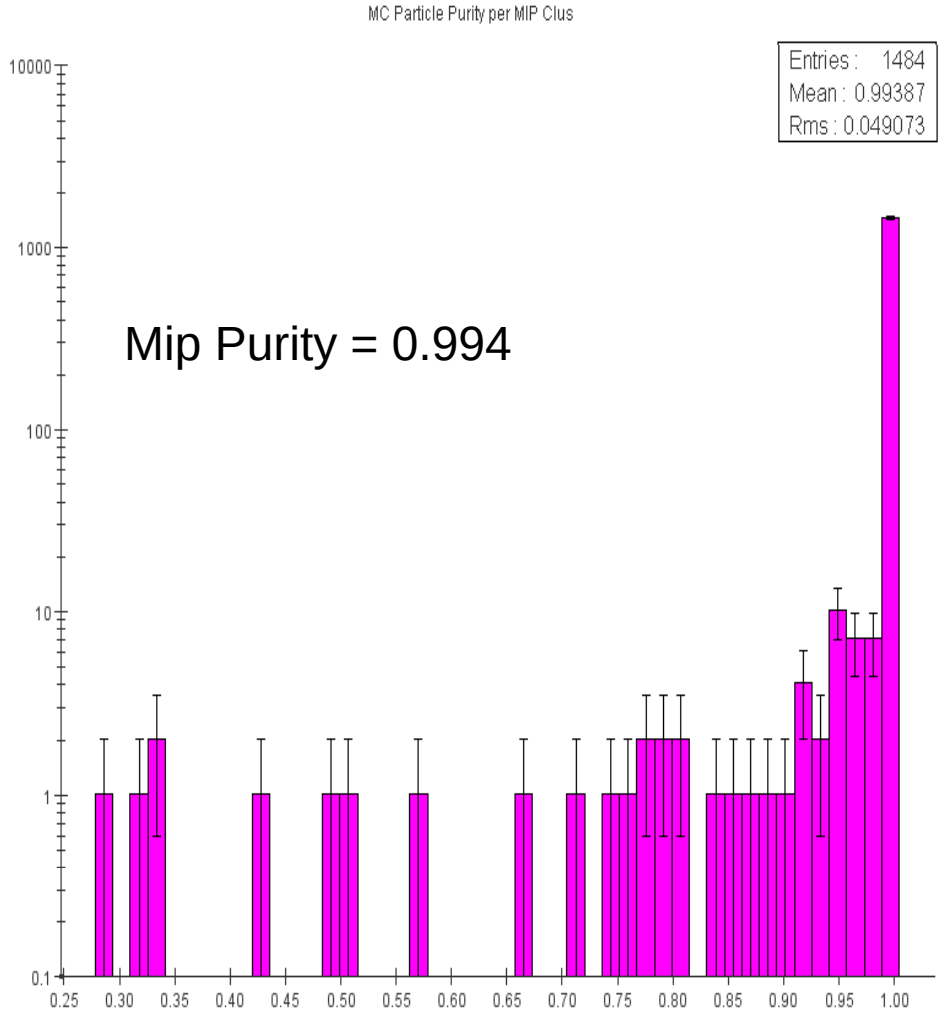
Status of PFA Template

Two Versions currently under test

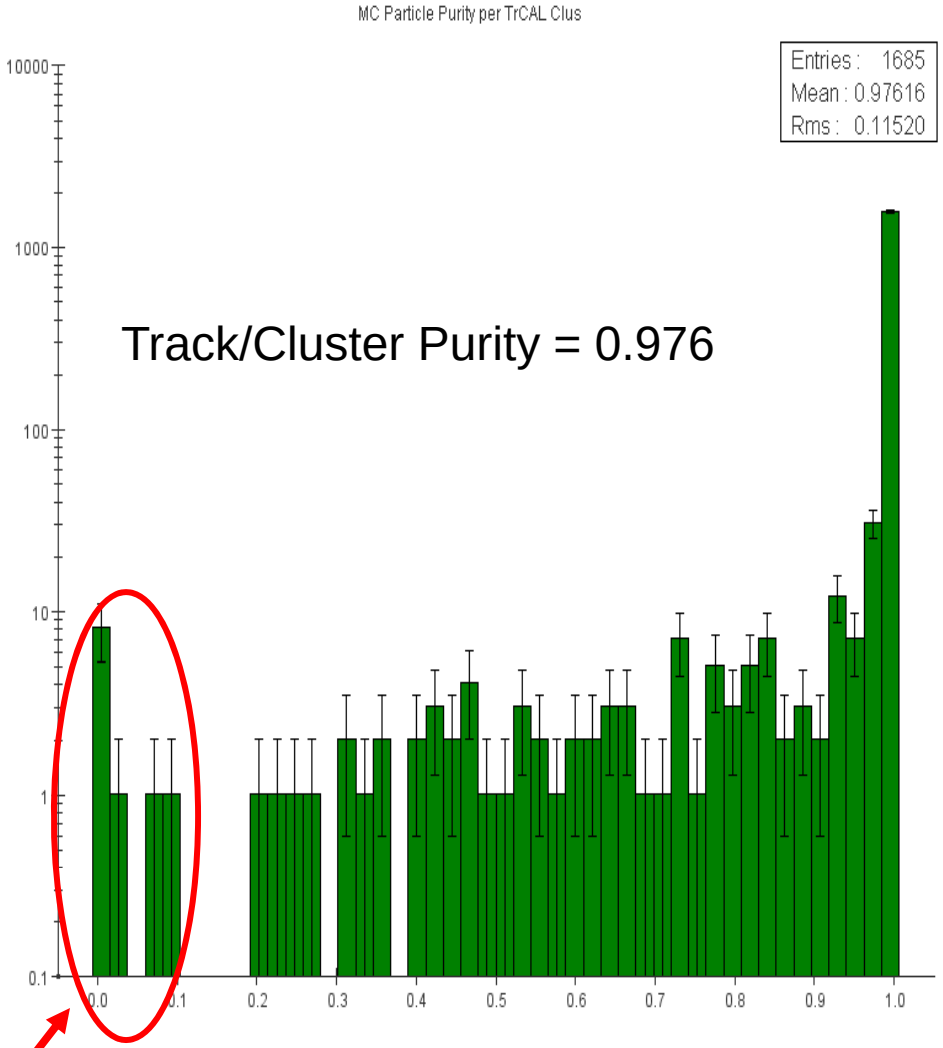
Version 1
- Mip Finding
- Track/Cal Cluster Matching
- Photon Finding (2 different photon finders)
- Neutral Hadron Finding
- *Some results from this method for SiD01*

Version 2
- Mip Finding
- HMatrix Photon Finding (photon cluster candidate E>~1 GeV
  - *high purity photons*
  - *HMatrix rejection*
- Track/Cal Cluster Matching
  - Maintains high purity
- Low Energy Photon Finding
  - Restore photon efficiency
- Neutral Hadron Finding

Mip Purity and Track/Cluster Purity

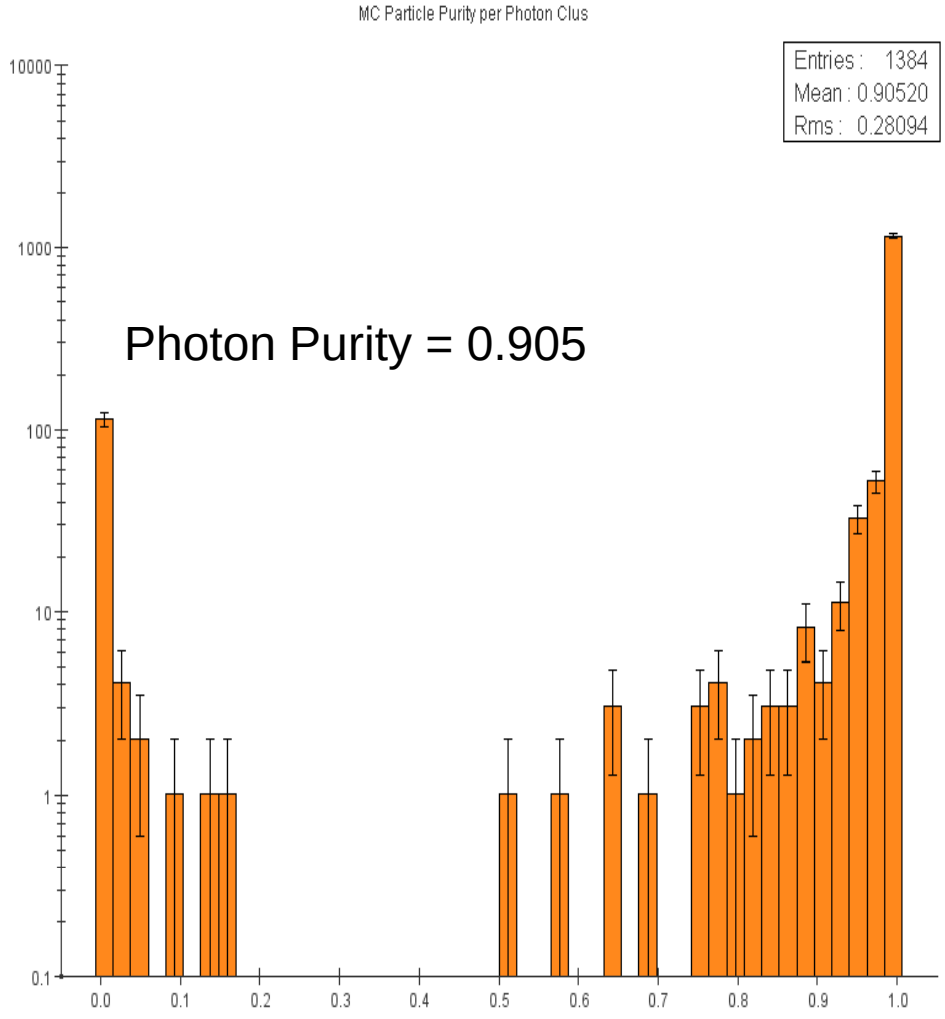


Mip Purity = 0.994

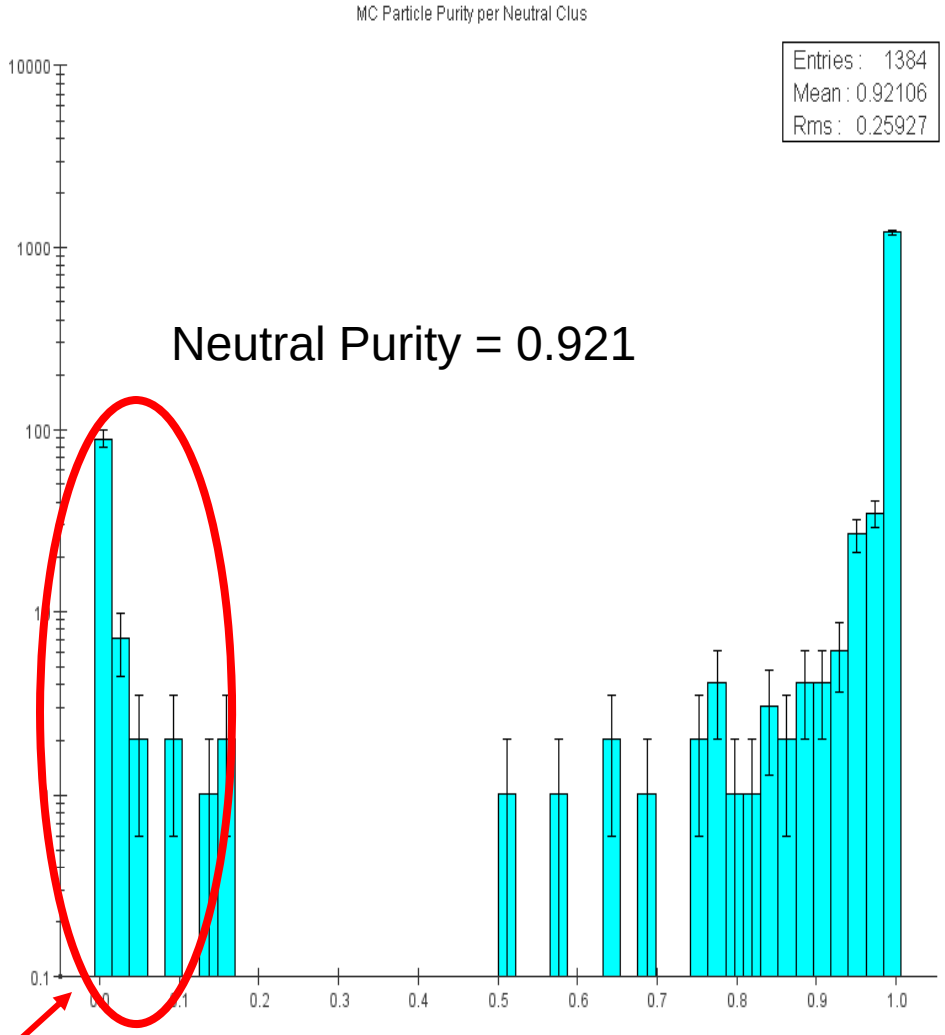


Track/Cluster Purity = 0.976

Possibly from close-by photons?

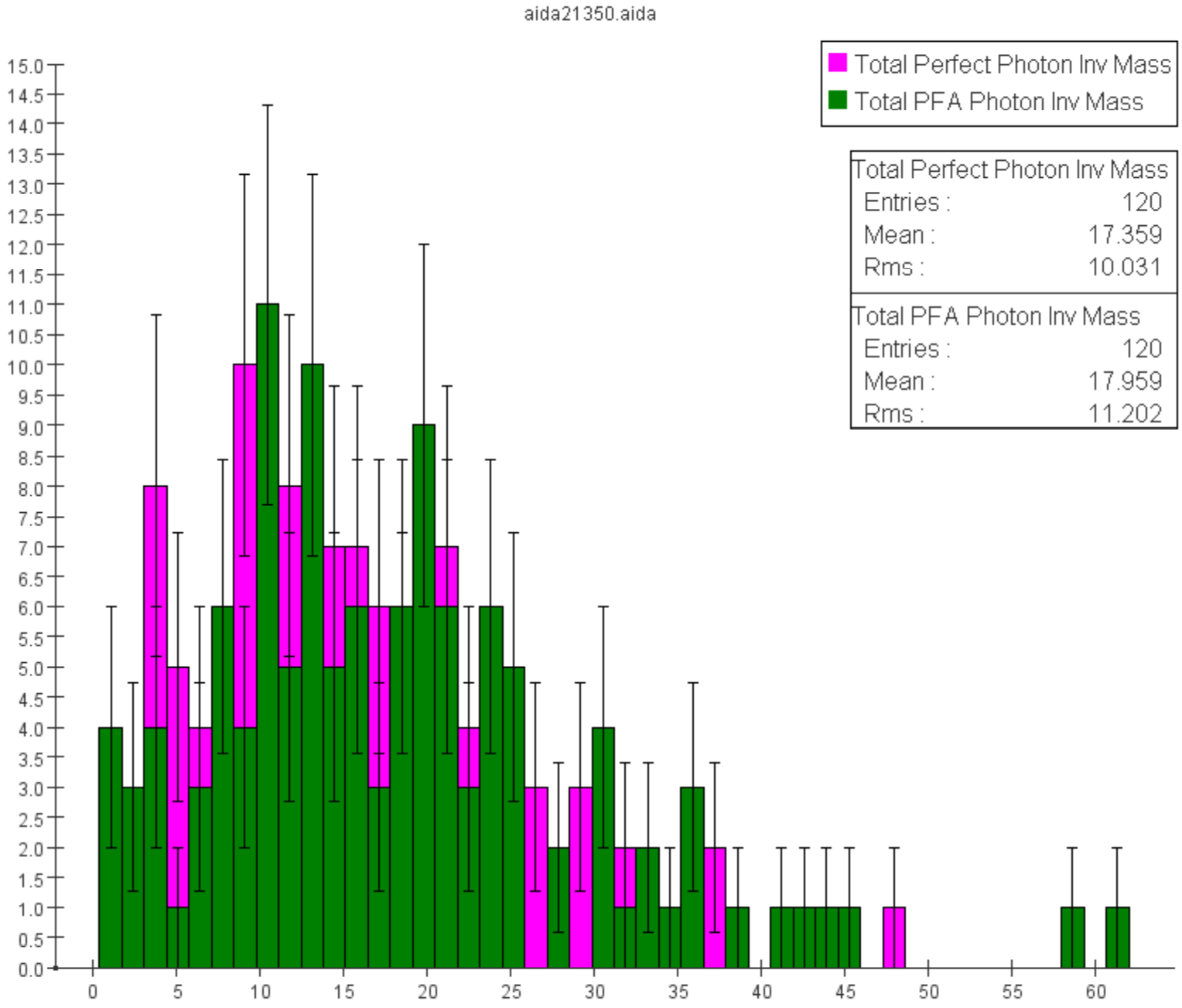


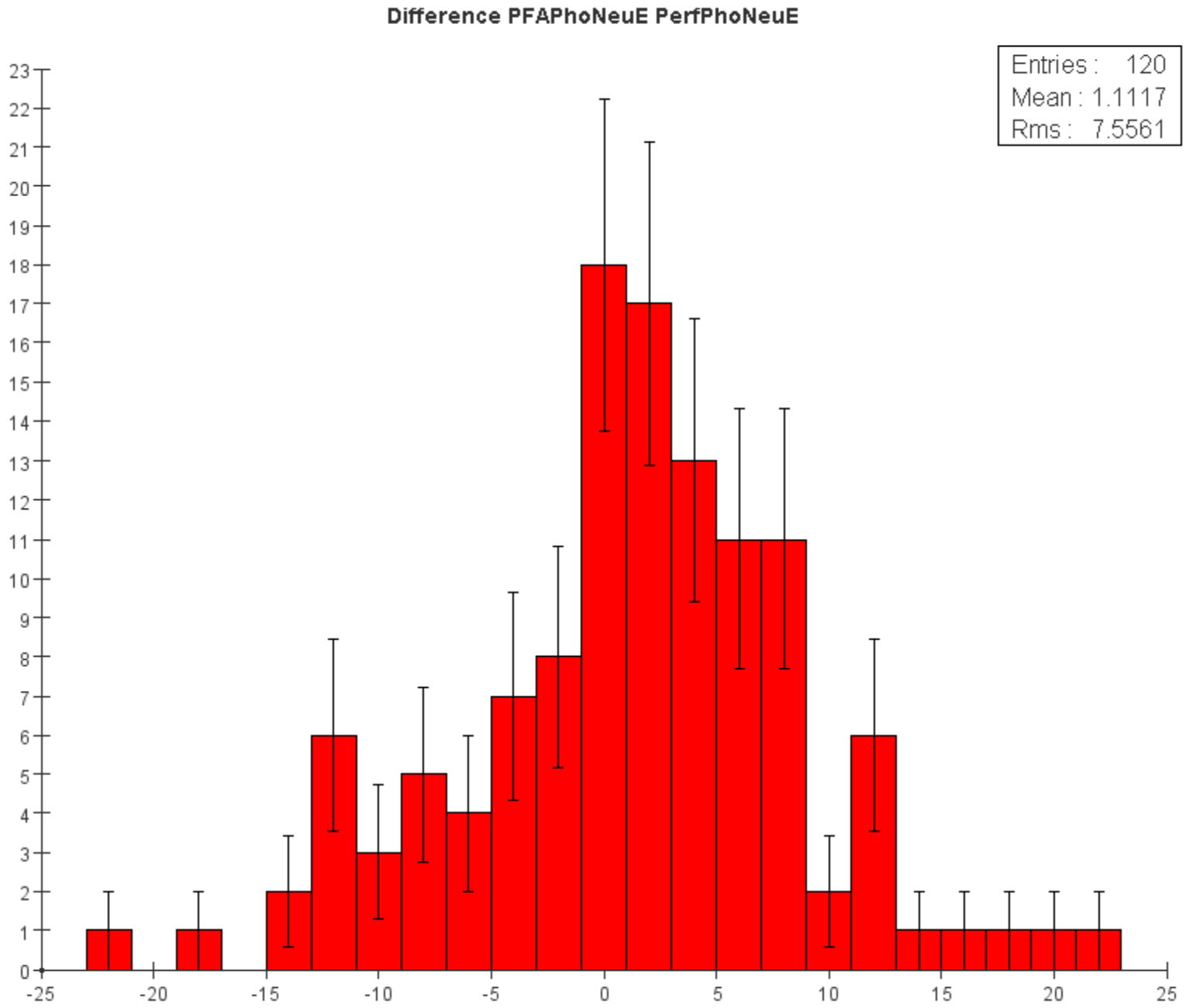
Photon Purity = 0.905

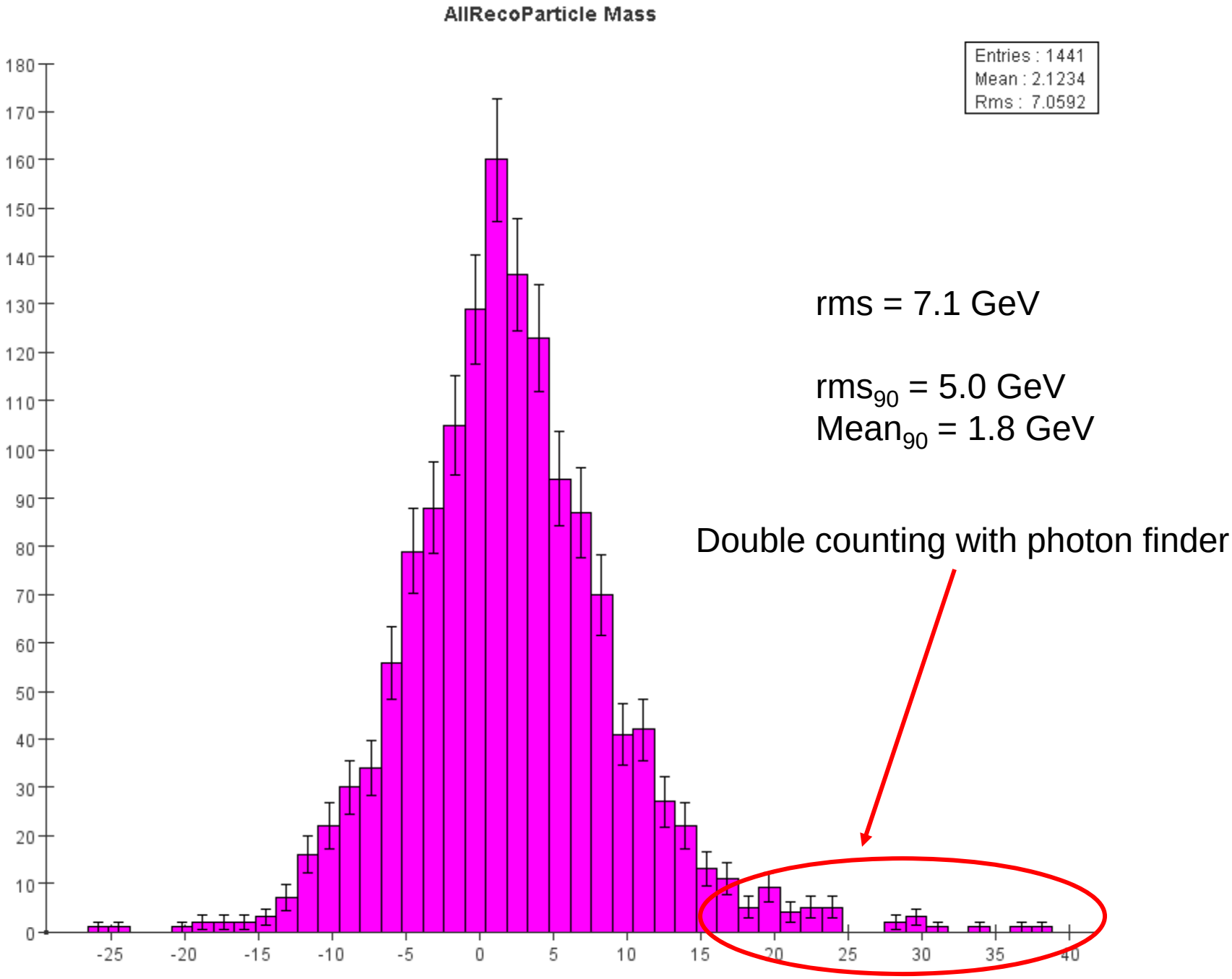


Neutral Purity = 0.921

Still remains – charged fragments


aida21350.aida
Total Perfect Photon Inv Mass
Total PFA Photon Inv Mass
Total Perfect Photon Inv Mass
Entries : 120
Mean : 17.359
Rms : 10.031
Total PFA Photon Inv Mass
Entries : 120
Mean : 17.959
Rms : 11.202
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
5
10
15
20
25
30
35
40
45
50
55
60


Difference PFAPhoNeuE PerfPhoNeuE
Entries : 120
Mean : 1.1117
Rms : 7.5561
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-25
-20
-15
-10
-5
0
5
10
15
20
25



rms = 7.1 GeV

rms_{90} = 5.0 GeV
$Mean_{90}$ = 1.8 GeV

Double counting with photon finder