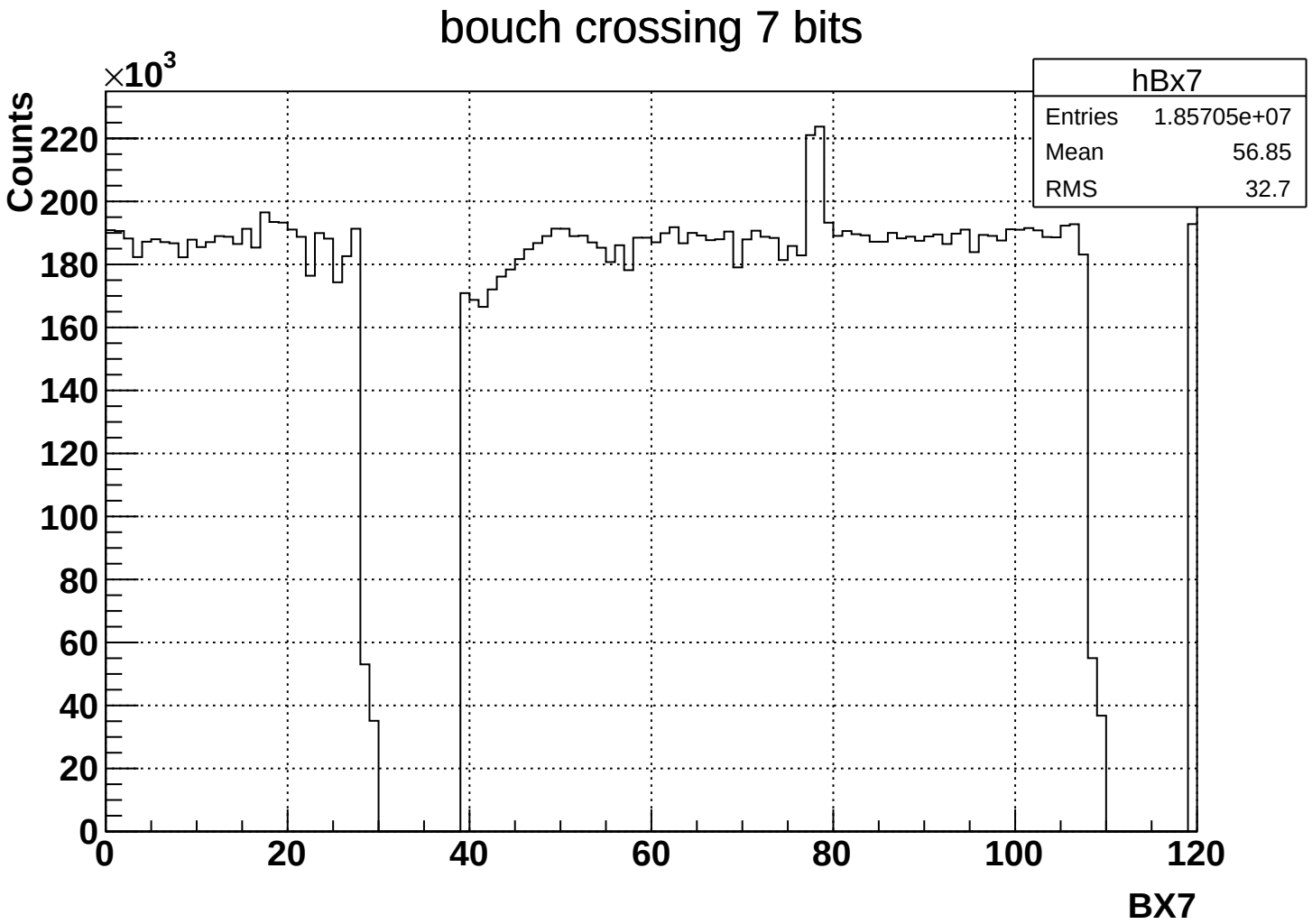
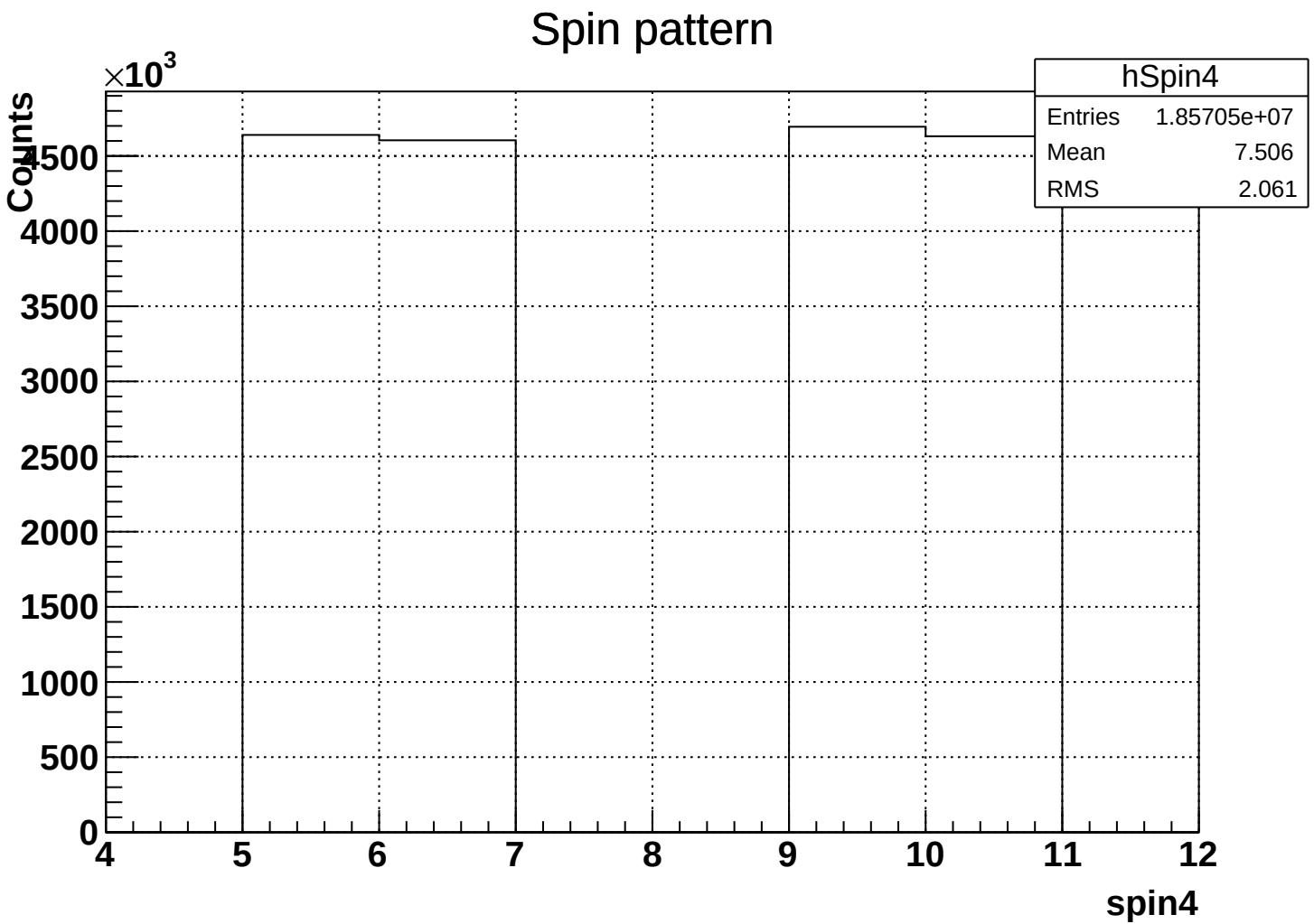
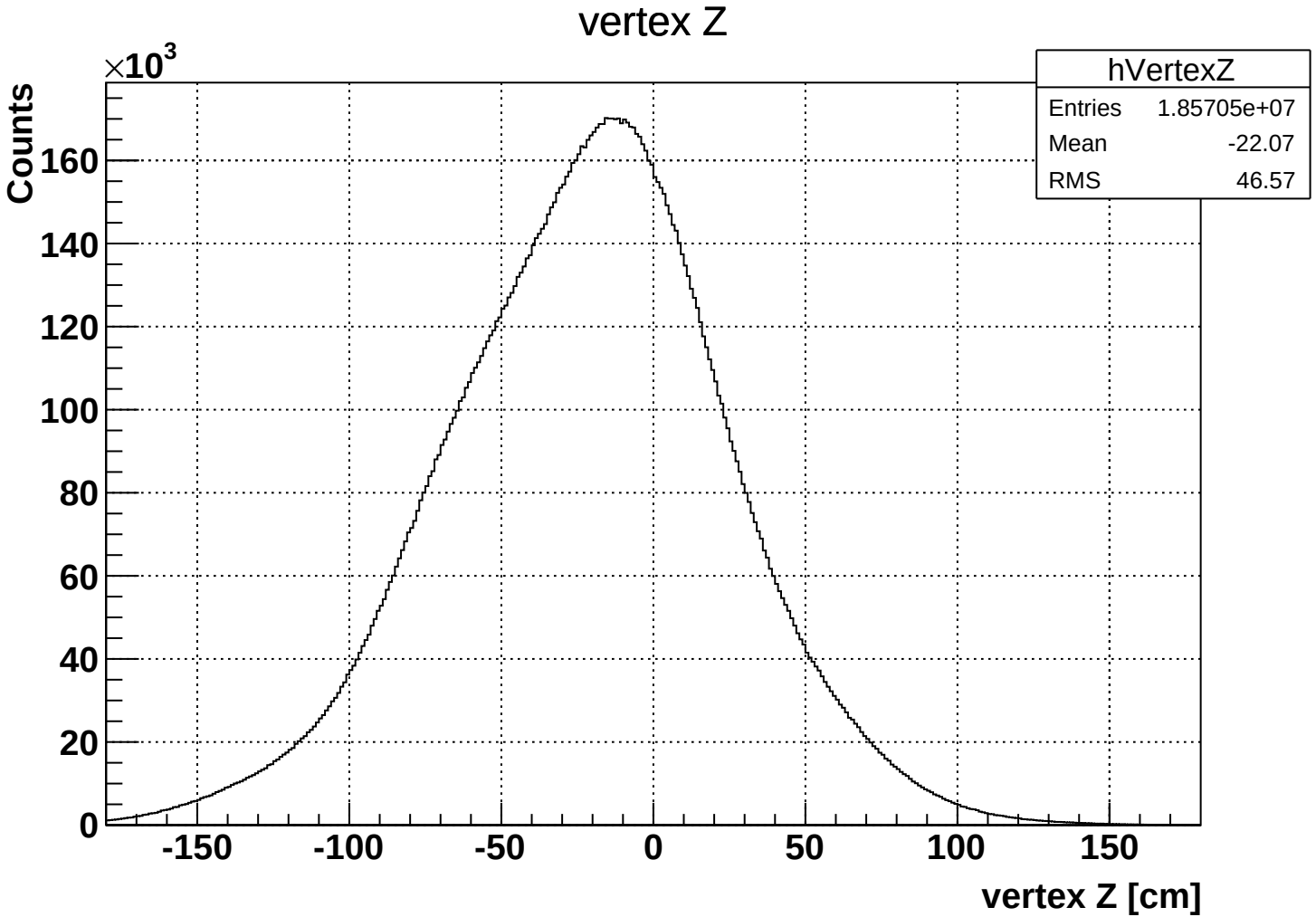
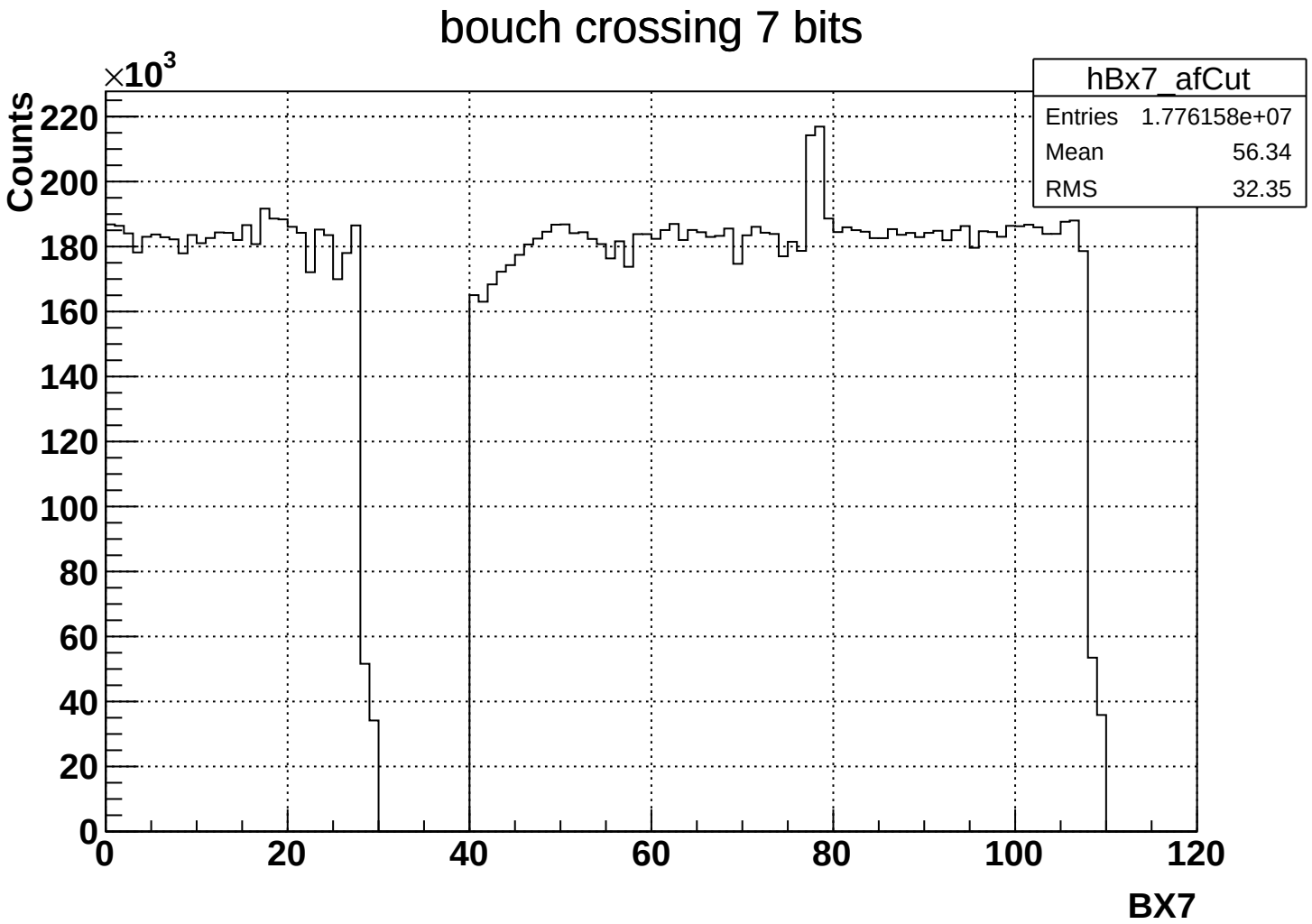
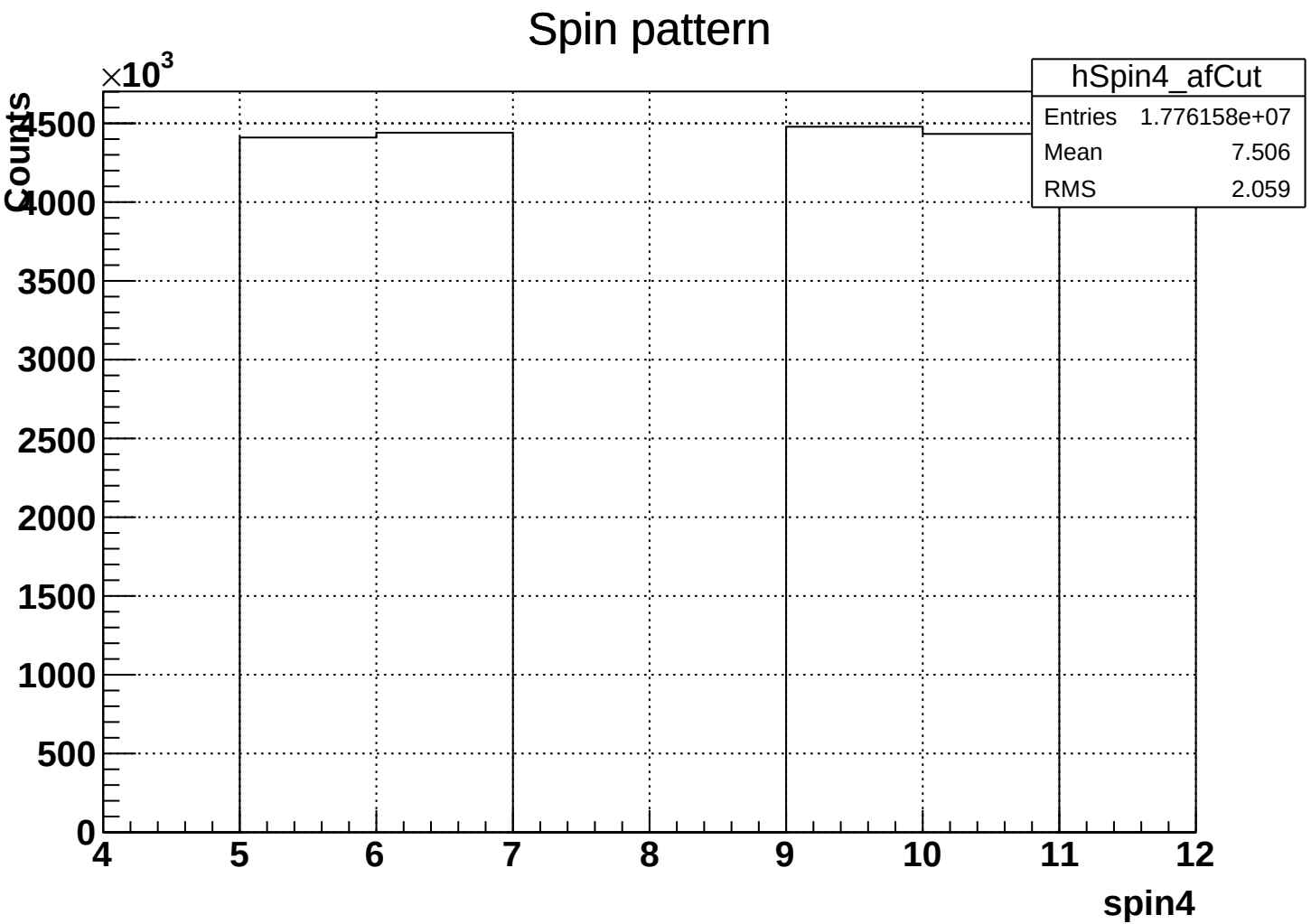
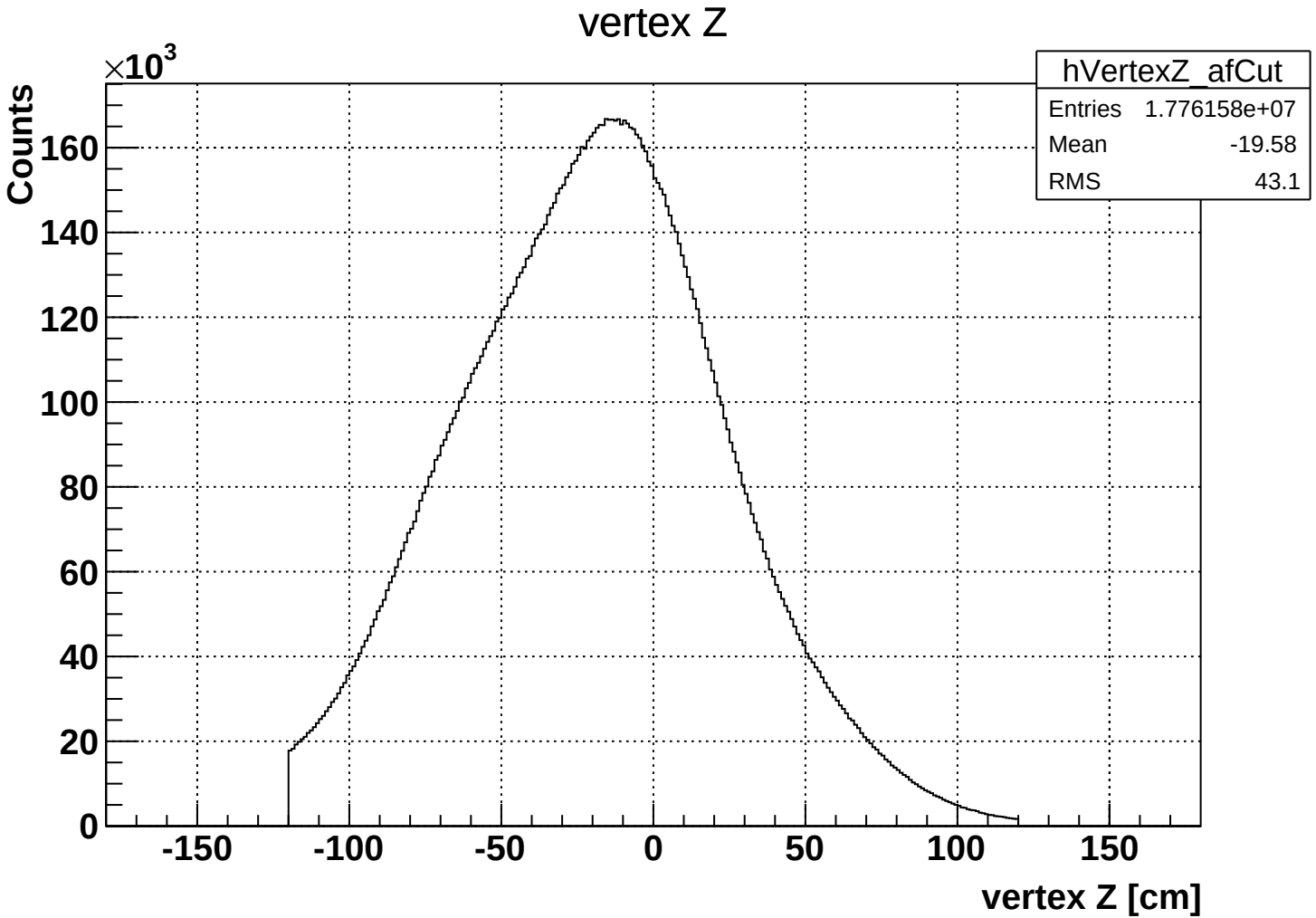

bouch crossing 7 bits
hBx7
Entries 1.85705e+07
Mean 56.85
RMS 32.7
Counts
×10^3
220
200
180
160
140
120
100
80
60
40
20
0
0
20
40
60
80
100
120
BX7

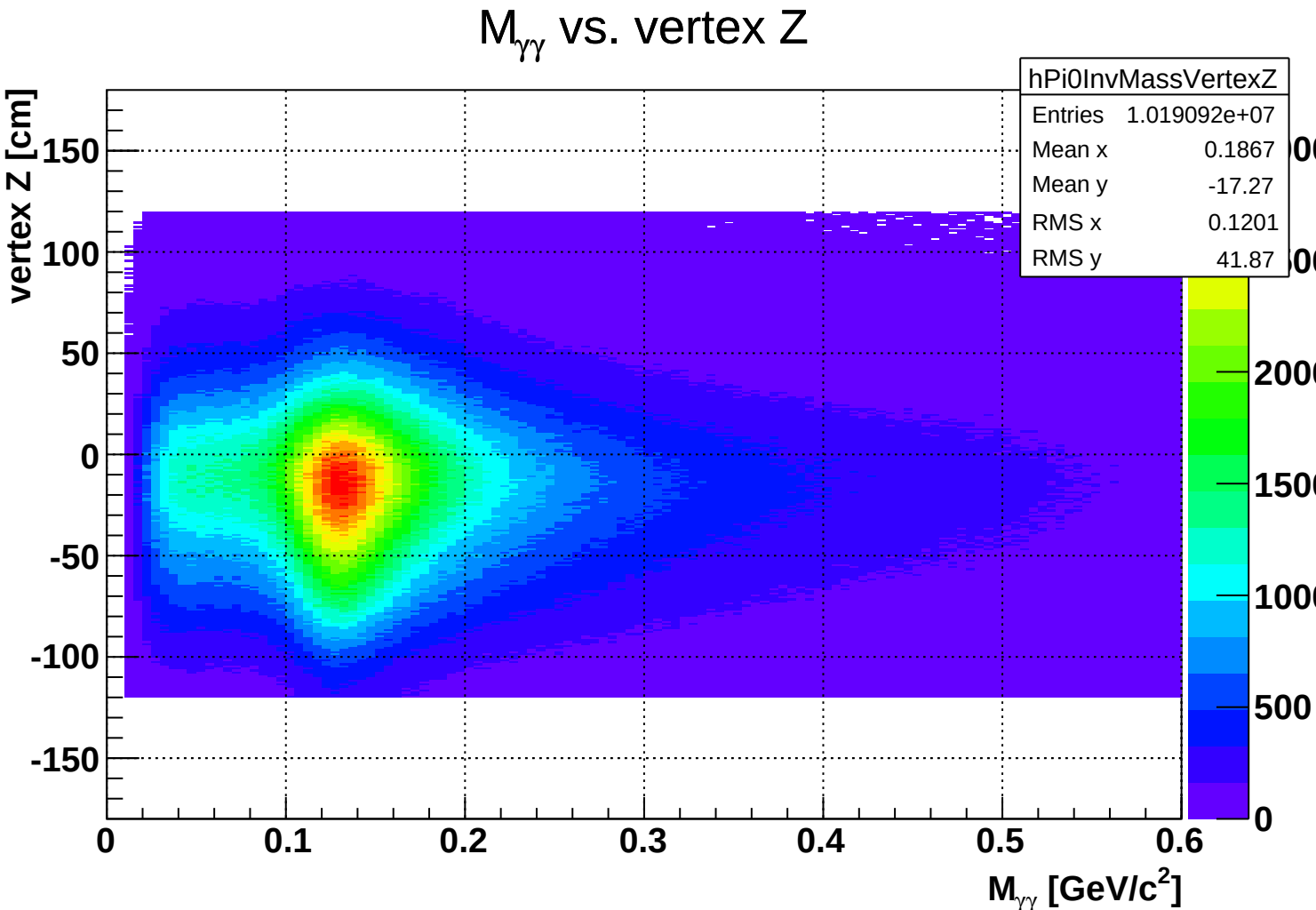

Spin pattern
hSpin4
Entries 1.85705e+07
Mean 7.506
RMS 2.061
×10^3
Counts
4500
4000
3500
3000
2500
2000
1500
1000
500
0
4
5
6
7
8
9
10
11
12
spin4

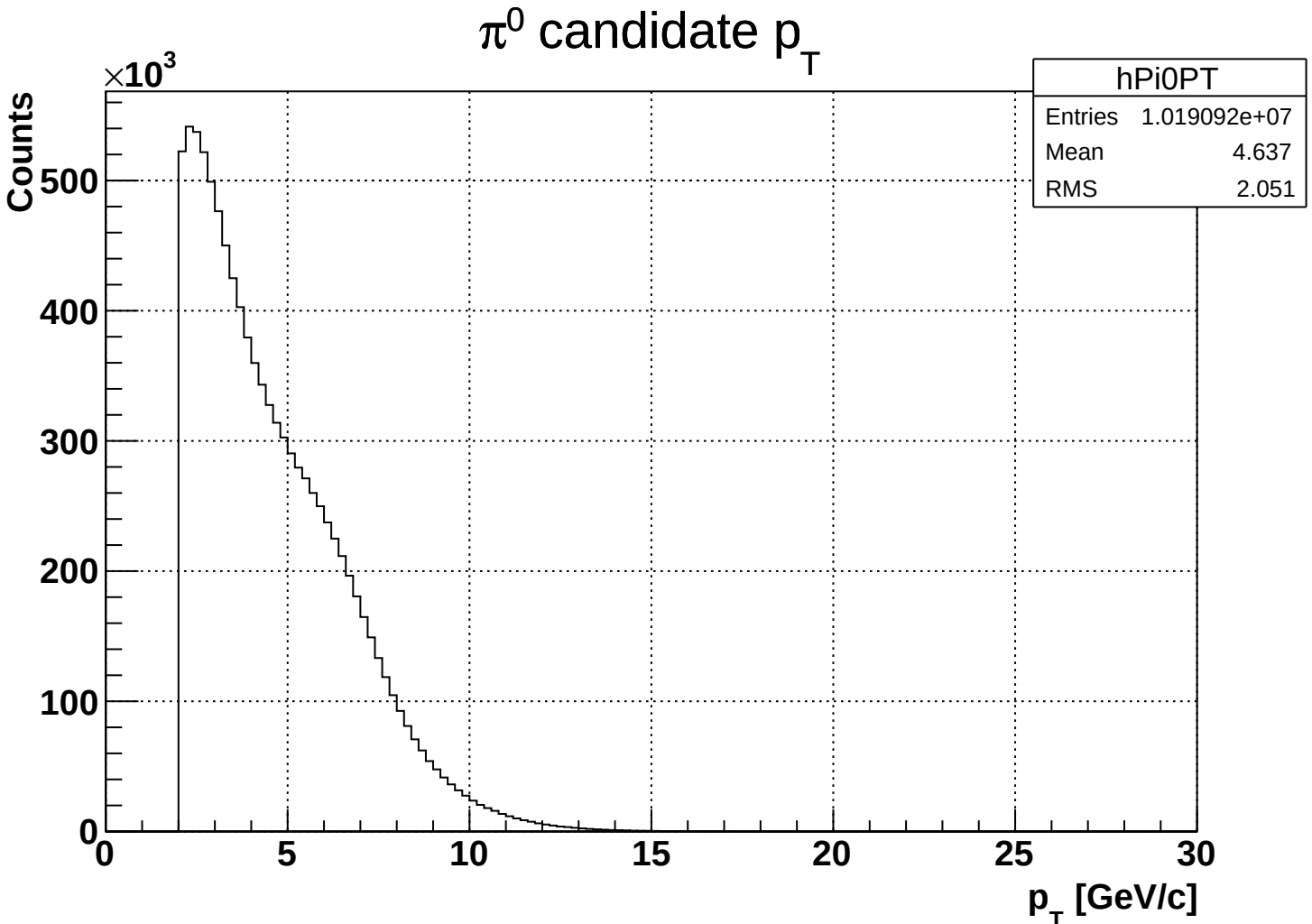

vertex Z
hVertexZ
Entries 1.85705e+07
Mean -22.07
RMS 46.57
Counts
×10^3
160
140
120
100
80
60
40
20
0
-150
-100
-50
0
50
100
150
vertex Z [cm]

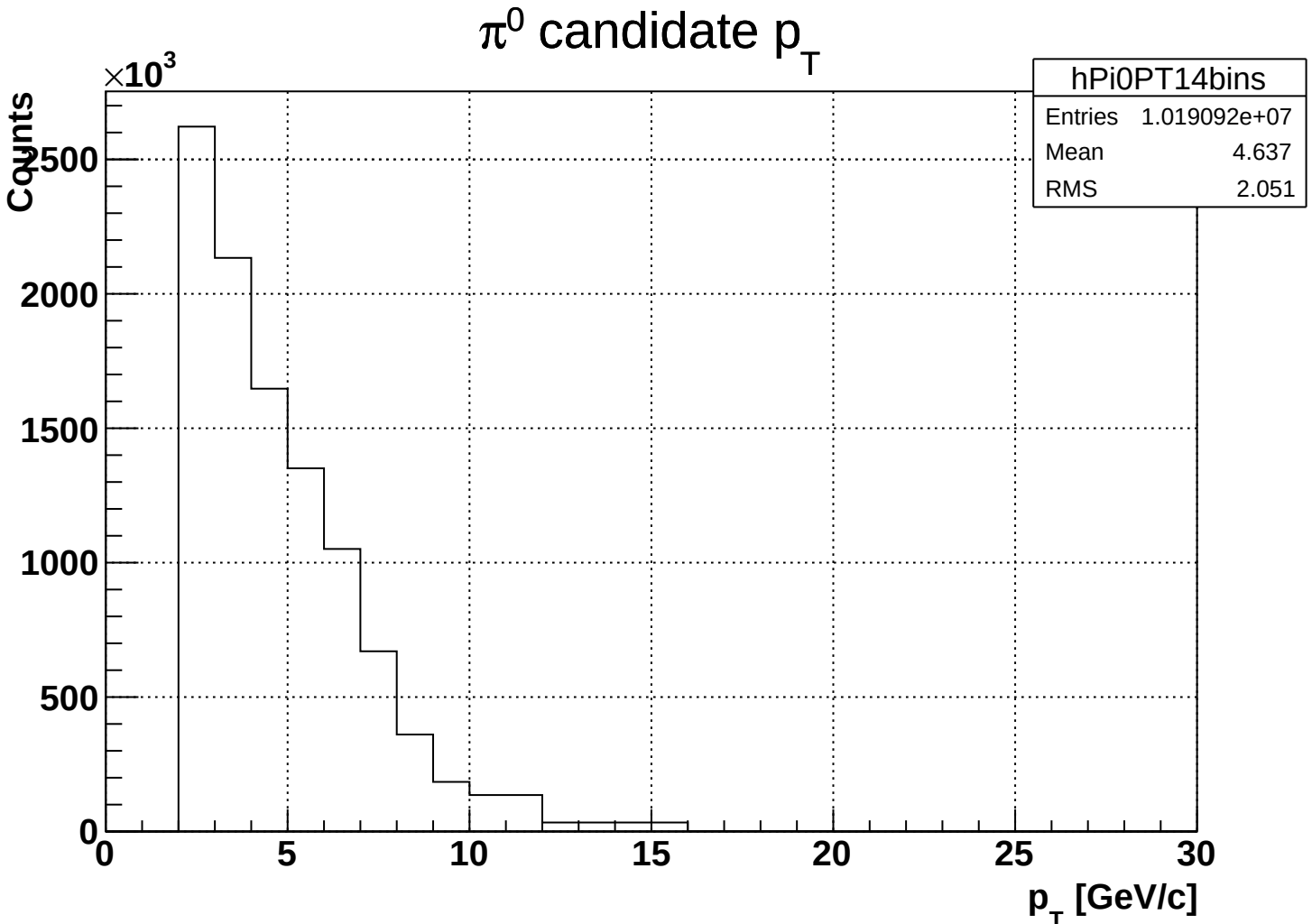

bouch crossing 7 bits
hBx7_afCut
Entries 1.776158e+07
Mean 56.34
RMS 32.35
Counts
×10^3
220
200
180
160
140
120
100
80
60
40
20
0
0
20
40
60
80
100
120
BX7

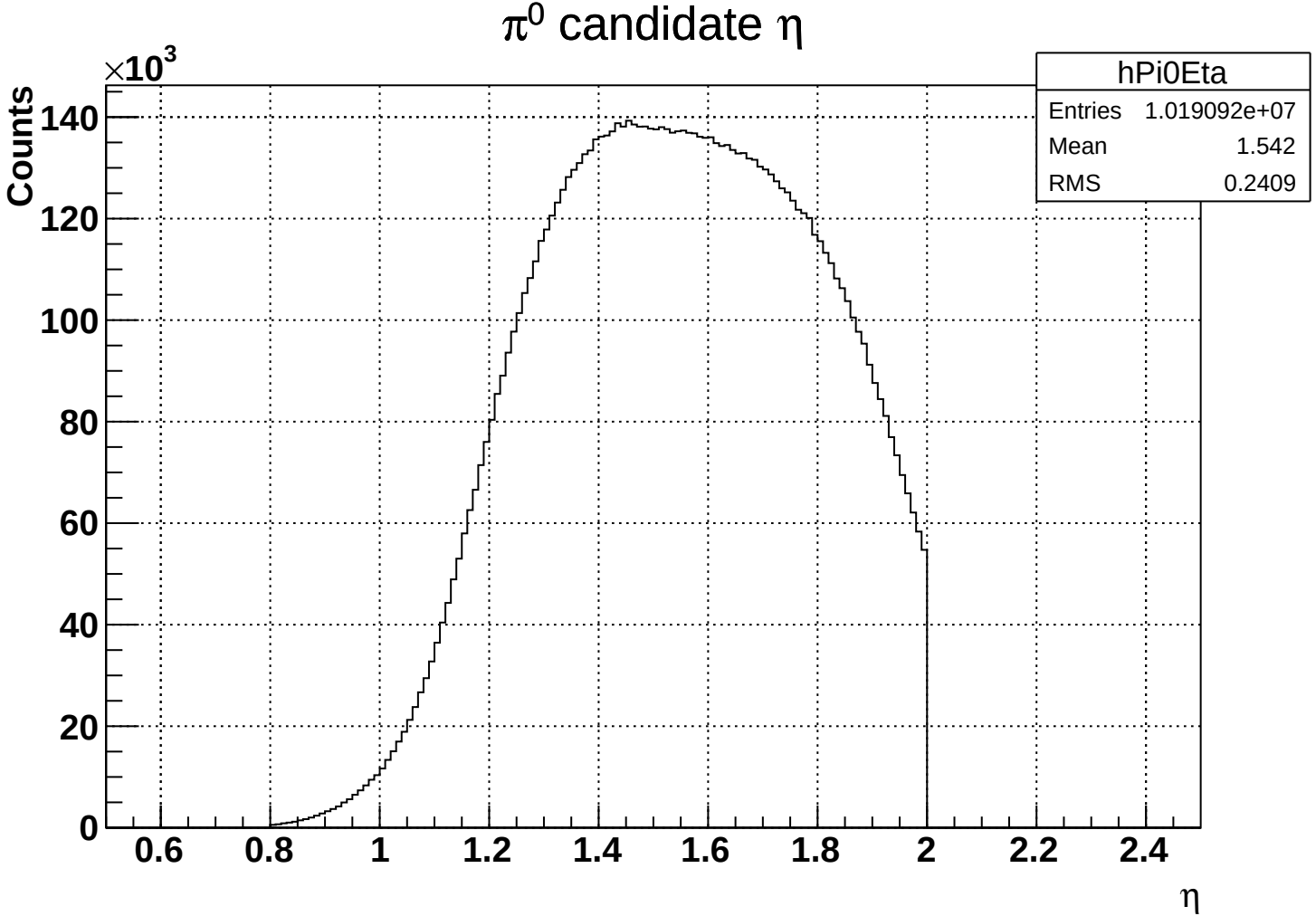

Spin pattern
hSpin4_afCut
Entries 1.776158e+07
Mean 7.506
RMS 2.059
Counts
×10^3
4500
4000
3500
3000
2500
2000
1500
1000
500
0
4
5
6
7
8
9
10
11
12
spin4

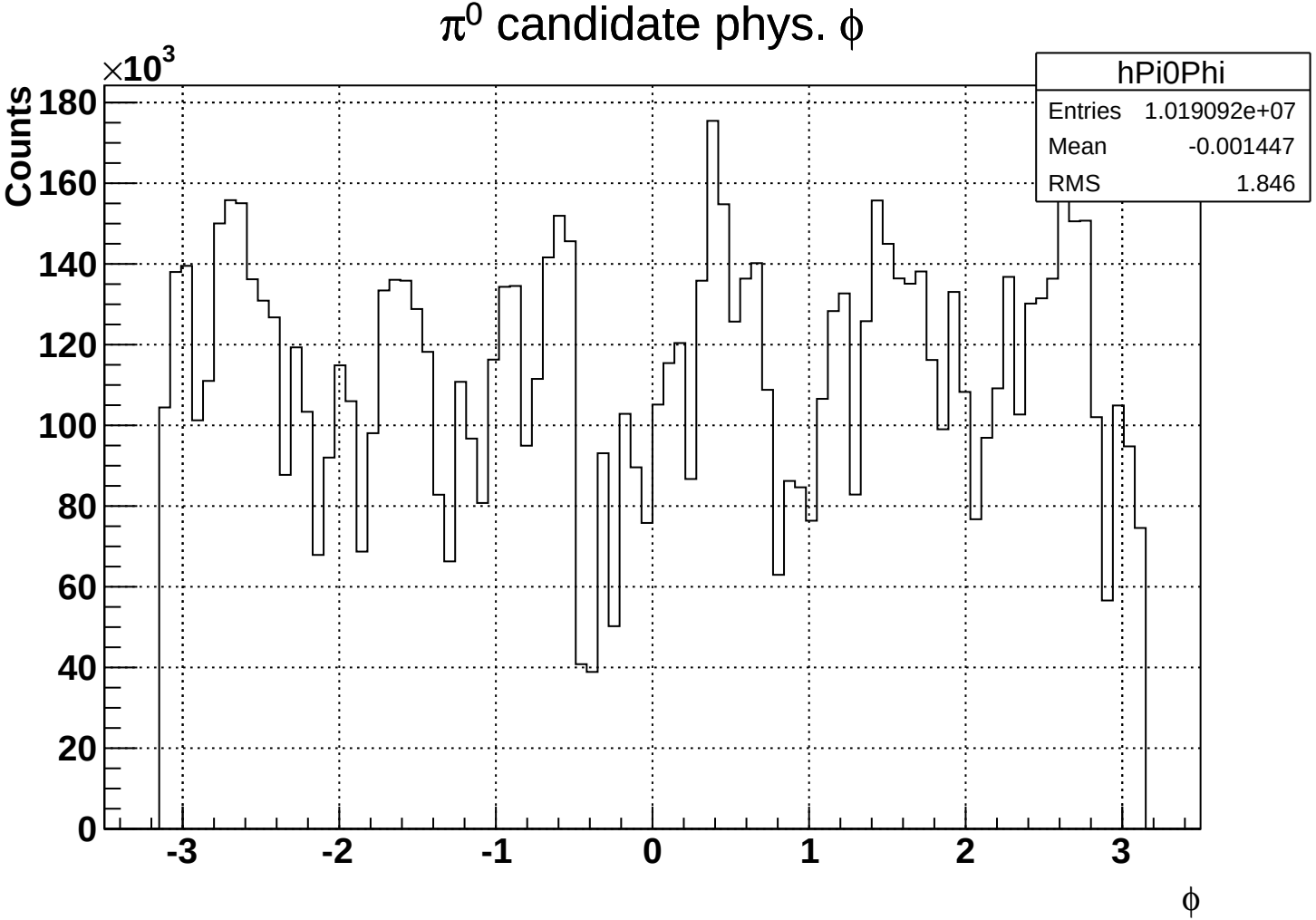

vertex Z
hVertexZ_afCut
Entries 1.776158e+07
Mean -19.58
RMS 43.1
Counts
×10^3
160
140
120
100
80
60
40
20
0
-150
-100
-50
0
50
100
150
vertex Z [cm]

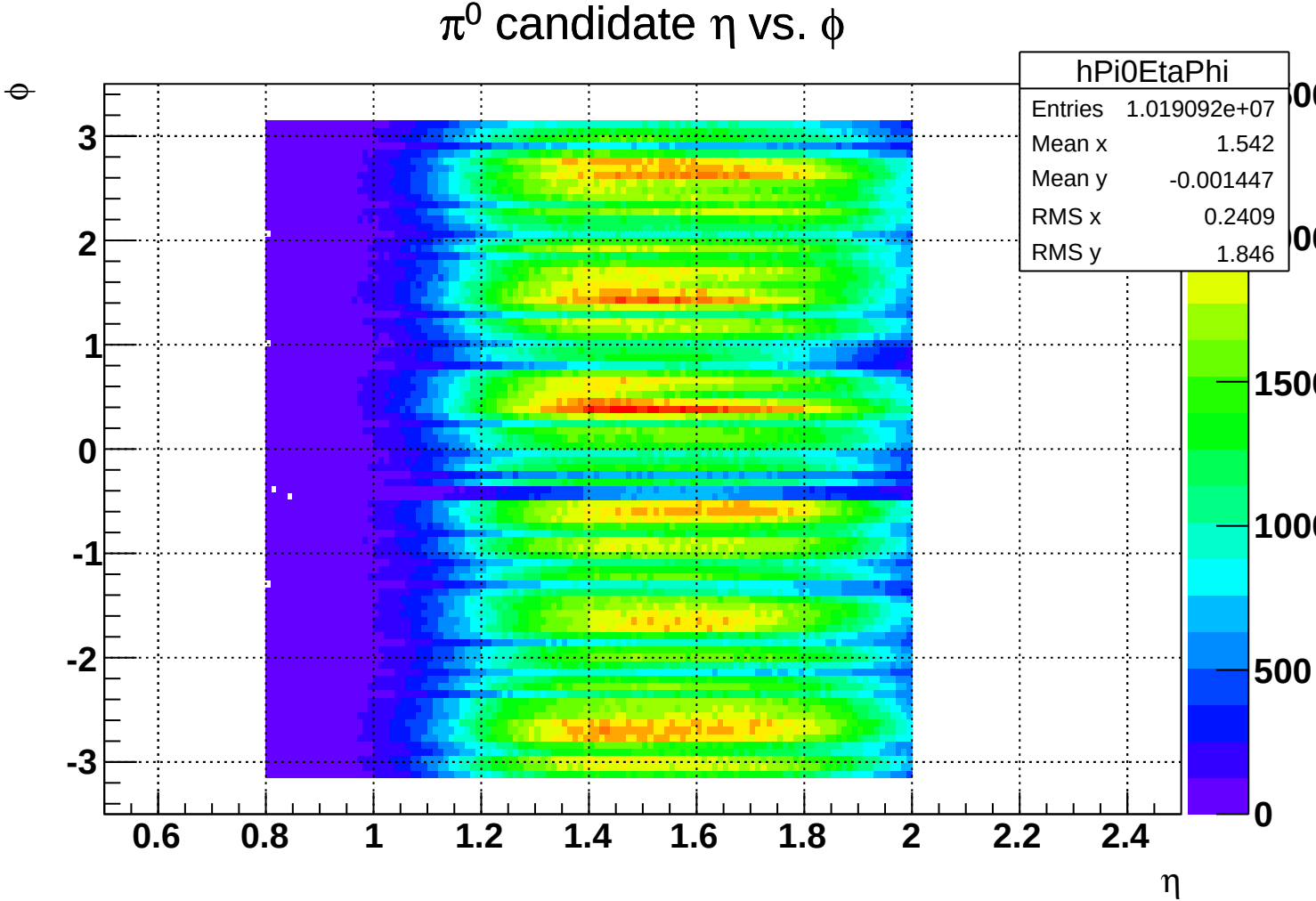

$M_{\gamma\gamma}$ vs. vertex Z
hPi0InvMassVertexZ
Entries 1.019092e+07
Mean x 0.1867
Mean y -17.27
RMS x 0.1201
RMS y 41.87
vertex Z [cm]
150
100
50
0
-50
-100
-150
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
2000
1500
1000
500
0

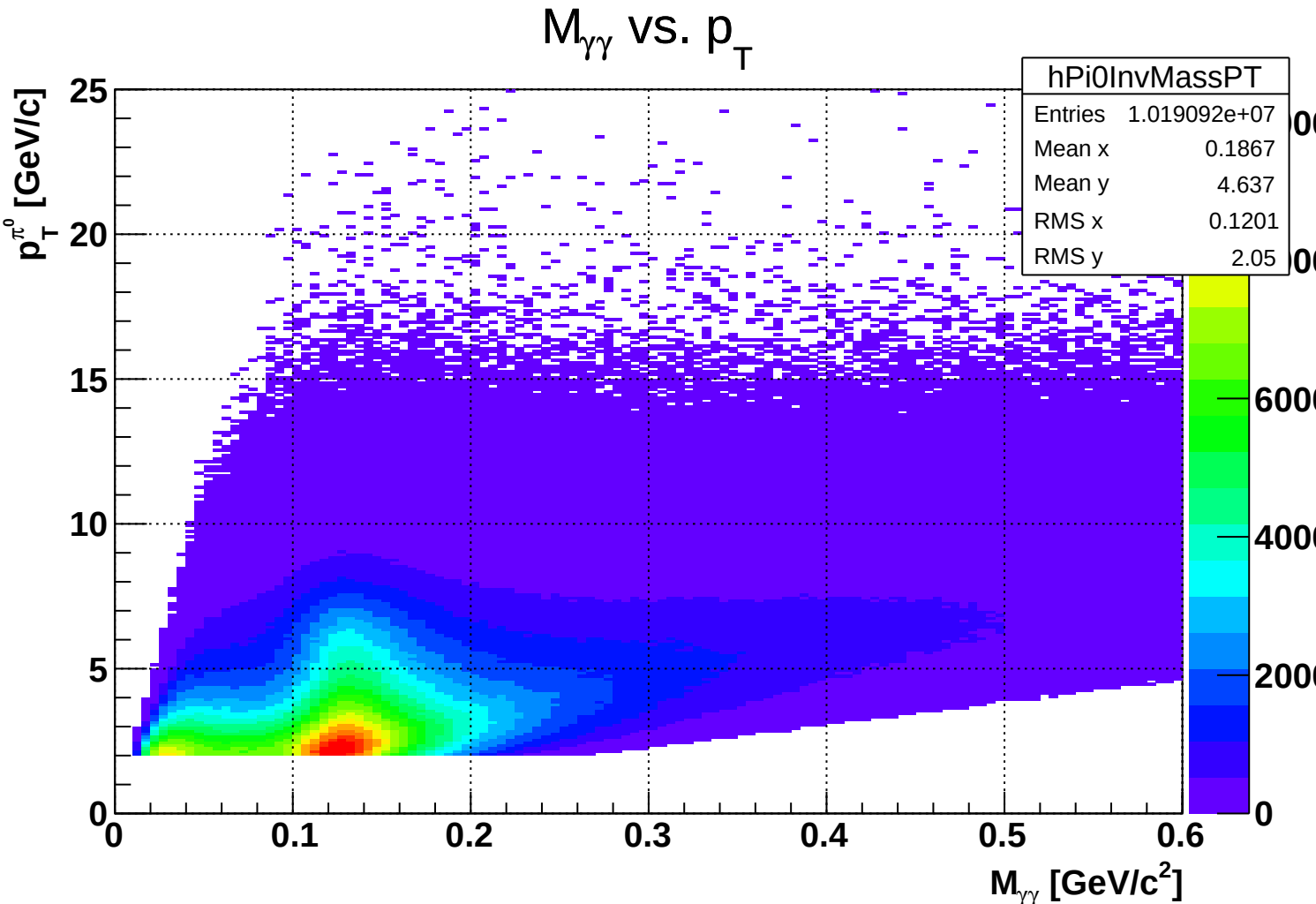

π^0 candidate p_T
hPi0PT
Entries 1.019092e+07
Mean 4.637
RMS 2.051
Counts
$\times 10^3$
500
400
300
200
100
0
0
5
10
15
20
25
30
p_T [GeV/c]

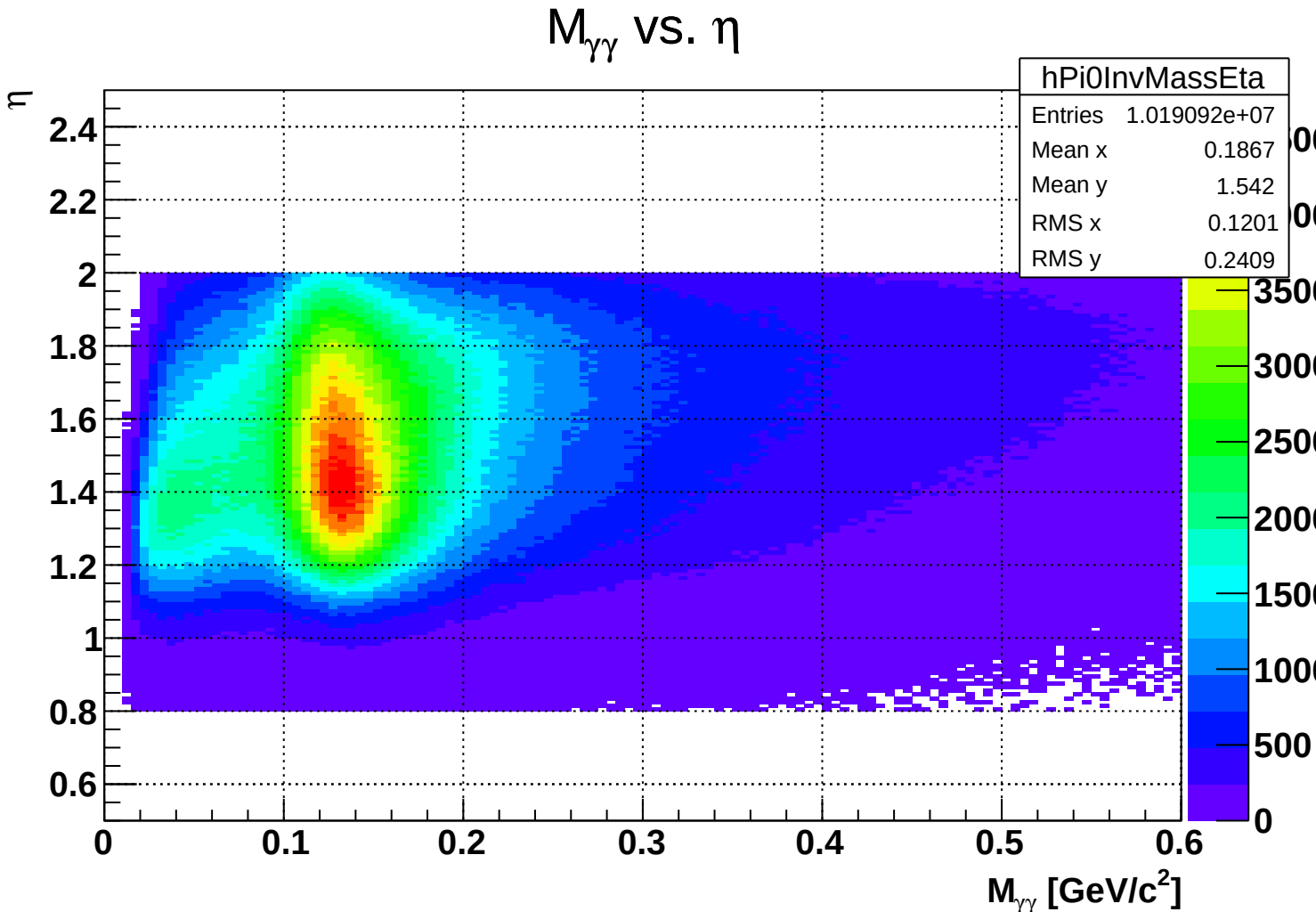

π^0 candidate p_T
hPi0PT14bins
Entries 1.019092e+07
Mean 4.637
RMS 2.051
Counts
$\times 10^3$
2500
2000
1500
1000
500
0
0
5
10
15
20
25
30
p_T [GeV/c]

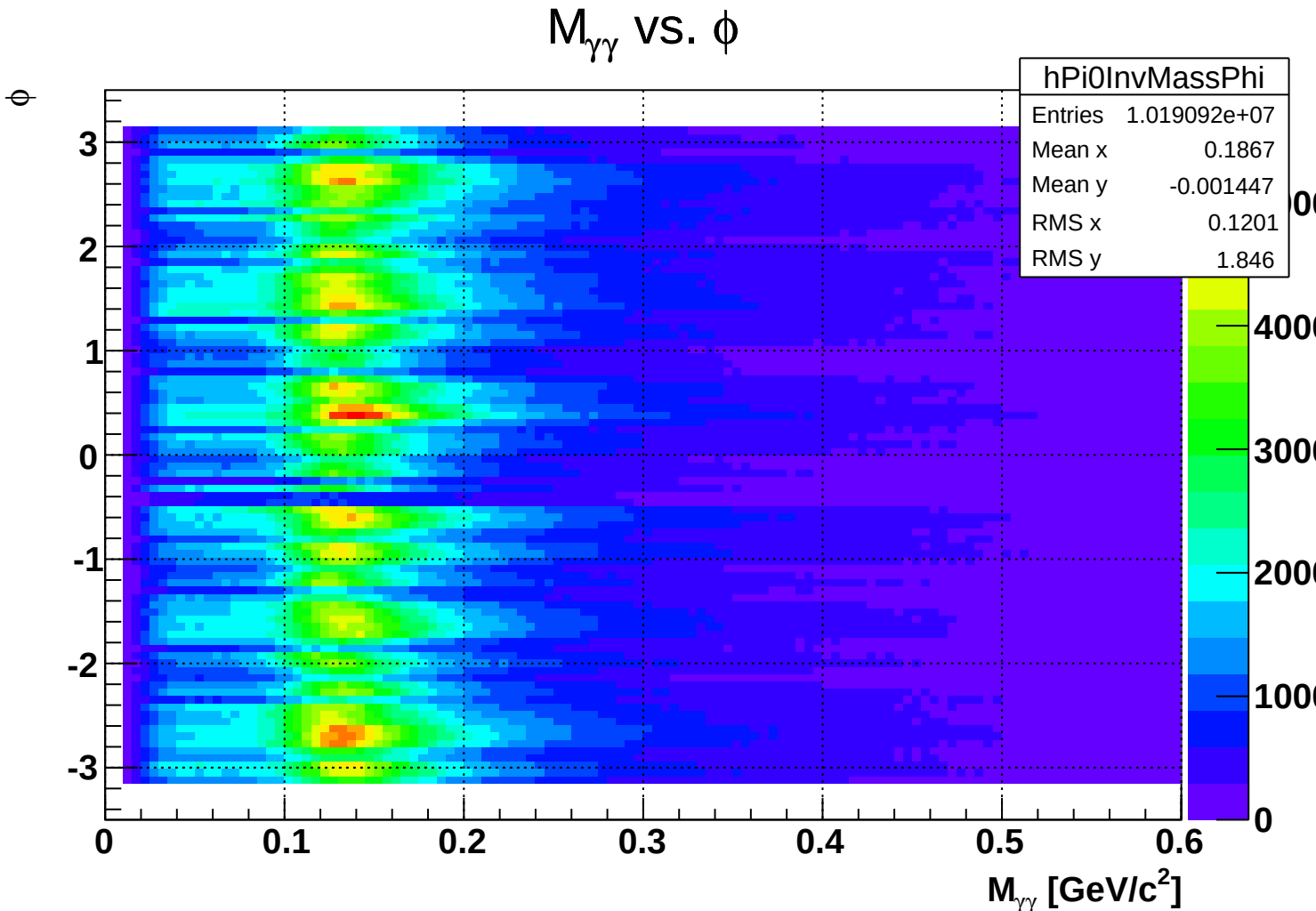

π0 candidate η
hPi0Eta
Entries 1.019092e+07
Mean 1.542
RMS 0.2409
Counts
×10^3
0
20
40
60
80
100
120
140
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η

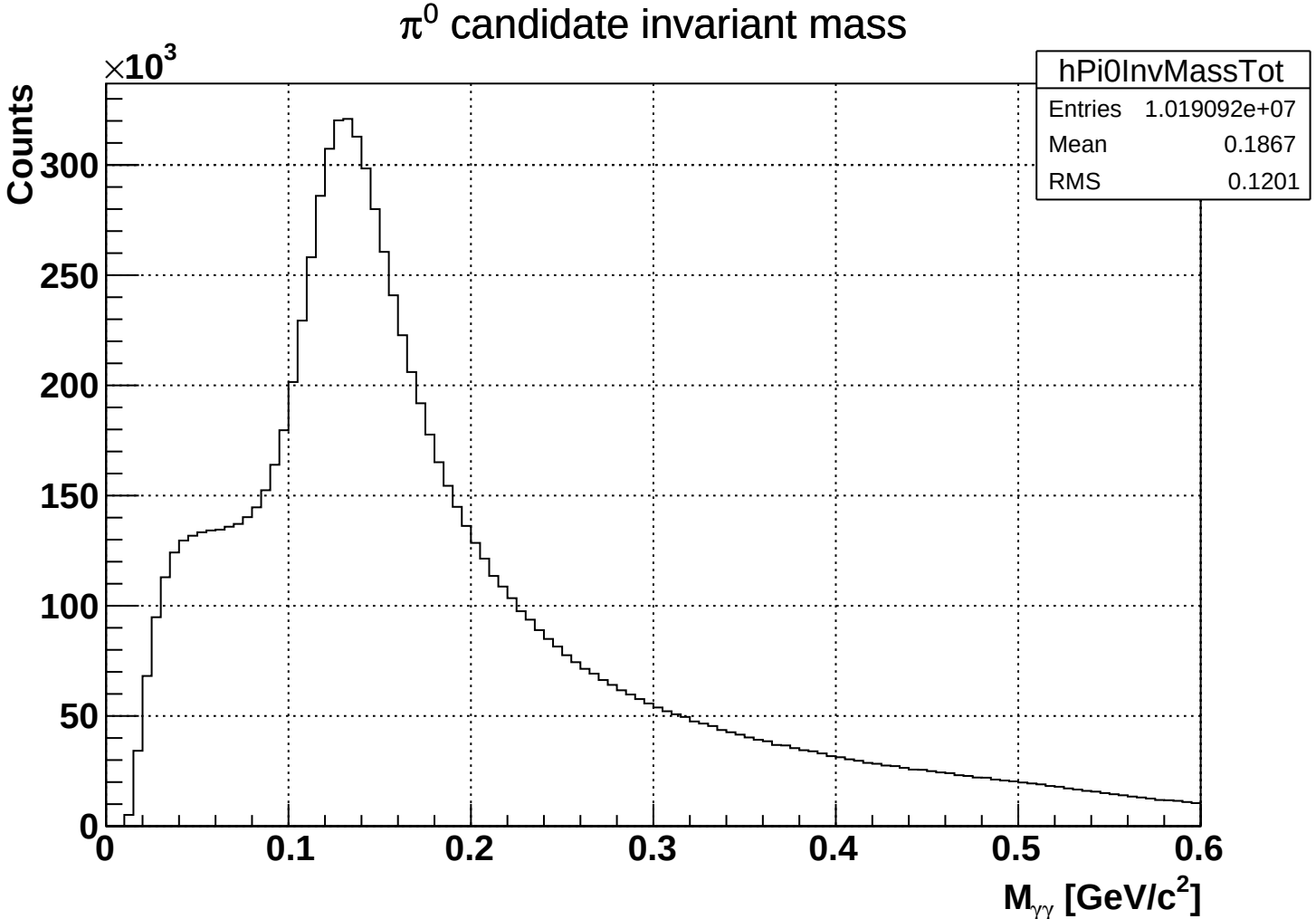

π^0 candidate phys. ϕ
hPi0Phi
Entries 1.019092e+07
Mean -0.001447
RMS 1.846
Counts
$\times 10^3$
180
160
140
120
100
80
60
40
20
0
-3
-2
-1
0
1
2
3
ϕ

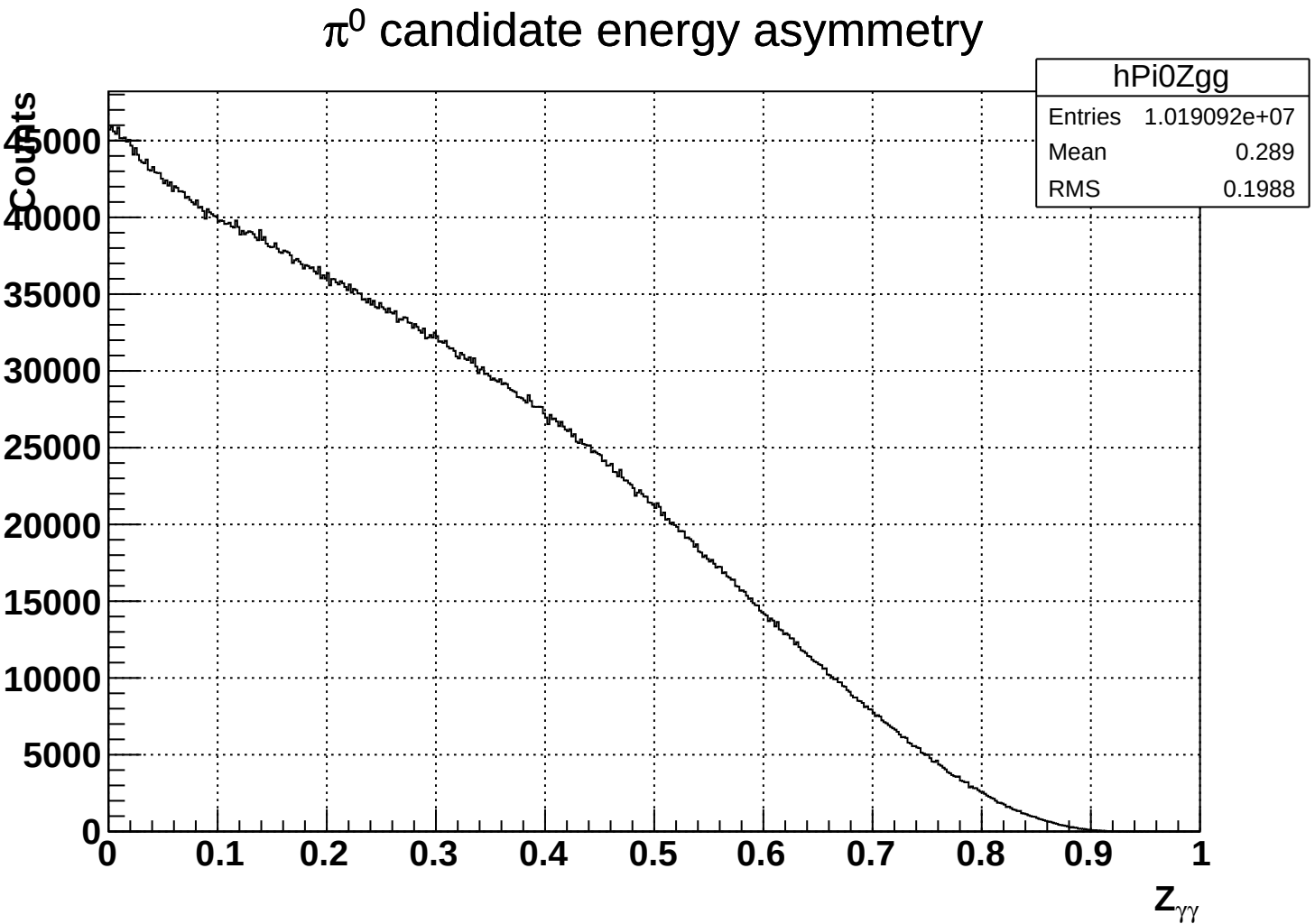

π^0 candidate η vs. ϕ
hPi0EtaPhi
Entries 1.019092e+07
Mean x 1.542
Mean y -0.001447
RMS x 0.2409
RMS y 1.846
ϕ
3
2
1
0
-1
-2
-3
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η
1500
1000
500
0

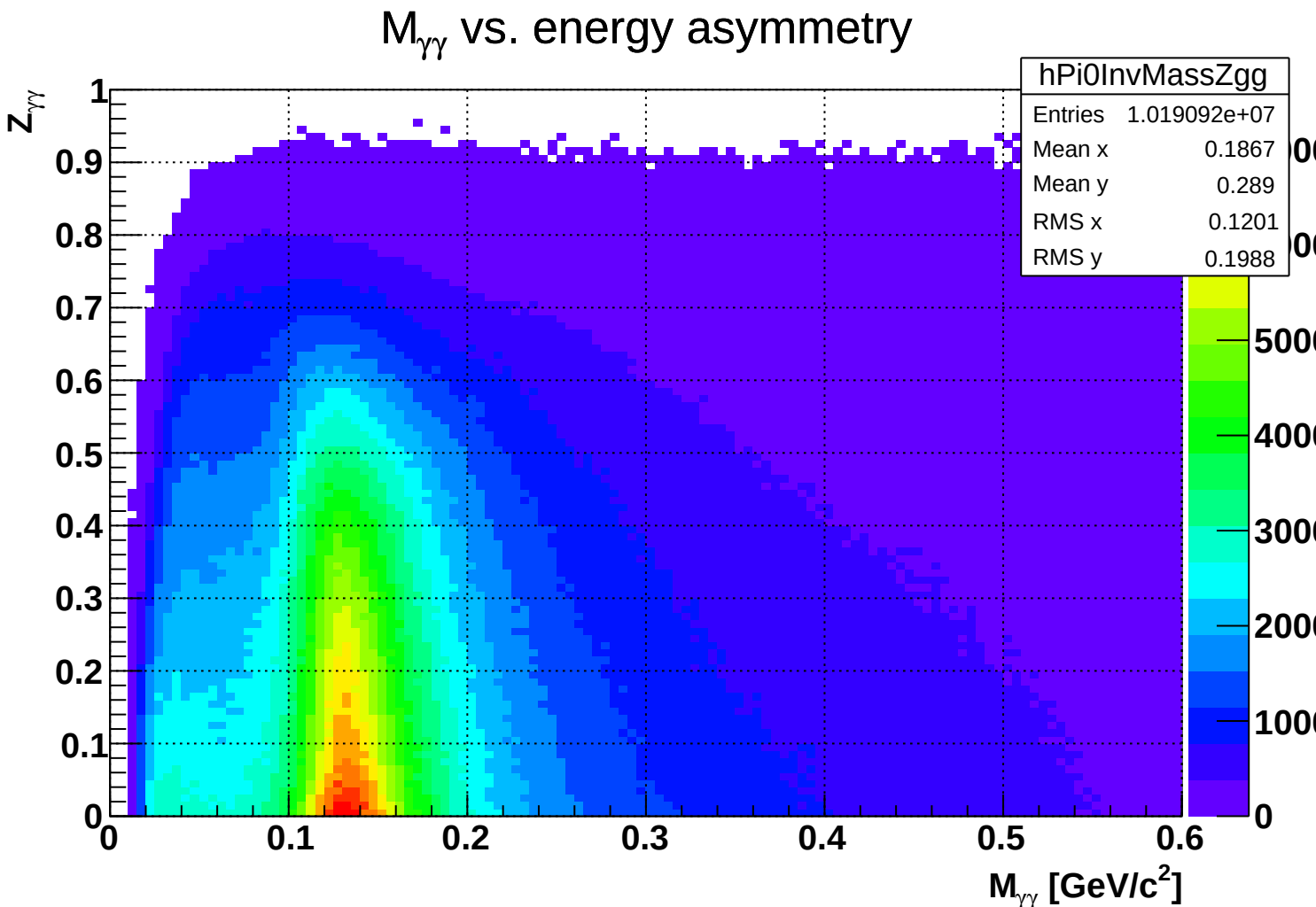

$M_{\gamma\gamma}$ vs. p_T
hPi0InvMassPT
Entries 1.019092e+07
Mean x 0.1867
Mean y 4.637
RMS x 0.1201
RMS y 2.05
$p_T^{\pi^0}$ [GeV/c]
$M_{\gamma\gamma}$ [GeV/c^2]
0
5
10
15
20
25
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000

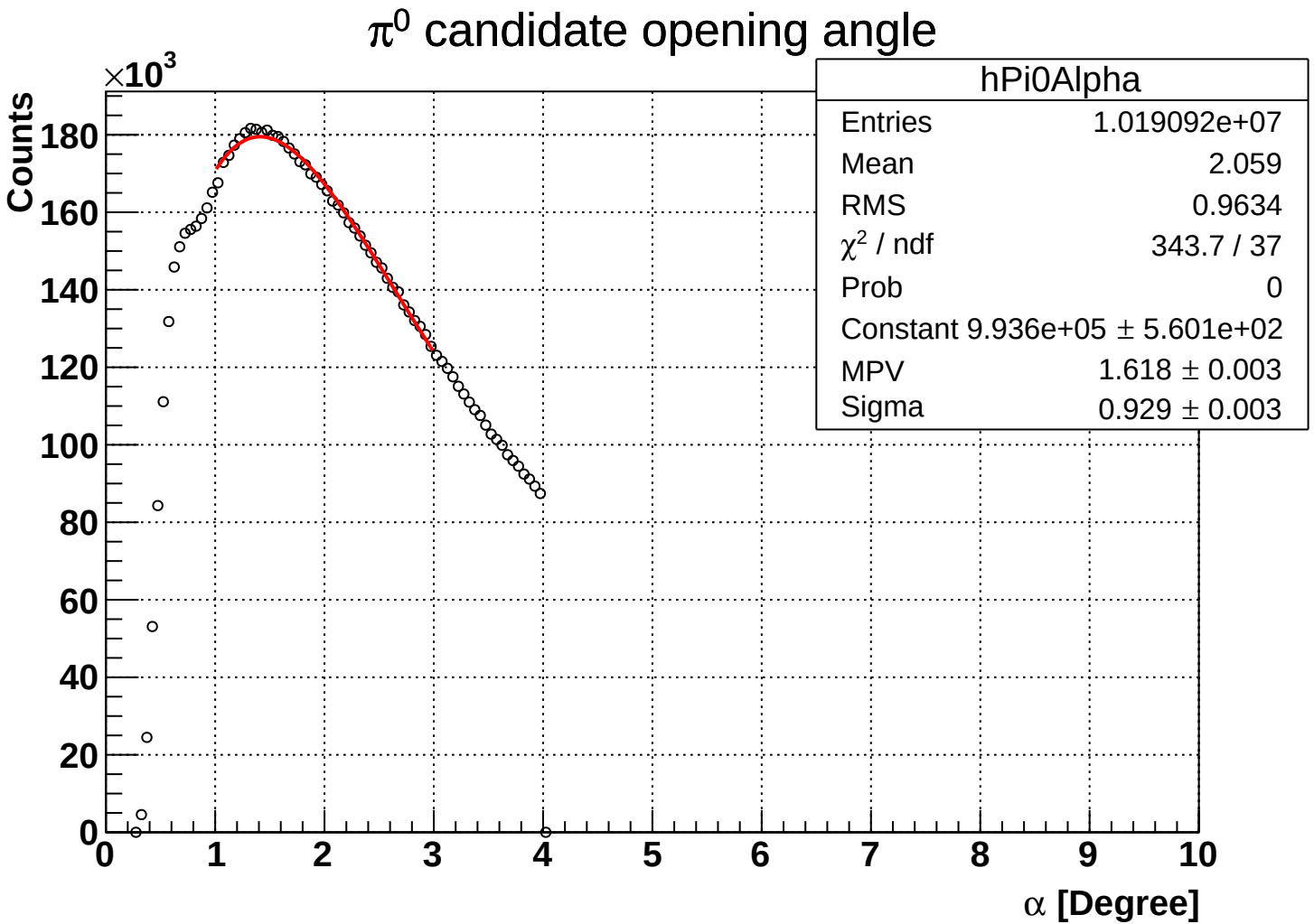

$M_{\gamma\gamma}$ vs. η
hPi0InvMassEta
Entries 1.019092e+07
Mean x 0.1867
Mean y 1.542
RMS x 0.1201
RMS y 0.2409
η
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
3500
3000
2500
2000
1500
1000
500
0

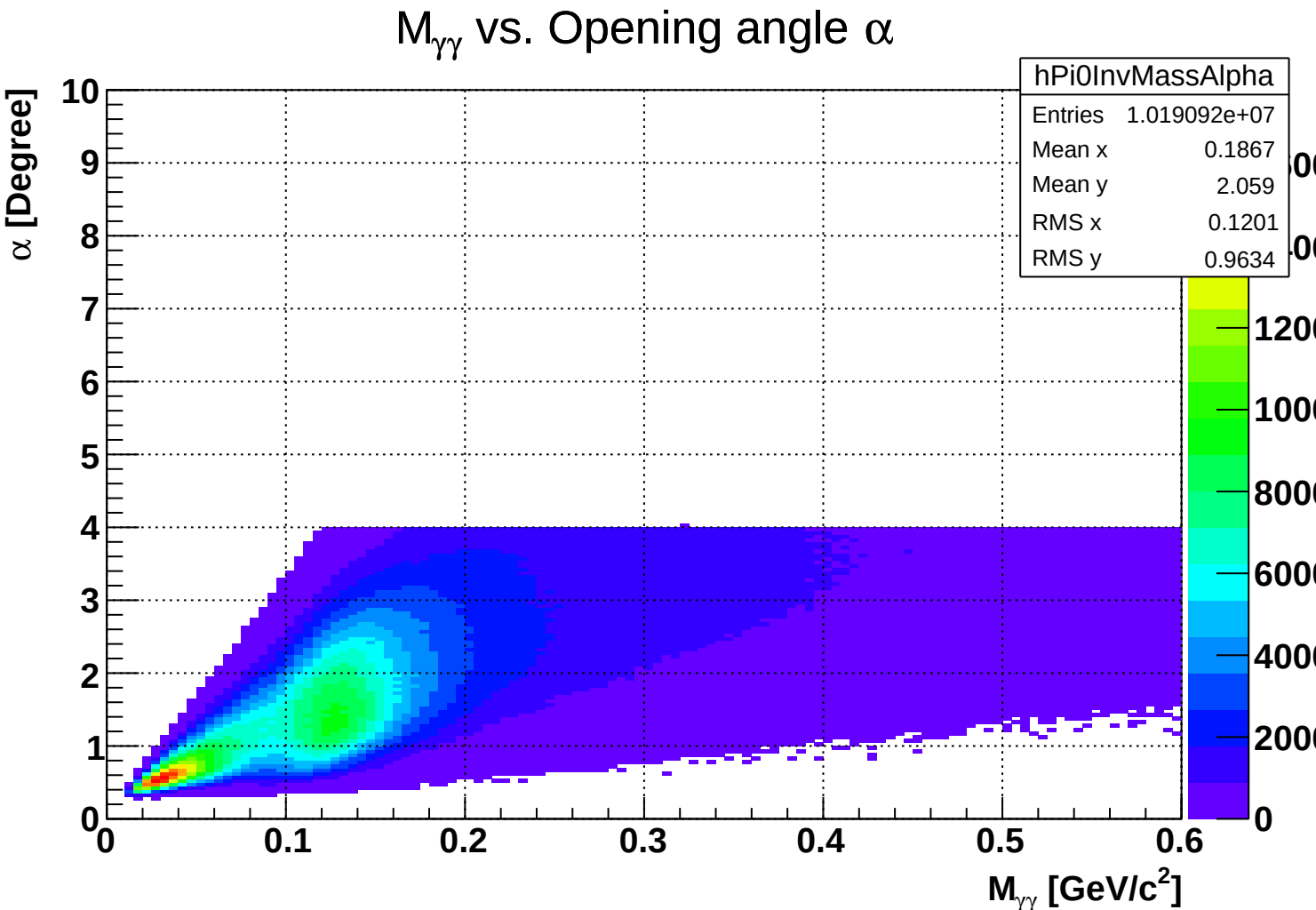

$M_{\gamma\gamma}$ vs. ϕ
hPi0InvMassPhi
Entries 1.019092e+07
Mean x 0.1867
Mean y -0.001447
RMS x 0.1201
RMS y 1.846
ϕ
3
2
1
0
-1
-2
-3
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
4000
3000
2000
1000
0

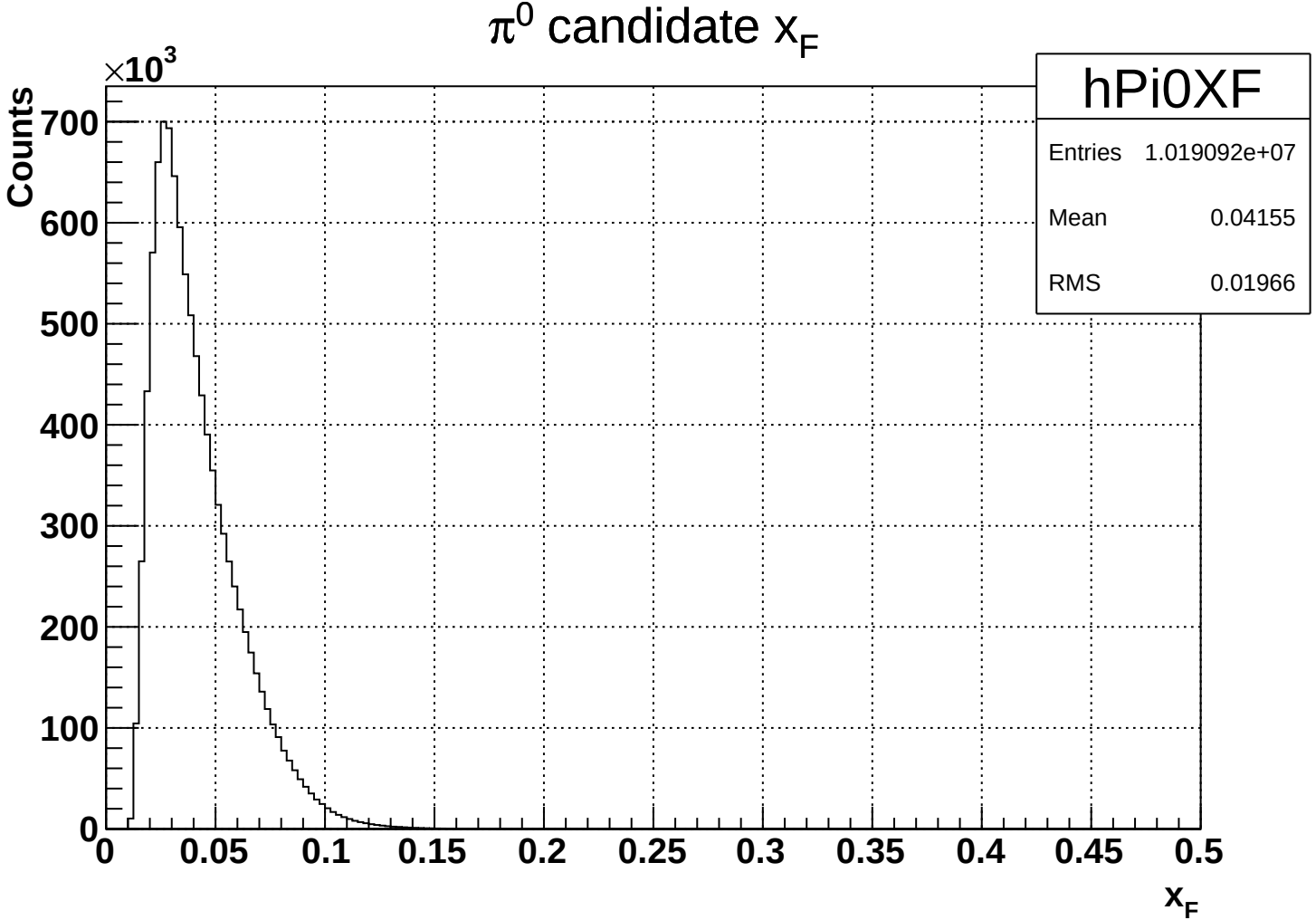

π0 candidate invariant mass
hPi0InvMassTot
Entries 1.019092e+07
Mean 0.1867
RMS 0.1201
Counts
×10^3
300
250
200
150
100
50
0
0
0.1
0.2
0.3
0.4
0.5
0.6
Mγγ [GeV/c2]

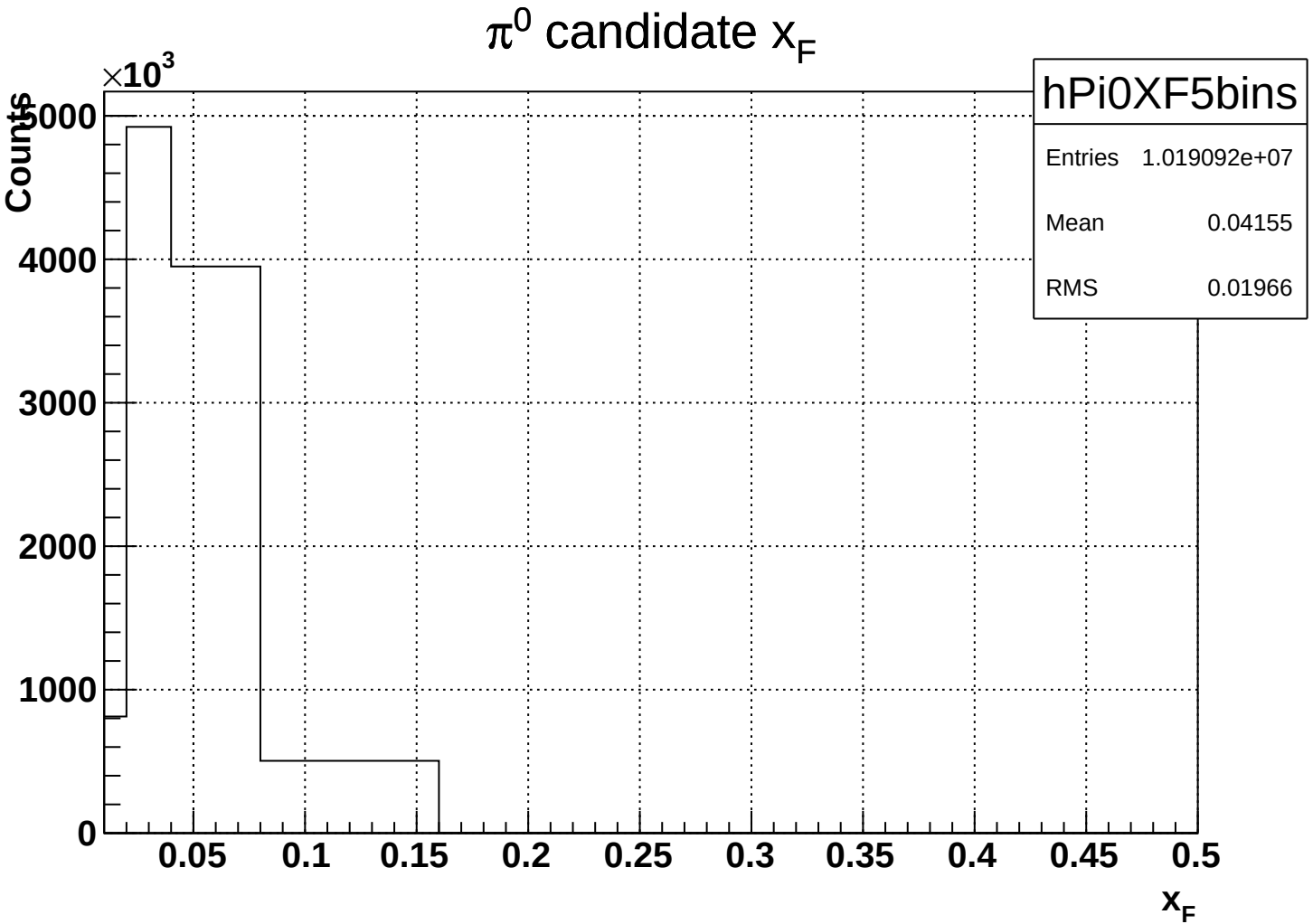

π0 candidate energy asymmetry
hPi0Zgg
Entries 1.019092e+07
Mean 0.289
RMS 0.1988
Counts
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Zγγ

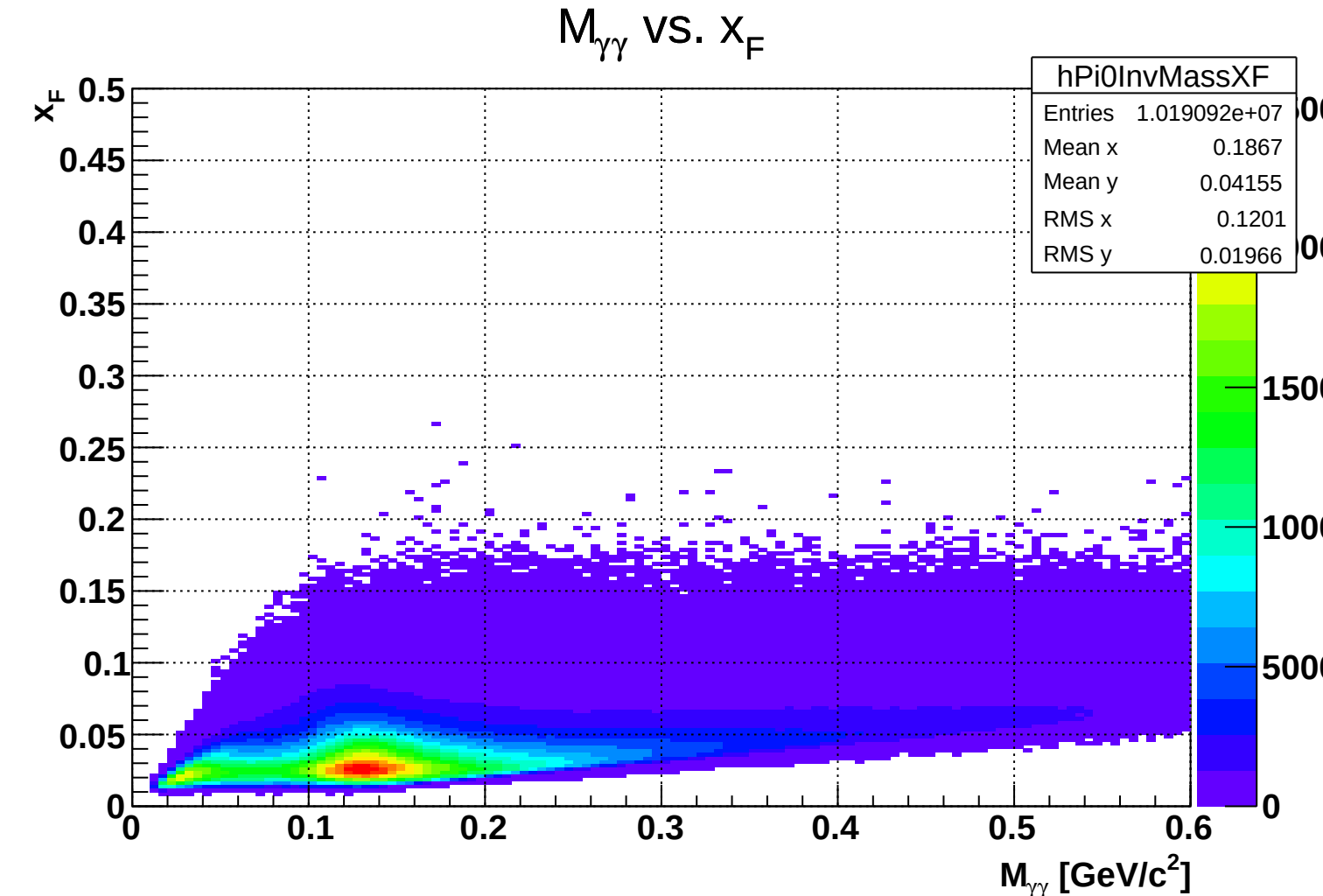

$M_{\gamma\gamma}$ vs. energy asymmetry
hPi0InvMassZgg
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.289
RMS x 0.1201
RMS y 0.1988
$Z_{\gamma\gamma}$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1000
2000
3000
4000
5000

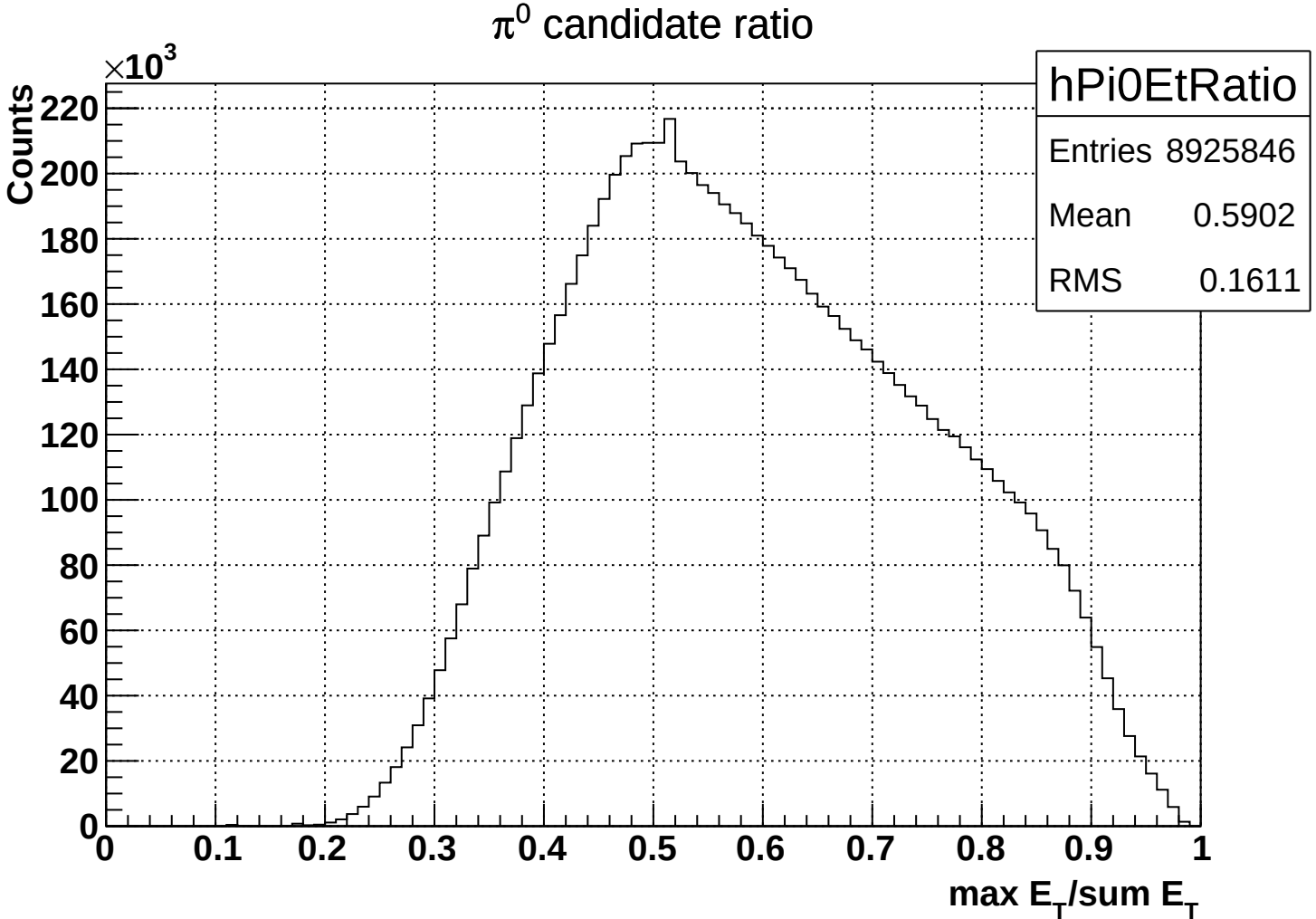

π^0 candidate opening angle
hPi0Alpha
Entries 1.019092e+07
Mean 2.059
RMS 0.9634
χ^2 / ndf 343.7 / 37
Prob 0
Constant 9.936e+05 ± 5.601e+02
MPV 1.618 ± 0.003
Sigma 0.929 ± 0.003
Counts
$\times 10^3$
0
20
40
60
80
100
120
140
160
180
0
1
2
3
4
5
6
7
8
9
10
α [Degree]

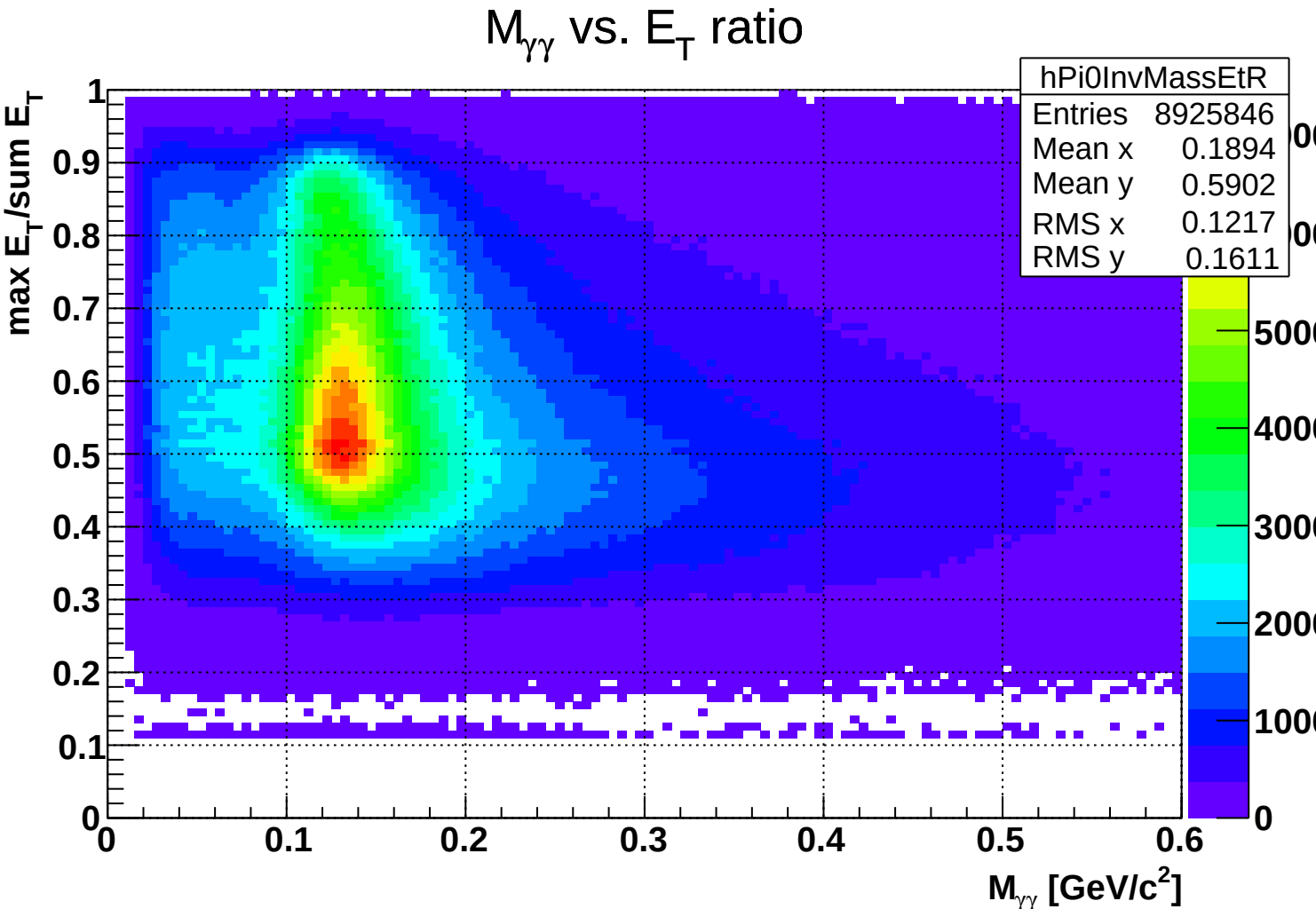

$M_{\gamma\gamma}$ vs. Opening angle α
hPi0InvMassAlpha
Entries 1.019092e+07
Mean x 0.1867
Mean y 2.059
RMS x 0.1201
RMS y 0.9634
α [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
1
2
3
4
5
6
7
8
9
10
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000
1000
1200

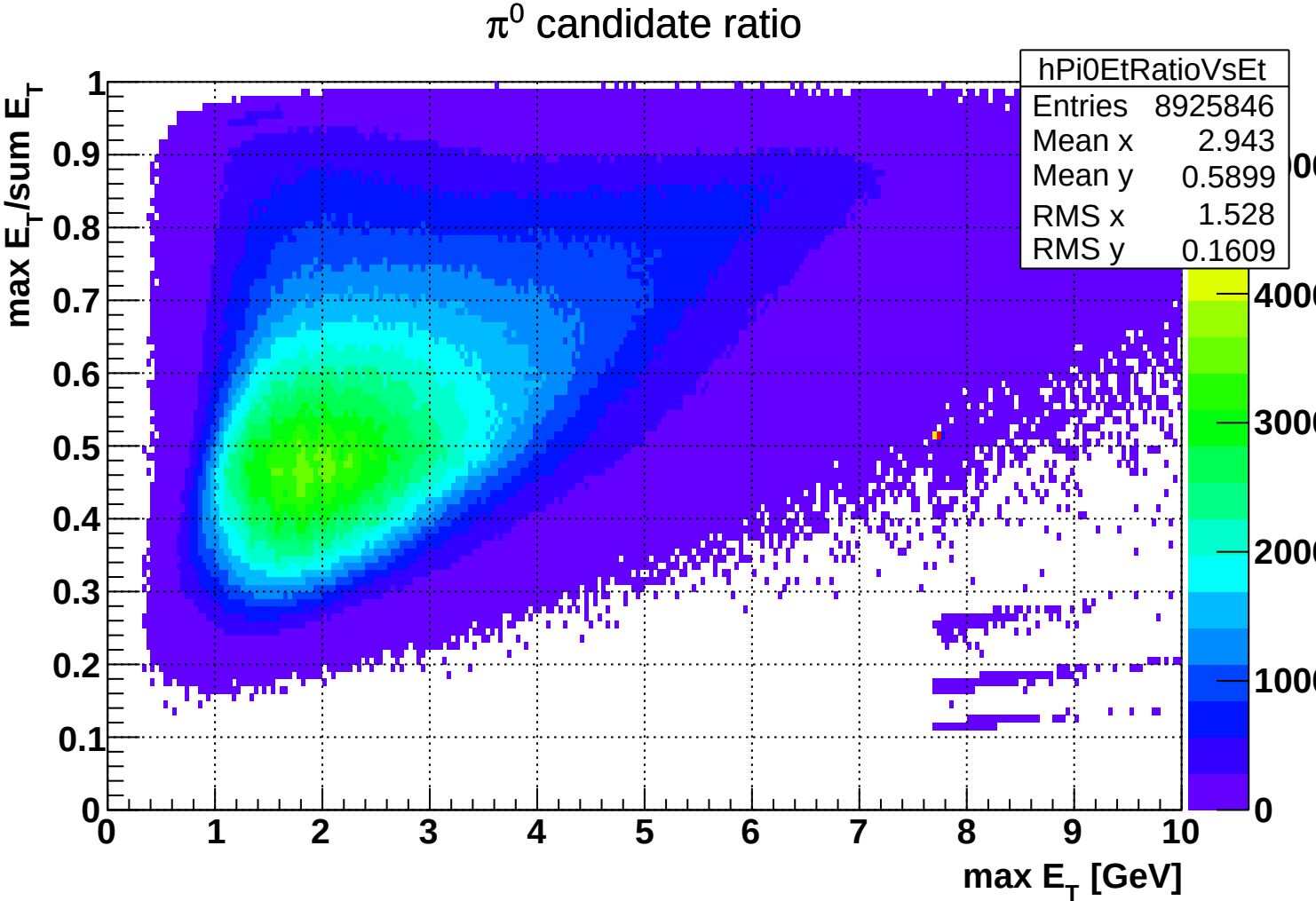

π^0 candidate x_F
hPi0XF
Entries 1.019092e+07
Mean 0.04155
RMS 0.01966
Counts
$\times 10^3$
700
600
500
400
300
200
100
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
x_F

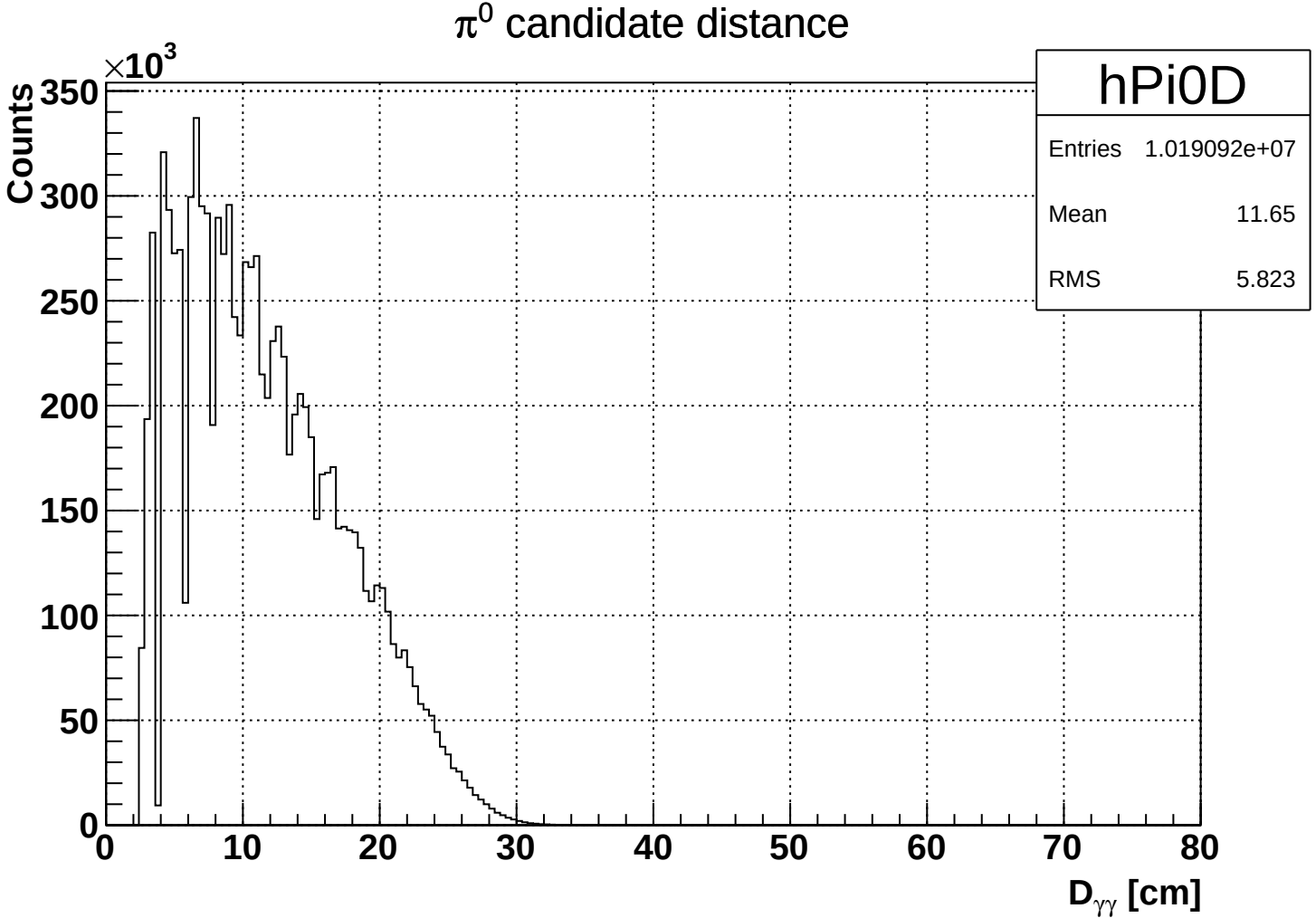

π^0 candidate x_F
hPi0XF5bins
Entries 1.019092e+07
Mean 0.04155
RMS 0.01966
Counts
$\times 10^3$
5000
4000
3000
2000
1000
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
x_F

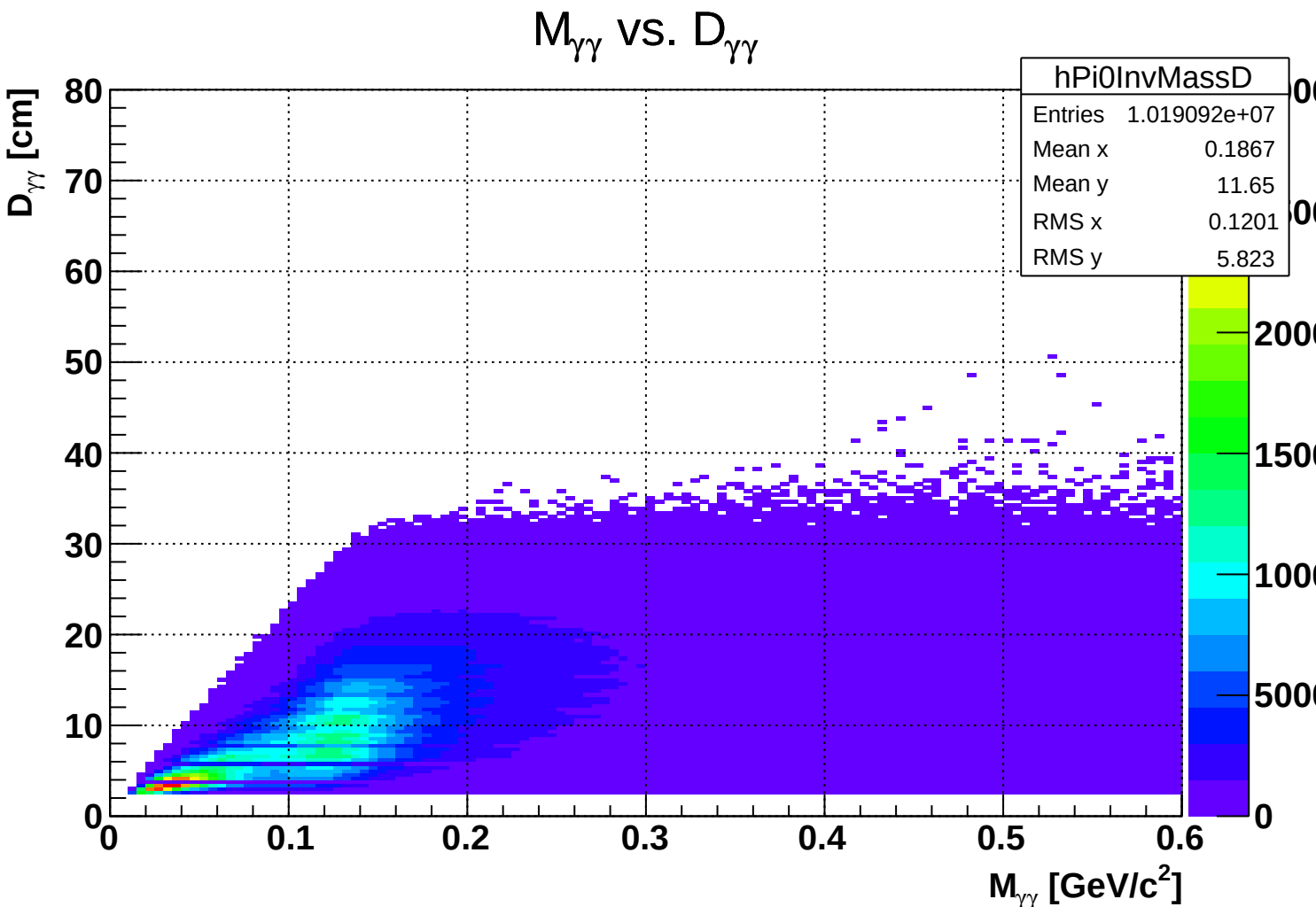

$M_{\gamma\gamma}$ vs. x_F
hPi0InvMassXF
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.04155
RMS x 0.1201
RMS y 0.01966
x_F
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0.1
0.2
0.3
0.4
0.5
0.6
1500
1000
5000
$M_{\gamma\gamma}$ [GeV/c^2]

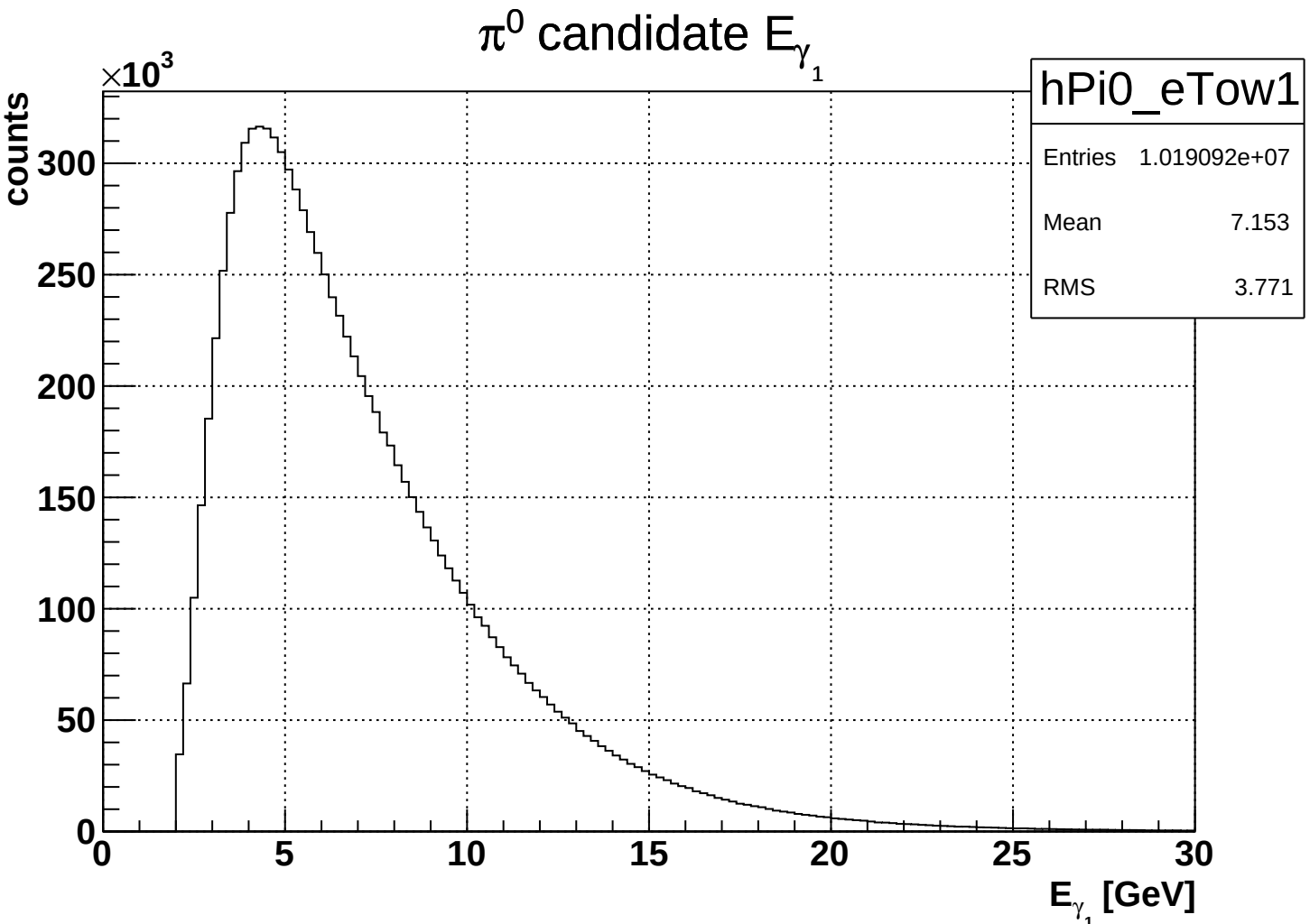

π^0 candidate ratio
hPi0EtRatio
Entries 8925846
Mean 0.5902
RMS 0.1611
Counts
$\times 10^3$
0
20
40
60
80
100
120
140
160
180
200
220
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
max E_T/sum E_T

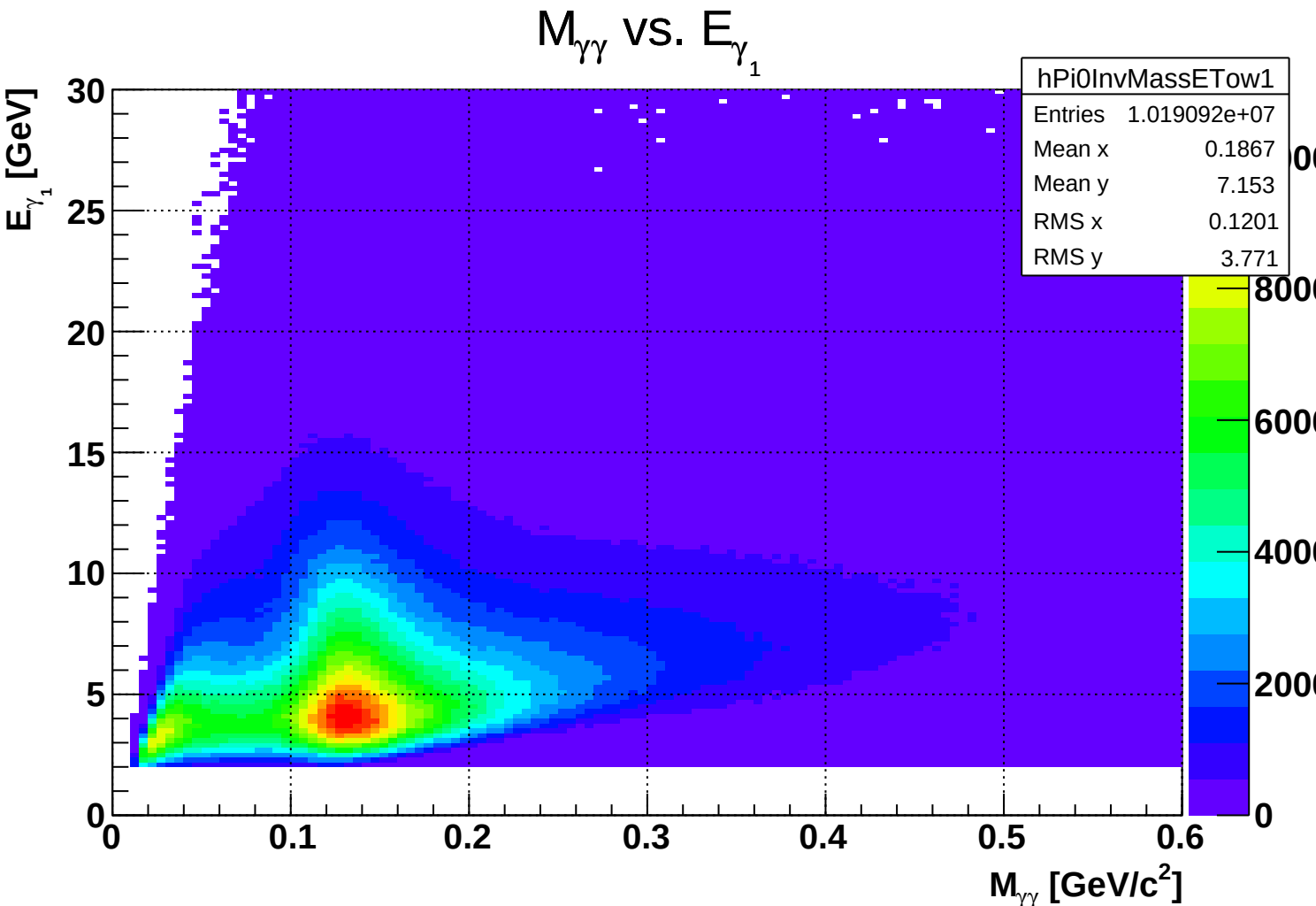

$M_{\gamma\gamma}$ vs. E_T ratio
hPi0InvMassEtR
Entries 8925846
Mean x 0.1894
Mean y 0.5902
RMS x 0.1217
RMS y 0.1611
max E_T/sum E_T
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1000
2000
3000
4000
5000

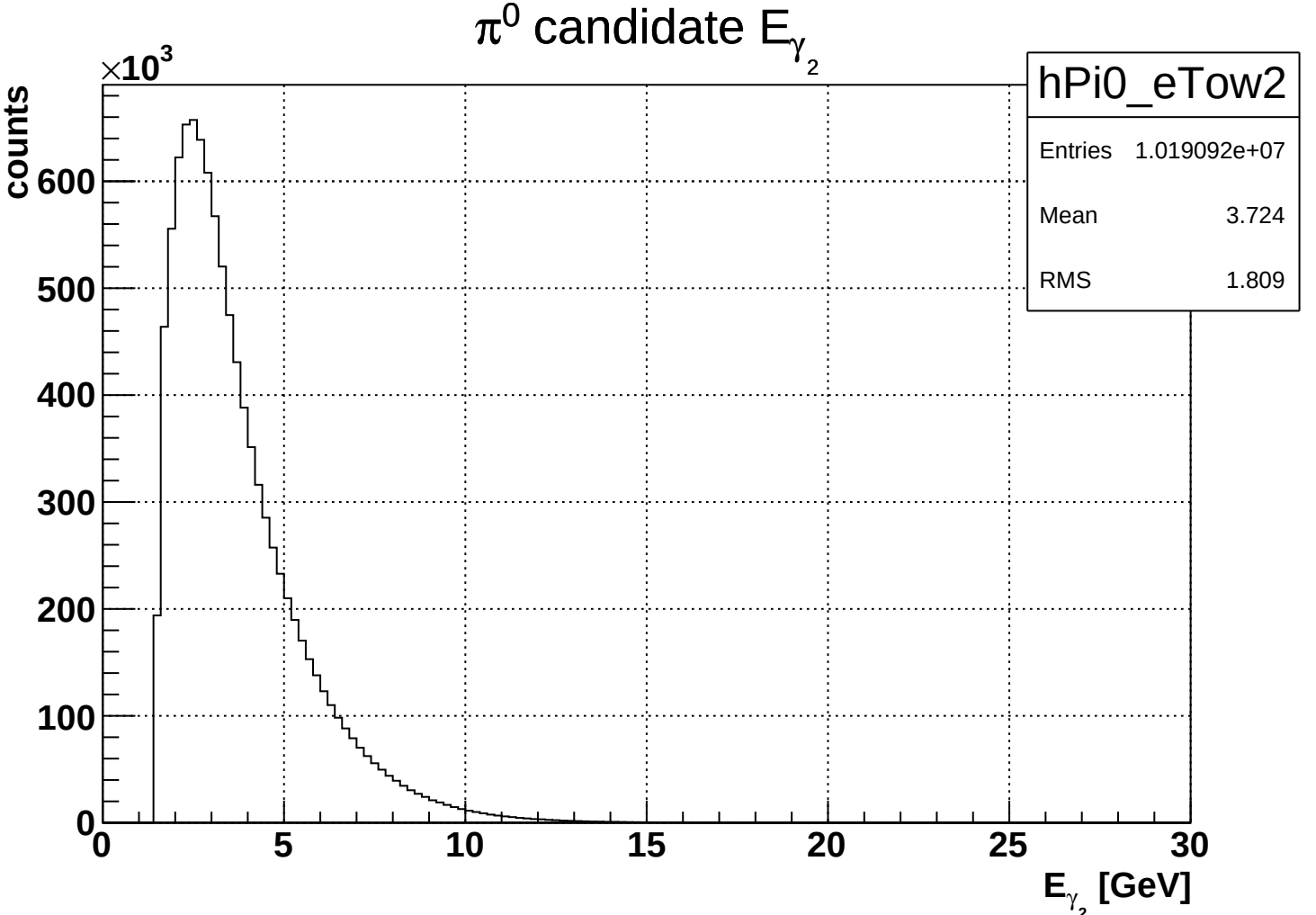

π^0 candidate ratio
hPi0EtRatioVsEt
Entries 8925846
Mean x 2.943
Mean y 0.5899
RMS x 1.528
RMS y 0.1609
max E_T/sum E_T
max E_T [GeV]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
1
2
3
4
5
6
7
8
9
10
0
1000
2000
3000
4000

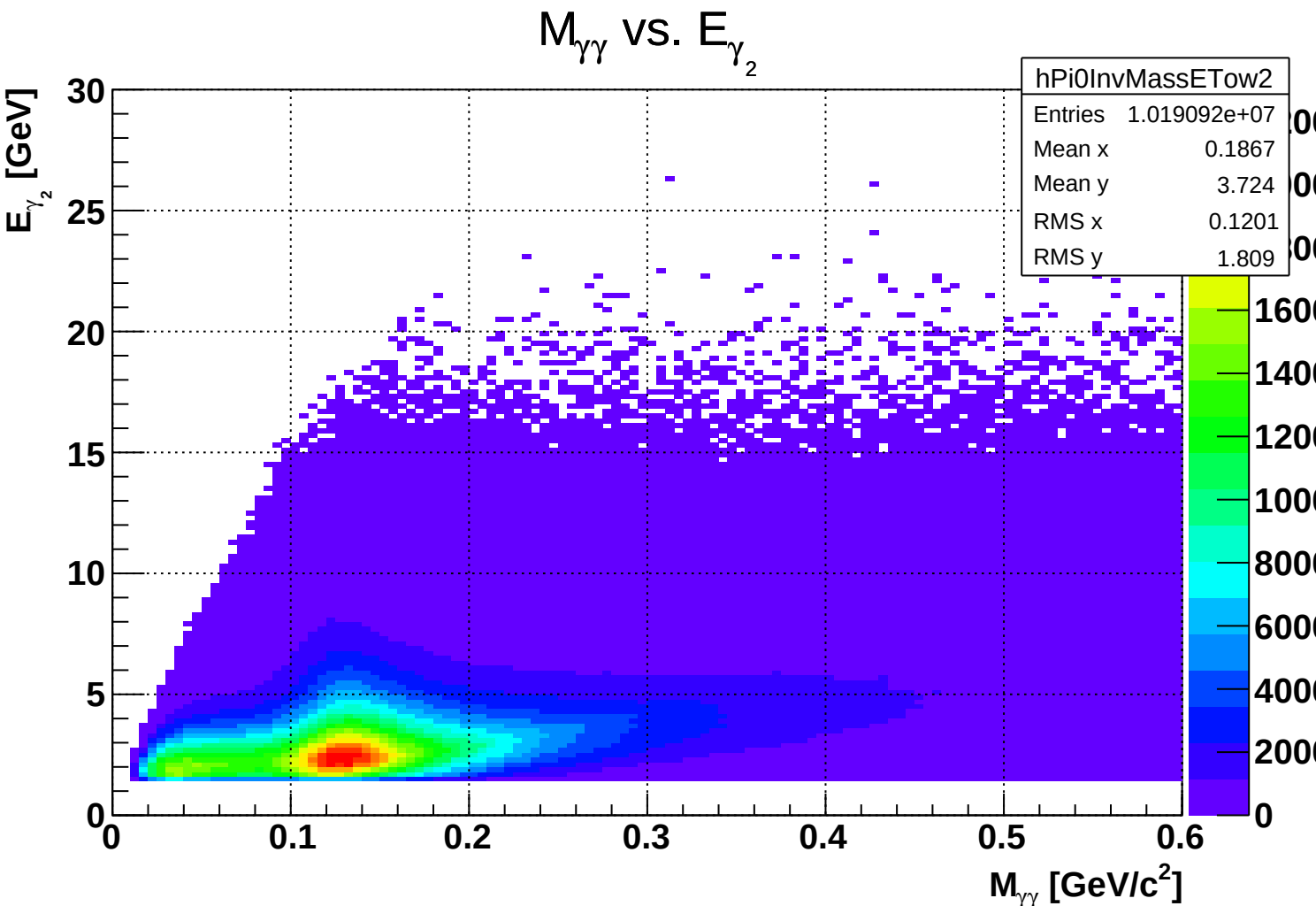

π^0 candidate distance
hPi0D
Entries 1.019092e+07
Mean 11.65
RMS 5.823
Counts
$\times 10^3$
350
300
250
200
150
100
50
0
0
10
20
30
40
50
60
70
80
$D_{\gamma\gamma}$ [cm]

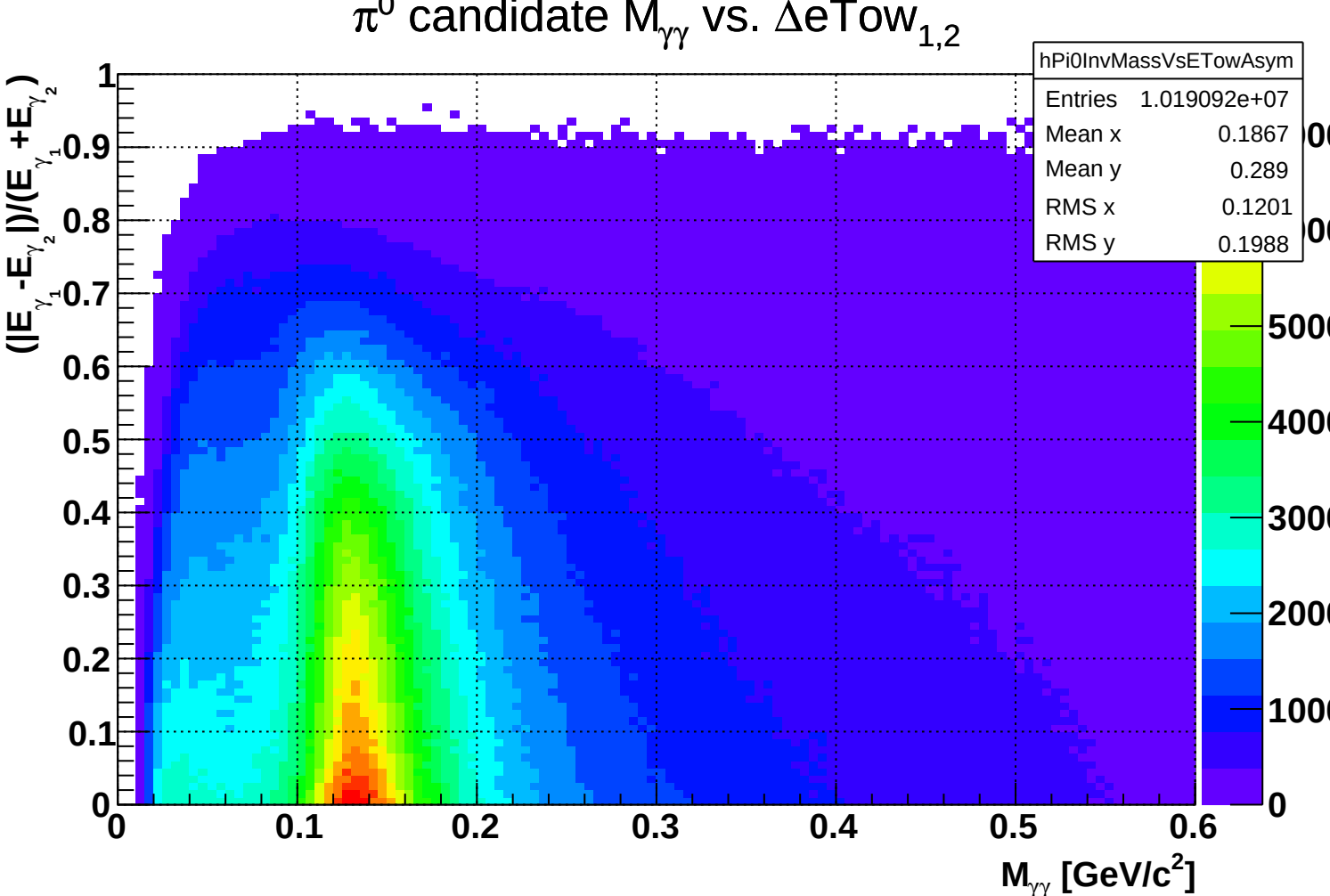

$M_{\gamma\gamma}$ vs. $D_{\gamma\gamma}$
hPi0InvMassD
Entries 1.019092e+07
Mean x 0.1867
Mean y 11.65
RMS x 0.1201
RMS y 5.823
$D_{\gamma\gamma}$ [cm]
$M_{\gamma\gamma}$ [GeV/c^2]
0
10
20
30
40
50
60
70
80
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000

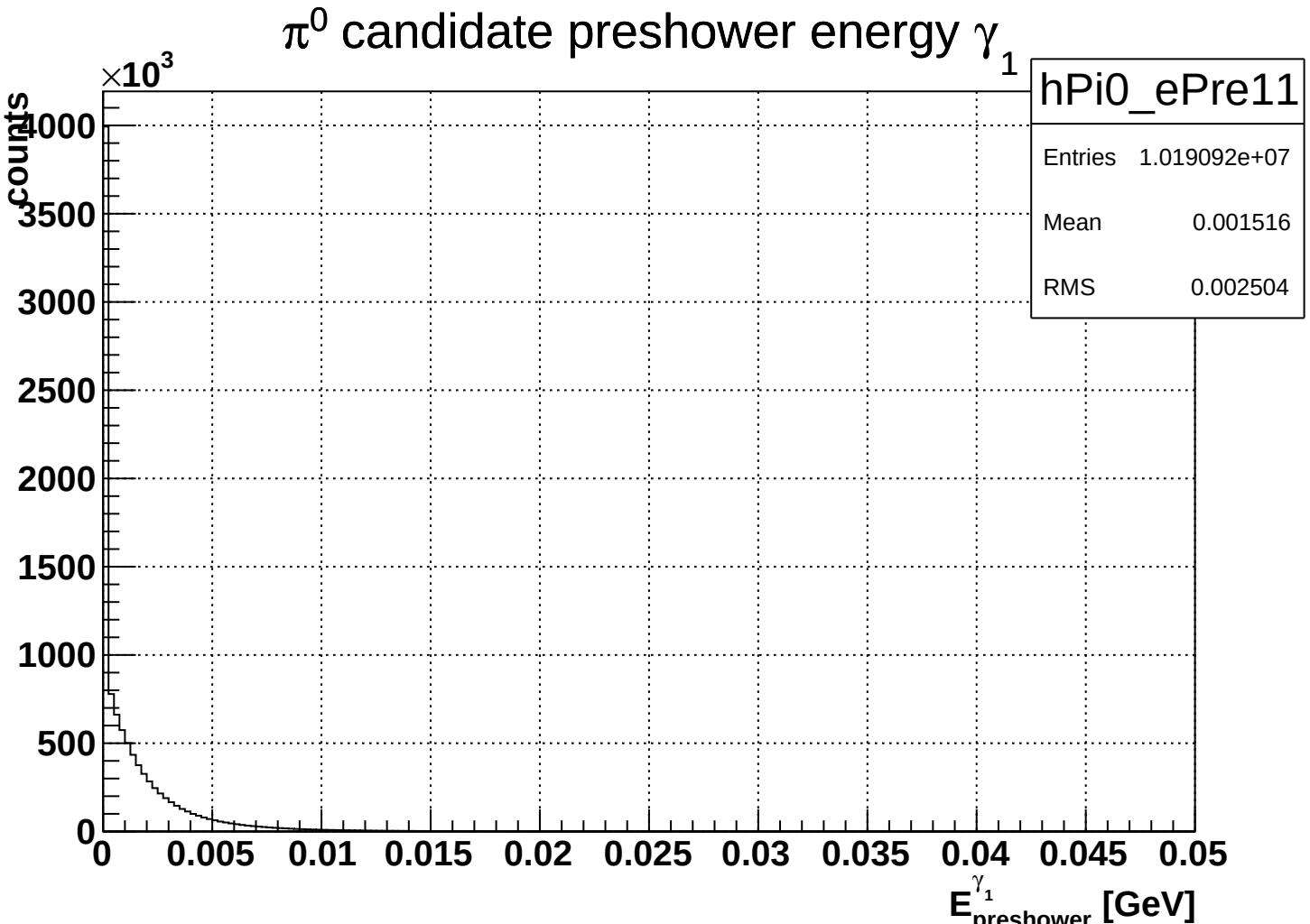

π^0 candidate E_{γ_1}
hPi0_eTow1
Entries 1.019092e+07
Mean 7.153
RMS 3.771
counts
$\times 10^3$
300
250
200
150
100
50
0
0
5
10
15
20
25
30
E_{γ_1} [GeV]

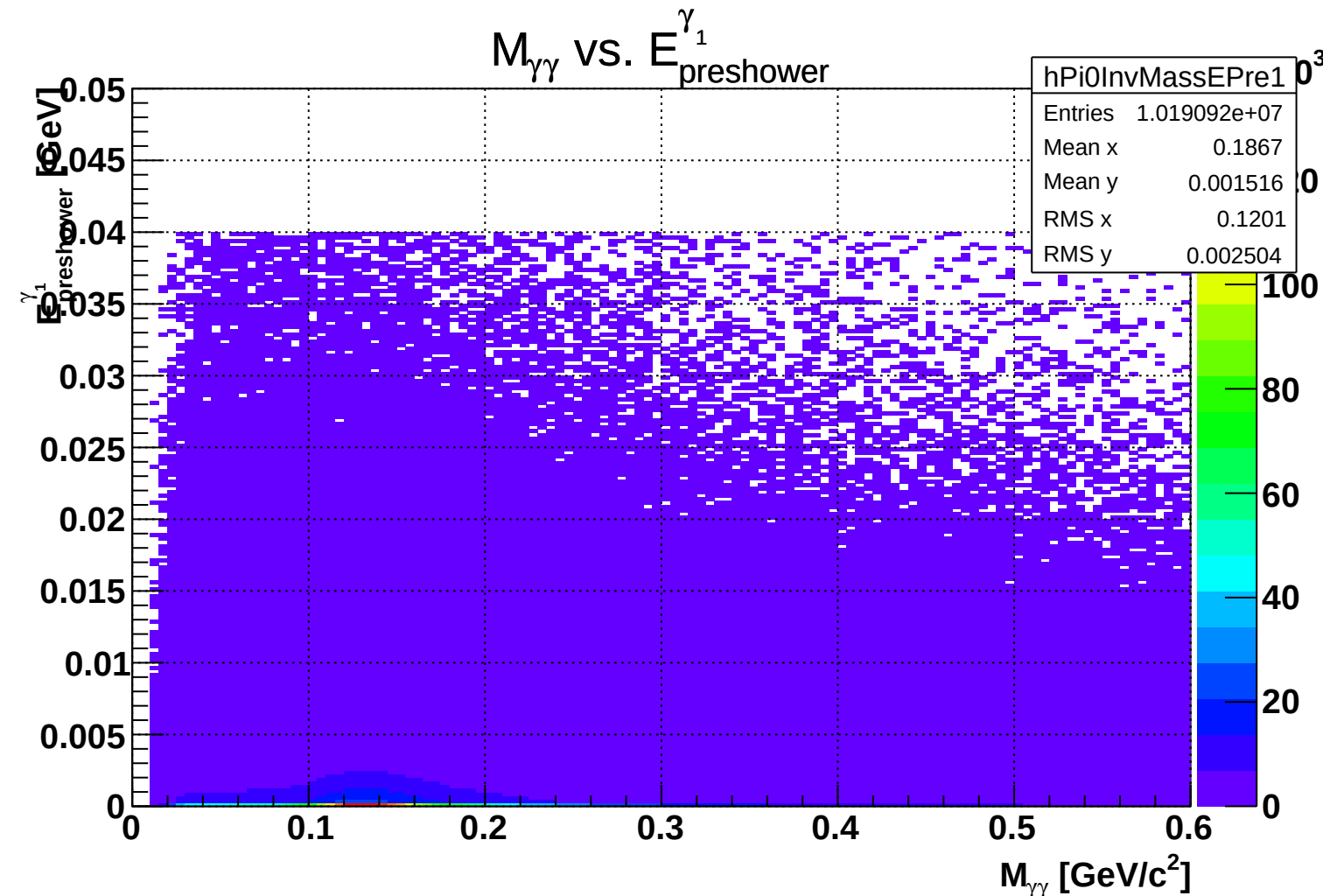

$M_{\gamma\gamma}$ vs. E_{γ_1}
hPi0InvMassETow1
Entries 1.019092e+07
Mean x 0.1867
Mean y 7.153
RMS x 0.1201
RMS y 3.771
E_{γ_1} [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
5
10
15
20
25
30
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000

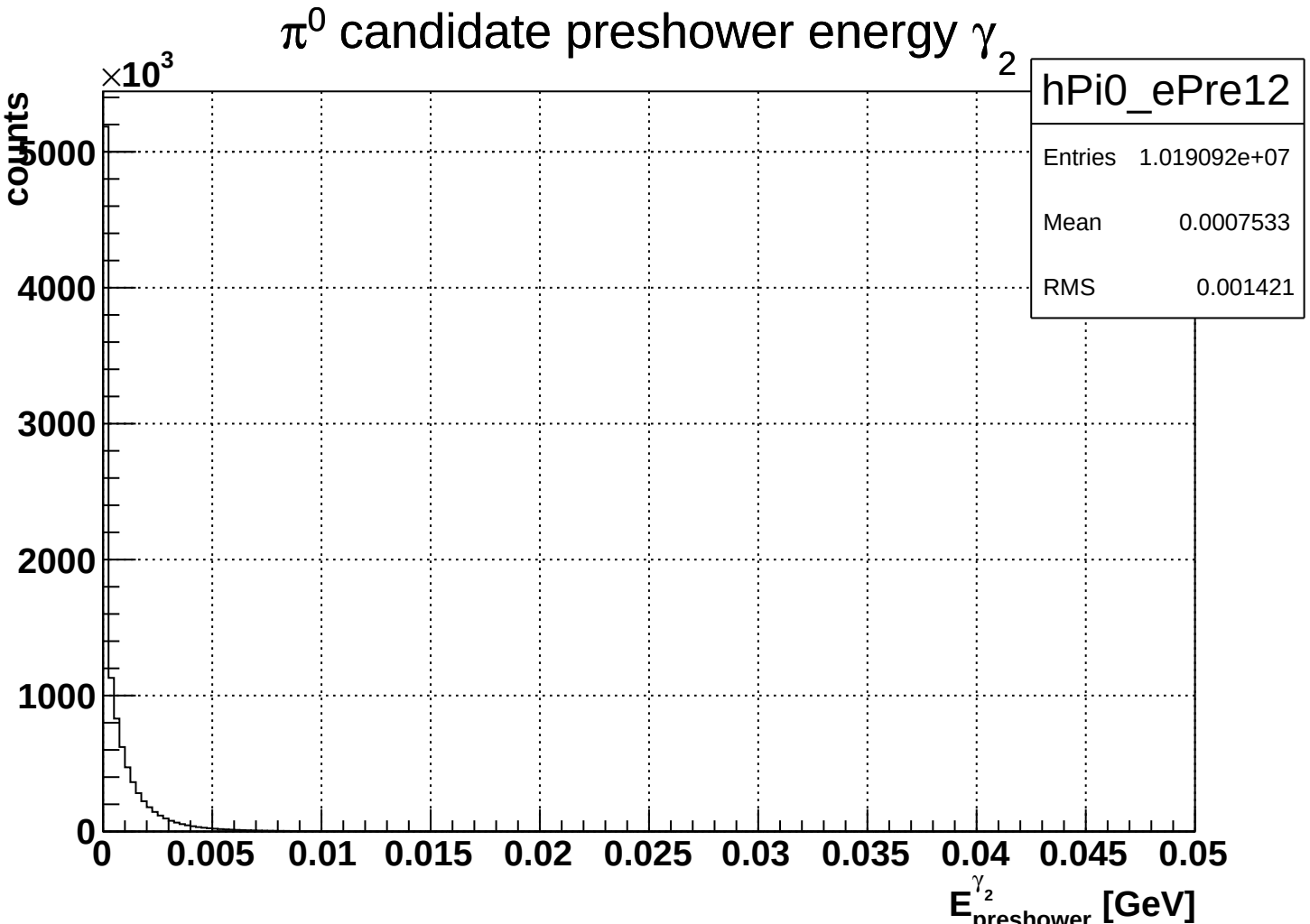

π^0 candidate E_{γ_2}
hPi0_eTow2
Entries 1.019092e+07
Mean 3.724
RMS 1.809
counts
$\times 10^3$
600
500
400
300
200
100
0
0
5
10
15
20
25
30
E_{γ_2} [GeV]

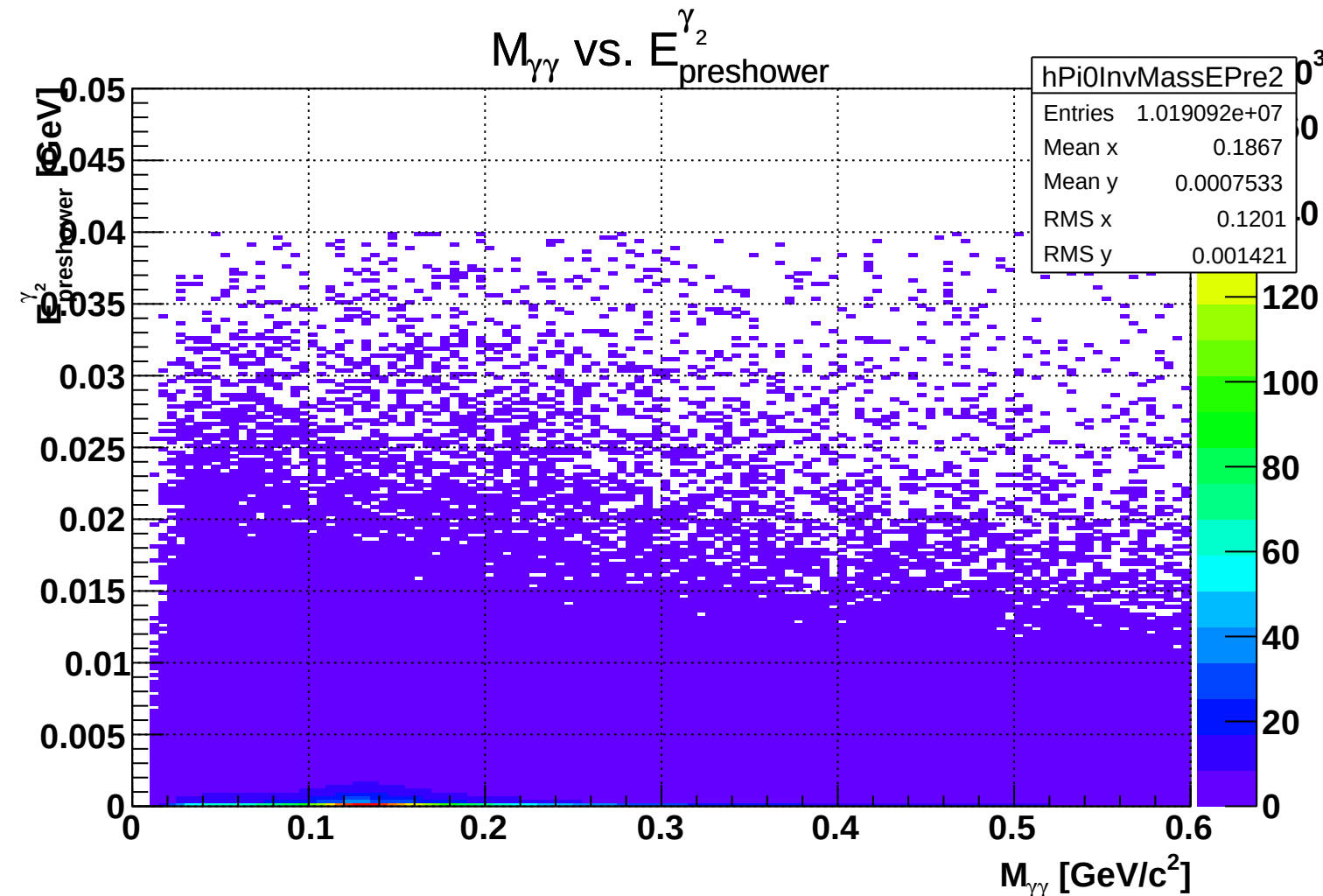

$M_{\gamma\gamma}$ vs. E_{γ_2}
hPi0InvMassETow2
Entries 1.019092e+07
Mean x 0.1867
Mean y 3.724
RMS x 0.1201
RMS y 1.809
E_{γ_2} [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
5
10
15
20
25
30
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000
10000
12000
14000
16000

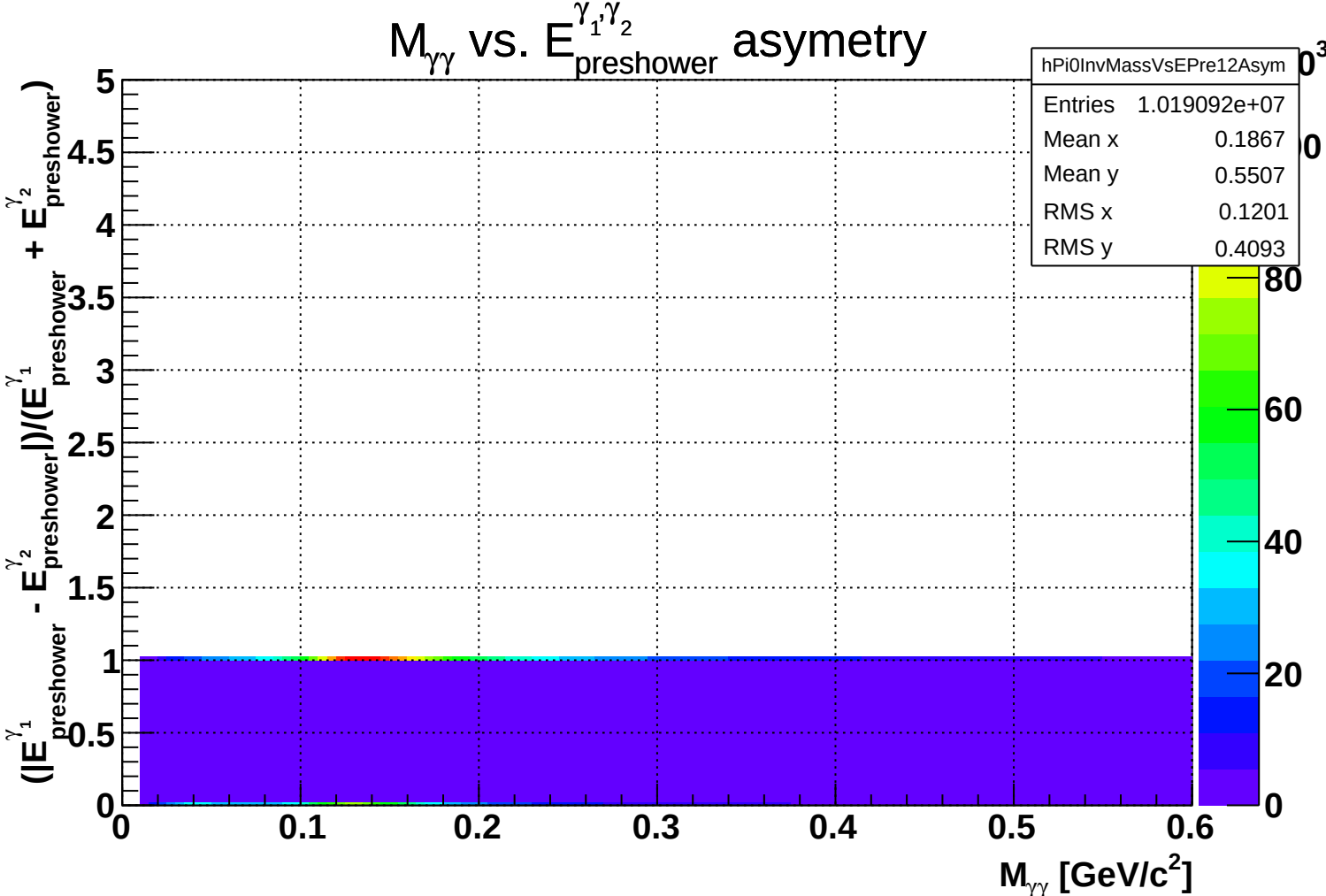

π^0 candidate $M_{\gamma\gamma}$ vs. $\Delta eTow_{1,2}$
hPi0InvMassVsETowAsym
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.289
RMS x 0.1201
RMS y 0.1988
$(|E_{\gamma_1}-E_{\gamma_2}|)/(E_{\gamma_1}+E_{\gamma_2})$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1000
2000
3000
4000
5000

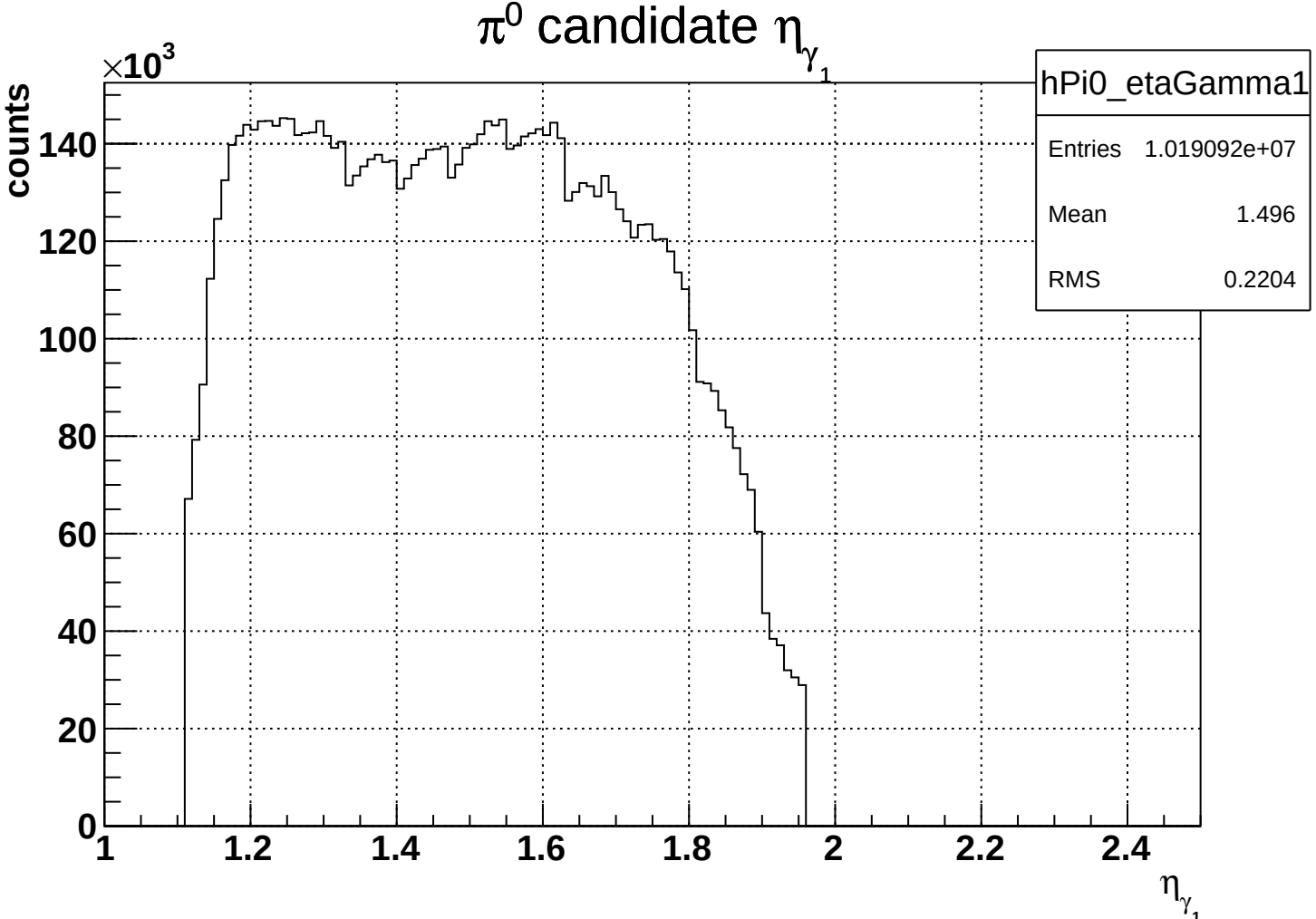

π^0 candidate preshower energy γ_1
hPi0_ePre11
Entries 1.019092e+07
Mean 0.001516
RMS 0.002504
counts
$\times 10^3$
4000
3500
3000
2500
2000
1500
1000
500
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
$E^{\gamma_1}_{preshower}$ [GeV]

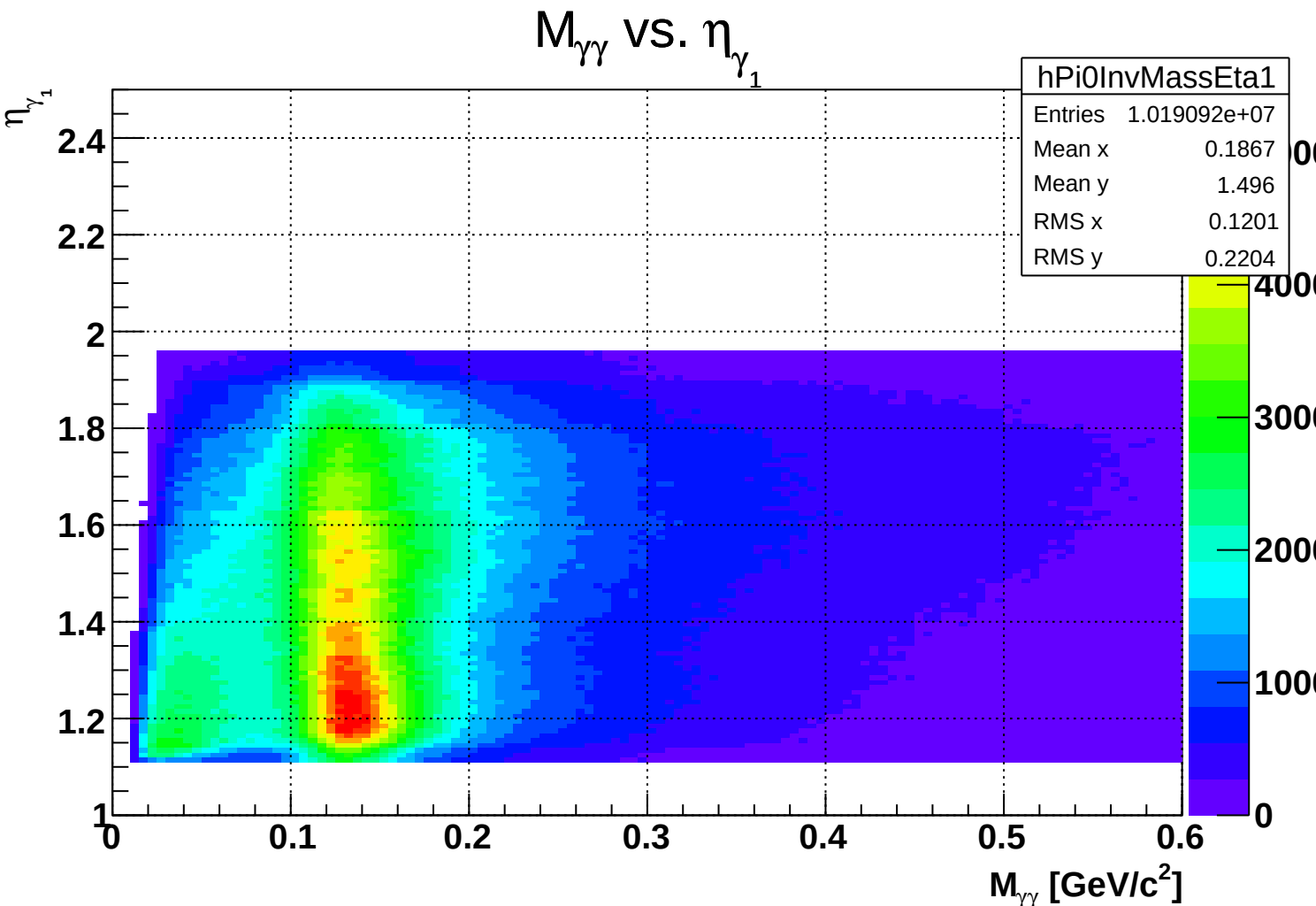

$M_{\gamma\gamma}$ vs. $E^{\gamma_1}_{preshower}$
hPi0InvMassEPre1
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.001516
RMS x 0.1201
RMS y 0.002504
$E^{\gamma_1}_{preshower}$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
0.1
0.2
0.3
0.4
0.5
0.6
20
40
60
80
100

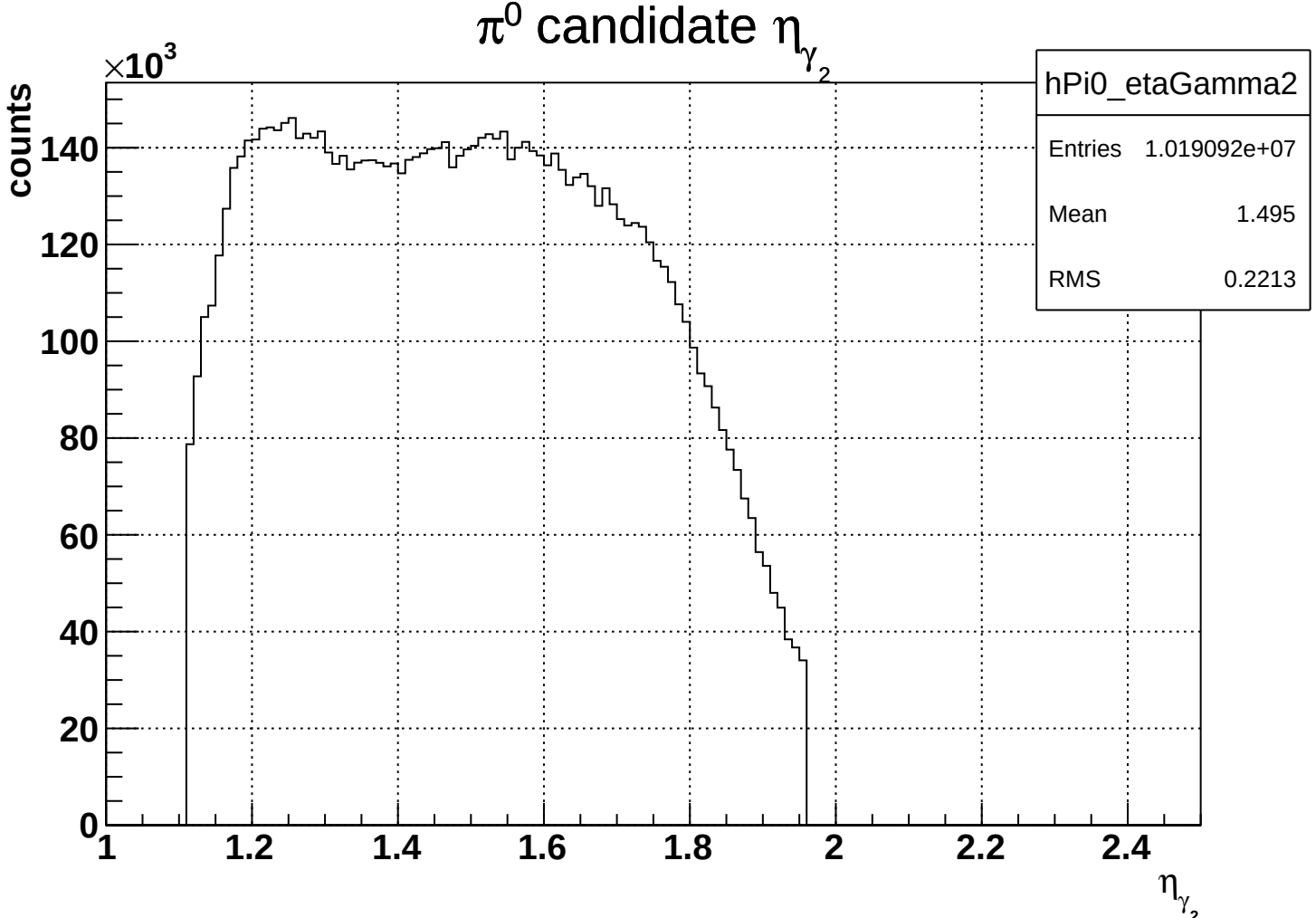

π^0 candidate preshower energy γ_2
hPi0_ePre12
Entries 1.019092e+07
Mean 0.0007533
RMS 0.001421
counts
$\times 10^3$
5000
4000
3000
2000
1000
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
$E^{\gamma_2}_{preshower}$ [GeV]

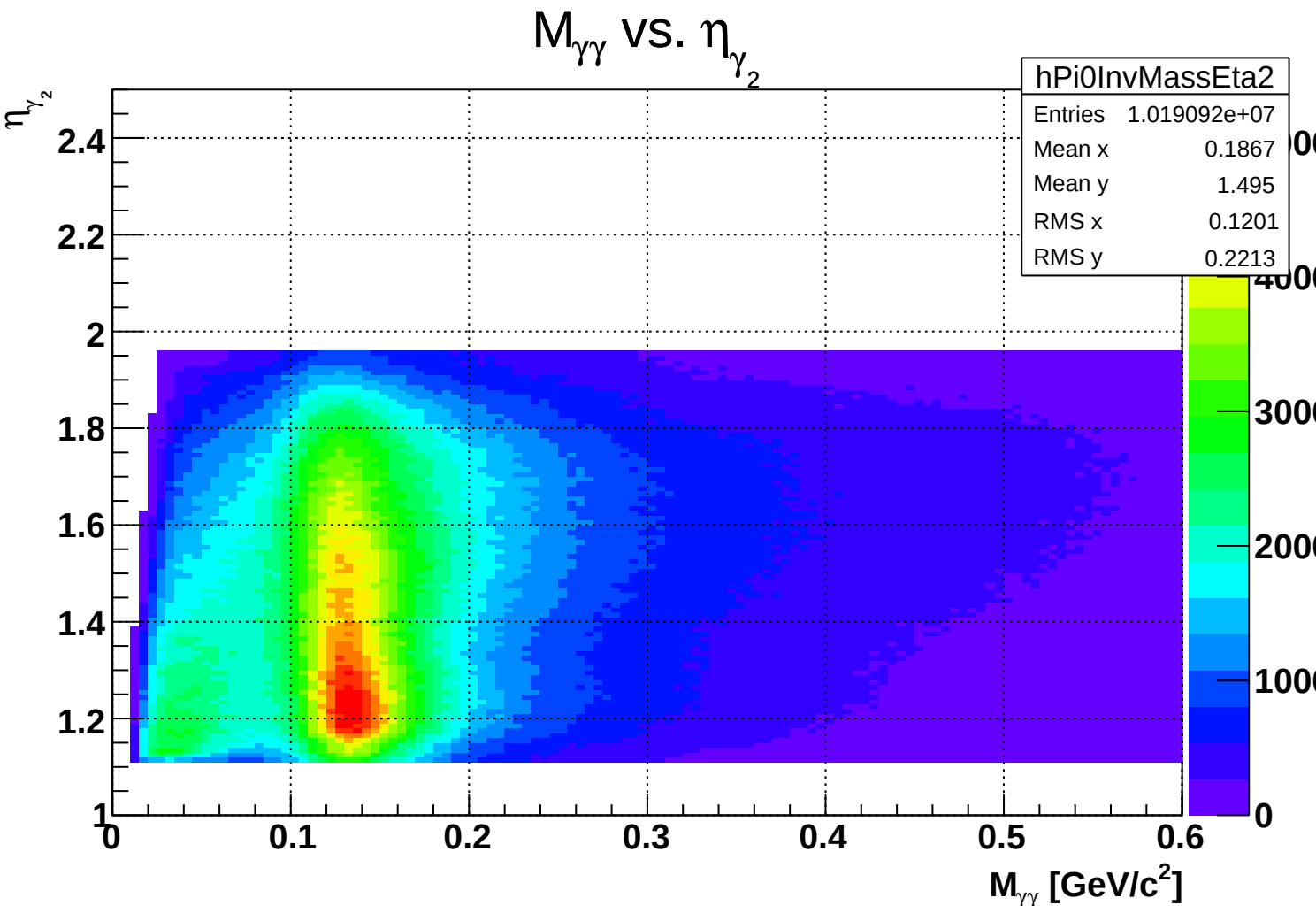

$M_{\gamma\gamma}$ vs. $E^{\gamma_2}_{preshower}$
hPi0InvMassEPre2
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.0007533
RMS x 0.1201
RMS y 0.001421
$E^{\gamma_2}_{preshower}$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
0.1
0.2
0.3
0.4
0.5
0.6
20
40
60
80
100
120

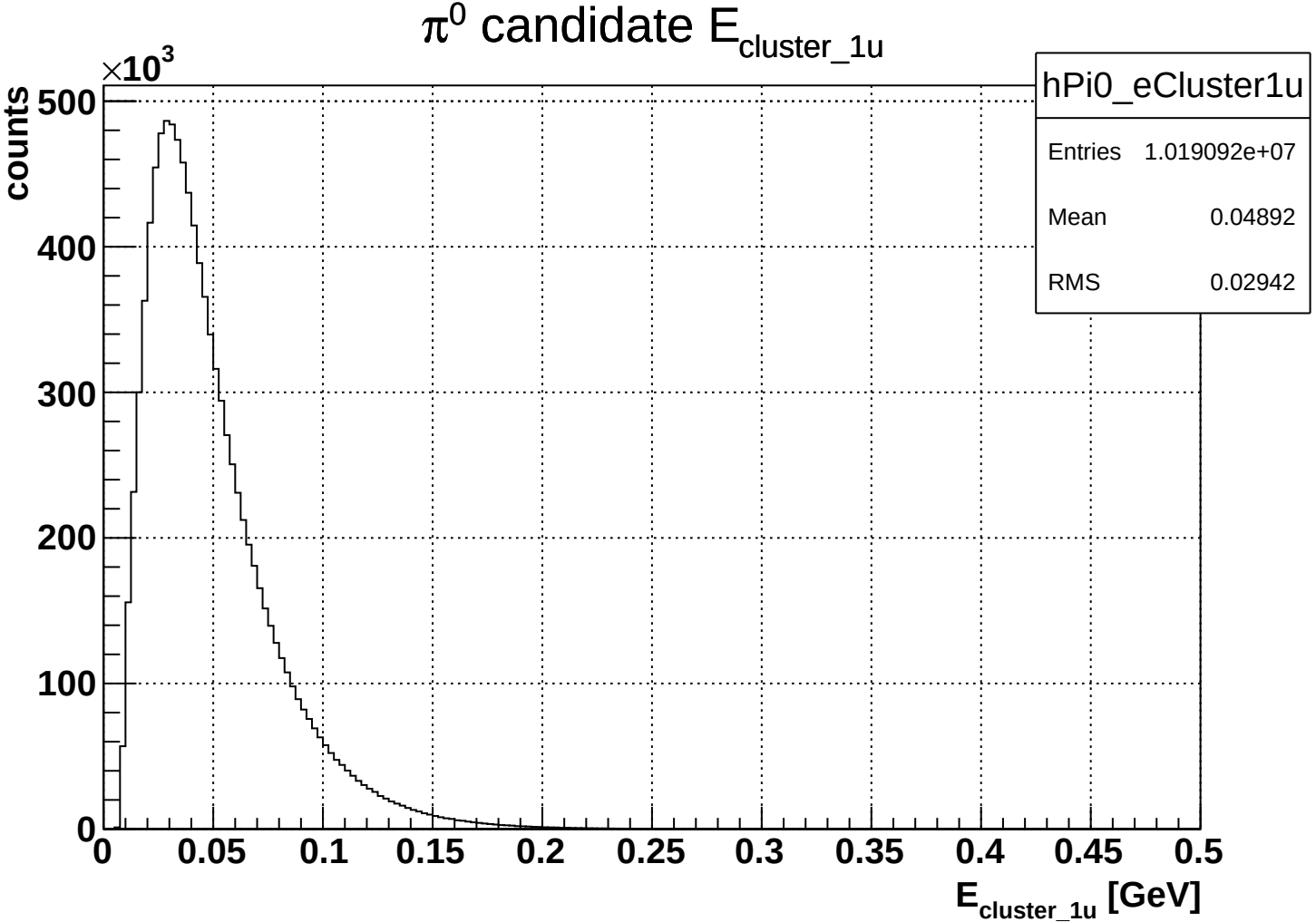

$M_{\gamma\gamma}$ vs. $E^{\gamma_1,\gamma_2}_{preshower}$ asymetry
hPi0InvMassVsEPre12Asym
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.5507
RMS x 0.1201
RMS y 0.4093
$(|E^{\gamma_1}_{preshower} - E^{\gamma_2}_{preshower}|)/(E^{\gamma_1}_{preshower} + E^{\gamma_2}_{preshower})$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
20
40
60
80

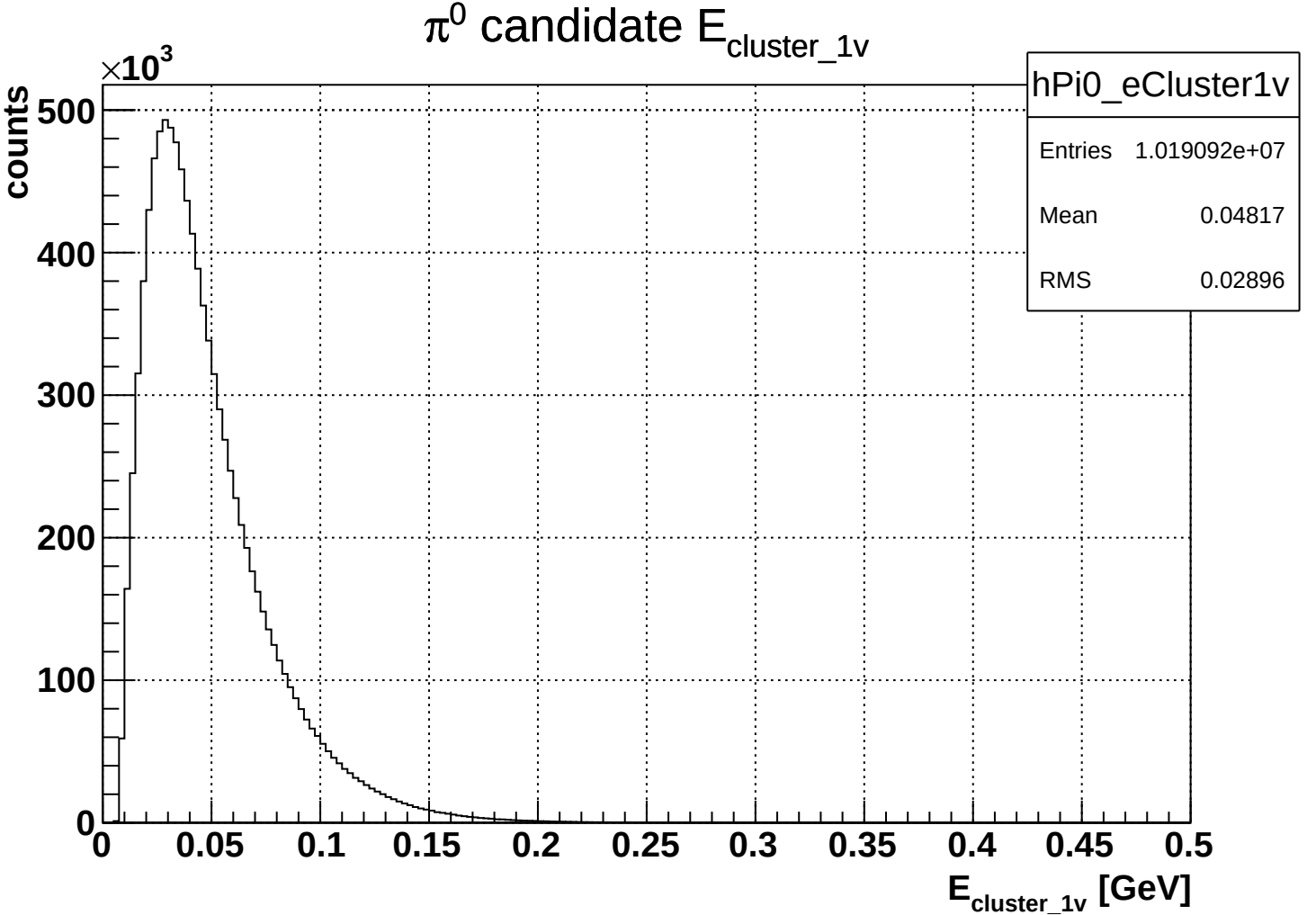

π^0 candidate η_{γ_1}
hPi0_etaGamma1
Entries 1.019092e+07
Mean 1.496
RMS 0.2204
counts
$\times 10^3$
0
20
40
60
80
100
120
140
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η_{γ_1}

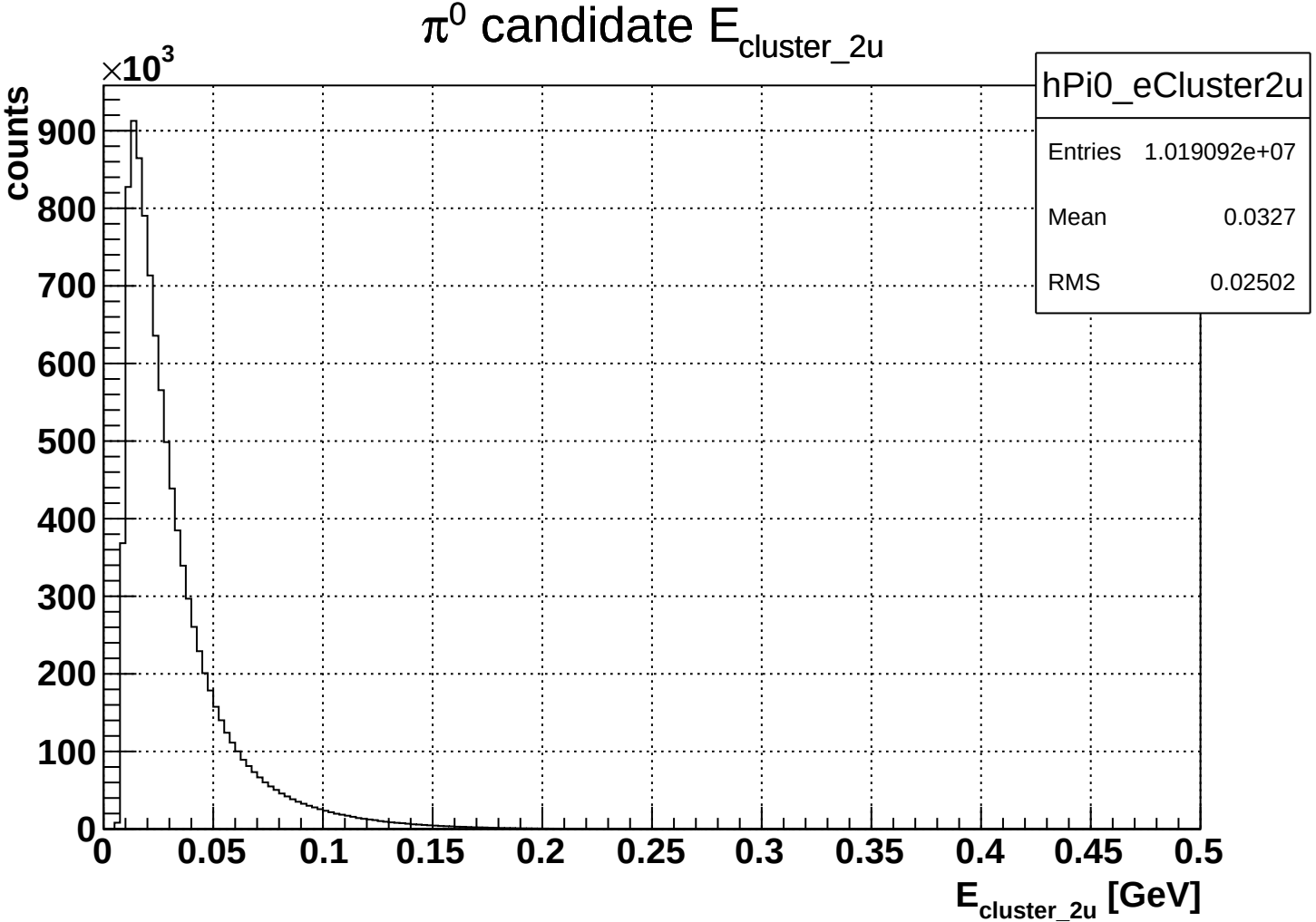

$M_{\gamma\gamma}$ vs. η_{γ_1}
hPi0InvMassEta1
Entries 1.019092e+07
Mean x 0.1867
Mean y 1.496
RMS x 0.1201
RMS y 0.2204
η_{γ_1}
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
4000
3000
2000
1000
0

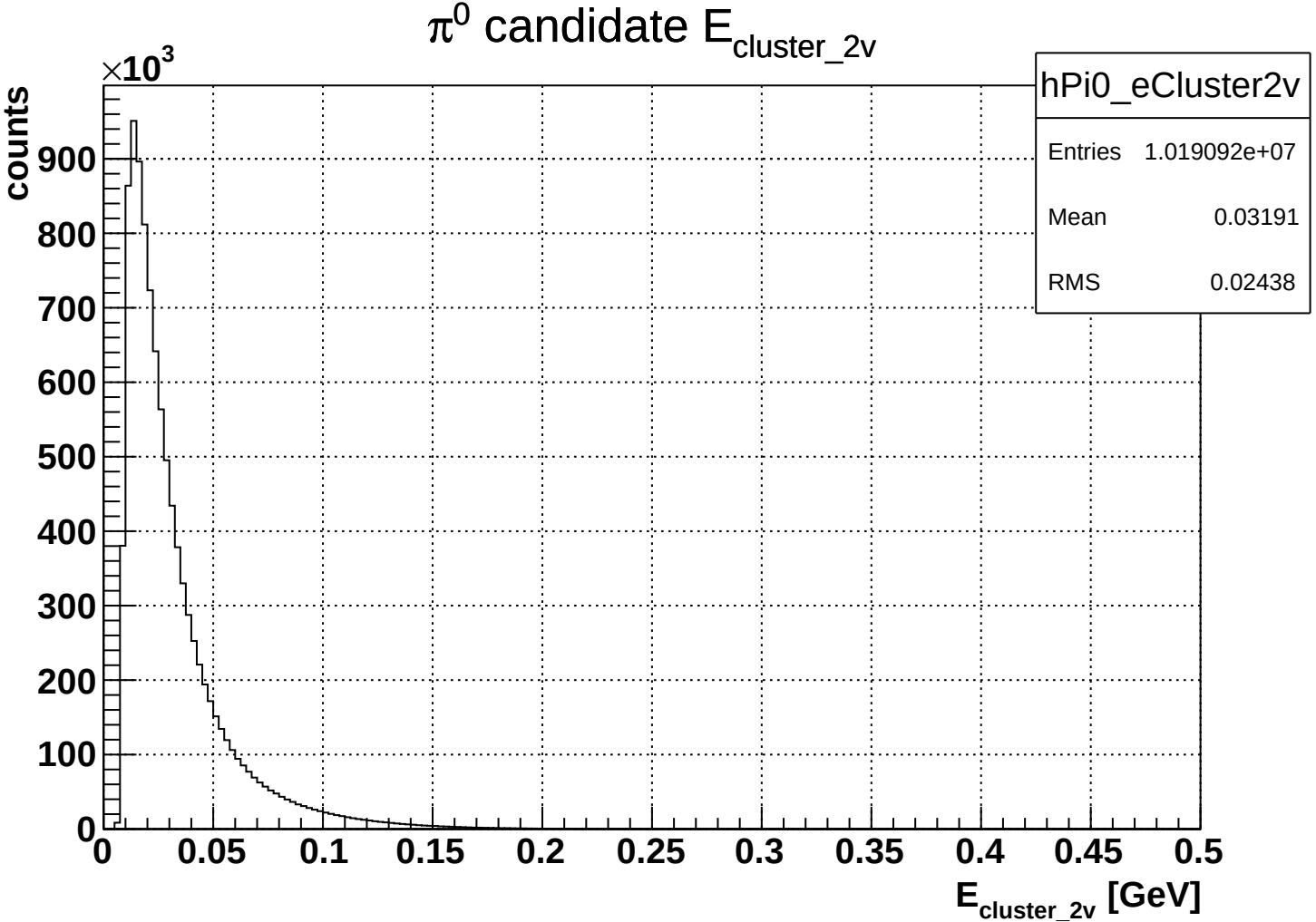

π^0 candidate η_{γ_2}
hPi0_etaGamma2
Entries 1.019092e+07
Mean 1.495
RMS 0.2213
counts
$\times 10^3$
0
20
40
60
80
100
120
140
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η_{γ_2}

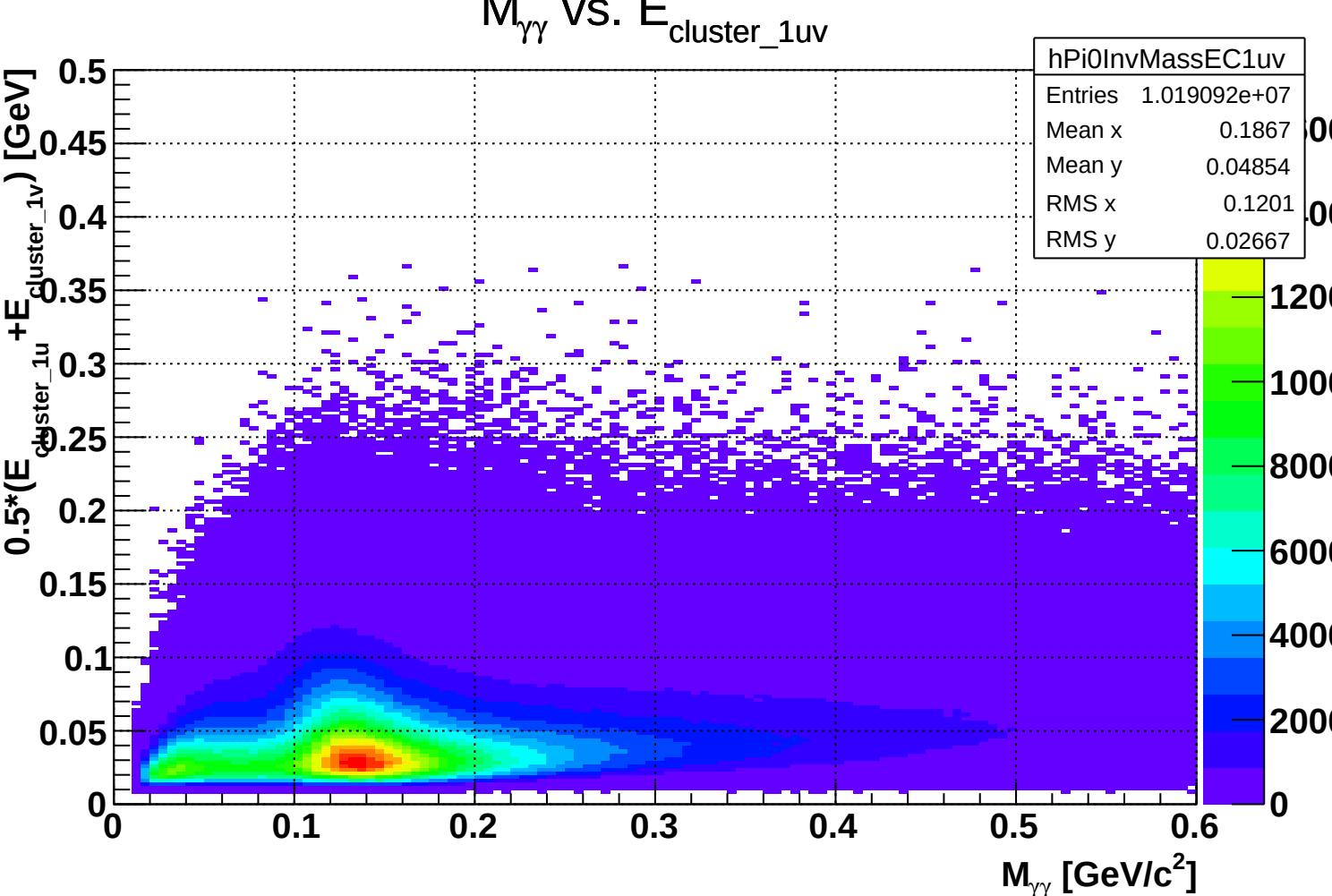

$M_{\gamma\gamma}$ vs. η_{γ_2}
hPi0InvMassEta2
Entries 1.019092e+07
Mean x 0.1867
Mean y 1.495
RMS x 0.1201
RMS y 0.2213
η_{γ_2}
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
4000
3000
2000
1000
0

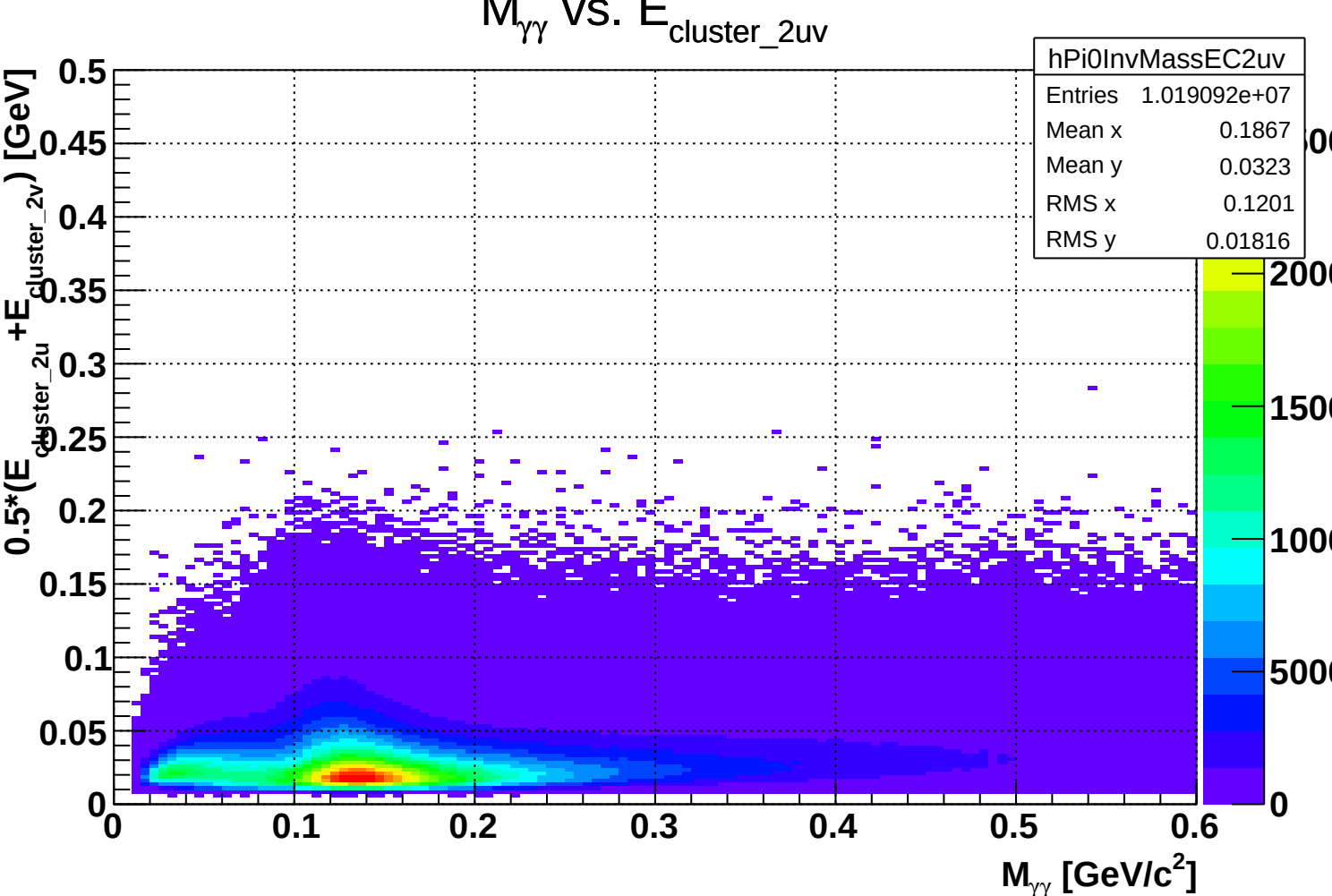

π^0 candidate $E_{cluster_1u}$
hPi0_eCluster1u
Entries 1.019092e+07
Mean 0.04892
RMS 0.02942
counts
$\times 10^3$
500
400
300
200
100
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
$E_{cluster_1u}$ [GeV]


π^0 candidate $E_{cluster_1v}$
hPi0_eCluster1v
Entries 1.019092e+07
Mean 0.04817
RMS 0.02896
counts
$\times 10^3$
500
400
300
200
100
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
$E_{cluster_1v}$ [GeV]

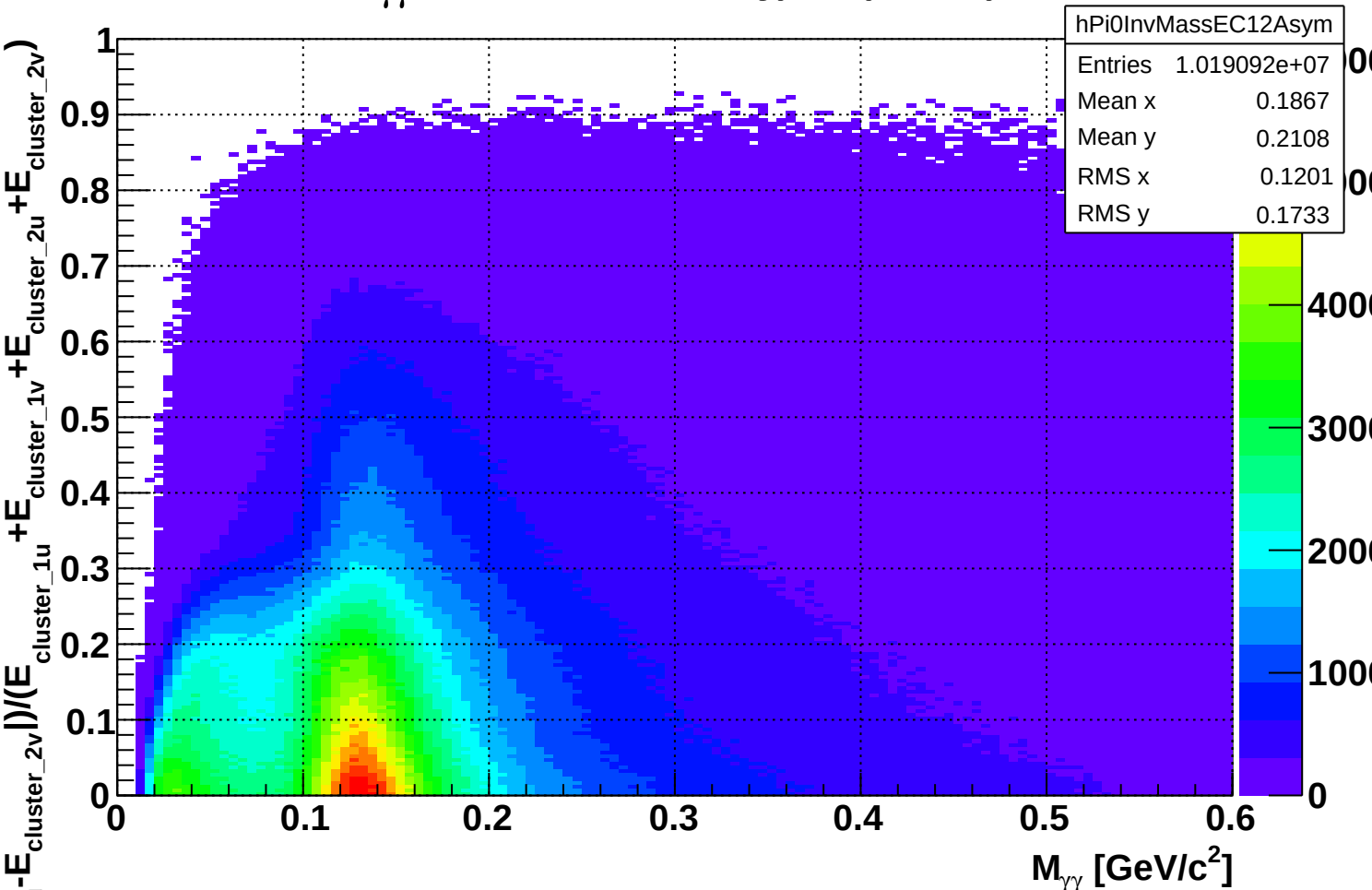

π^0 candidate $E_{cluster_2u}$
hPi0_eCluster2u
Entries 1.019092e+07
Mean 0.0327
RMS 0.02502
counts
$\times 10^3$
900
800
700
600
500
400
300
200
100
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
$E_{cluster_2u}$ [GeV]

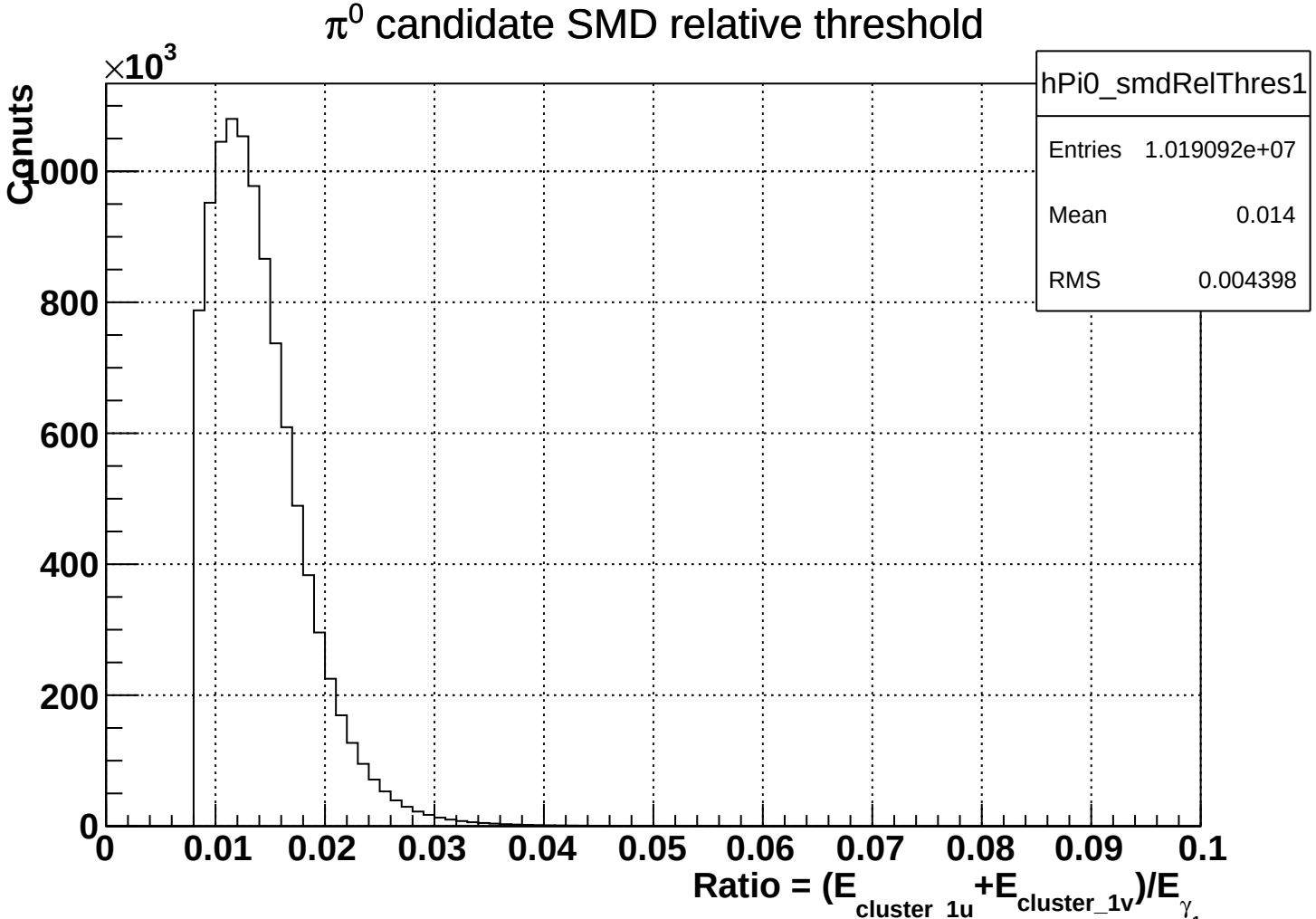

π^0 candidate $E_{cluster_2v}$
hPi0_eCluster2v
Entries 1.019092e+07
Mean 0.03191
RMS 0.02438
counts
$\times 10^3$
900
800
700
600
500
400
300
200
100
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
$E_{cluster_2v}$ [GeV]

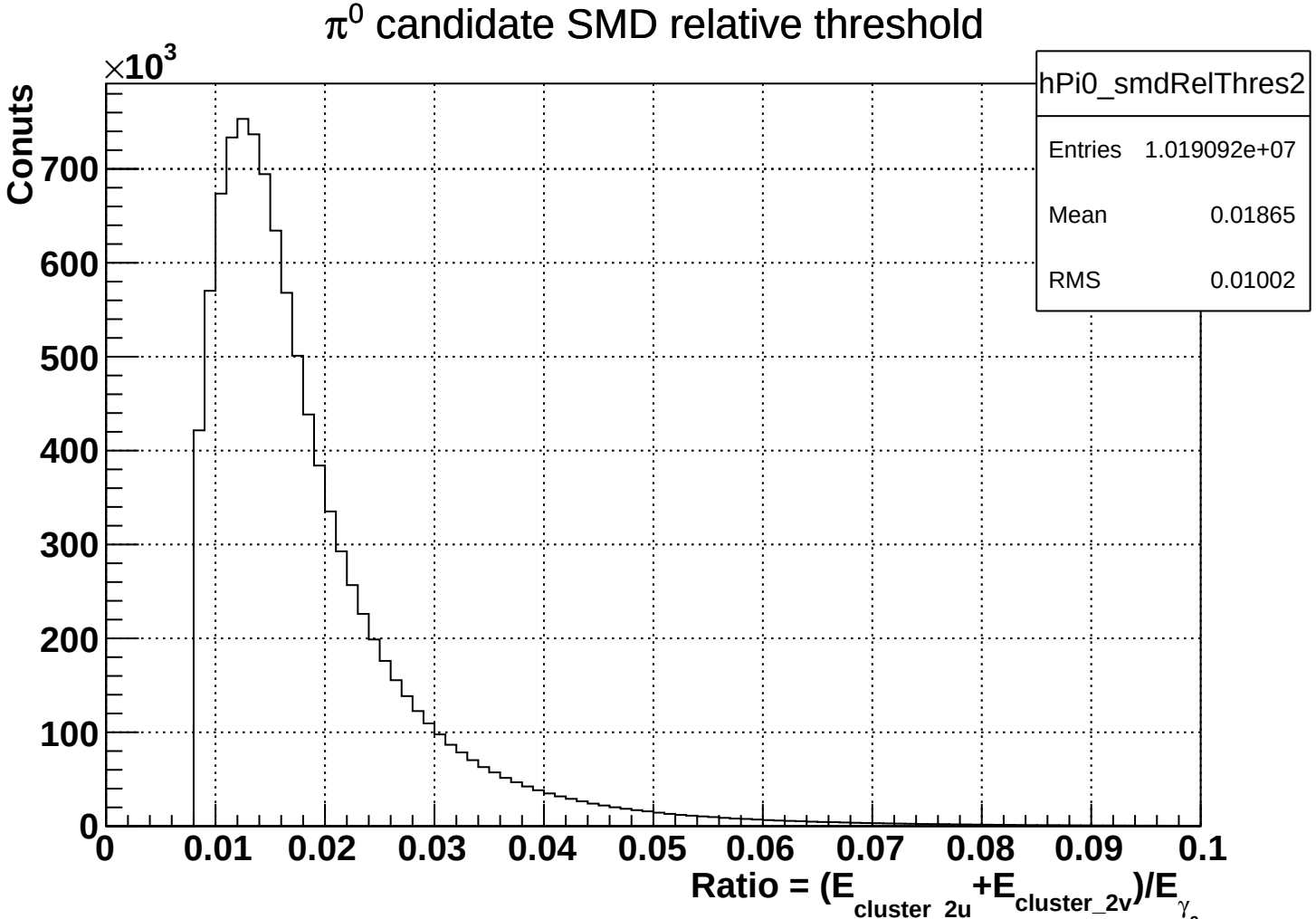

$M_{\gamma\gamma}$ vs. $E_{cluster_1uv}$
hPi0InvMassEC1uv
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.04854
RMS x 0.1201
RMS y 0.02667
$0.5*(E_{cluster_1u}+E_{cluster_1v})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000
1000
1200


$M_{\gamma\gamma}$ vs. $E_{cluster_2uv}$
hPi0InvMassEC2uv
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.0323
RMS x 0.1201
RMS y 0.01816
$0.5*(E_{cluster_2u}+E_{cluster_2v})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.1
0.2
0.3
0.4
0.5
0.6
5000
1000
1500
2000

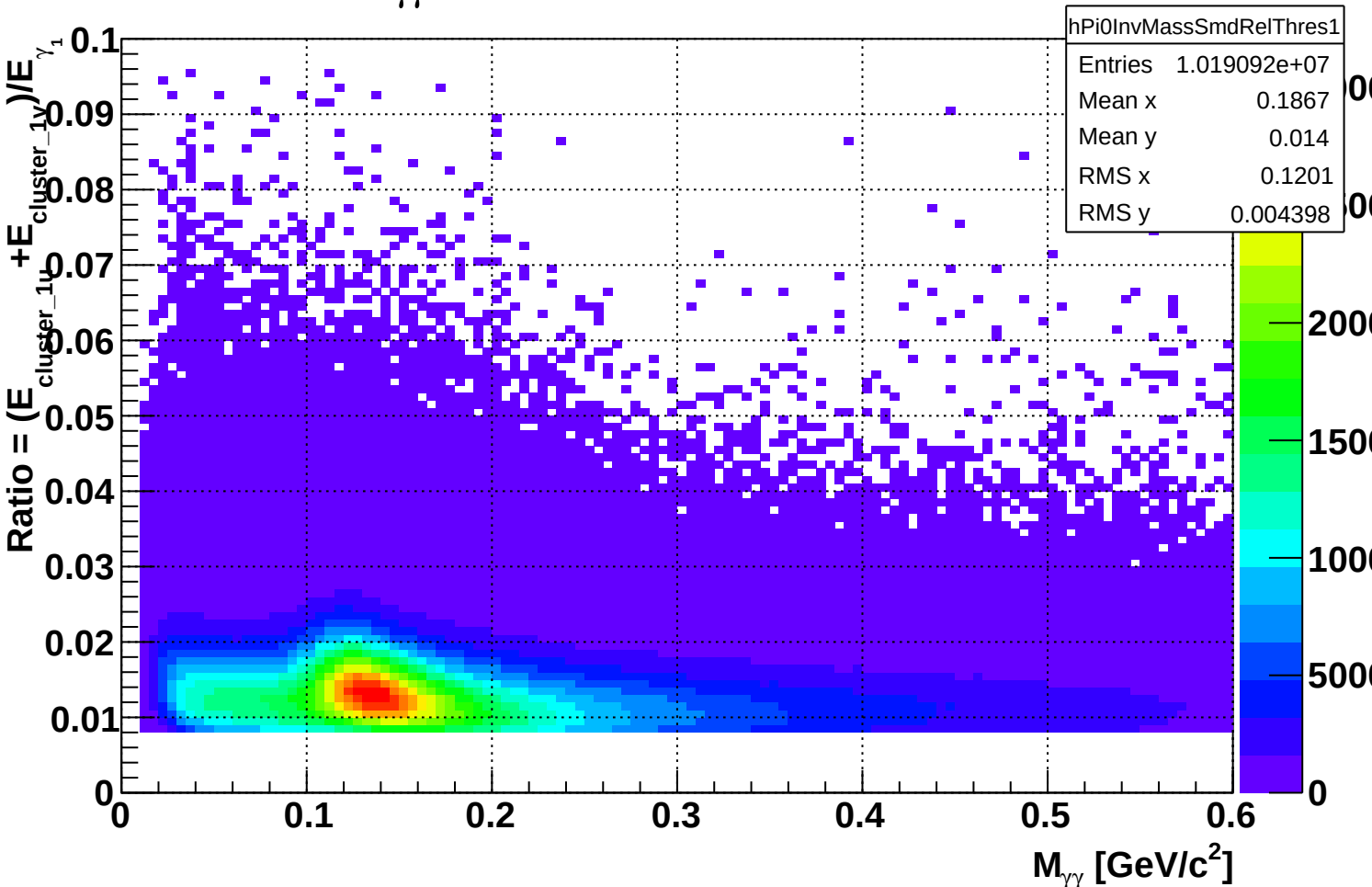
$M_{\gamma\gamma}$ vs. cluster energy asymetry



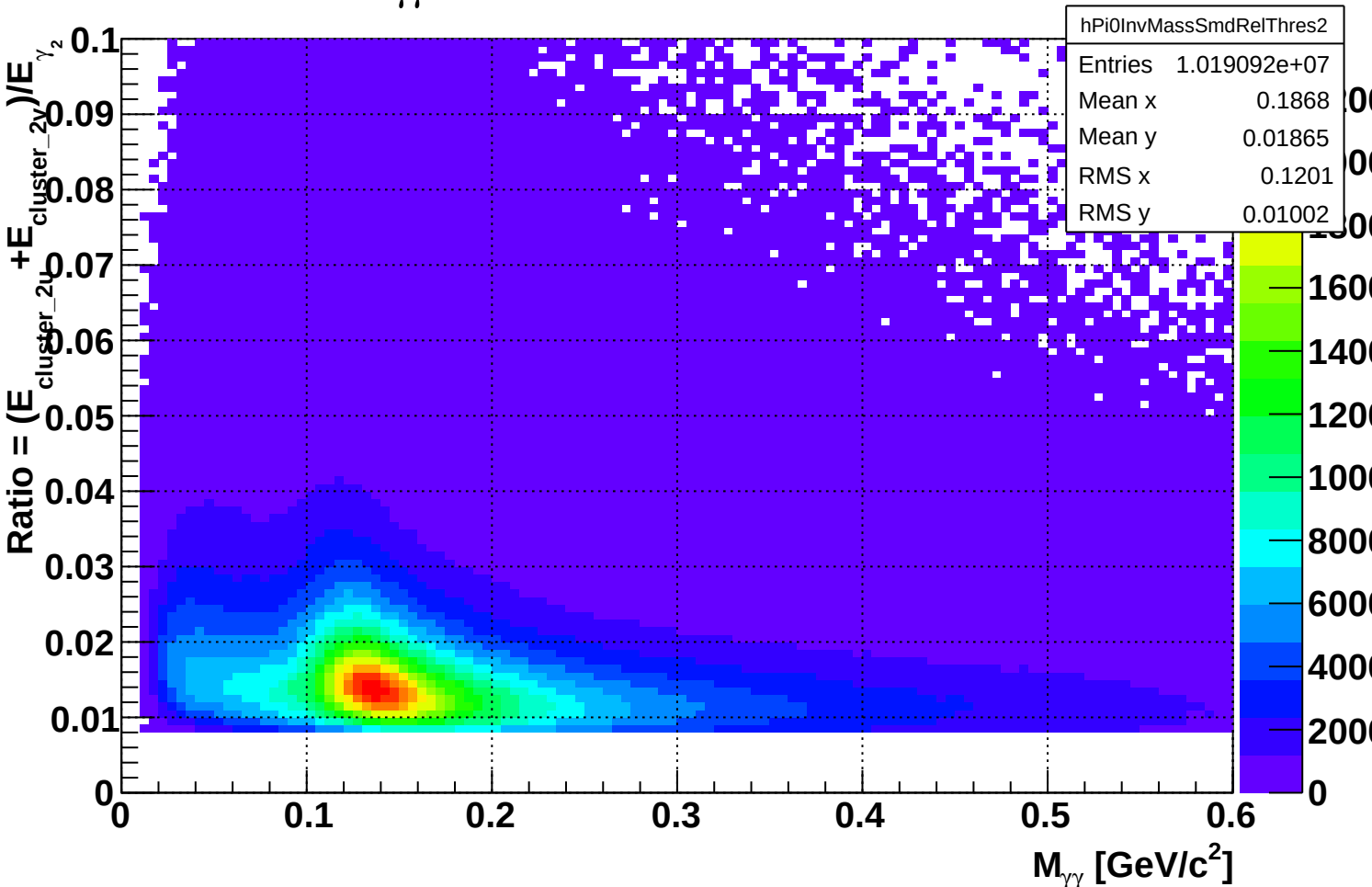

π^0 candidate SMD relative threshold
hPi0_smdRelThres1
Entries 1.019092e+07
Mean 0.014
RMS 0.004398
Counts
$\times 10^3$
1000
800
600
400
200
0
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Ratio = $(E_{cluster_1u} + E_{cluster_1v})/E_{\gamma}$

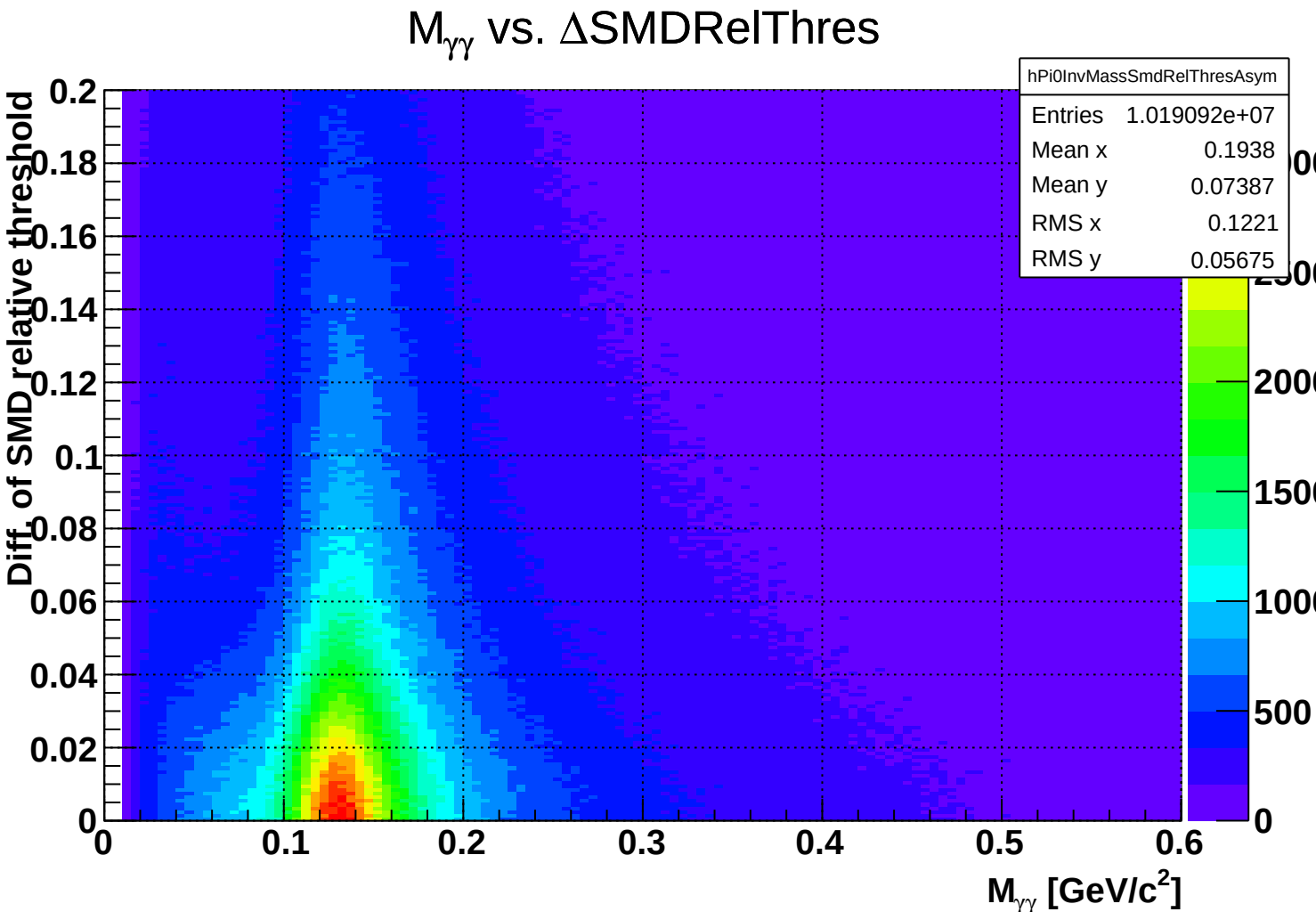

π^0 candidate SMD relative threshold
hPi0_smdRelThres2
Entries 1.019092e+07
Mean 0.01865
RMS 0.01002
Conuts
$\times 10^3$
700
600
500
400
300
200
100
0
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Ratio = $(E_{cluster_2u}+E_{cluster_2v})/E_{\gamma}$

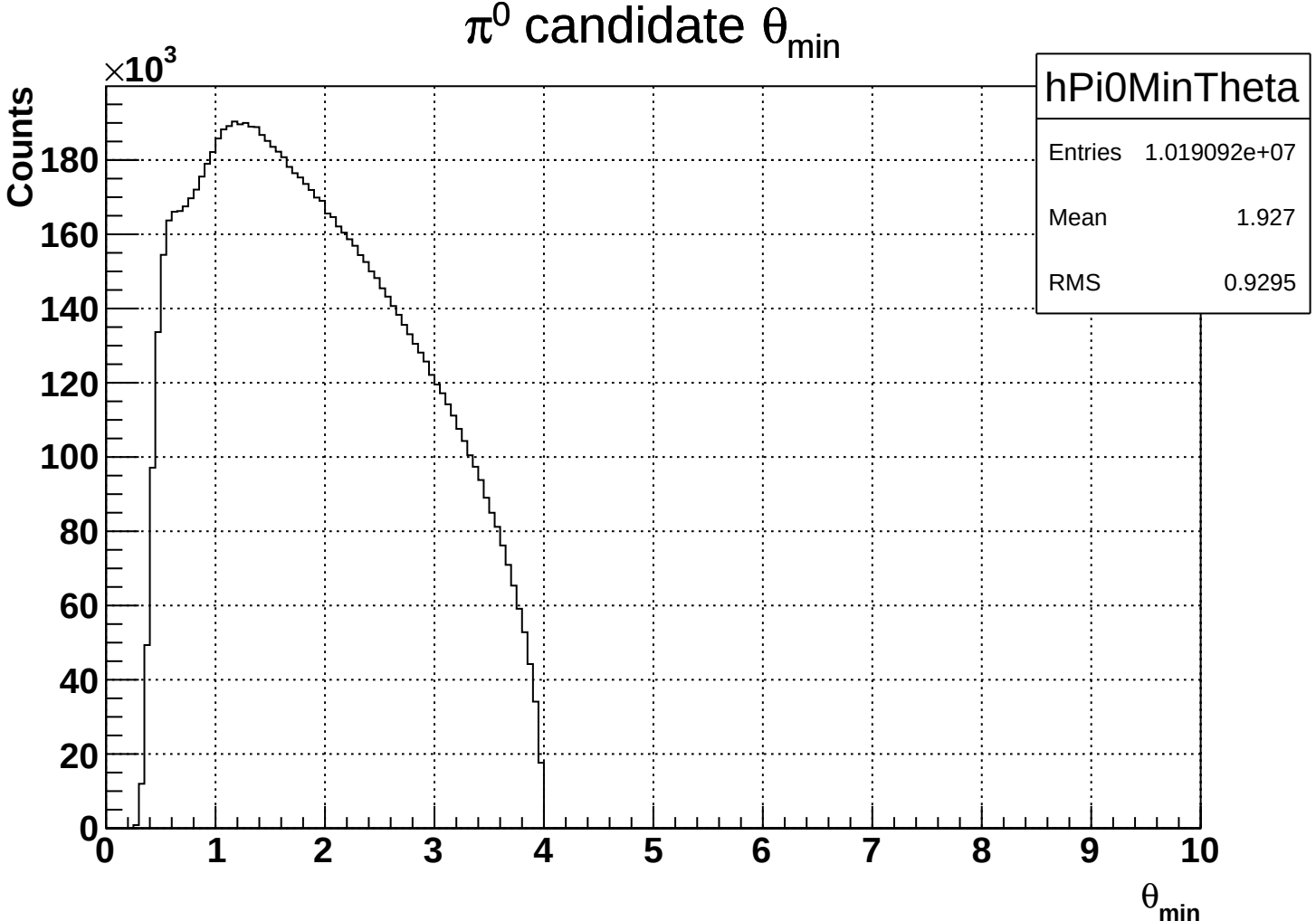
$M_{\gamma\gamma}$ vs. SMD relative threshold

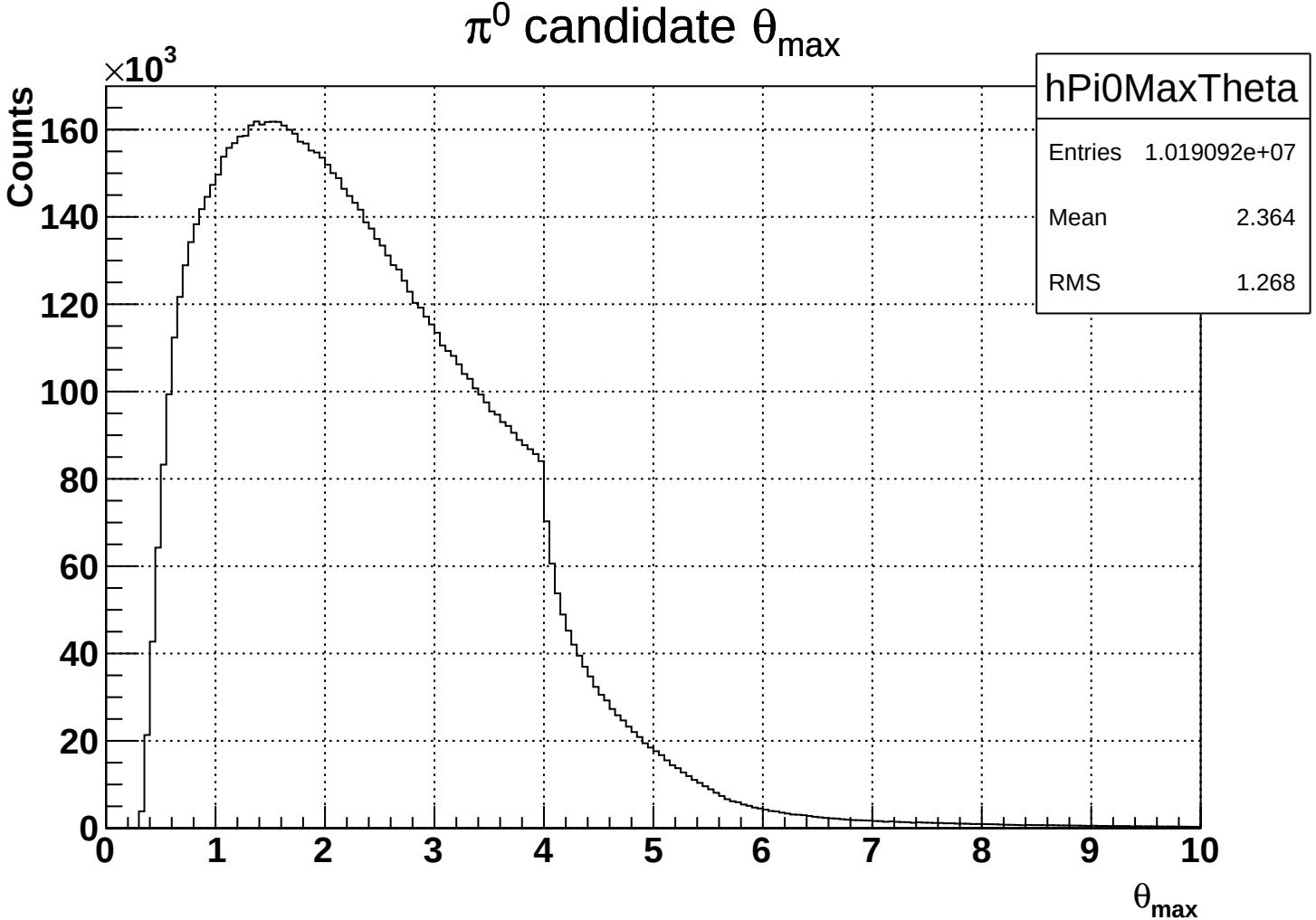


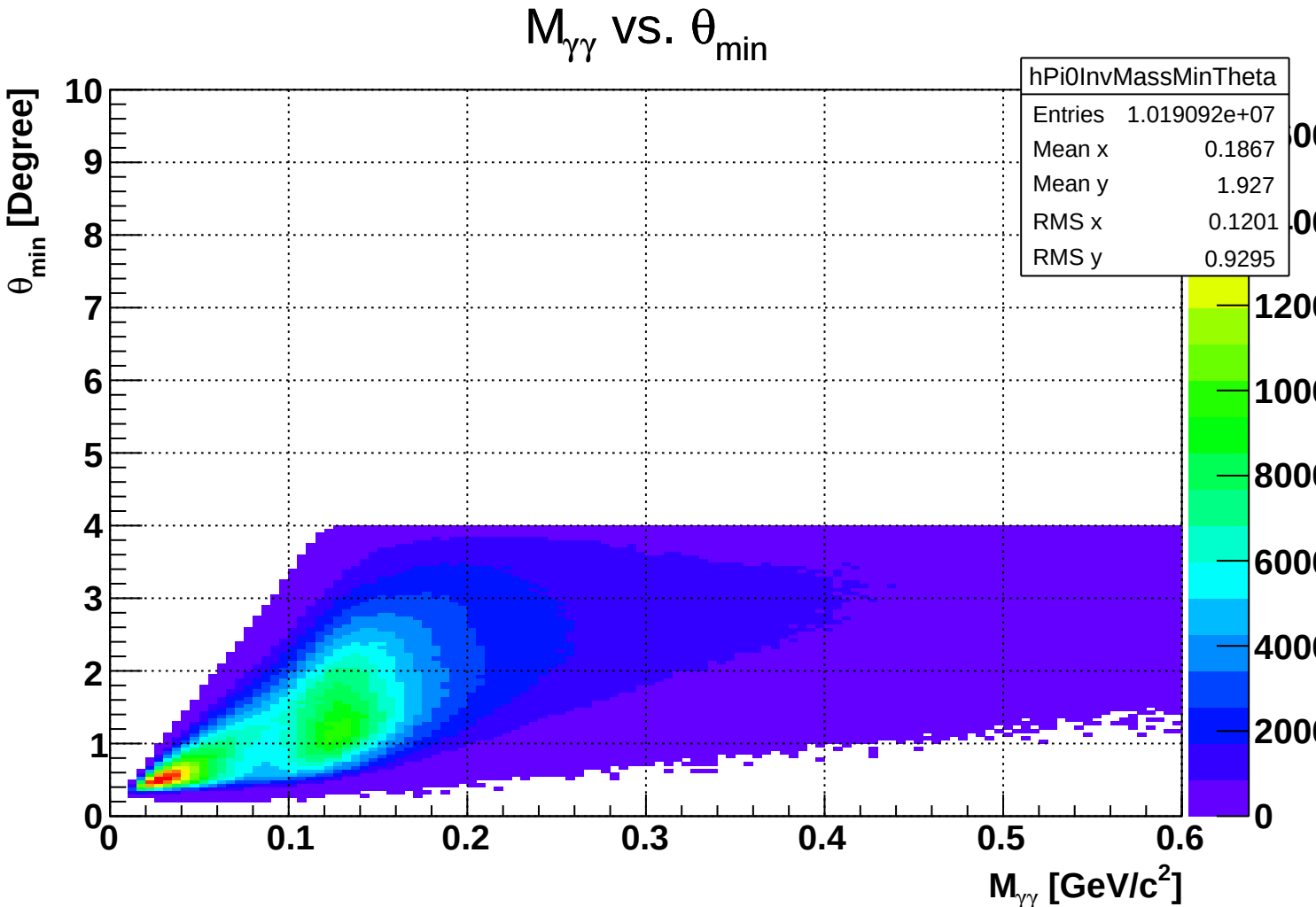
$M_{\gamma\gamma}$ vs. SMD relative threshold

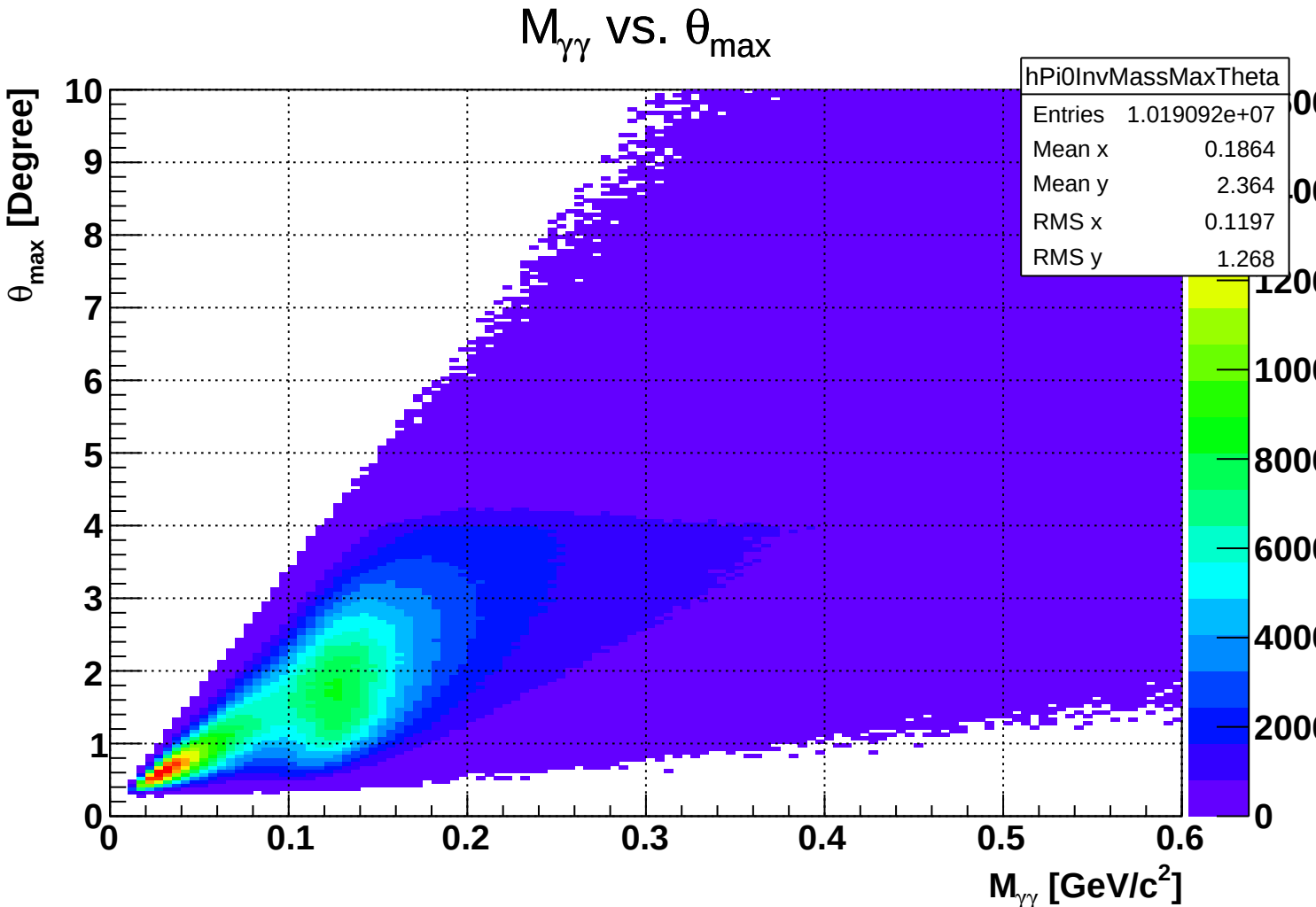


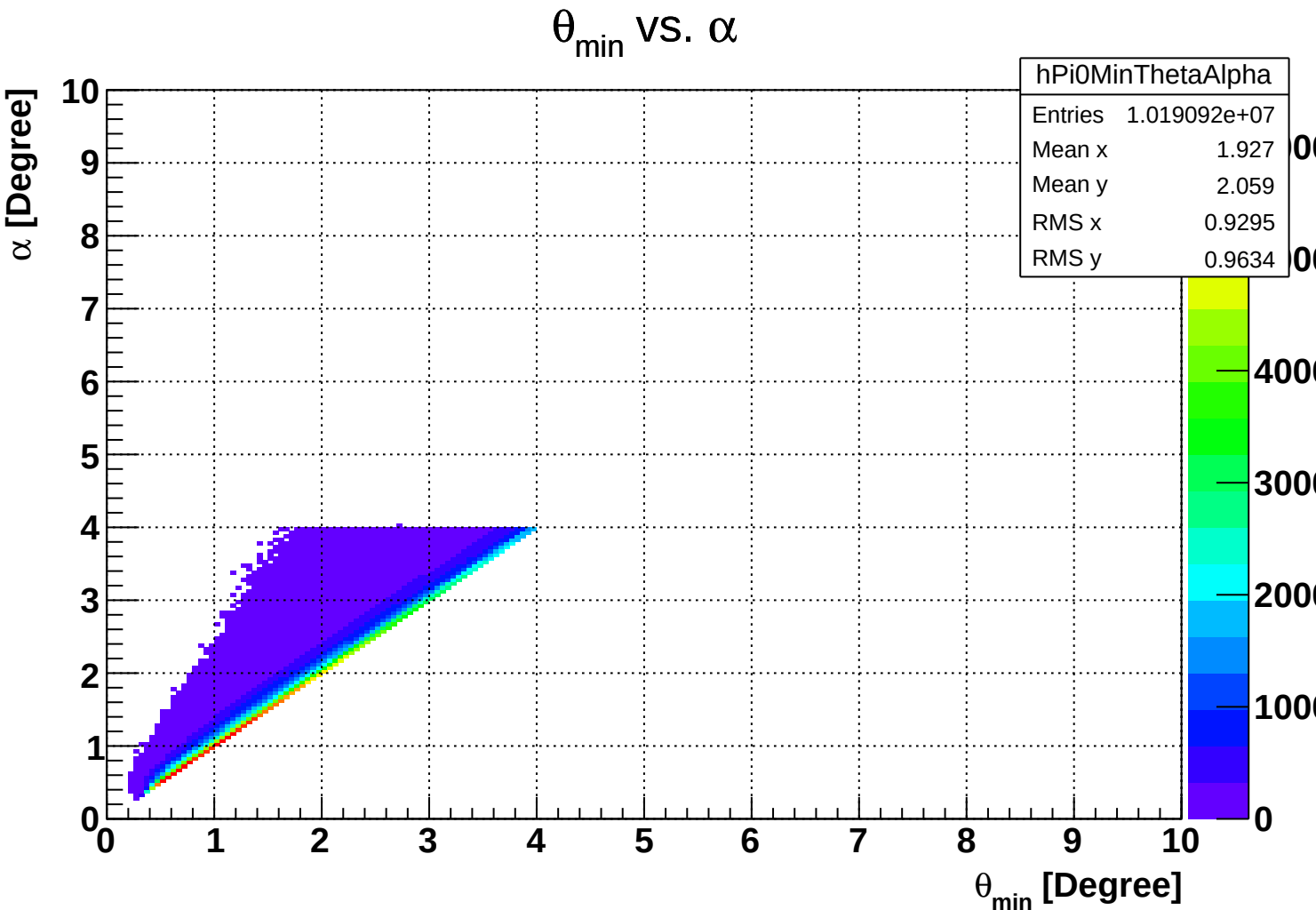

$M_{\gamma\gamma}$ vs. ΔSMDRelThres
hPi0InvMassSmdRelThresAsym
Entries 1.019092e+07
Mean x 0.1938
Mean y 0.07387
RMS x 0.1221
RMS y 0.05675
Diff. of SMD relative threshold
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0.1
0.2
0.3
0.4
0.5
0.6
2000
1500
1000
500
$M_{\gamma\gamma}$ [GeV/c^2]

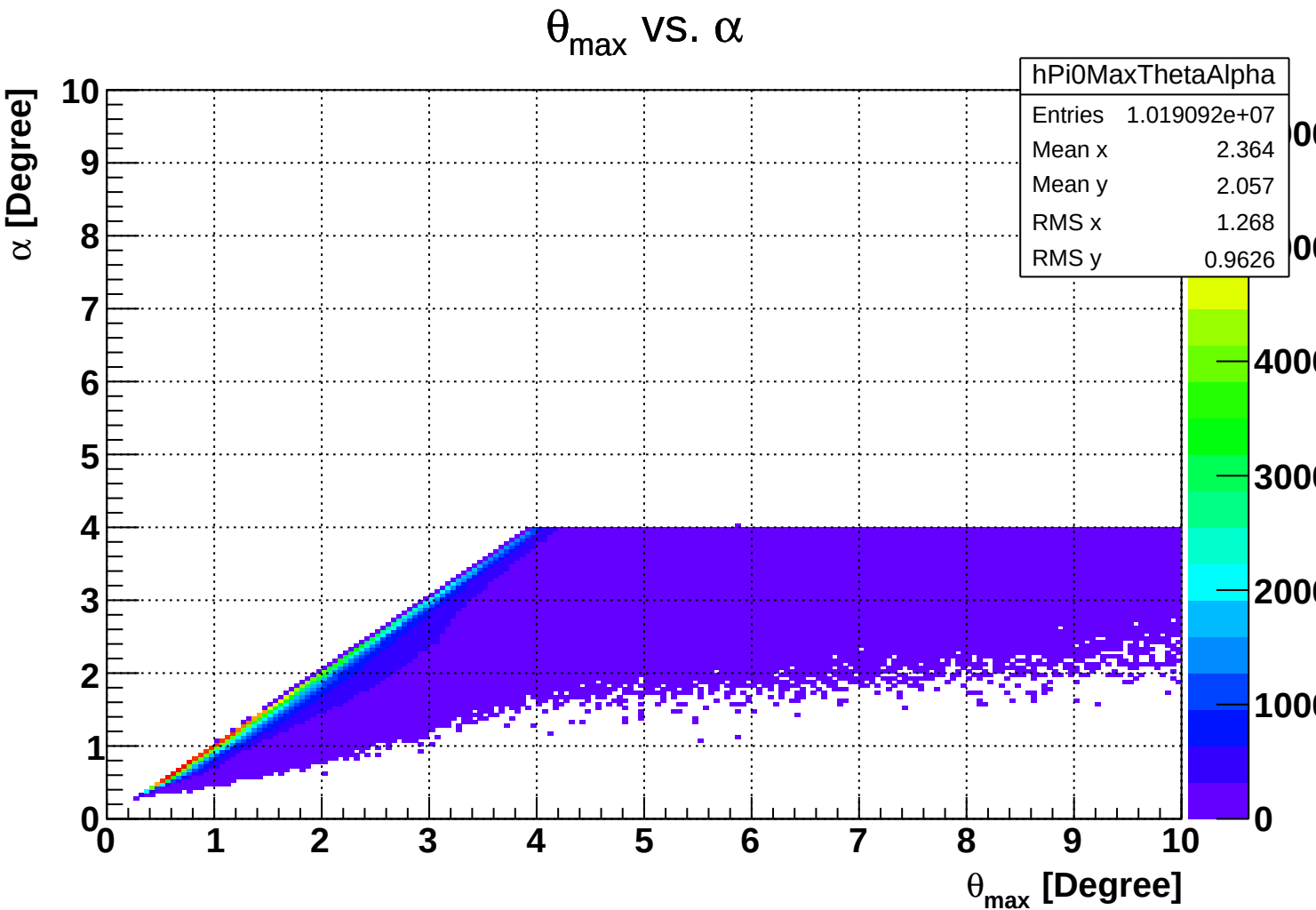

π^0 candidate θ_{min}
hPi0MinTheta
Entries 1.019092e+07
Mean 1.927
RMS 0.9295
Counts
$\times 10^3$
0
20
40
60
80
100
120
140
160
180
0
1
2
3
4
5
6
7
8
9
10
θ_{min}

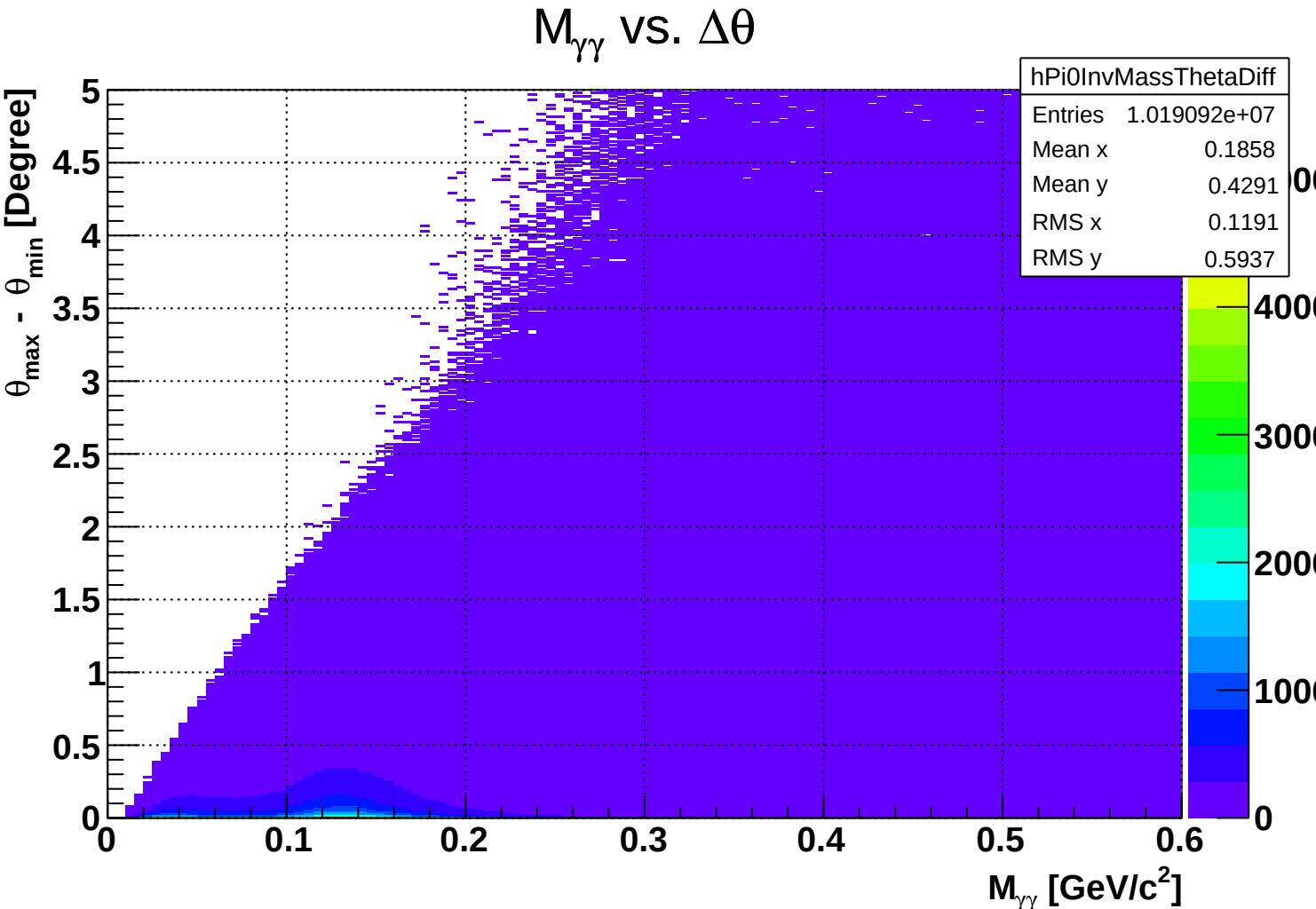

π^0 candidate θ_{max}
hPi0MaxTheta
Entries 1.019092e+07
Mean 2.364
RMS 1.268
Counts
$\times 10^3$
0
20
40
60
80
100
120
140
160
0
1
2
3
4
5
6
7
8
9
10
θ_{max}

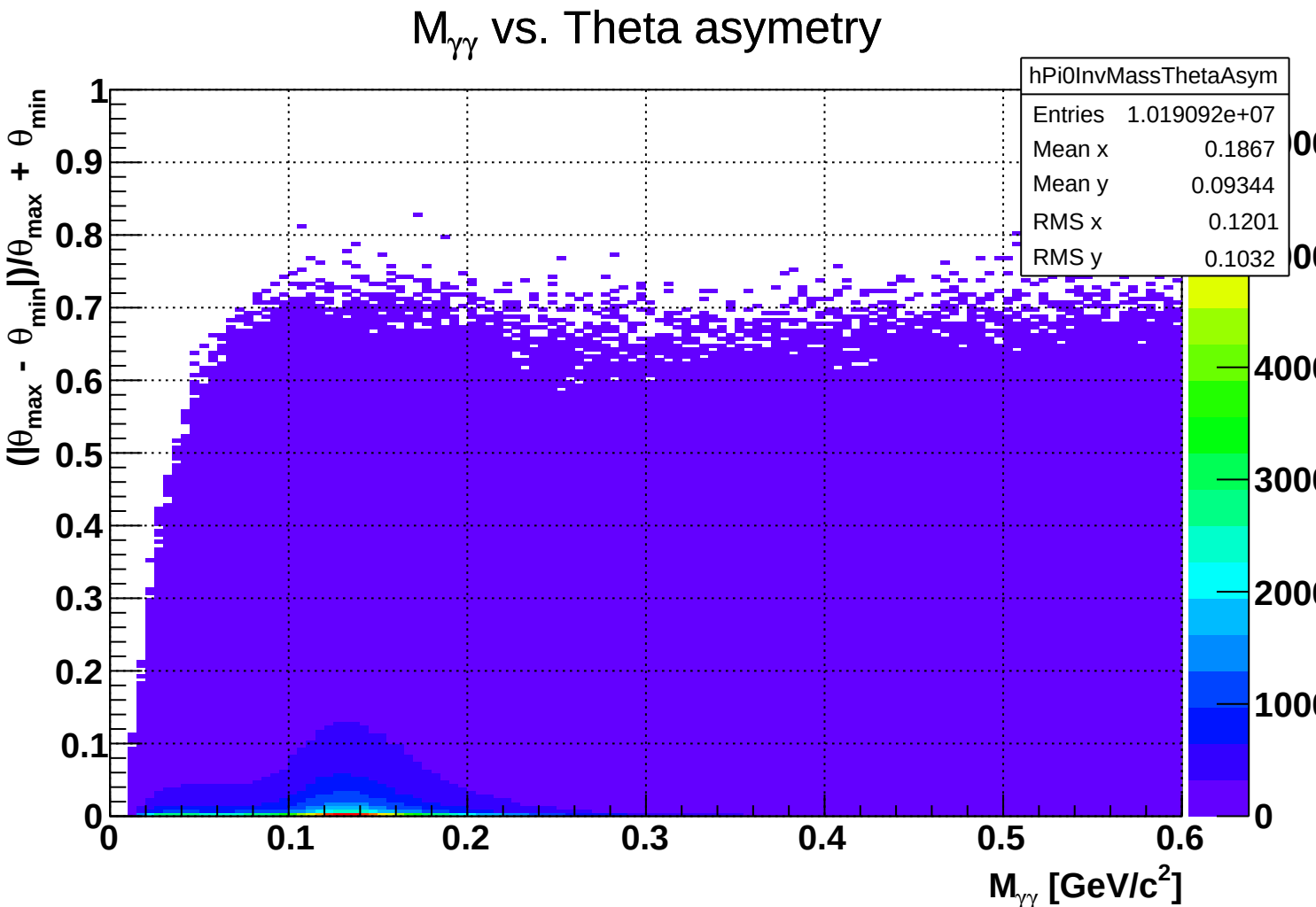

$M_{\gamma\gamma}$ vs. θ_{min}
hPi0InvMassMinTheta
Entries 1.019092e+07
Mean x 0.1867
Mean y 1.927
RMS x 0.1201
RMS y 0.9295
θ_{min} [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
1
2
3
4
5
6
7
8
9
10
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000
1000
1200

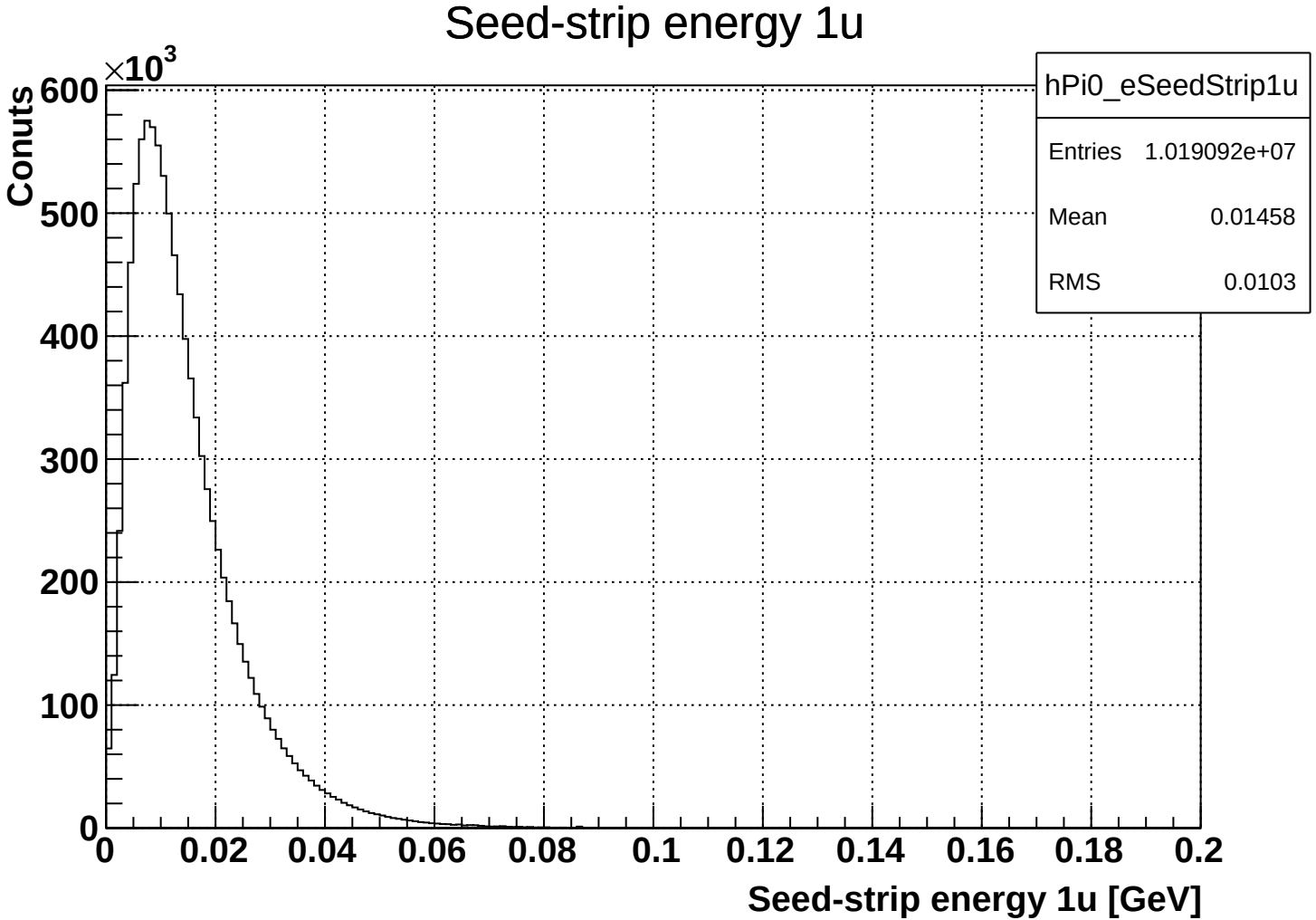

$M_{\gamma\gamma}$ vs. θ_{max}
hPi0InvMassMaxTheta
Entries 1.019092e+07
Mean x 0.1864
Mean y 2.364
RMS x 0.1197
RMS y 1.268
θ_{max} [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
1
2
3
4
5
6
7
8
9
10
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000
1000
1200

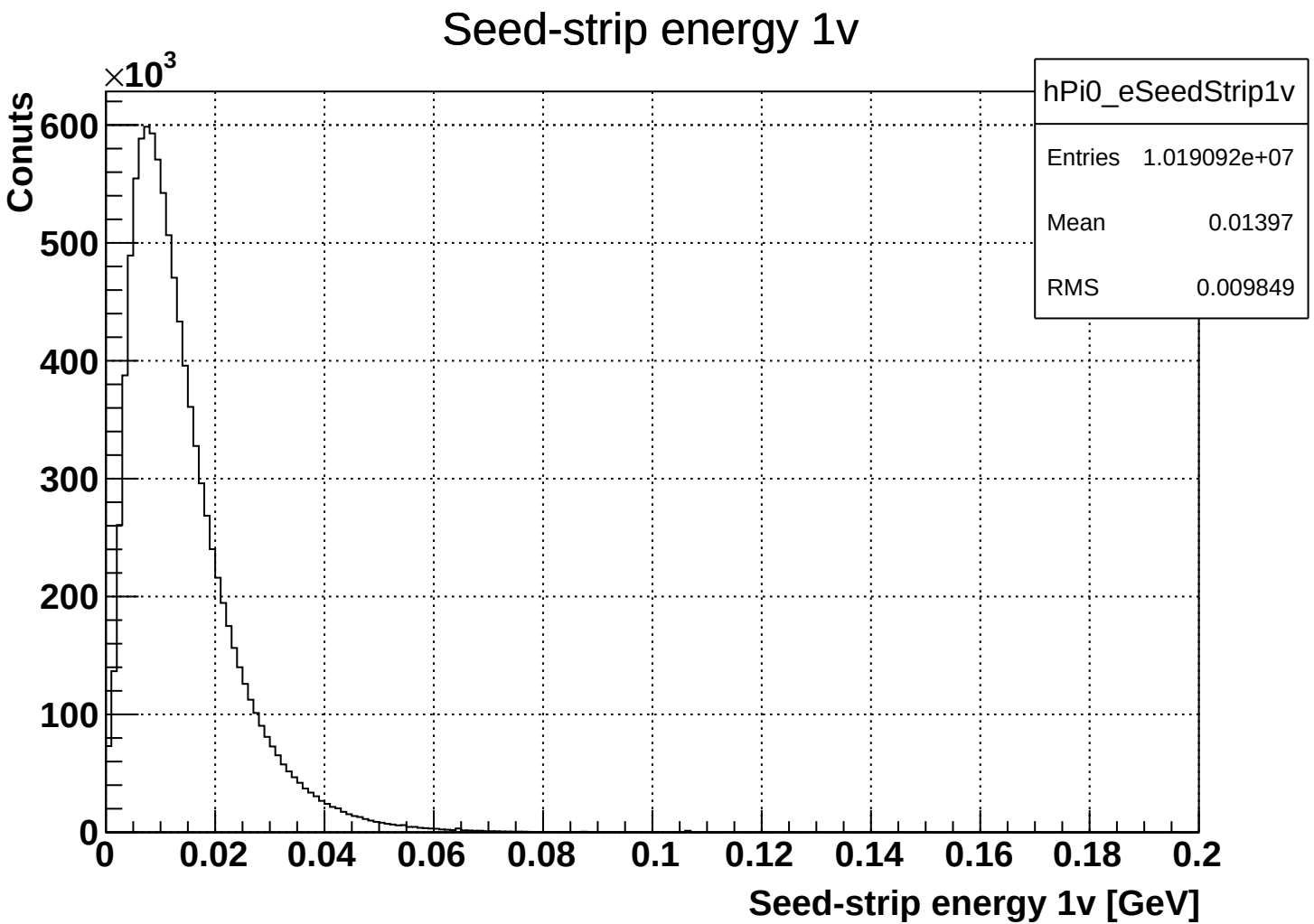

θmin vs. α
hPi0MinThetaAlpha
Entries 1.019092e+07
Mean x 1.927
Mean y 2.059
RMS x 0.9295
RMS y 0.9634
α [Degree]
θmin [Degree]
0
1
2
3
4
5
6
7
8
9
10
1000
2000
3000
4000

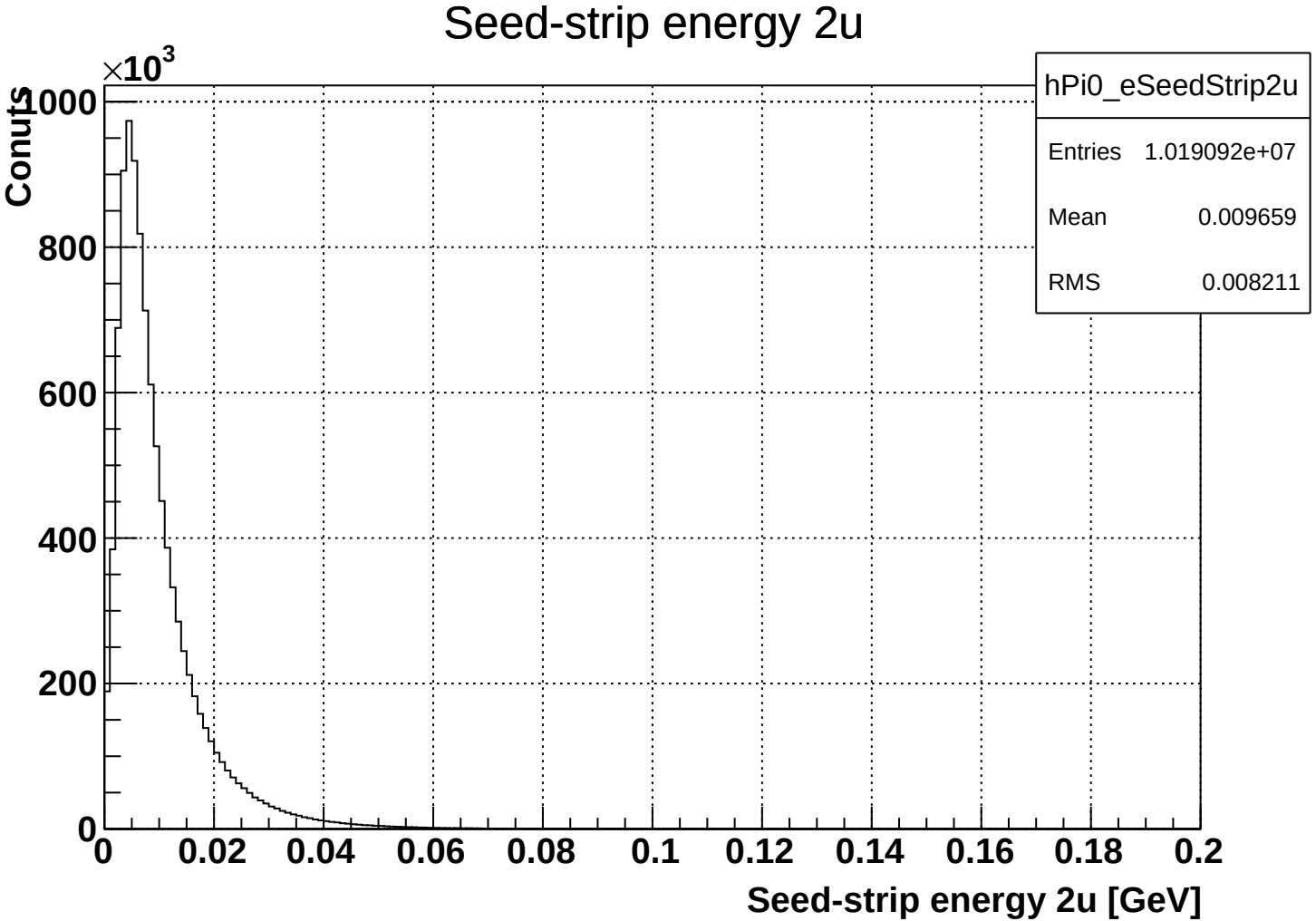

θmax vs. α
hPi0MaxThetaAlpha
Entries 1.019092e+07
Mean x 2.364
Mean y 2.057
RMS x 1.268
RMS y 0.9626
α [Degree]
θmax [Degree]
0
1
2
3
4
5
6
7
8
9
10
1000
2000
3000
4000

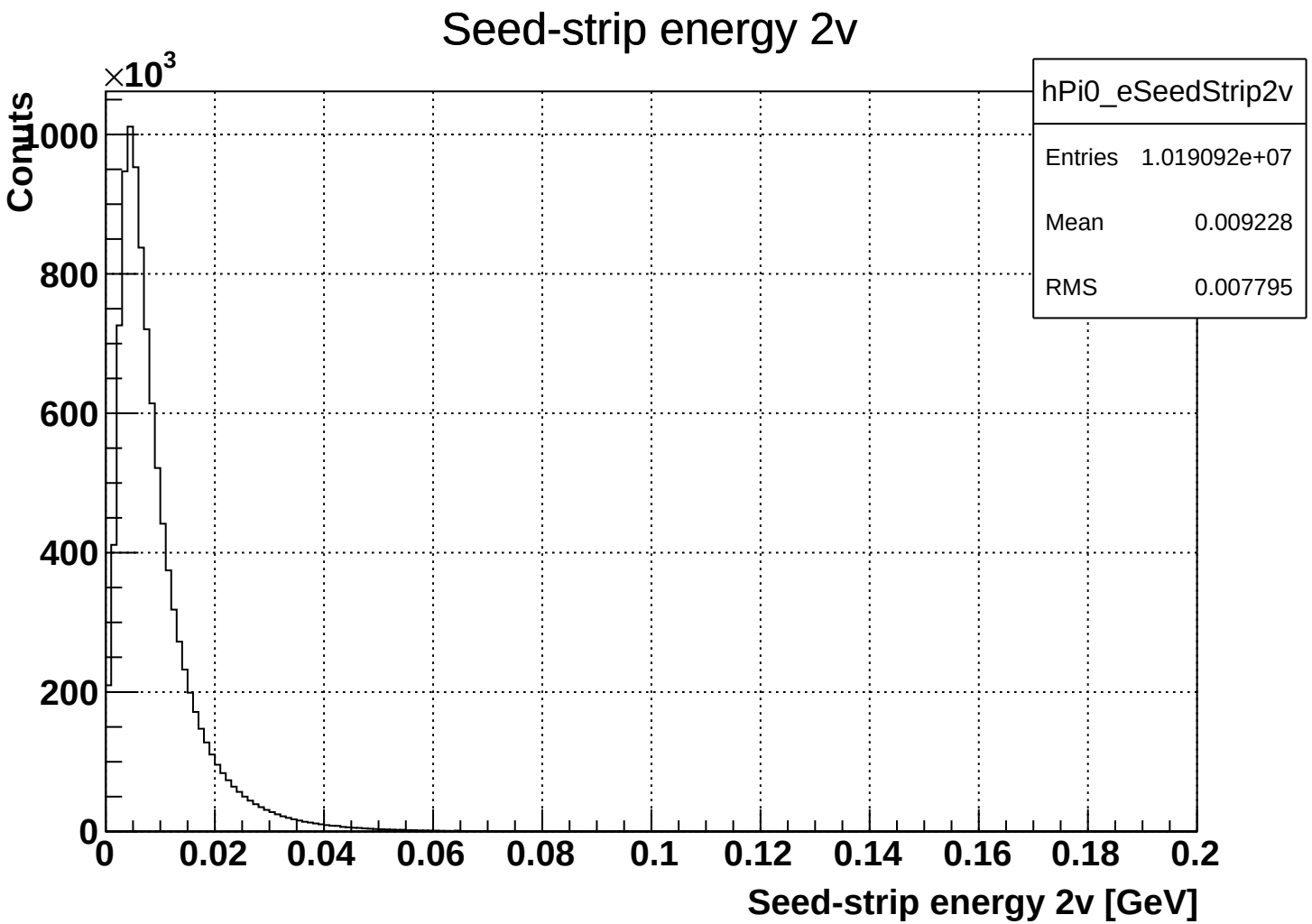

$M_{\gamma\gamma}$ vs. $\Delta\theta$
hPi0InvMassThetaDiff
Entries 1.019092e+07
Mean x 0.1858
Mean y 0.4291
RMS x 0.1191
RMS y 0.5937
$\theta_{max} - \theta_{min}$ [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0.1
0.2
0.3
0.4
0.5
0.6
1000
2000
3000
4000

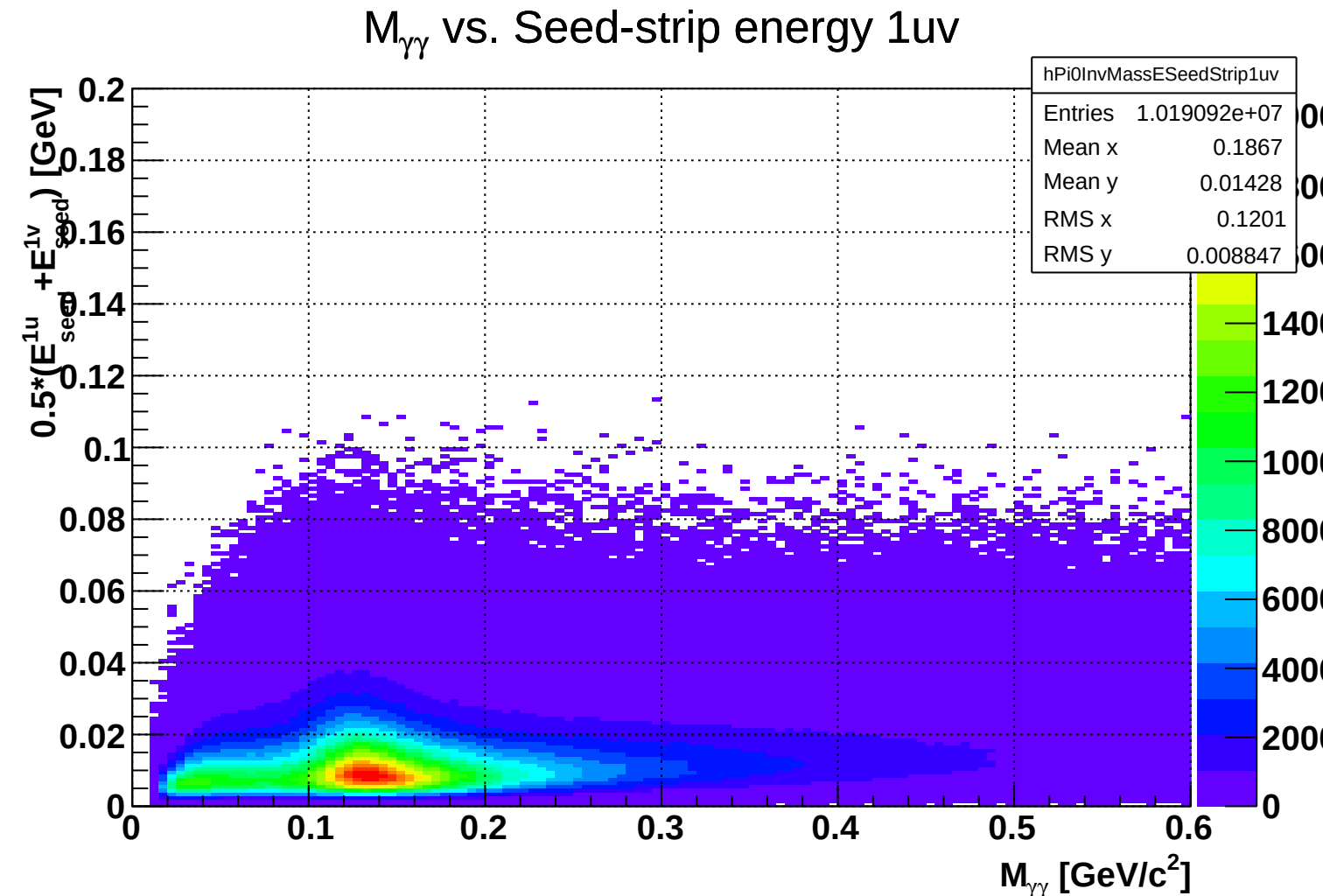

$M_{\gamma\gamma}$ vs. Theta asymetry
hPi0InvMassThetaAsym
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.09344
RMS x 0.1201
RMS y 0.1032
$(|\theta_{max} - \theta_{min}|)/\theta_{max} + \theta_{min}$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1000
2000
3000
4000

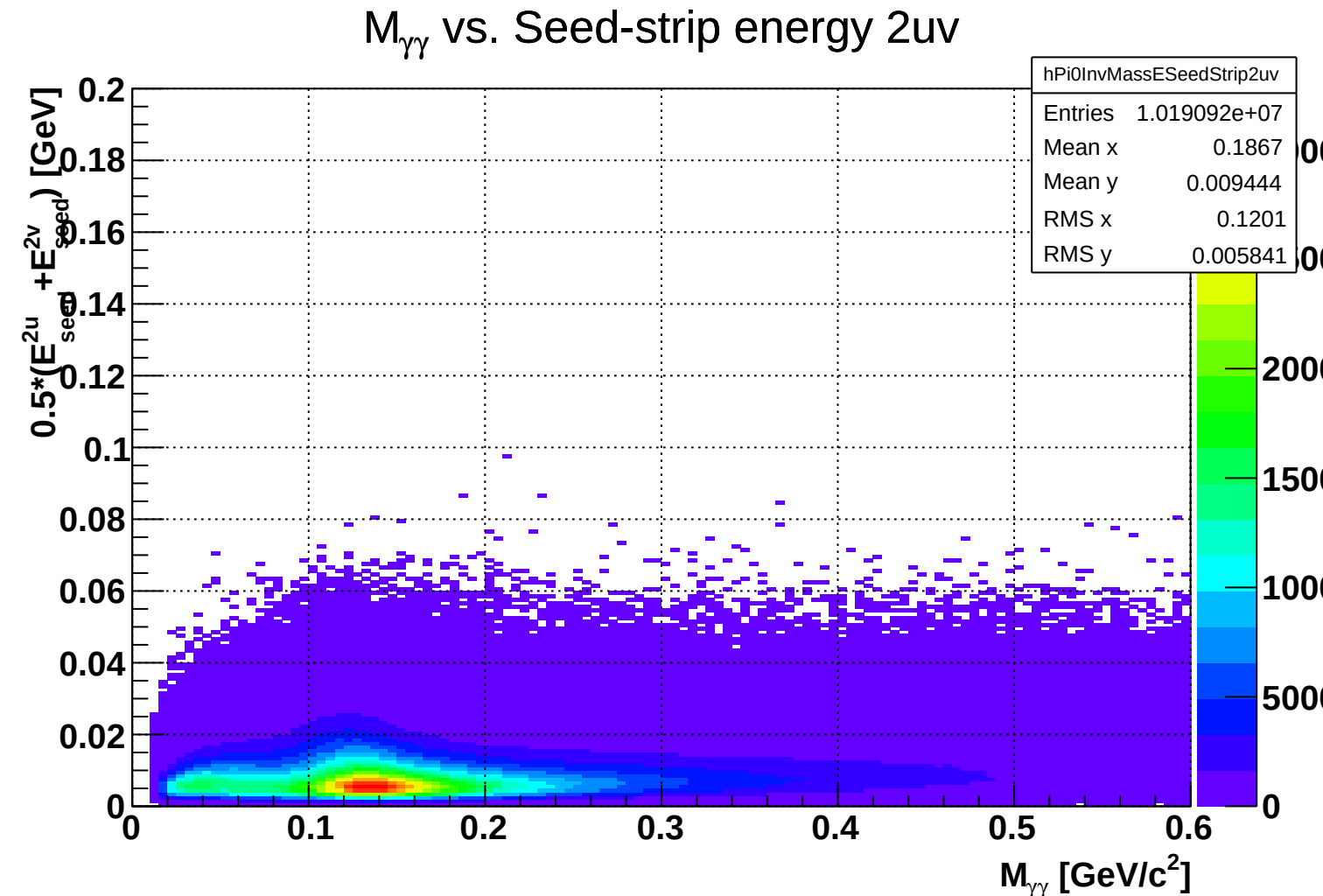

Seed-strip energy 1u
hPi0_eSeedStrip1u
Entries 1.019092e+07
Mean 0.01458
RMS 0.0103
Conuts
×10^3
600
500
400
300
200
100
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Seed-strip energy 1u [GeV]


Seed-strip energy 1v
×10^3
Conuts
600
500
400
300
200
100
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Seed-strip energy 1v [GeV]
hPi0_eSeedStrip1v
Entries 1.019092e+07
Mean 0.01397
RMS 0.009849

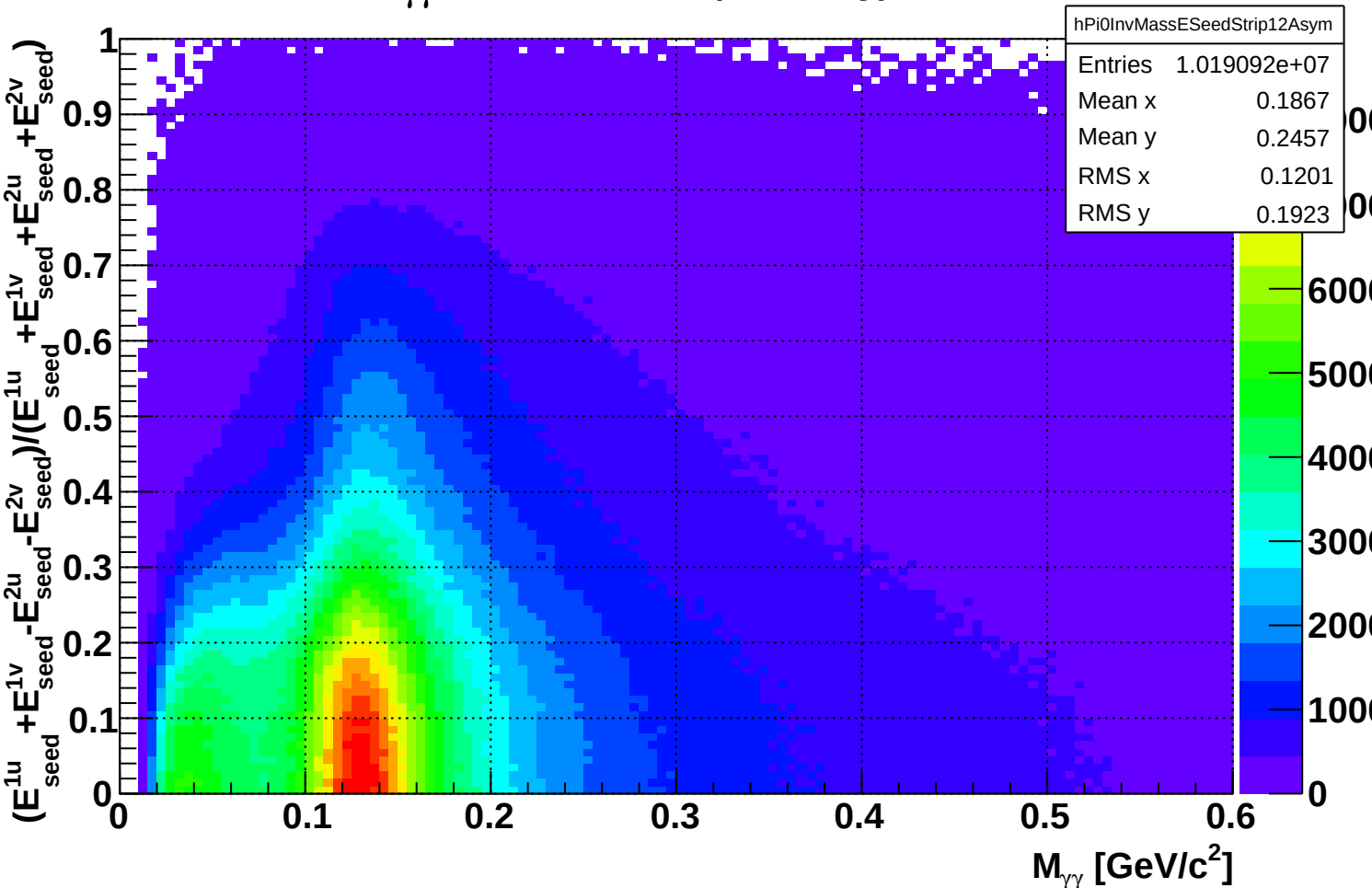

Seed-strip energy 2u
hPi0_eSeedStrip2u
Entries 1.019092e+07
Mean 0.009659
RMS 0.008211
Conuts
×10^3
1000
800
600
400
200
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Seed-strip energy 2u [GeV]

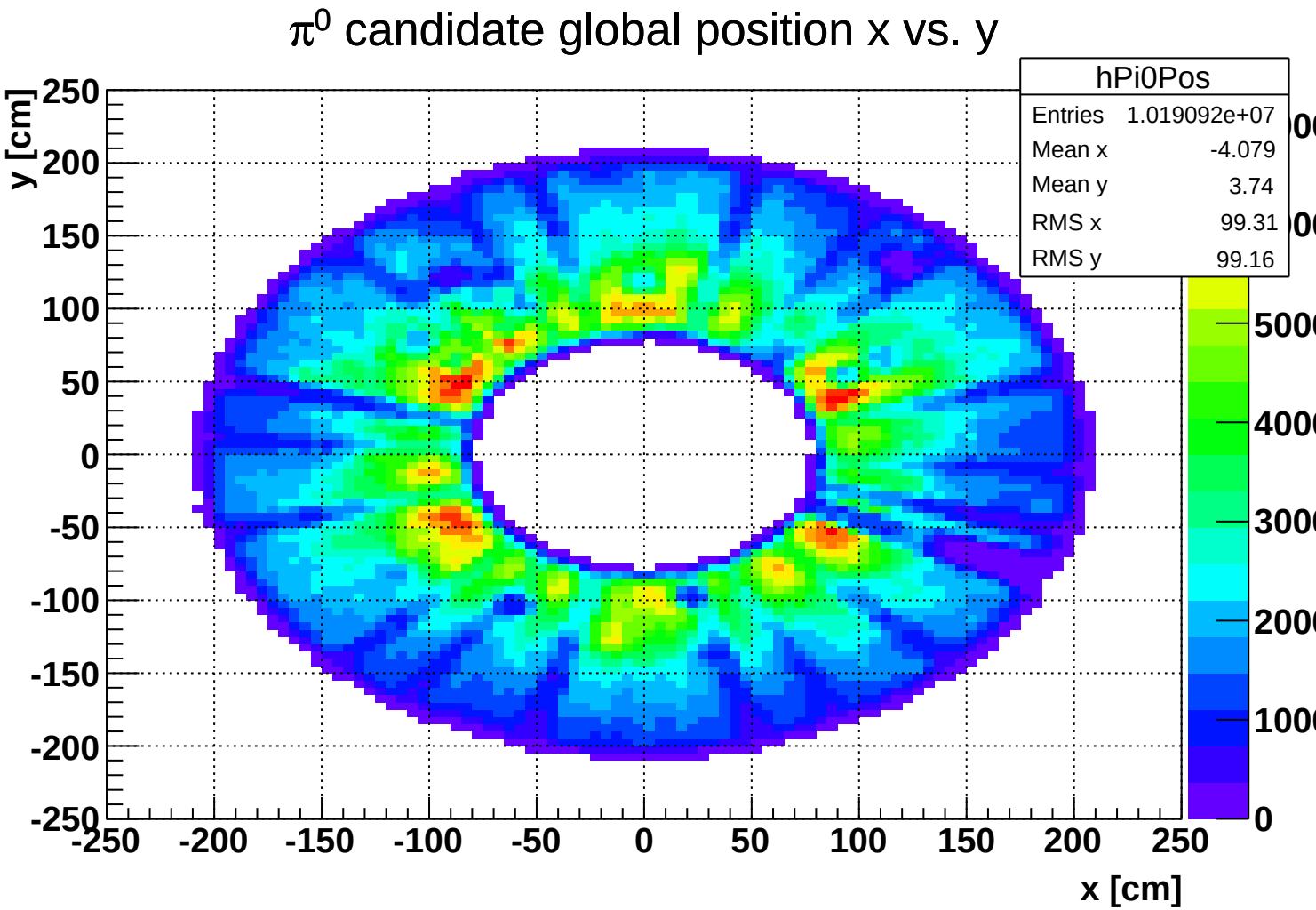

Seed-strip energy 2v
×10^3
Counts
1000
800
600
400
200
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Seed-strip energy 2v [GeV]
hPi0_eSeedStrip2v
Entries 1.019092e+07
Mean 0.009228
RMS 0.007795

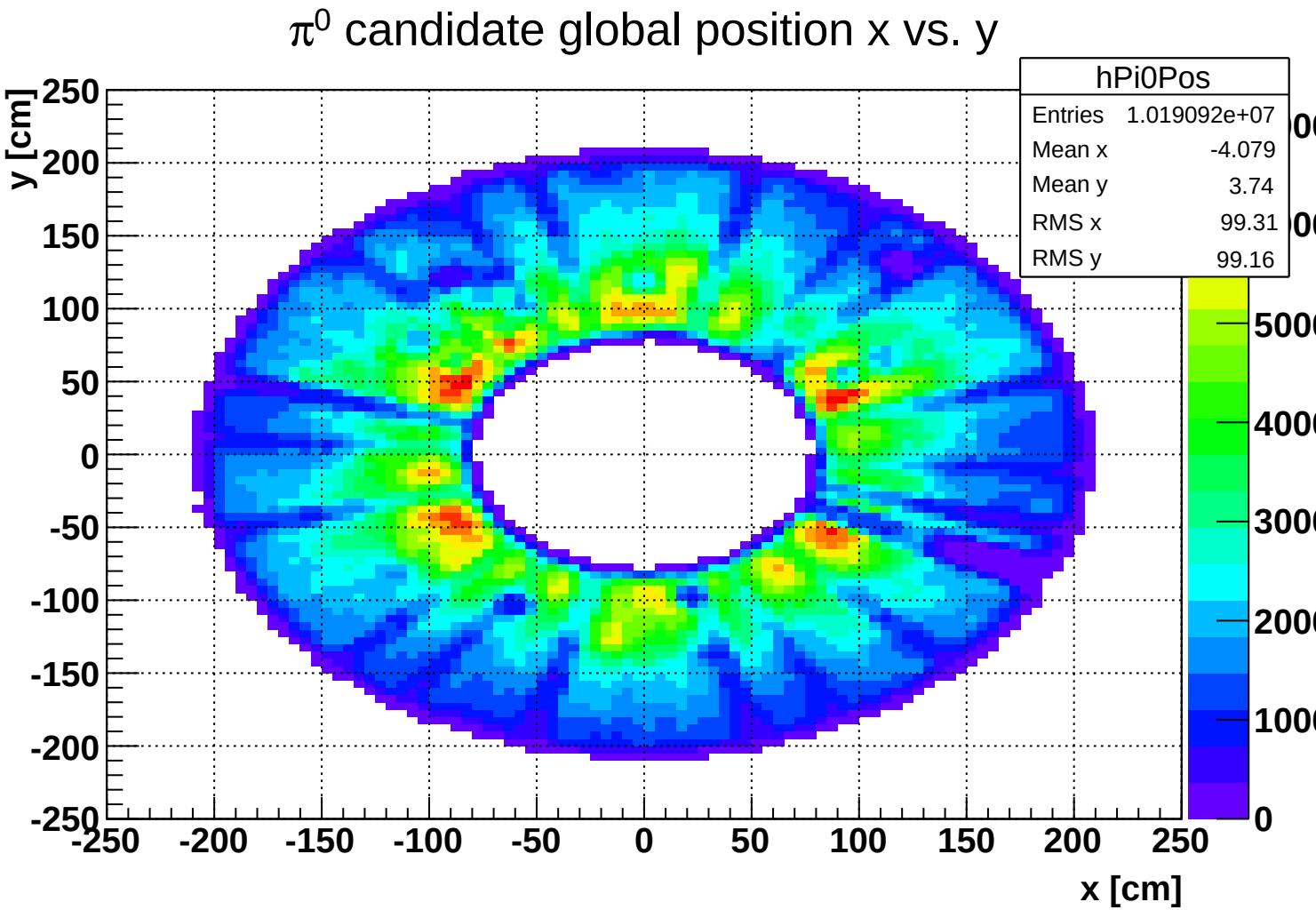

$M_{\gamma\gamma}$ vs. Seed-strip energy 1uv
hPi0InvMassESeedStrip1uv
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.01428
RMS x 0.1201
RMS y 0.008847
$0.5*(E^{1u}_{seed}+E^{1v}_{seed})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000
10000
12000
14000

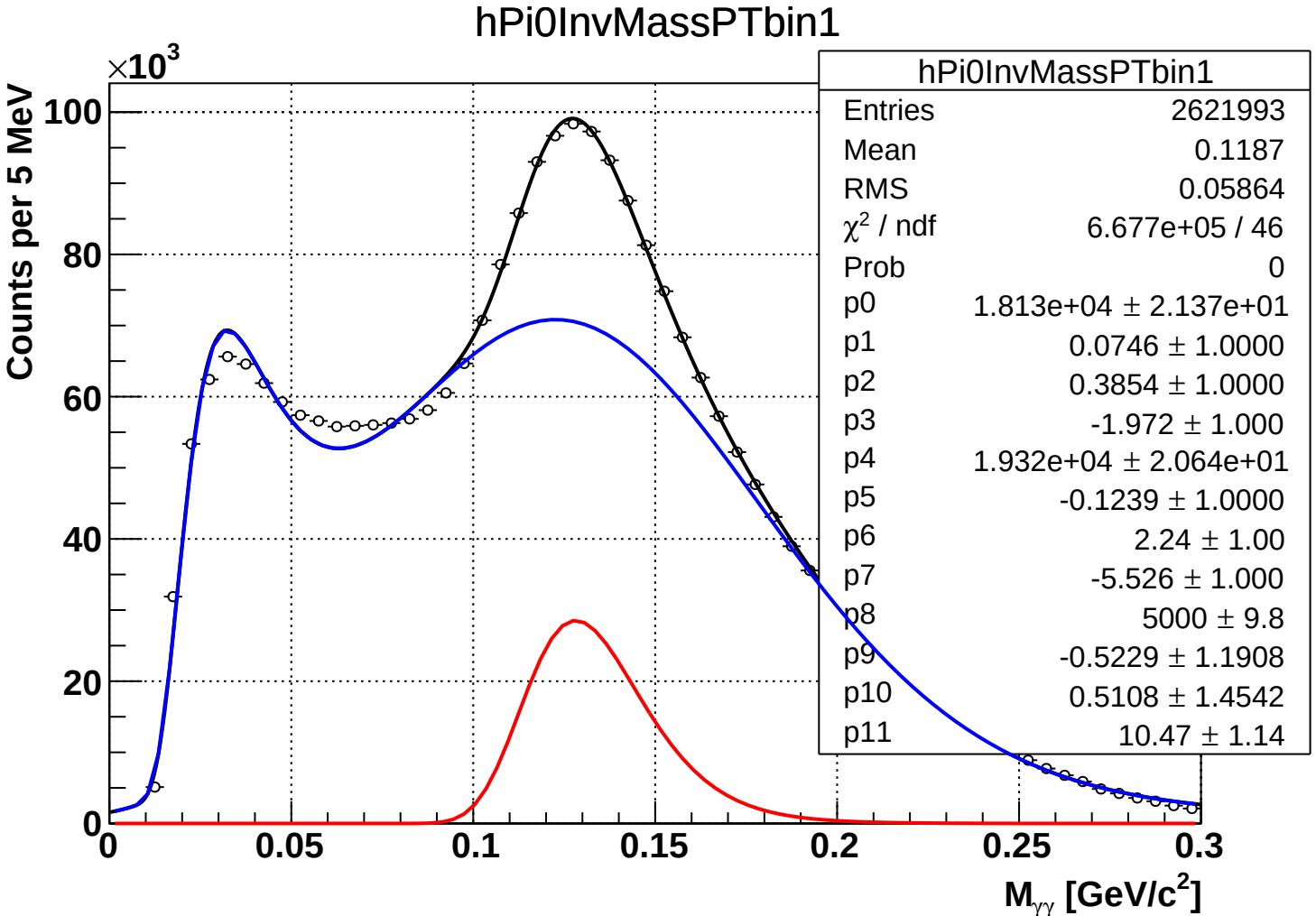

$M_{\gamma\gamma}$ vs. Seed-strip energy 2uv
hPi0InvMassESeedStrip2uv
Entries 1.019092e+07
Mean x 0.1867
Mean y 0.009444
RMS x 0.1201
RMS y 0.005841
$0.5*(E^{2u}_{seed}+E^{2v}_{seed})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000

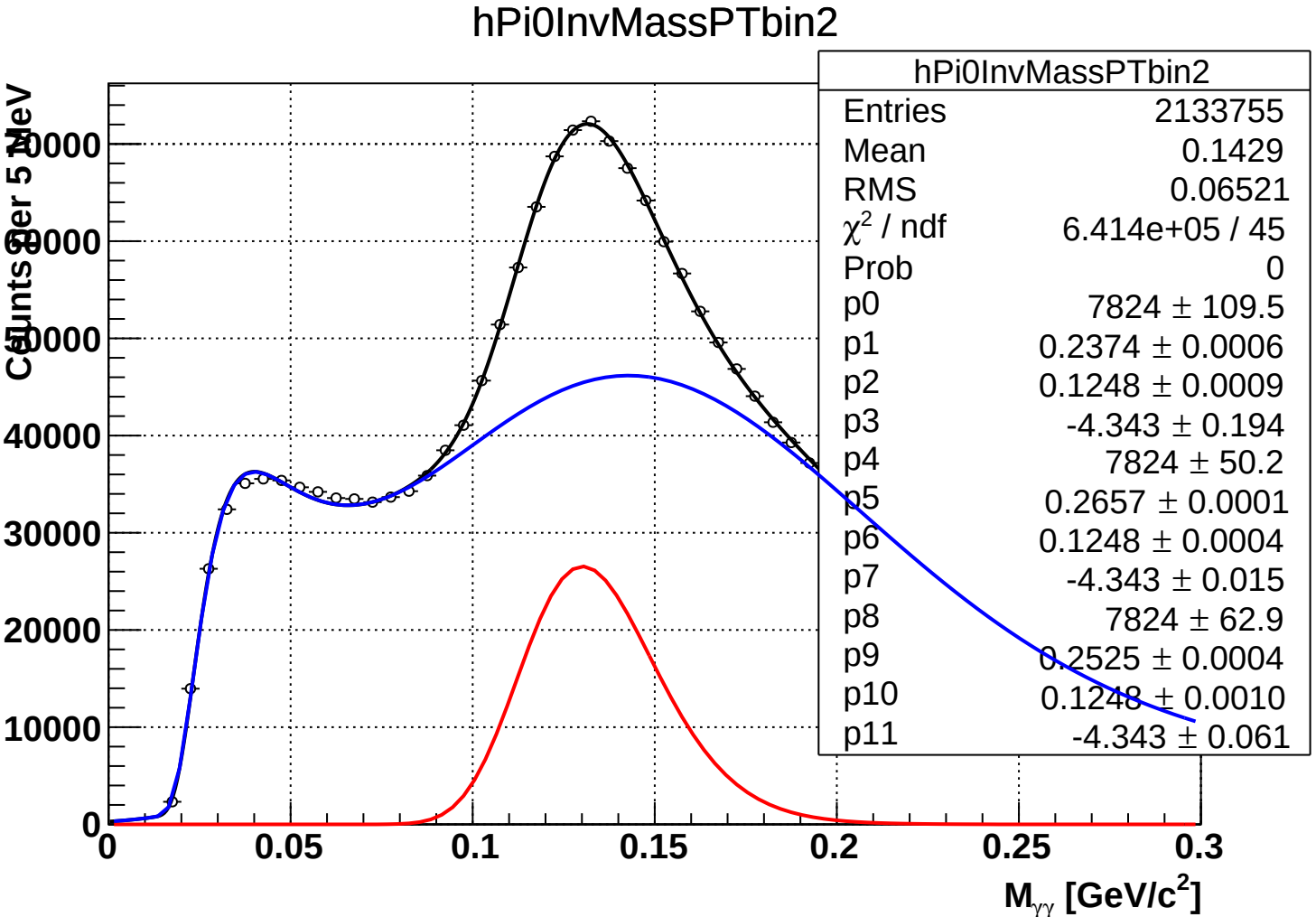
$M_{\gamma\gamma}$ vs. Seed-strip energy Diff

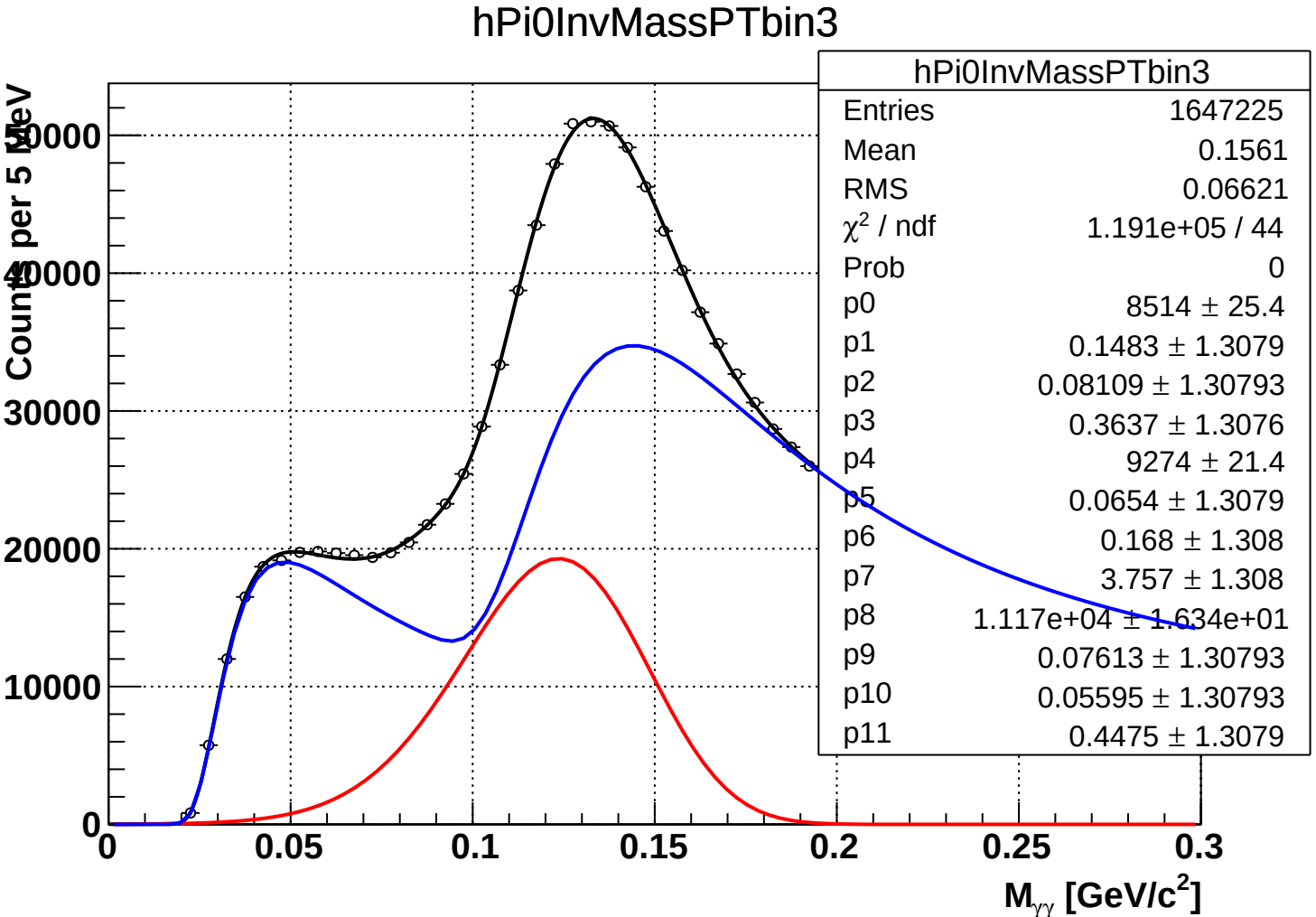


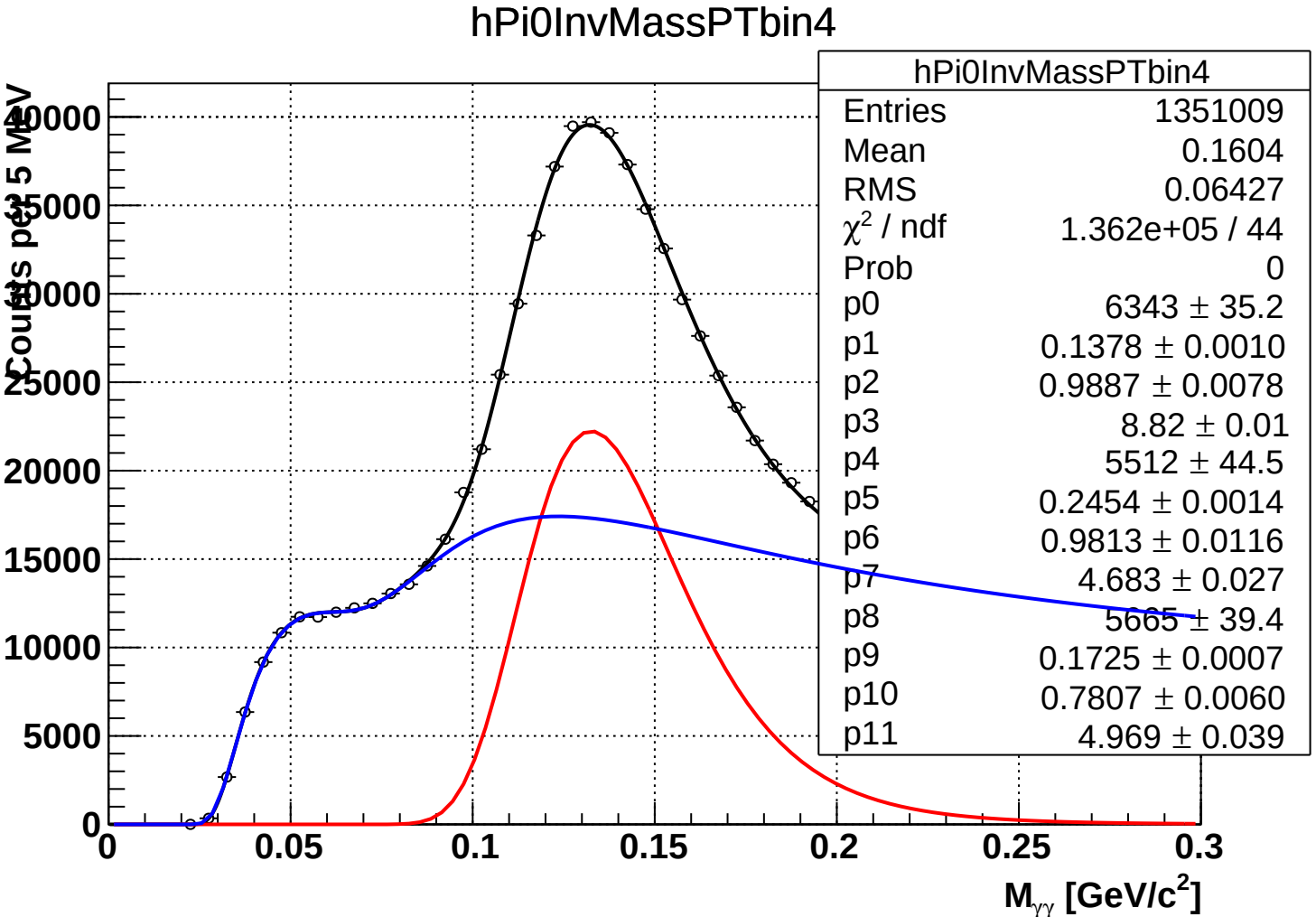

π^0 candidate global position x vs. y
hPi0Pos
Entries 1.019092e+07
Mean x -4.079
Mean y 3.74
RMS x 99.31
RMS y 99.16
y [cm]
x [cm]
250
200
150
100
50
0
-50
-100
-150
-200
-250
5000
4000
3000
2000
1000
0

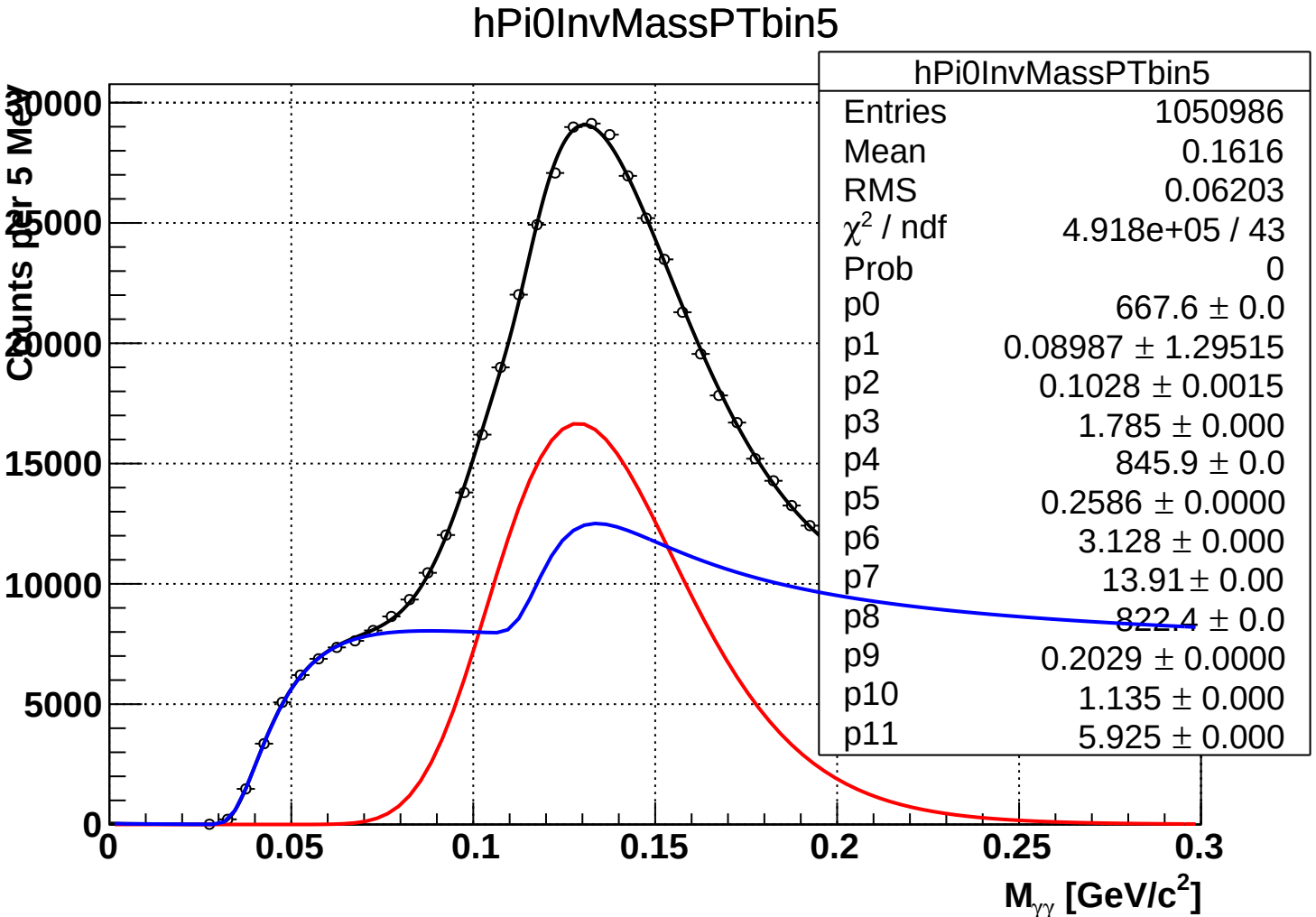

π^0 candidate global position x vs. y
hPi0Pos
Entries 1.019092e+07
Mean x -4.079
Mean y 3.74
RMS x 99.31
RMS y 99.16
y [cm]
x [cm]
250
200
150
100
50
0
-50
-100
-150
-200
-250
5000
4000
3000
2000
1000
0

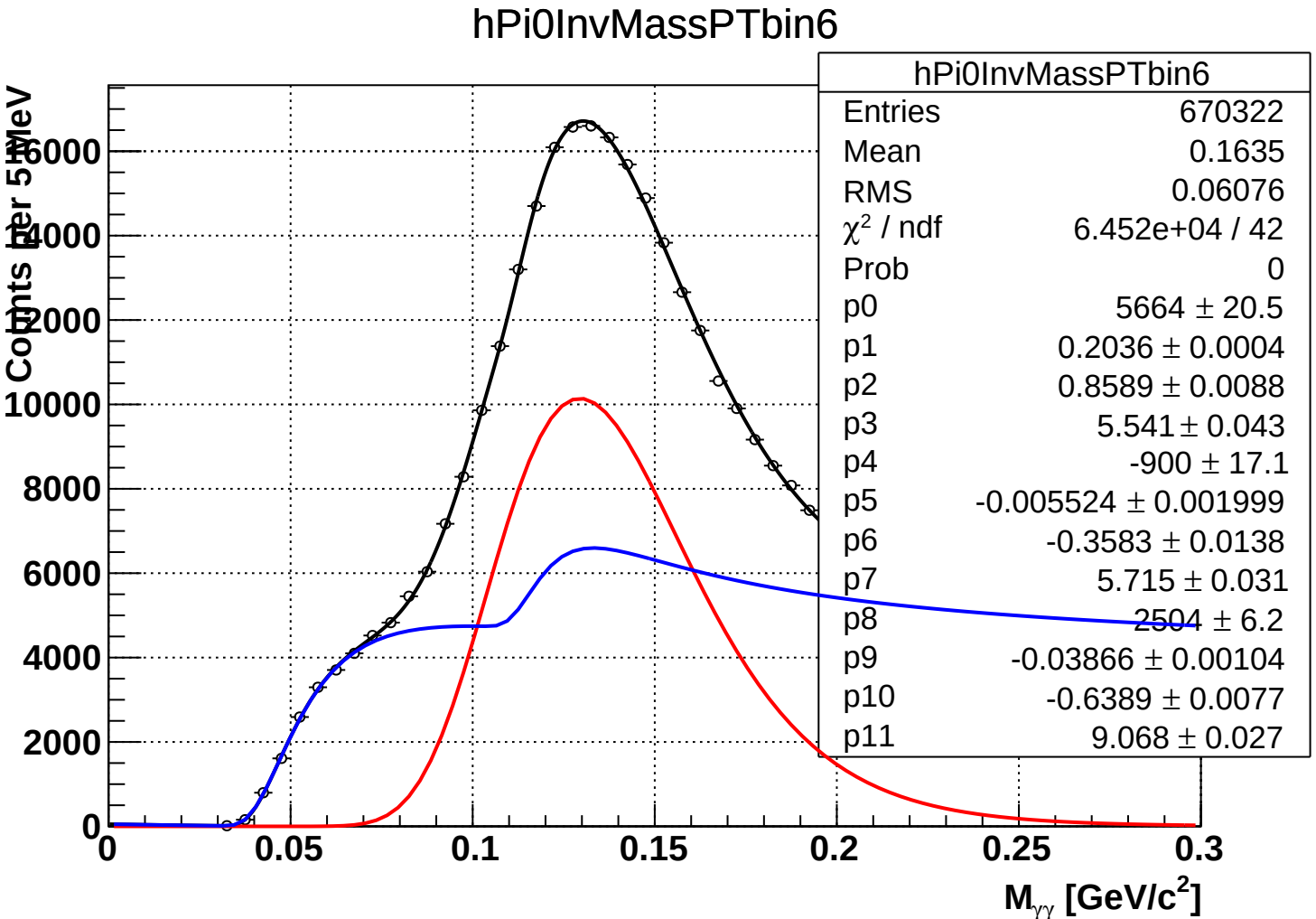

hPi0InvMassPTbin1
×10^3
Counts per 5 MeV
100
80
60
40
20
0
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c^2]
hPi0InvMassPTbin1
Entries 2621993
Mean 0.1187
RMS 0.05864
χ^2 / ndf 6.677e+05 / 46
Prob 0
p0 1.813e+04 ± 2.137e+01
p1 0.0746 ± 1.0000
p2 0.3854 ± 1.0000
p3 -1.972 ± 1.000
p4 1.932e+04 ± 2.064e+01
p5 -0.1239 ± 1.0000
p6 2.24 ± 1.00
p7 -5.526 ± 1.000
p8 5000 ± 9.8
p9 -0.5229 ± 1.1908
p10 0.5108 ± 1.4542
p11 10.47 ± 1.14

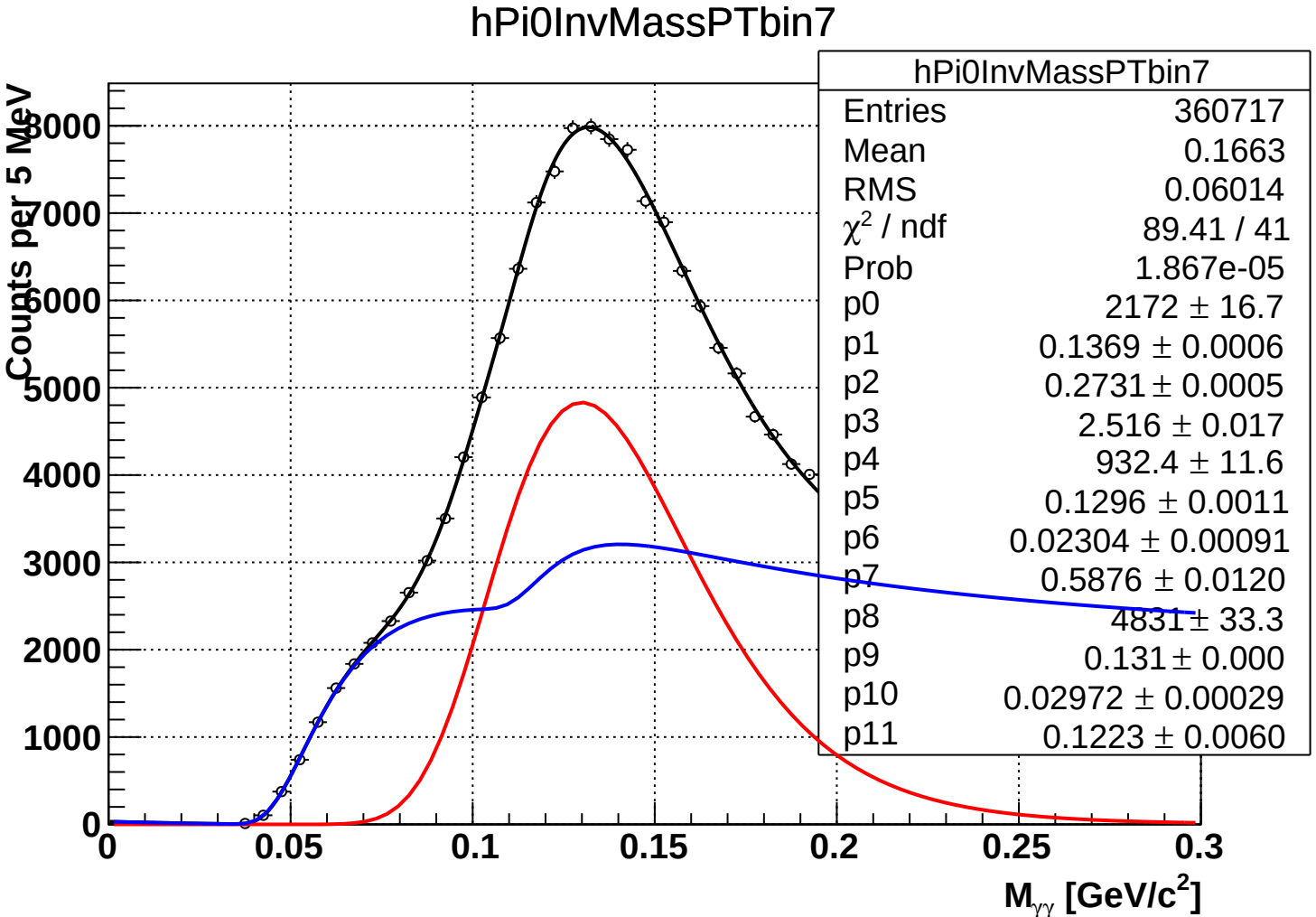

hPi0InvMassPTbin2
hPi0InvMassPTbin2
Entries 2133755
Mean 0.1429
RMS 0.06521
χ2 / ndf 6.414e+05 / 45
Prob 0
p0 7824 ± 109.5
p1 0.2374 ± 0.0006
p2 0.1248 ± 0.0009
p3 -4.343 ± 0.194
p4 7824 ± 50.2
p5 0.2657 ± 0.0001
p6 0.1248 ± 0.0004
p7 -4.343 ± 0.015
p8 7824 ± 62.9
p9 0.2525 ± 0.0004
p10 0.1248 ± 0.0010
p11 -4.343 ± 0.061
Counts per 5 MeV
0
10000
20000
30000
40000
50000
60000
70000
0
0.05
0.1
0.15
0.2
0.25
0.3
Mγγ [GeV/c2]

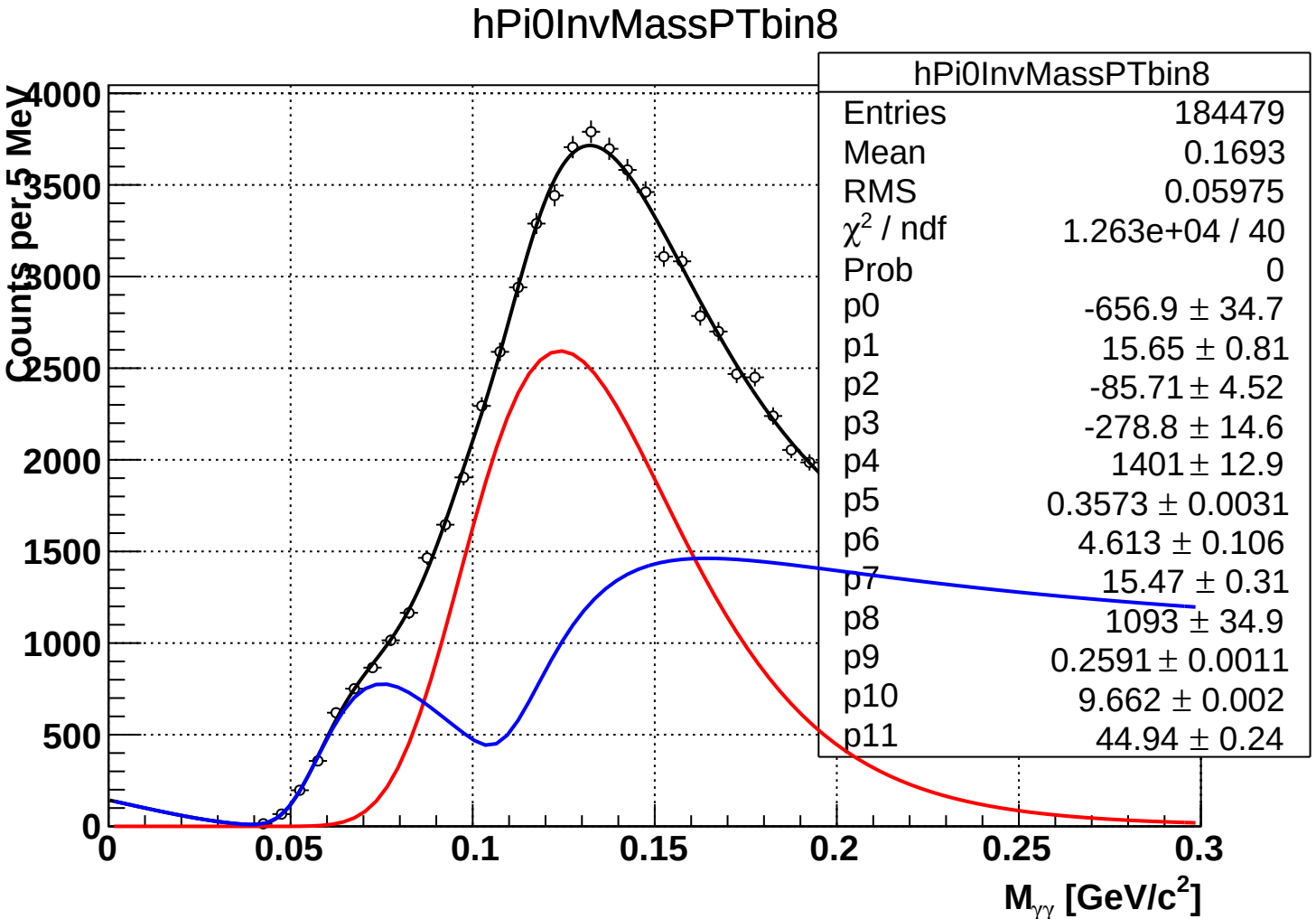

hPi0InvMassPTbin3
hPi0InvMassPTbin3
Entries 1647225
Mean 0.1561
RMS 0.06621
χ² / ndf 1.191e+05 / 44
Prob 0
p0 8514 ± 25.4
p1 0.1483 ± 1.3079
p2 0.08109 ± 1.30793
p3 0.3637 ± 1.3076
p4 9274 ± 21.4
p5 0.0654 ± 1.3079
p6 0.168 ± 1.308
p7 3.757 ± 1.308
p8 1.117e+04 ± 1.634e+01
p9 0.07613 ± 1.30793
p10 0.05595 ± 1.30793
p11 0.4475 ± 1.3079
Counts per 5 MeV
0
10000
20000
30000
40000
50000
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]

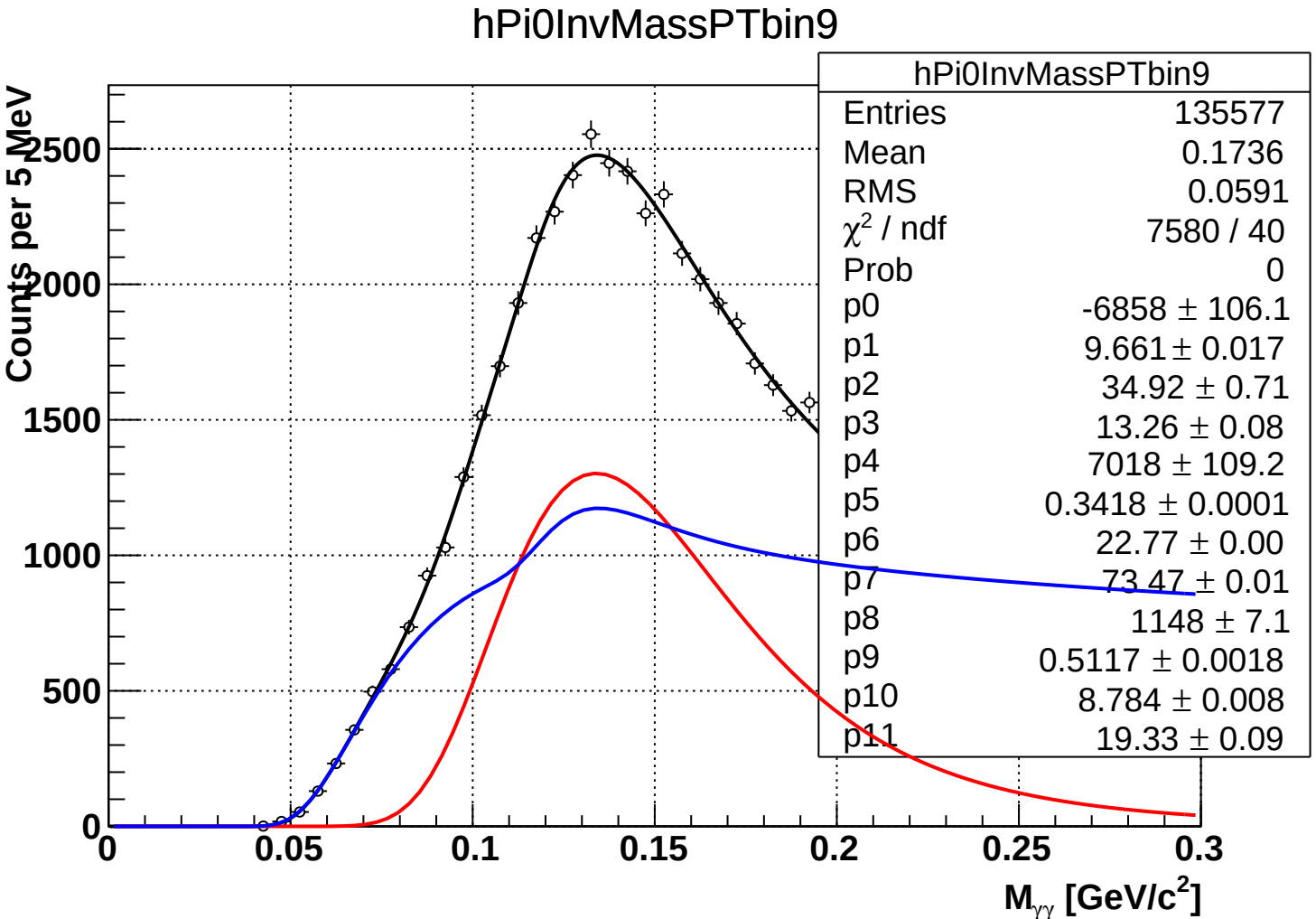

hPi0InvMassPTbin4
hPi0InvMassPTbin4
Entries 1351009
Mean 0.1604
RMS 0.06427
χ2 / ndf 1.362e+05 / 44
Prob 0
p0 6343 ± 35.2
p1 0.1378 ± 0.0010
p2 0.9887 ± 0.0078
p3 8.82 ± 0.01
p4 5512 ± 44.5
p5 0.2454 ± 0.0014
p6 0.9813 ± 0.0116
p7 4.683 ± 0.027
p8 5665 ± 39.4
p9 0.1725 ± 0.0007
p10 0.7807 ± 0.0060
p11 4.969 ± 0.039
Counts per 2.5 MeV
0
5000
10000
15000
20000
25000
30000
35000
40000
0
0.05
0.1
0.15
0.2
0.25
0.3
Mγγ [GeV/c2]

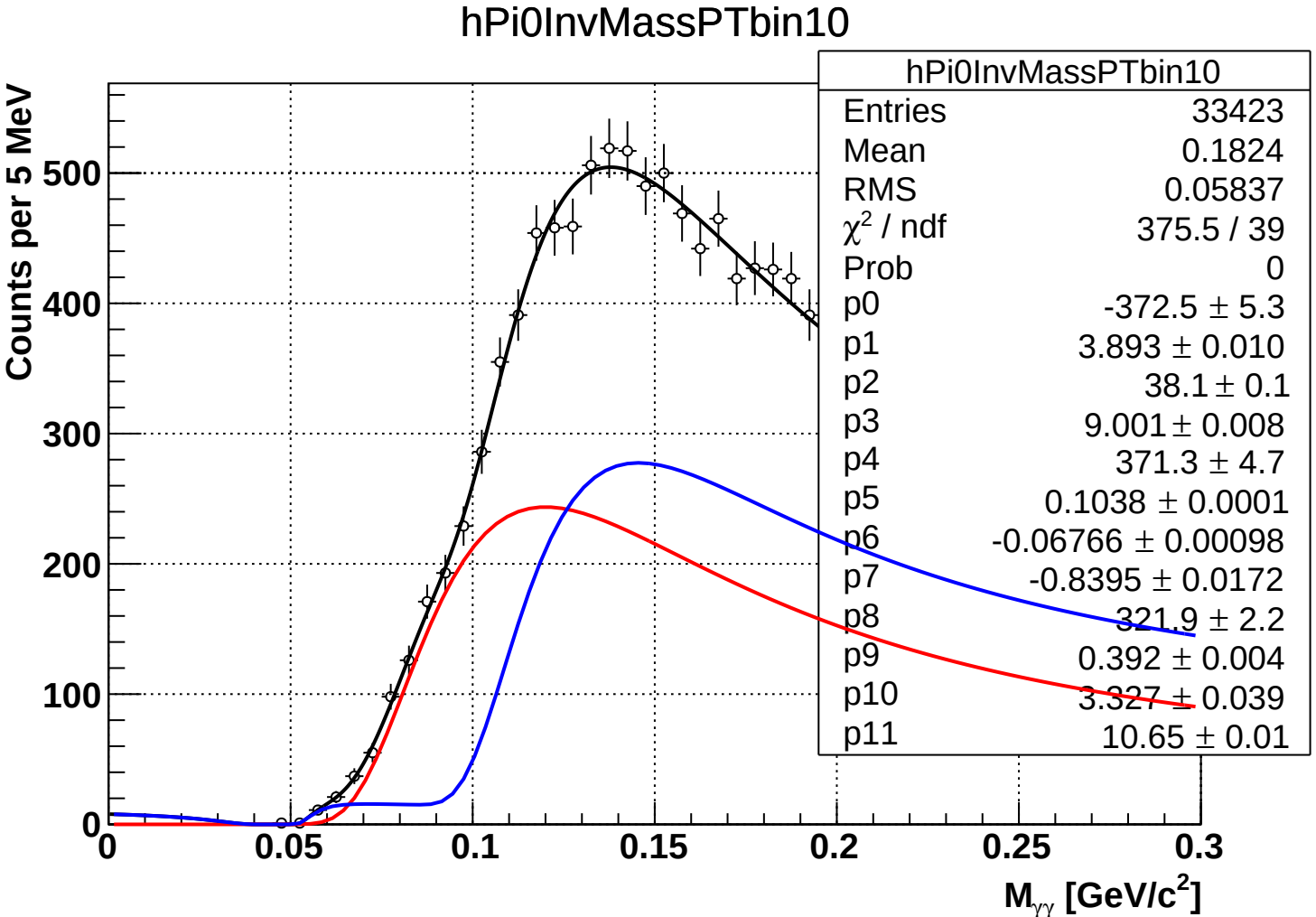

hPi0InvMassPTbin5
hPi0InvMassPTbin5
Entries 1050986
Mean 0.1616
RMS 0.06203
χ2 / ndf 4.918e+05 / 43
Prob 0
p0 667.6 ± 0.0
p1 0.08987 ± 1.29515
p2 0.1028 ± 0.0015
p3 1.785 ± 0.000
p4 845.9 ± 0.0
p5 0.2586 ± 0.0000
p6 3.128 ± 0.000
p7 13.91 ± 0.00
p8 822.4 ± 0.0
p9 0.2029 ± 0.0000
p10 1.135 ± 0.000
p11 5.925 ± 0.000
Counts per 5 MeV
0
5000
10000
15000
20000
25000
30000
0
0.05
0.1
0.15
0.2
0.25
0.3
Mγγ [GeV/c2]

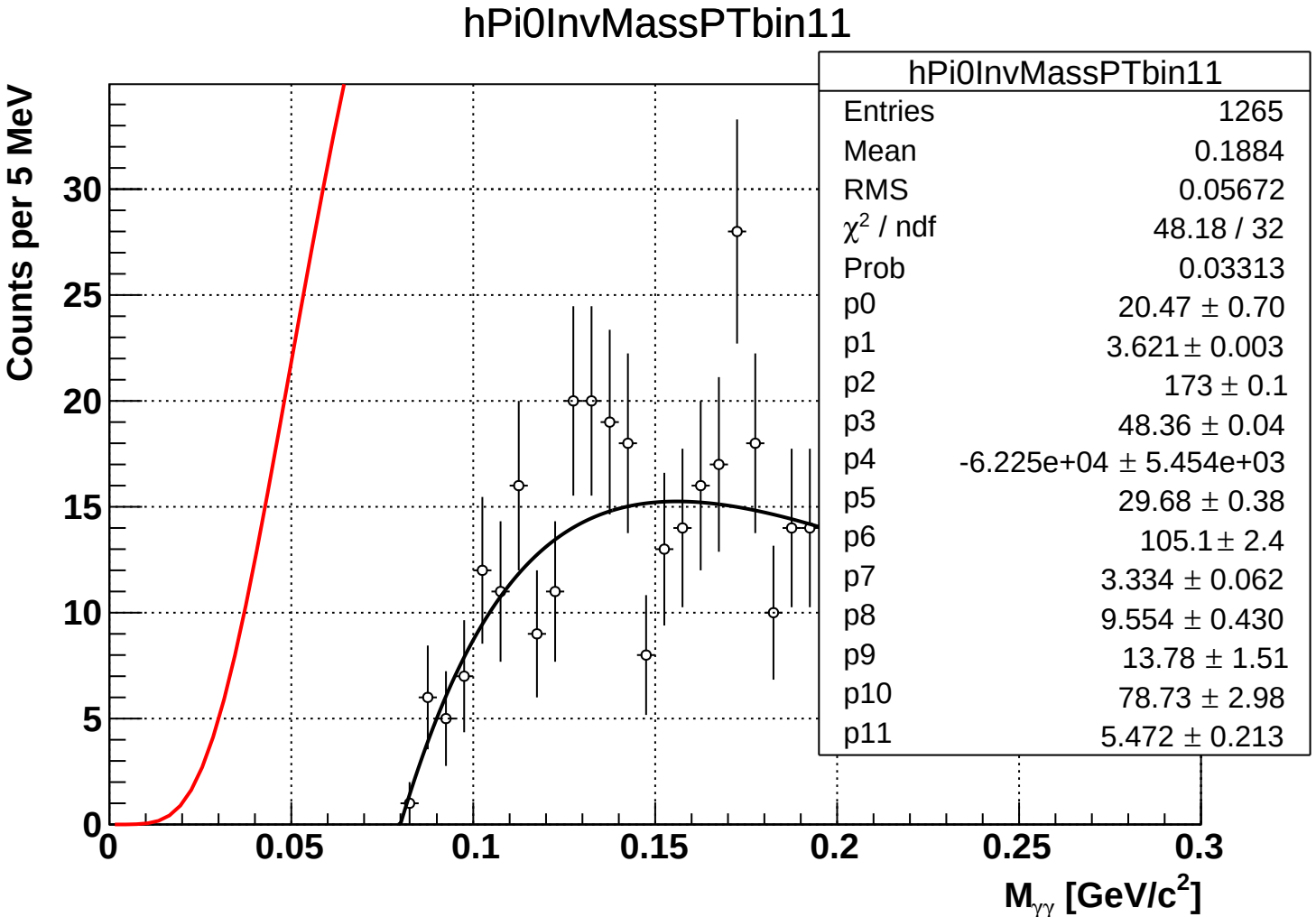

hPi0InvMassPTbin6
hPi0InvMassPTbin6
Entries 670322
Mean 0.1635
RMS 0.06076
χ² / ndf 6.452e+04 / 42
Prob 0
p0 5664 ± 20.5
p1 0.2036 ± 0.0004
p2 0.8589 ± 0.0088
p3 5.541 ± 0.043
p4 -900 ± 17.1
p5 -0.005524 ± 0.001999
p6 -0.3583 ± 0.0138
p7 5.715 ± 0.031
p8 2504 ± 6.2
p9 -0.03866 ± 0.00104
p10 -0.6389 ± 0.0077
p11 9.068 ± 0.027
Counts per 5MeV
16000
14000
12000
10000
8000
6000
4000
2000
0
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]

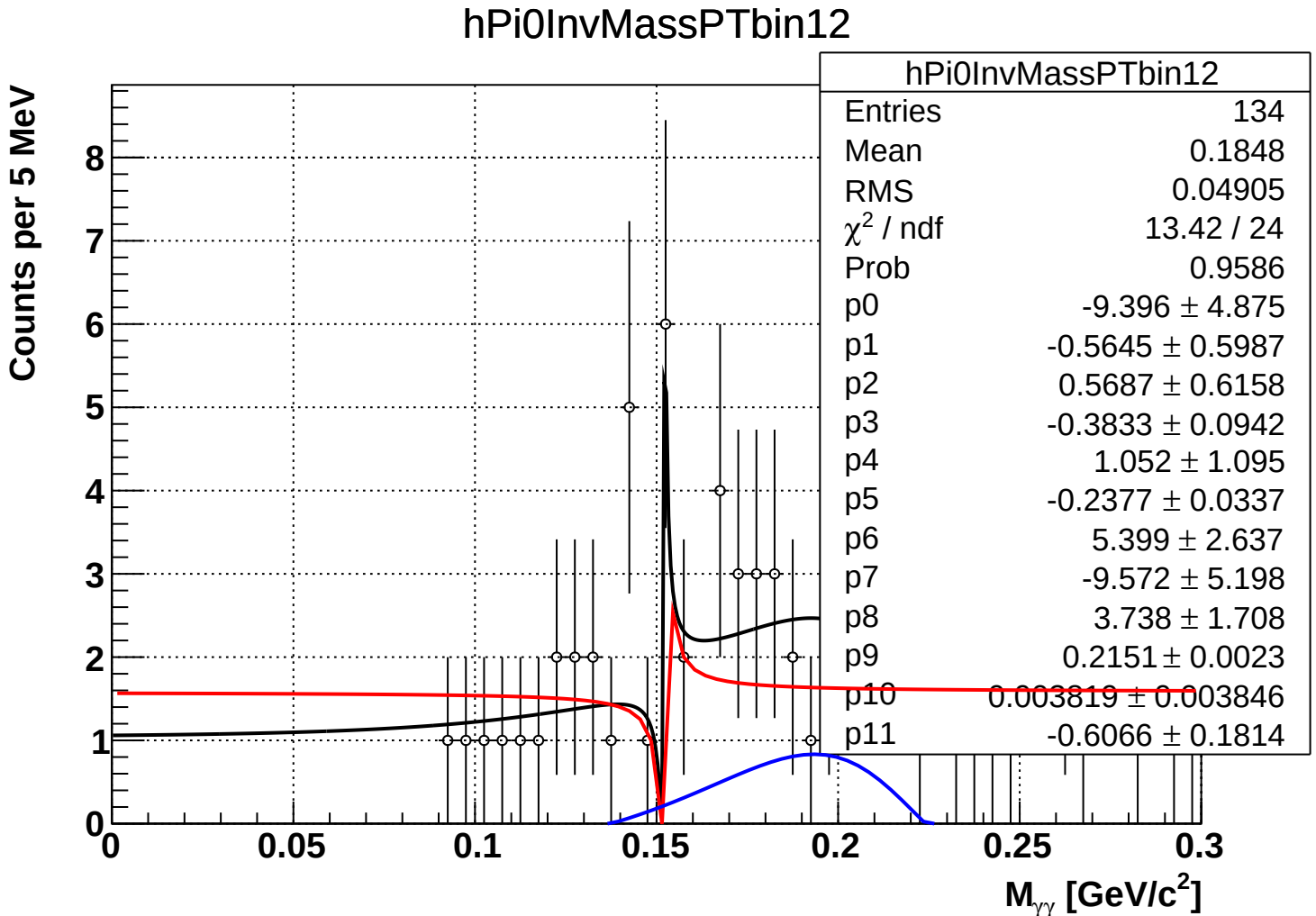

hPi0InvMassPTbin7
hPi0InvMassPTbin7
Entries 360717
Mean 0.1663
RMS 0.06014
χ² / ndf 89.41 / 41
Prob 1.867e-05
p0 2172 ± 16.7
p1 0.1369 ± 0.0006
p2 0.2731 ± 0.0005
p3 2.516 ± 0.017
p4 932.4 ± 11.6
p5 0.1296 ± 0.0011
p6 0.02304 ± 0.00091
p7 0.5876 ± 0.0120
p8 4831 ± 33.3
p9 0.131 ± 0.000
p10 0.02972 ± 0.00029
p11 0.1223 ± 0.0060
Counts per 5 MeV
0
1000
2000
3000
4000
5000
6000
7000
8000
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]

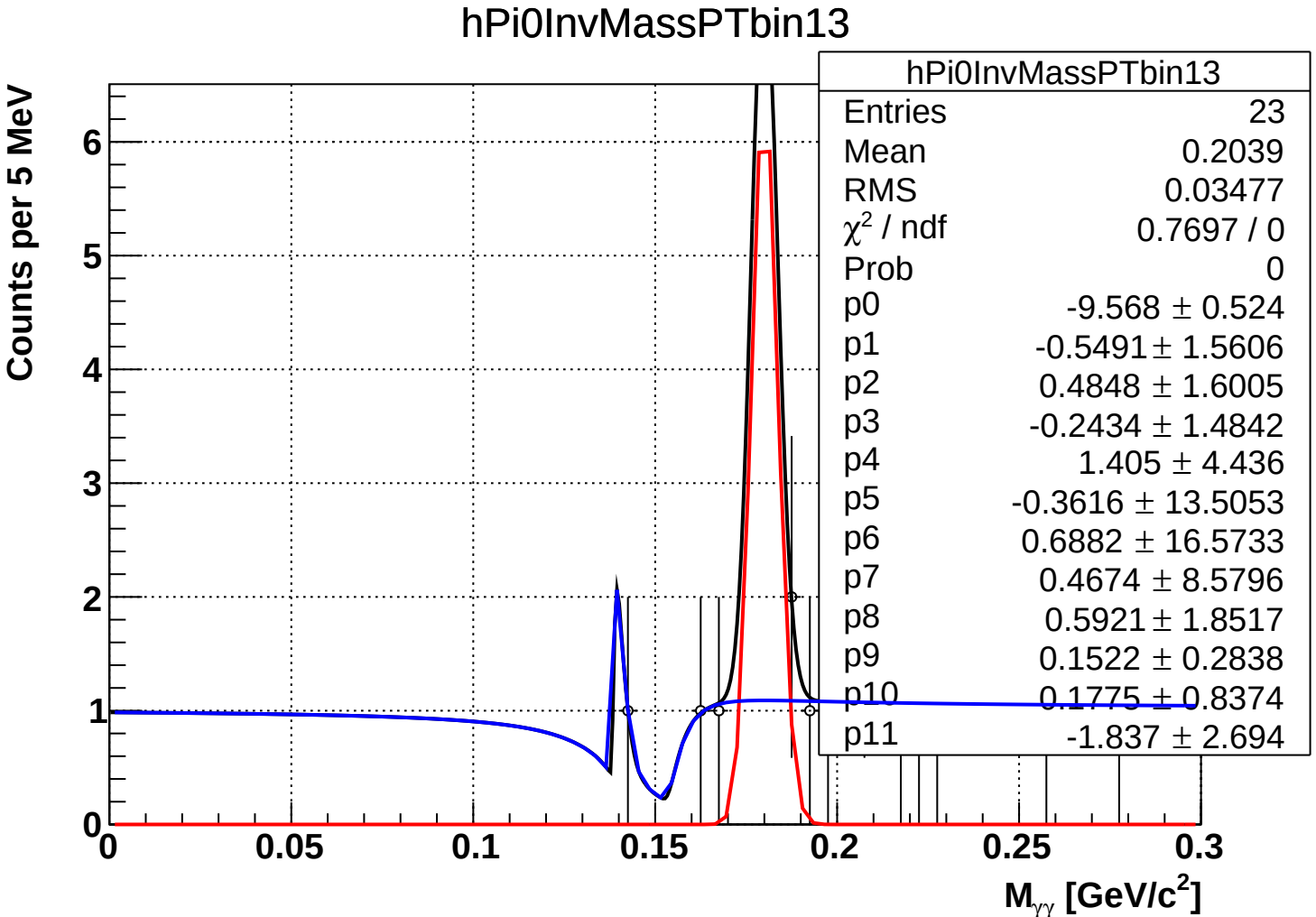

hPi0InvMassPTbin8
hPi0InvMassPTbin8
Entries 184479
Mean 0.1693
RMS 0.05975
χ2 / ndf 1.263e+04 / 40
Prob 0
p0 -656.9 ± 34.7
p1 15.65 ± 0.81
p2 -85.71 ± 4.52
p3 -278.8 ± 14.6
p4 1401 ± 12.9
p5 0.3573 ± 0.0031
p6 4.613 ± 0.106
p7 15.47 ± 0.31
p8 1093 ± 34.9
p9 0.2591 ± 0.0011
p10 9.662 ± 0.002
p11 44.94 ± 0.24
Counts per 5 MeV
0
500
1000
1500
2000
2500
3000
3500
4000
0
0.05
0.1
0.15
0.2
0.25
0.3
Mγγ [GeV/c2]


hPi0InvMassPTbin9
hPi0InvMassPTbin9
Entries 135577
Mean 0.1736
RMS 0.0591
χ² / ndf 7580 / 40
Prob 0
p0 -6858 ± 106.1
p1 9.661 ± 0.017
p2 34.92 ± 0.71
p3 13.26 ± 0.08
p4 7018 ± 109.2
p5 0.3418 ± 0.0001
p6 22.77 ± 0.00
p7 73.47 ± 0.01
p8 1148 ± 7.1
p9 0.5117 ± 0.0018
p10 8.784 ± 0.008
p11 19.33 ± 0.09
Counts per 5 MeV
0
500
1000
1500
2000
2500
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]


hPi0InvMassPTbin10
Counts per 5 MeV
0
100
200
300
400
500
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin10
Entries 33423
Mean 0.1824
RMS 0.05837
χ^2 / ndf 375.5 / 39
Prob 0
p0 -372.5 ± 5.3
p1 3.893 ± 0.010
p2 38.1 ± 0.1
p3 9.001 ± 0.008
p4 371.3 ± 4.7
p5 0.1038 ± 0.0001
p6 -0.06766 ± 0.00098
p7 -0.8395 ± 0.0172
p8 321.9 ± 2.2
p9 0.392 ± 0.004
p10 3.327 ± 0.039
p11 10.65 ± 0.01


hPi0InvMassPTbin11
Counts per 5 MeV
0
5
10
15
20
25
30
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin11
Entries 1265
Mean 0.1884
RMS 0.05672
χ^2 / ndf 48.18 / 32
Prob 0.03313
p0 20.47 ± 0.70
p1 3.621 ± 0.003
p2 173 ± 0.1
p3 48.36 ± 0.04
p4 -6.225e+04 ± 5.454e+03
p5 29.68 ± 0.38
p6 105.1 ± 2.4
p7 3.334 ± 0.062
p8 9.554 ± 0.430
p9 13.78 ± 1.51
p10 78.73 ± 2.98
p11 5.472 ± 0.213


hPi0InvMassPTbin12
Counts per 5 MeV
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.05
0.1
0.15
0.2
0.25
0.3
1
2
3
4
5
6
7
8
hPi0InvMassPTbin12
Entries 134
Mean 0.1848
RMS 0.04905
χ^2 / ndf 13.42 / 24
Prob 0.9586
p0 -9.396 ± 4.875
p1 -0.5645 ± 0.5987
p2 0.5687 ± 0.6158
p3 -0.3833 ± 0.0942
p4 1.052 ± 1.095
p5 -0.2377 ± 0.0337
p6 5.399 ± 2.637
p7 -9.572 ± 5.198
p8 3.738 ± 1.708
p9 0.2151 ± 0.0023
p10 0.003819 ± 0.003846
p11 -0.6066 ± 0.1814


hPi0InvMassPTbin13
Counts per 5 MeV
0
1
2
3
4
5
6
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin13
Entries 23
Mean 0.2039
RMS 0.03477
χ^2 / ndf 0.7697 / 0
Prob 0
p0 -9.568 ± 0.524
p1 -0.5491 ± 1.5606
p2 0.4848 ± 1.6005
p3 -0.2434 ± 1.4842
p4 1.405 ± 4.436
p5 -0.3616 ± 13.5053
p6 0.6882 ± 16.5733
p7 0.4674 ± 8.5796
p8 0.5921 ± 1.8517
p9 0.1522 ± 0.2838
p10 0.1775 ± 0.8374
p11 -1.837 ± 2.694