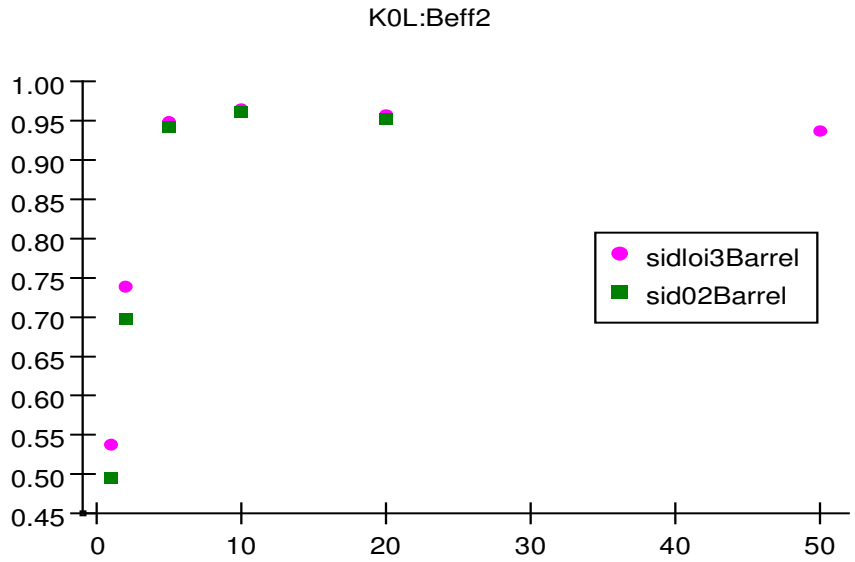


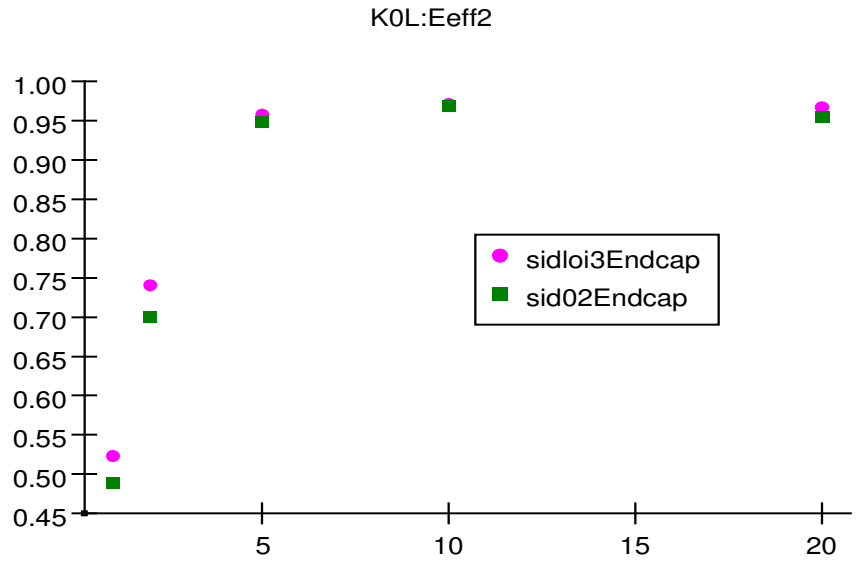


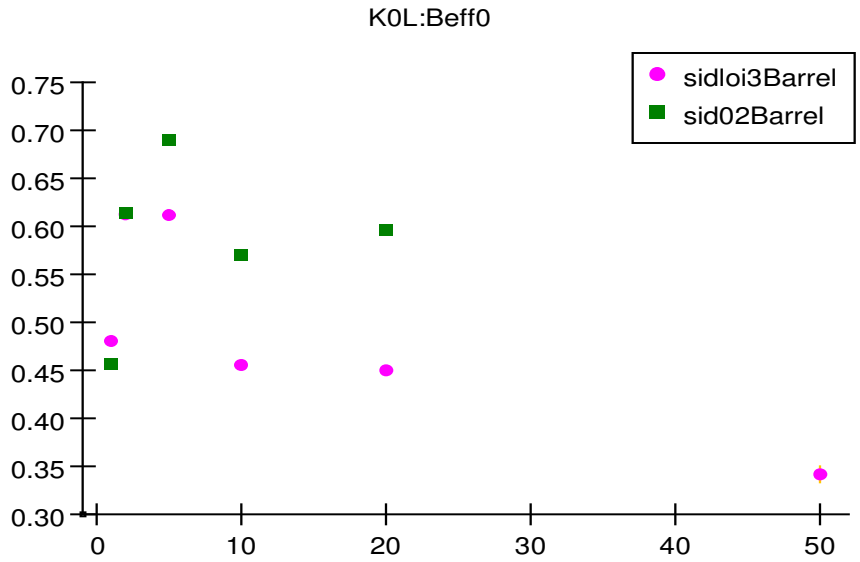


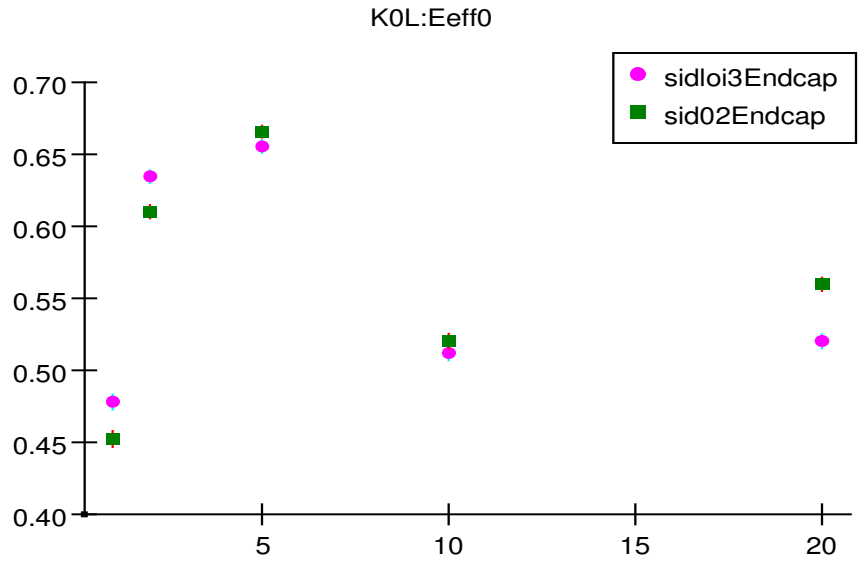
Efficiency definitions

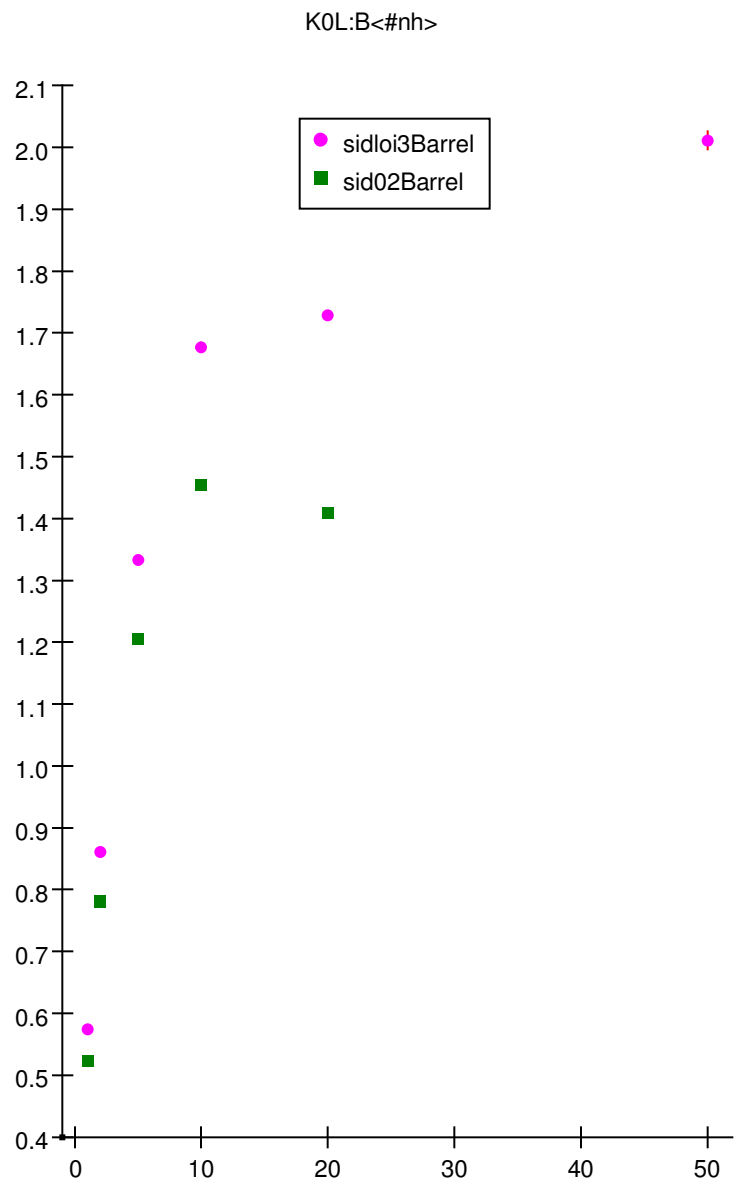
- Eff0 = exactly 1 reconstructed particle, and correct type.
- Eff2 = correct type E > ½ Egen

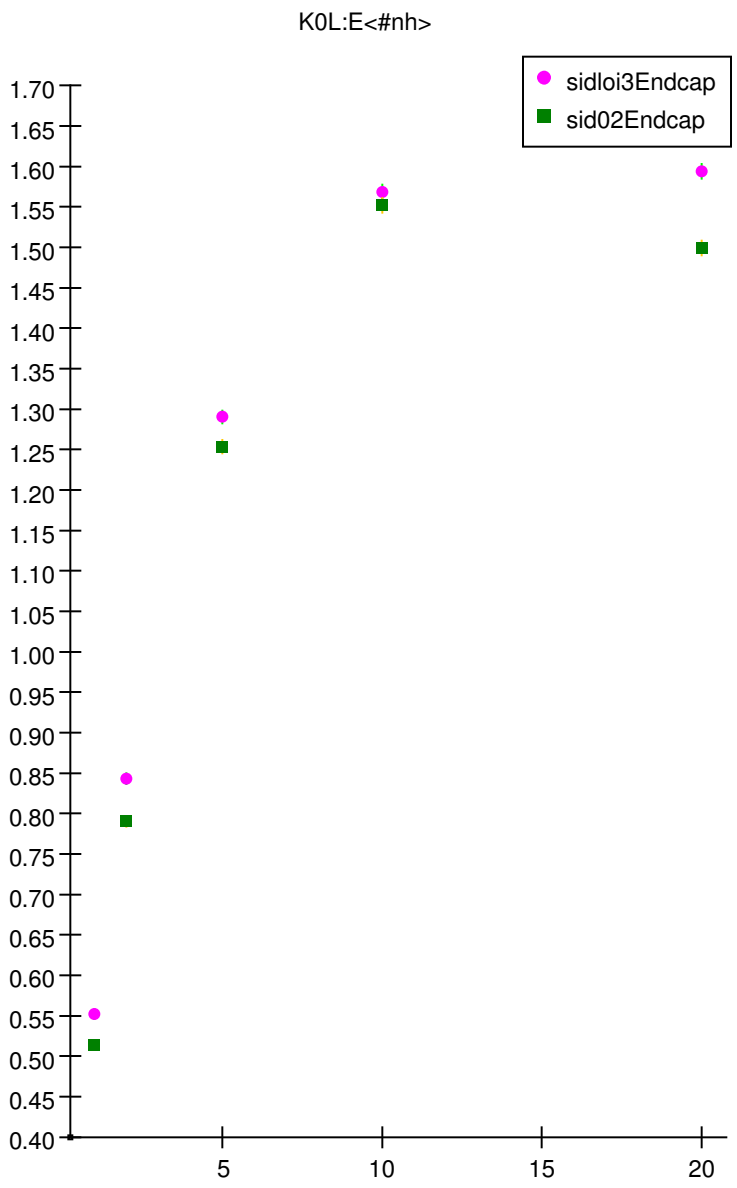

K0L:Beff2
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0
10
20
30
40
50
sidloi3Barrel
sid02Barrel


K0L:Eeff2
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
5
10
15
20
sidloi3Endcap
sid02Endcap

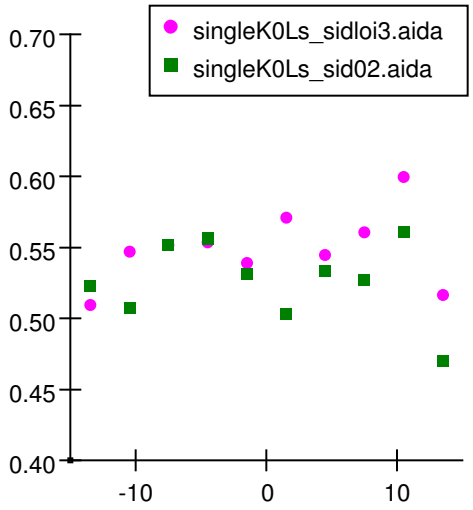

K0L:Beff0
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0
10
20
30
40
50
sidloi3Barrel
sid02Barrel


K0L:Eeff0
0.70
0.65
0.60
0.55
0.50
0.45
0.40
5
10
15
20
sidloi3Endcap
sid02Endcap

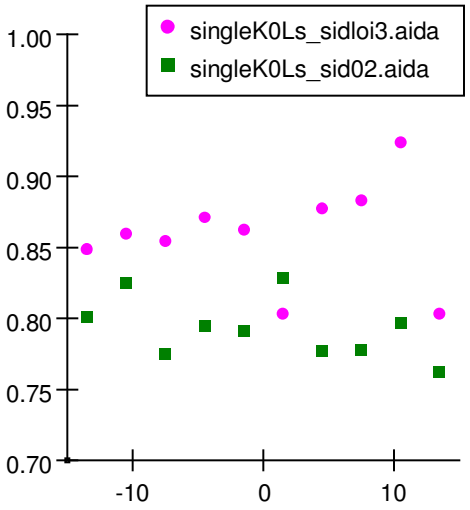

K0L:B<#nh>
sidloi3Barrel
sid02Barrel
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0
10
20
30
40
50


K0L:E<#nh>
sidloi3Endcap
sid02Endcap
1.70
1.65
1.60
1.55
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
5
10
15
20

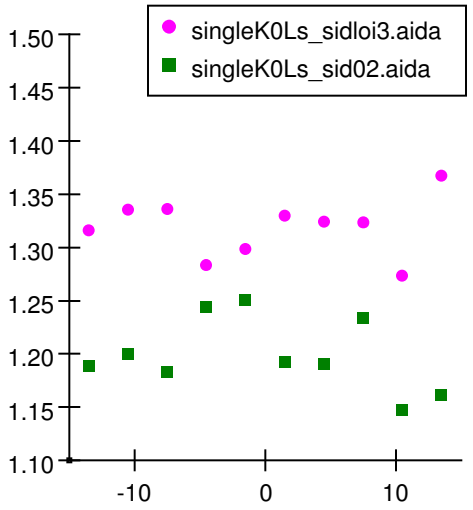
PDG130 - E=1 - ct=.17 - <# nhs> ...



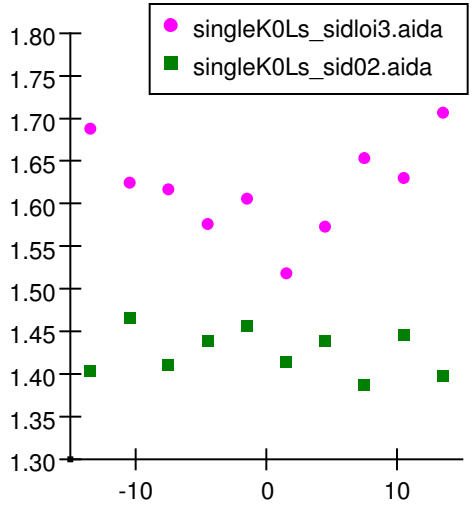
PDG130 - E=2 - ct=.17 - <# nhs> ...



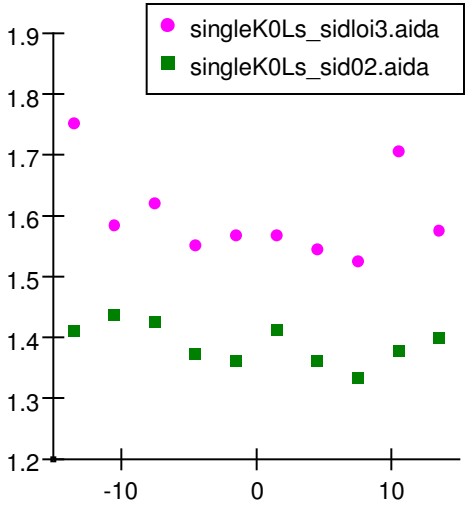
PDG130 - E=5 - ct=.17 - <# nhs> ...



PDG130 - E=10 - ct=.17 - <# nhs>...

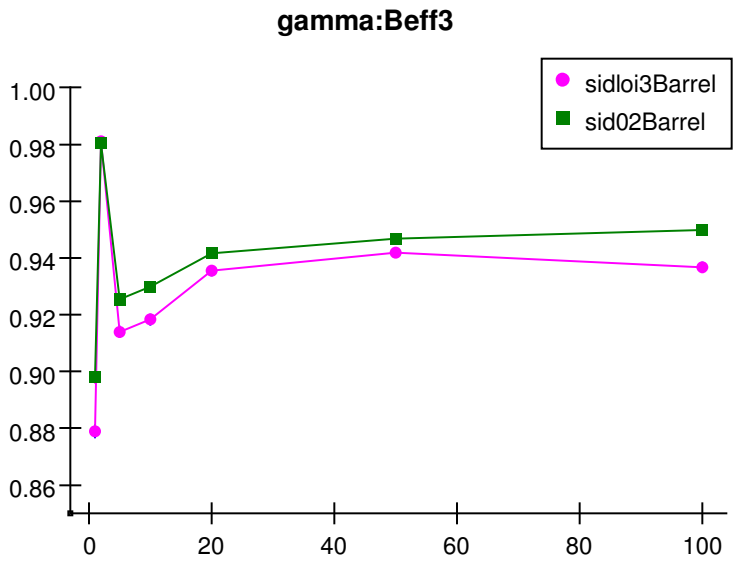


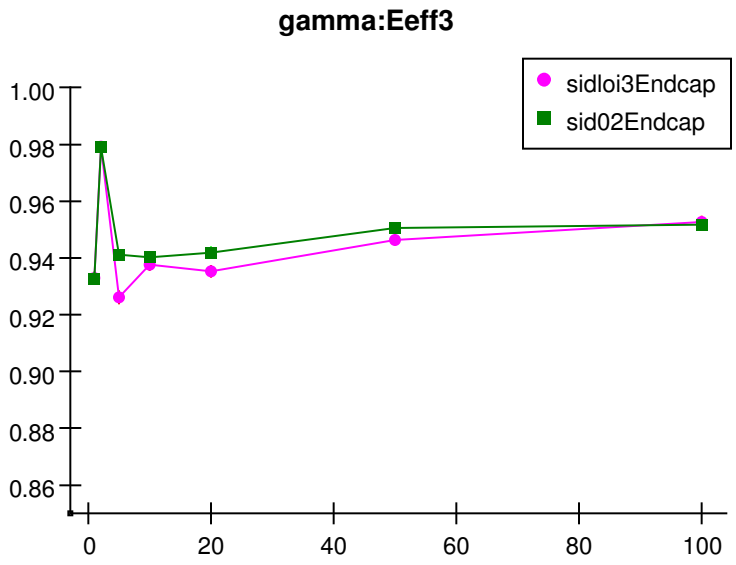
PDG130 - E=20 - ct=.17 - <# nhs>...

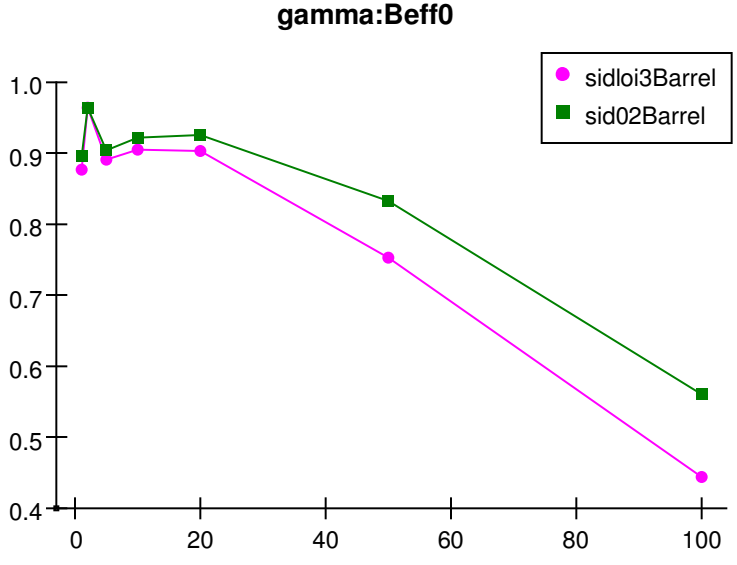


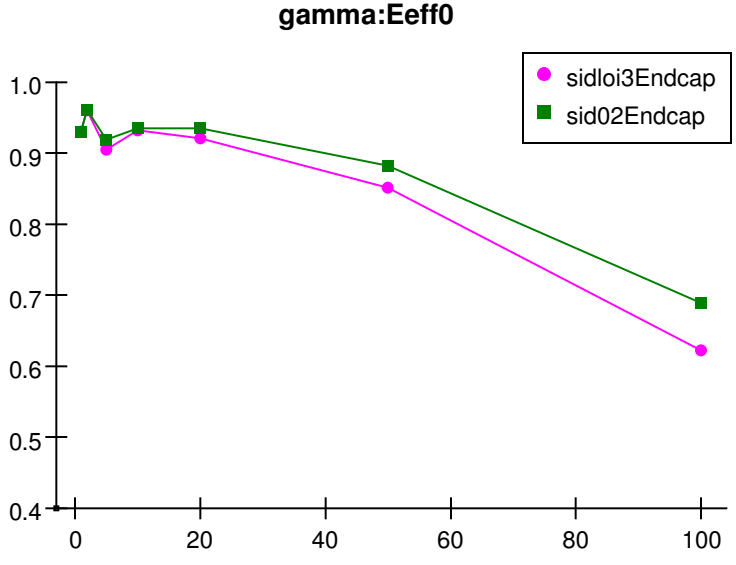
Photons

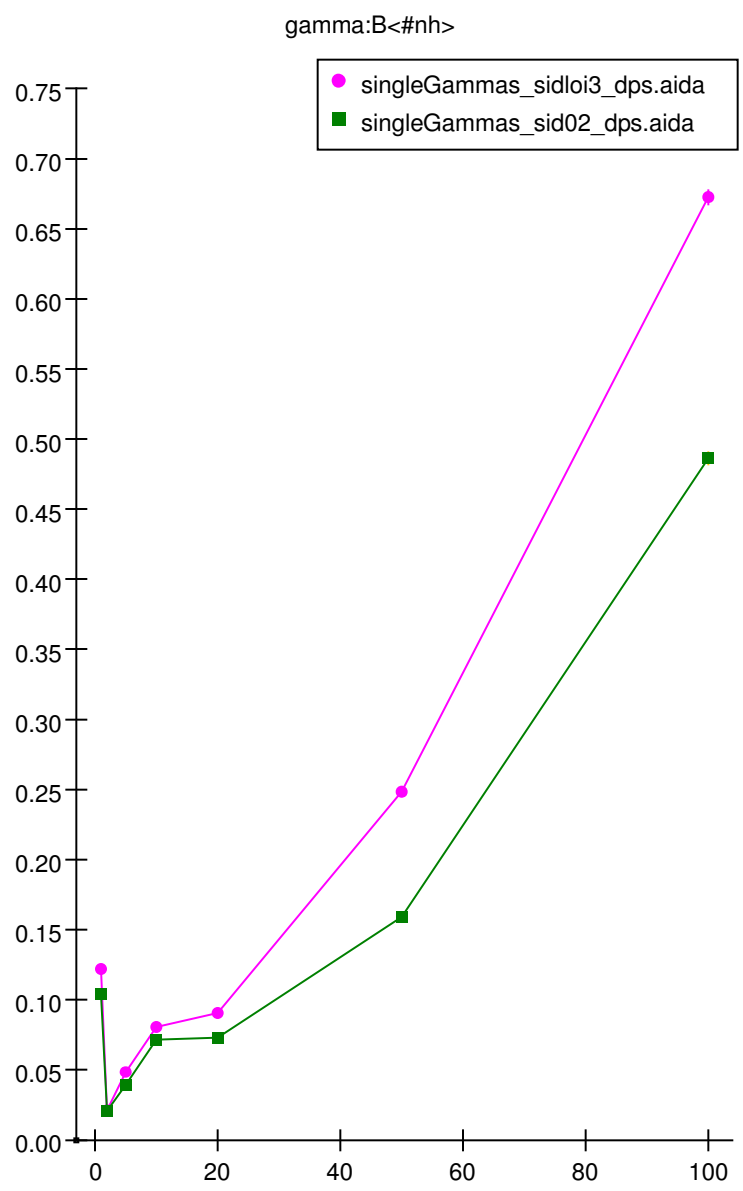
- Eff3 = maxE recon particle within 4sigma of Egen

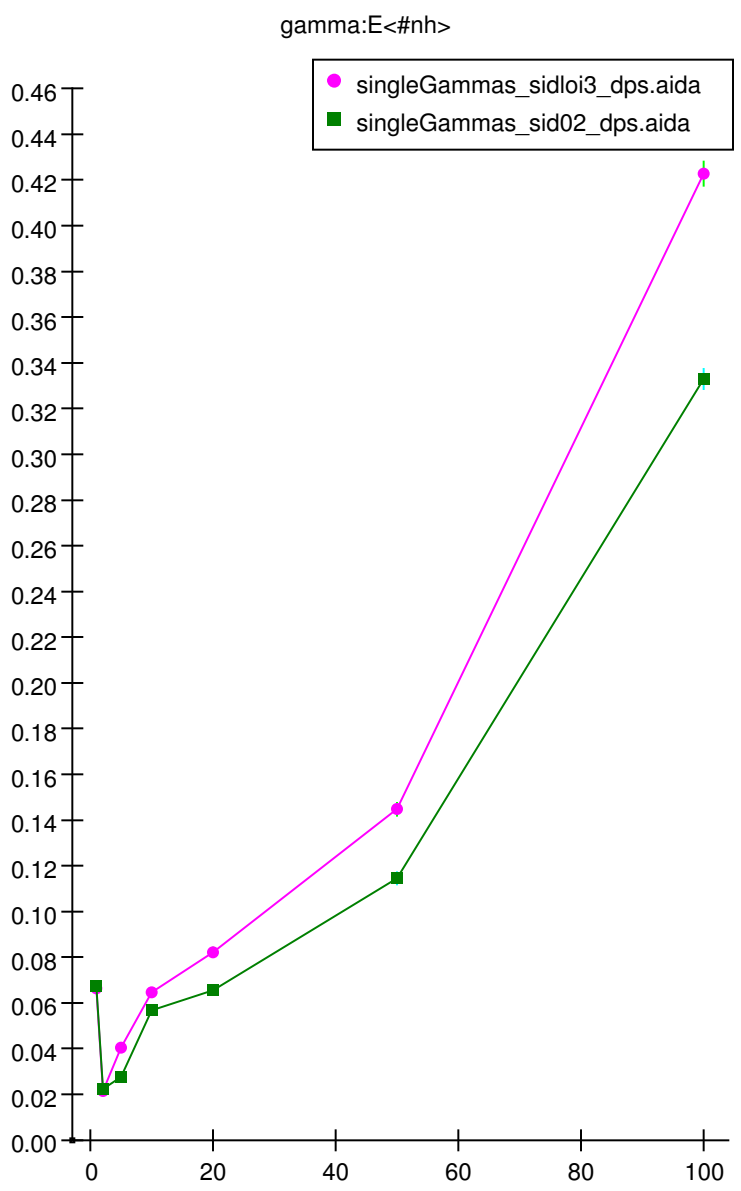

gamma:Beff3
sidloi3Barrel
sid02Barrel
1.00
0.98
0.96
0.94
0.92
0.90
0.88
0.86
0
20
40
60
80
100

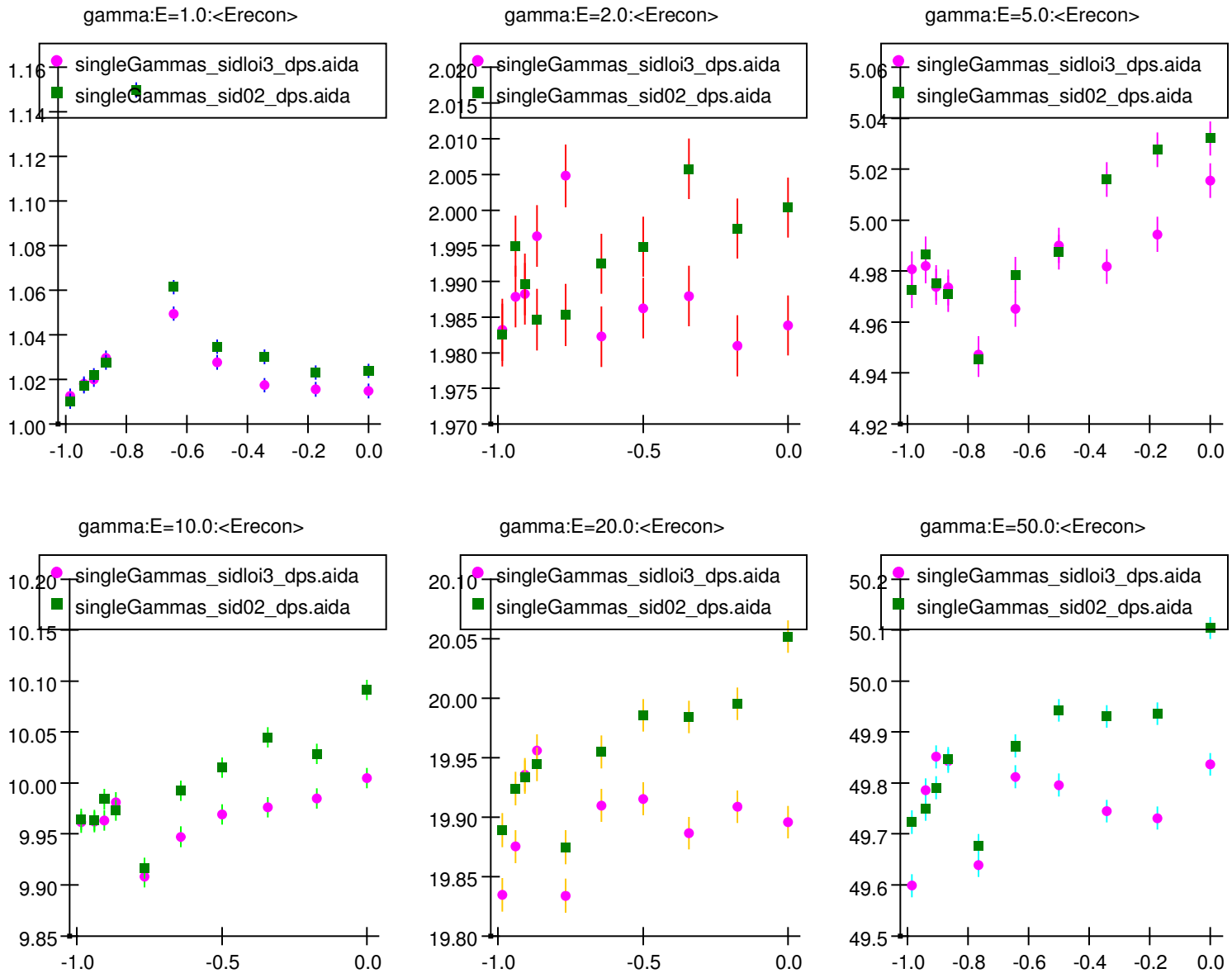

gamma:Eeff3
sidloi3Endcap
sid02Endcap
1.00
0.98
0.96
0.94
0.92
0.90
0.88
0.86
0
20
40
60
80
100

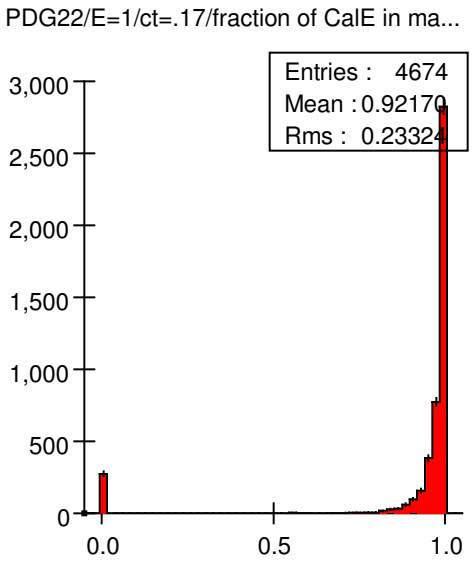

gamma:Beff0
sidloi3Barrel
sid02Barrel
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0
20
40
60
80
100

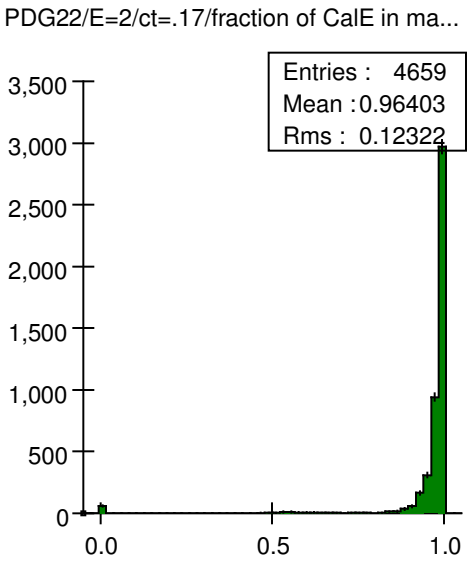

gamma:Eeff0
sidloi3Endcap
sid02Endcap
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0
20
40
60
80
100

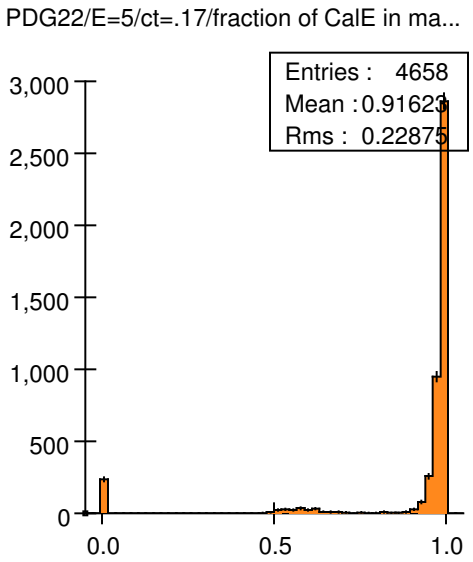

gamma:B<#nh>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
20
40
60
80
100

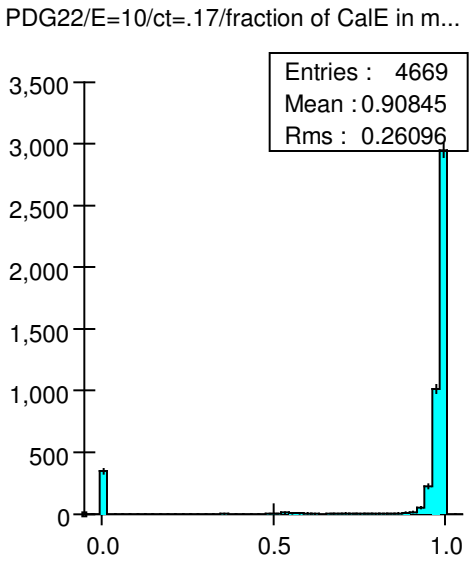

gamma:E<#nh>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida
0.46
0.44
0.42
0.40
0.38
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0
20
40
60
80
100

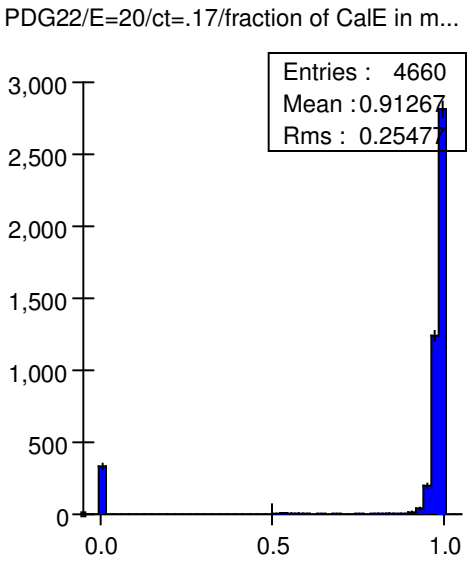

gamma:E=1.0:<Erecon>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida
gamma:E=2.0:<Erecon>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida
gamma:E=5.0:<Erecon>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida
gamma:E=10.0:<Erecon>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida
gamma:E=20.0:<Erecon>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida
gamma:E=50.0:<Erecon>
singleGammas_sidloi3_dps.aida
singleGammas_sid02_dps.aida

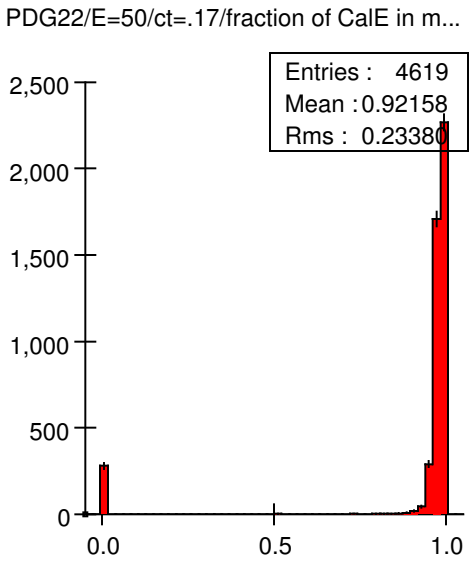

PDG22/E=1/ct=.17/fraction of CalE in ma...
Entries : 4674
Mean : 0.92170
Rms : 0.23324
3,000
2,500
2,000
1,500
1,000
500
0
0.0
0.5
1.0


PDG22/E=2/ct=.17/fraction of CalE in ma...
Entries : 4659
Mean : 0.96403
Rms : 0.12322
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0.0
0.5
1.0


PDG22/E=5/ct=.17/fraction of CalE in ma...
Entries : 4658
Mean : 0.91623
Rms : 0.22875
3,000
2,500
2,000
1,500
1,000
500
0
0.0
0.5
1.0


PDG22/E=10/ct=.17/fraction of CalE in m...
Entries : 4669
Mean : 0.90845
Rms : 0.26096
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0.0
0.5
1.0


PDG22/E=20/ct=.17/fraction of CalE in m...
Entries : 4660
Mean : 0.91267
Rms : 0.25477
3,000
2,500
2,000
1,500
1,000
500
0
0.0
0.5
1.0


PDG22/E=50/ct=.17/fraction of CalE in m...
Entries : 4619
Mean : 0.92158
Rms : 0.23380
2,500
2,000
1,500
1,000
500
0
0.0
0.5
1.0