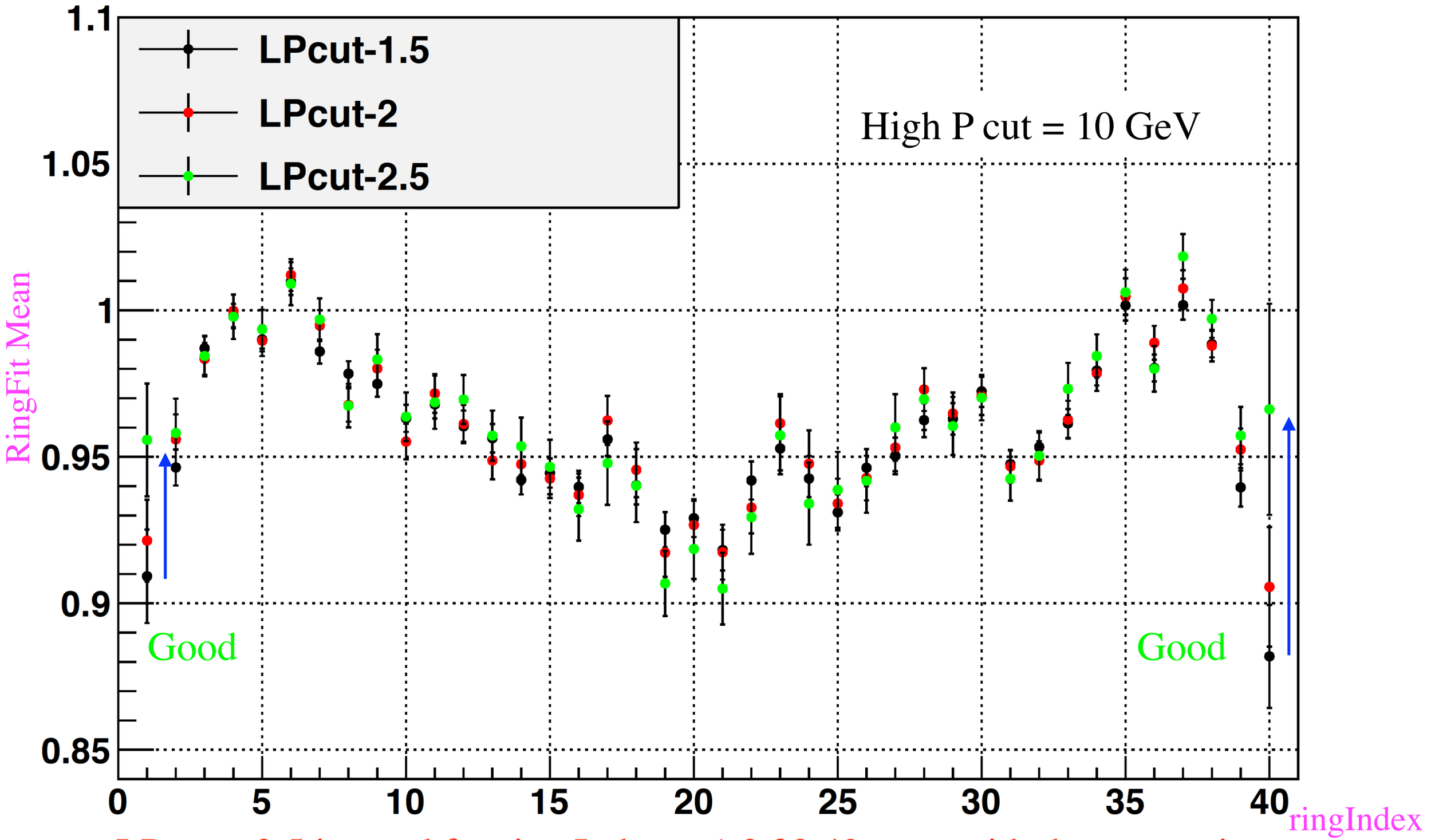
Effective track Cuts on trigger options

Electron Cuts

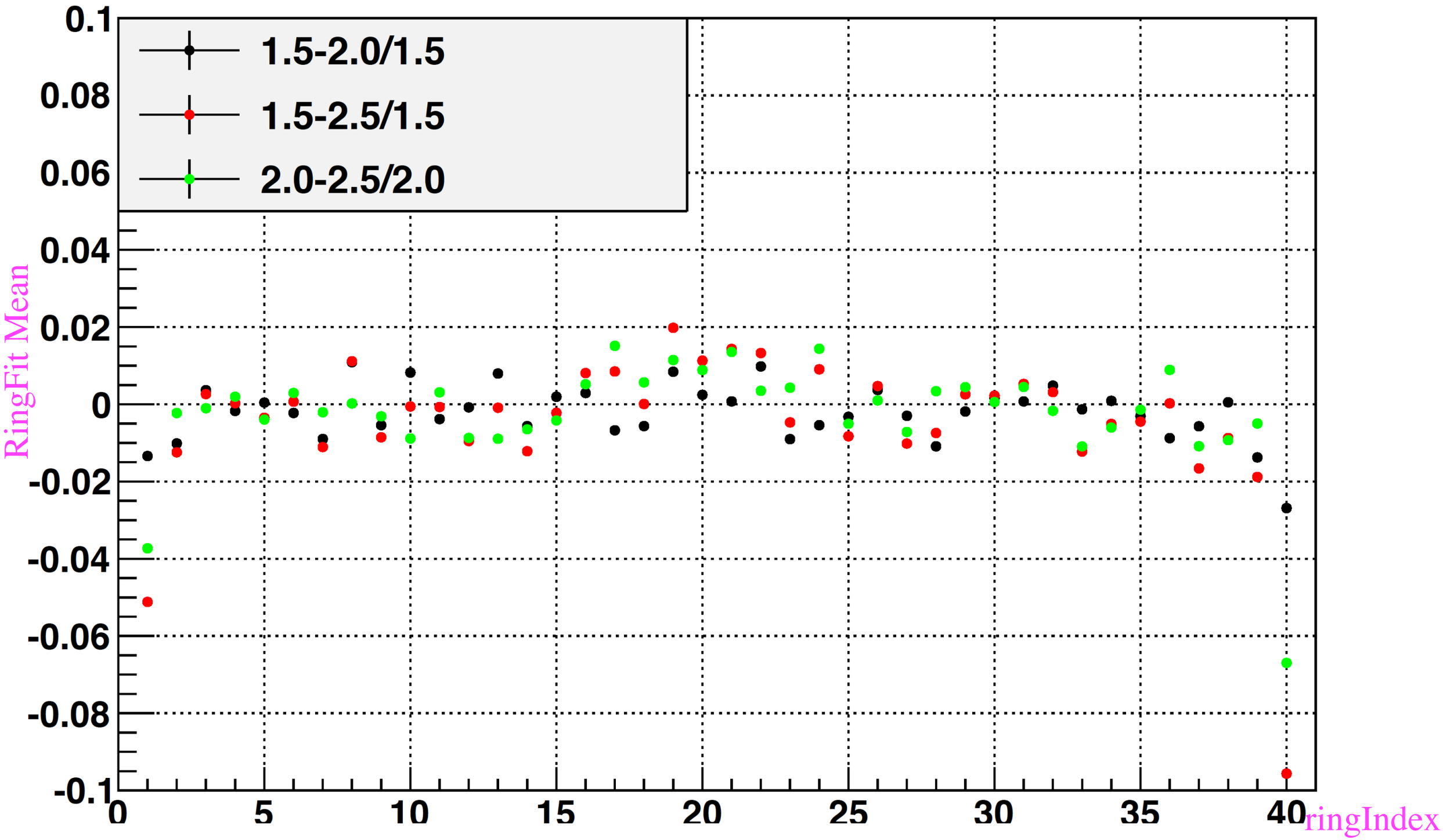
- Track P cuts
- Isolation cuts
- Other Track cuts (nSigmaPio, nSigmaElectrons)

JP2 Low P cut



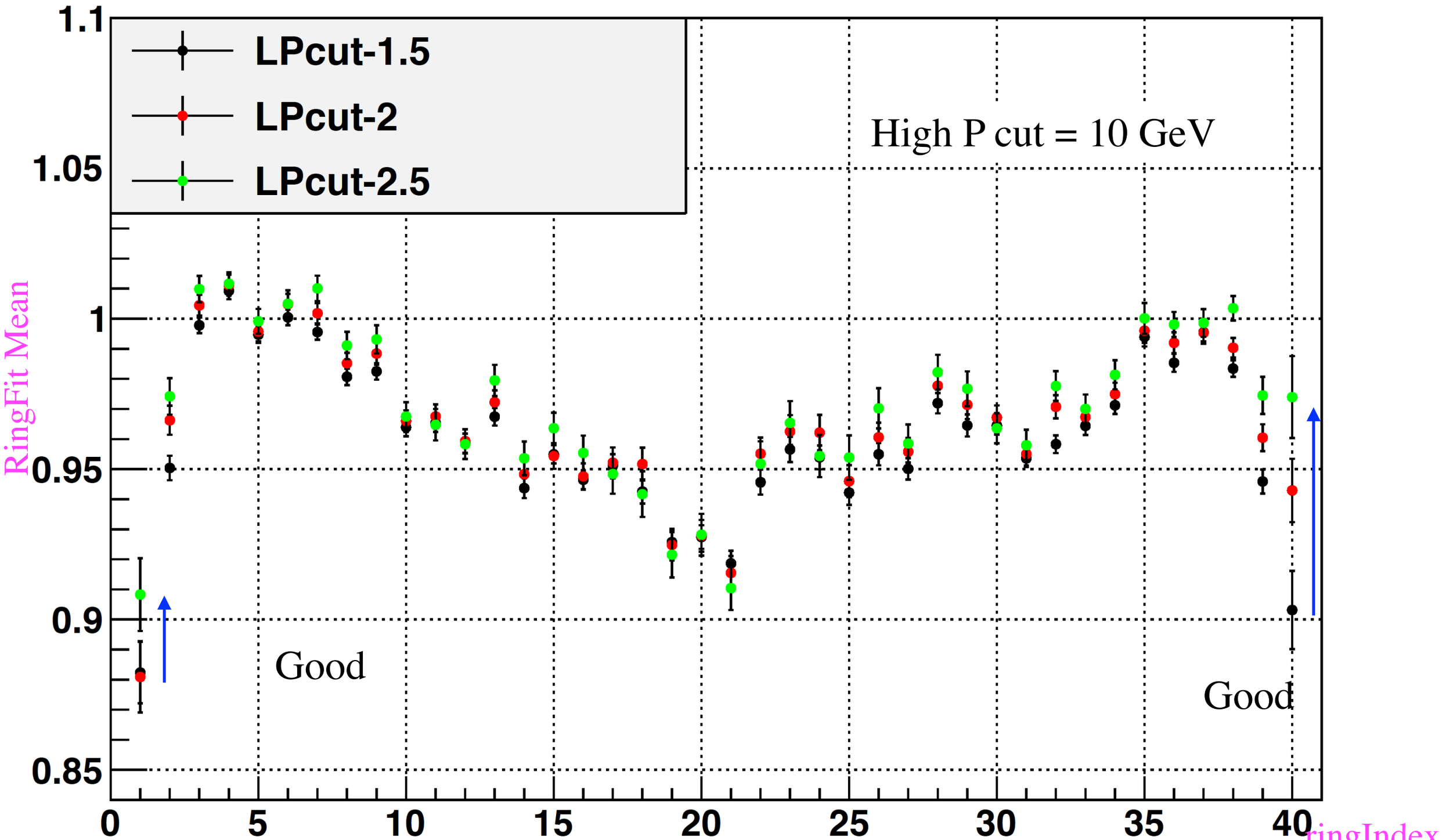
LP cut =2.5 is good for ring Indexes 1,2,39,40 even with the uncertainty .

Differences



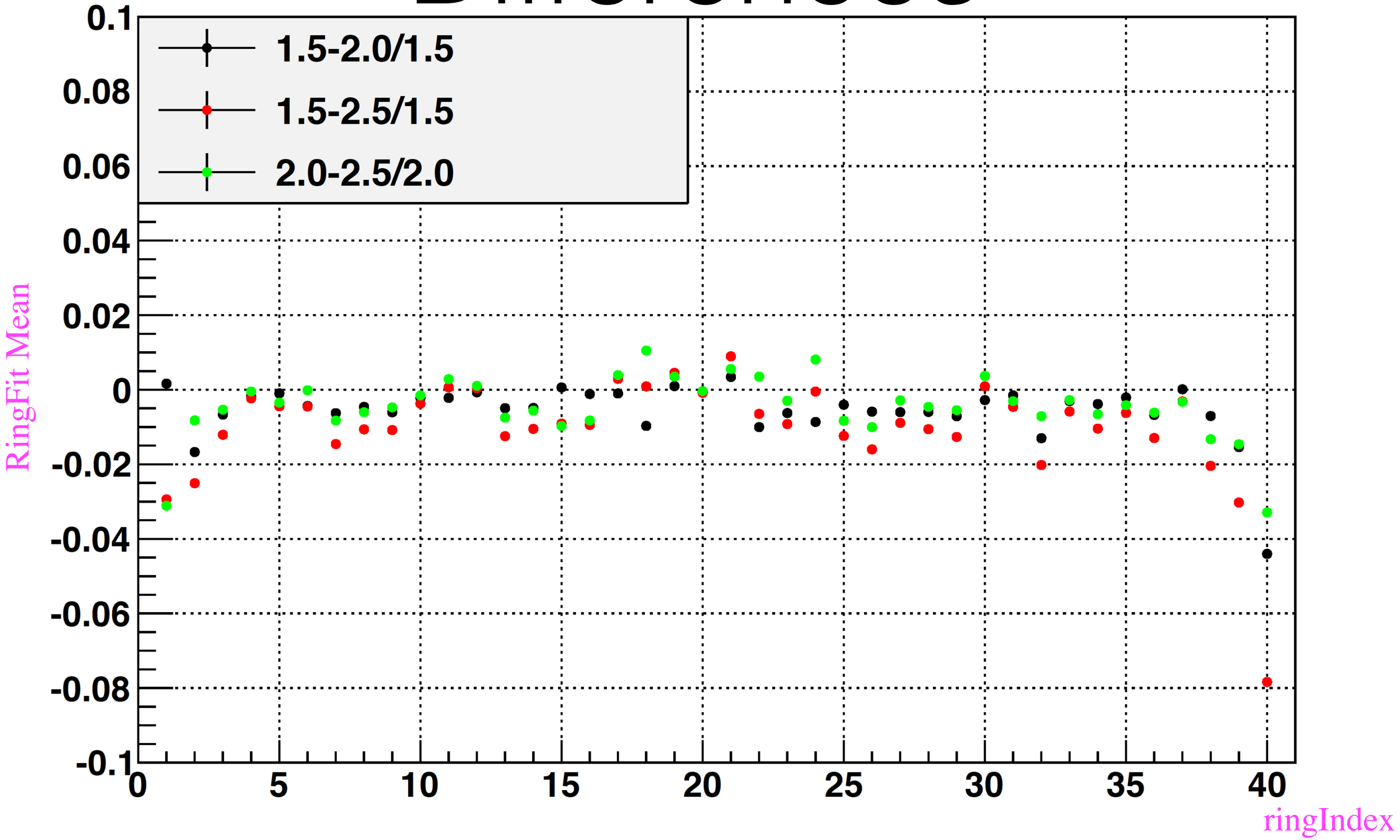
Inner rings consistent within 1-2% , but outermost rings shows significant difference.

BHT3 Low P cut



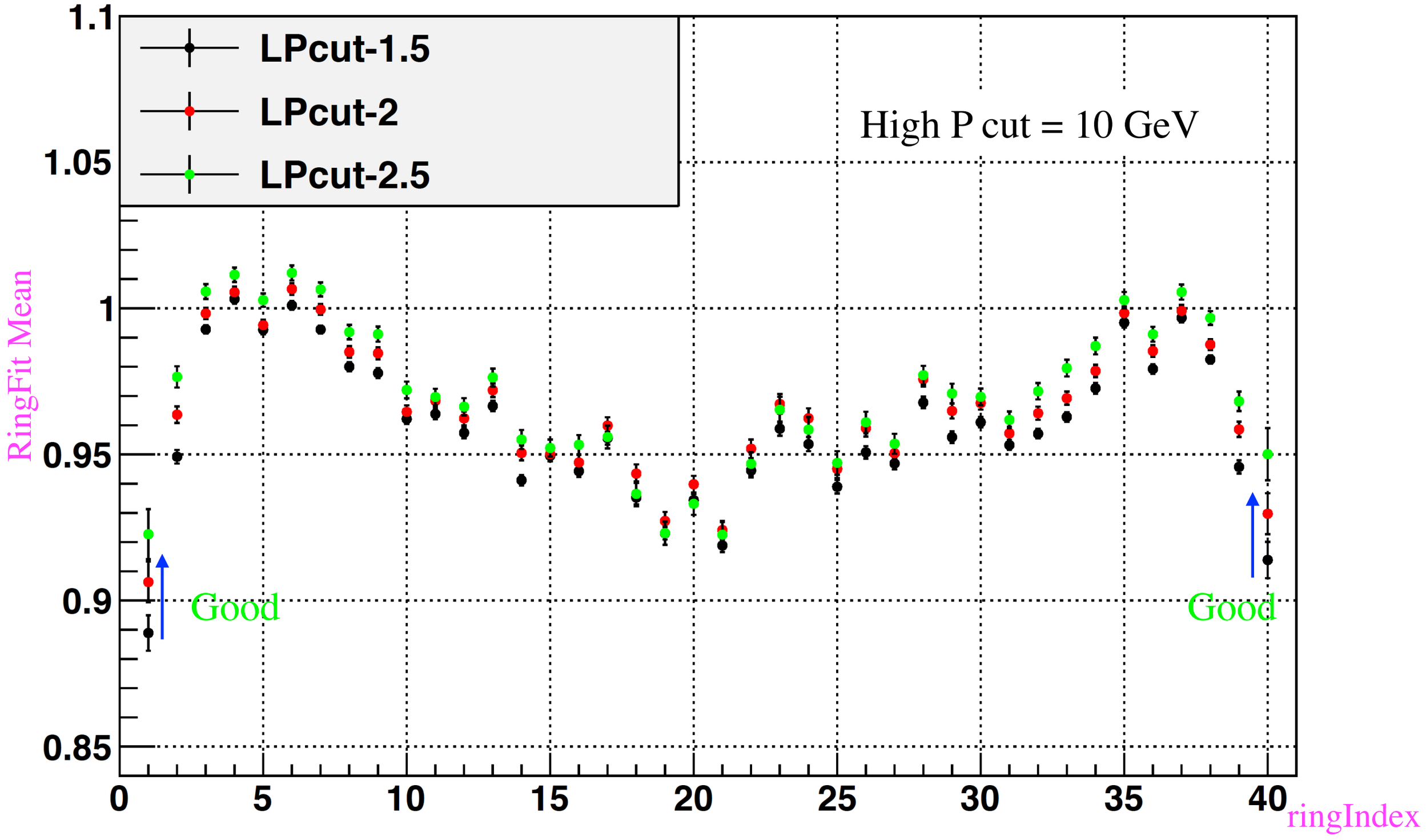
LP cut =2.5 is good for ring Indexes 1,2,39,40 even waiting the uncertainty.

Differences

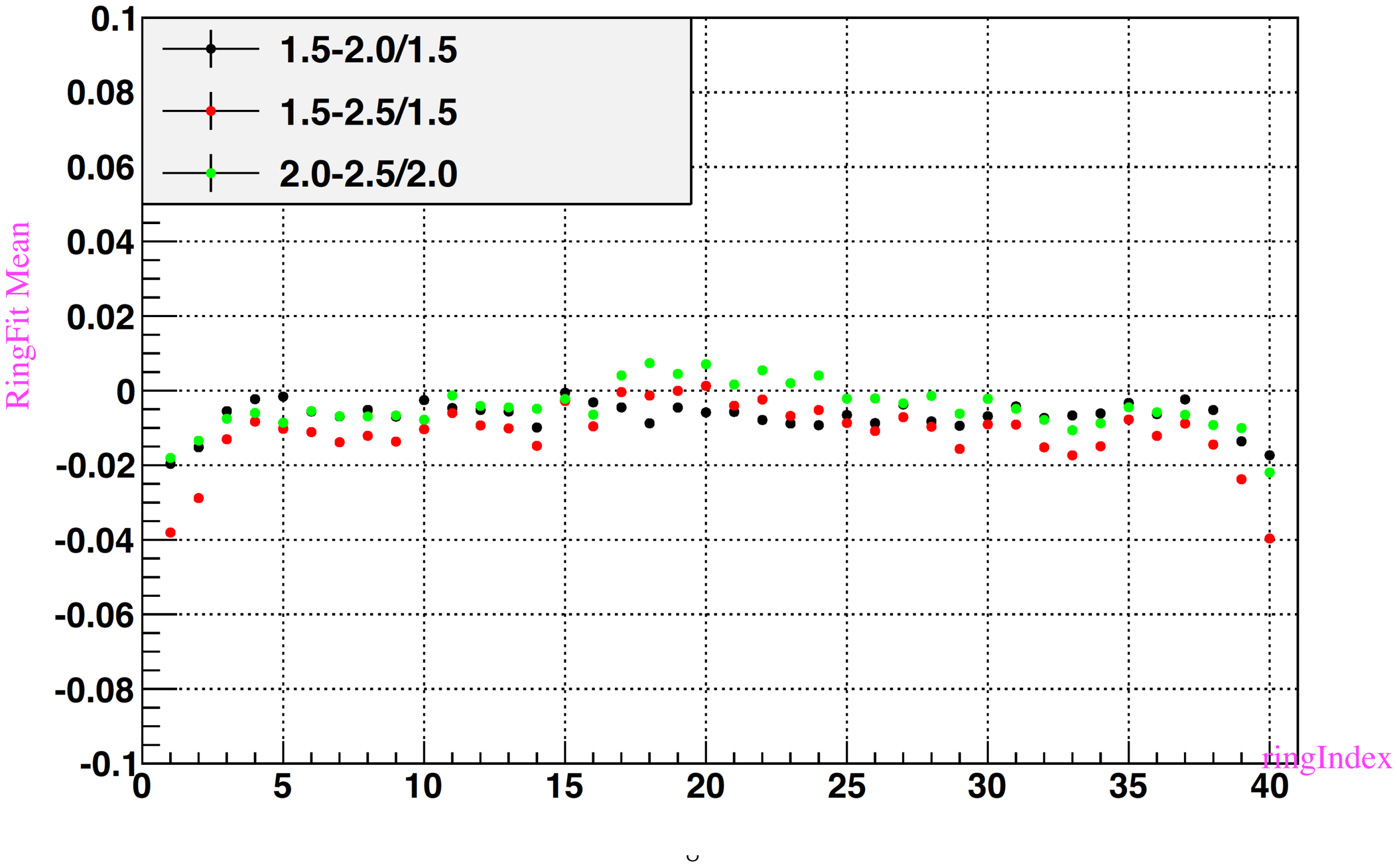


Inner rings consistent within 1-2% , but outermost rings shows significant difference.

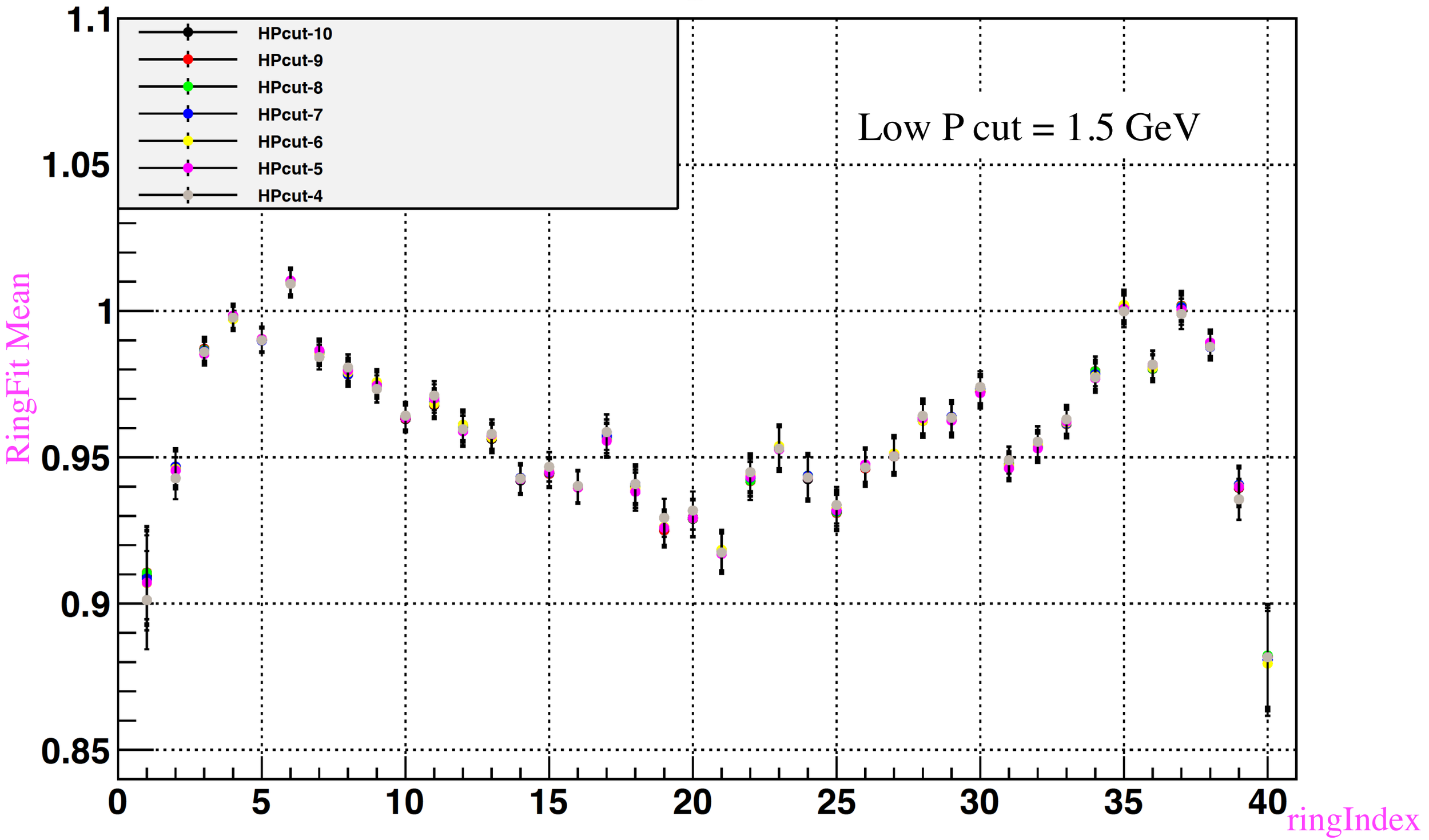
Unbiased Low P cut



Differences

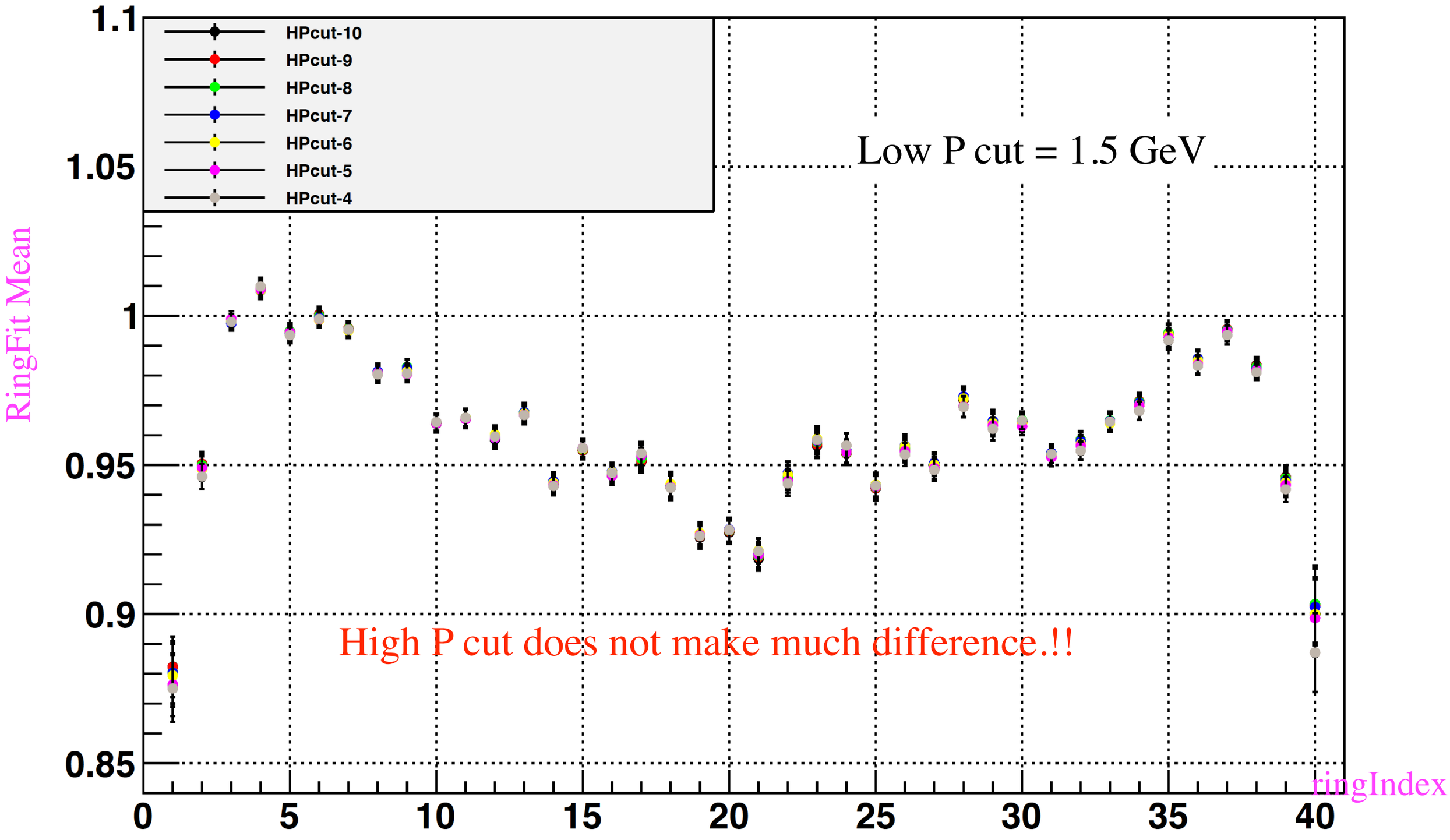


JP2 High P cut

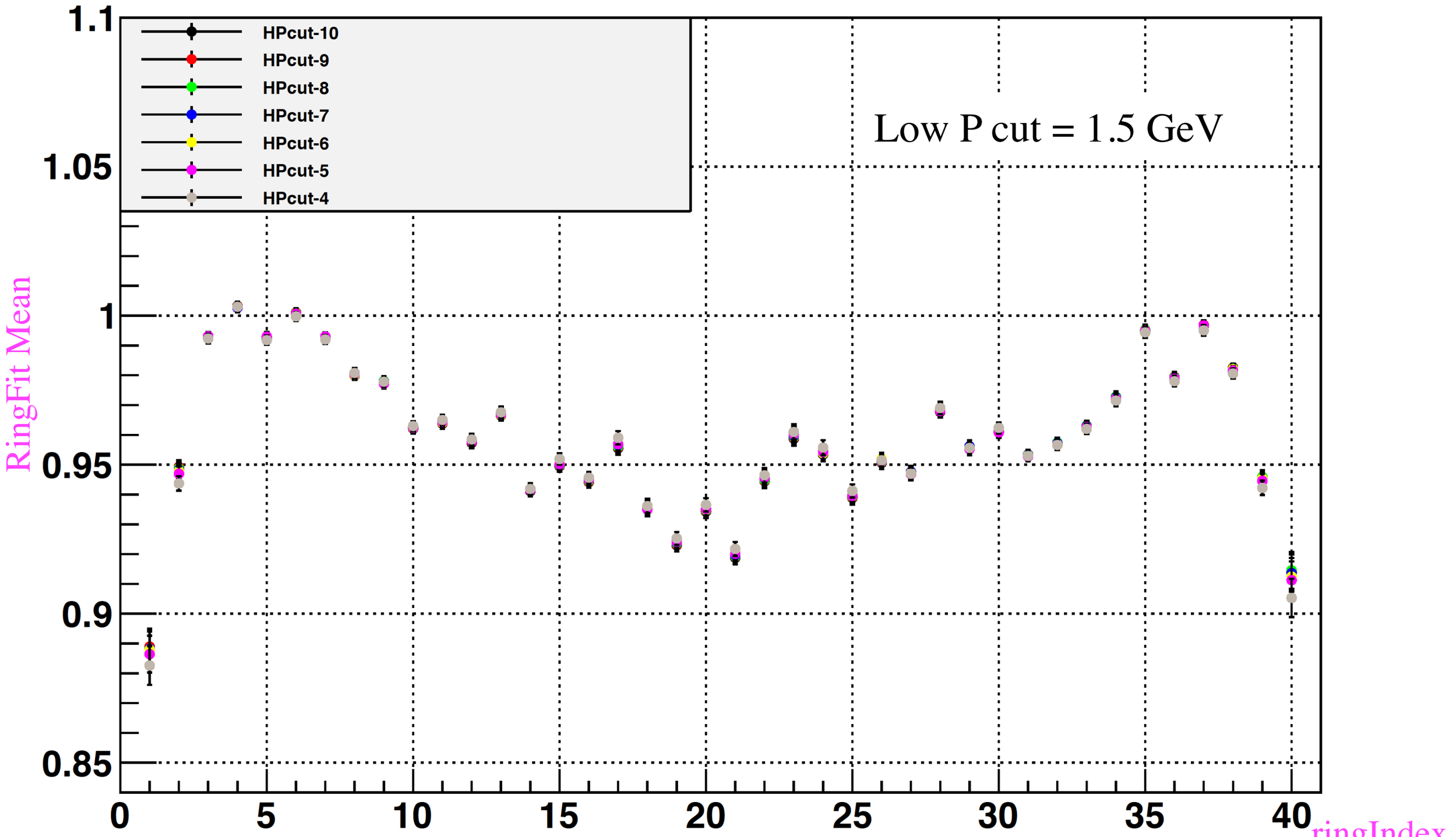


High P cut does not make much difference.

BHT3 High P cut

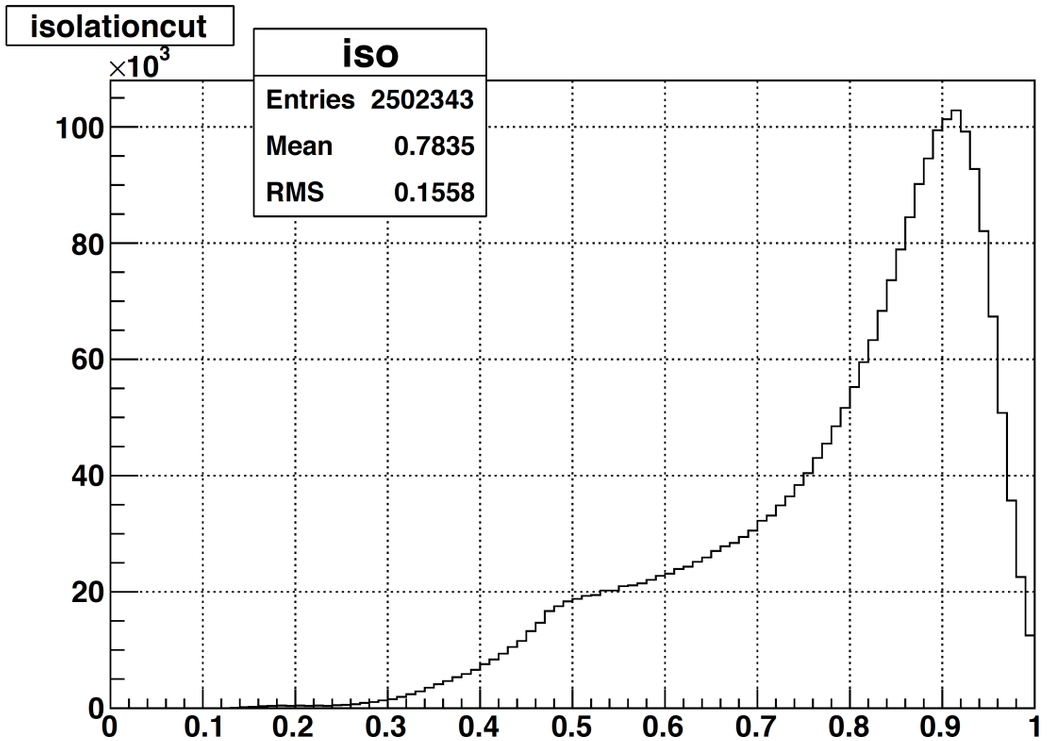


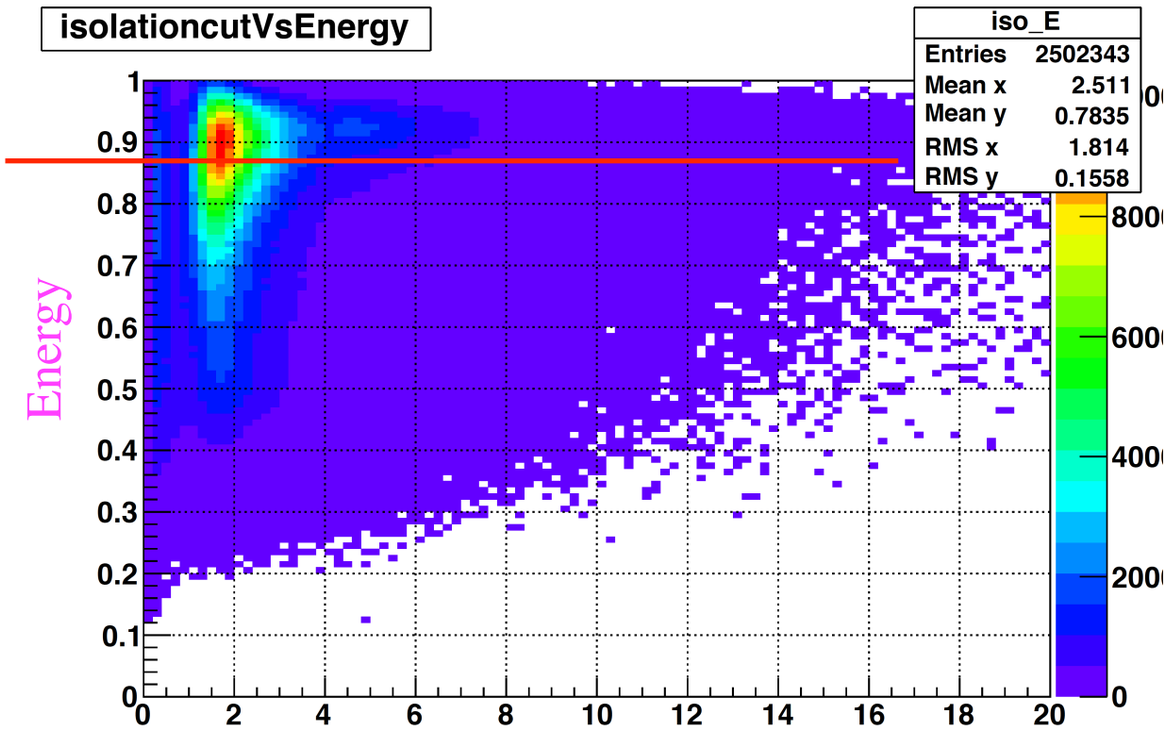
Unbiased High P cut



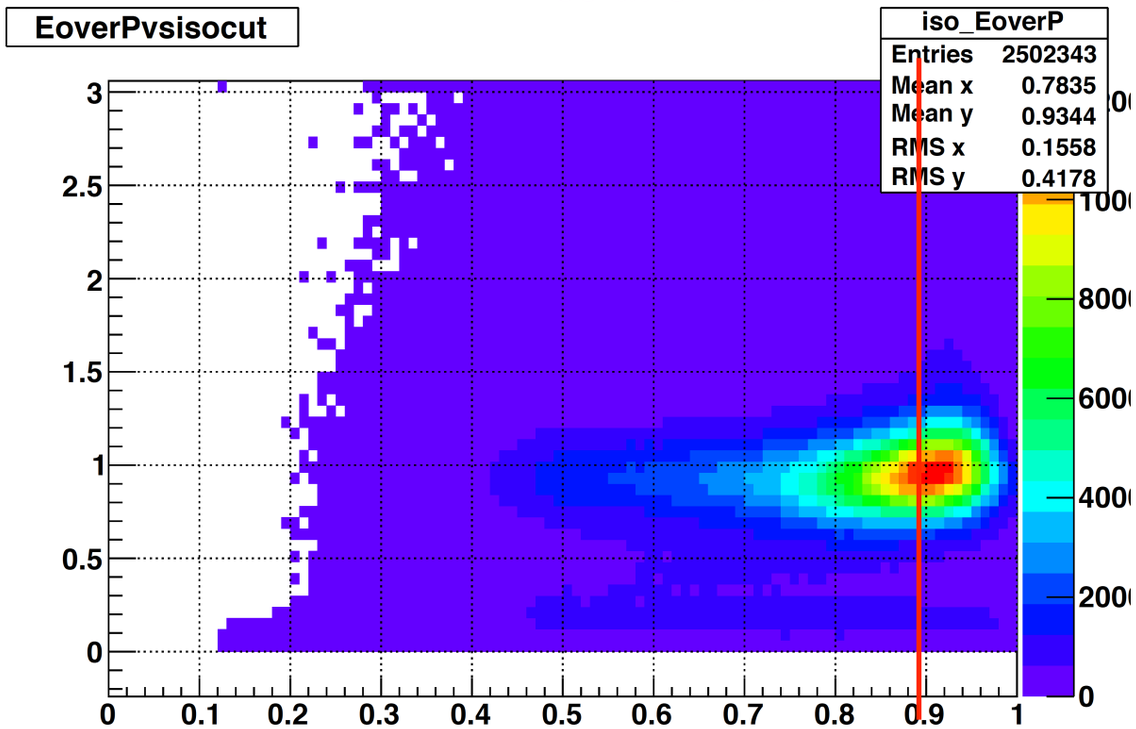
High P cut does not make much difference.

Isolation Cut : track E / E_{3x3} clusterSum

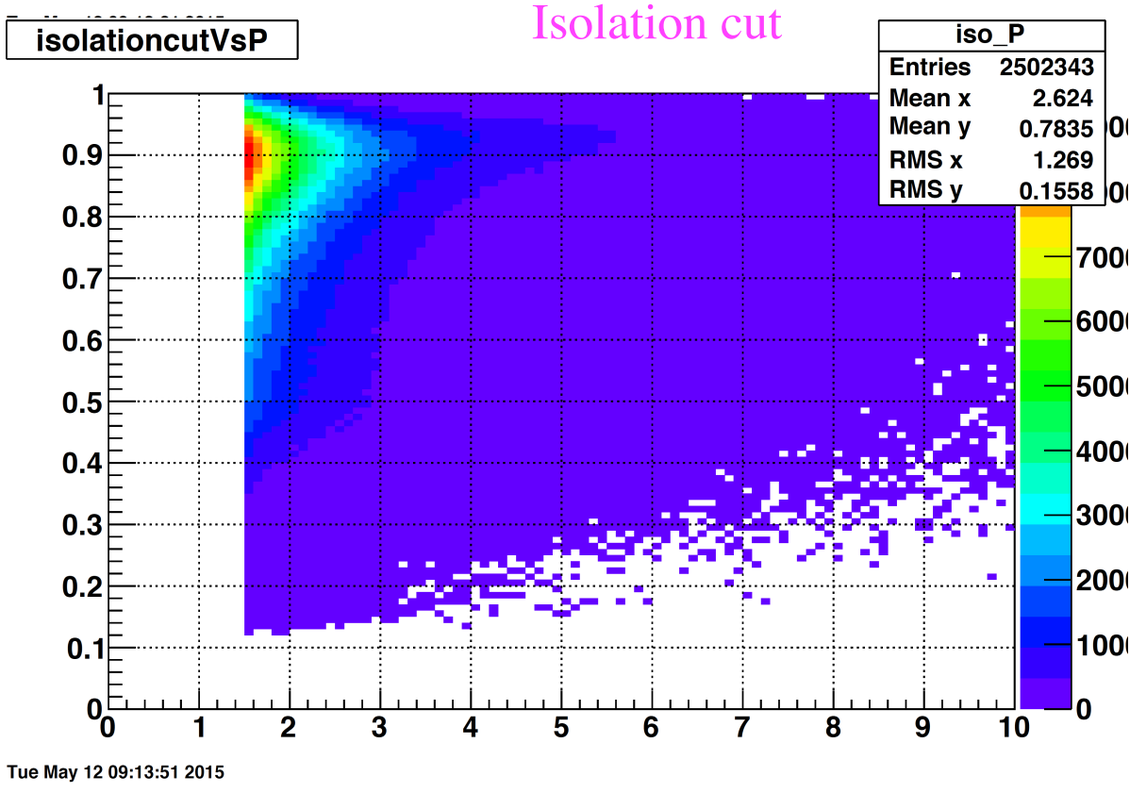




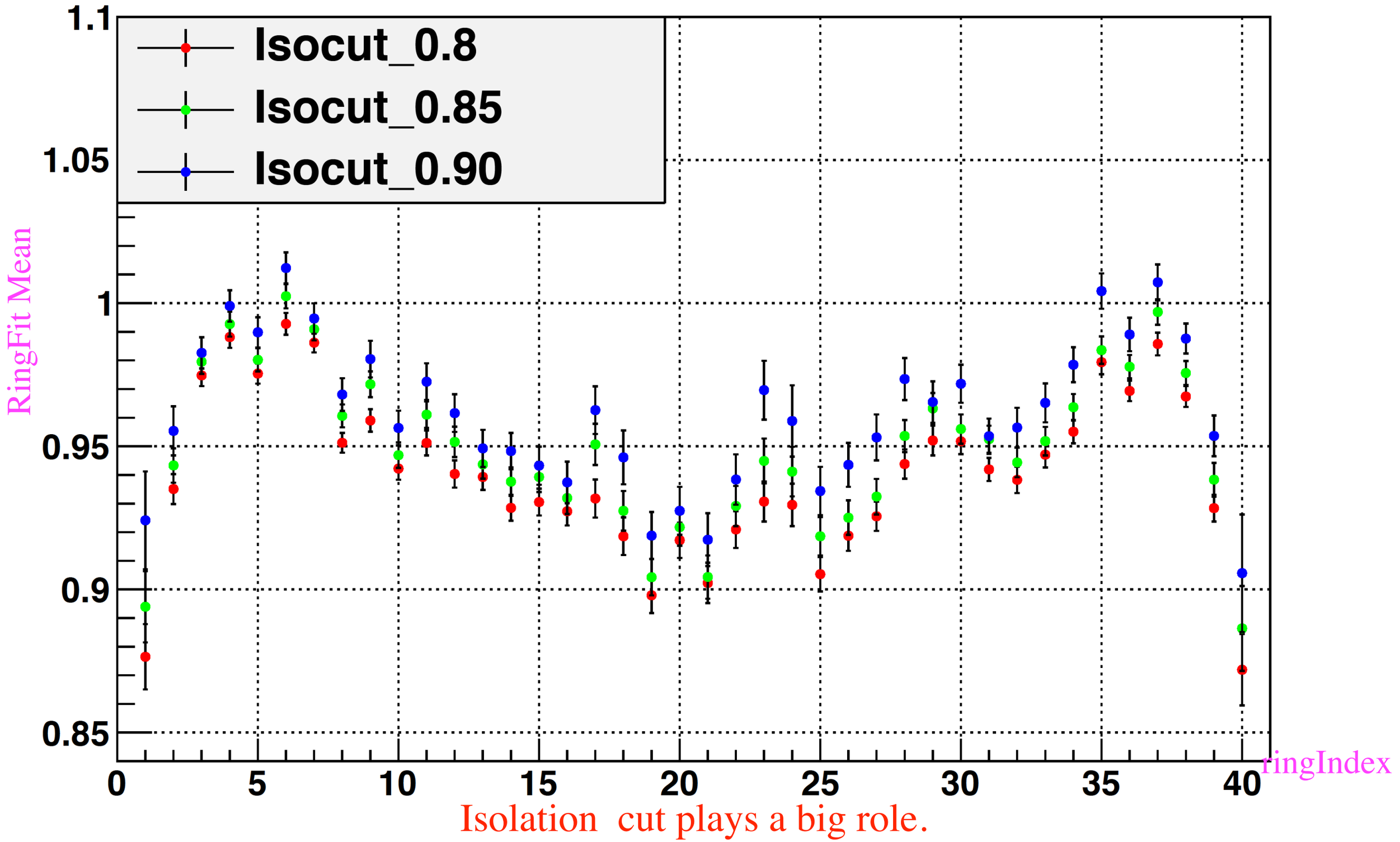
Isolation cut



Isolation cut

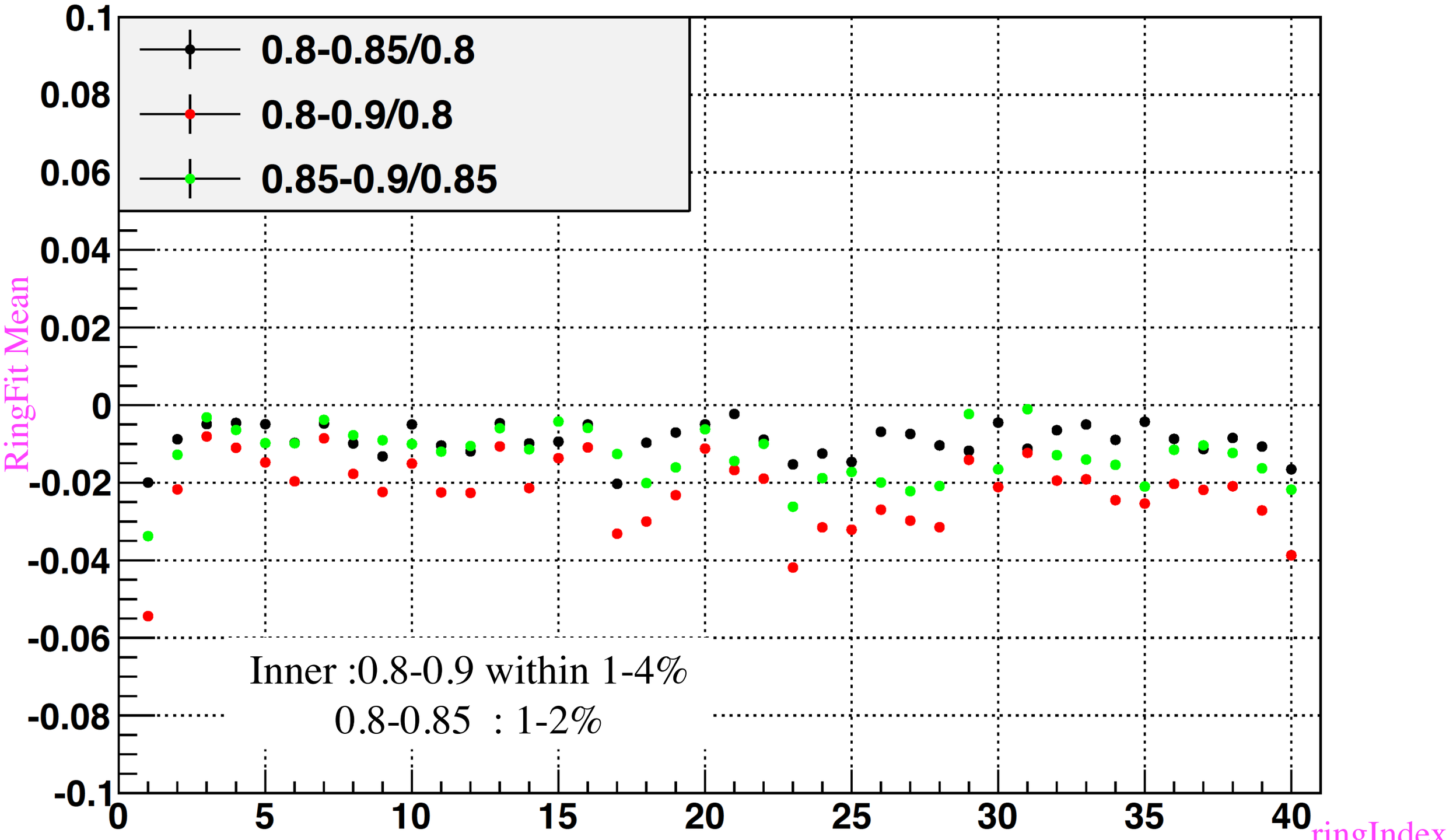


JP2 Isolation cut



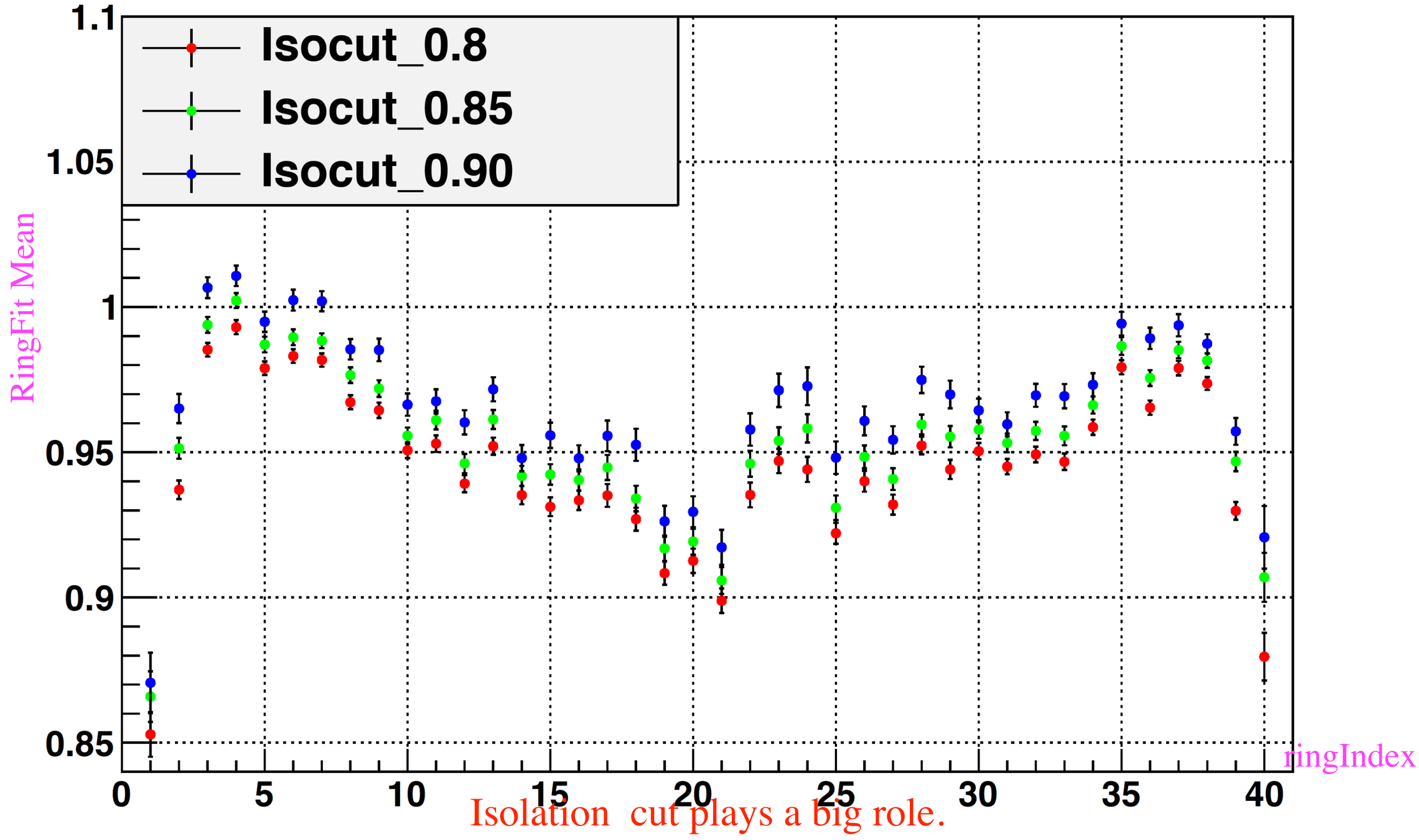
Isolation cut plays a big role.

Differences



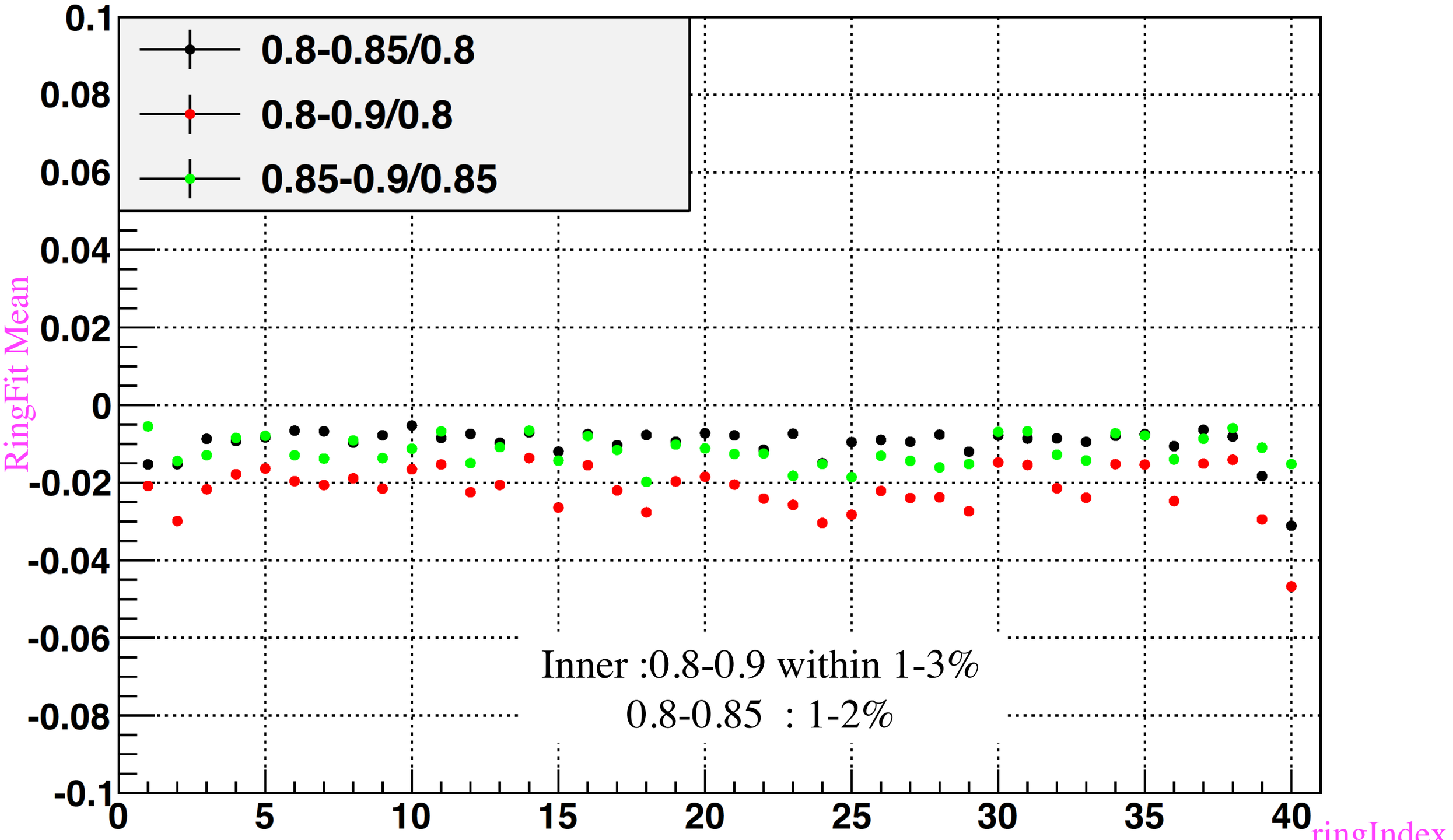
Outermost rings shows significant differences.

BHT3 Isolation cut



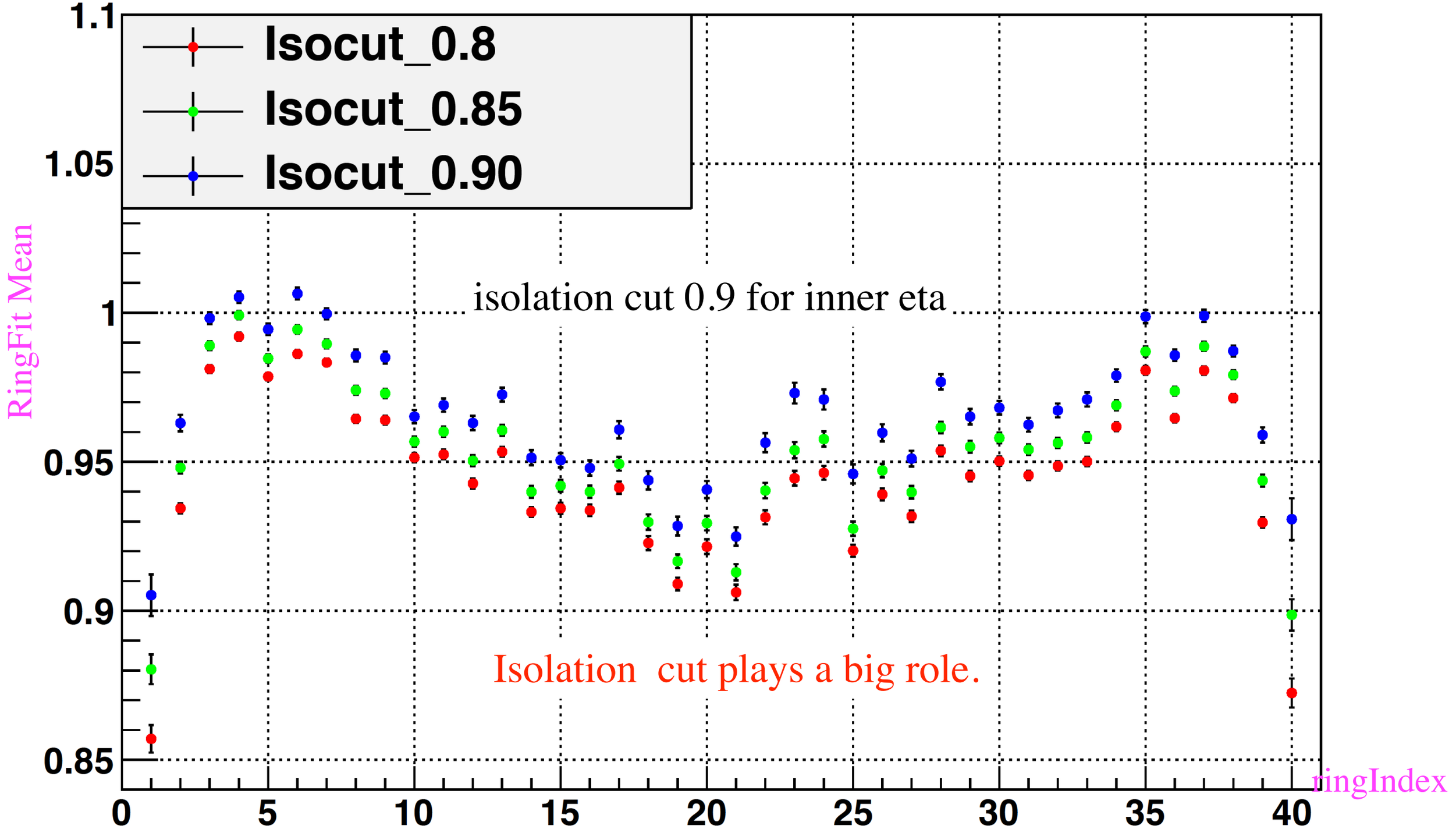
Isolation cut plays a big role.

Differences

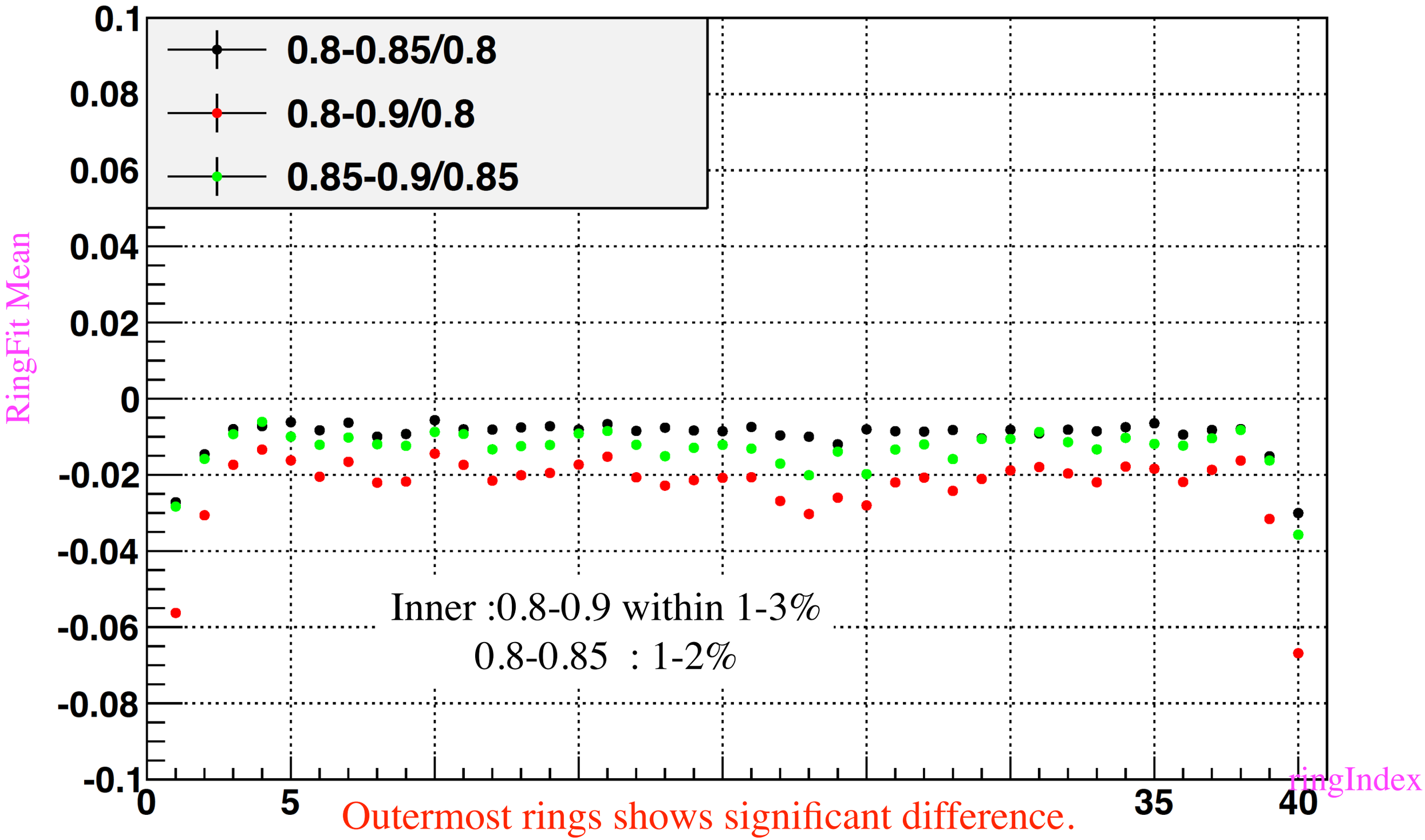


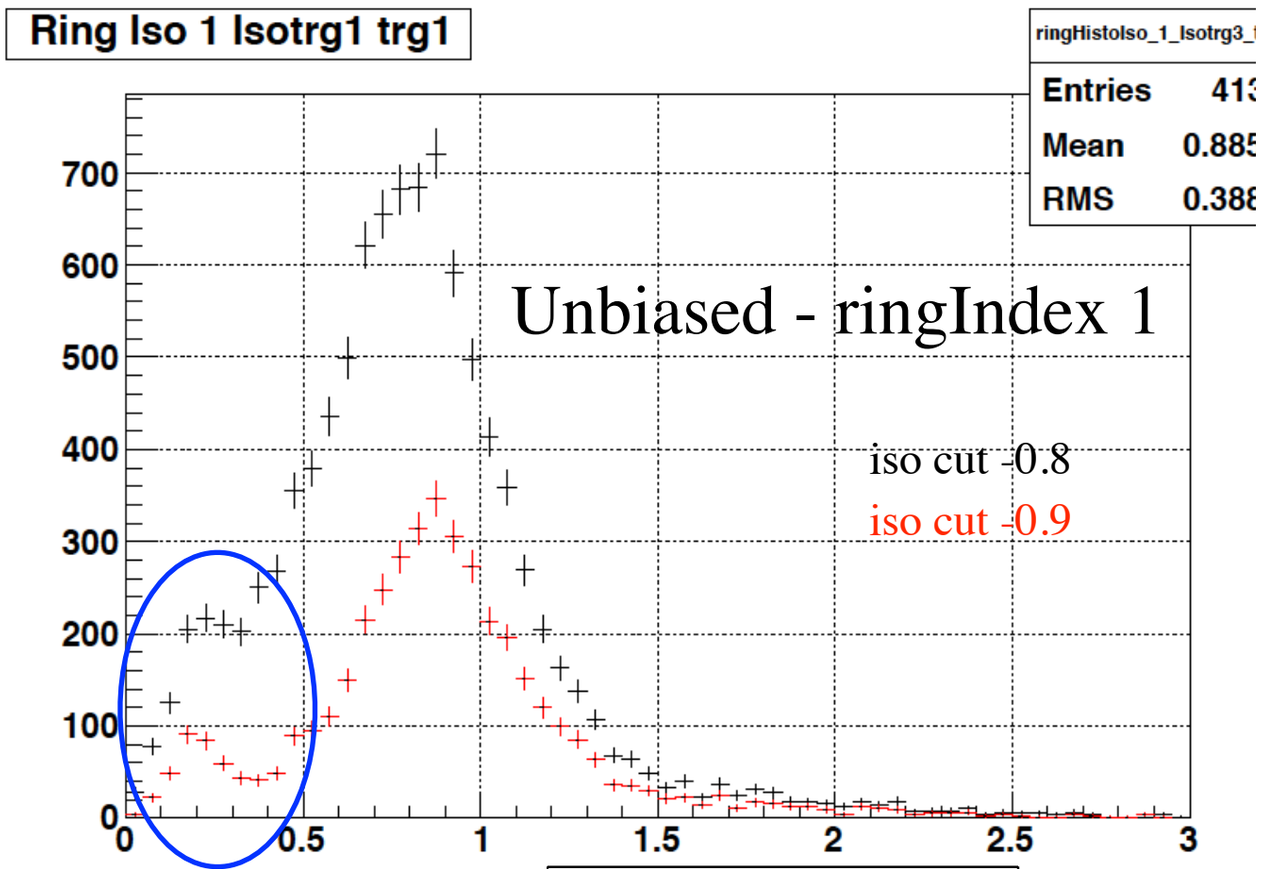
Outermost rings shows significant differences.

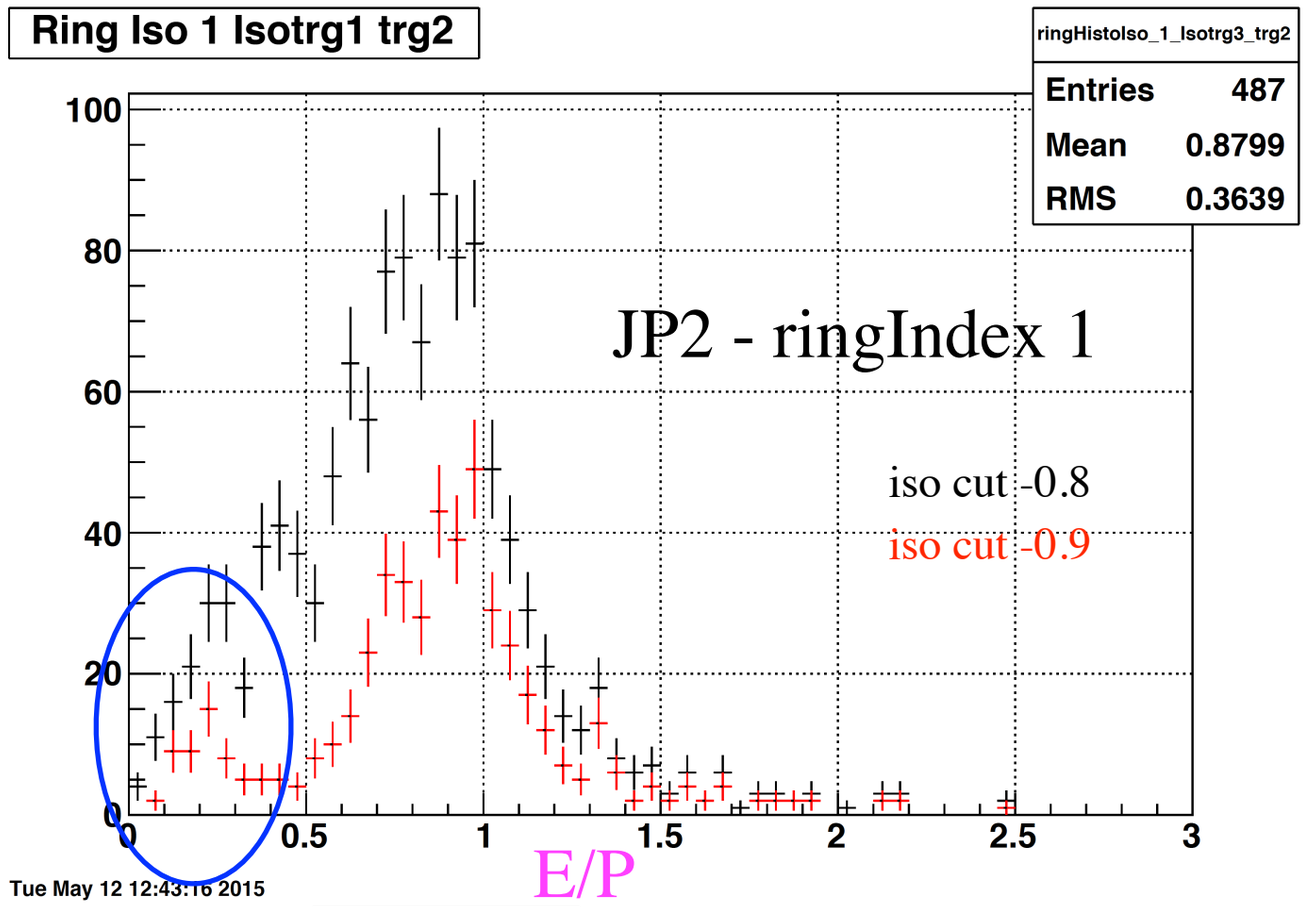
Unbiased Isolation cut

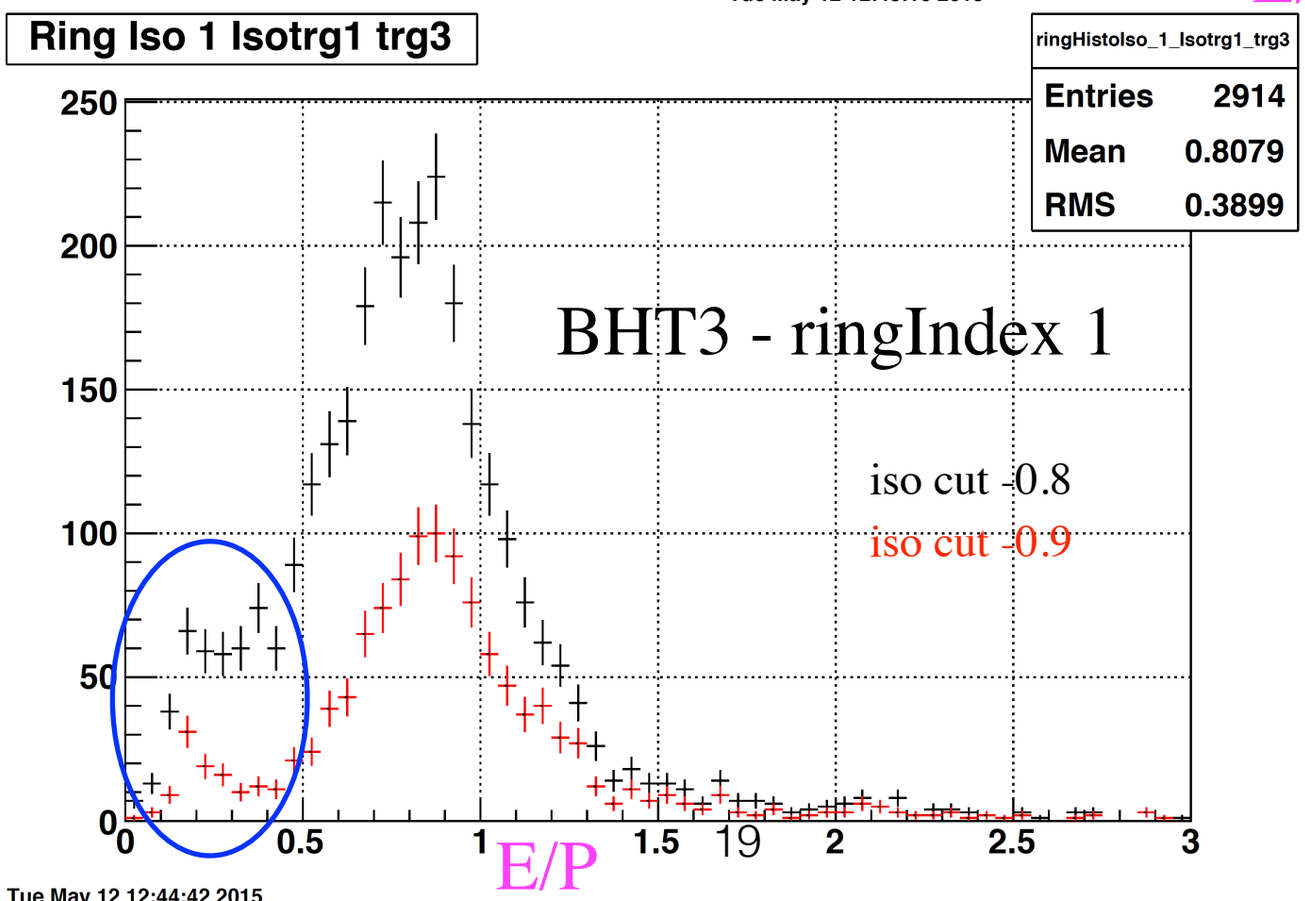


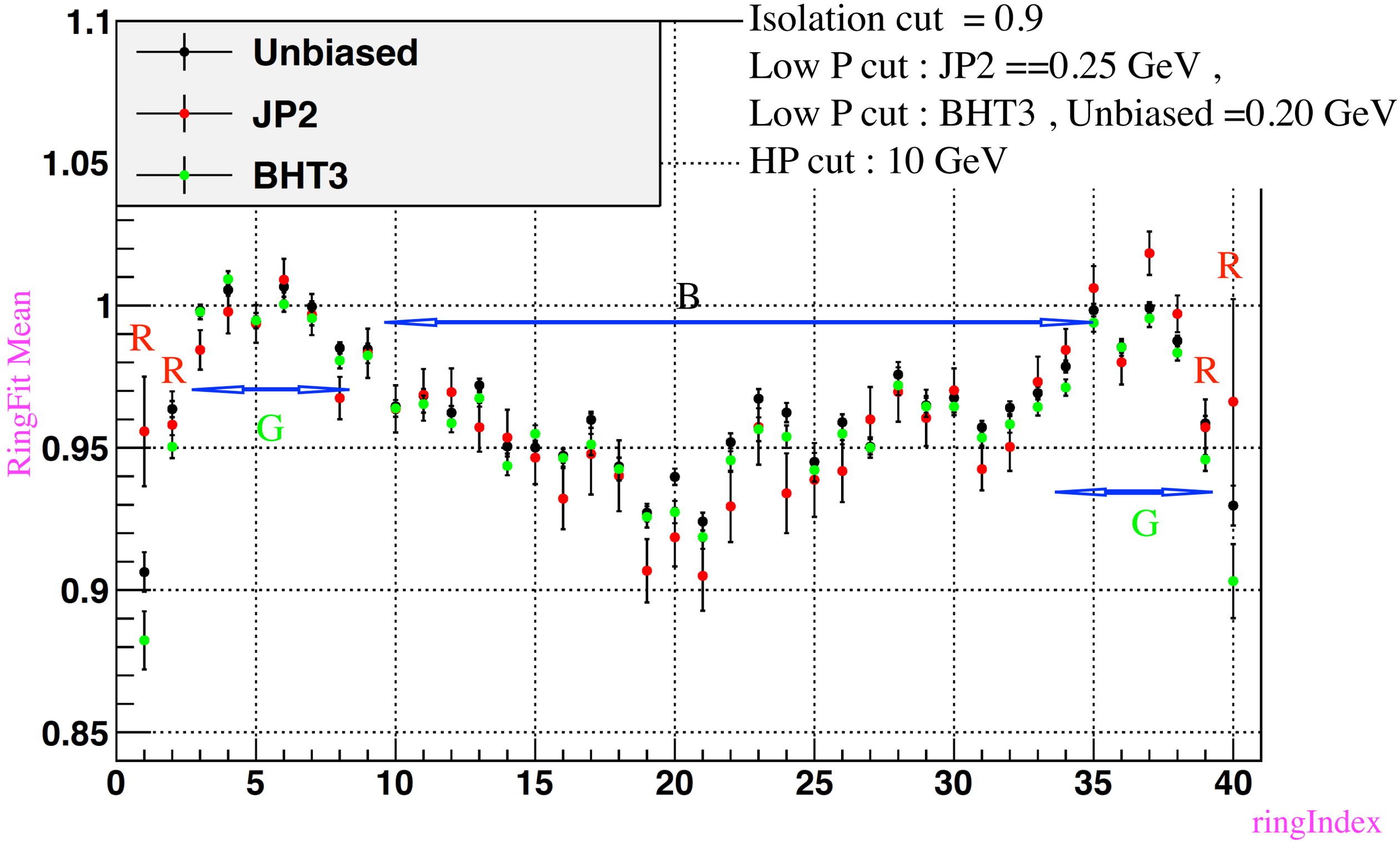
Differences



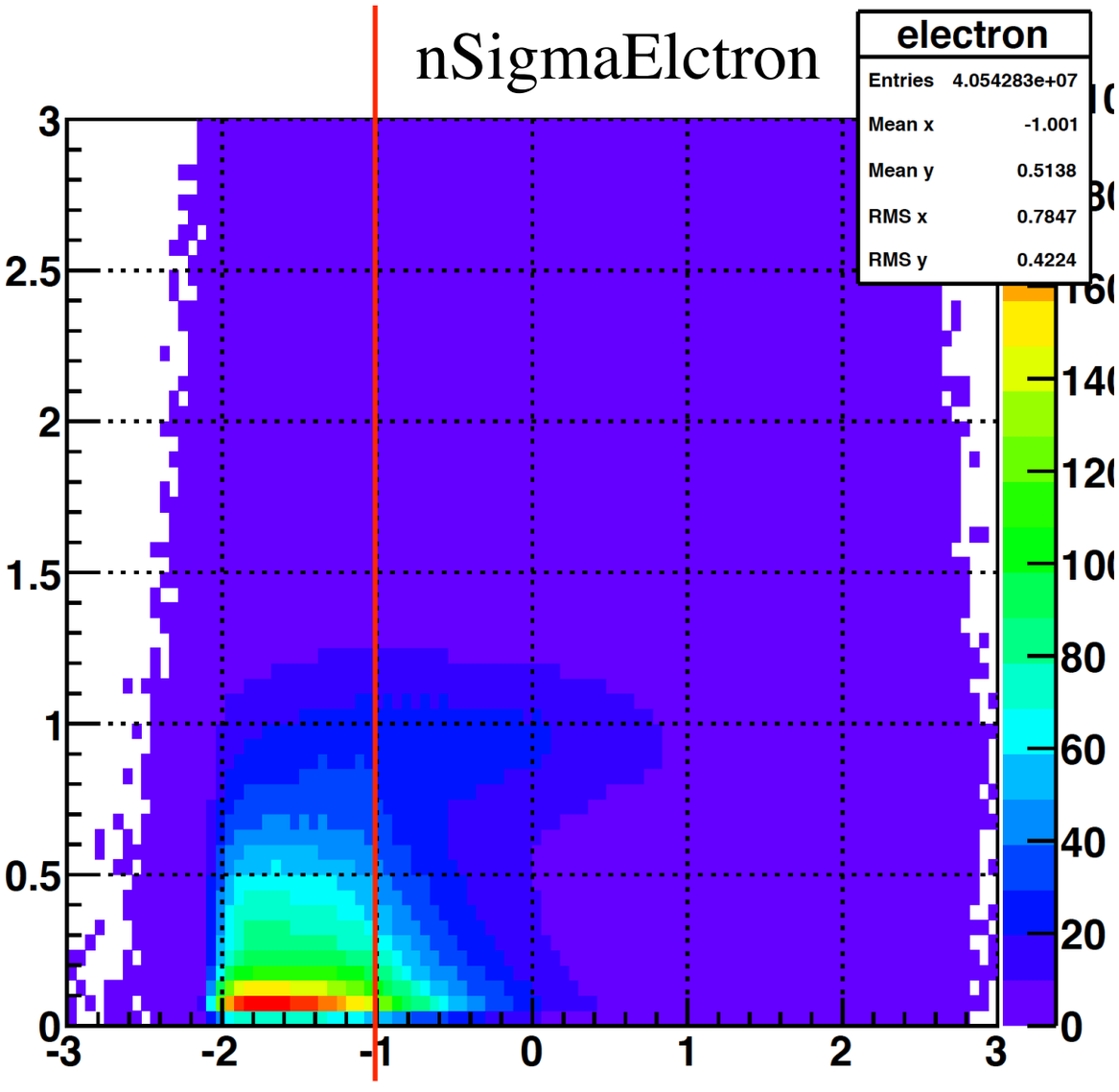

Ring Iso 1 Isotrg1 trg1
ringHistoIso_1_Isotrg3_t
Entries 413
Mean 0.885
RMS 0.388
Unbiased - ringIndex 1
iso cut -0.8
iso cut -0.9
E/P
Tue May 12 12:41:40 2015

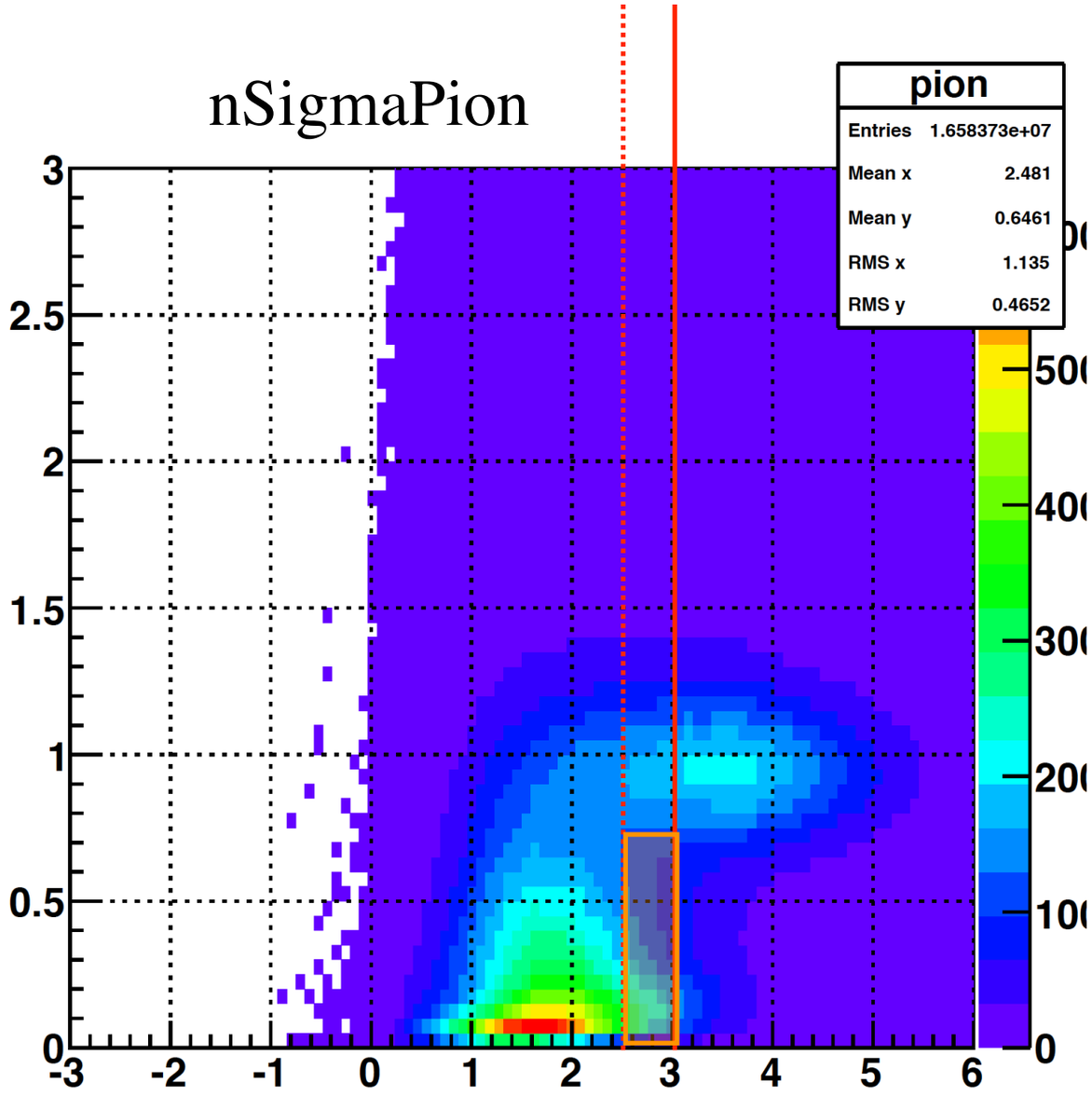

Ring Iso 1 Isotrg1 trg2
ringHistoIso_1_Isotrg3_trg2
Entries 487
Mean 0.8799
RMS 0.3639
JP2 - ringIndex 1
iso cut -0.8
iso cut -0.9
E/P
Tue May 12 12:43:16 2015


Ring Iso 1 Isotrg1 trg3
ringHistoIso_1_Isotrg1_trg3
Entries 2914
Mean 0.8079
RMS 0.3899
BHT3 - ringIndex 1
iso cut -0.8
iso cut -0.9
E/P
Tue May 12 12:44:42 2015


Unbiased
JP2
BHT3
Isolation cut = 0.9
Low P cut : JP2 ==0.25 GeV ,
Low P cut : BHT3 , Unbiased =0.20 GeV
HP cut : 10 GeV
B
R
R
G
R
R
G
RingFit Mean
ringIndex
1.1
1.05
1
0.95
0.9
0.85
0
5
10
15
20
25
30
35
40

Track Cuts





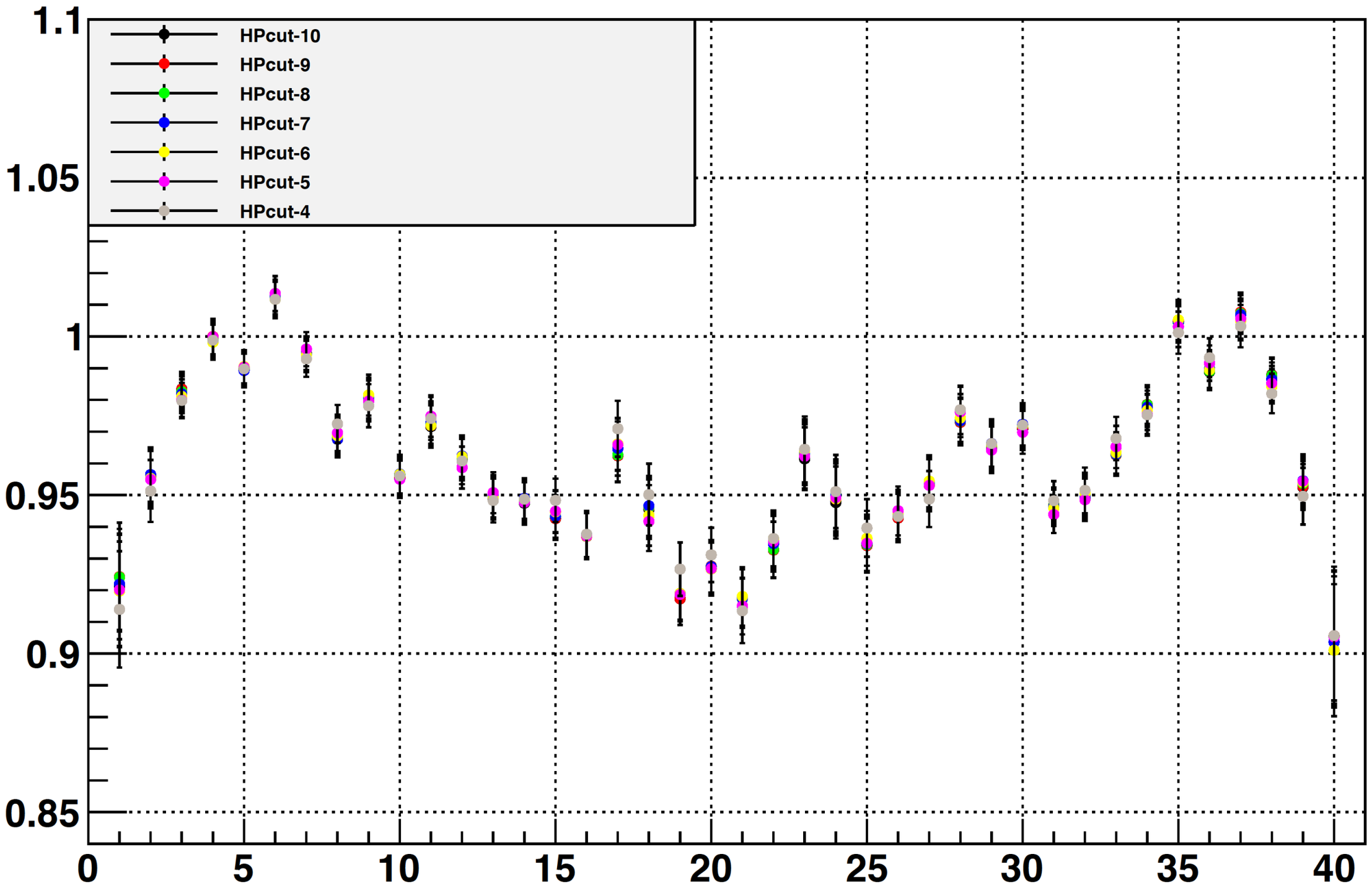
2.5———> 3.0

Summary

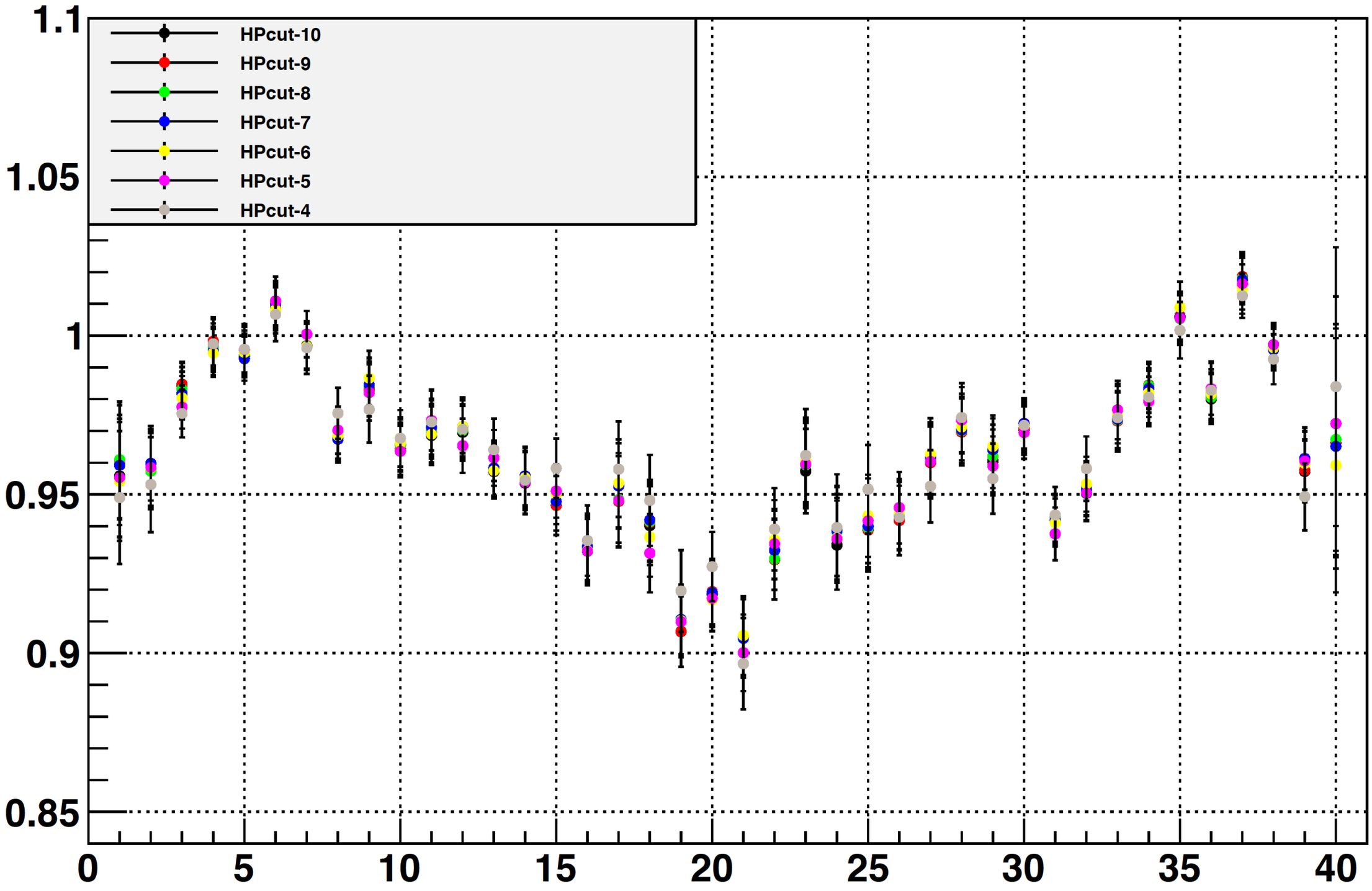
- Low Pt cut significantly effect outermost rings due to backgrounds
- High Pt Cuts shows negligible differences.
- Isolation Cut plays a big role thorough out the whole Eta region.

Backup

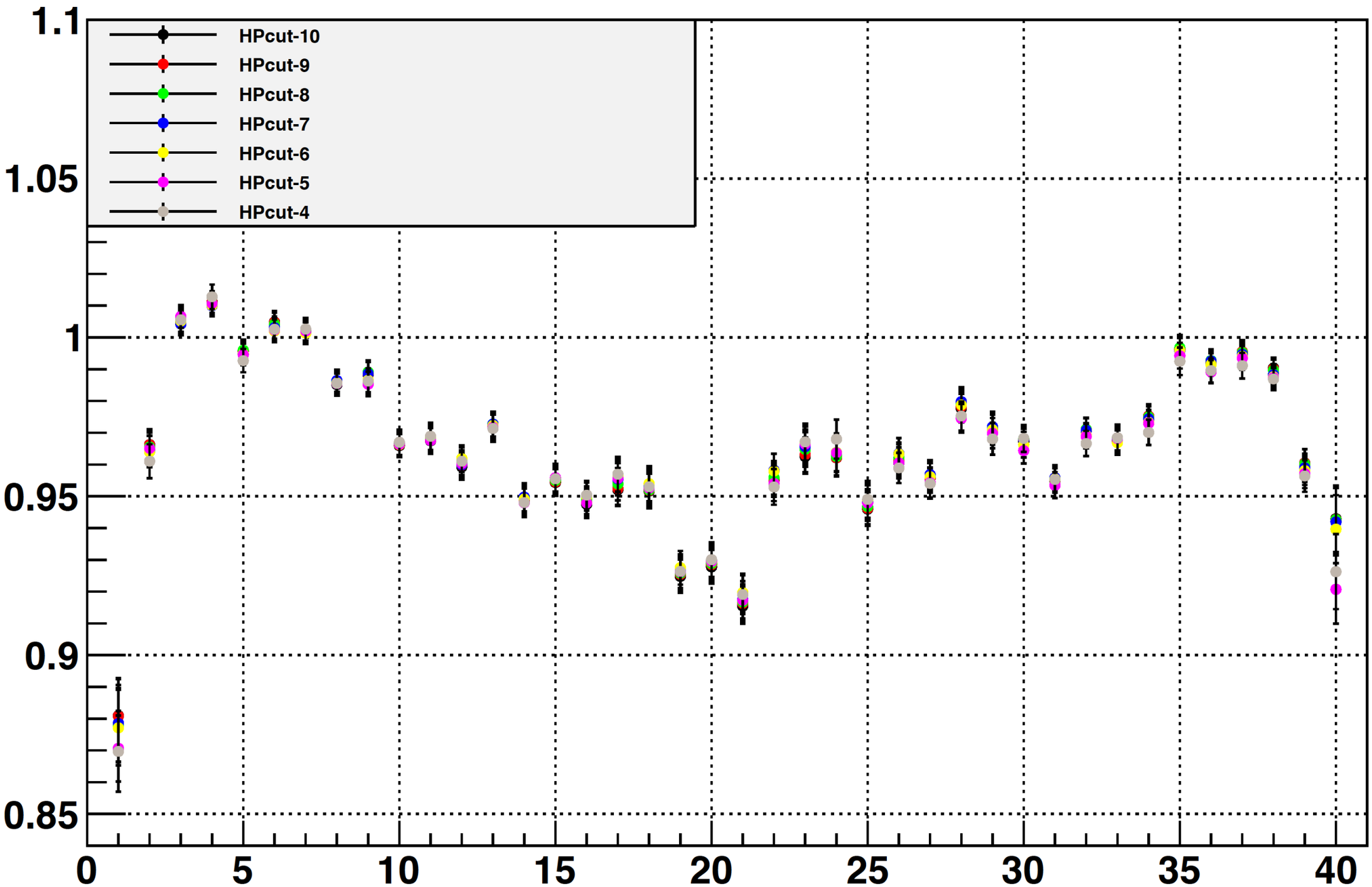
JP2 trigger LP cut =2.0



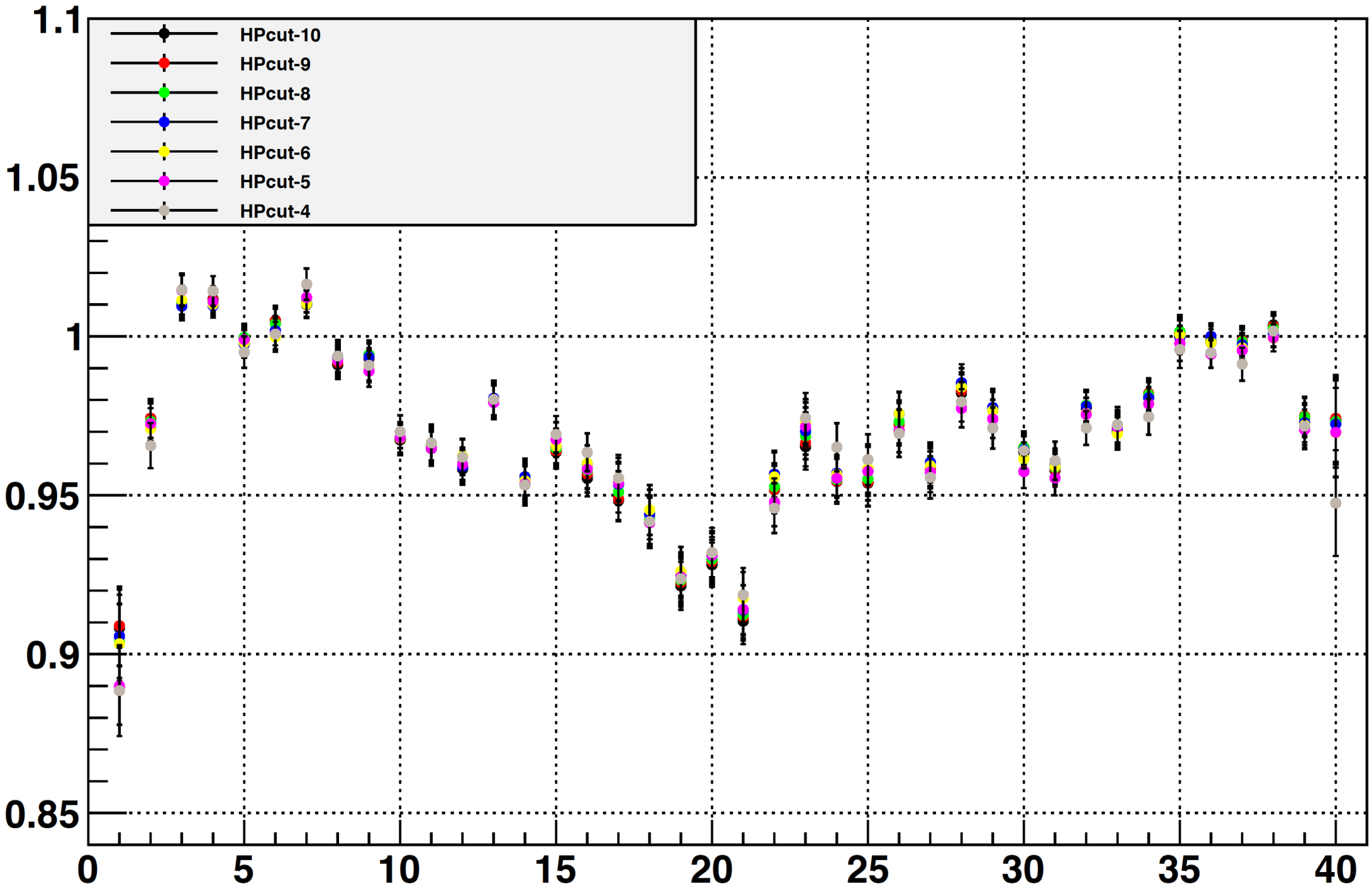
LP=2.5 JP2

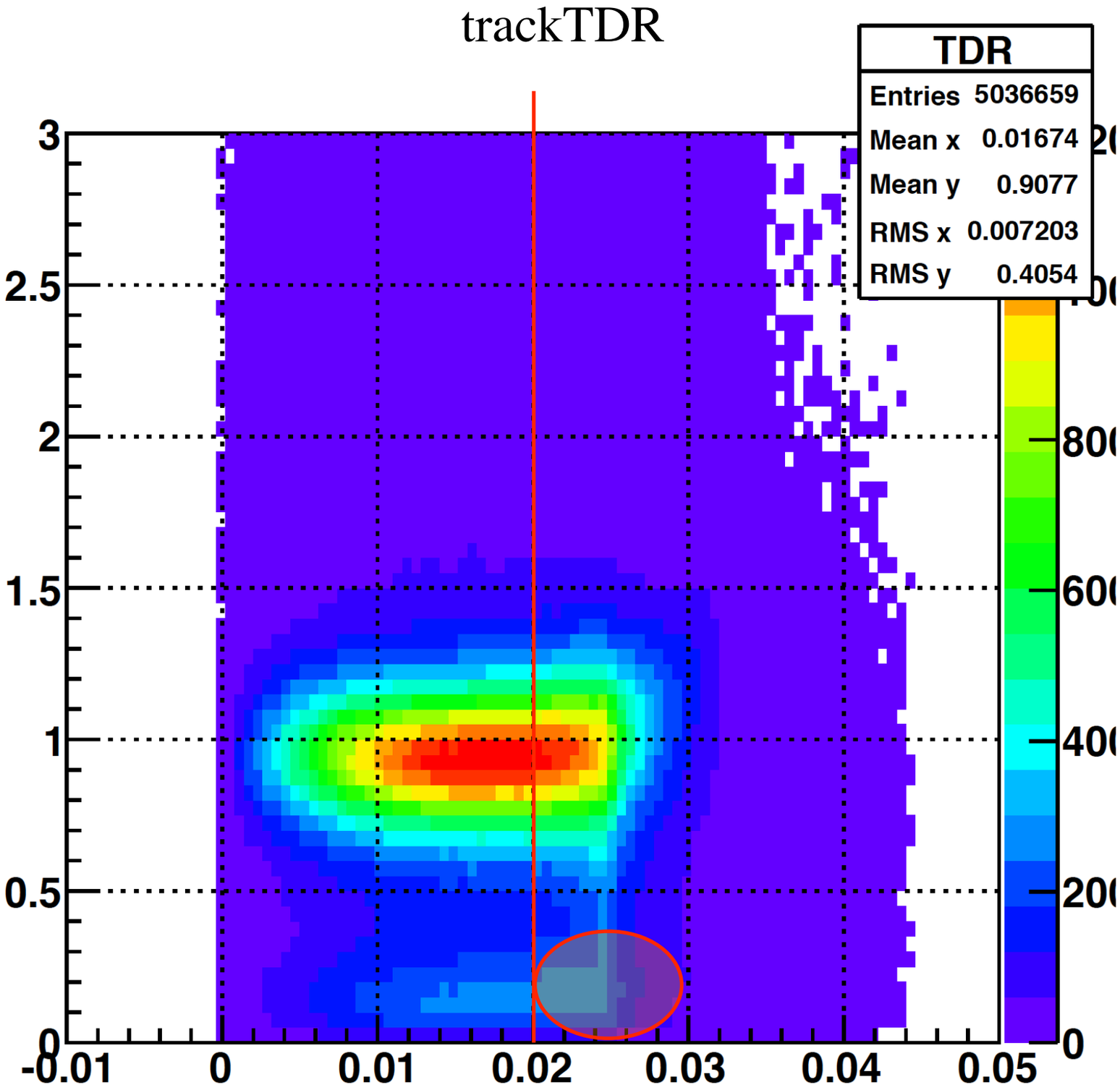

HPcut-10
HPcut-9
HPcut-8
HPcut-7
HPcut-6
HPcut-5
HPcut-4
1.1
1.05
1
0.95
0.9
0.85
0
5
10
15
20
25
30
35
40

LP=2.0 BHT3


HPcut-10
HPcut-9
HPcut-8
HPcut-7
HPcut-6
HPcut-5
HPcut-4
1.1
1.05
1
0.95
0.9
0.85
0
5
10
15
20
25
30
35
40

LP=2.5 BHT3


HPcut-10
HPcut-9
HPcut-8
HPcut-7
HPcut-6
HPcut-5
HPcut-4
1.1
1.05
1
0.95
0.9
0.85
0
5
10
15
20
25
30
35
40


trackTDR
TDR
Entries 5036659
Mean x 0.01674
Mean y 0.9077
RMS x 0.007203
RMS y 0.4054
3
2.5
2
1.5
1
0.5
0
-0.01
0
0.01
0.02
0.03
0.04
0.05
800
600
400
200
0