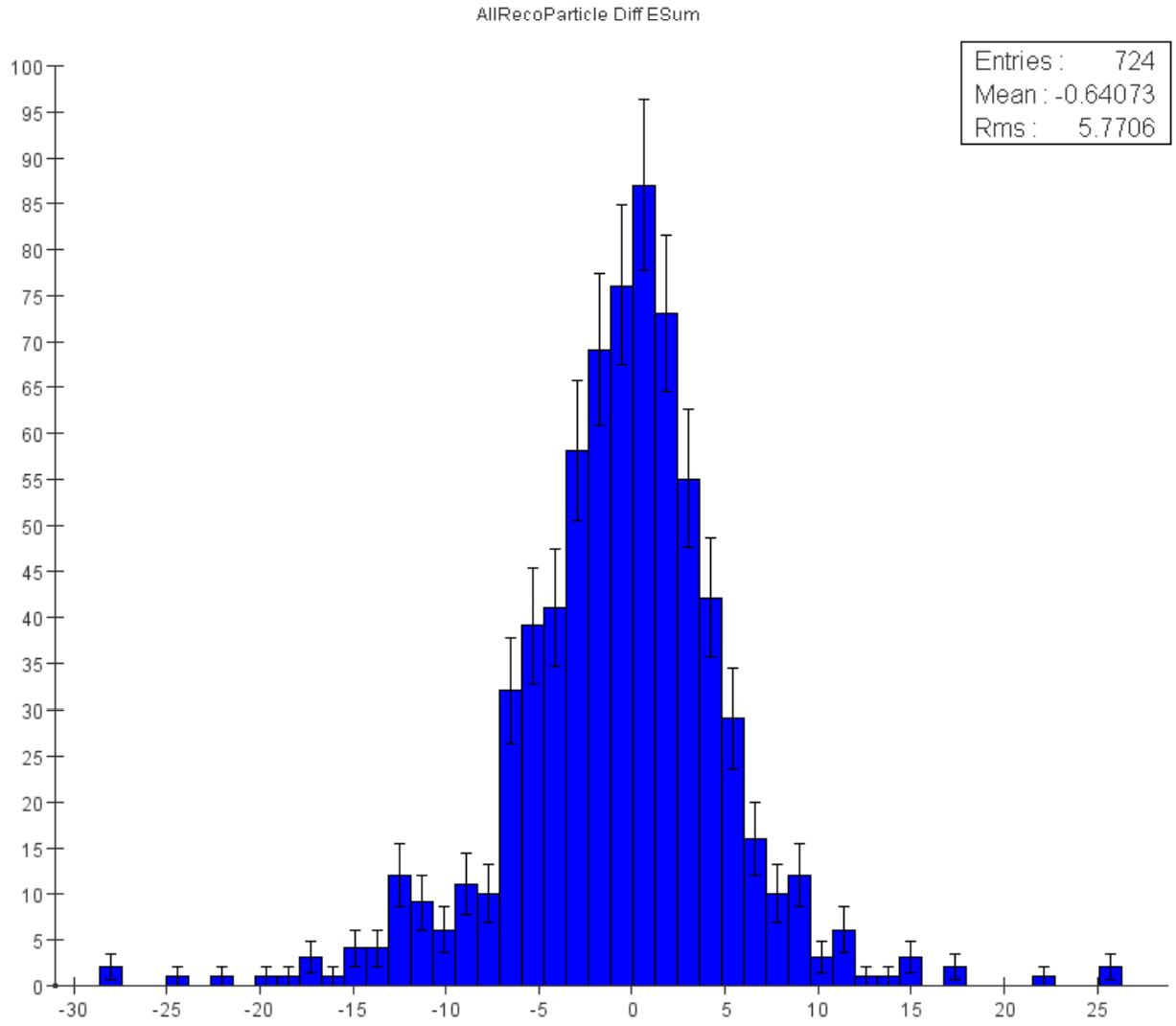
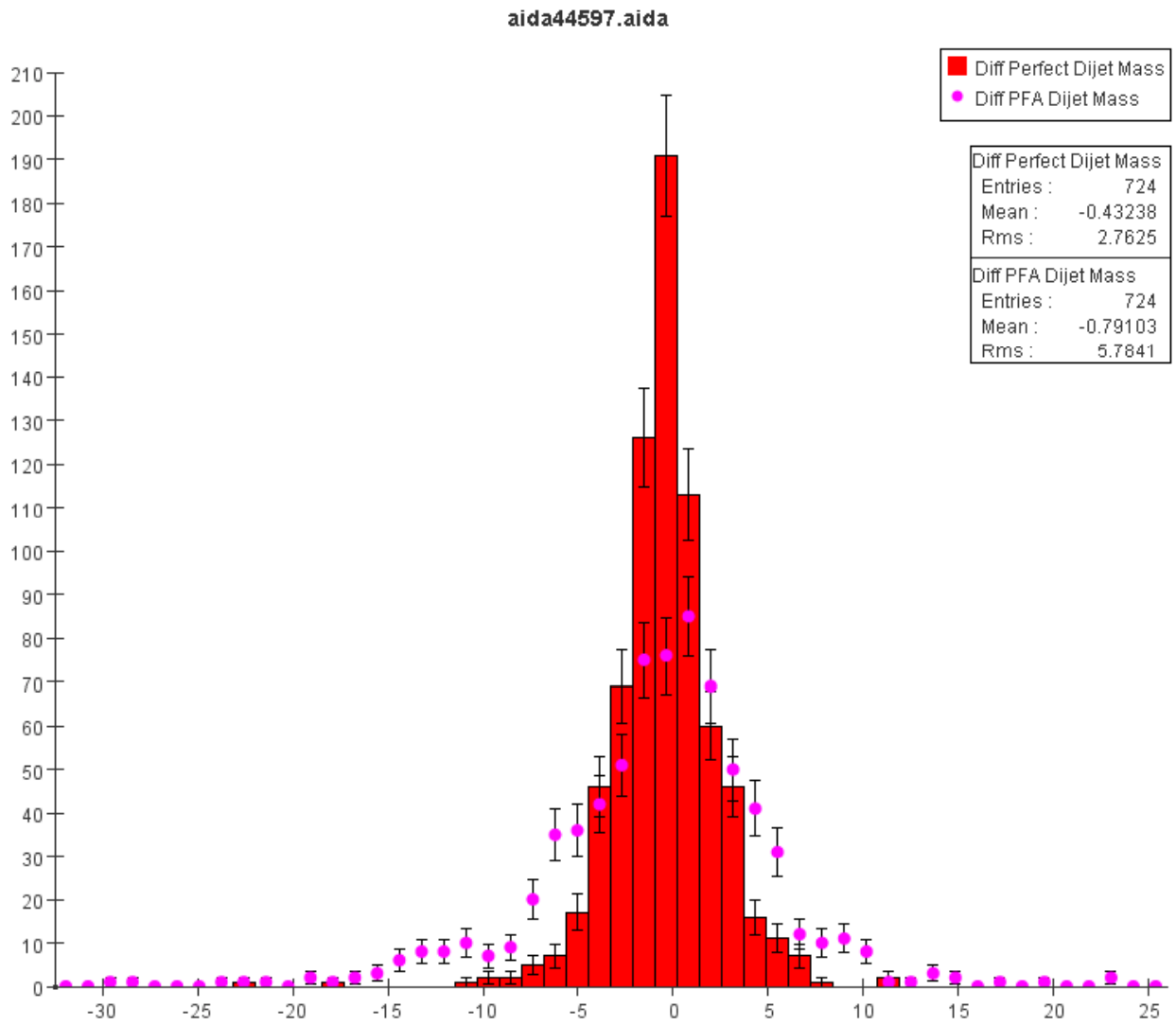
PFA Template Performance - 090308

PFA Algorithm
- Mips
- Photons (Ron's photons + Low E photons)
- Track/Shower Association
- Photon/Track proximity
- Neutral Hadrons
- Neutral Hadron/Track proximity
- Reconstructed Particles

Results on qqbar100 events in SiD01

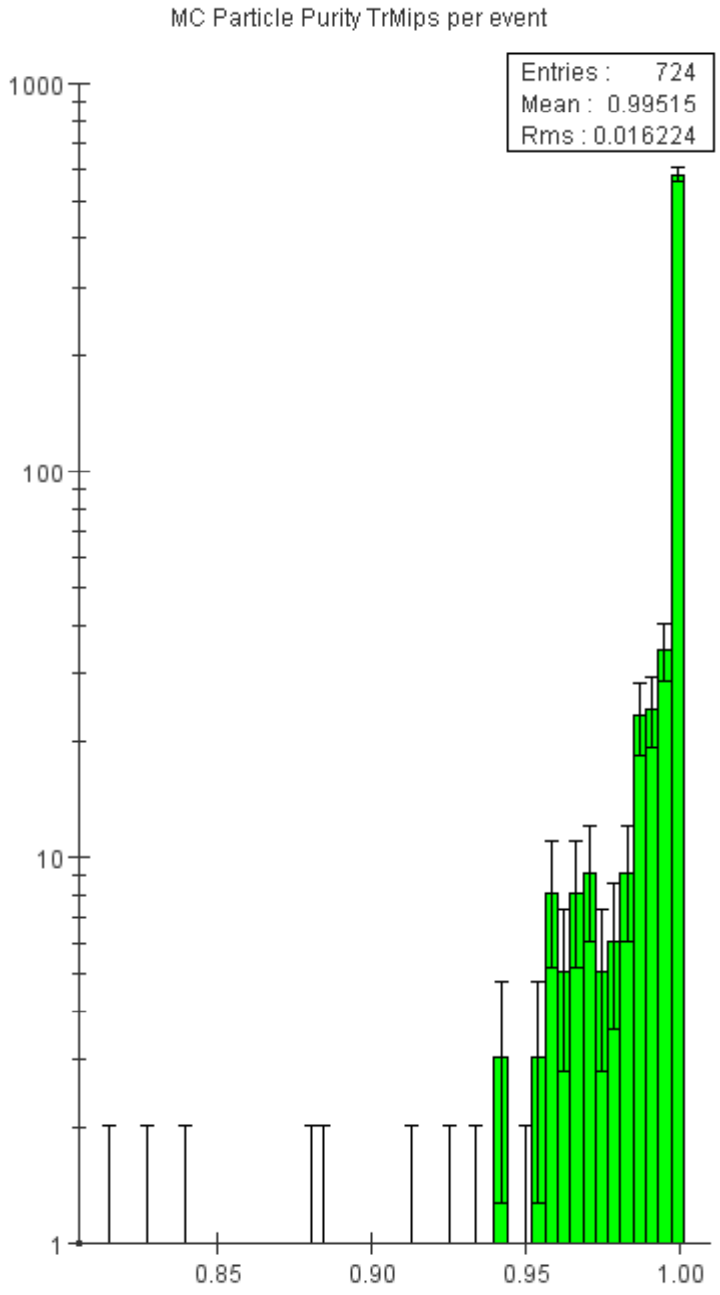


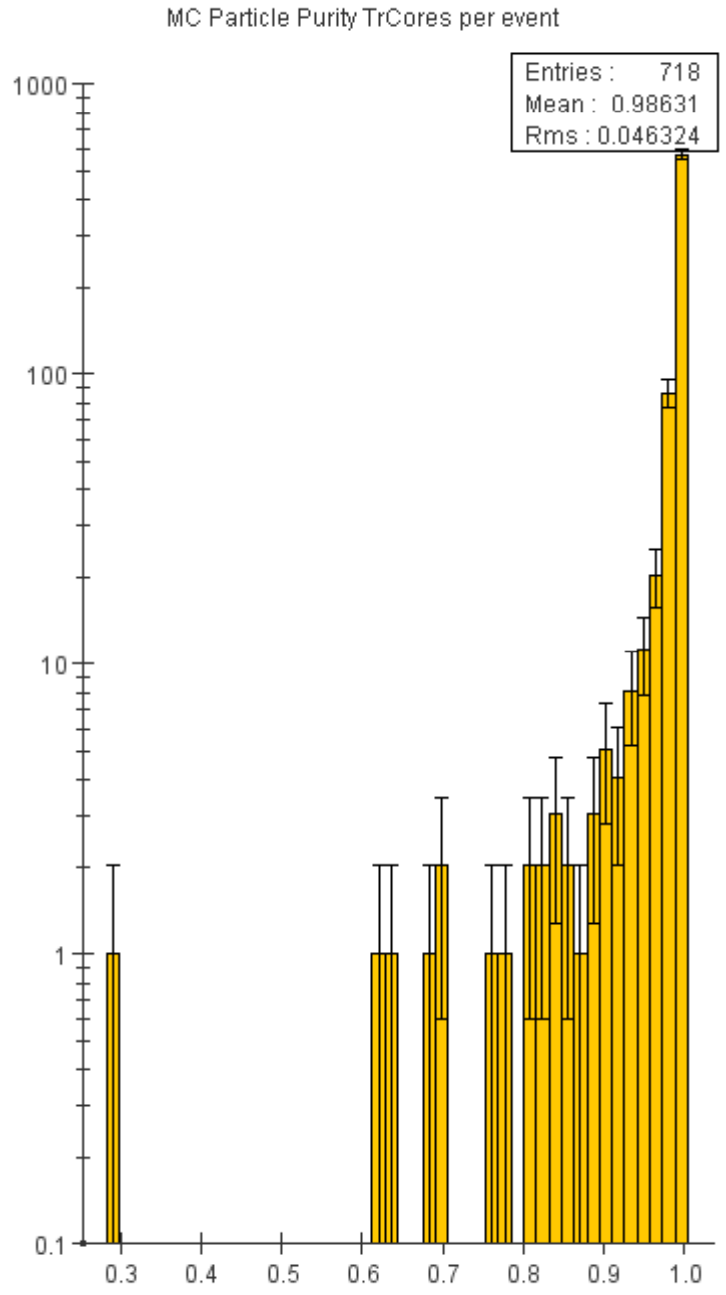
Rms90 = 3.79 GeV
Mean = -0.19

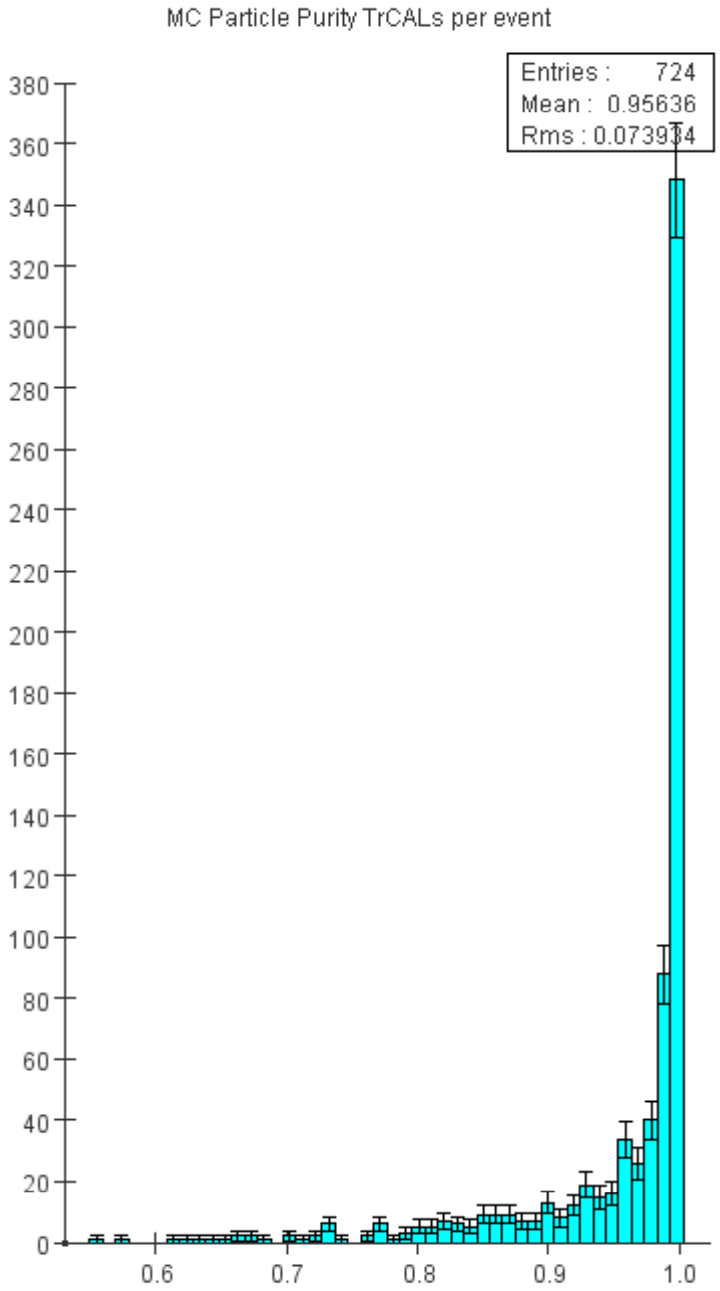


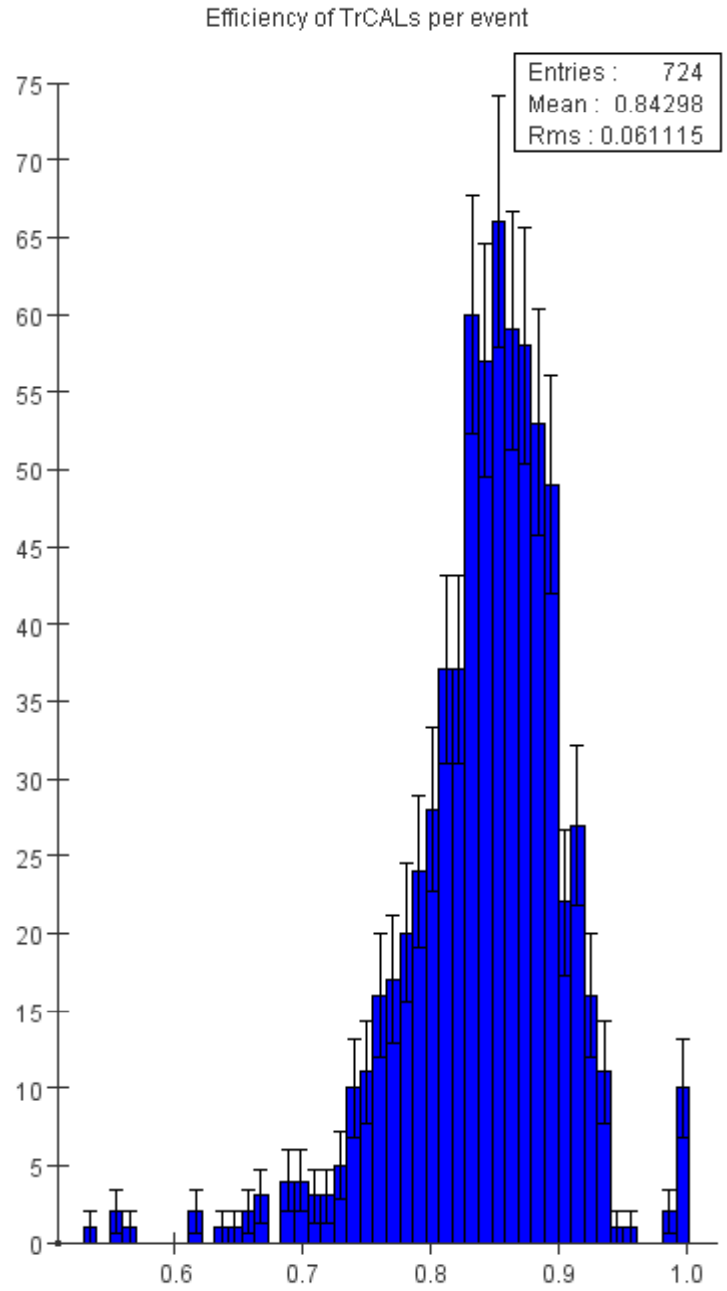
Perfect results
Rms90 = 1.79 GeV
Mean = -0.46

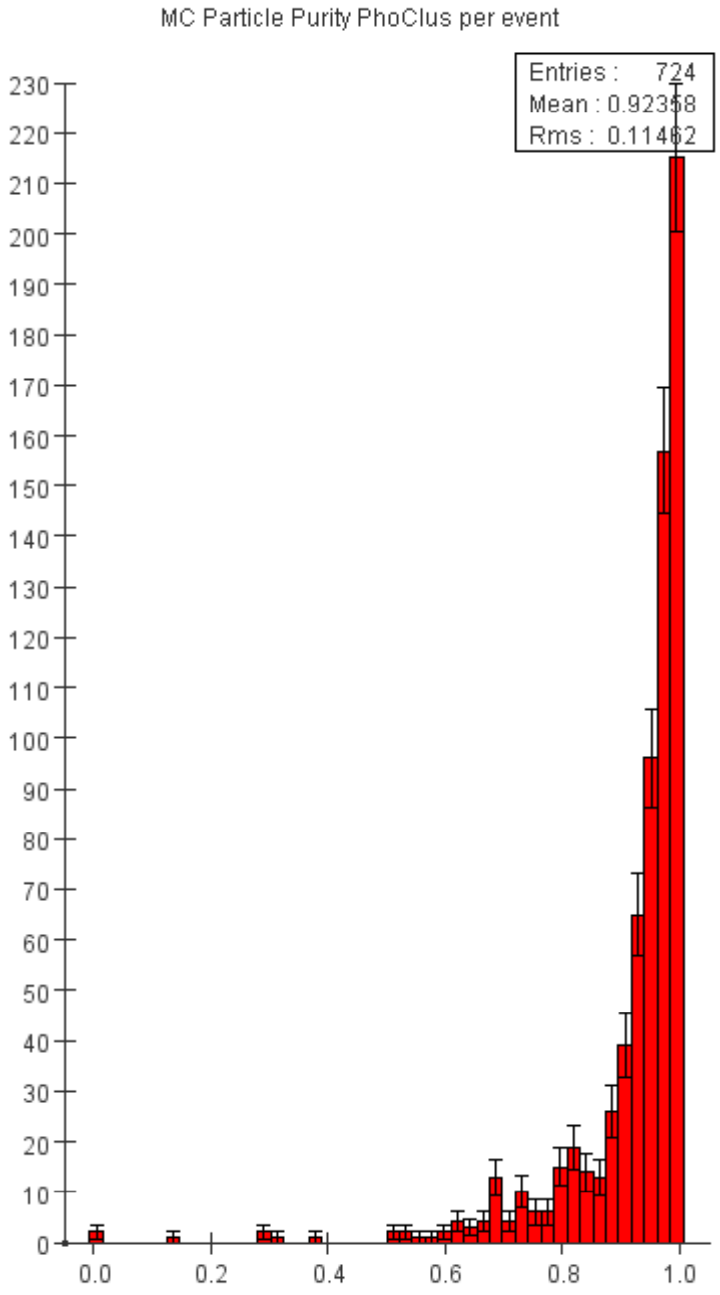
PFA results
Rms90 = 3.83 GeV
Mean = -0.29

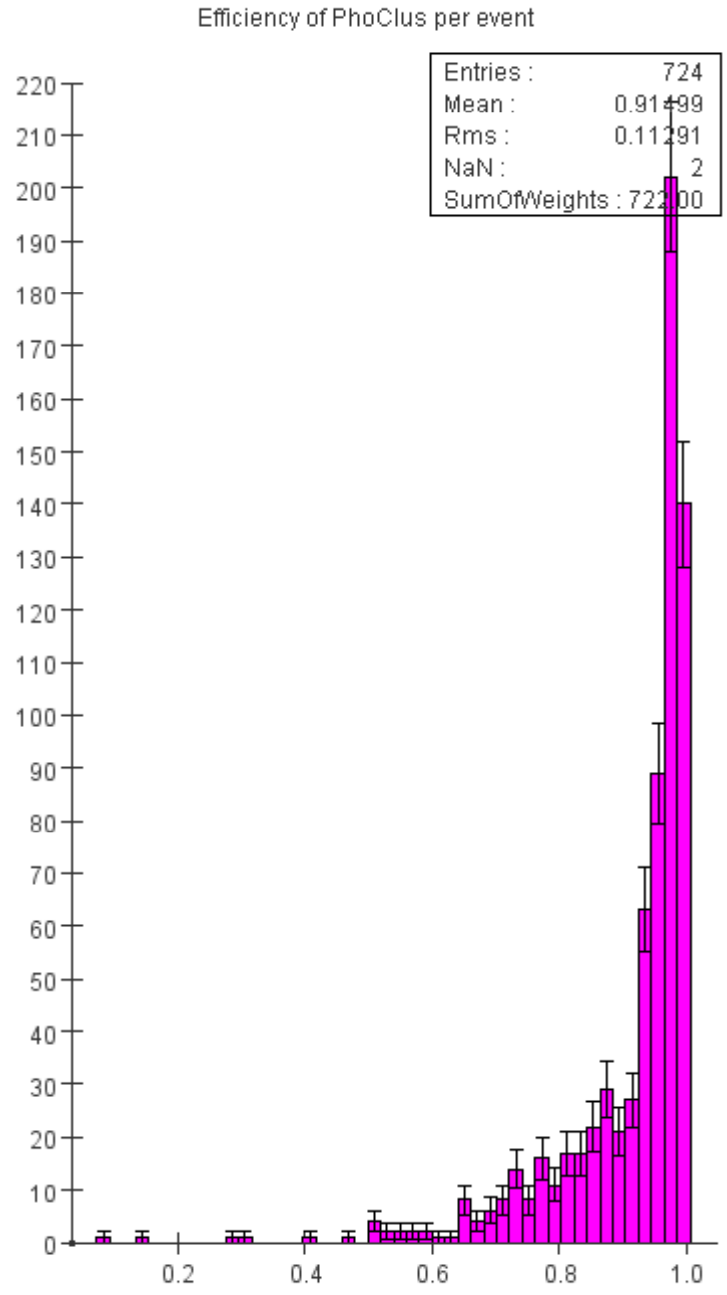

MC Particle Purity TrMips per event
Entries : 724
Mean : 0.99515
Rms : 0.016224
1000
100
10
1
0.85
0.90
0.95
1.00

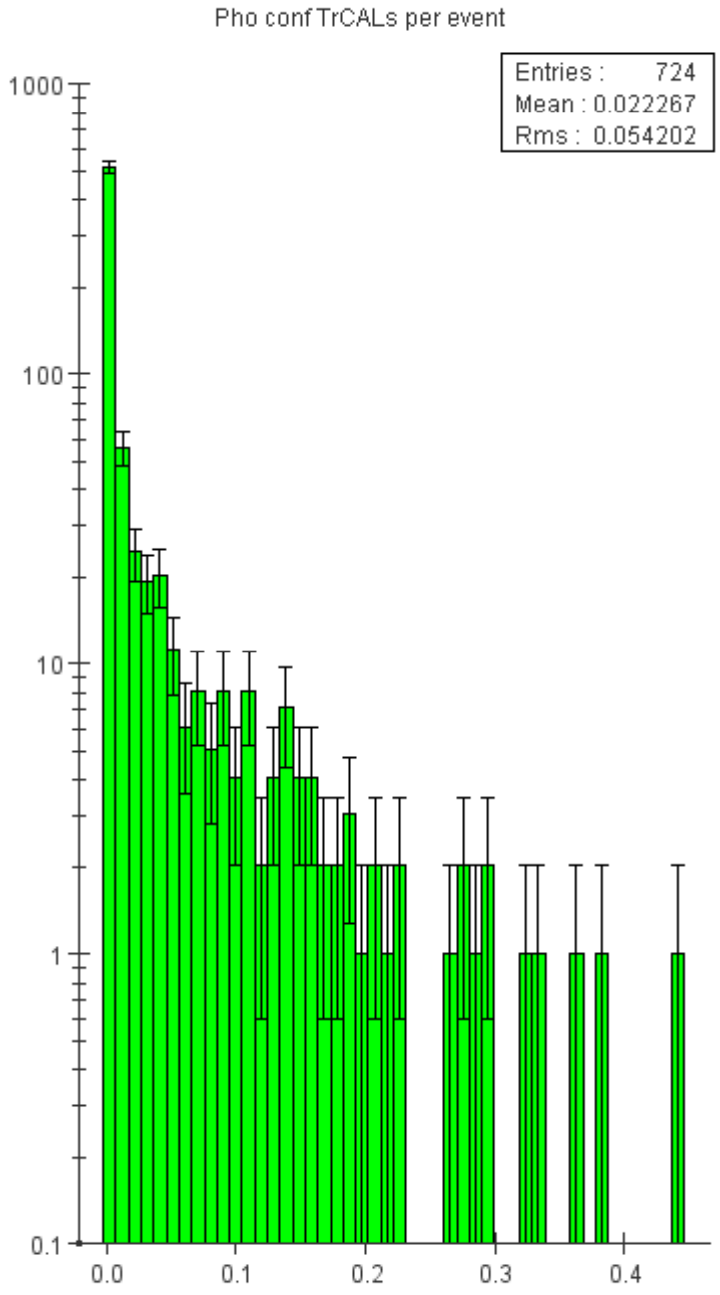

MC Particle Purity TrCores per event
Entries : 718
Mean : 0.98631
Rms : 0.046324
1000
100
10
1
0.1
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

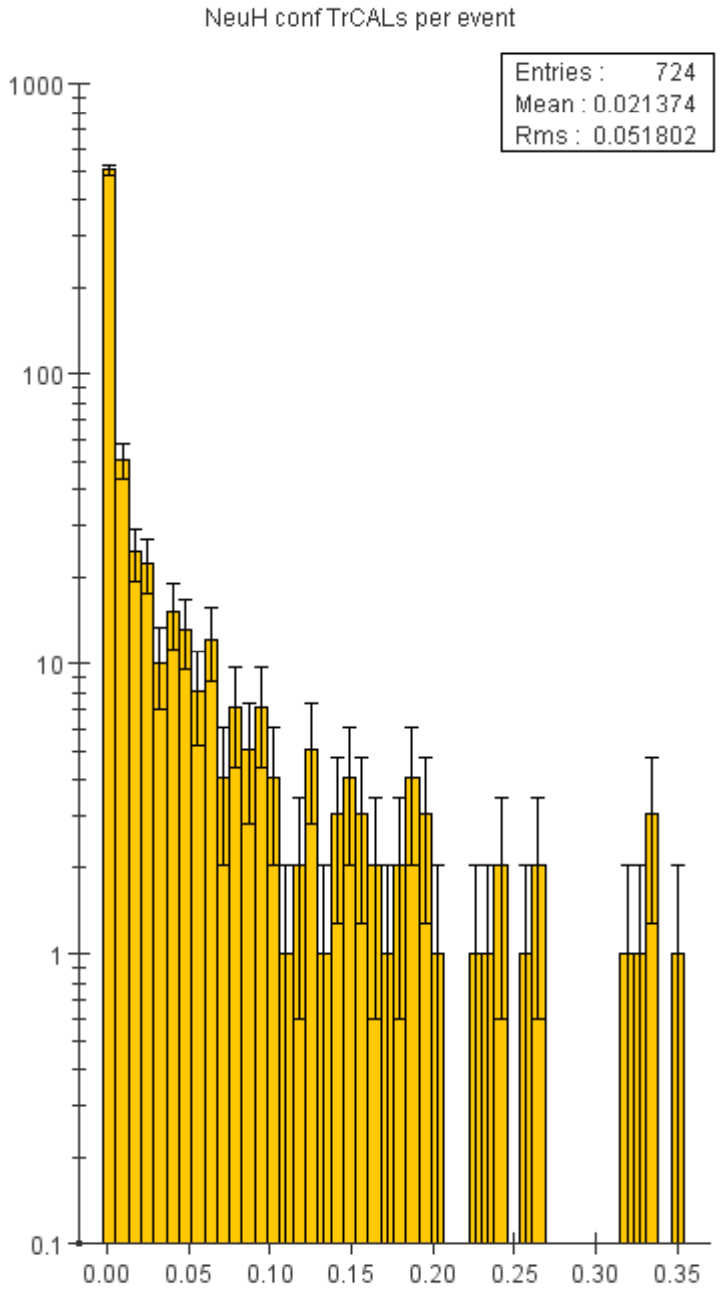

MC Particle Purity TrCALs per event
Entries : 724
Mean : 0.95636
Rms : 0.073934
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0.6
0.7
0.8
0.9
1.0

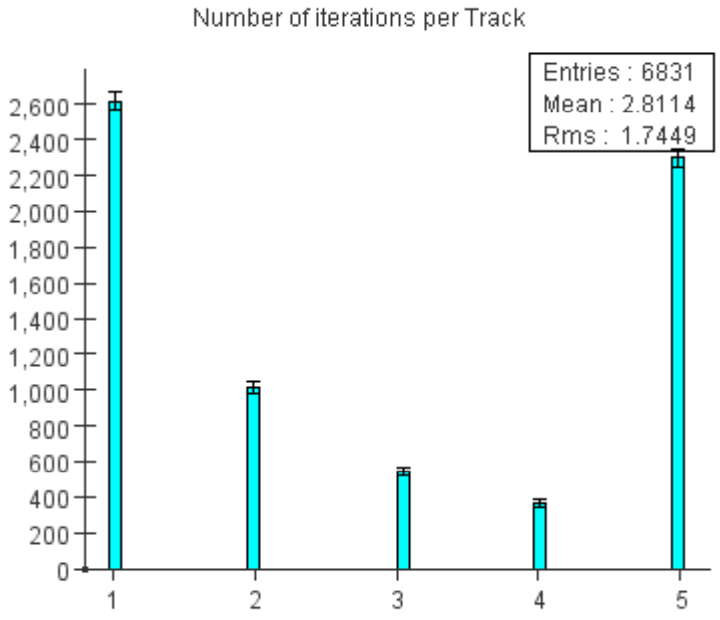

Efficiency of TrCALs per event
Entries : 724
Mean : 0.84298
Rms : 0.061115
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0.6
0.7
0.8
0.9
1.0

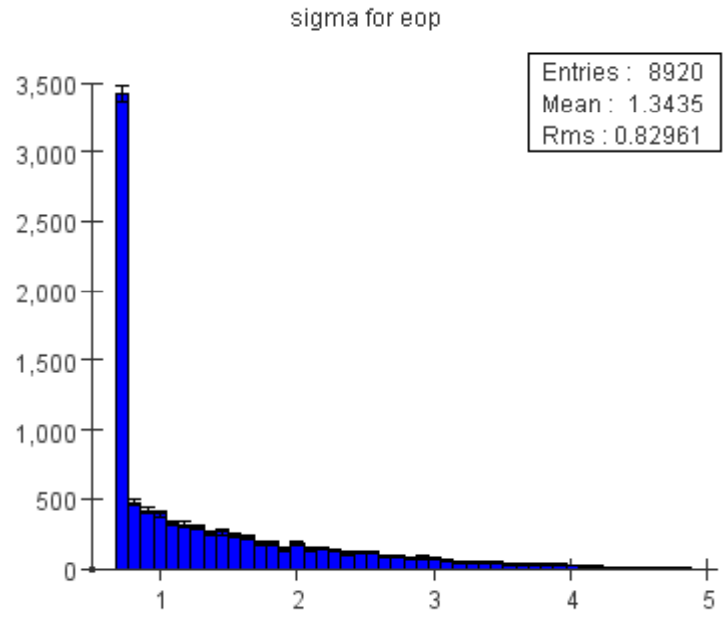

MC Particle Purity PhoClus per event
Entries : 724
Mean : 0.92358
Rms : 0.11462
0.0
0.2
0.4
0.6
0.8
1.0

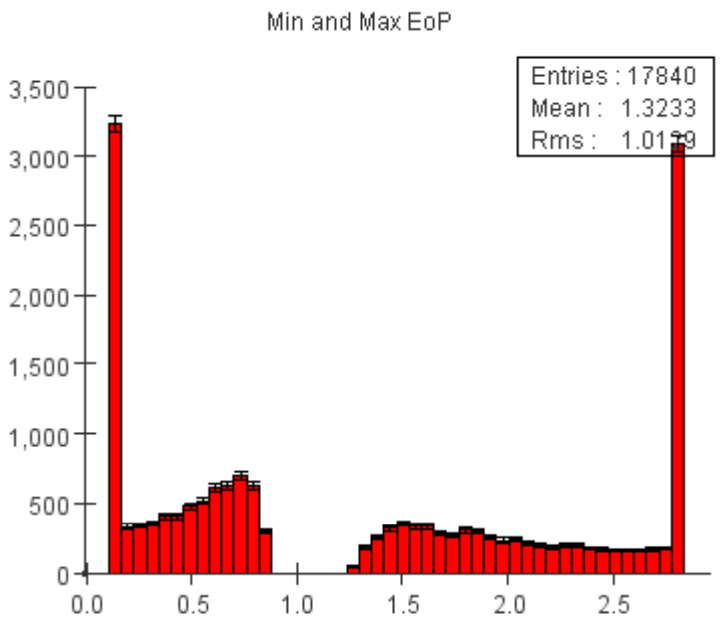

Efficiency of PhoClus per event
Entries : 724
Mean : 0.91499
Rms : 0.11291
NaN : 2
SumOfWeights : 722.00
0.2
0.4
0.6
0.8
1.0

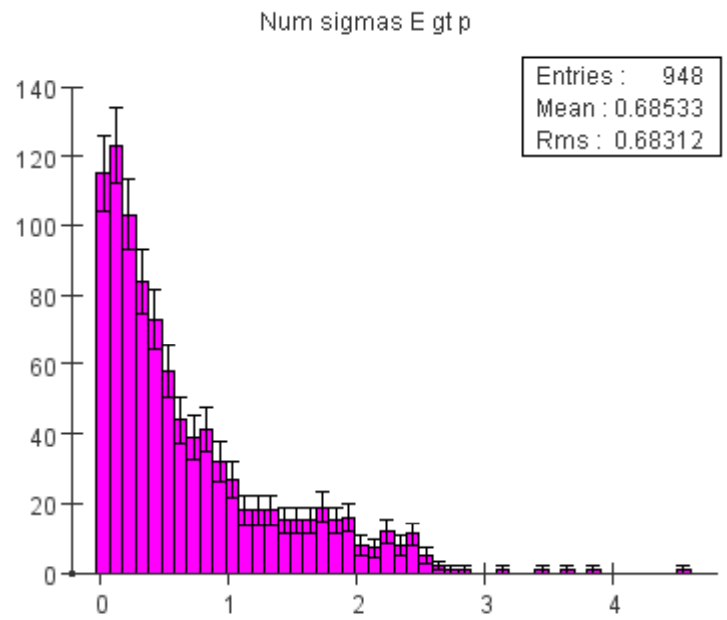

Pho conf TrCALs per event
Entries : 724
Mean : 0.022267
Rms : 0.054202
1000
100
10
1
0.1
0.0
0.1
0.2
0.3
0.4

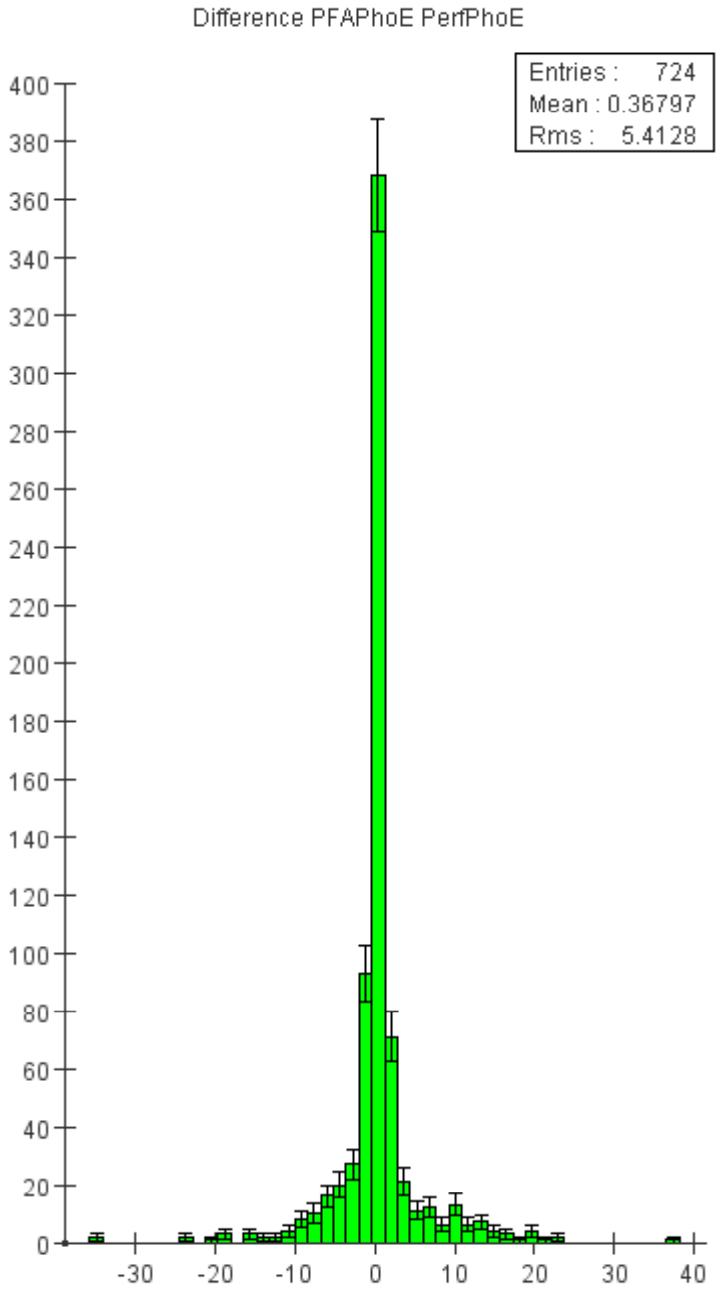

NeuH conf TrCALs per event
Entries : 724
Mean : 0.021374
Rms : 0.051802
1000
100
10
1
0.1
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35

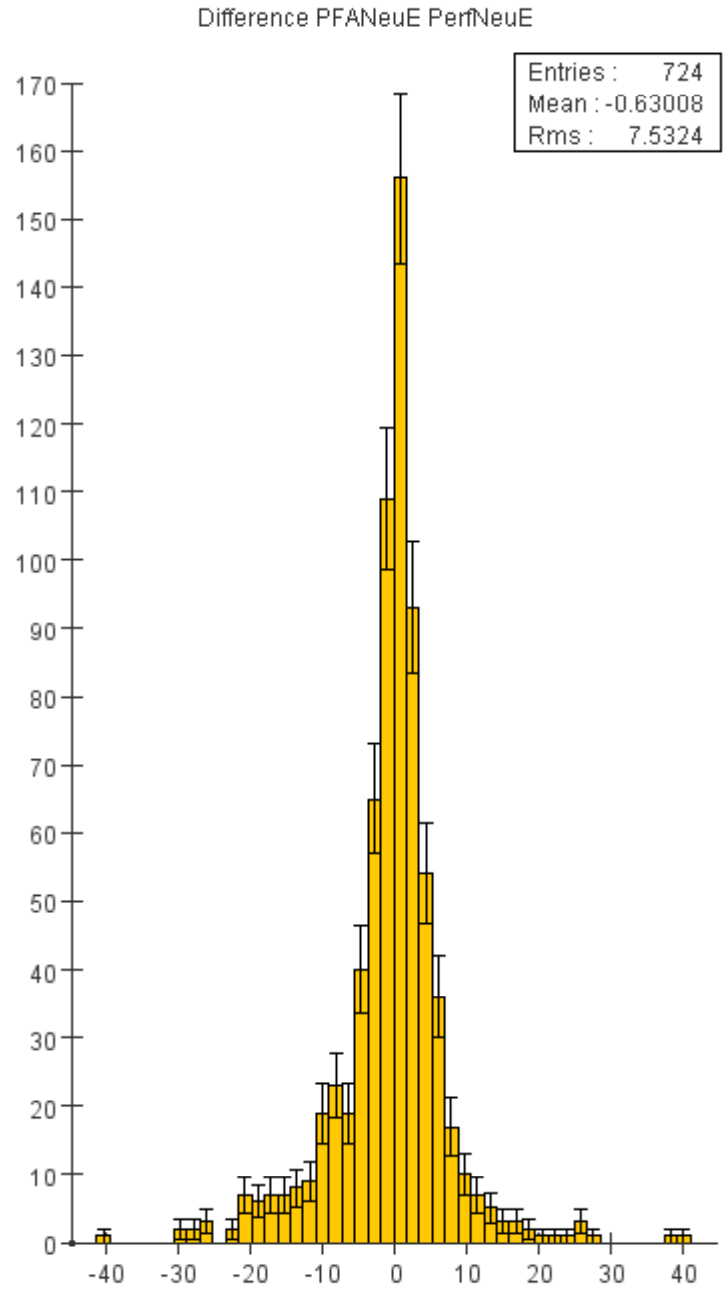

Number of iterations per Track
Entries : 6831
Mean : 2.8114
Rms : 1.7449
2,600
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
1
2
3
4
5

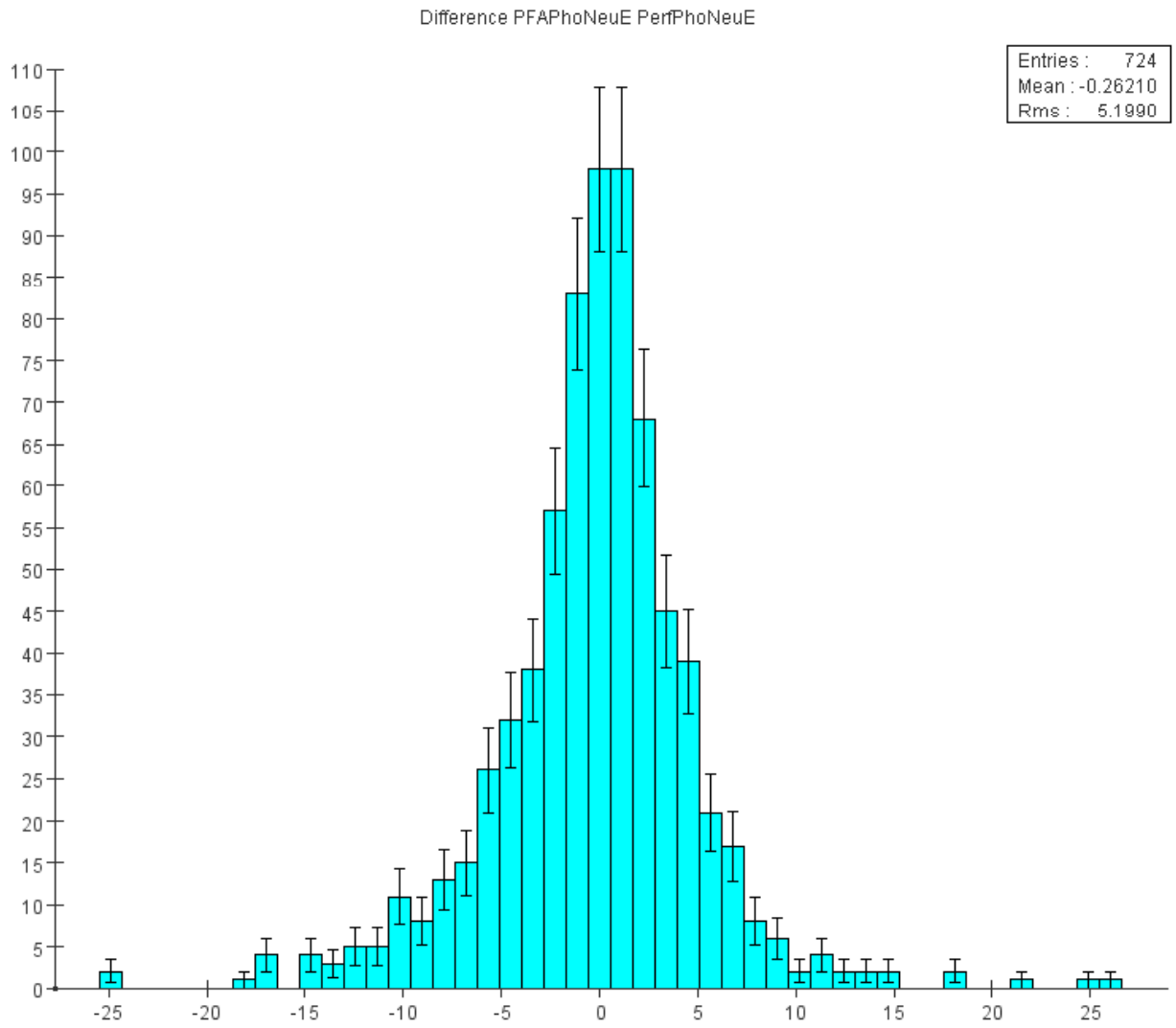

sigma for eop
Entries : 8920
Mean : 1.3435
Rms : 0.82961
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1
2
3
4
5


Min and Max EoP
Entries : 17840
Mean : 1.3233
Rms : 1.0179
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0.0
0.5
1.0
1.5
2.0
2.5


Num sigmas E gt p
Entries : 948
Mean : 0.68533
Rms : 0.68312
140
120
100
80
60
40
20
0
0
1
2
3
4


Difference PFAPhoE PerfPhoE
Entries : 724
Mean : 0.36797
Rms : 5.4128
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-30
-20
-10
0
10
20
30
40


Difference PFANeuE PerfNeuE
Entries : 724
Mean : -0.63008
Rms : 7.5324
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-40
-30
-20
-10
0
10
20
30
40



Confusion
Rms = 5.20 GeV

ESum
Rms = 5.77 GeV

Difference
Rms = 2.50 GeV

Perfect
Rms = 2.74 GeV