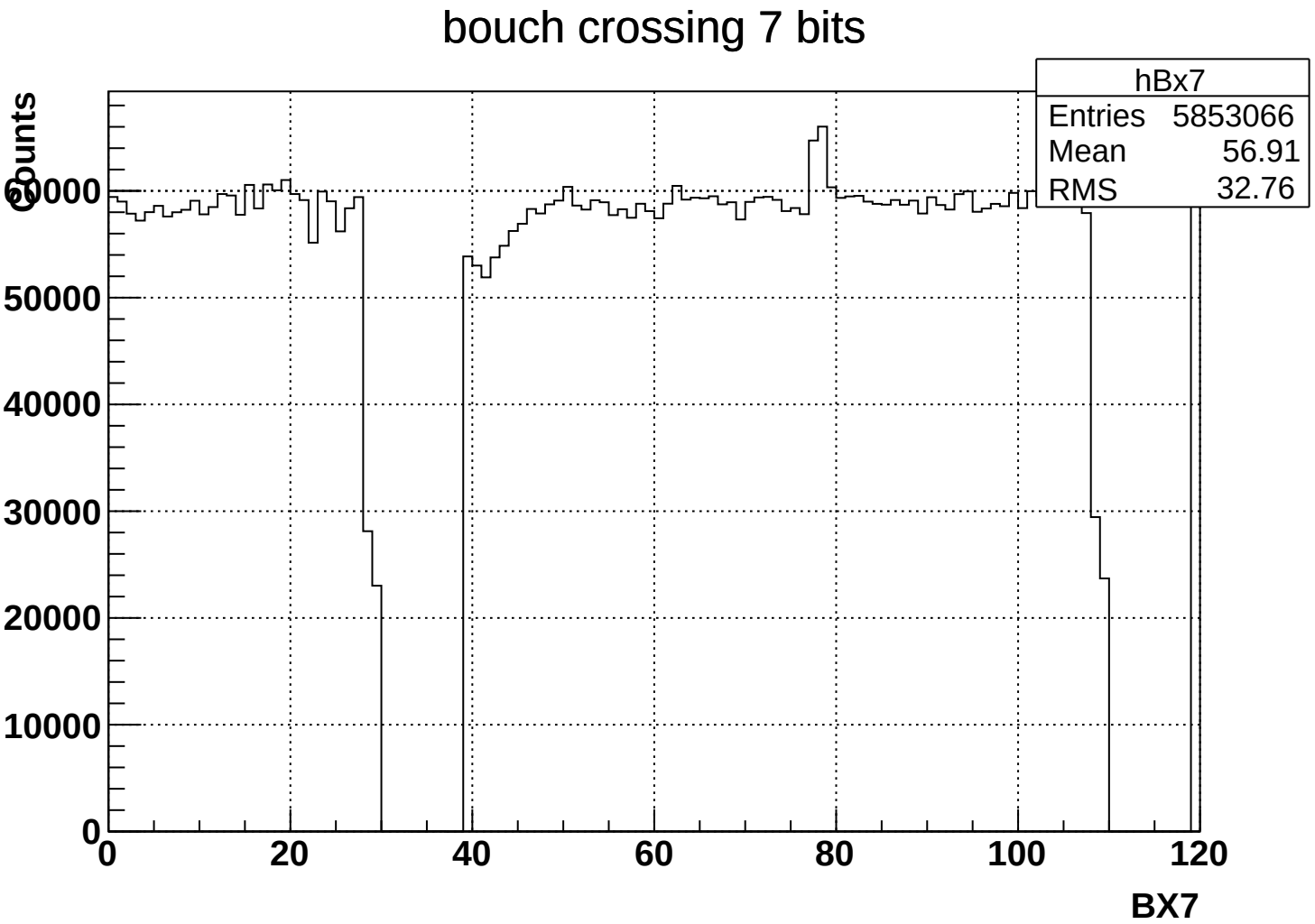
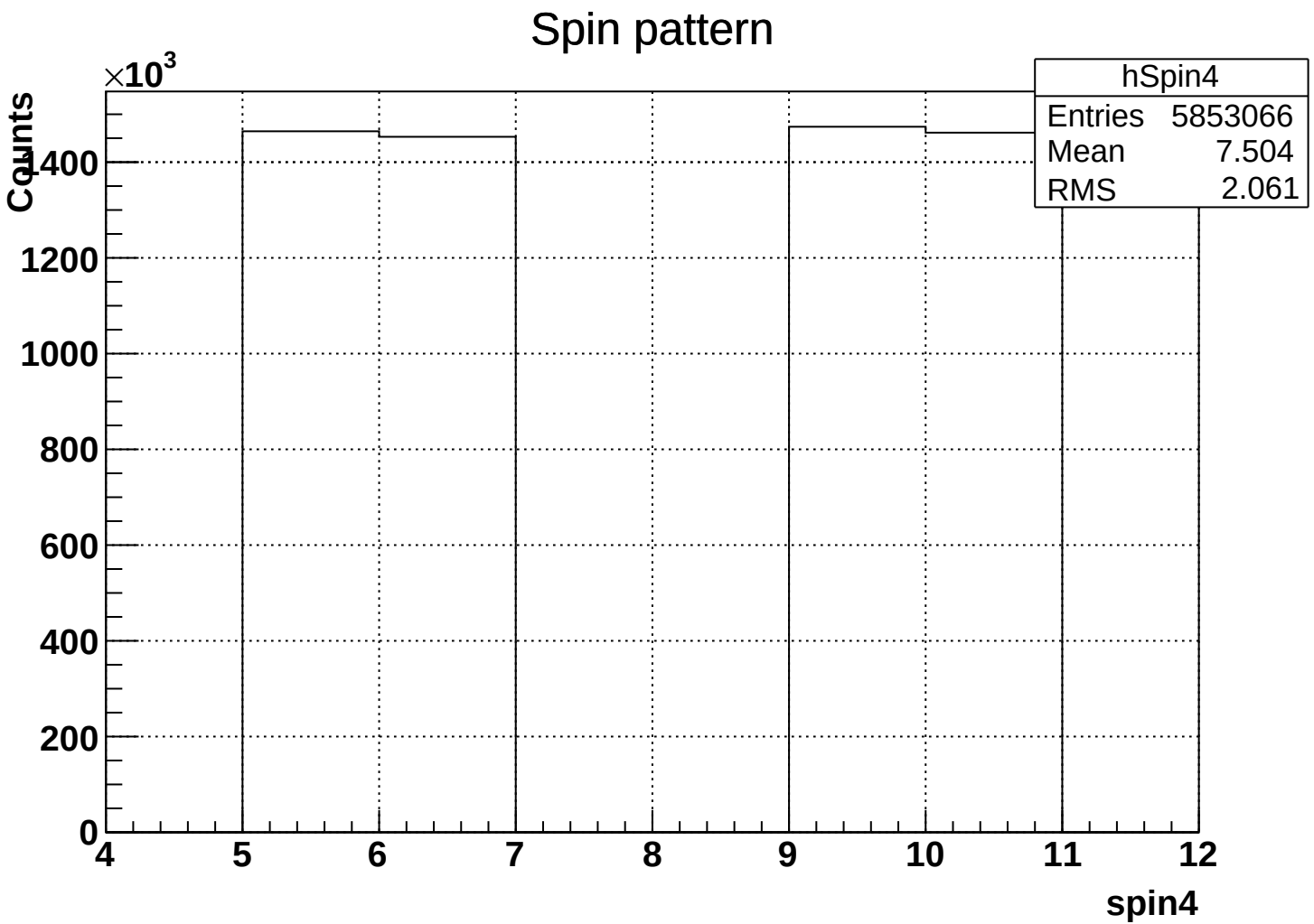
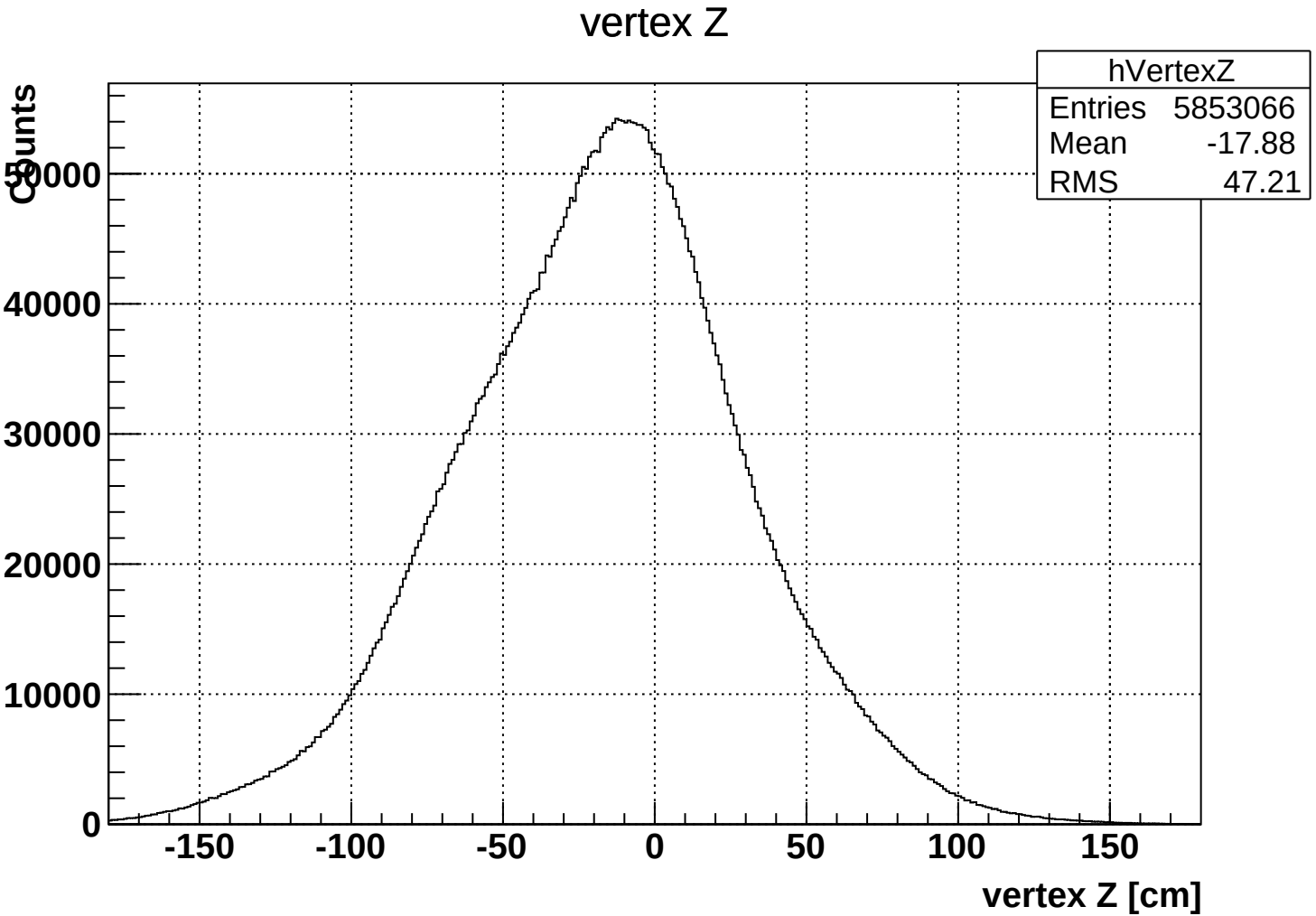
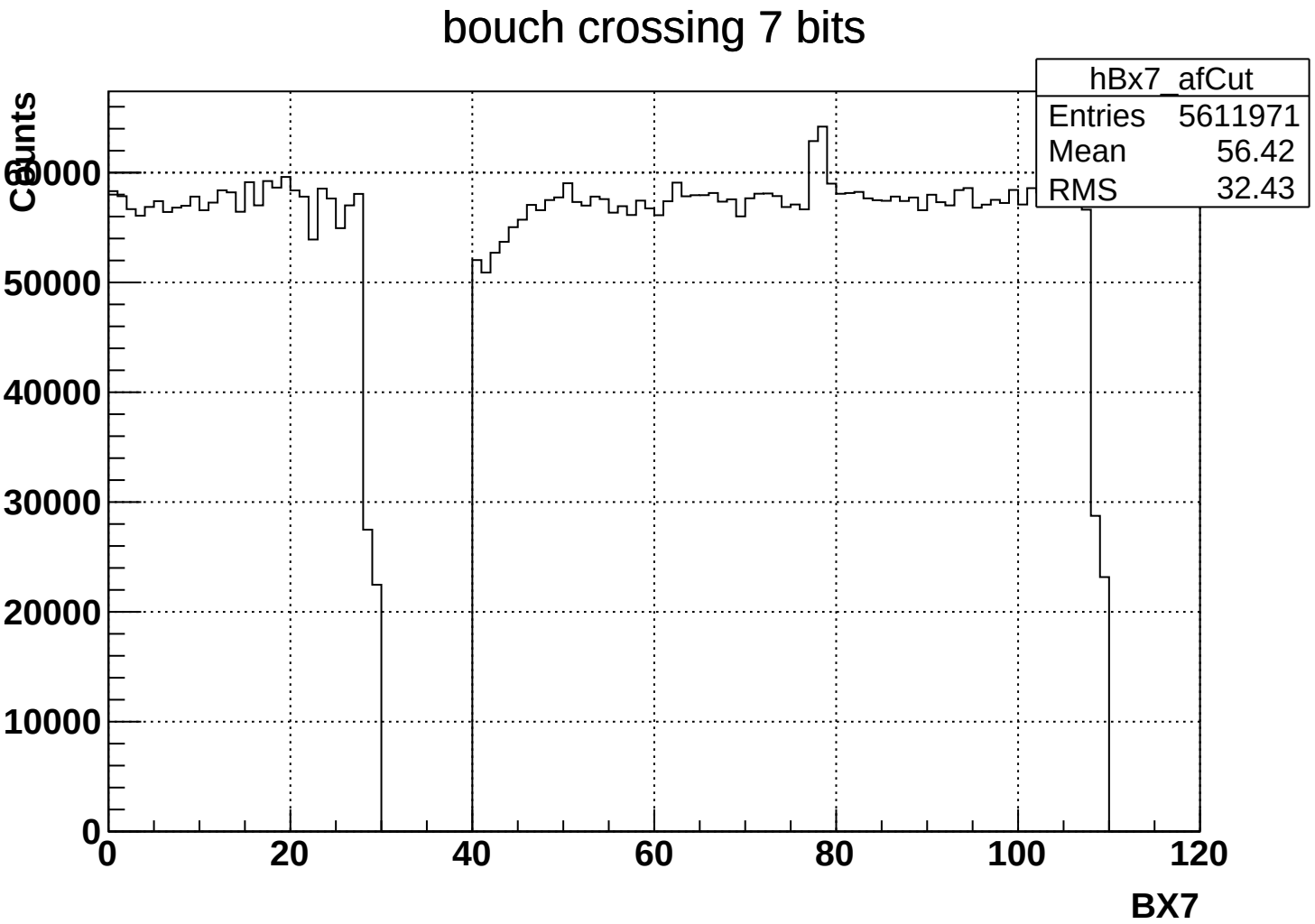
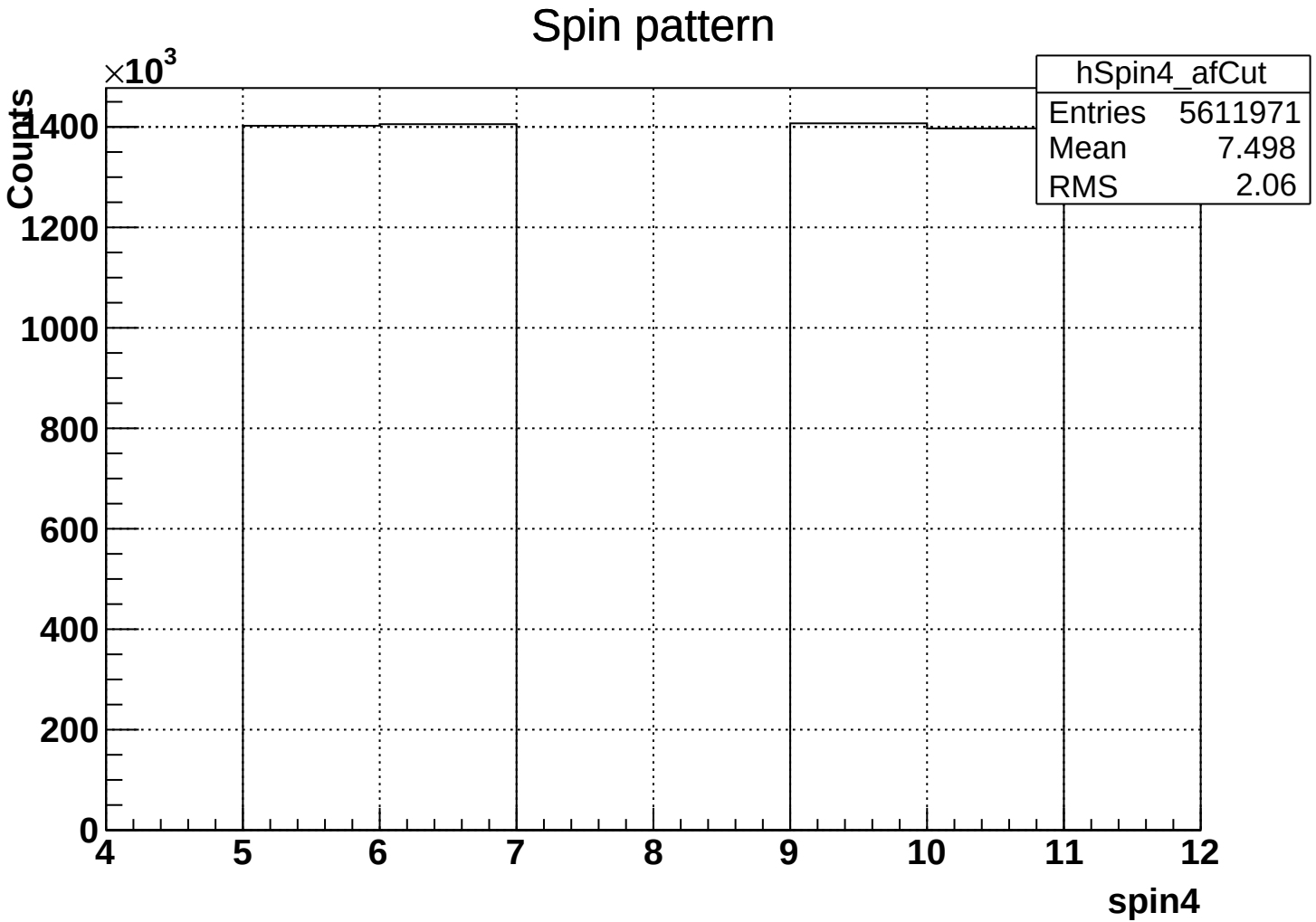
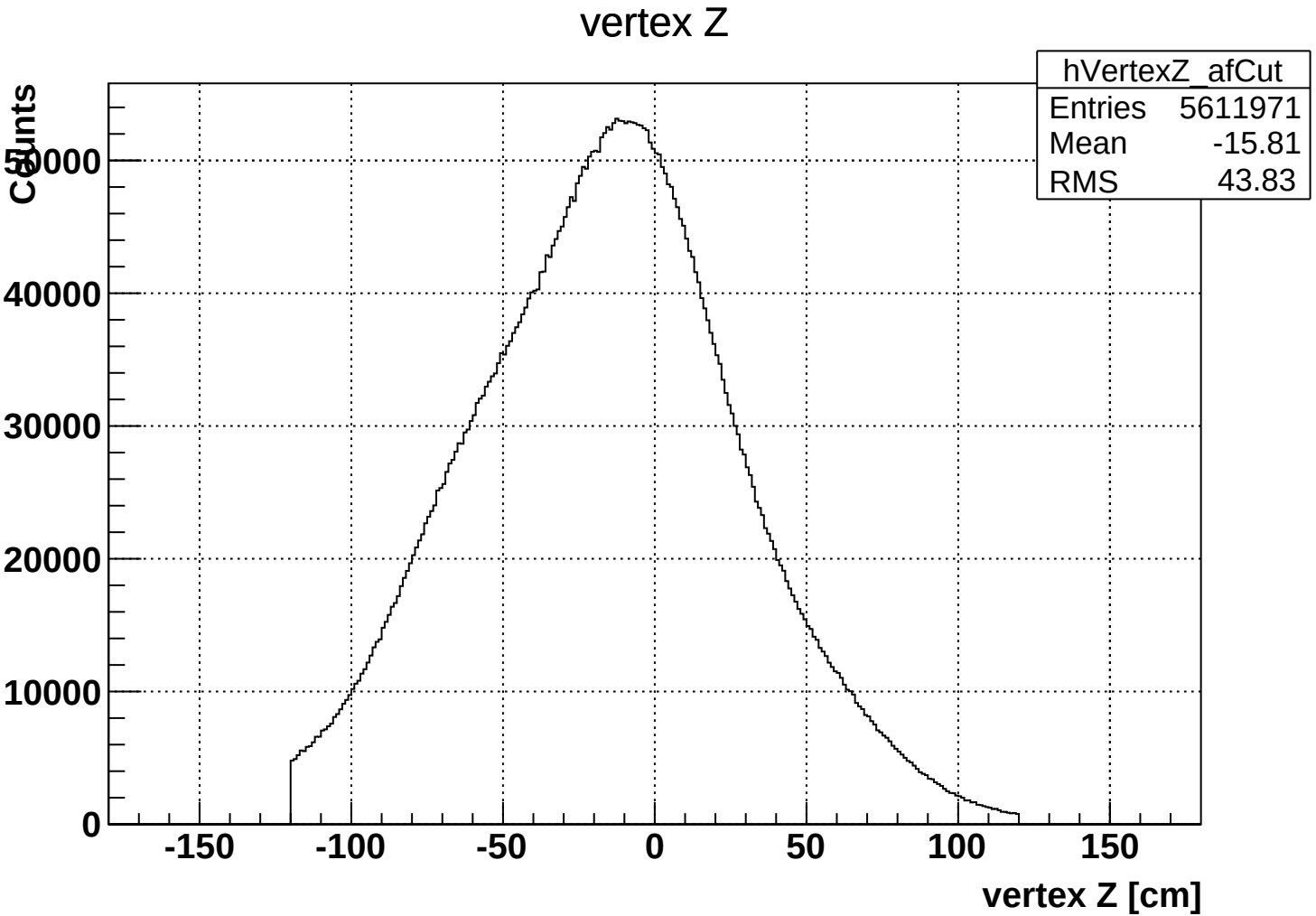

bouch crossing 7 bits
hBx7
Entries 5853066
Mean 56.91
RMS 32.76
Counts
60000
50000
40000
30000
20000
10000
0
0
20
40
60
80
100
120
BX7

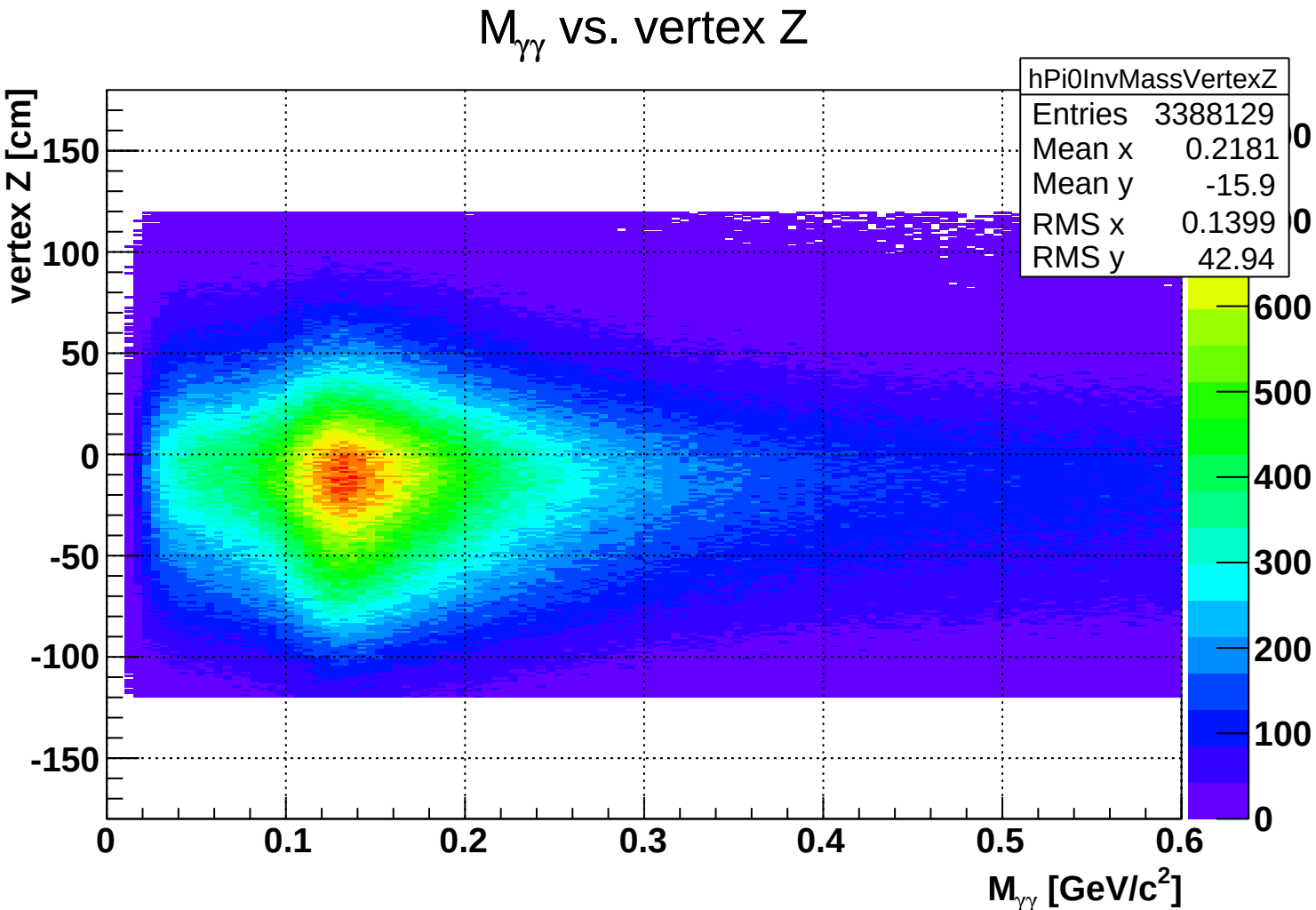

Spin pattern
hSpin4
Entries 5853066
Mean 7.504
RMS 2.061
×10^3
Counts
1400
1200
1000
800
600
400
200
0
4
5
6
7
8
9
10
11
12
spin4

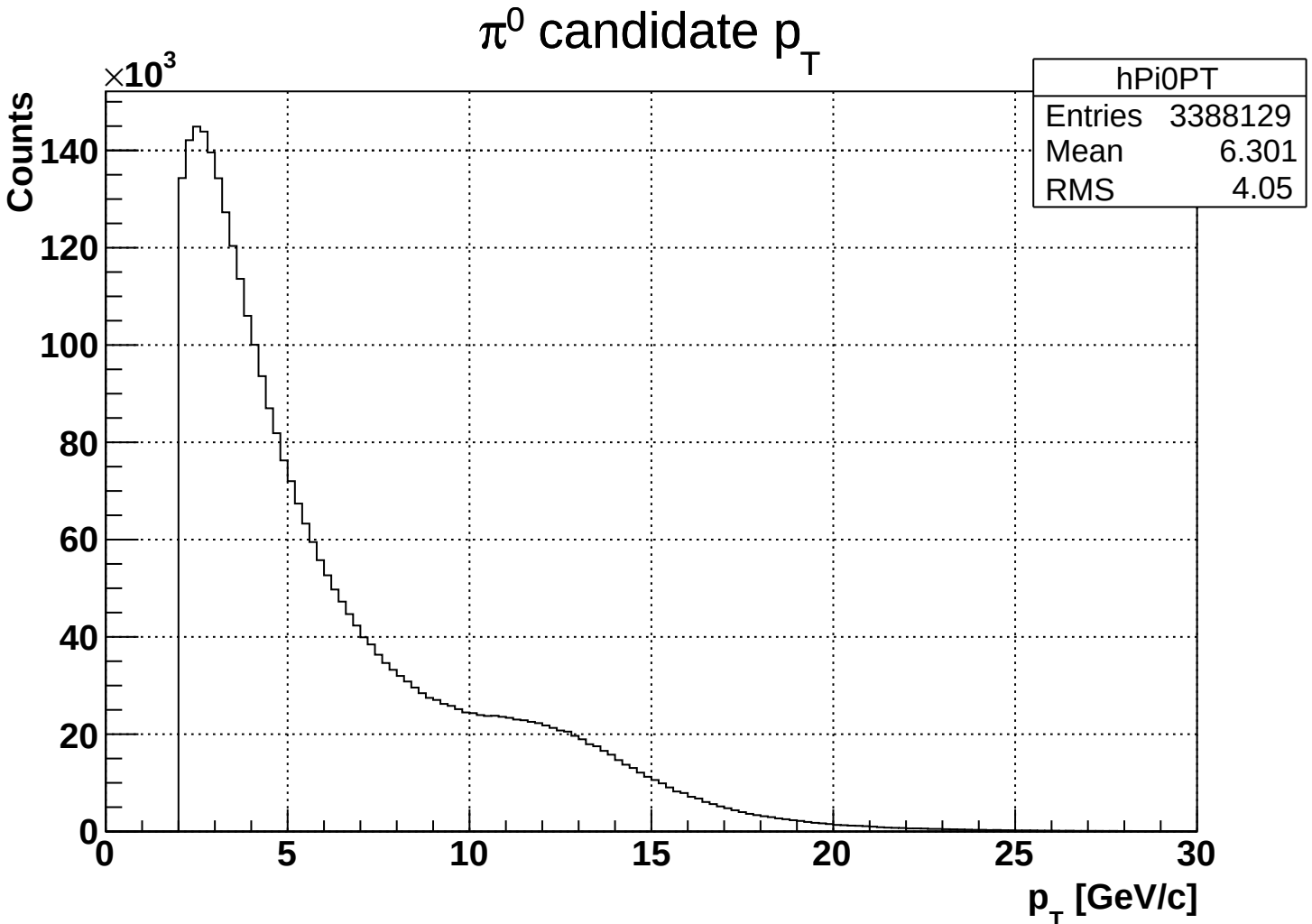

vertex Z
hVertexZ
Entries 5853066
Mean -17.88
RMS 47.21
Counts
50000
40000
30000
20000
10000
0
-150
-100
-50
0
50
100
150
vertex Z [cm]

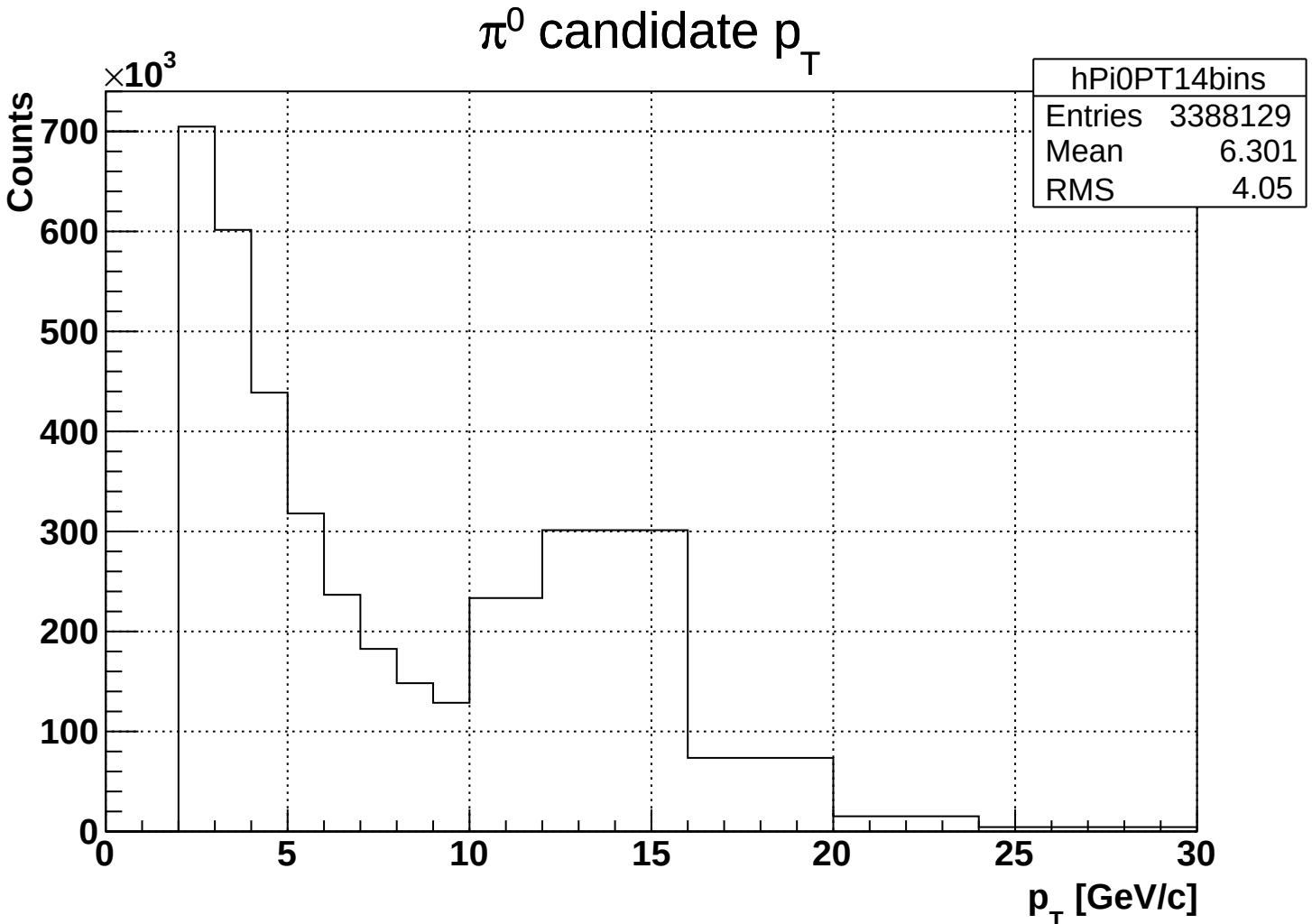

bouch crossing 7 bits
hBx7_afCut
Entries 5611971
Mean 56.42
RMS 32.43
Counts
60000
50000
40000
30000
20000
10000
0
0
20
40
60
80
100
120
BX7

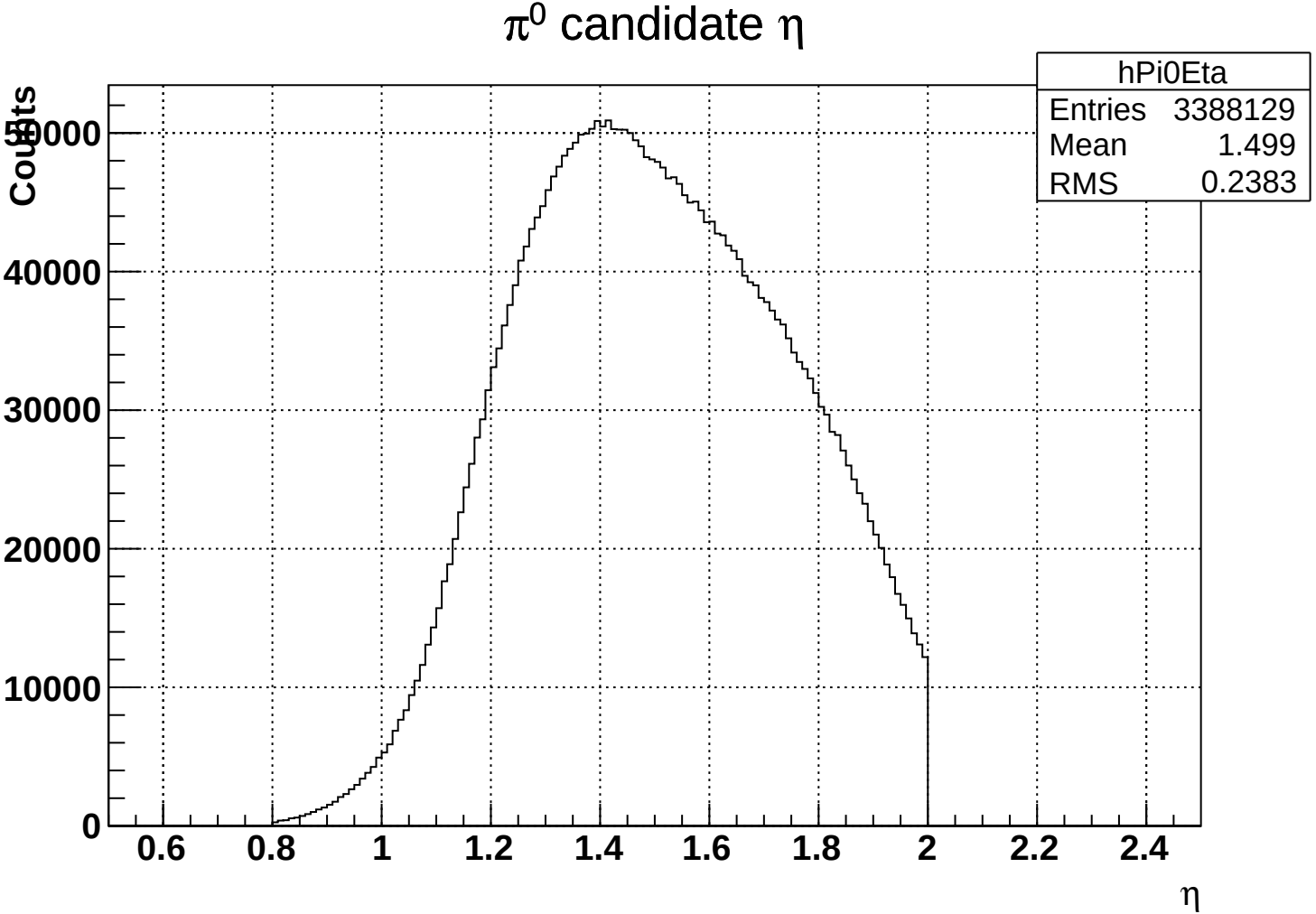

Spin pattern
hSpin4_afCut
Entries 5611971
Mean 7.498
RMS 2.06
Counts
×10^3
1400
1200
1000
800
600
400
200
0
4
5
6
7
8
9
10
11
12
spin4

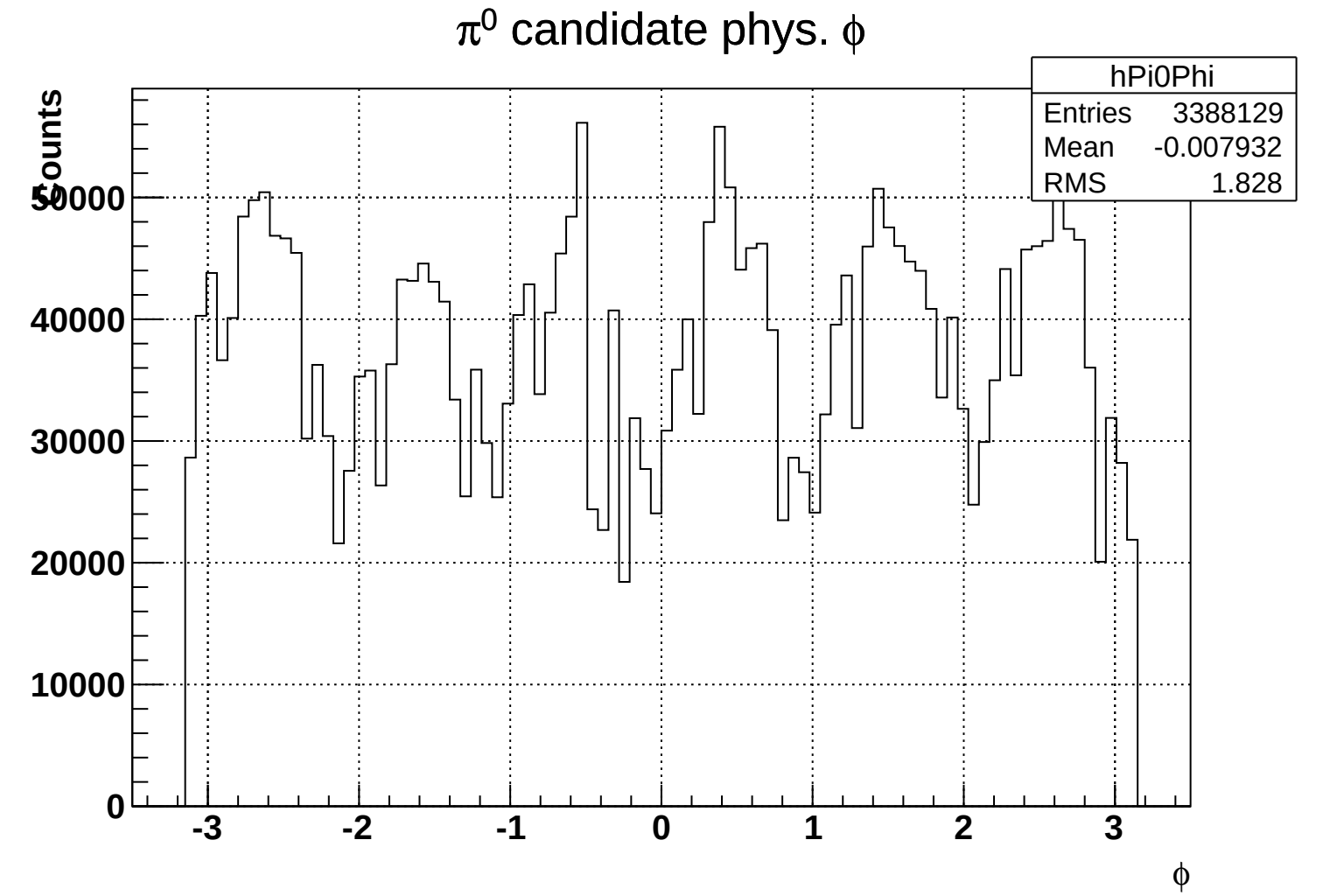

vertex Z
hVertexZ_afCut
Entries 5611971
Mean -15.81
RMS 43.83
Counts
50000
40000
30000
20000
10000
0
-150
-100
-50
0
50
100
150
vertex Z [cm]

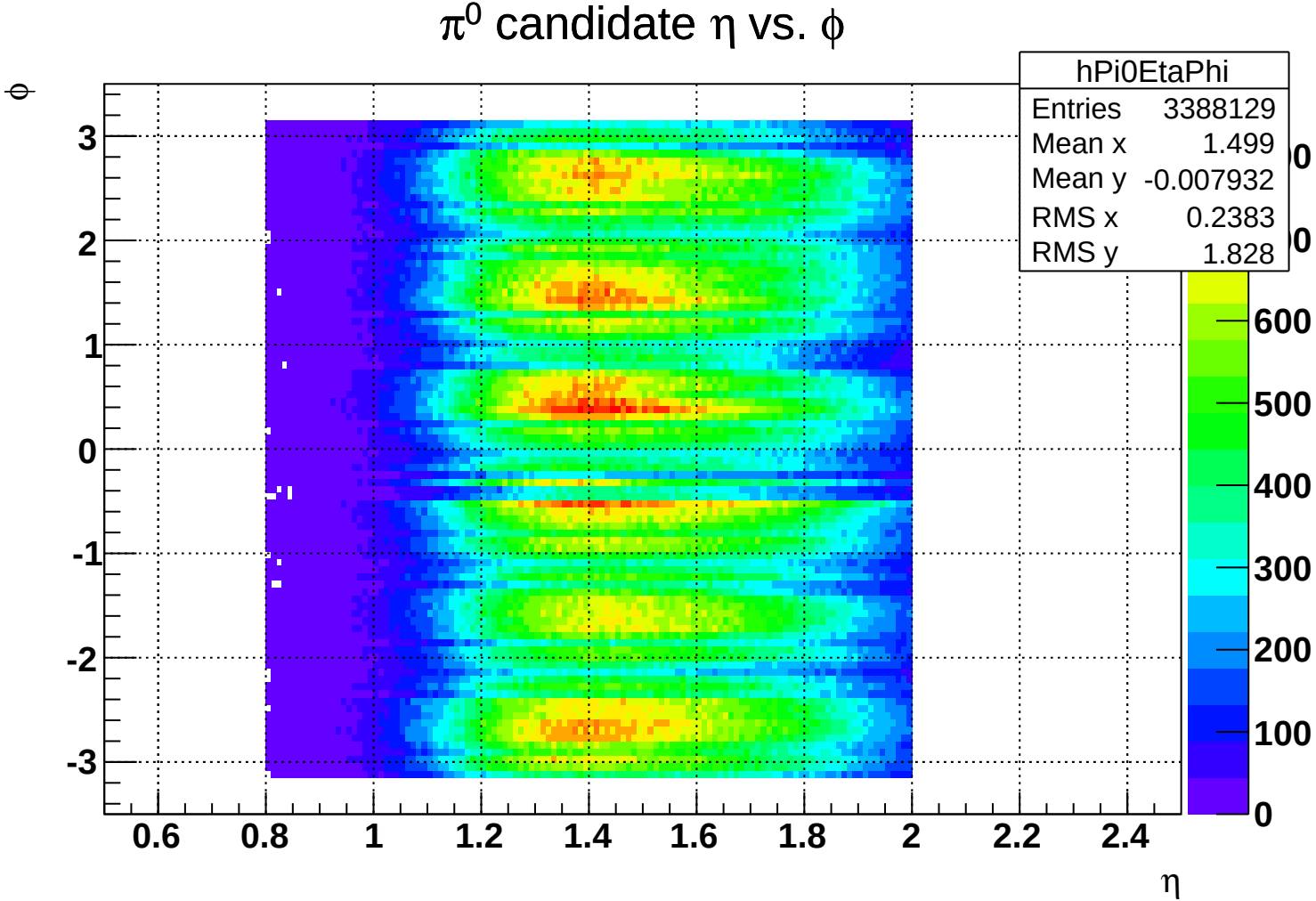

$M_{\gamma\gamma}$ vs. vertex Z
hPi0InvMassVertexZ
Entries 3388129
Mean x 0.2181
Mean y -15.9
RMS x 0.1399
RMS y 42.94
vertex Z [cm]
150
100
50
0
-50
-100
-150
0
0.1
0.2
0.3
0.4
0.5
0.6
600
500
400
300
200
100
0
$M_{\gamma\gamma}$ [GeV/c^2]

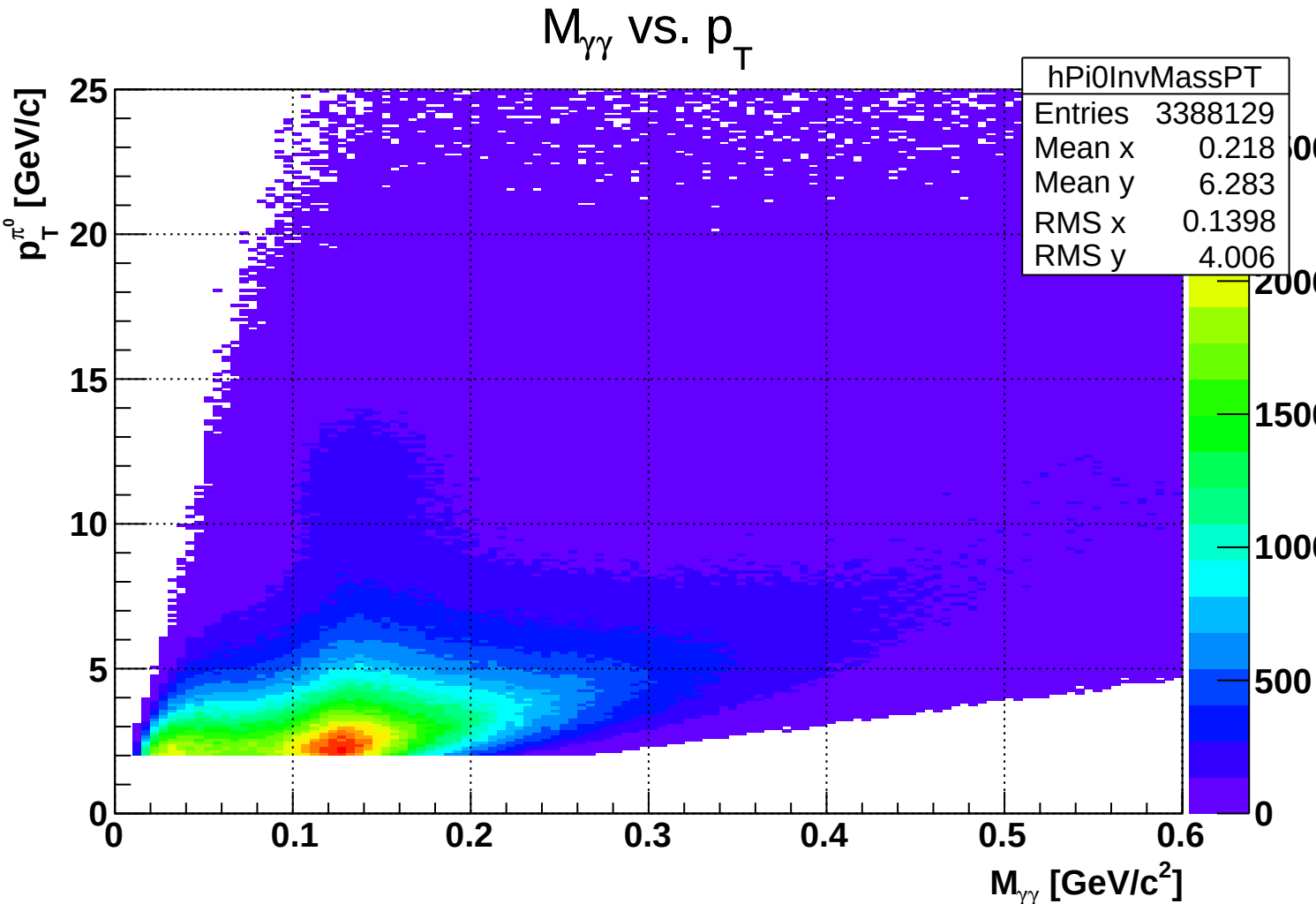

π^0 candidate p_T
hPi0PT
Entries 3388129
Mean 6.301
RMS 4.05
Counts
$\times 10^3$
0
20
40
60
80
100
120
140
0
5
10
15
20
25
30
p_T [GeV/c]

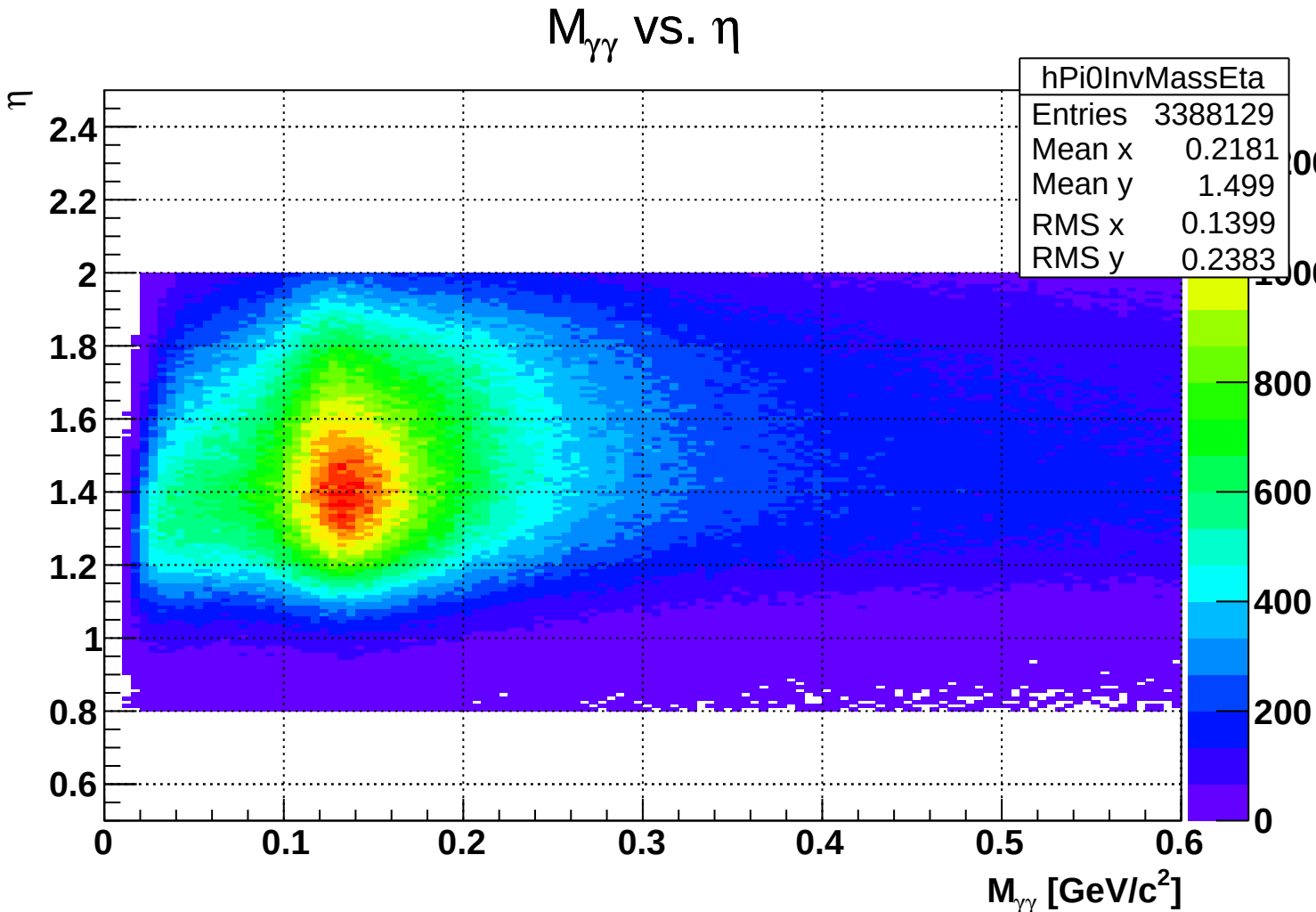

π^0 candidate p_T
hPi0PT14bins
Entries 3388129
Mean 6.301
RMS 4.05
Counts
$\times 10^3$
700
600
500
400
300
200
100
0
0
5
10
15
20
25
30
p_T [GeV/c]

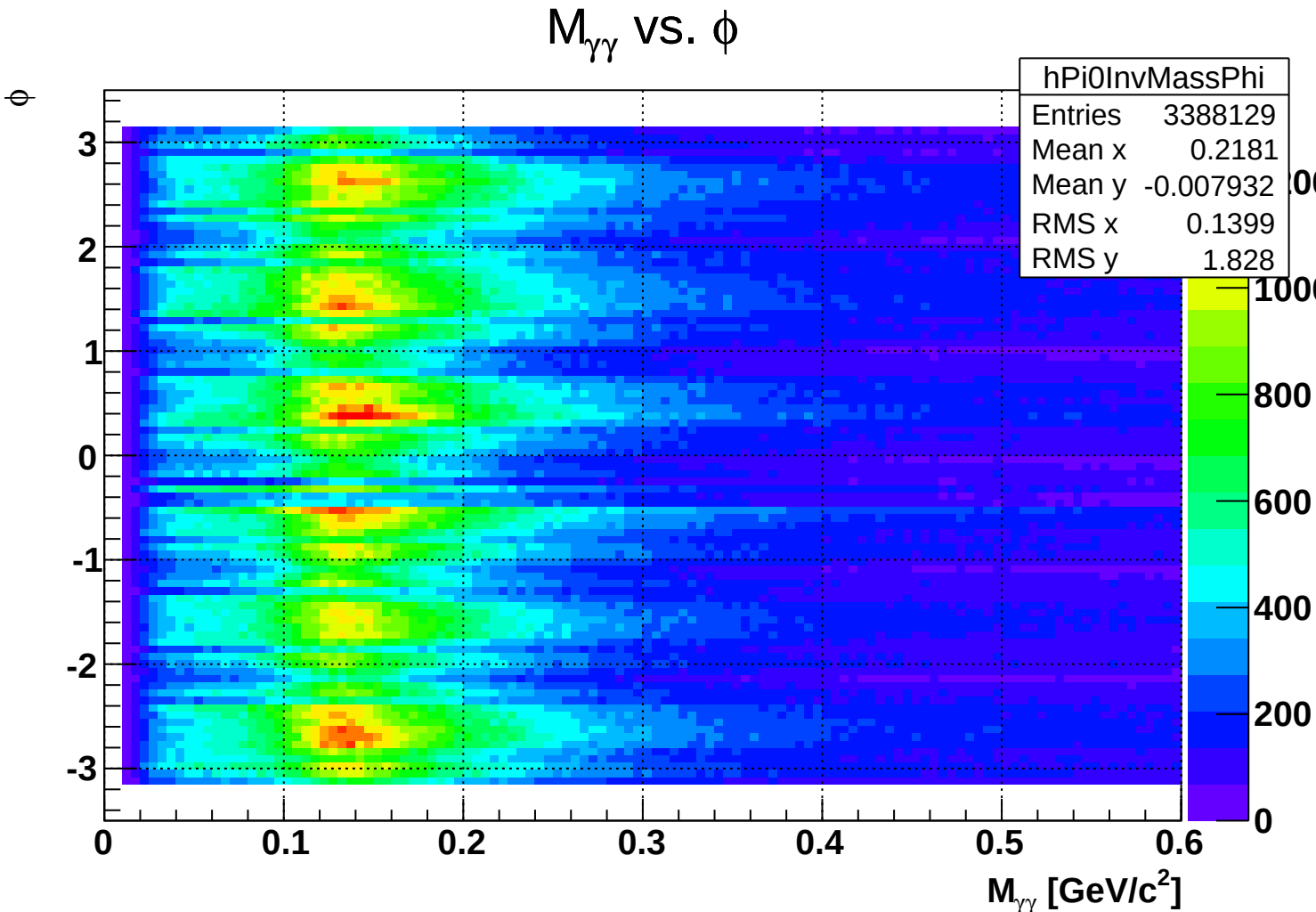

π^0 candidate η
hPi0Eta
Entries 3388129
Mean 1.499
RMS 0.2383
Counts
50000
40000
30000
20000
10000
0
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η

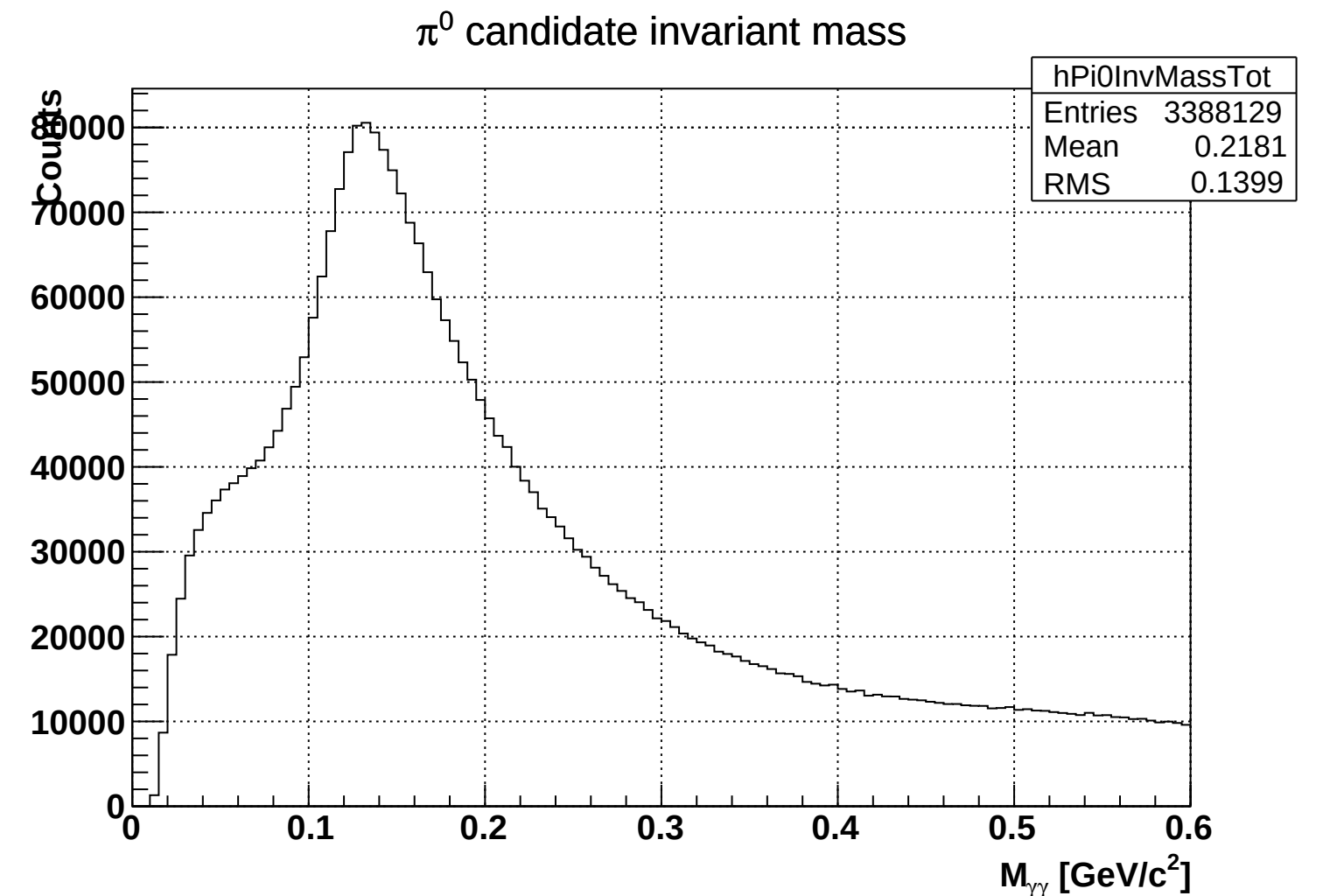

π^0 candidate phys. ϕ
hPi0Phi
Entries 3388129
Mean -0.007932
RMS 1.828
Counts
50000
40000
30000
20000
10000
0
-3
-2
-1
0
1
2
3
ϕ

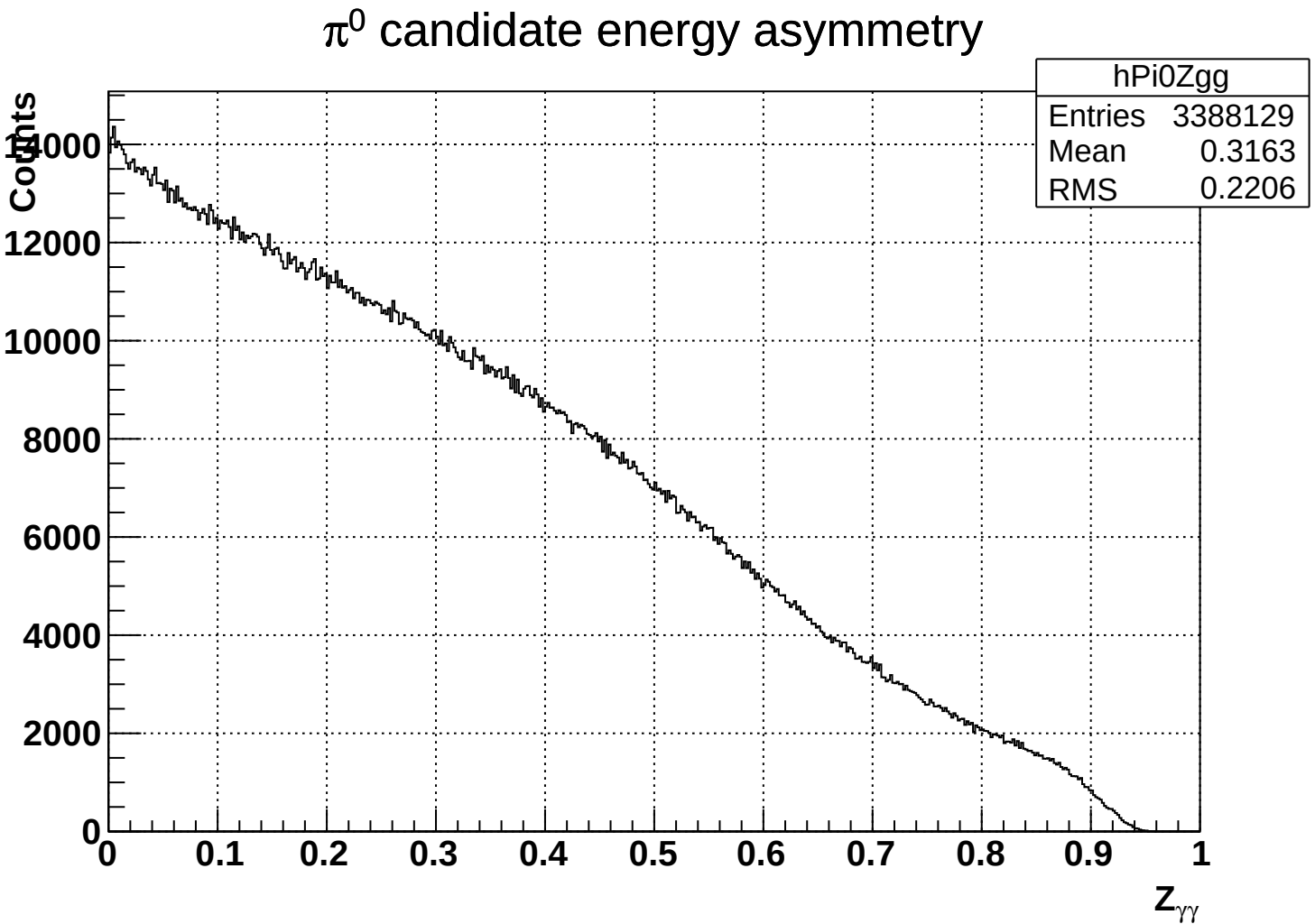

π^0 candidate η vs. ϕ
hPi0EtaPhi
Entries 3388129
Mean x 1.499
Mean y -0.007932
RMS x 0.2383
RMS y 1.828
ϕ
3
2
1
0
-1
-2
-3
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η
600
500
400
300
200
100
0

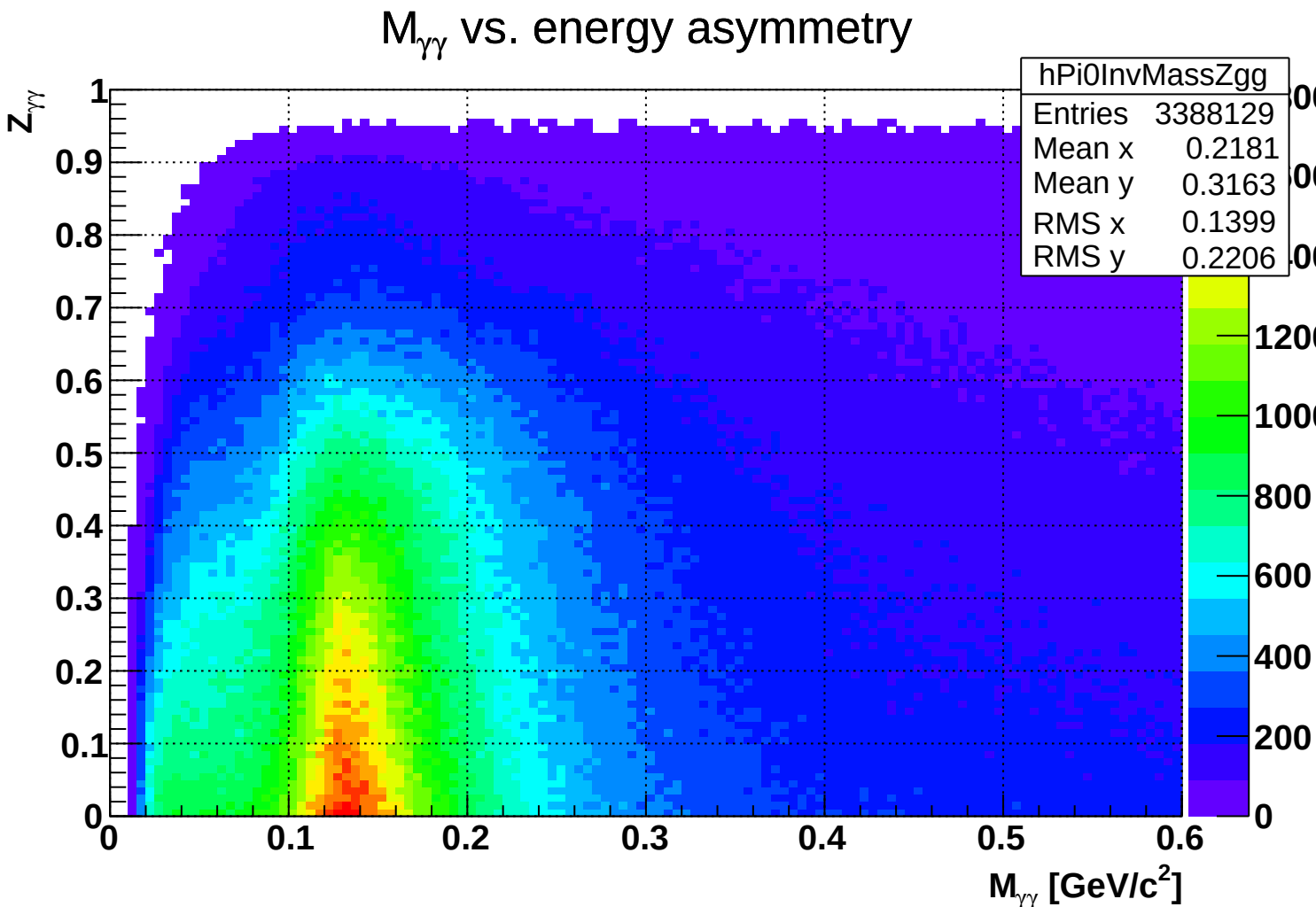

$M_{\gamma\gamma}$ vs. p_T
hPi0InvMassPT
Entries 3388129
Mean x 0.218
Mean y 6.283
RMS x 0.1398
RMS y 4.006
$p_T^{\pi^0}$ [GeV/c]
$M_{\gamma\gamma}$ [GeV/c^2]
0
5
10
15
20
25
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000

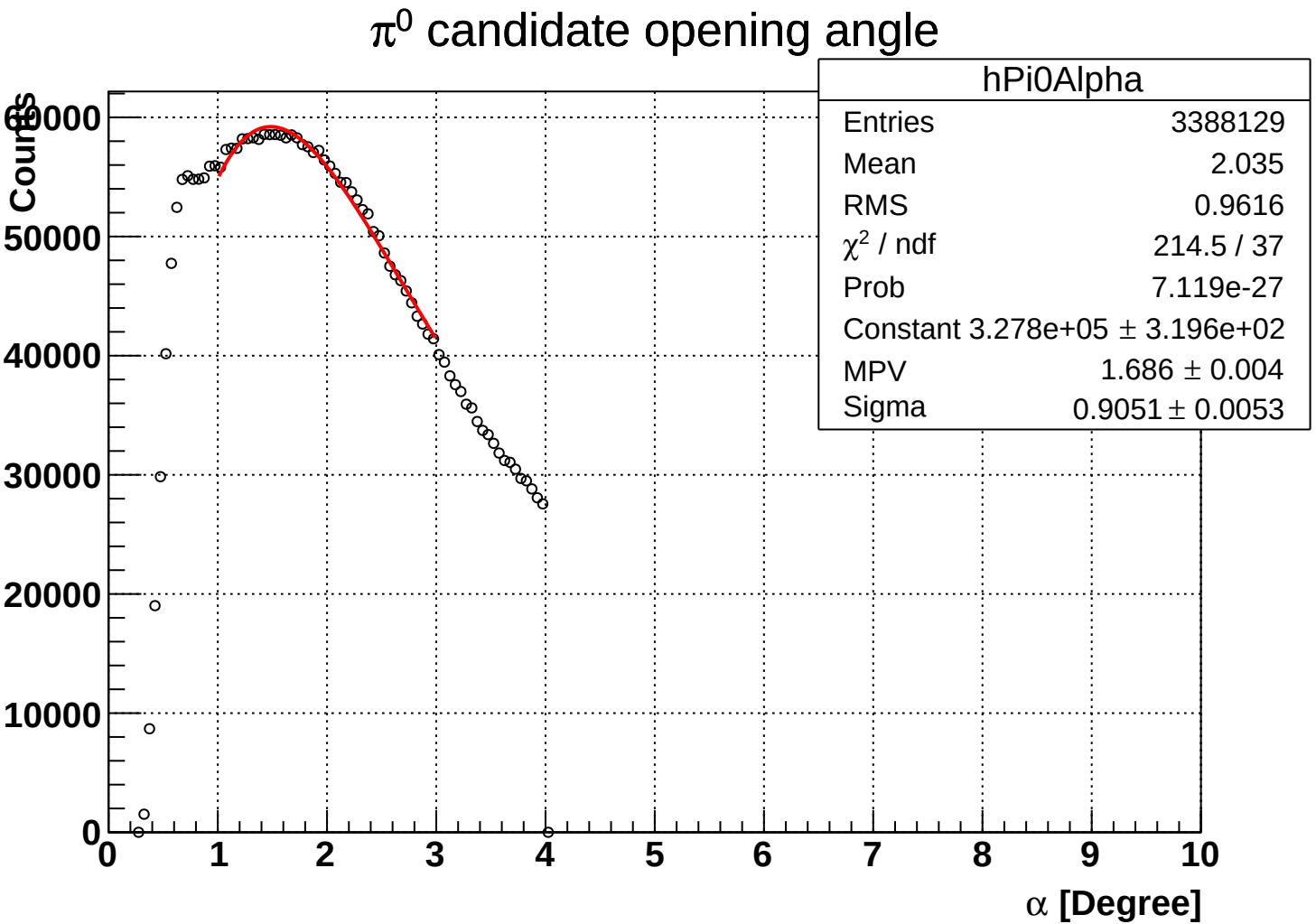

$M_{\gamma\gamma}$ vs. η
hPi0InvMassEta
Entries 3388129
Mean x 0.2181
Mean y 1.499
RMS x 0.1399
RMS y 0.2383
η
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0
0.1
0.2
0.3
0.4
0.5
0.6
800
600
400
200
0
$M_{\gamma\gamma}$ [GeV/c^2]

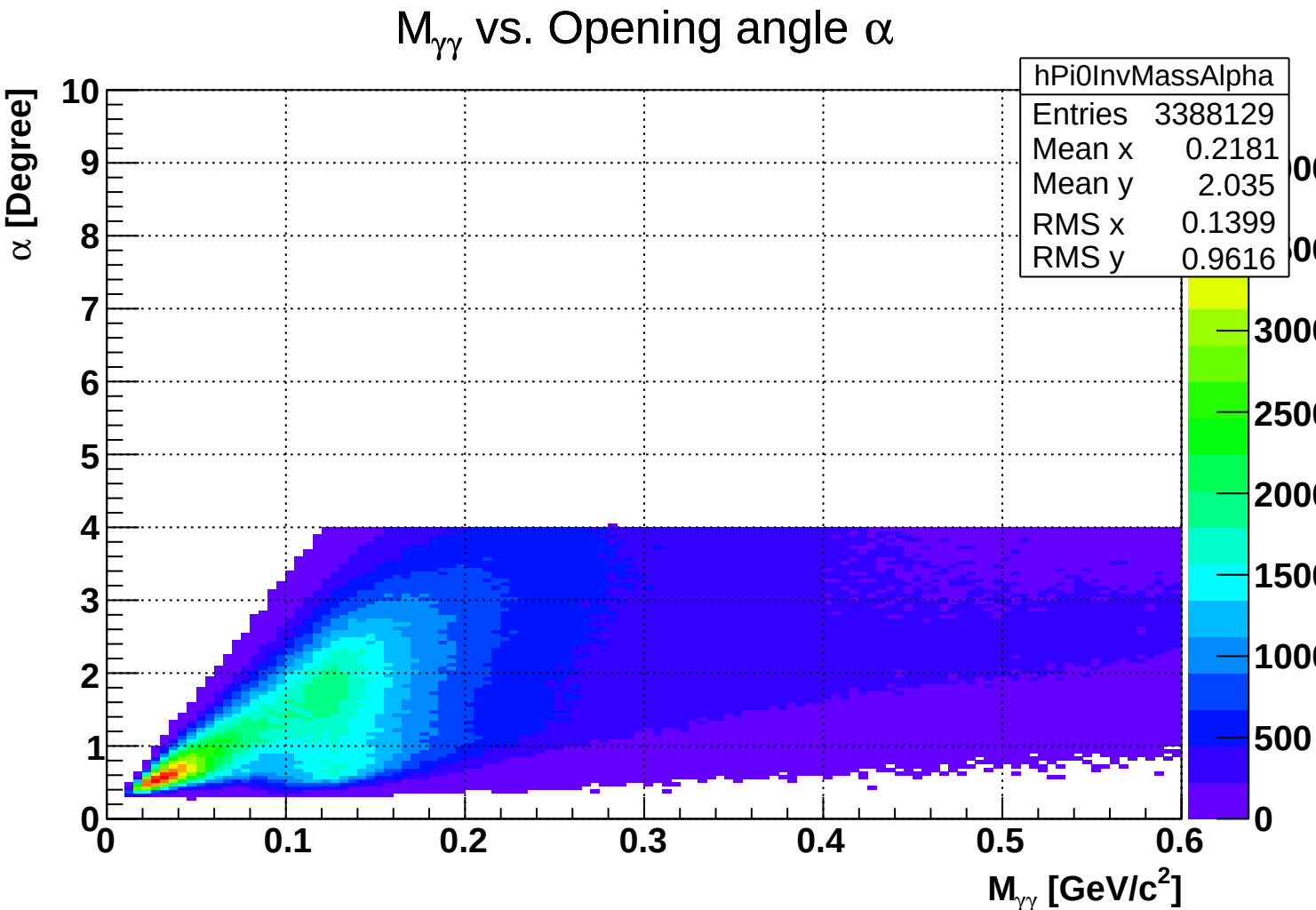

$M_{\gamma\gamma}$ vs. ϕ
hPi0InvMassPhi
Entries 3388129
Mean x 0.2181
Mean y -0.007932
RMS x 0.1399
RMS y 1.828
ϕ
3
2
1
0
-1
-2
-3
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
1000
800
600
400
200
0

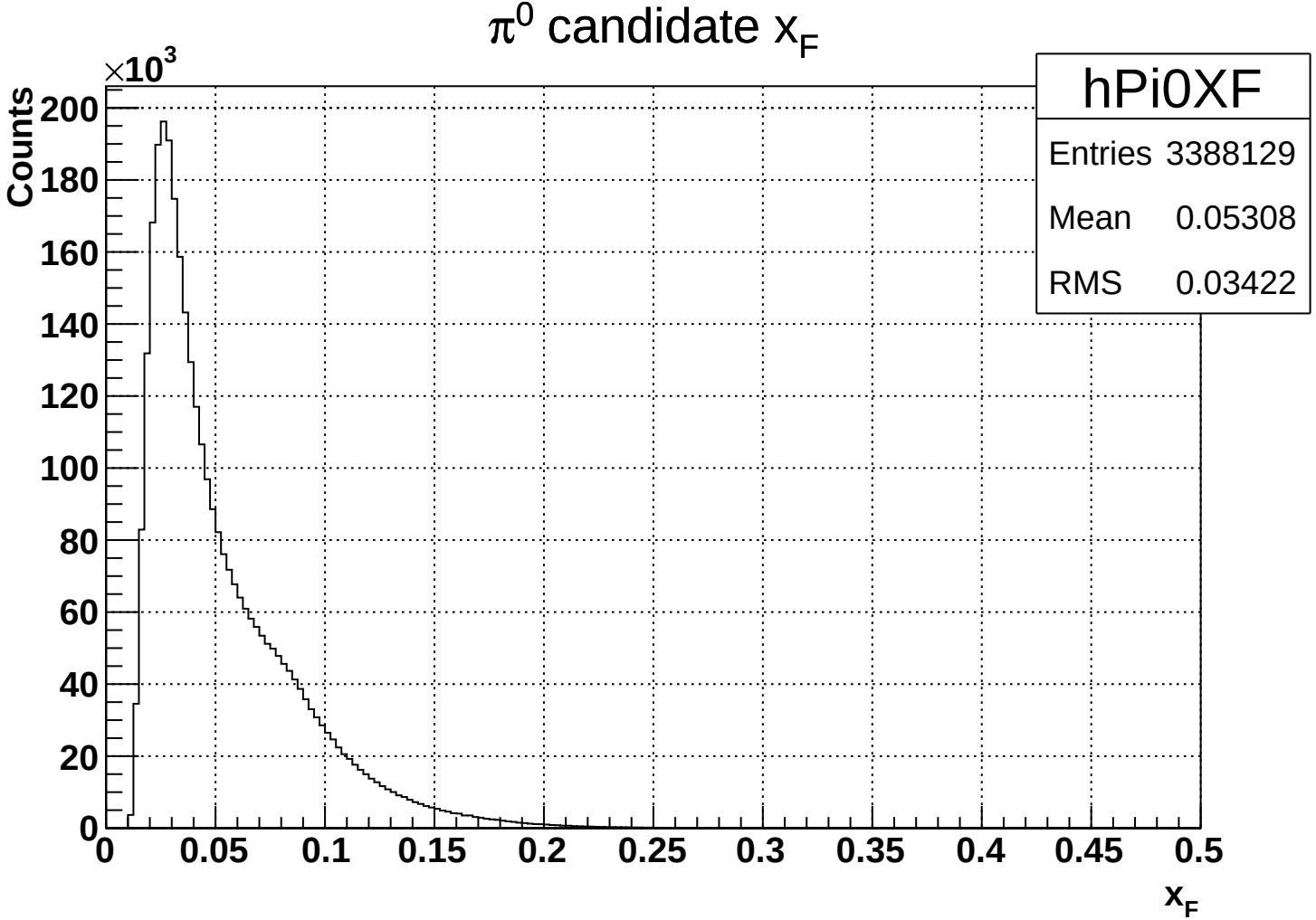

π^0 candidate invariant mass
hPi0InvMassTot
Entries 3388129
Mean 0.2181
RMS 0.1399
Counts
80000
70000
60000
50000
40000
30000
20000
10000
0
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]

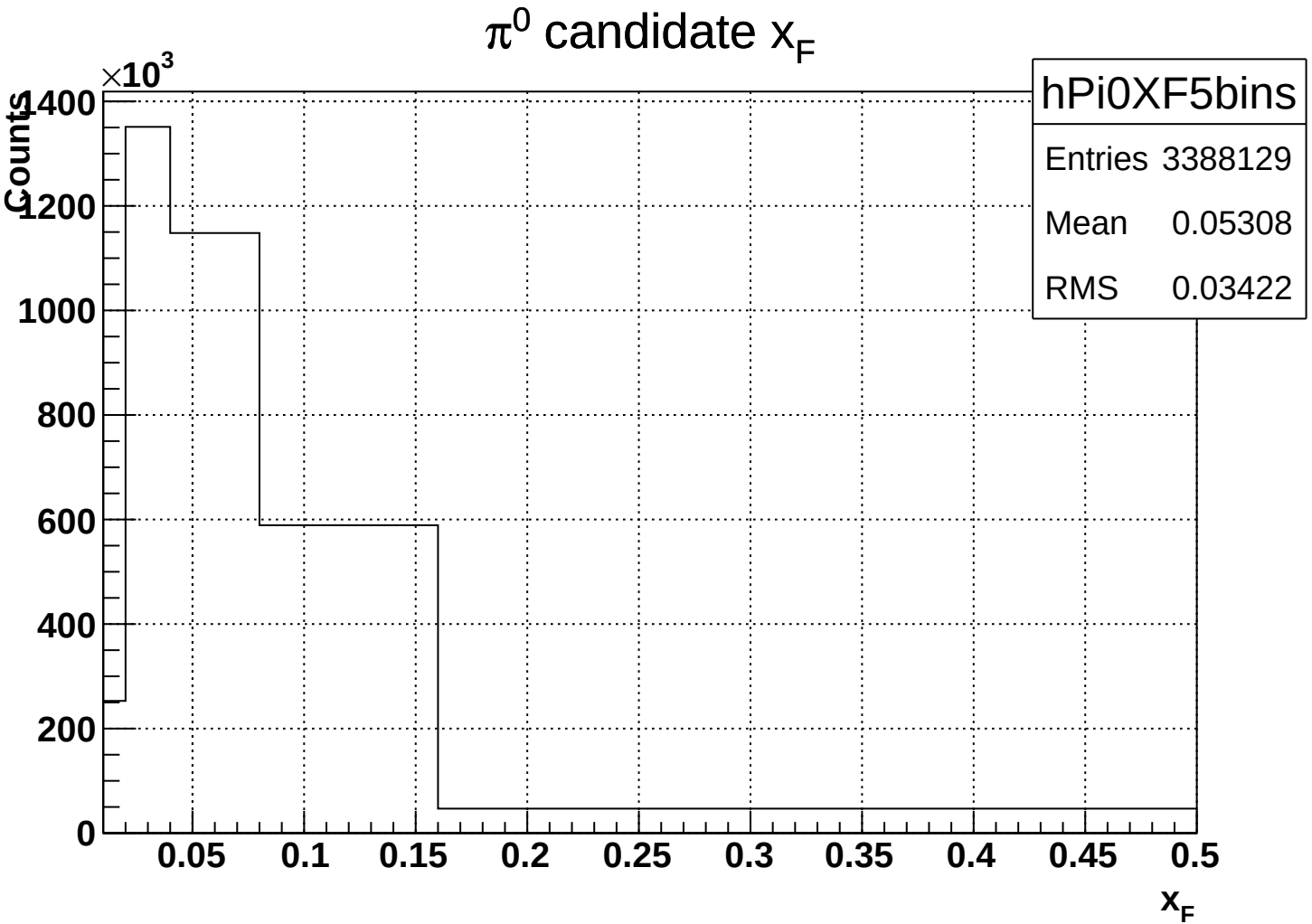

π^0 candidate energy asymmetry
hPi0Zgg
Entries 3388129
Mean 0.3163
RMS 0.2206
Counts
14000
12000
10000
8000
6000
4000
2000
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
$Z_{\gamma\gamma}$

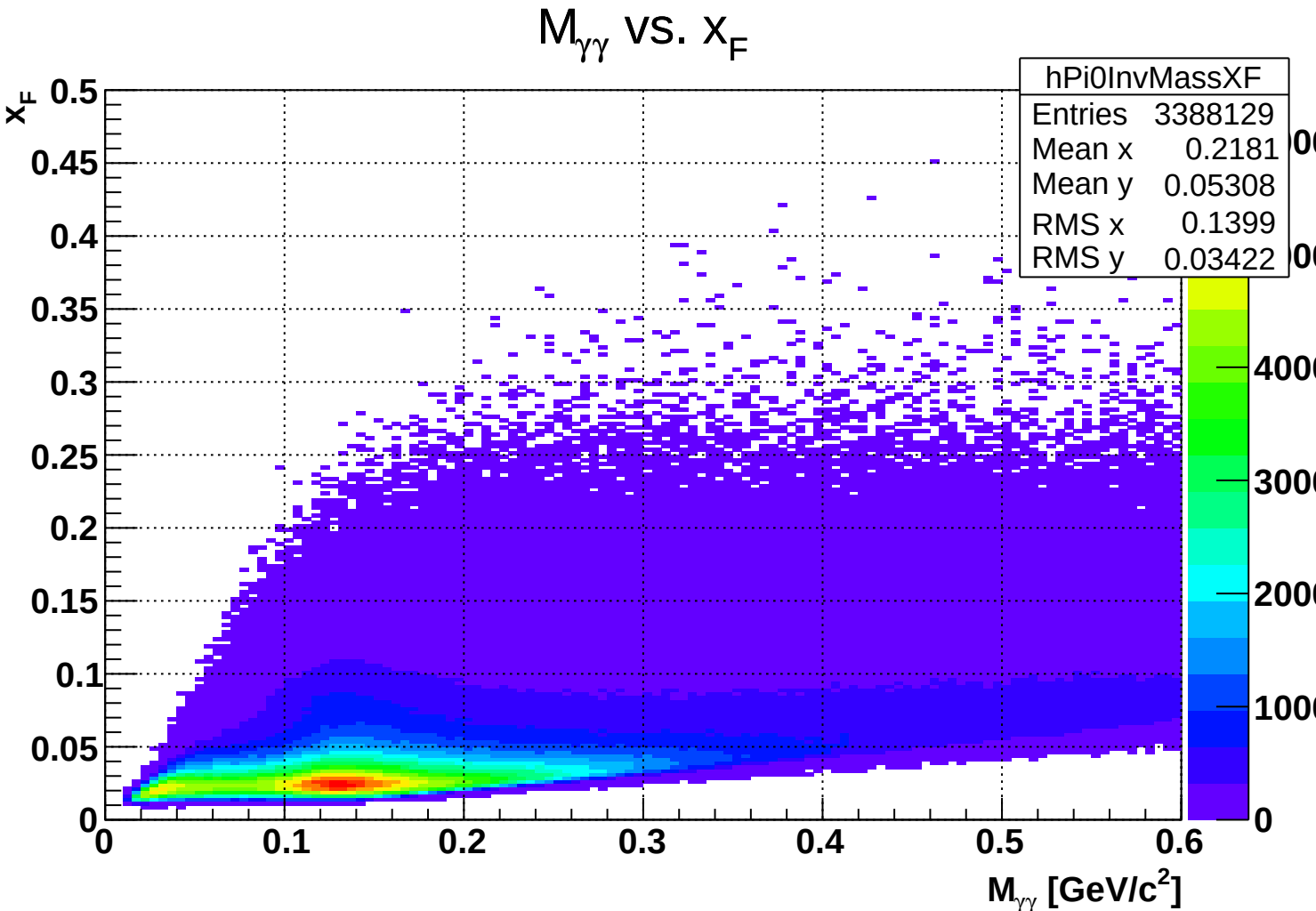

$M_{\gamma\gamma}$ vs. energy asymmetry
hPi0InvMassZgg
Entries 3388129
Mean x 0.2181
Mean y 0.3163
RMS x 0.1399
RMS y 0.2206
$Z_{\gamma\gamma}$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
200
400
600
800
1000
1200

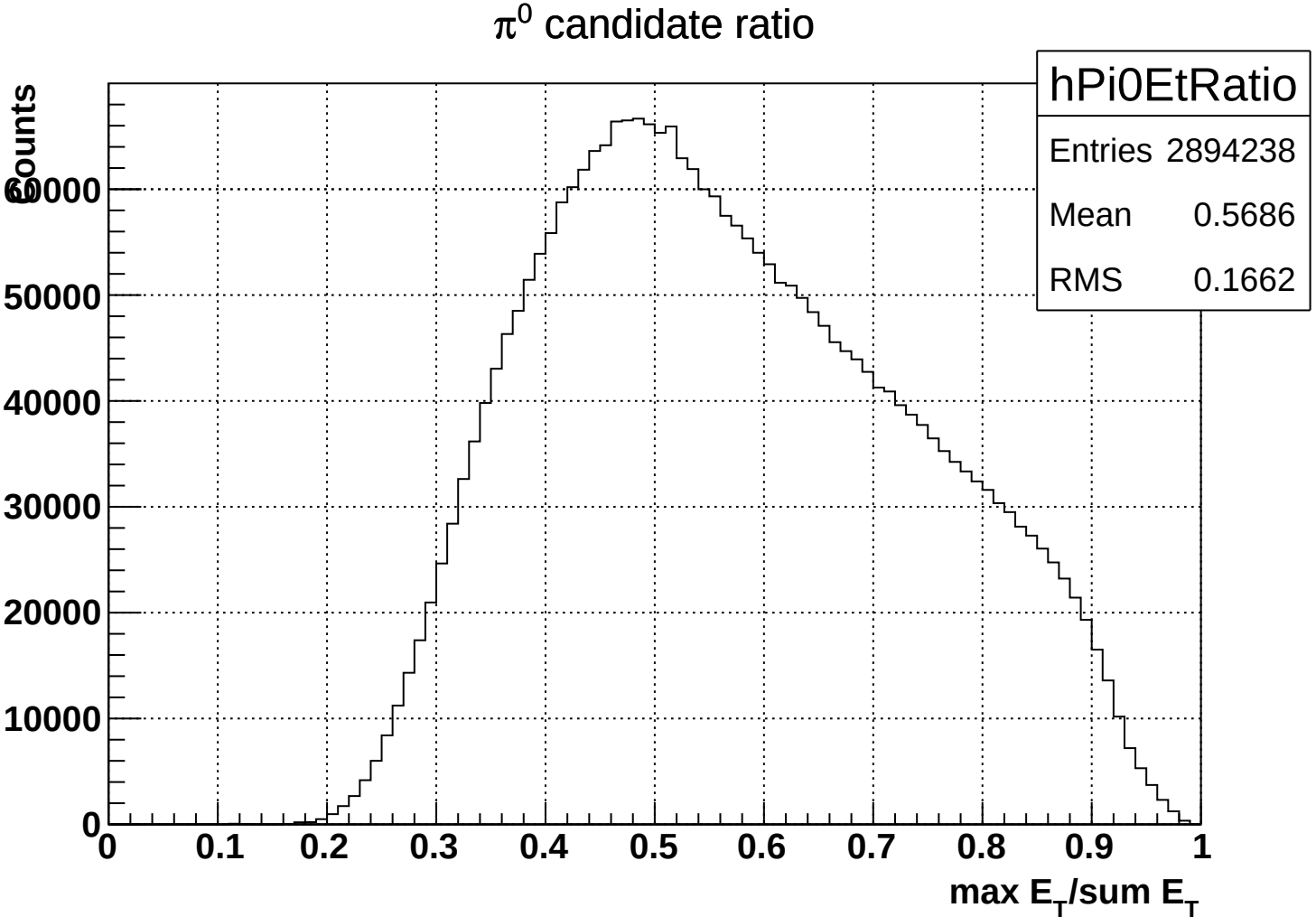

π^0 candidate opening angle
hPi0Alpha
Entries 3388129
Mean 2.035
RMS 0.9616
χ^2 / ndf 214.5 / 37
Prob 7.119e-27
Constant 3.278e+05 ± 3.196e+02
MPV 1.686 ± 0.004
Sigma 0.9051 ± 0.0053
Counts
60000
50000
40000
30000
20000
10000
0
0
1
2
3
4
5
6
7
8
9
10
α [Degree]

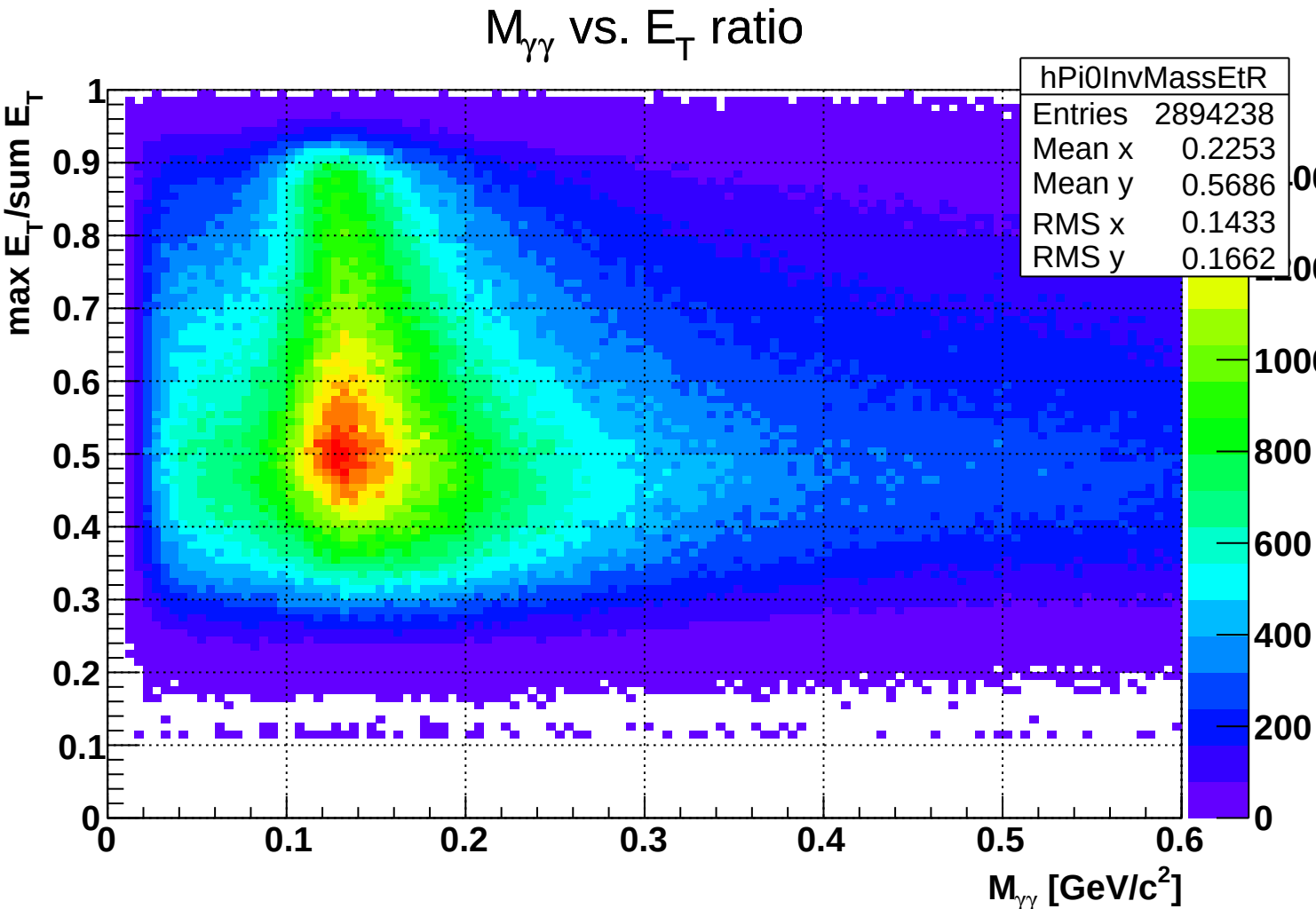

$M_{\gamma\gamma}$ vs. Opening angle α
hPi0InvMassAlpha
Entries 3388129
Mean x 0.2181
Mean y 2.035
RMS x 0.1399
RMS y 0.9616
α [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
1
2
3
4
5
6
7
8
9
10
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000
2500
3000

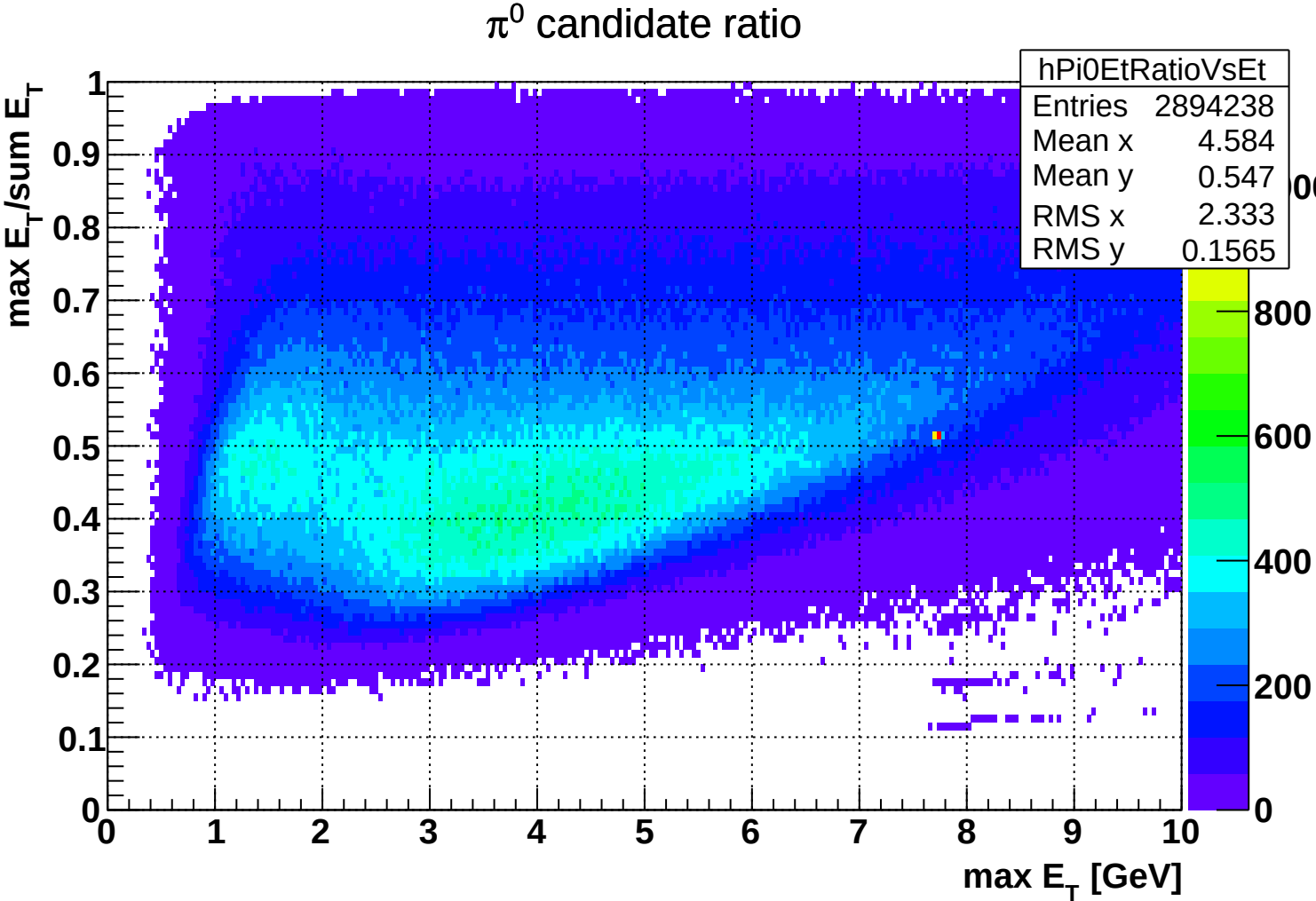

π^0 candidate x_F
hPi0XF
Entries 3388129
Mean 0.05308
RMS 0.03422
Counts
$\times 10^3$
200
180
160
140
120
100
80
60
40
20
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
x_F

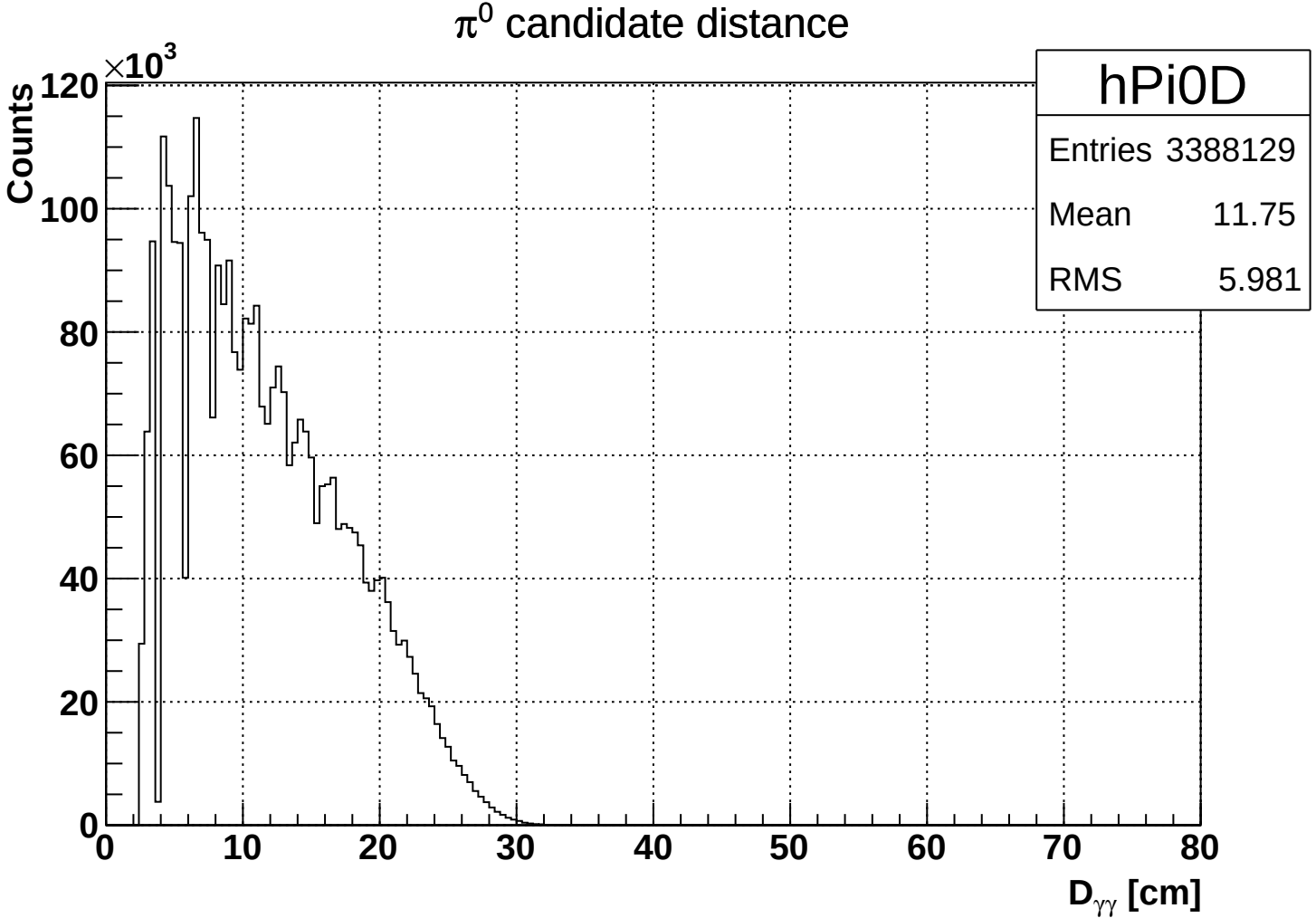

π^0 candidate x_F
hPi0XF5bins
Entries 3388129
Mean 0.05308
RMS 0.03422
Counts
$\times 10^3$
1400
1200
1000
800
600
400
200
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
x_F

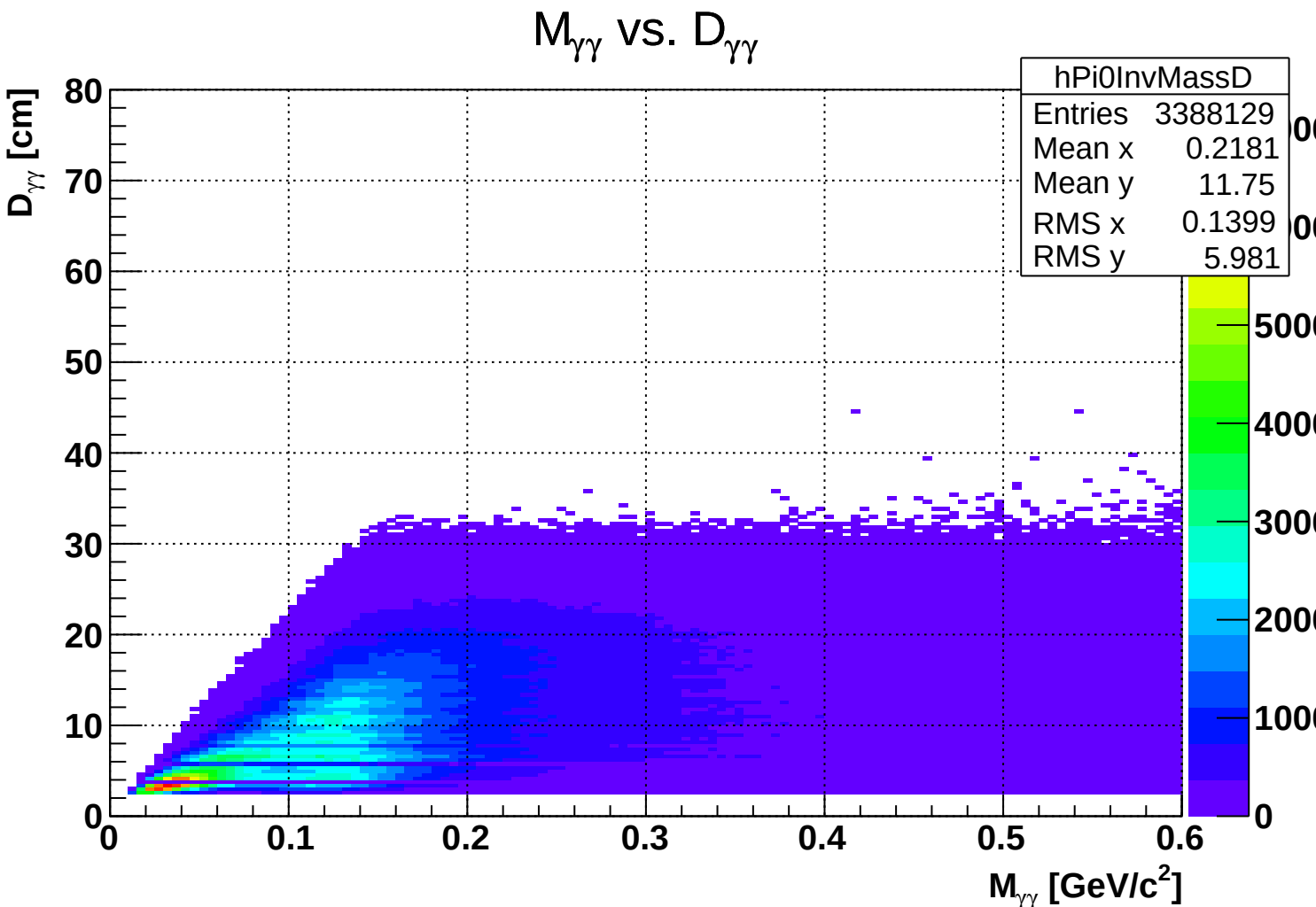

$M_{\gamma\gamma}$ vs. x_F
hPi0InvMassXF
Entries 3388129
Mean x 0.2181
Mean y 0.05308
RMS x 0.1399
RMS y 0.03422
x_F
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0.1
0.2
0.3
0.4
0.5
0.6
4000
3000
2000
1000
$M_{\gamma\gamma}$ [GeV/c^2]

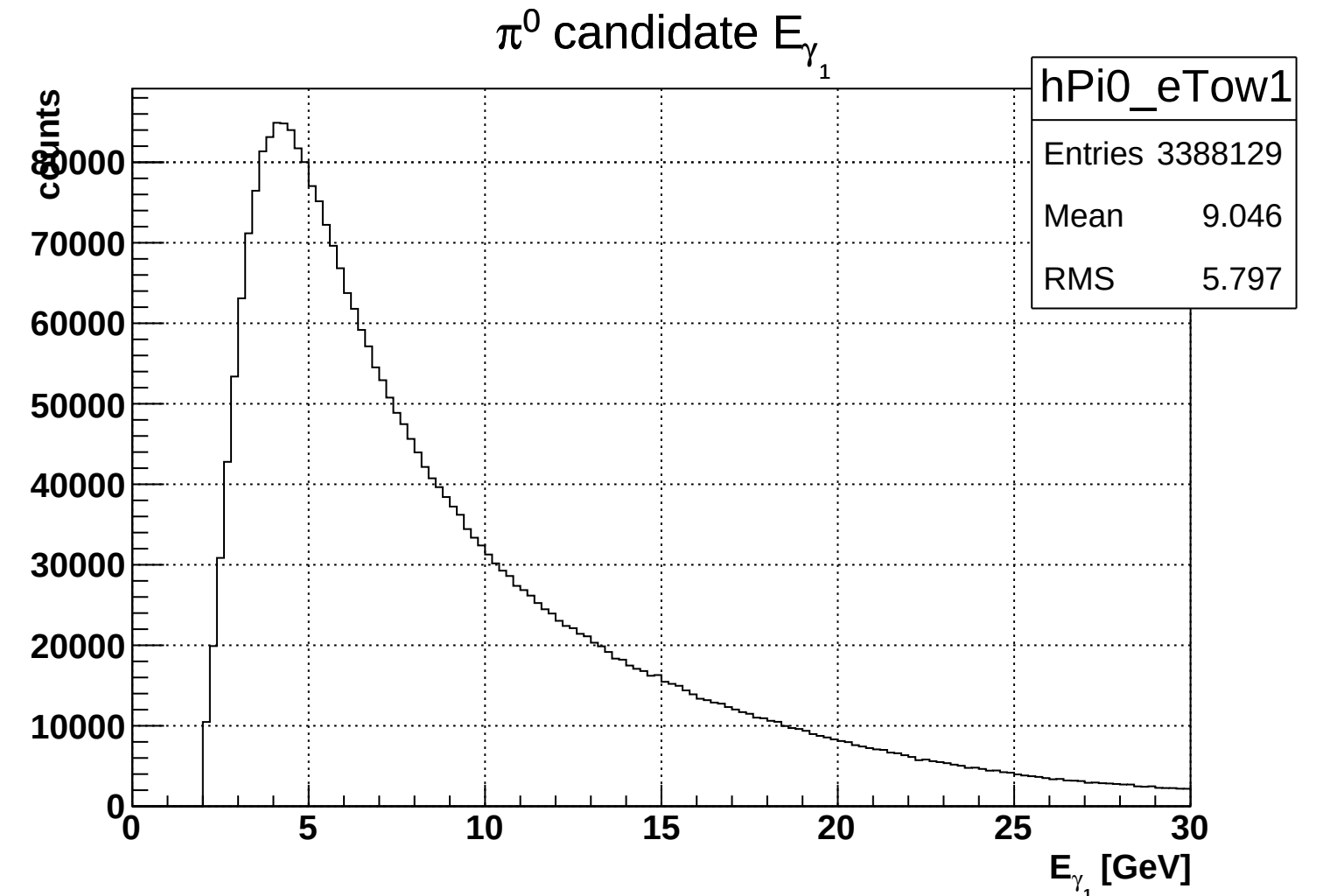

π^0 candidate ratio
hPi0EtRatio
Entries 2894238
Mean 0.5686
RMS 0.1662
Counts
60000
50000
40000
30000
20000
10000
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
max E_T/sum E_T

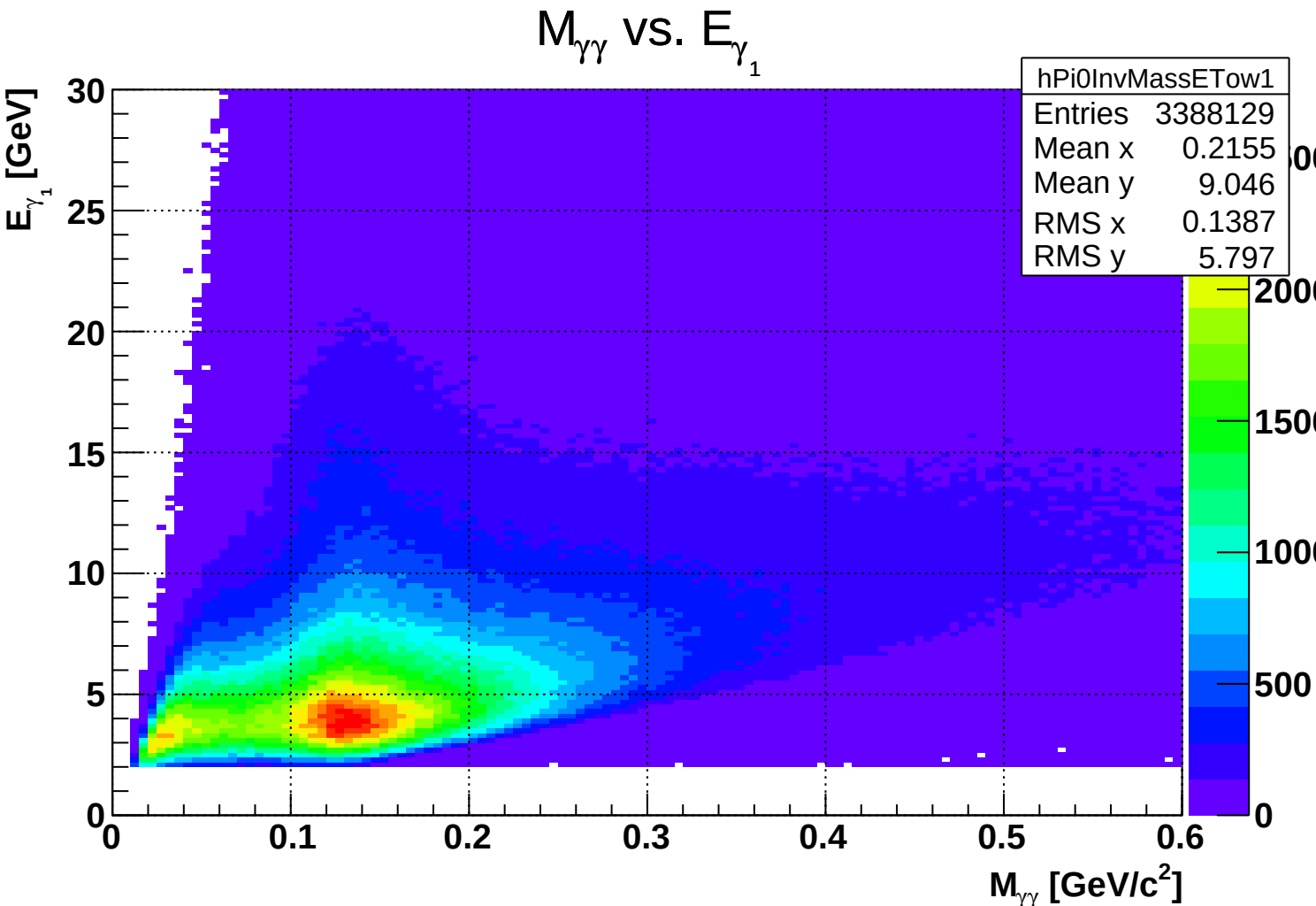

$M_{\gamma\gamma}$ vs. E_T ratio
hPi0InvMassEtR
Entries 2894238
Mean x 0.2253
Mean y 0.5686
RMS x 0.1433
RMS y 0.1662
max E_T/sum E_T
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
200
400
600
800
1000

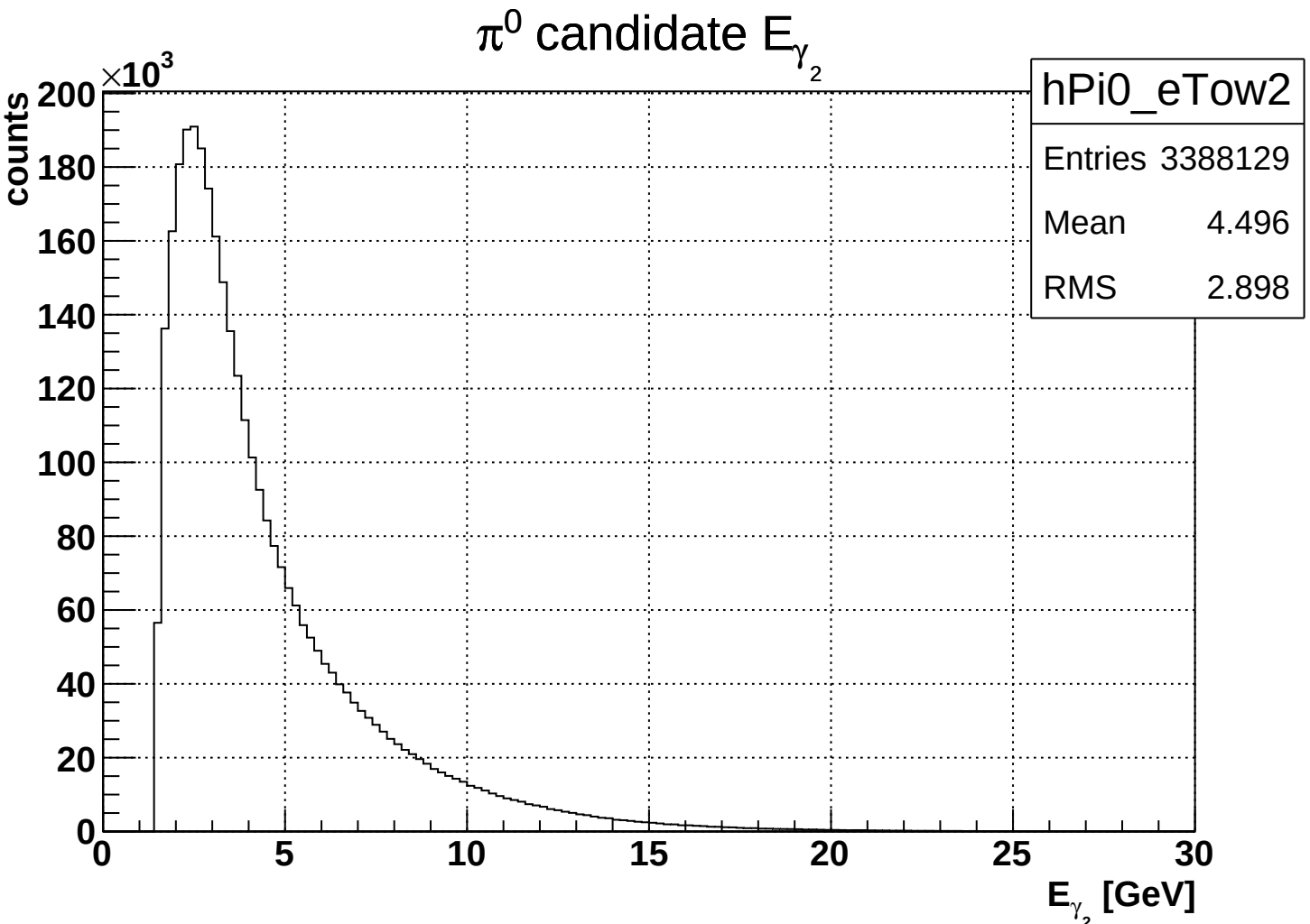

π^0 candidate ratio
hPi0EtRatioVsEt
Entries 2894238
Mean x 4.584
Mean y 0.547
RMS x 2.333
RMS y 0.1565
max E_T/sum E_T
max E_T [GeV]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
1
2
3
4
5
6
7
8
9
10
0
200
400
600
800

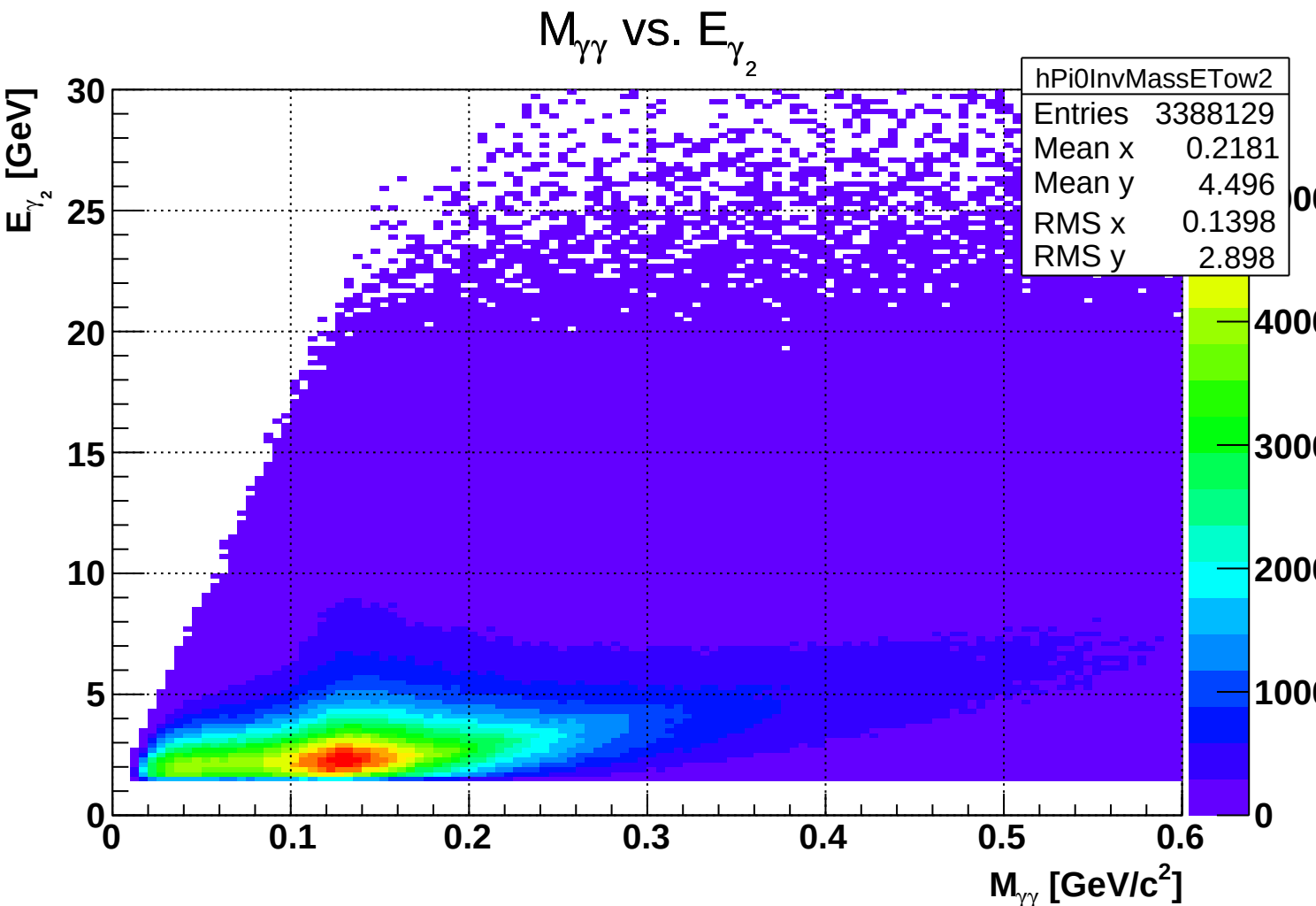

π^0 candidate distance
hPi0D
Entries 3388129
Mean 11.75
RMS 5.981
Counts
$\times 10^3$
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
$D_{\gamma\gamma}$ [cm]

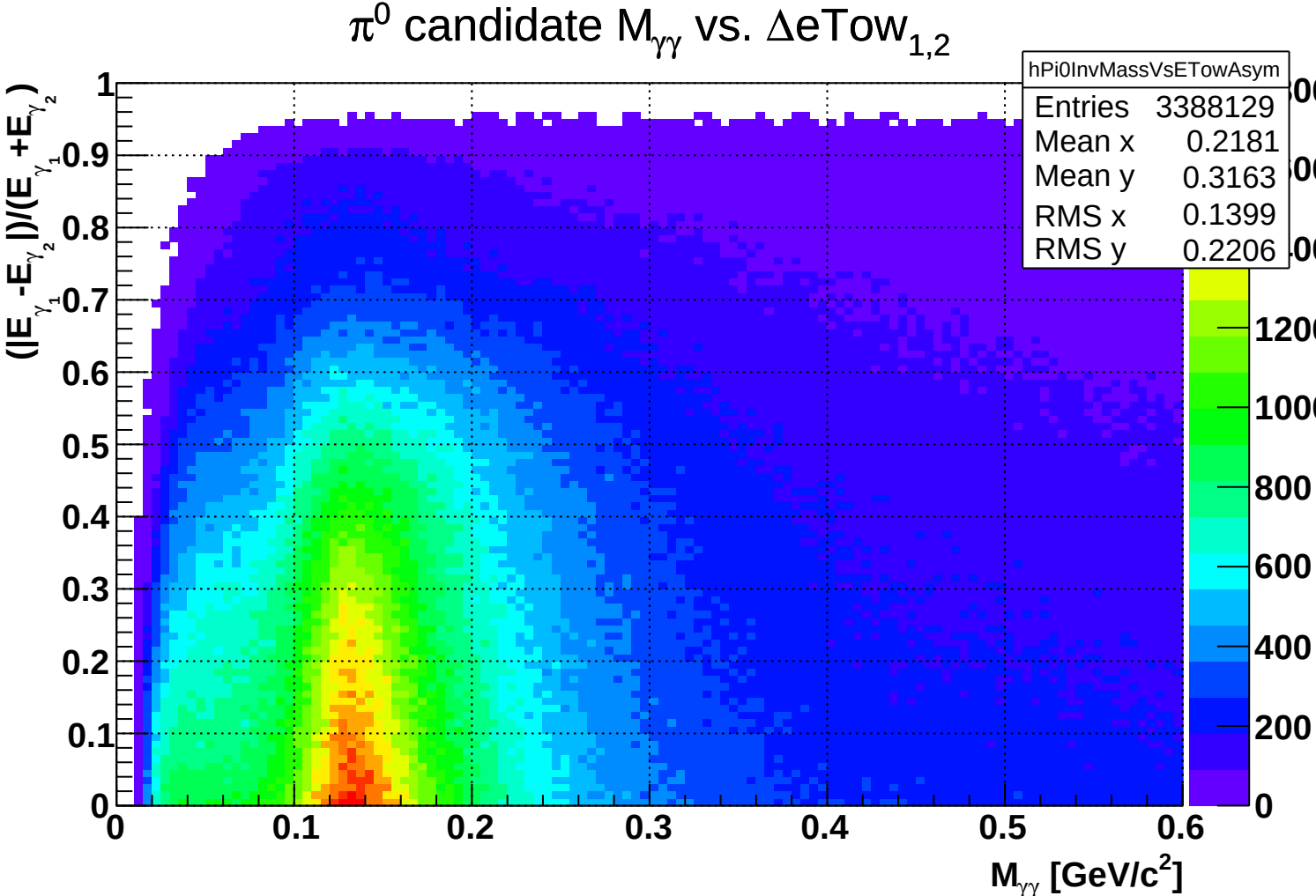

$M_{\gamma\gamma}$ vs. $D_{\gamma\gamma}$
hPi0InvMassD
Entries 3388129
Mean x 0.2181
Mean y 11.75
RMS x 0.1399
RMS y 5.981
$D_{\gamma\gamma}$ [cm]
$M_{\gamma\gamma}$ [GeV/c^2]
0
10
20
30
40
50
60
70
80
0.1
0.2
0.3
0.4
0.5
0.6
1000
2000
3000
4000
5000

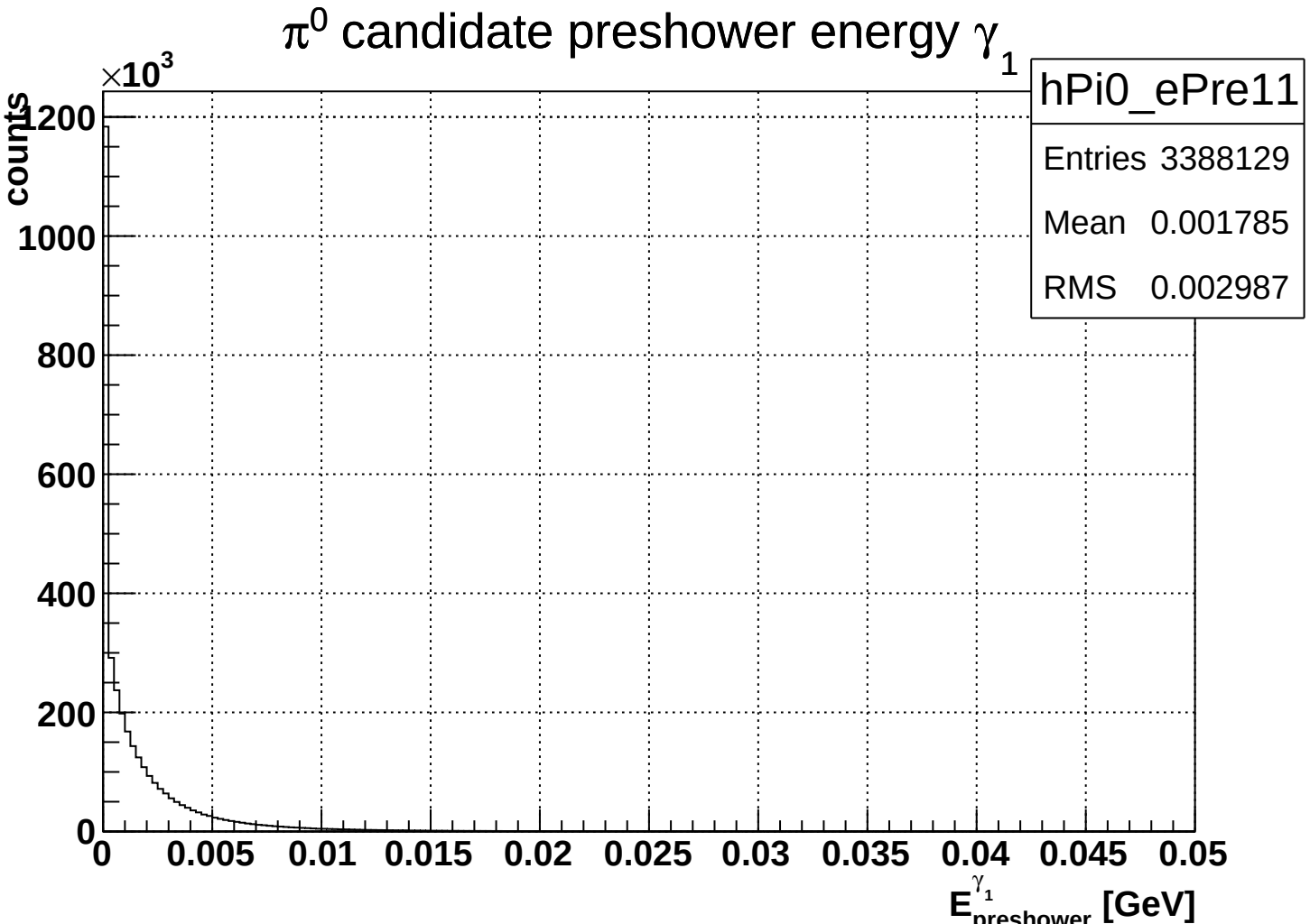

π^0 candidate E_{γ_1}
hPi0_eTow1
Entries 3388129
Mean 9.046
RMS 5.797
counts
80000
70000
60000
50000
40000
30000
20000
10000
0
0
5
10
15
20
25
30
E_{γ_1} [GeV]

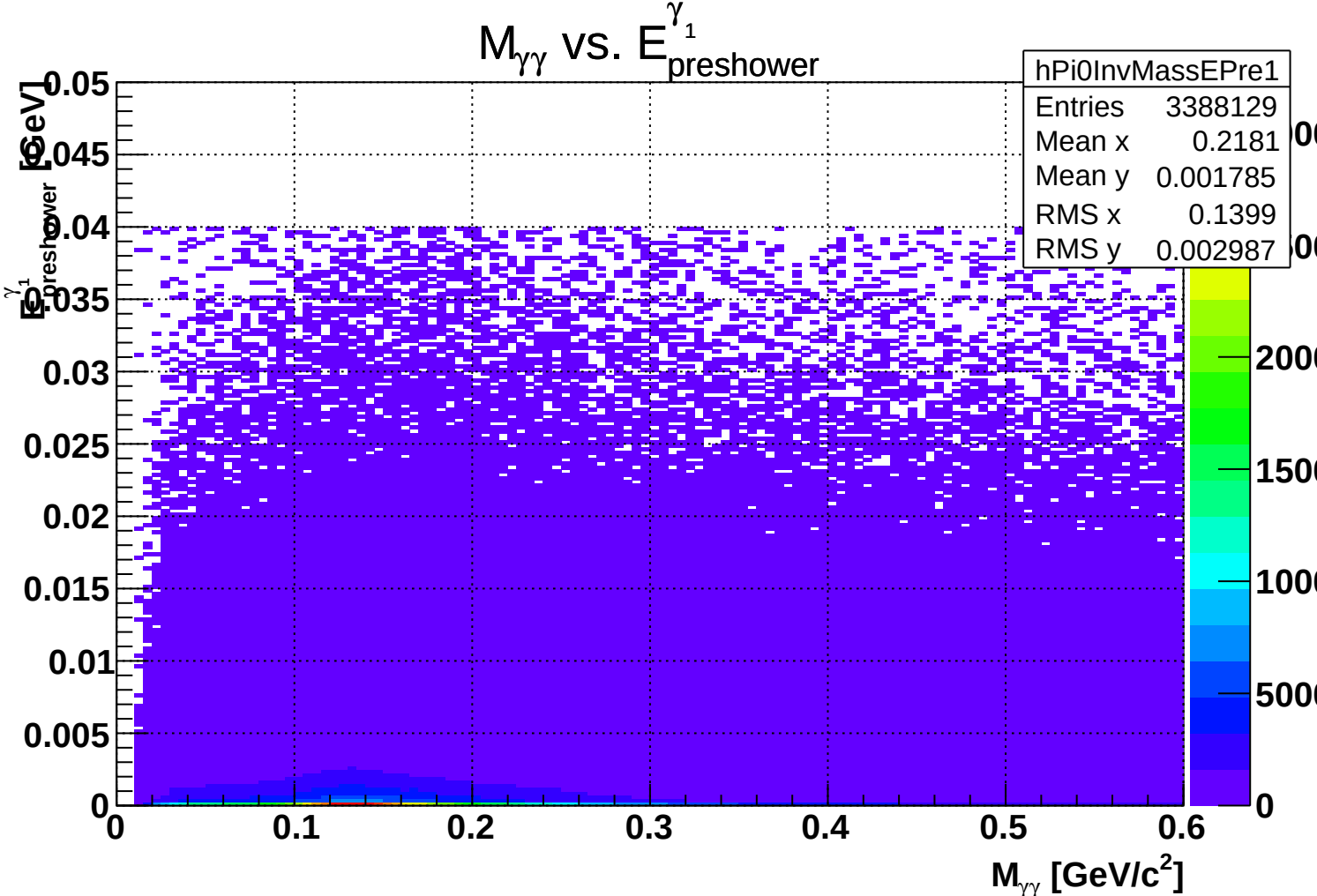

$M_{\gamma\gamma}$ vs. E_{γ_1}
hPi0InvMassETow1
Entries 3388129
Mean x 0.2155
Mean y 9.046
RMS x 0.1387
RMS y 5.797
E_{γ_1} [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
5
10
15
20
25
30
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000

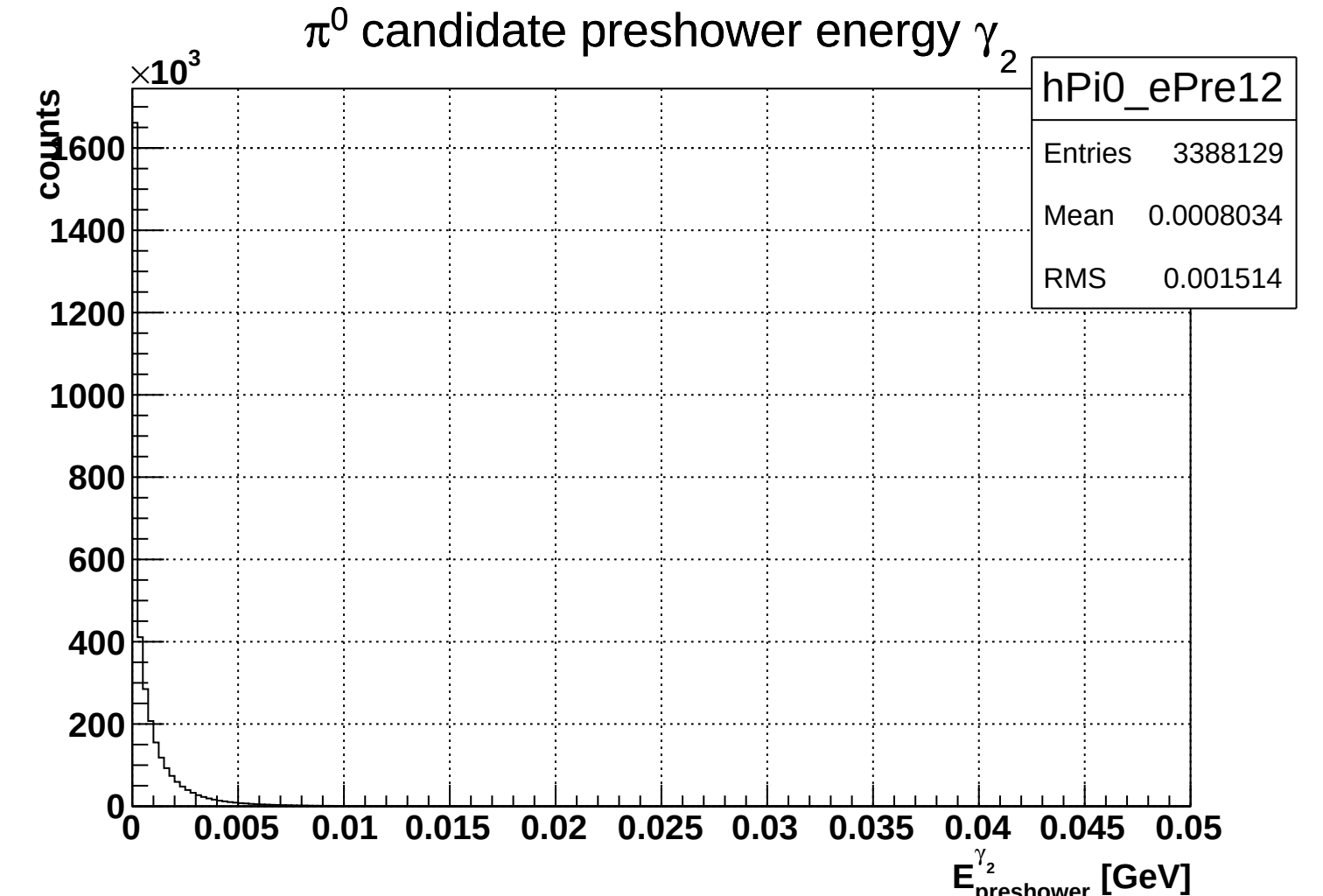

π^0 candidate E_{γ_2}
hPi0_eTow2
Entries 3388129
Mean 4.496
RMS 2.898
counts
$\times 10^3$
200
180
160
140
120
100
80
60
40
20
0
0
5
10
15
20
25
30
E_{γ_2} [GeV]

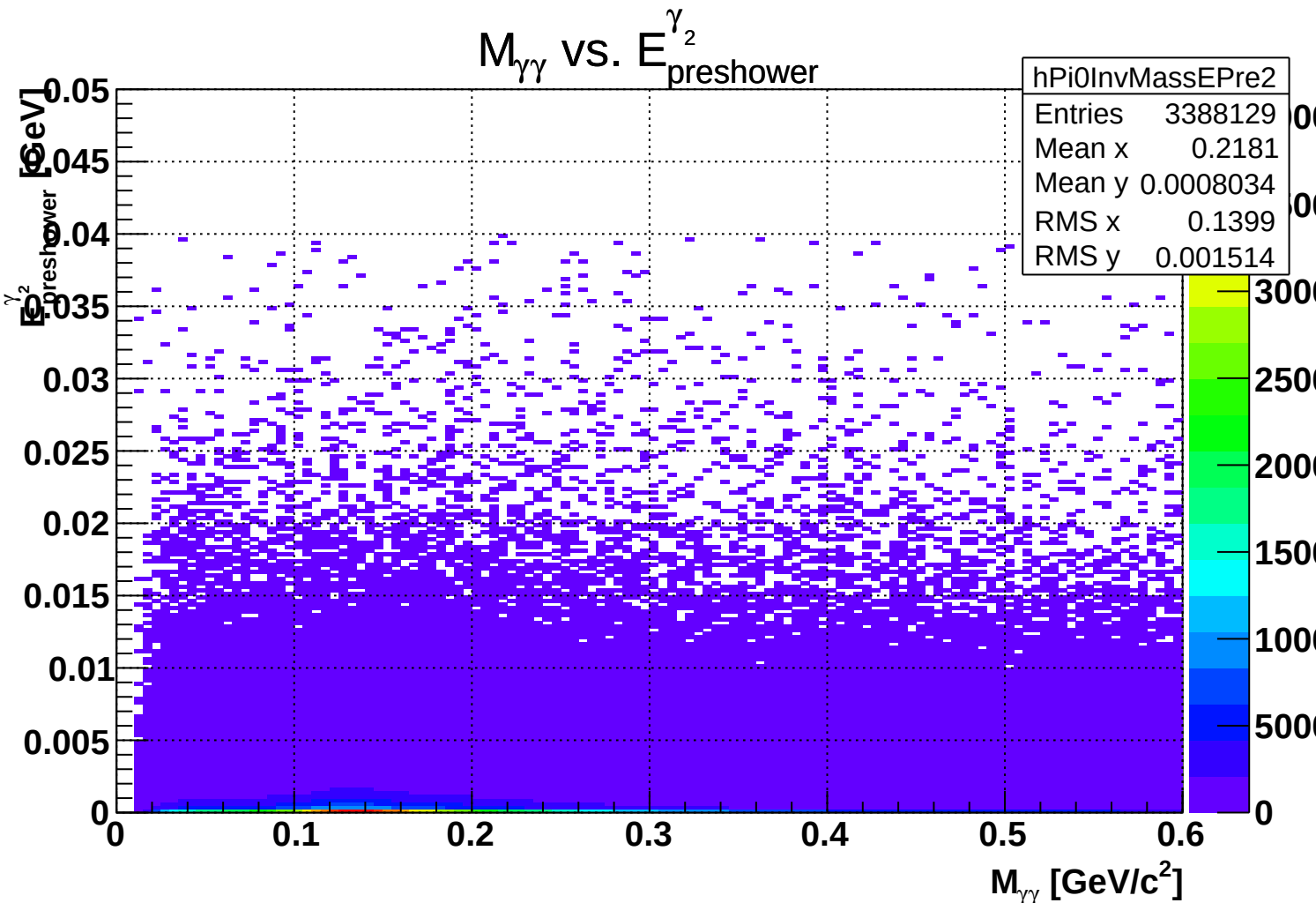

$M_{\gamma\gamma}$ vs. E_{γ_2}
hPi0InvMassETow2
Entries 3388129
Mean x 0.2181
Mean y 4.496
RMS x 0.1398
RMS y 2.898
E_{γ_2} [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
5
10
15
20
25
30
0.1
0.2
0.3
0.4
0.5
0.6
1000
2000
3000
4000

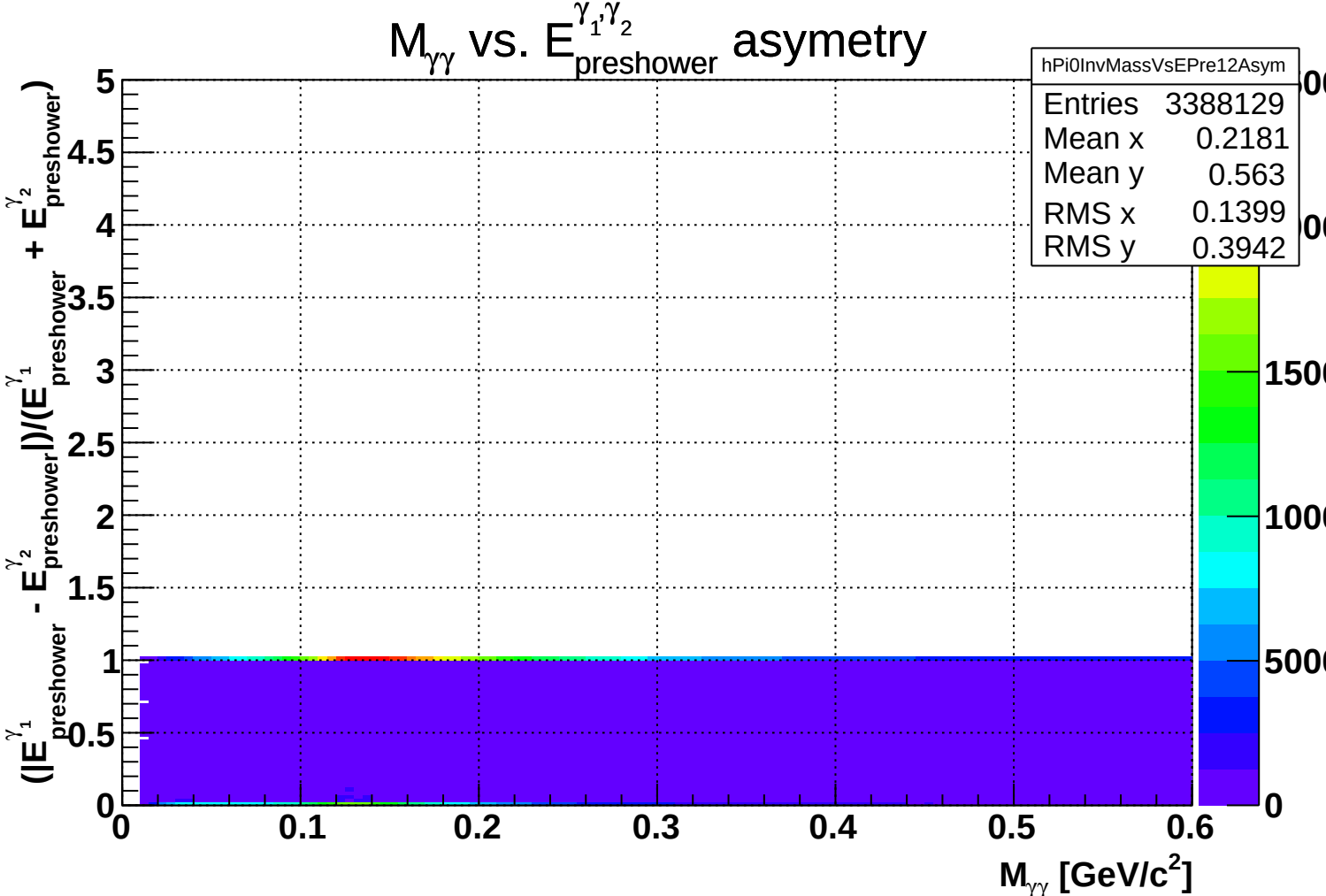

π^0 candidate $M_{\gamma\gamma}$ vs. $\Delta eTow_{1,2}$
hPi0InvMassVsETowAsym
Entries 3388129
Mean x 0.2181
Mean y 0.3163
RMS x 0.1399
RMS y 0.2206
$(|E_{\gamma_1}-E_{\gamma_2}|)/(E_{\gamma_1}+E_{\gamma_2})$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
200
400
600
800
1000
1200

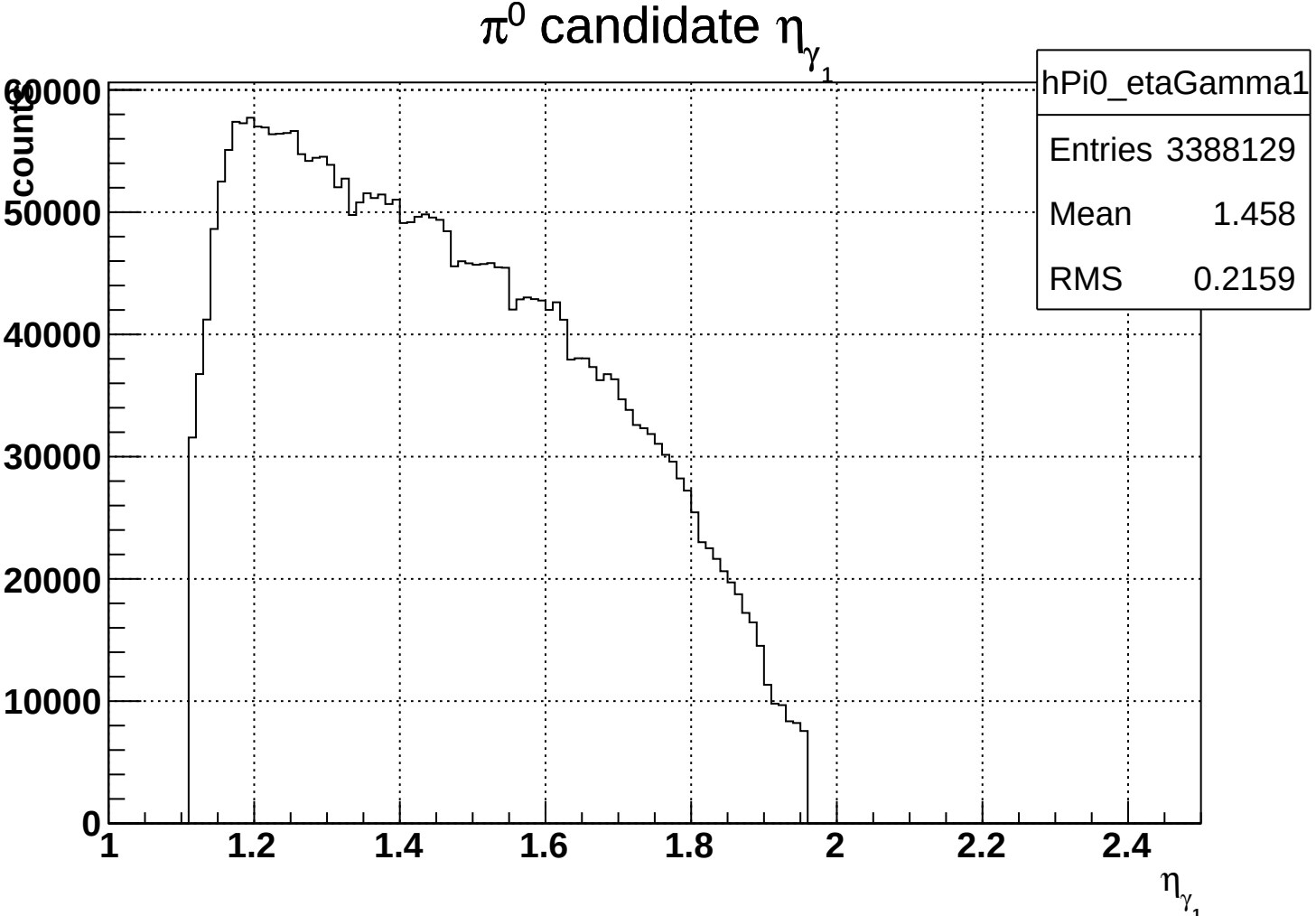

π^0 candidate preshower energy γ_1
hPi0_ePre11
Entries 3388129
Mean 0.001785
RMS 0.002987
counts
$\times 10^3$
1200
1000
800
600
400
200
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
$E^{\gamma_1}_{preshower}$ [GeV]

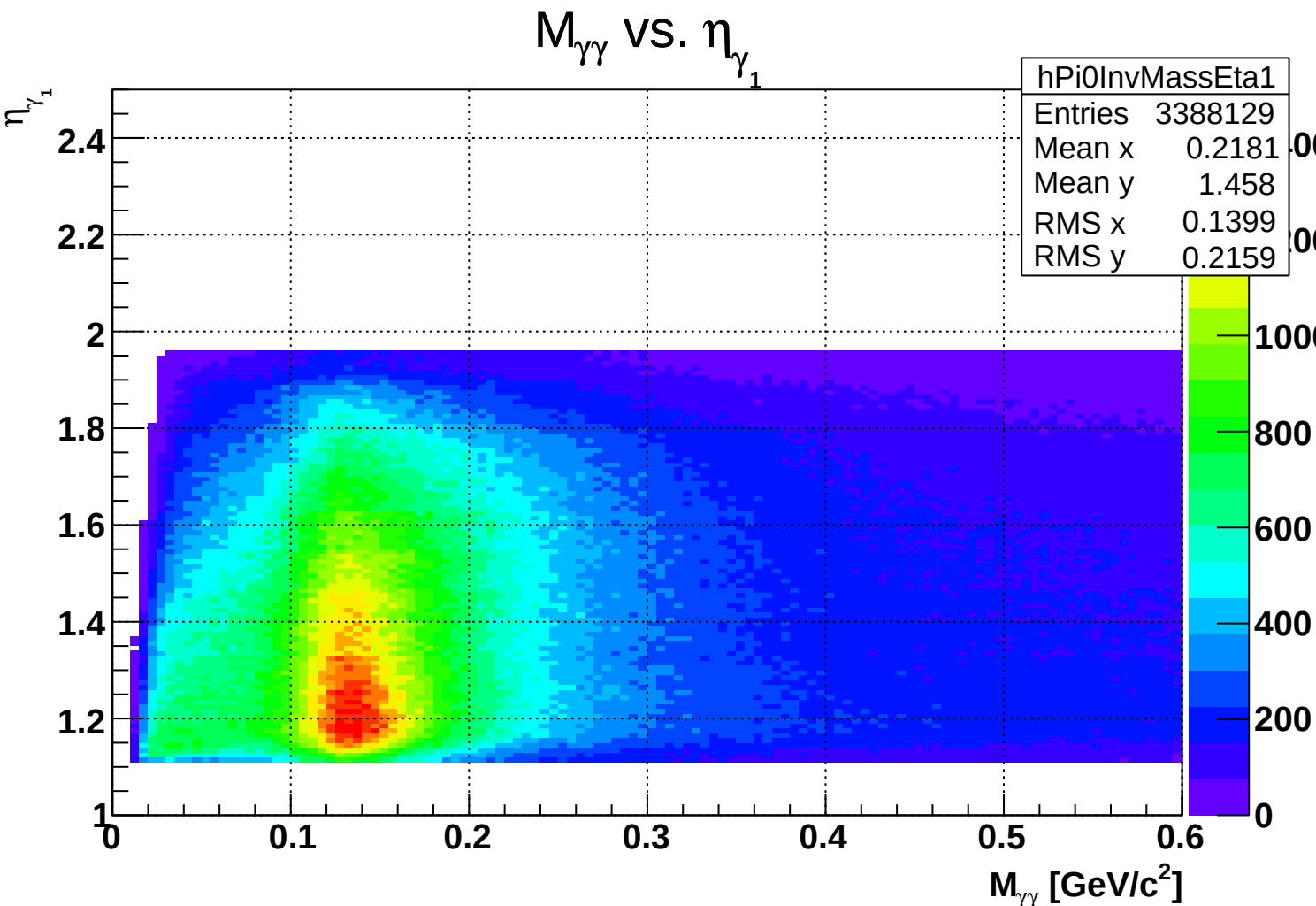

$M_{\gamma\gamma}$ vs. $E^{\gamma_1}_{preshower}$
hPi0InvMassEPre1
Entries 3388129
Mean x 0.2181
Mean y 0.001785
RMS x 0.1399
RMS y 0.002987
$E^{\gamma_1}_{preshower}$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000

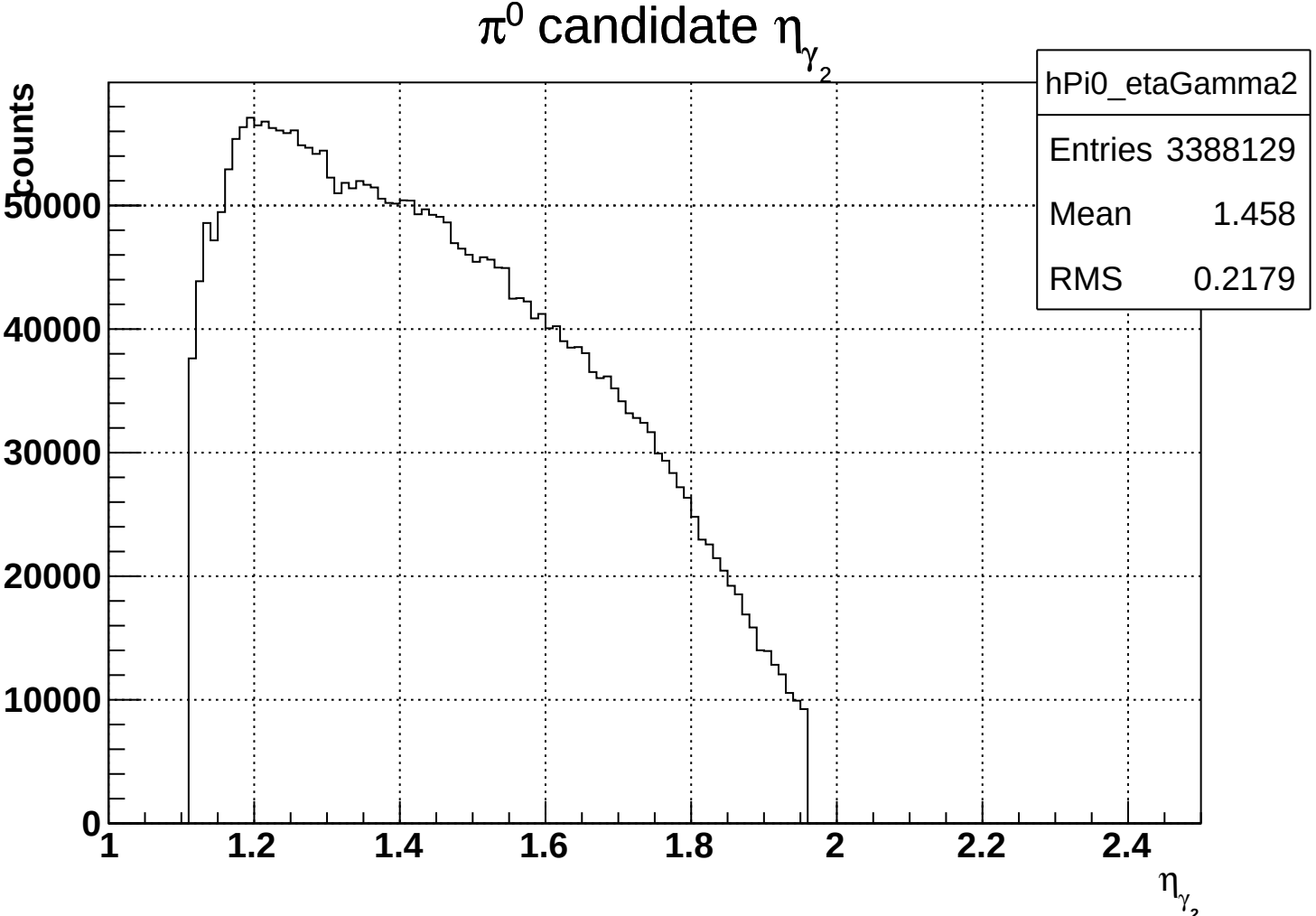

π^0 candidate preshower energy γ_2
hPi0_ePre12
Entries 3388129
Mean 0.0008034
RMS 0.001514
counts
$\times 10^3$
1600
1400
1200
1000
800
600
400
200
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
$E^{\gamma_2}_{preshower}$ [GeV]

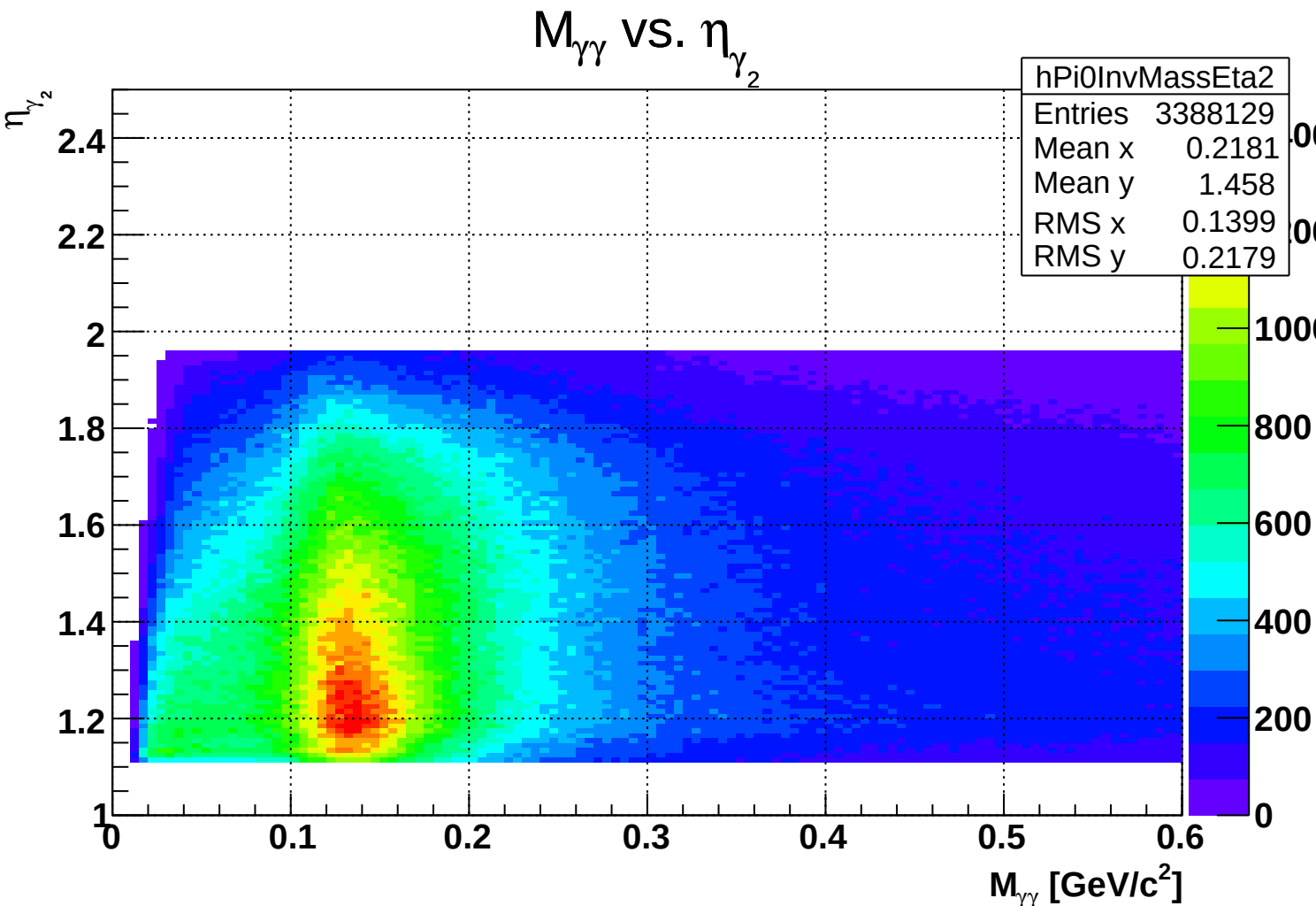

$M_{\gamma\gamma}$ vs. $E^{\gamma_2}_{preshower}$
hPi0InvMassEPre2
Entries 3388129
Mean x 0.2181
Mean y 0.0008034
RMS x 0.1399
RMS y 0.001514
$E^{\gamma_2}_{preshower}$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000
2500
3000

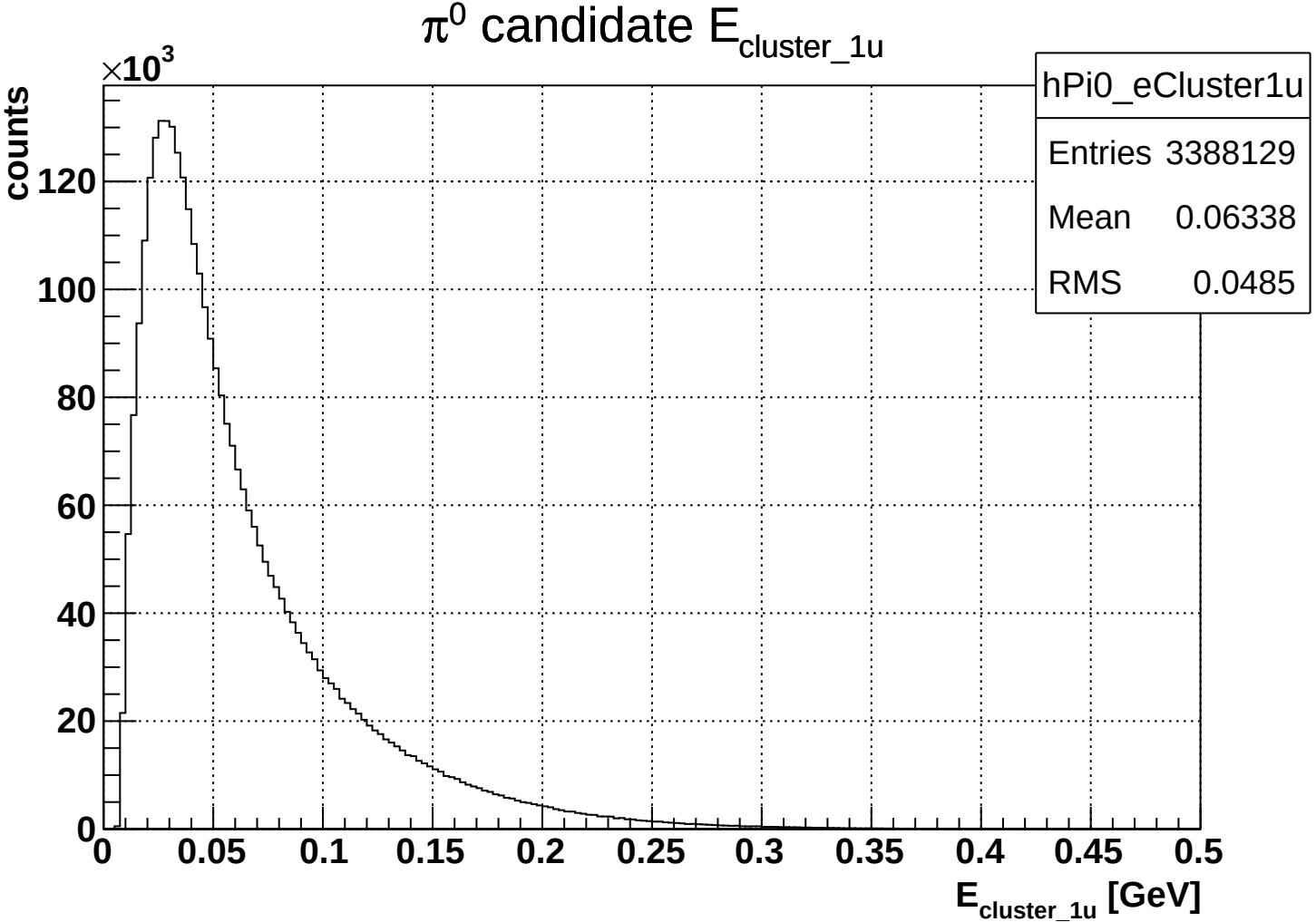

$M_{\gamma\gamma}$ vs. $E^{\gamma_1,\gamma_2}_{preshower}$ asymetry
hPi0InvMassVsEPre12Asym
Entries 3388129
Mean x 0.2181
Mean y 0.563
RMS x 0.1399
RMS y 0.3942
$(|E^{\gamma_1}_{preshower} - E^{\gamma_2}_{preshower}|)/(E^{\gamma_1}_{preshower} + E^{\gamma_2}_{preshower})$
$M_{\gamma\gamma}$ [GeV/c^2]
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
500
1000
1500

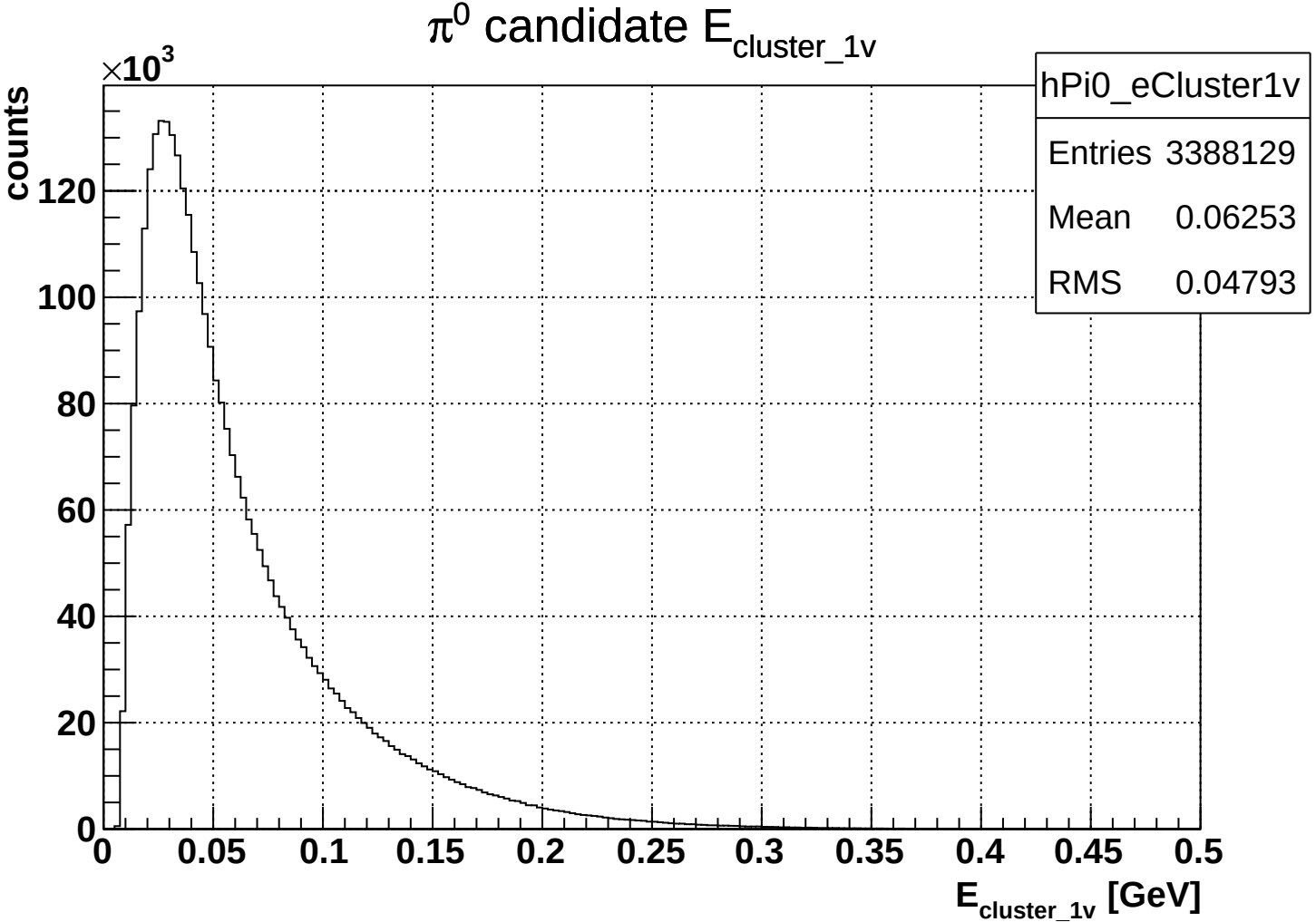

π^0 candidate η_{γ_1}
hPi0_etaGamma1
Entries 3388129
Mean 1.458
RMS 0.2159
counts
60000
50000
40000
30000
20000
10000
0
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η_{γ_1}

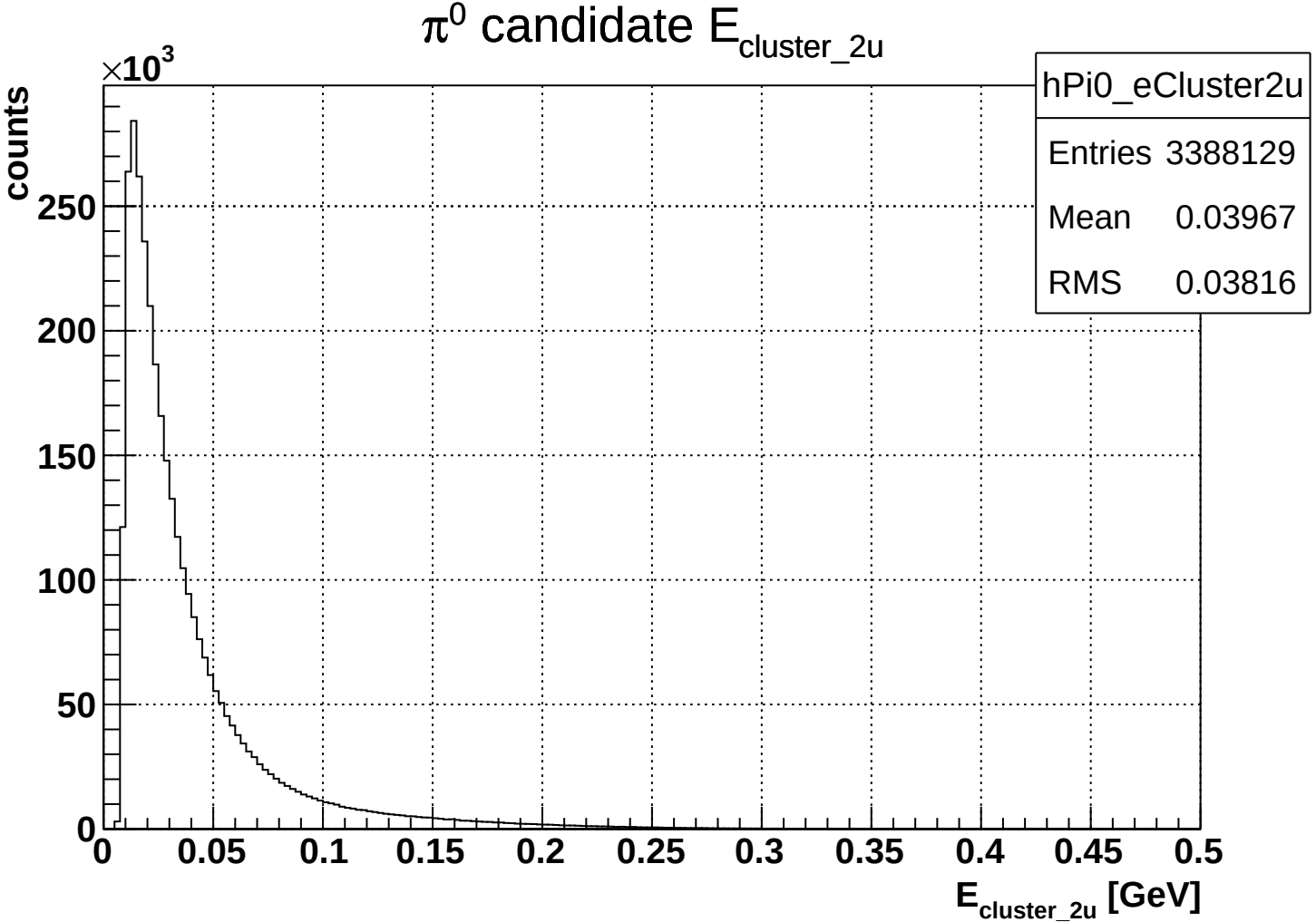

$M_{\gamma\gamma}$ vs. η_{γ_1}
hPi0InvMassEta1
Entries 3388129
Mean x 0.2181
Mean y 1.458
RMS x 0.1399
RMS y 0.2159
η_{γ_1}
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
1000
800
600
400
200
0

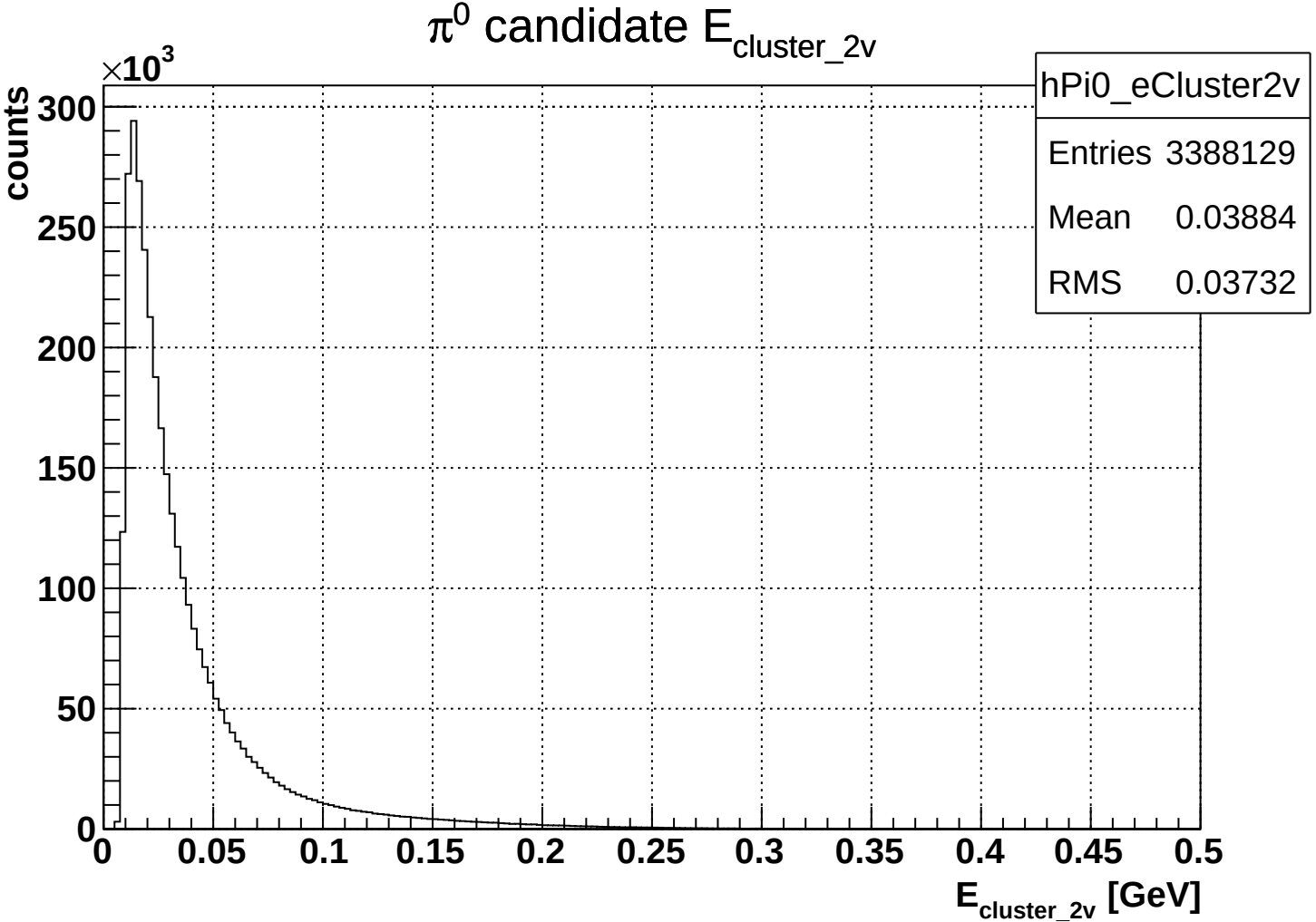

π^0 candidate η_{γ_2}
hPi0_etaGamma2
Entries 3388129
Mean 1.458
RMS 0.2179
counts
50000
40000
30000
20000
10000
0
1
1.2
1.4
1.6
1.8
2
2.2
2.4
η_{γ_2}

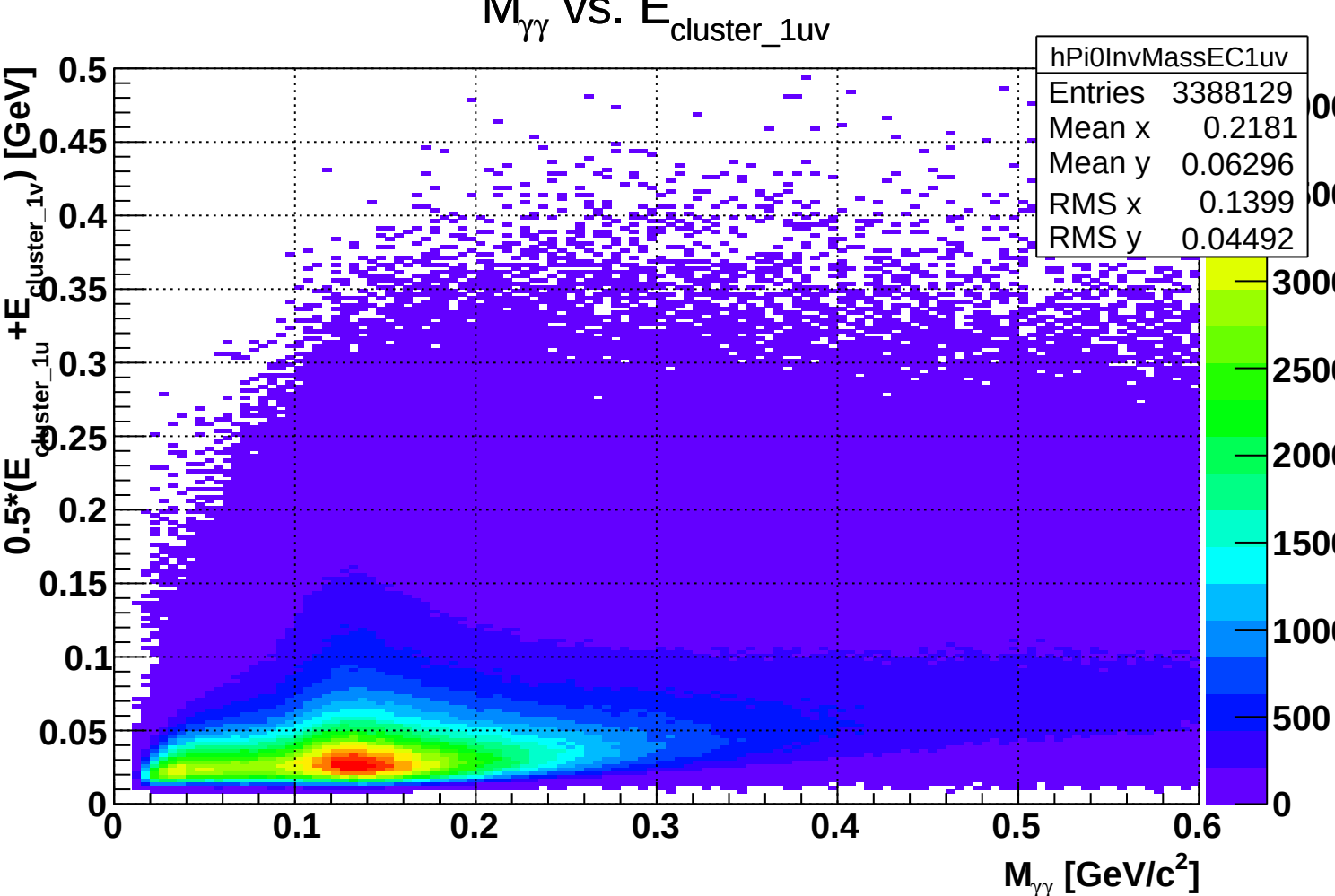

$M_{\gamma\gamma}$ vs. η_{γ_2}
hPi0InvMassEta2
Entries 3388129
Mean x 0.2181
Mean y 1.458
RMS x 0.1399
RMS y 0.2179
η_{γ_2}
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0
0.1
0.2
0.3
0.4
0.5
0.6
$M_{\gamma\gamma}$ [GeV/c^2]
1000
800
600
400
200
0

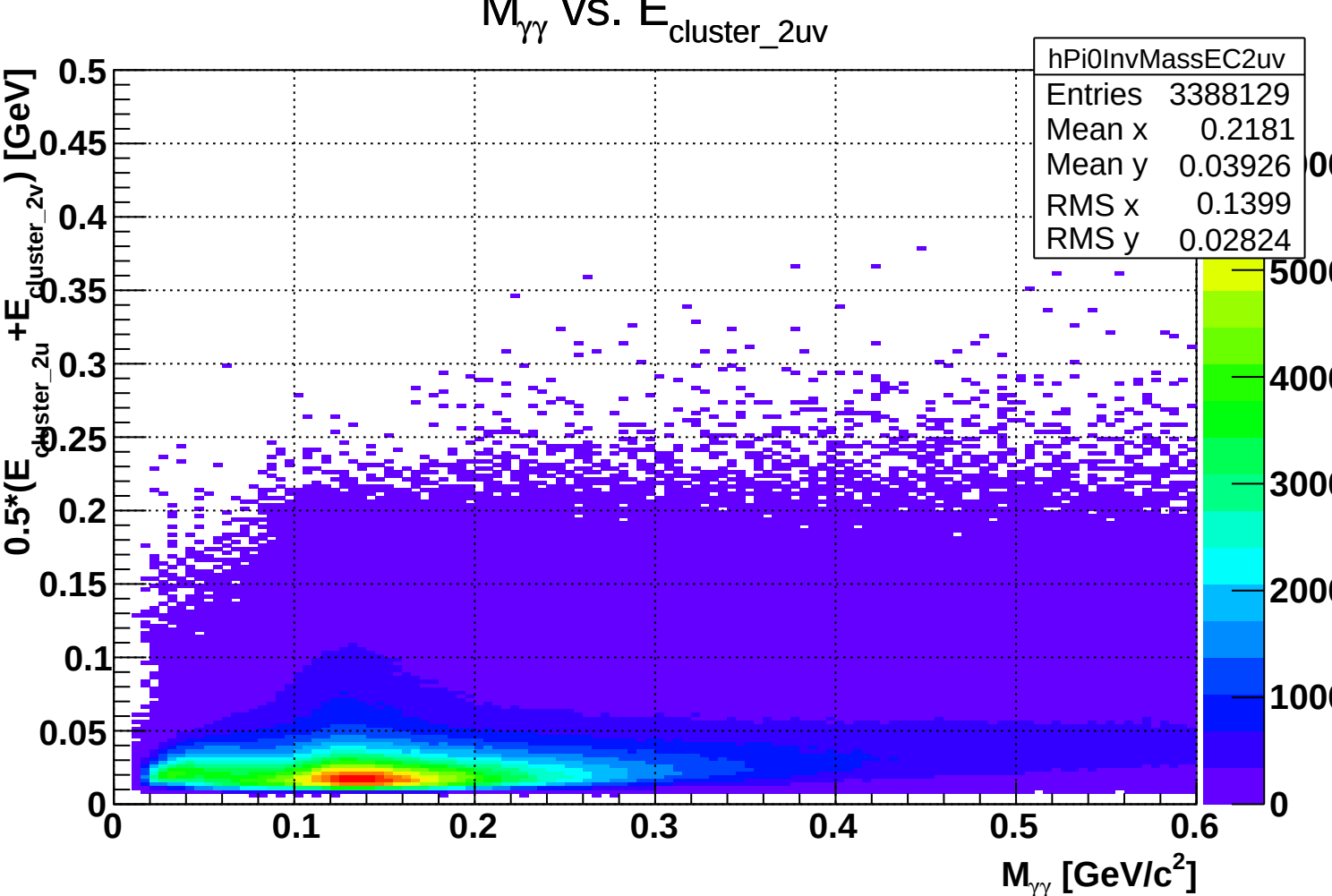

π^0 candidate $E_{cluster_1u}$
hPi0_eCluster1u
Entries 3388129
Mean 0.06338
RMS 0.0485
counts
$\times 10^3$
0
20
40
60
80
100
120
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
$E_{cluster_1u}$ [GeV]


π^0 candidate $E_{cluster_1v}$
hPi0_eCluster1v
Entries 3388129
Mean 0.06253
RMS 0.04793
counts
$\times 10^3$
0
20
40
60
80
100
120
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]

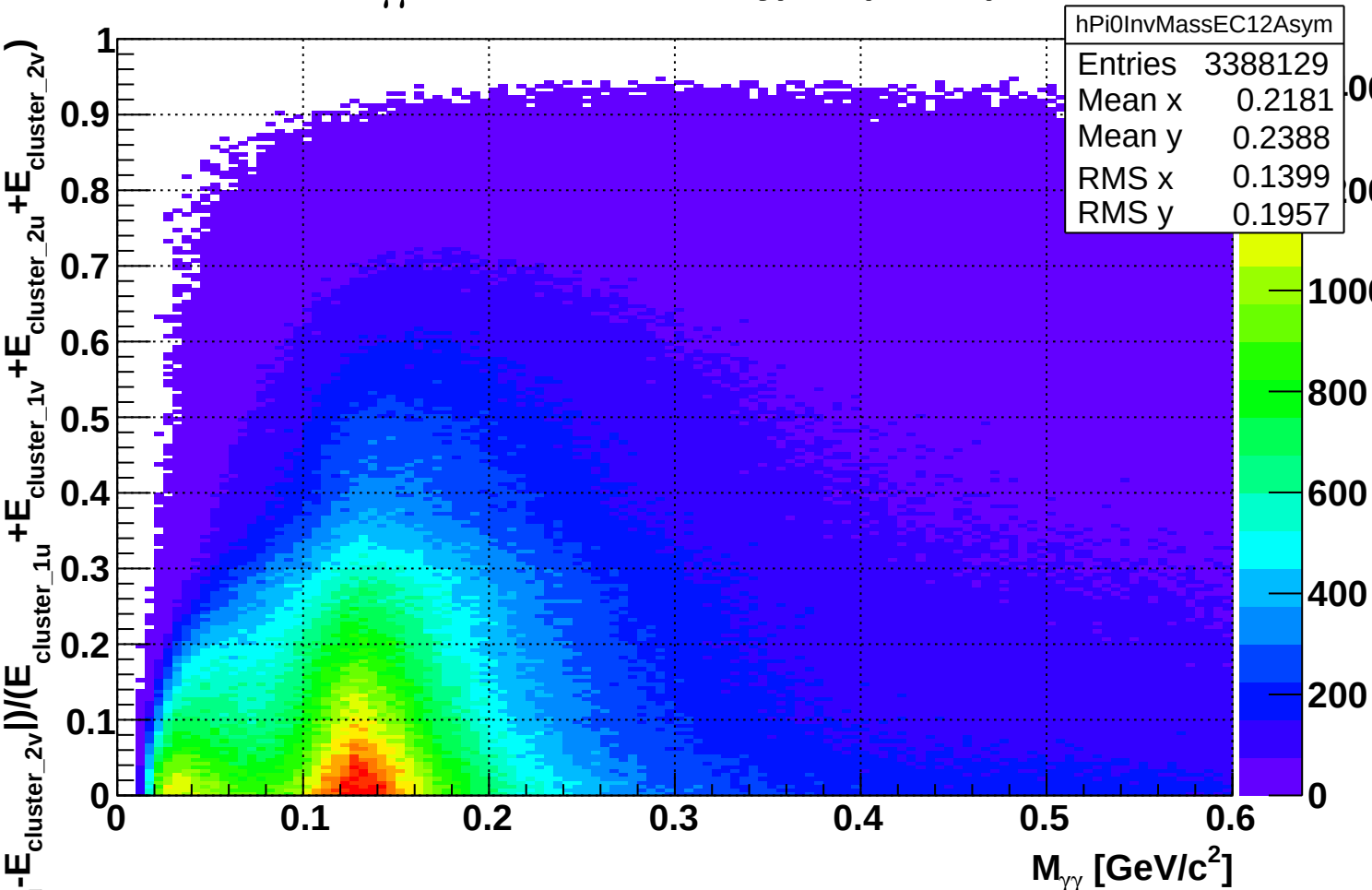

π^0 candidate $E_{cluster_2u}$
hPi0_eCluster2u
Entries 3388129
Mean 0.03967
RMS 0.03816
counts
$\times 10^3$
250
200
150
100
50
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
$E_{cluster_2u}$ [GeV]

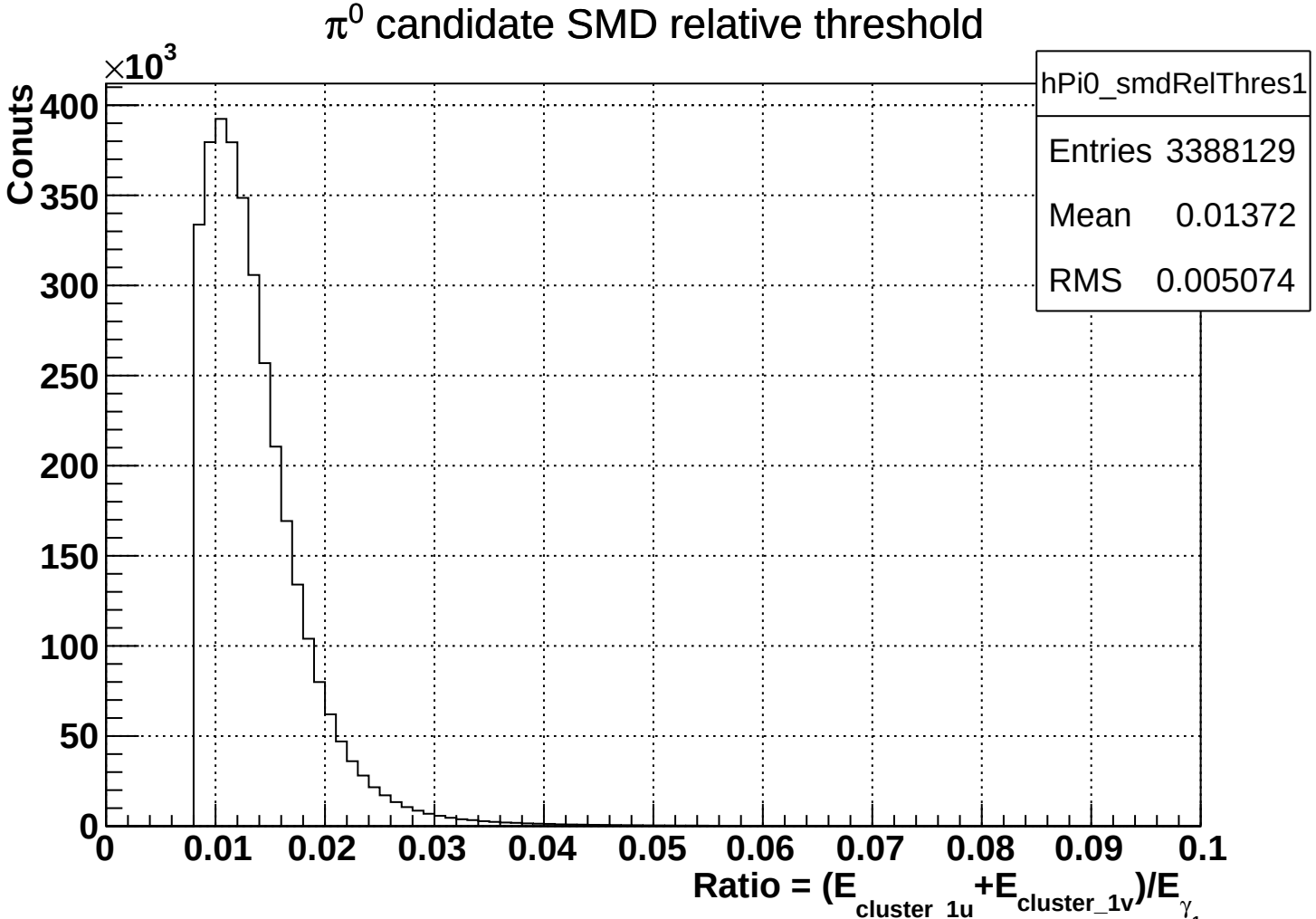

π^0 candidate $E_{cluster_2v}$
hPi0_eCluster2v
Entries 3388129
Mean 0.03884
RMS 0.03732
counts
$\times 10^3$
300
250
200
150
100
50
0
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
$E_{cluster_2v}$ [GeV]

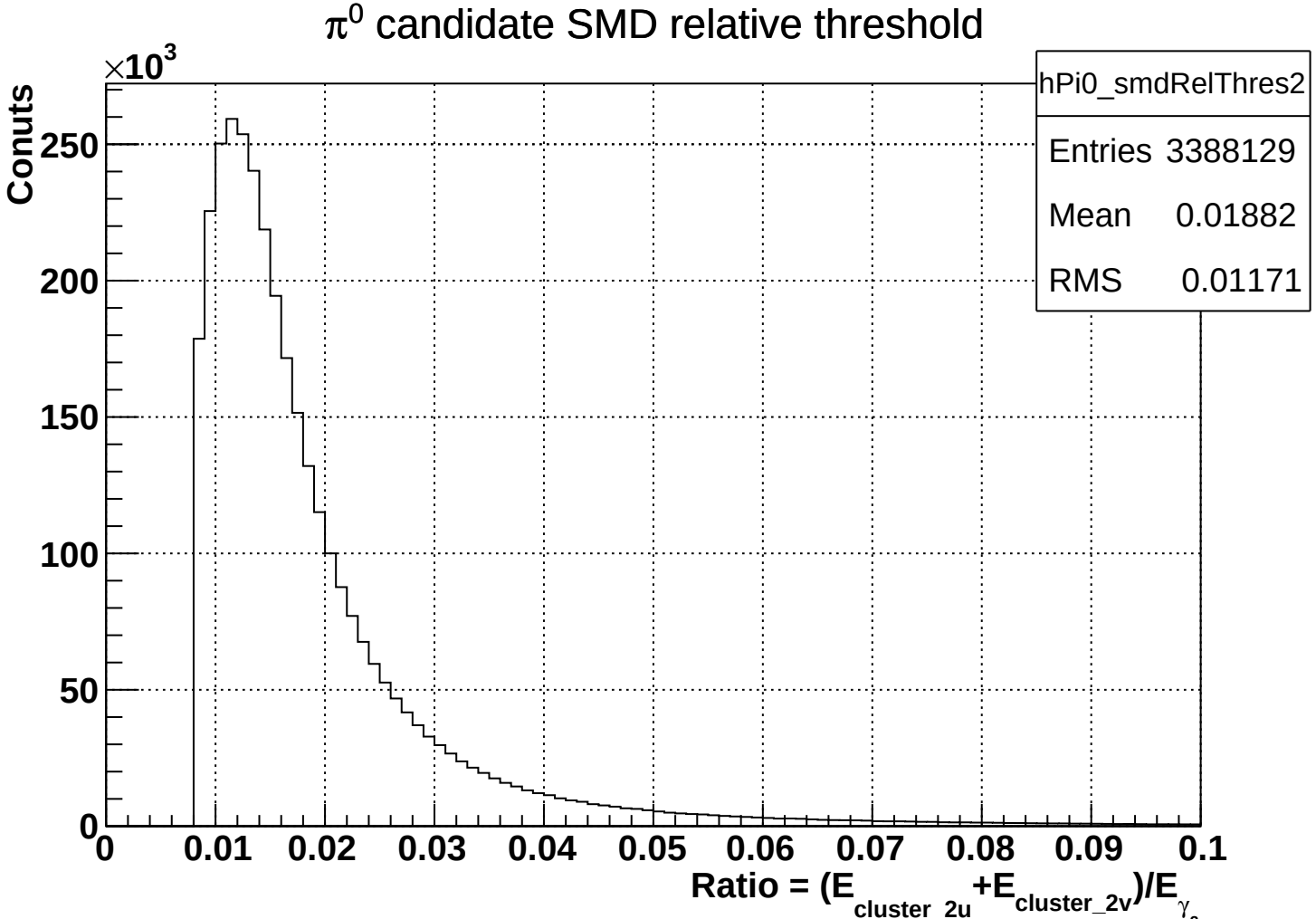

$M_{\gamma\gamma}$ vs. $E_{cluster_1uv}$
hPi0InvMassEC1uv
Entries 3388129
Mean x 0.2181
Mean y 0.06296
RMS x 0.1399
RMS y 0.04492
$0.5*(E_{cluster_1u}+E_{cluster_1v})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.6
500
1000
1500
2000
2500
3000

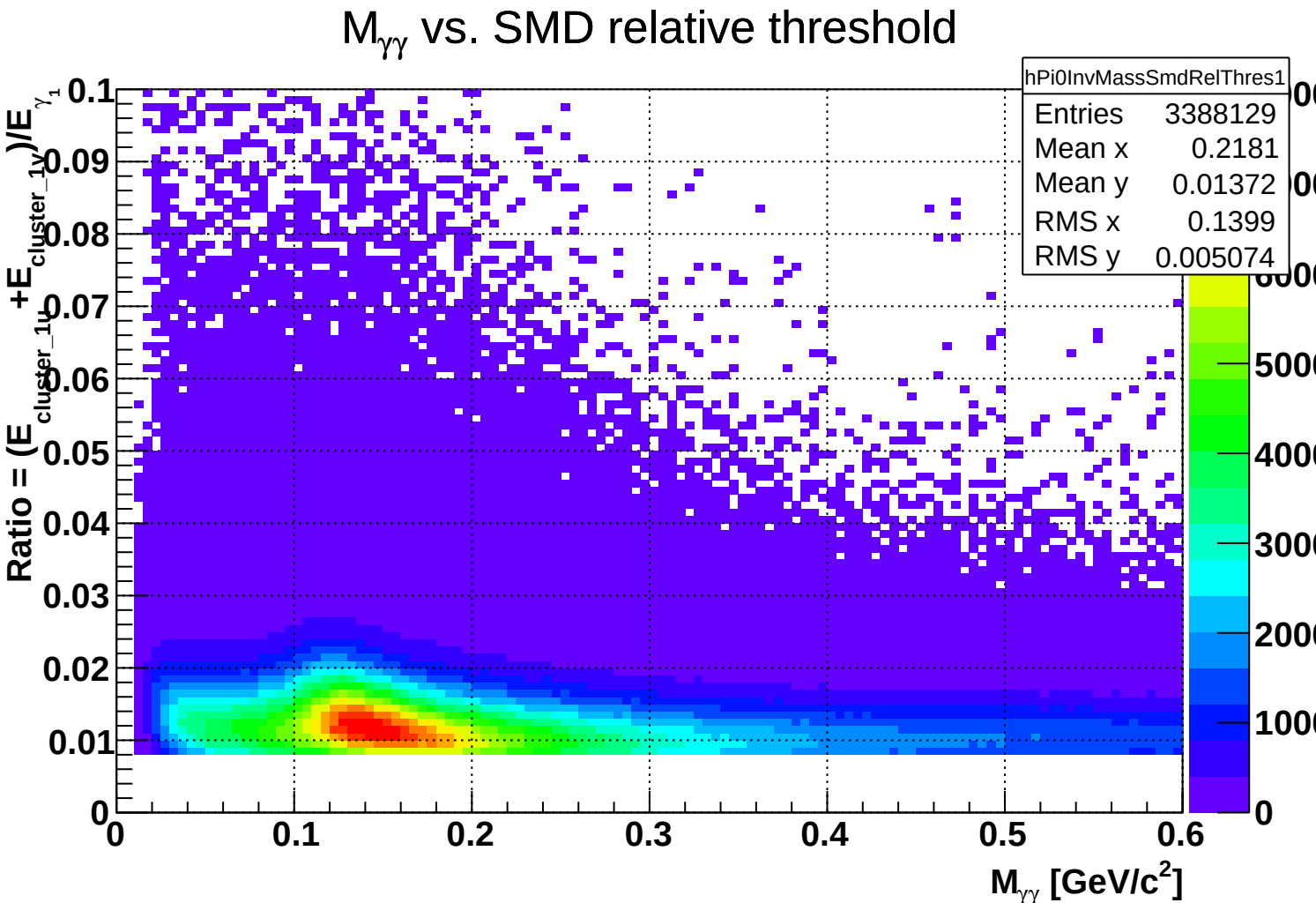

$M_{\gamma\gamma}$ vs. $E_{cluster_2uv}$
hPi0InvMassEC2uv
Entries 3388129
Mean x 0.2181
Mean y 0.03926
RMS x 0.1399
RMS y 0.02824
$0.5*(E_{cluster_2u}+E_{cluster_2v})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.6
1000
2000
3000
4000
5000

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

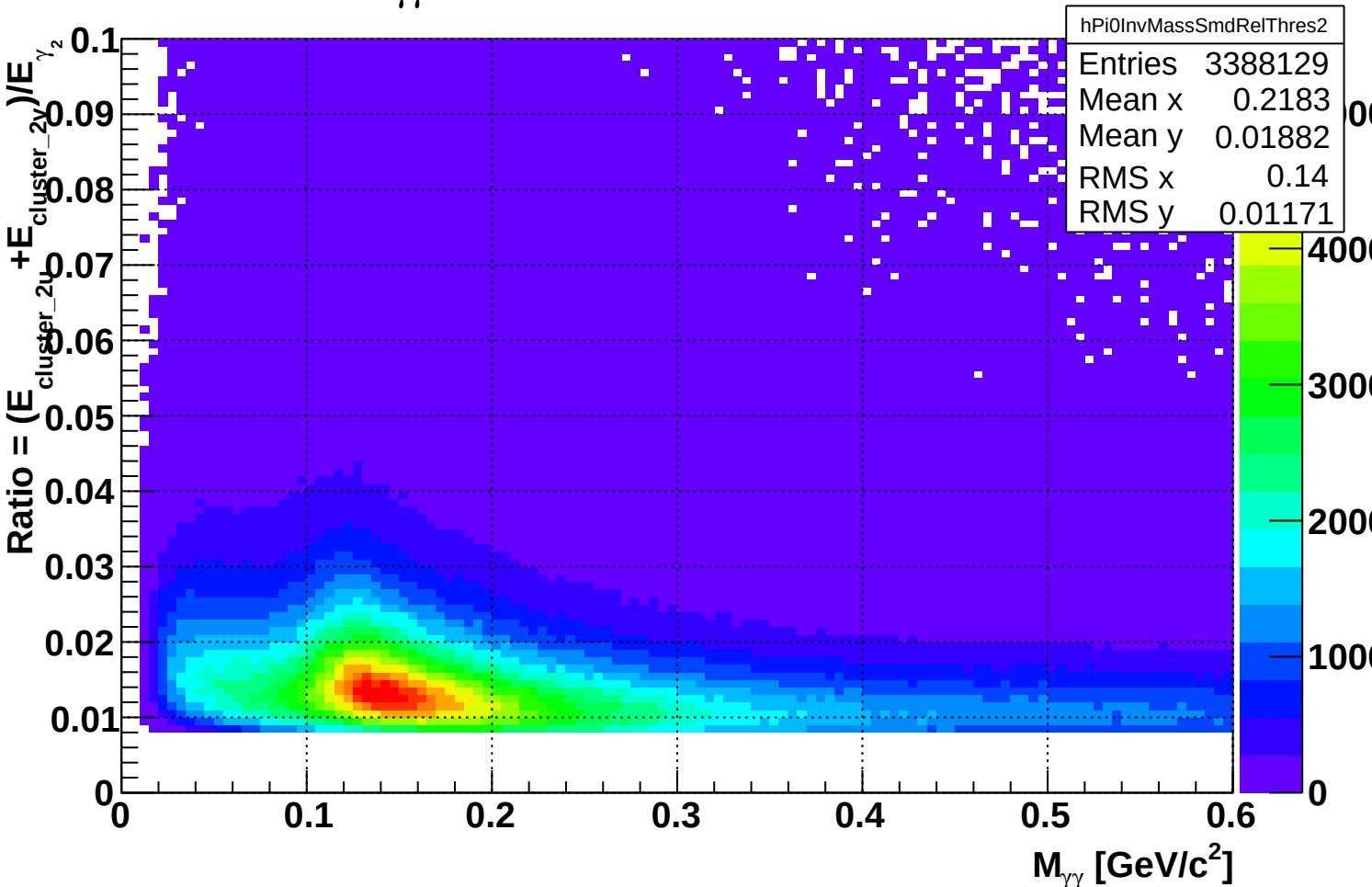


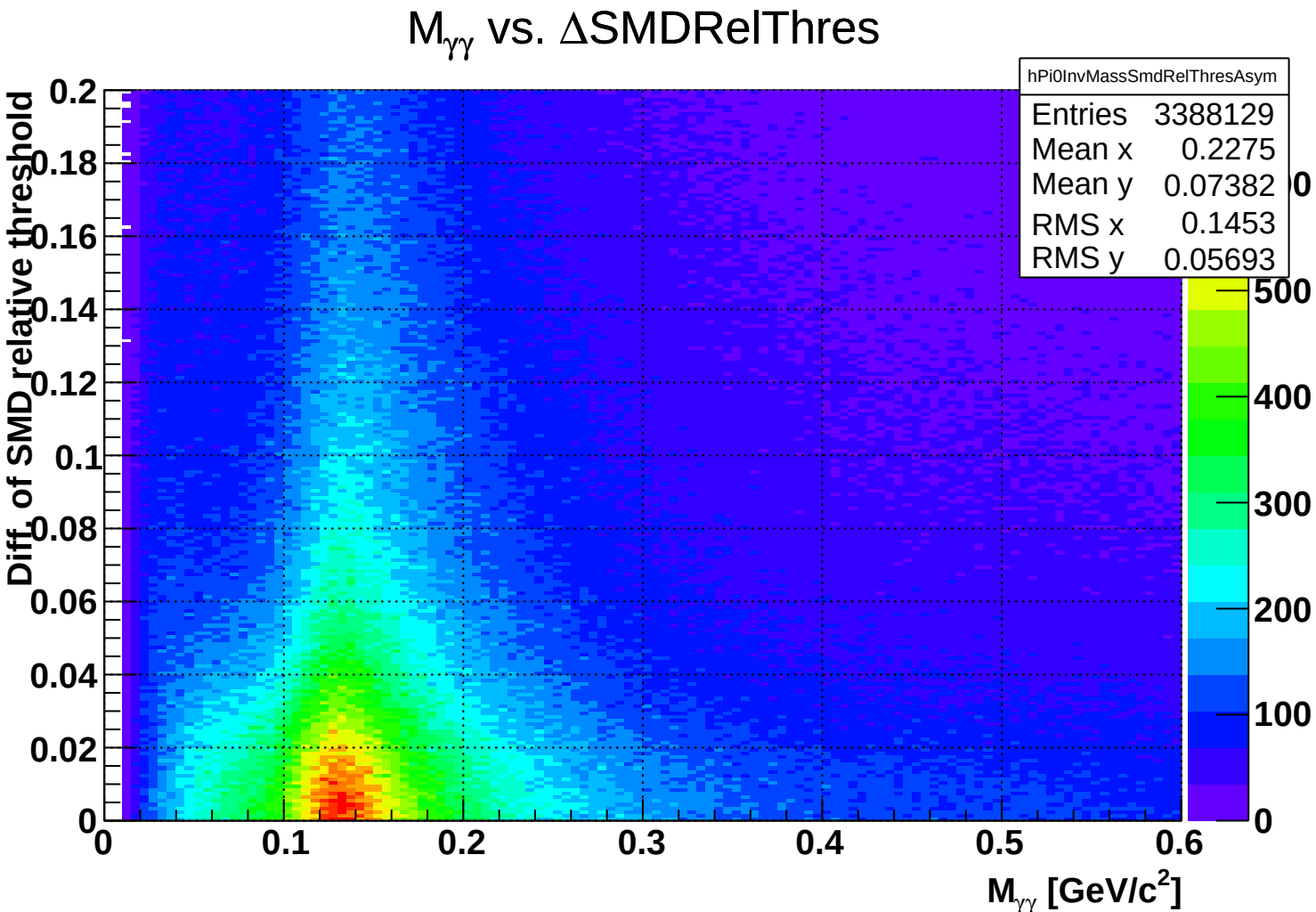

π^0 candidate SMD relative threshold
hPi0_smdRelThres1
Entries 3388129
Mean 0.01372
RMS 0.005074
Conuts
$\times 10^3$
400
350
300
250
200
150
100
50
0
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Ratio = $(E_{cluster_1u}+E_{cluster_1v})/E_{\gamma}$

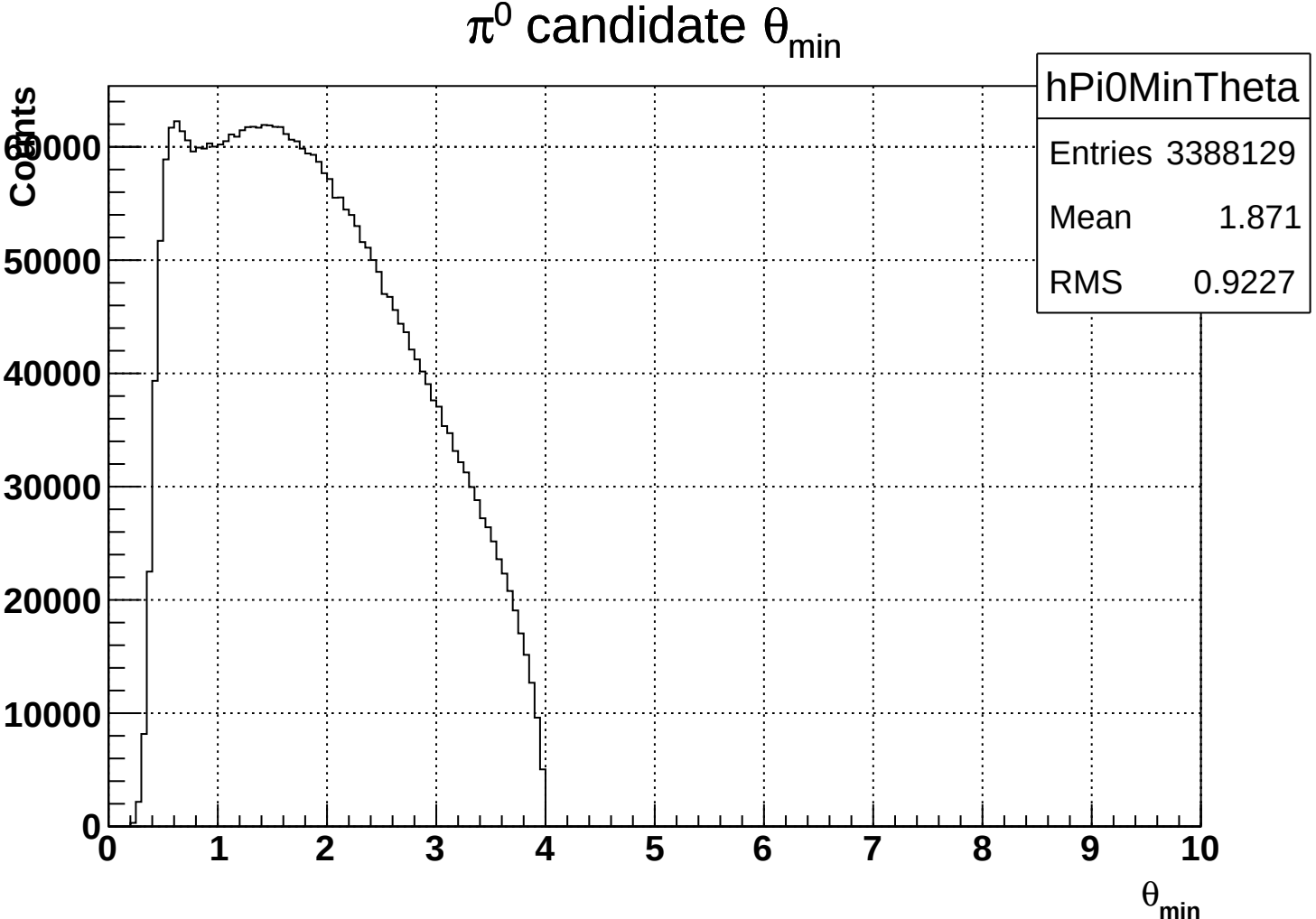

π^0 candidate SMD relative threshold
hPi0_smdRelThres2
Entries 3388129
Mean 0.01882
RMS 0.01171
Conuts
$\times 10^3$
250
200
150
100
50
0
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Ratio = $(E_{cluster_2u}+E_{cluster_2v})/E_{\gamma}$

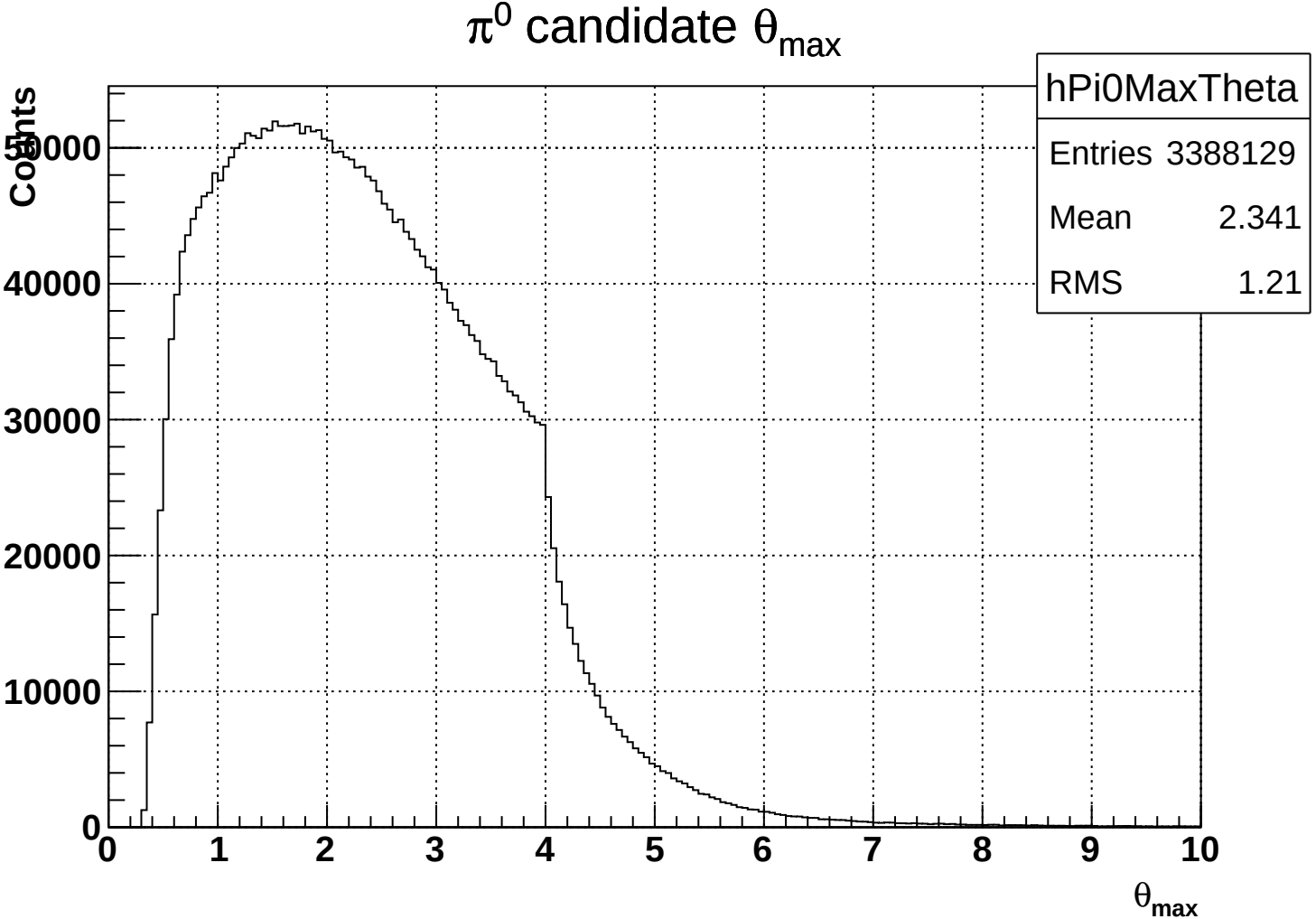

$M_{\gamma\gamma}$ vs. SMD relative threshold
hPi0InvMassSmdRelThres1
Entries 3388129
Mean x 0.2181
Mean y 0.01372
RMS x 0.1399
RMS y 0.005074
Ratio = $(E_{cluster_1u}+E_{cluster_1v})/E_{\gamma_1}$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
0.1
0.2
0.3
0.4
0.5
0.6
1000
2000
3000
4000
5000

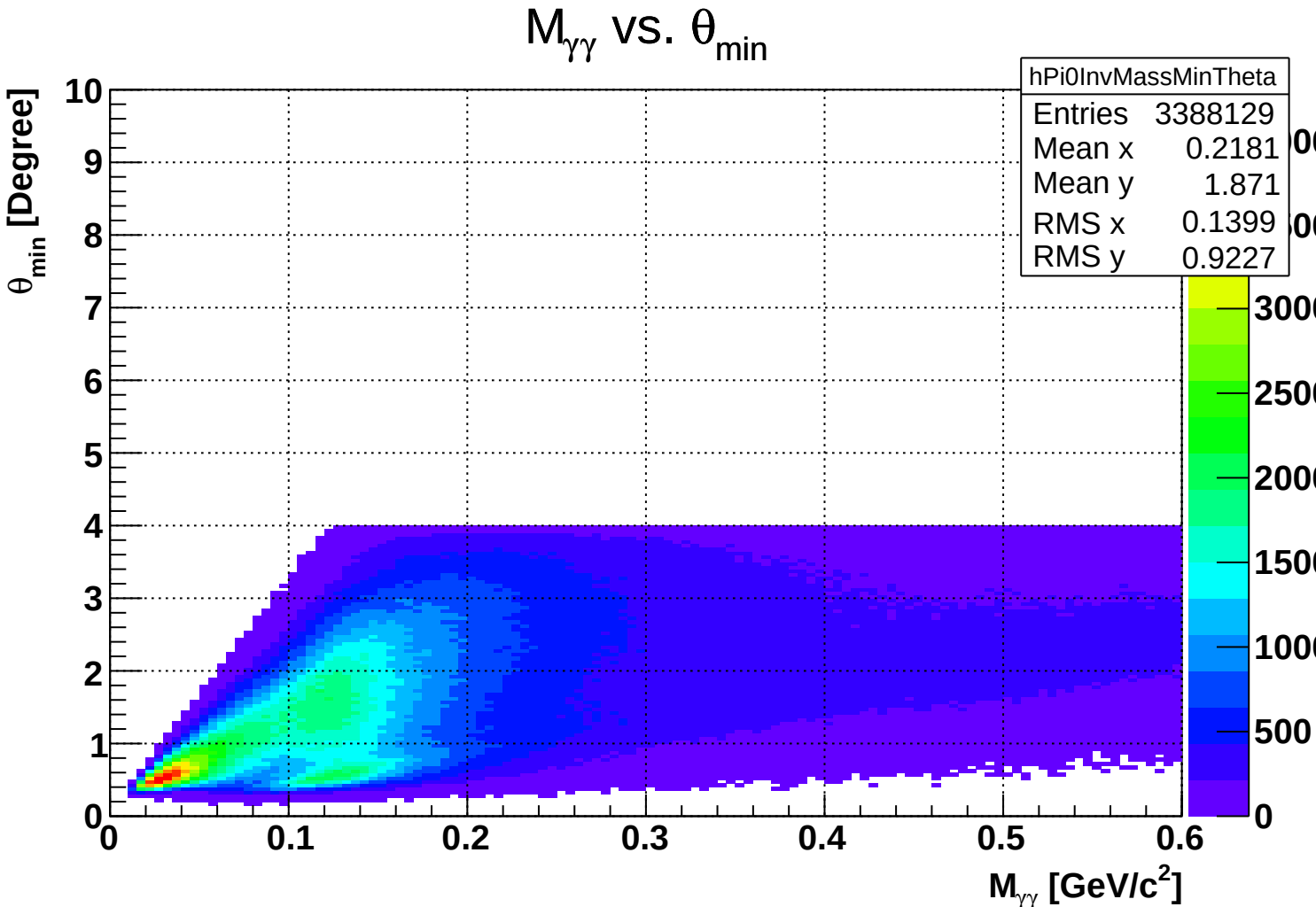
$M_{\gamma\gamma}$ vs. SMD relative threshold

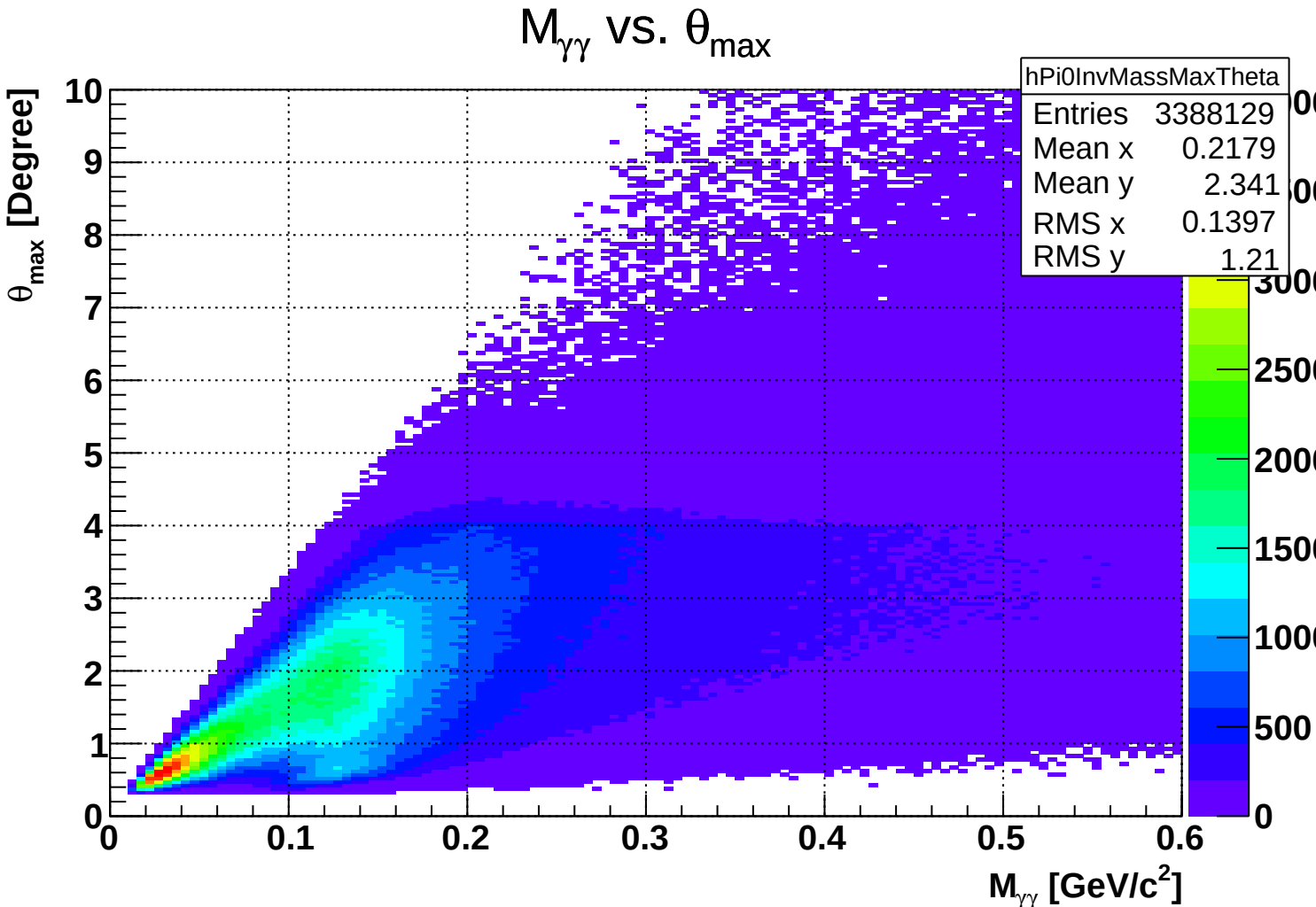


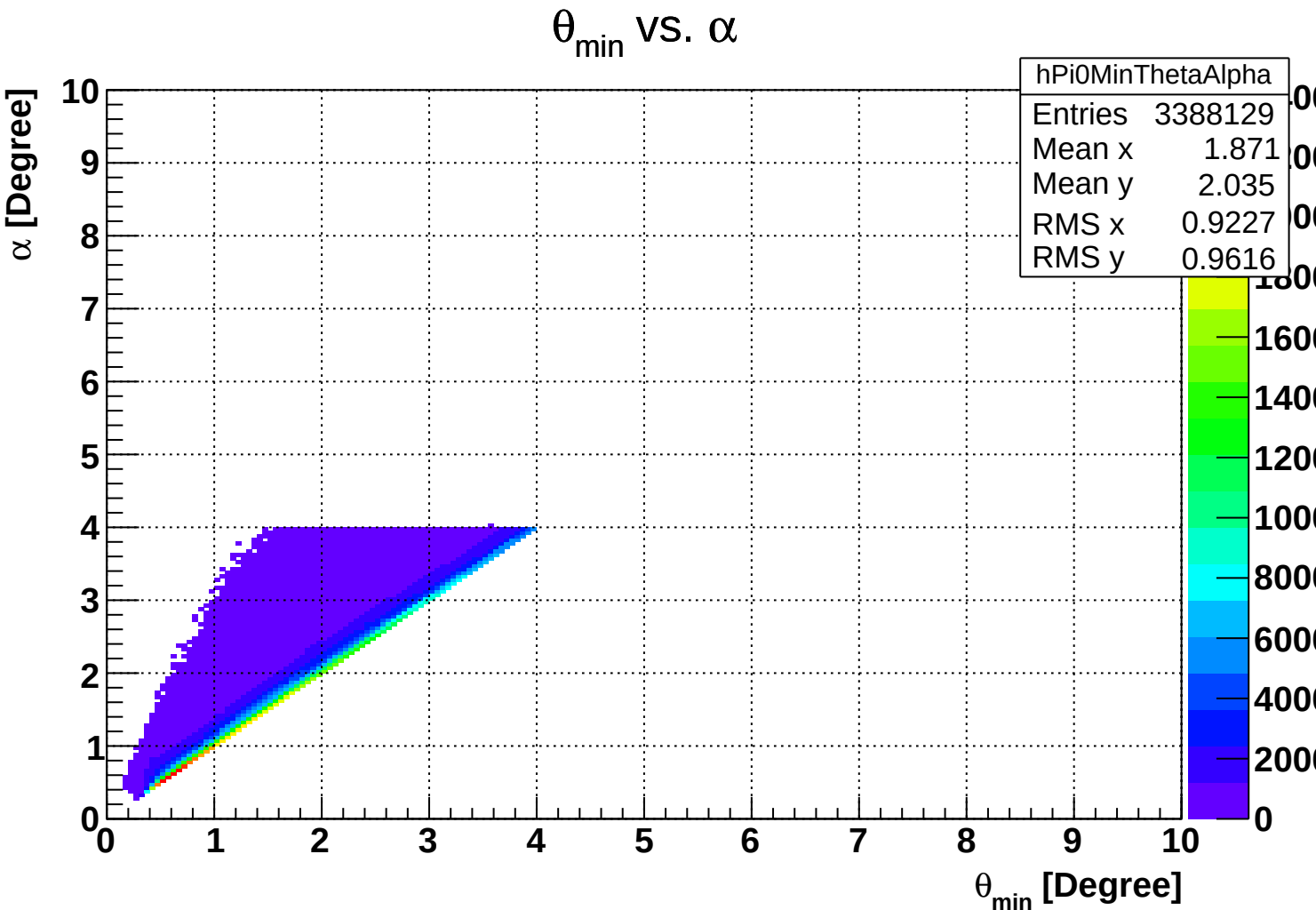

$M_{\gamma\gamma}$ vs. ΔSMDRelThres
hPi0InvMassSmdRelThresAsym
Entries 3388129
Mean x 0.2275
Mean y 0.07382
RMS x 0.1453
RMS y 0.05693
Diff. of SMD relative threshold
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.1
0.2
0.3
0.4
0.5
0.6
100
200
300
400
500

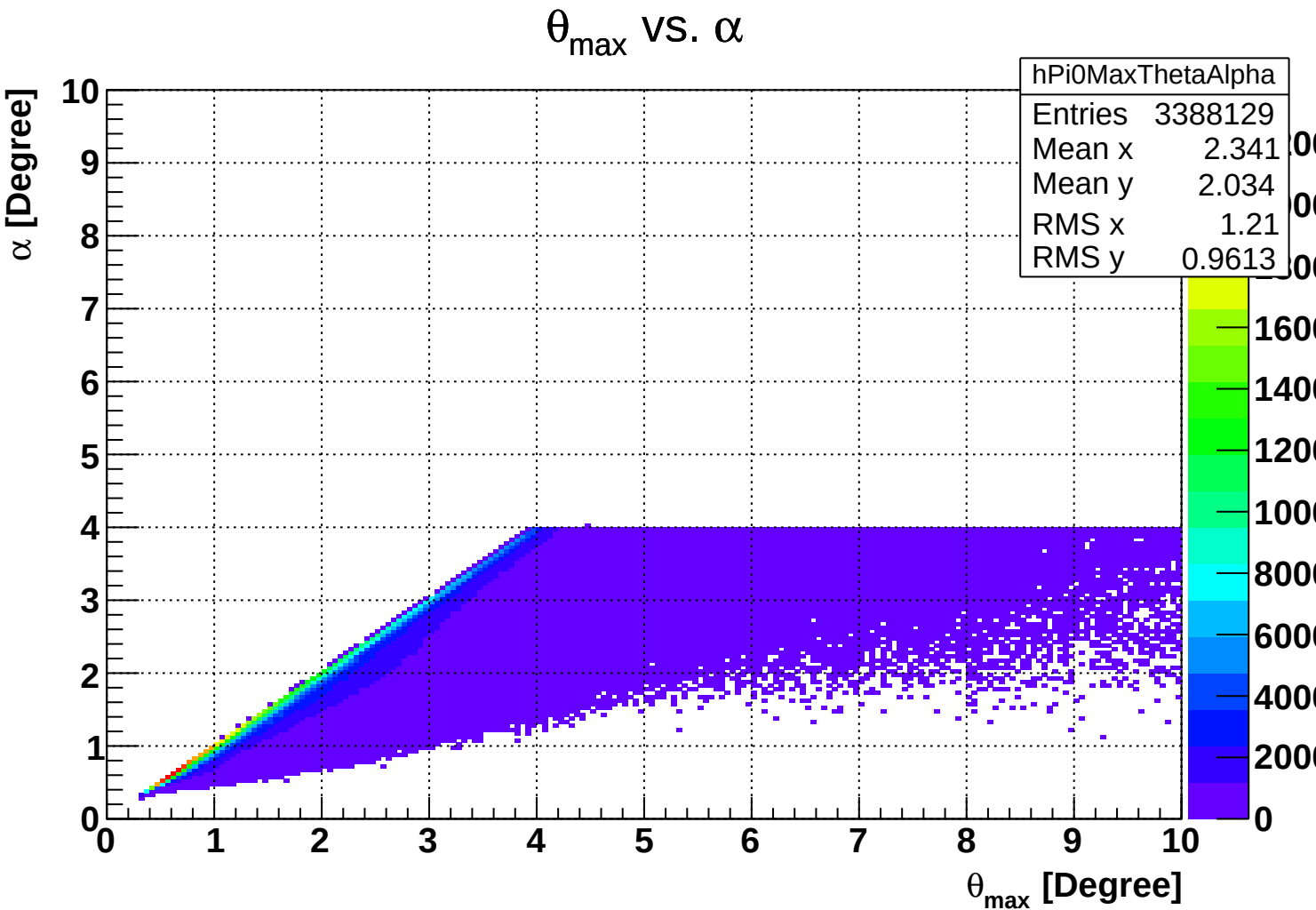

π^0 candidate θ_{min}
hPi0MinTheta
Entries 3388129
Mean 1.871
RMS 0.9227
Counts
60000
50000
40000
30000
20000
10000
0
0
1
2
3
4
5
6
7
8
9
10
θ_{min}

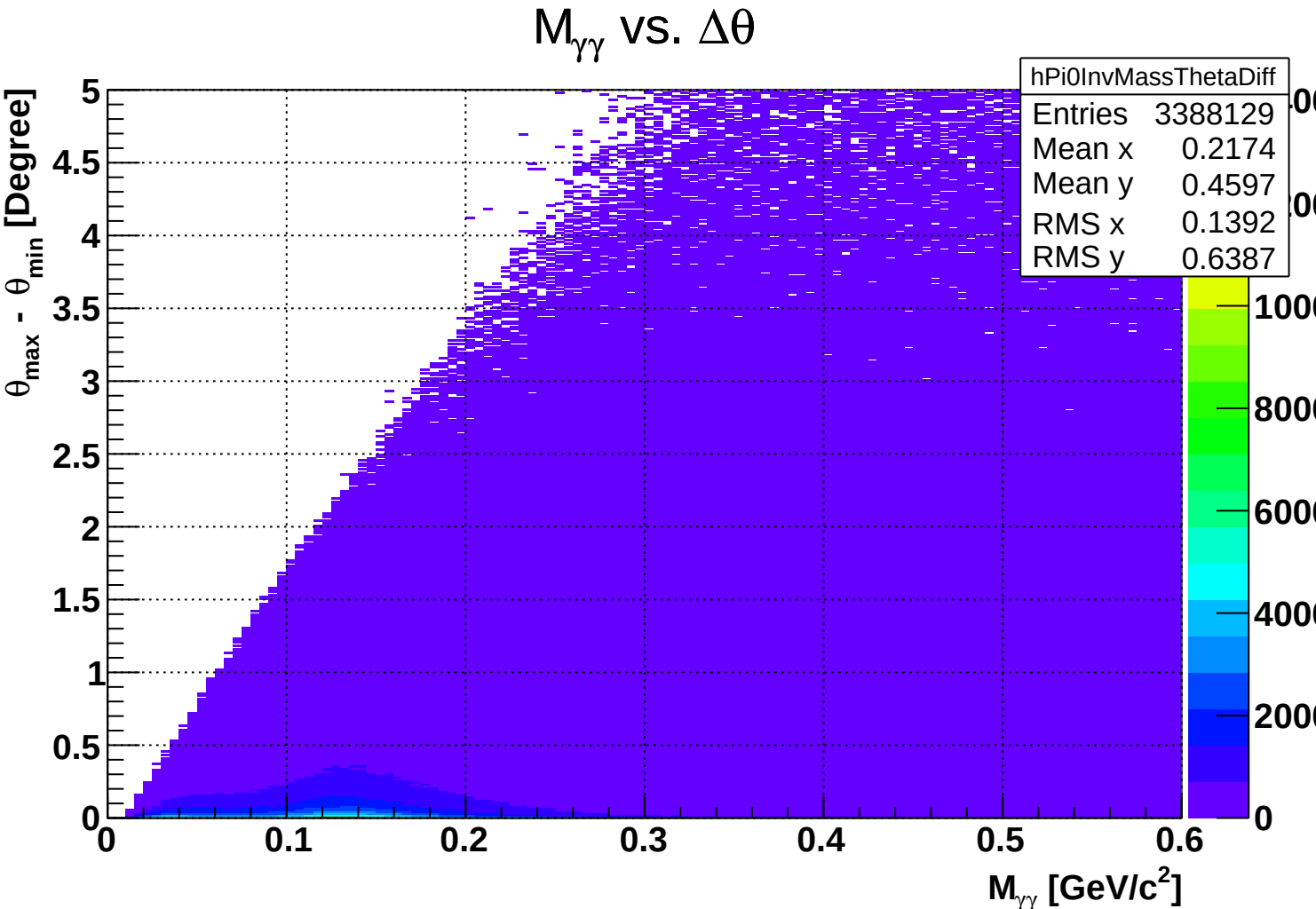

π^0 candidate θ_{max}
hPi0MaxTheta
Entries 3388129
Mean 2.341
RMS 1.21
Counts
50000
40000
30000
20000
10000
0
0
1
2
3
4
5
6
7
8
9
10
θ_{max}

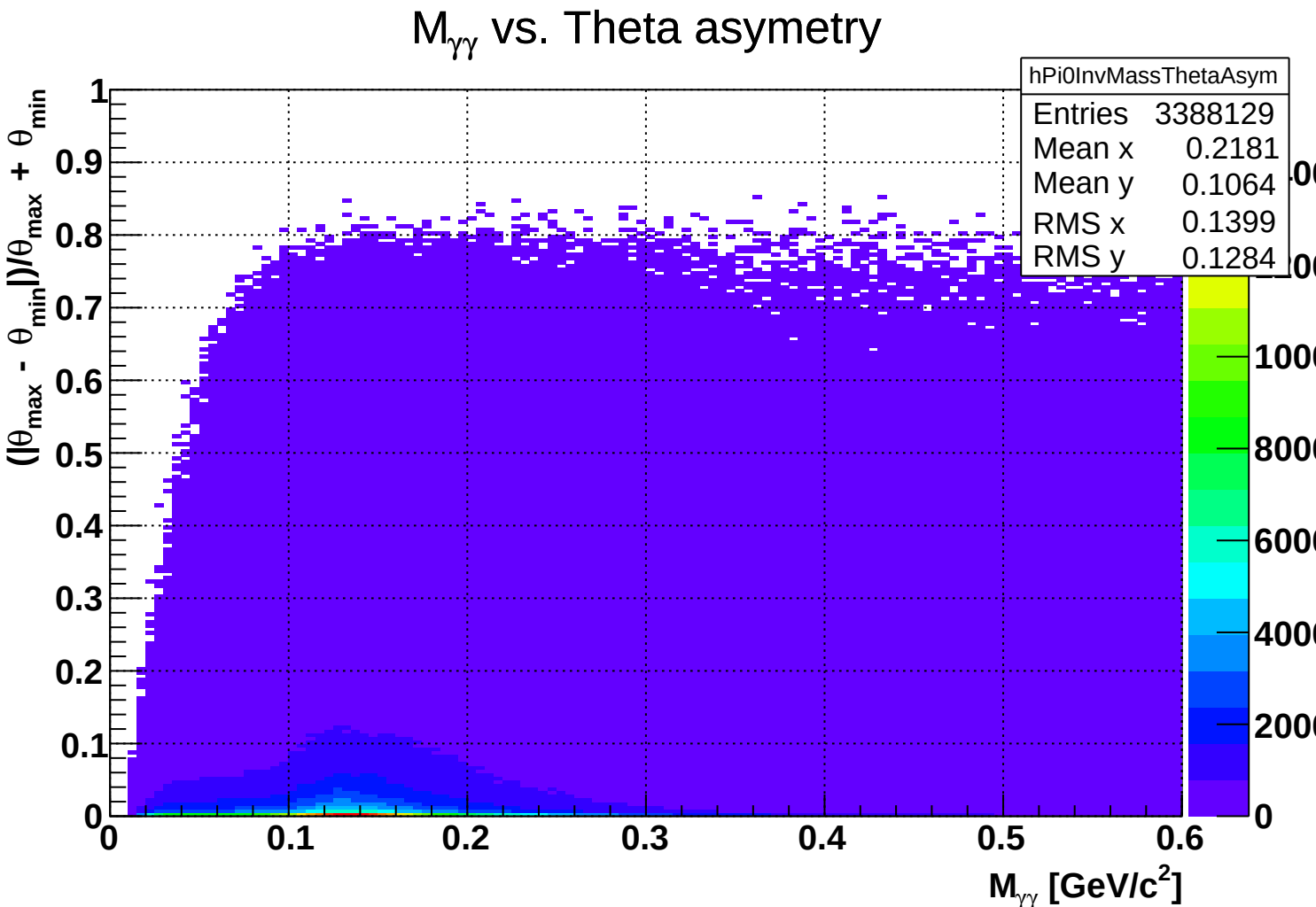

$M_{\gamma\gamma}$ vs. θ_{min}
hPi0InvMassMinTheta
Entries 3388129
Mean x 0.2181
Mean y 1.871
RMS x 0.1399
RMS y 0.9227
θ_{min} [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
1
2
3
4
5
6
7
8
9
10
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000
2500
3000

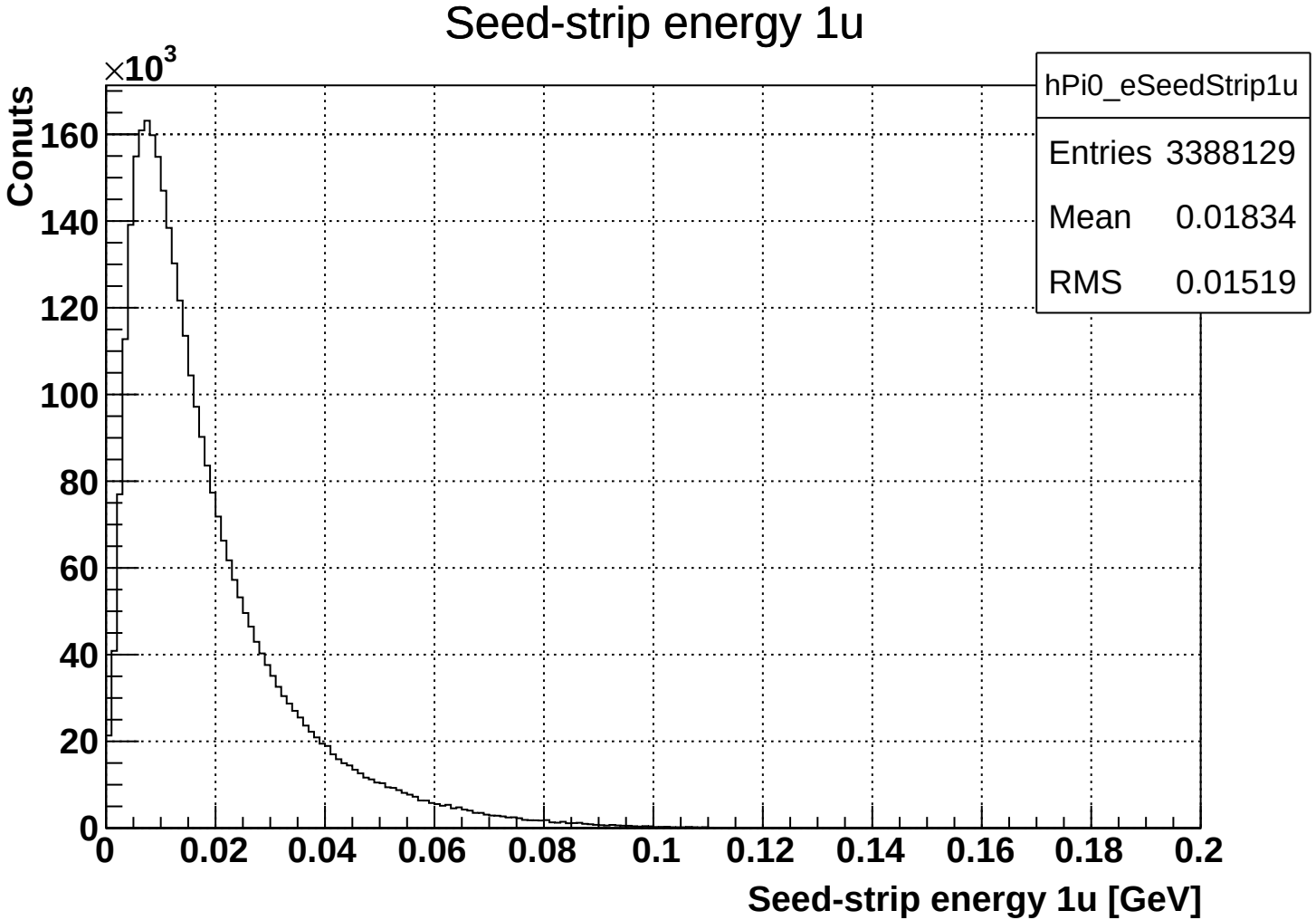

$M_{\gamma\gamma}$ vs. θ_{max}
hPi0InvMassMaxTheta
Entries 3388129
Mean x 0.2179
Mean y 2.341
RMS x 0.1397
RMS y 1.21
θ_{max} [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
1
2
3
4
5
6
7
8
9
10
0.1
0.2
0.3
0.4
0.5
0.6
500
1000
1500
2000
2500
3000

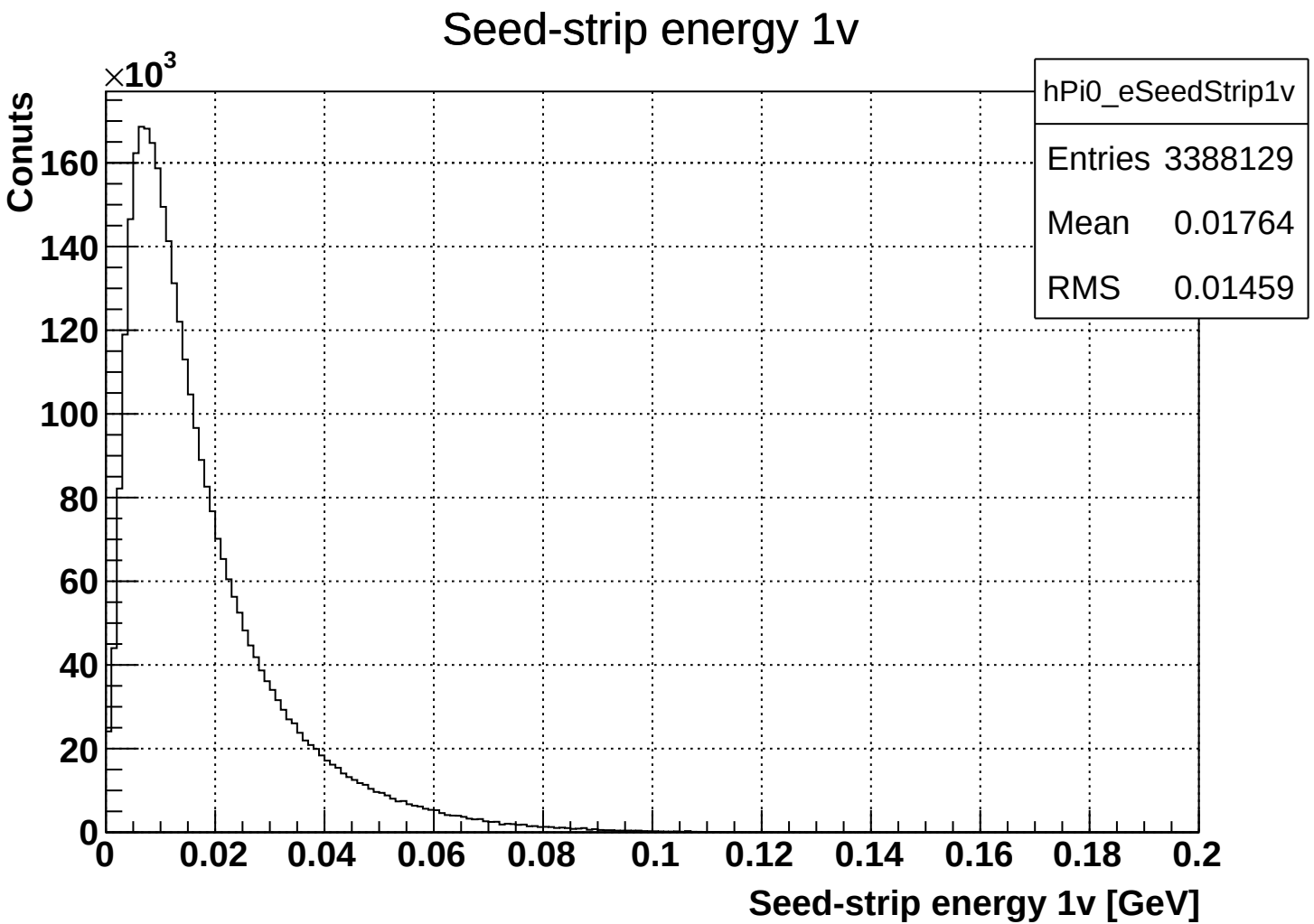

θmin vs. α
hPi0MinThetaAlpha
Entries 3388129
Mean x 1.871
Mean y 2.035
RMS x 0.9227
RMS y 0.9616
α [Degree]
θmin [Degree]
0
1
2
3
4
5
6
7
8
9
10
0
2000
4000
6000
8000
1000
1200
1400
1600
1800

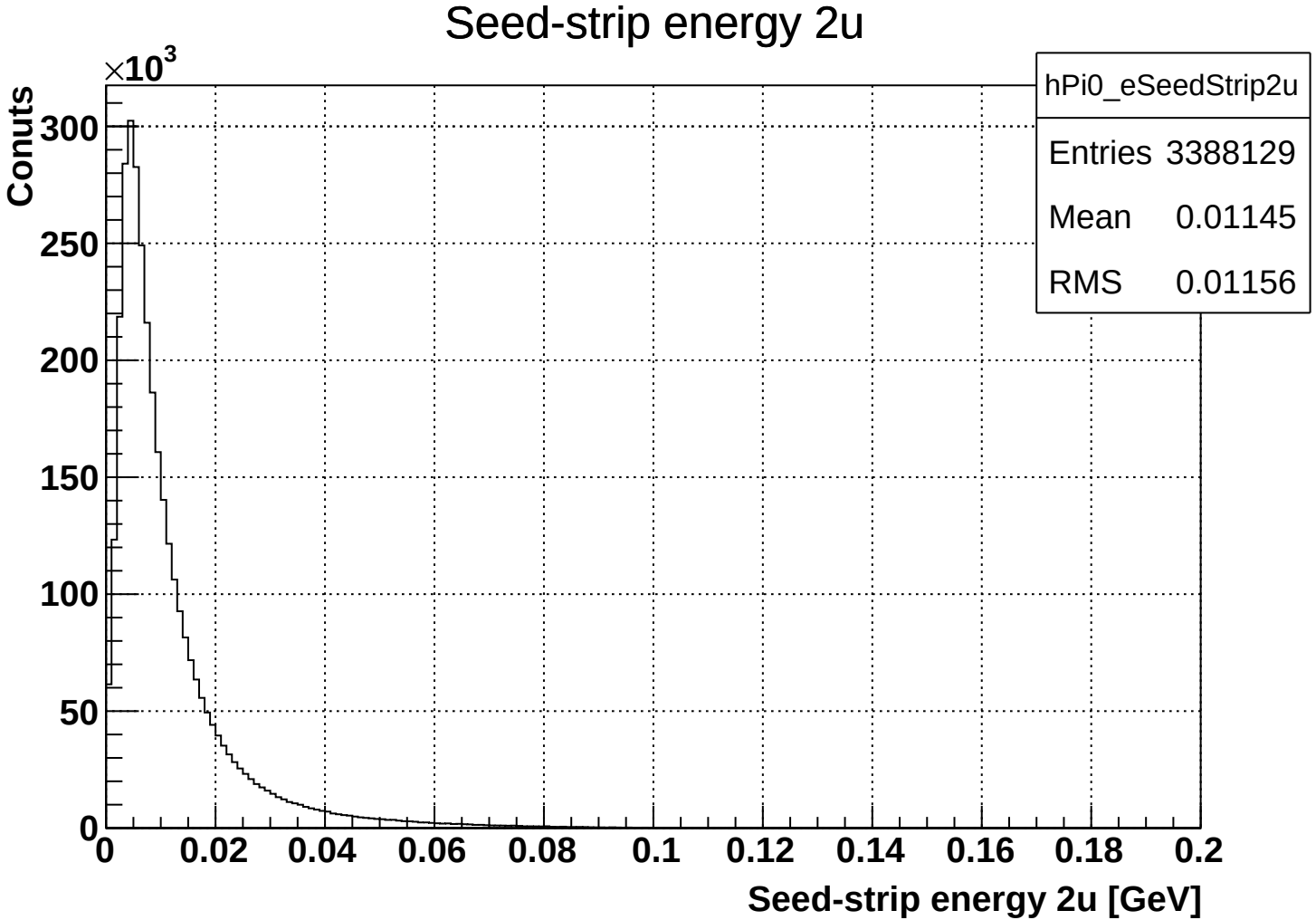

θmax vs. α
hPi0MaxThetaAlpha
Entries 3388129
Mean x 2.341
Mean y 2.034
RMS x 1.21
RMS y 0.9613
α [Degree]
θmax [Degree]
0
1
2
3
4
5
6
7
8
9
10
0
200
400
600
800
1000
1200
1400
1600

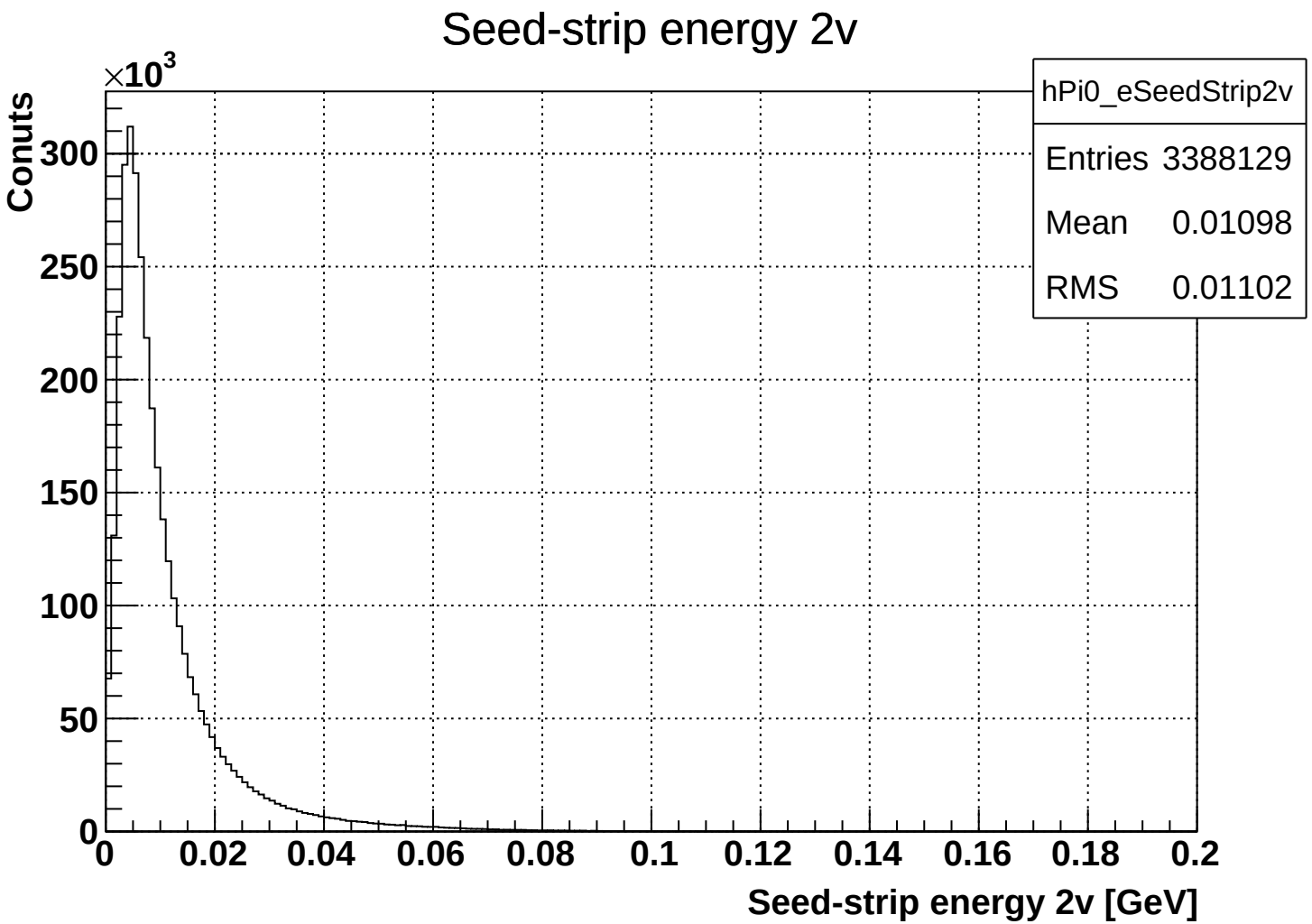

$M_{\gamma\gamma}$ vs. $\Delta\theta$
hPi0InvMassThetaDiff
Entries 3388129
Mean x 0.2174
Mean y 0.4597
RMS x 0.1392
RMS y 0.6387
$\theta_{max} - \theta_{min}$ [Degree]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0.1
0.2
0.3
0.4
0.5
0.6
2000
4000
6000
8000
1000

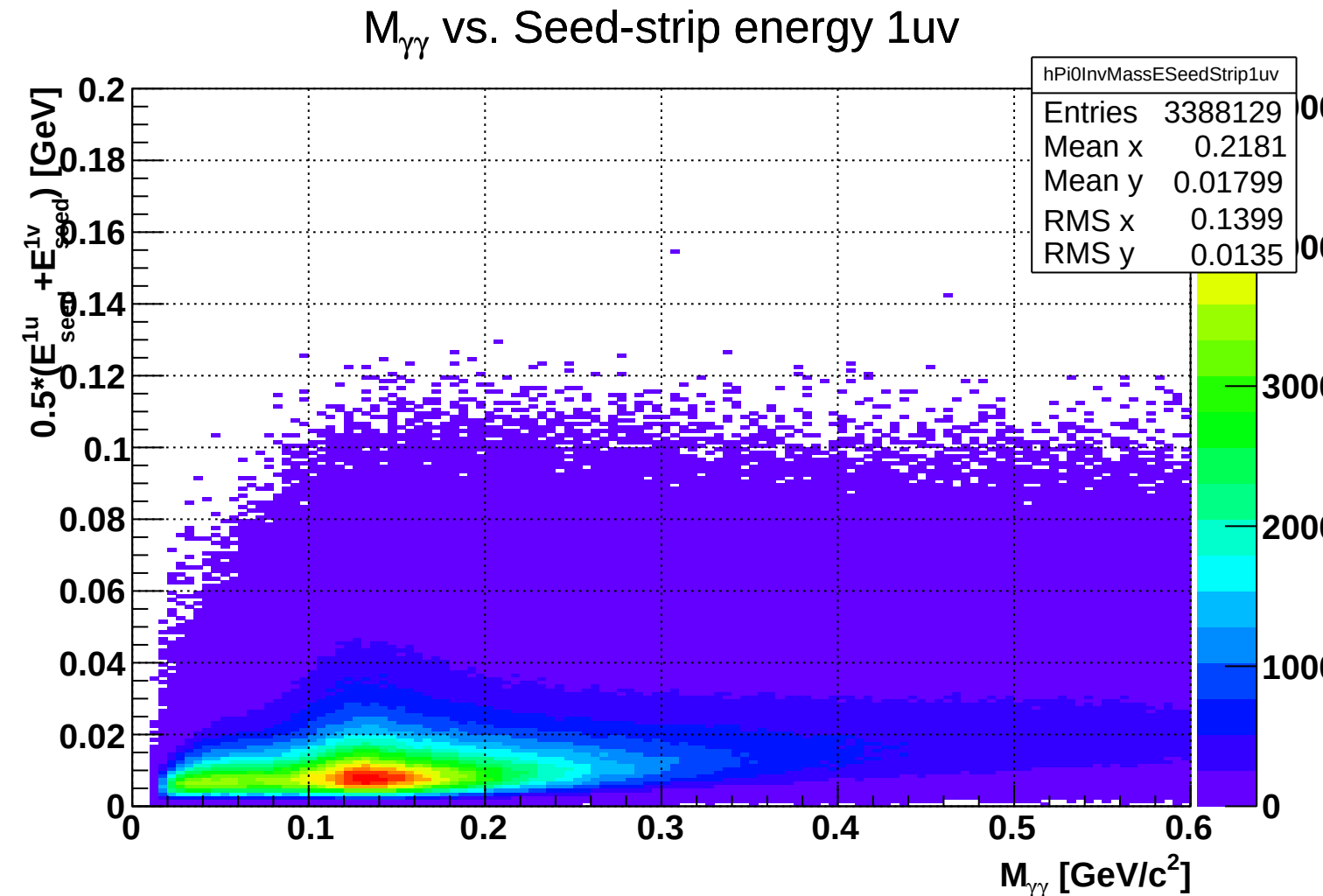

$M_{\gamma\gamma}$ vs. Theta asymetry
hPi0InvMassThetaAsym
Entries 3388129
Mean x 0.2181
Mean y 0.1064
RMS x 0.1399
RMS y 0.1284
$(|\theta_{max} - \theta_{min}|)/\theta_{max} + \theta_{min}$
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
2000
4000
6000
8000
1000

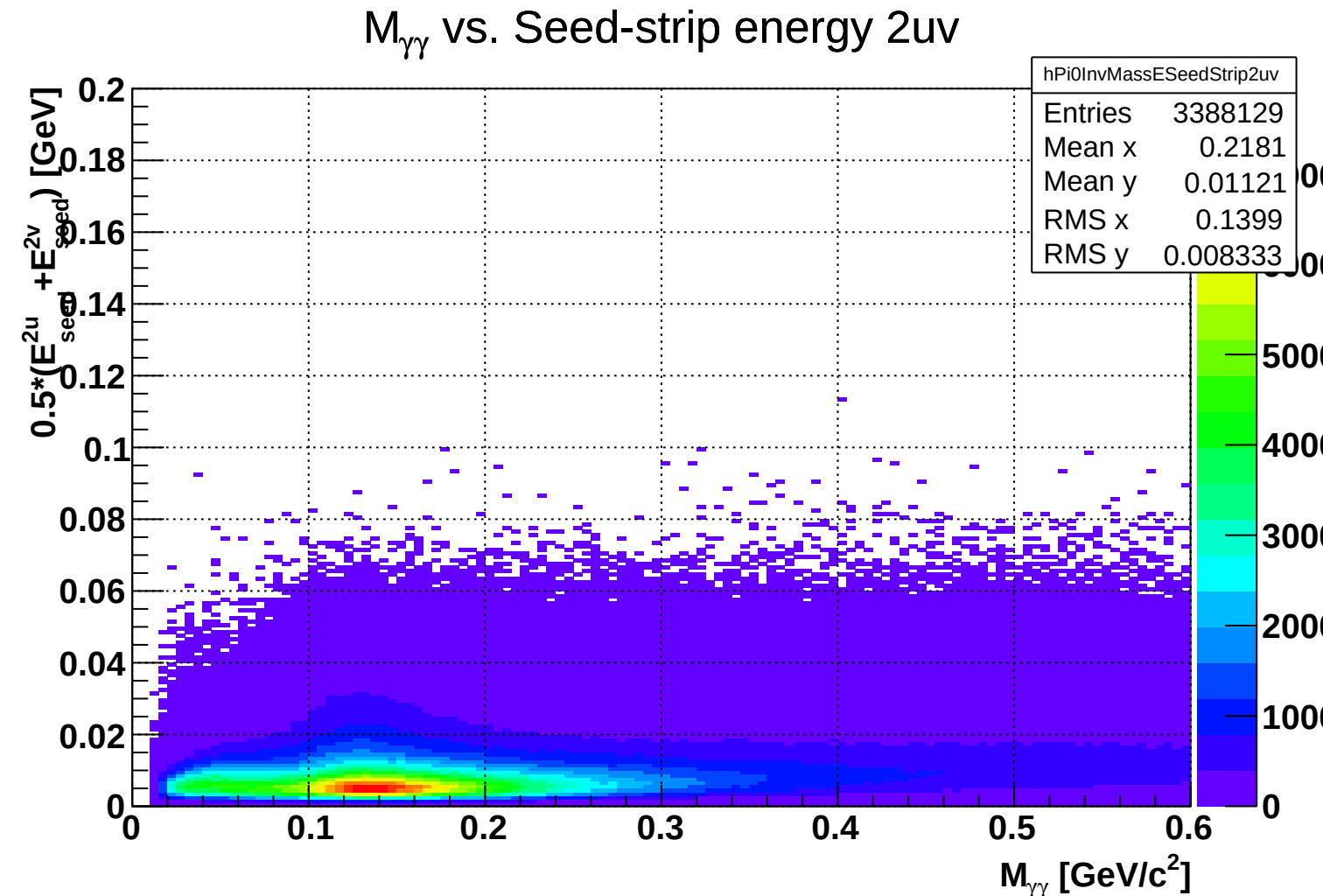

Seed-strip energy 1u
hPi0_eSeedStrip1u
Entries 3388129
Mean 0.01834
RMS 0.01519
×10^3
Conuts
160
140
120
100
80
60
40
20
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Seed-strip energy 1u [GeV]


Seed-strip energy 1v
hPi0_eSeedStrip1v
Entries 3388129
Mean 0.01764
RMS 0.01459
×10^3
Conuts
160
140
120
100
80
60
40
20
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]

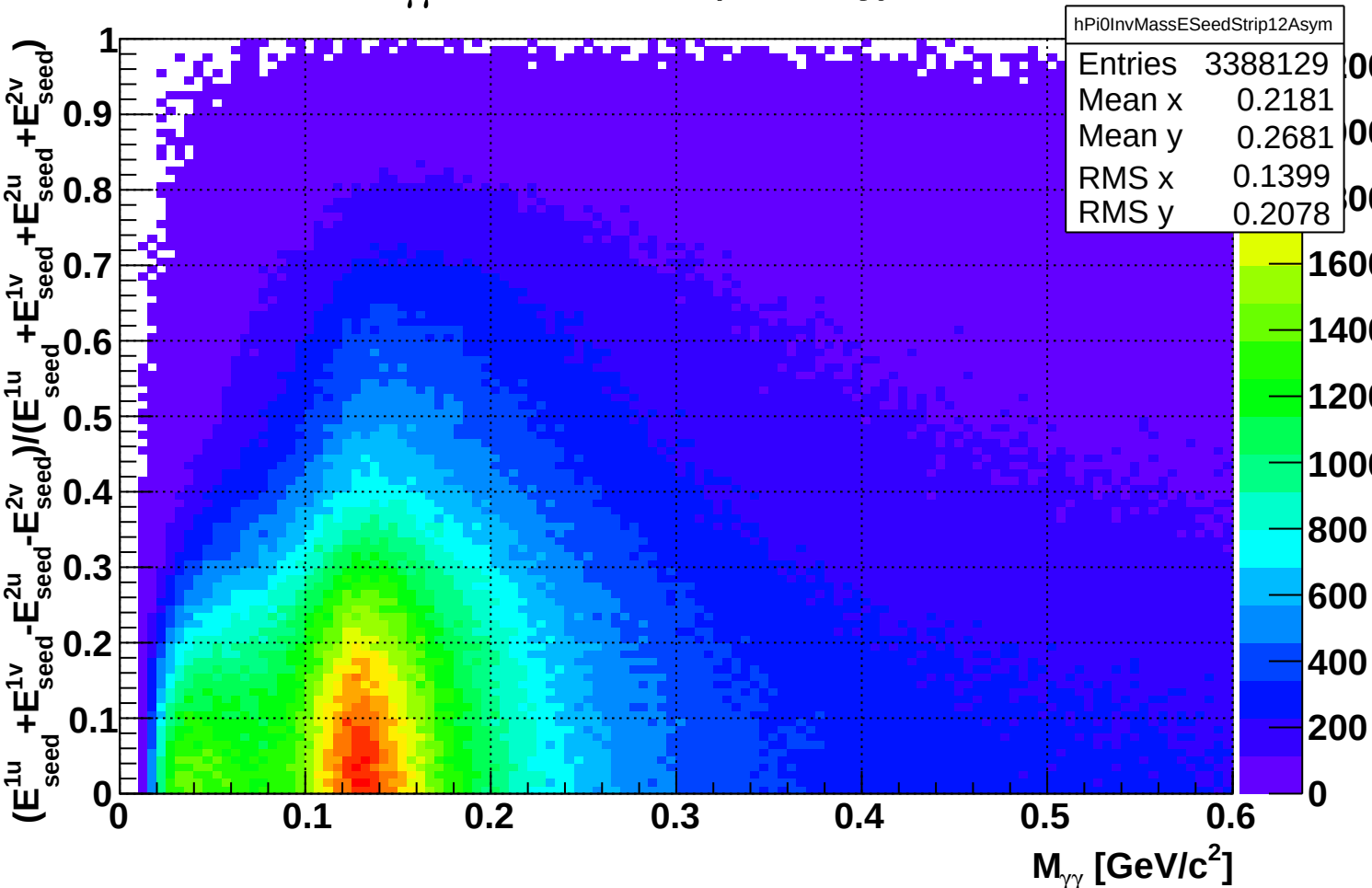

Seed-strip energy 2u
hPi0_eSeedStrip2u
Entries 3388129
Mean 0.01145
RMS 0.01156
Conuts
×10^3
300
250
200
150
100
50
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Seed-strip energy 2u [GeV]

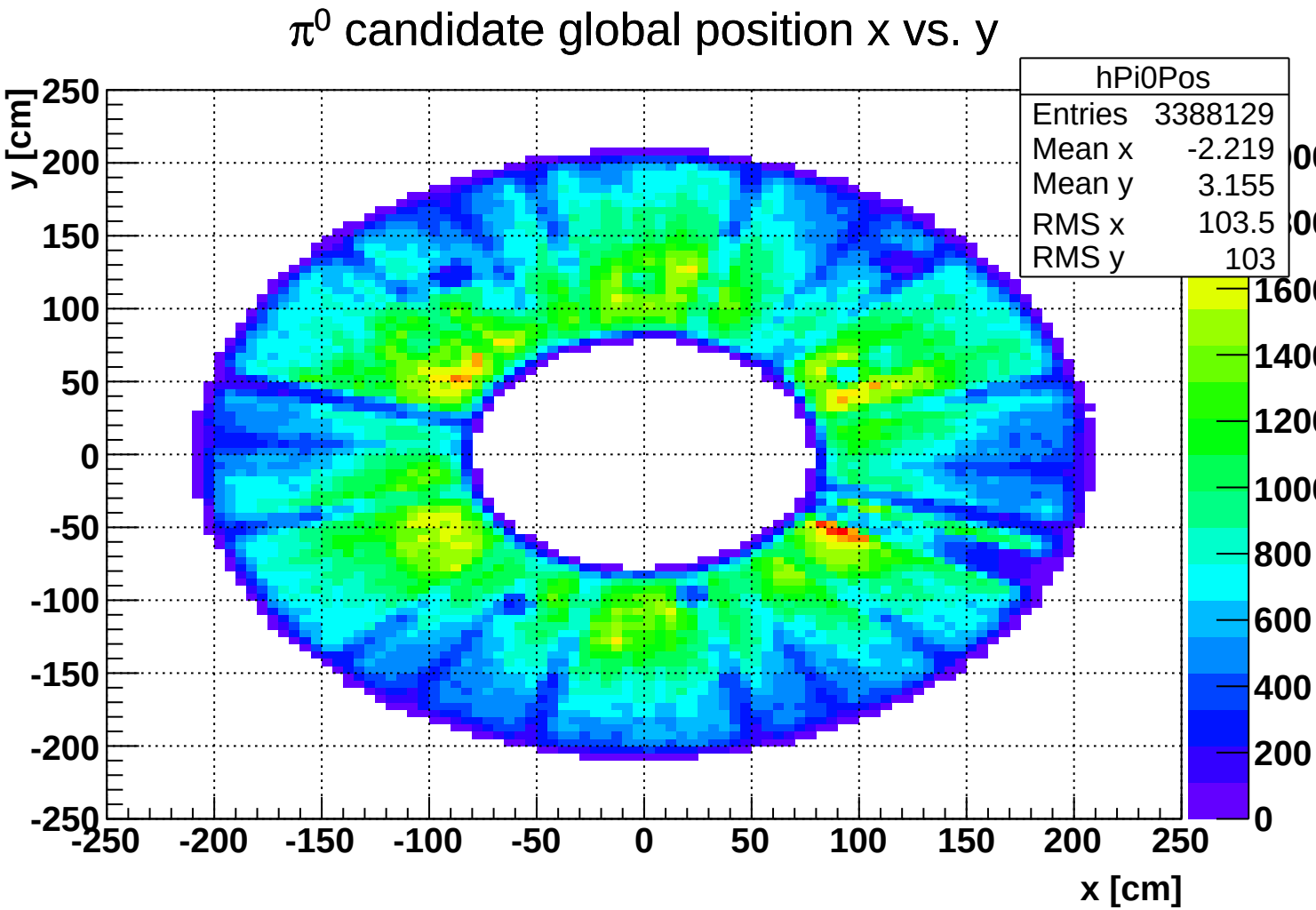

Seed-strip energy 2v
hPi0_eSeedStrip2v
Entries 3388129
Mean 0.01098
RMS 0.01102
Conuts
×10^3
300
250
200
150
100
50
0
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
Seed-strip energy 2v [GeV]

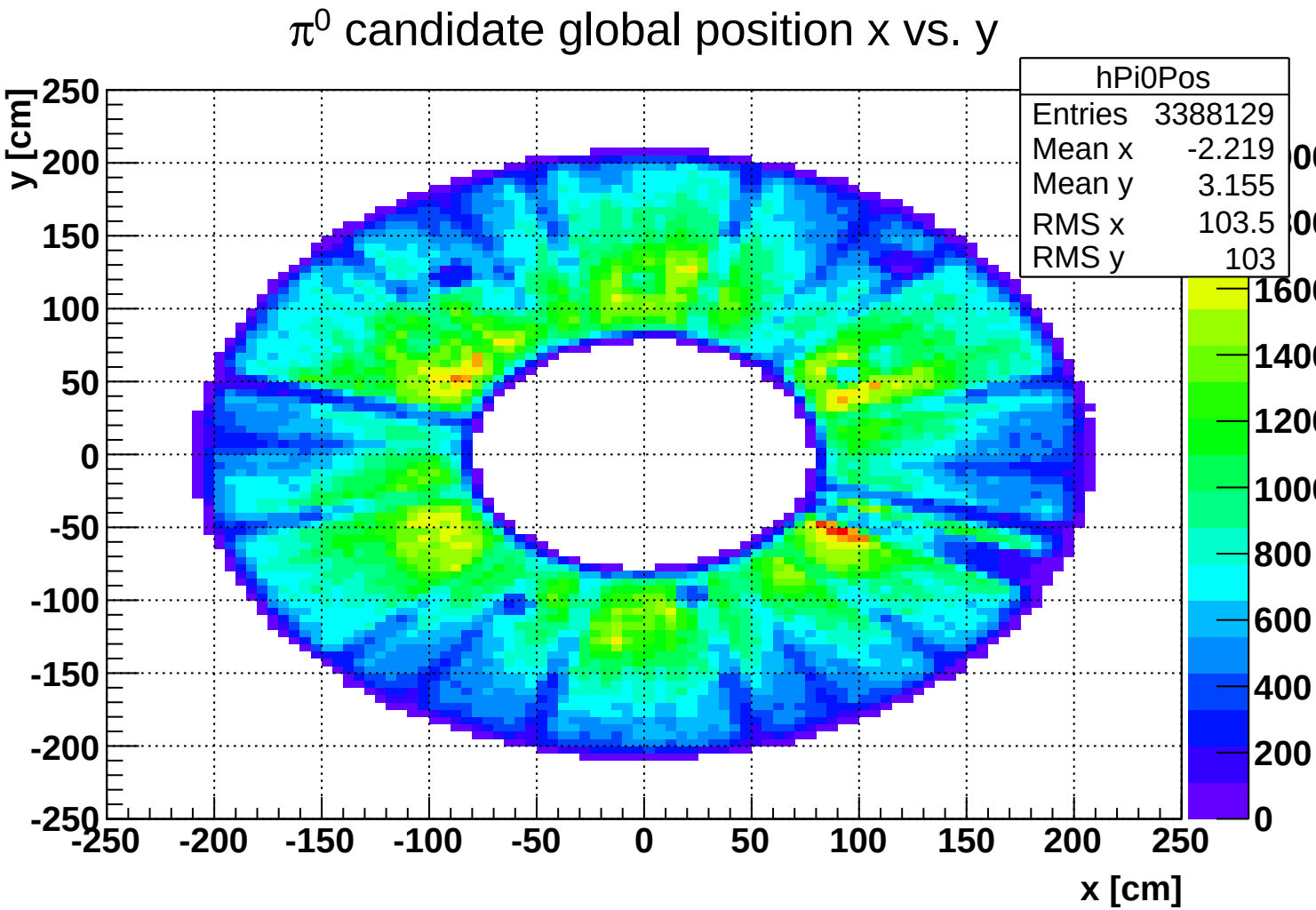

$M_{\gamma\gamma}$ vs. Seed-strip energy 1uv
hPi0InvMassESeedStrip1uv
Entries 3388129
Mean x 0.2181
Mean y 0.01799
RMS x 0.1399
RMS y 0.0135
$0.5*(E^{1u}_{seed}+E^{1v}_{seed})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.1
0.2
0.3
0.4
0.5
0.6
1000
2000
3000

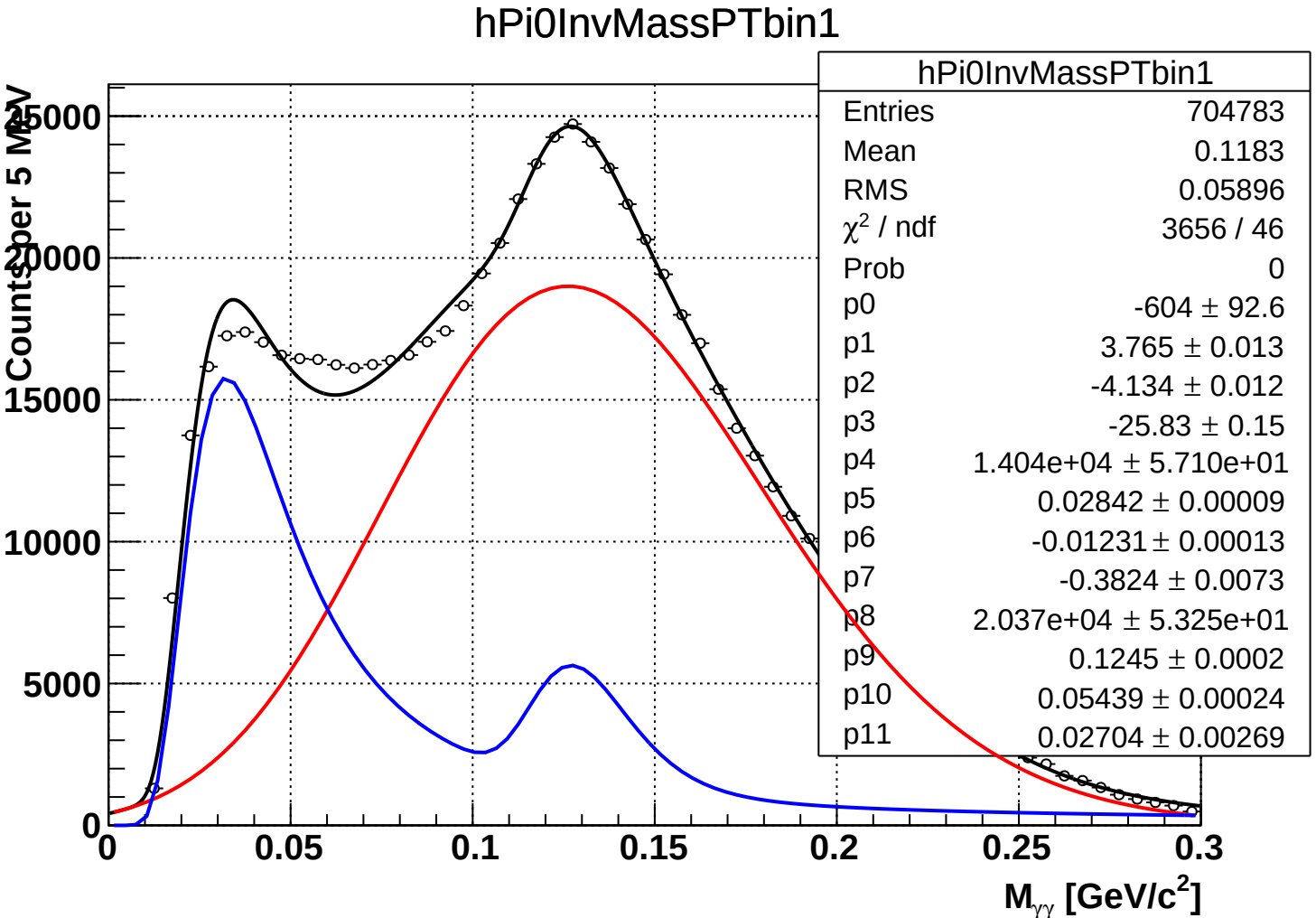

$M_{\gamma\gamma}$ vs. Seed-strip energy 2uv
hPi0InvMassESeedStrip2uv
Entries 3388129
Mean x 0.2181
Mean y 0.01121
RMS x 0.1399
RMS y 0.008333
$0.5*(E^{2u}_{seed}+E^{2v}_{seed})$ [GeV]
$M_{\gamma\gamma}$ [GeV/c^2]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.1
0.2
0.3
0.4
0.5
0.6
1000
2000
3000
4000
5000

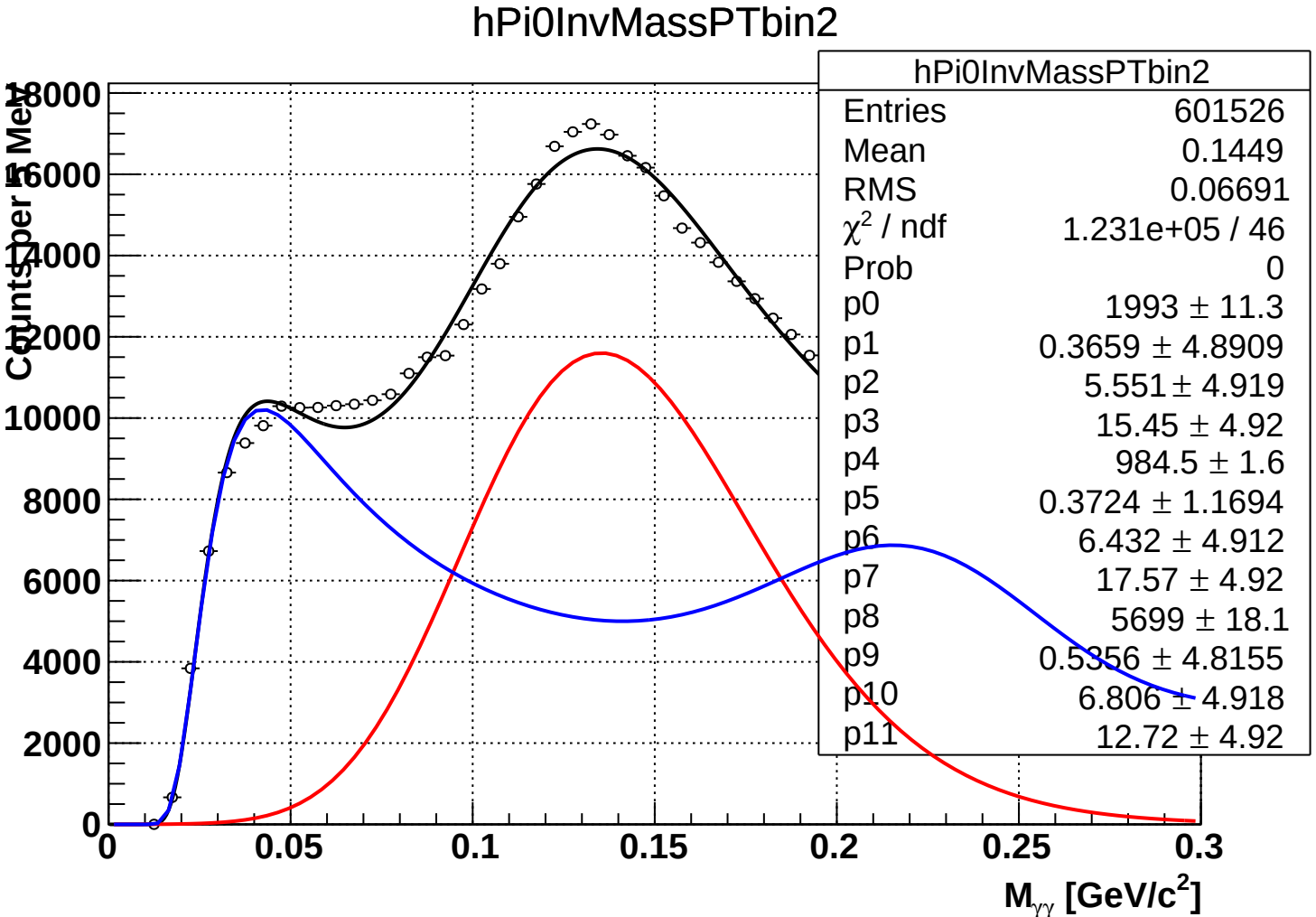
$M_{\gamma\gamma}$ vs. Seed-strip energy Diff

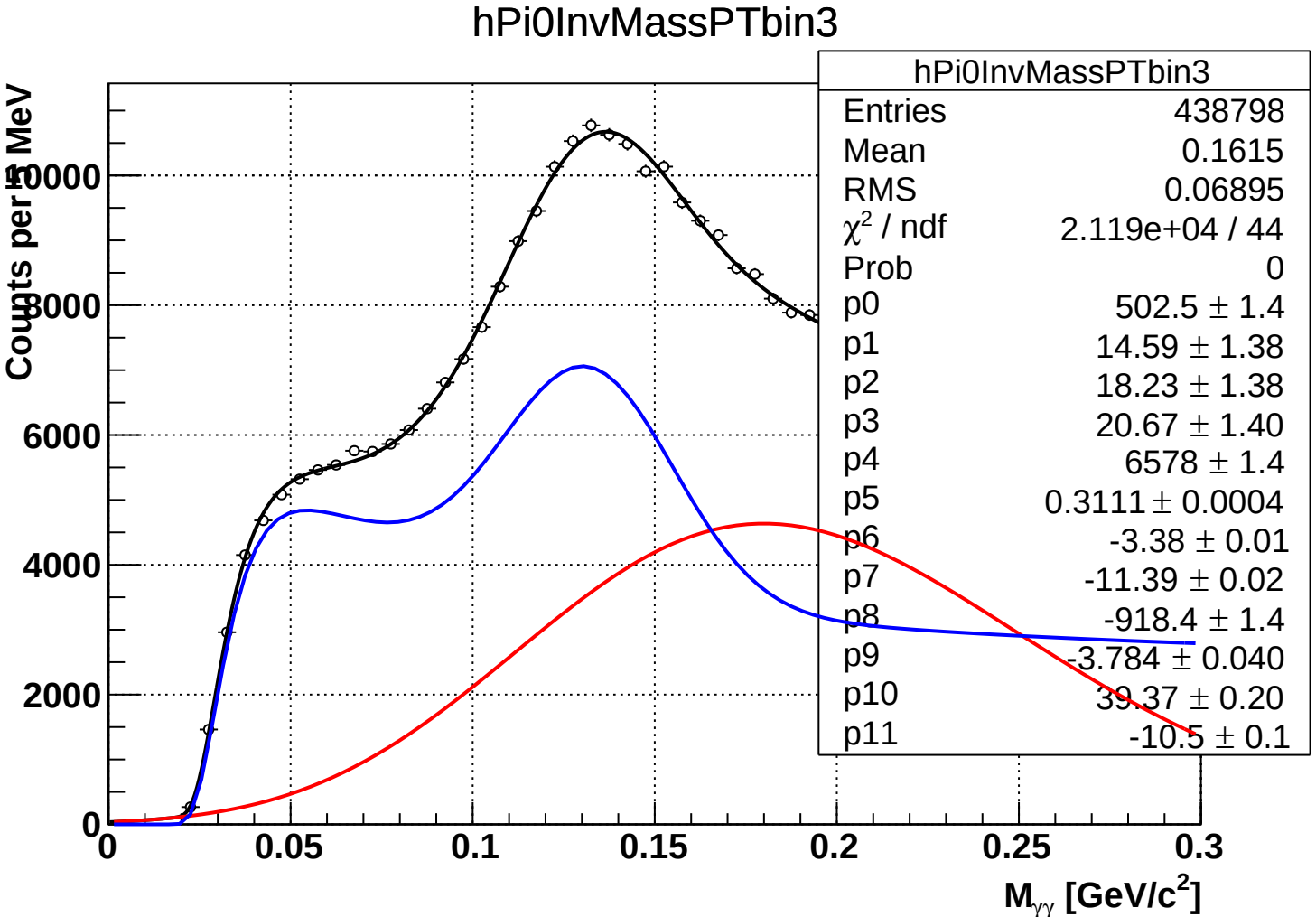


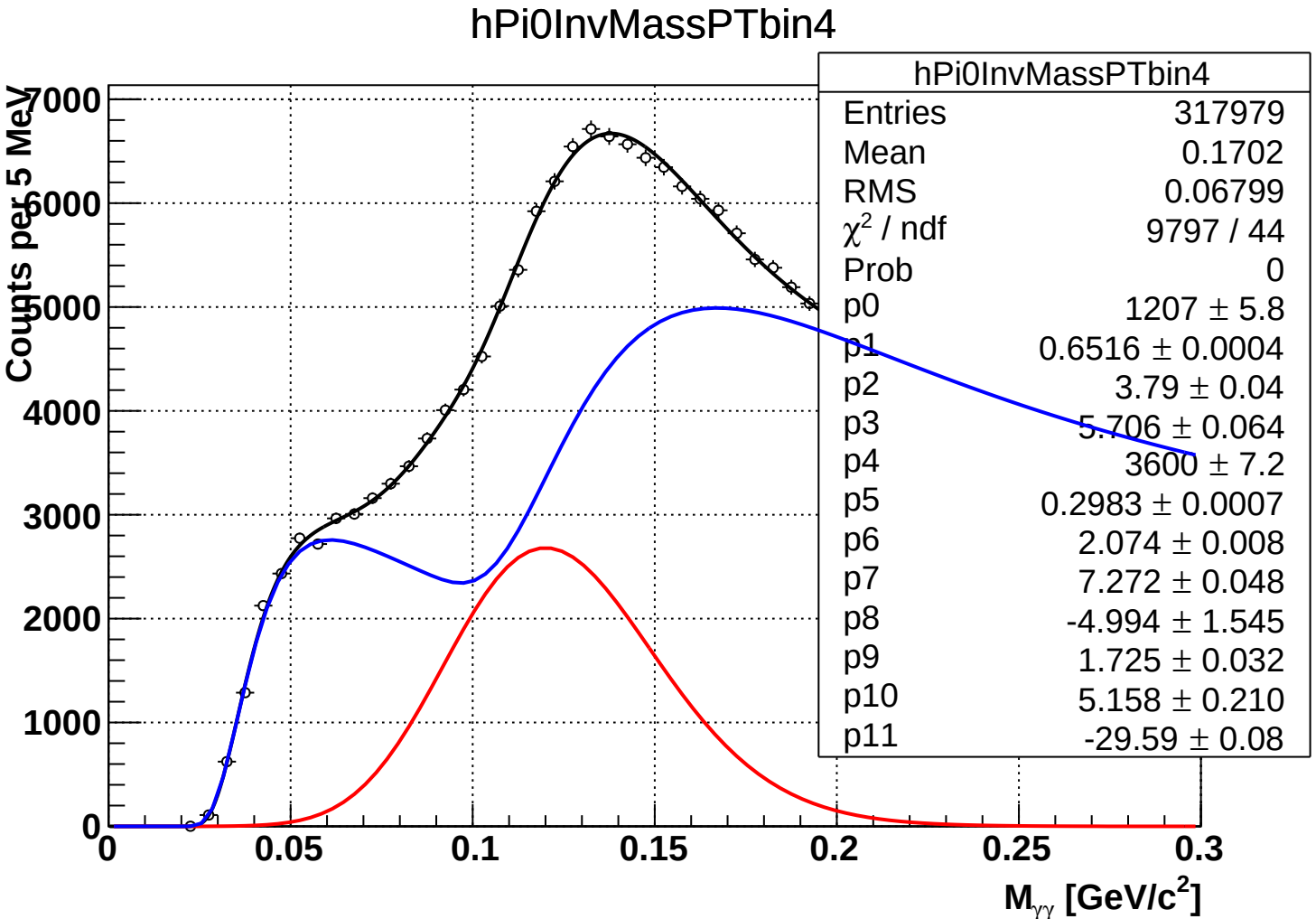

π^0 candidate global position x vs. y
hPi0Pos
Entries 3388129
Mean x -2.219
Mean y 3.155
RMS x 103.5
RMS y 103
y [cm]
x [cm]
250
200
150
100
50
0
-50
-100
-150
-200
-250
1600
1400
1200
1000
800
600
400
200
0

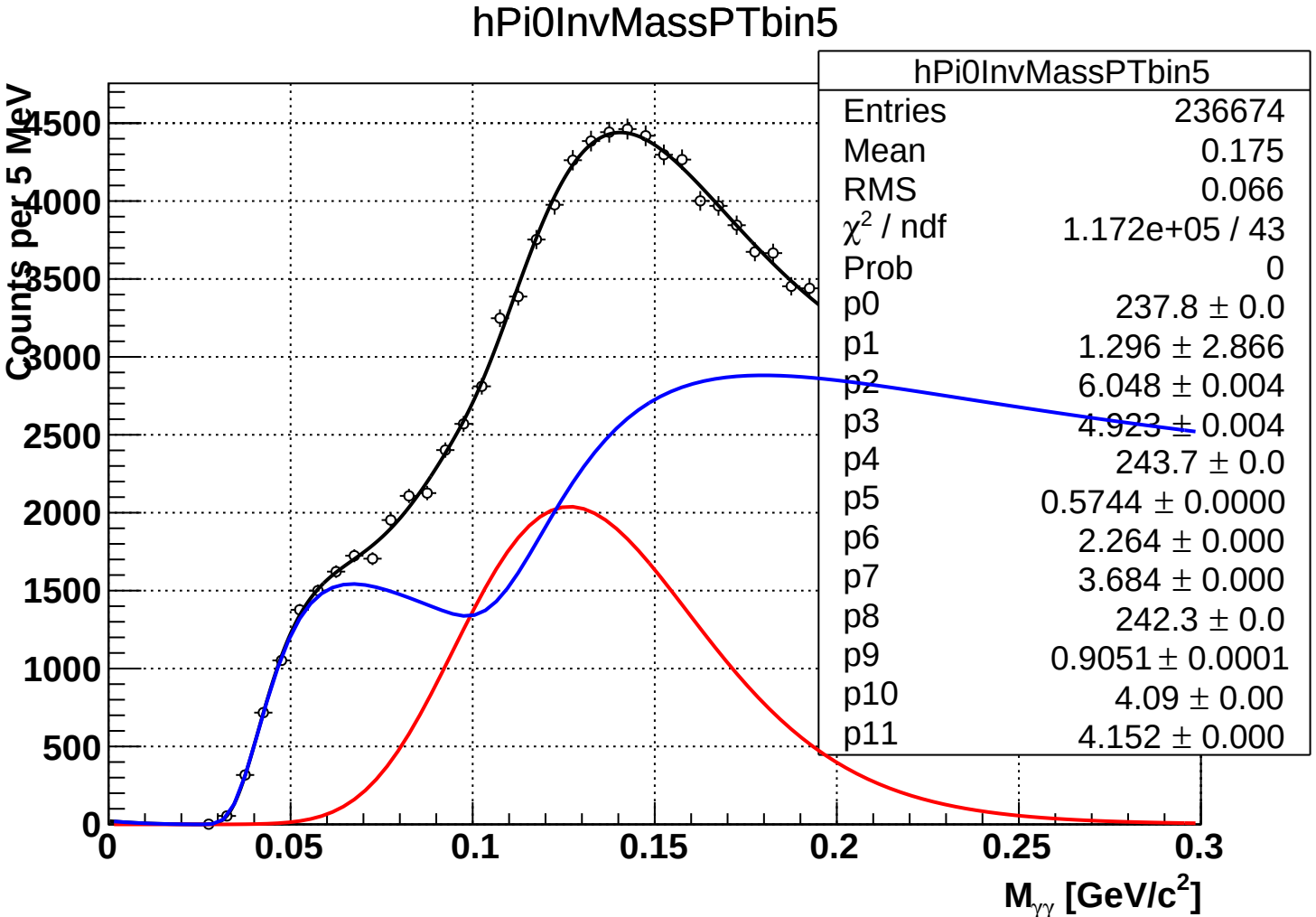

π^0 candidate global position x vs. y
hPi0Pos
Entries 3388129
Mean x -2.219
Mean y 3.155
RMS x 103.5
RMS y 103
y [cm]
x [cm]
250
200
150
100
50
0
-50
-100
-150
-200
-250
1600
1400
1200
1000
800
600
400
200
0

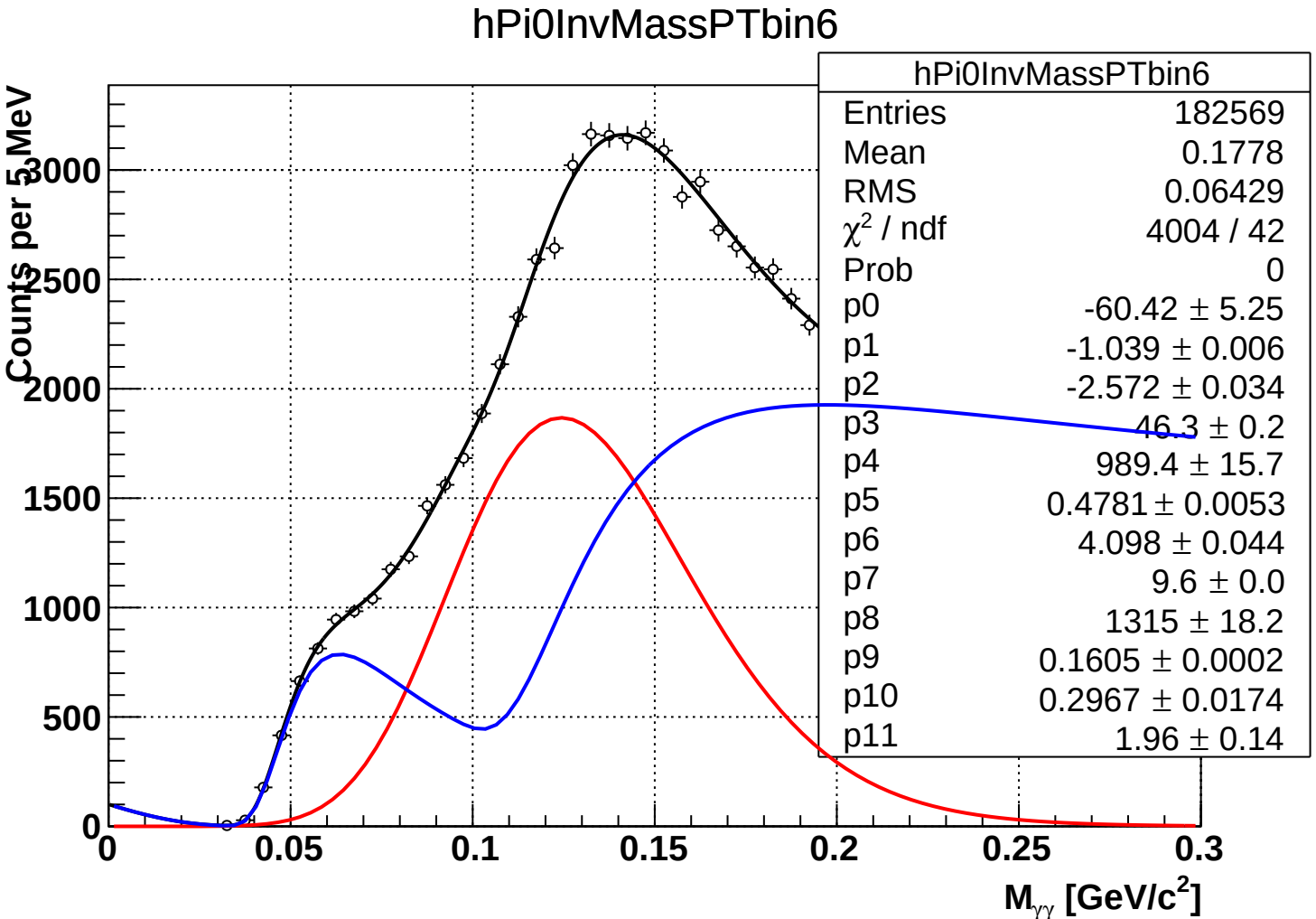

hPi0InvMassPTbin1
Counts per 5 MeV
25000
20000
15000
10000
5000
0
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin1
Entries 704783
Mean 0.1183
RMS 0.05896
χ^2 / ndf 3656 / 46
Prob 0
p0 -604 ± 92.6
p1 3.765 ± 0.013
p2 -4.134 ± 0.012
p3 -25.83 ± 0.15
p4 1.404e+04 ± 5.710e+01
p5 0.02842 ± 0.00009
p6 -0.01231 ± 0.00013
p7 -0.3824 ± 0.0073
p8 2.037e+04 ± 5.325e+01
p9 0.1245 ± 0.0002
p10 0.05439 ± 0.00024
p11 0.02704 ± 0.00269

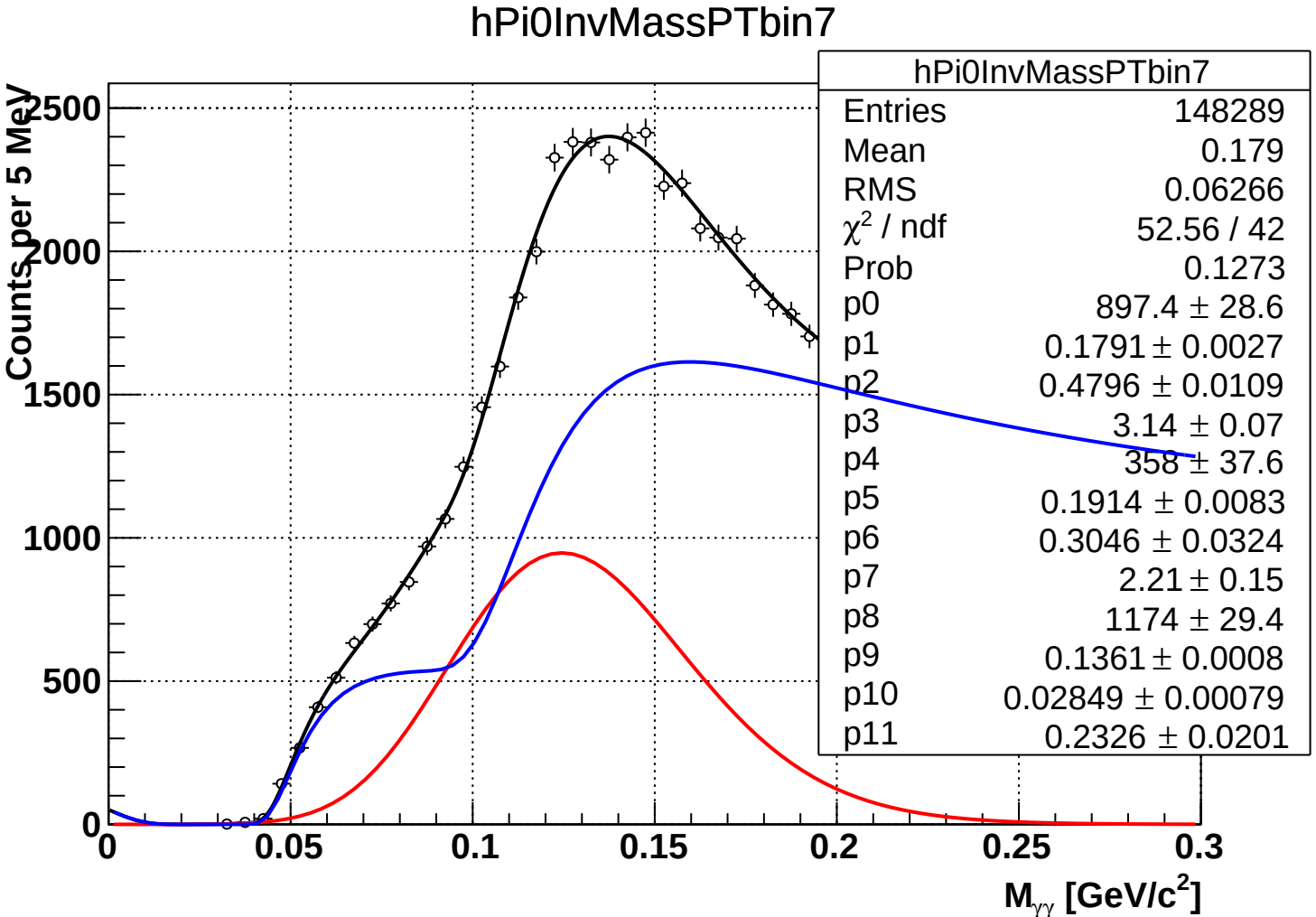

hPi0InvMassPTbin2
hPi0InvMassPTbin2
Entries 601526
Mean 0.1449
RMS 0.06691
χ2 / ndf 1.231e+05 / 46
Prob 0
p0 1993 ± 11.3
p1 0.3659 ± 4.8909
p2 5.551 ± 4.919
p3 15.45 ± 4.92
p4 984.5 ± 1.6
p5 0.3724 ± 1.1694
p6 6.432 ± 4.912
p7 17.57 ± 4.92
p8 5699 ± 18.1
p9 0.5356 ± 4.8155
p10 6.806 ± 4.918
p11 12.72 ± 4.92
Counts per 5 MeV
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
0
0.05
0.1
0.15
0.2
0.25
0.3
Mγγ [GeV/c2]

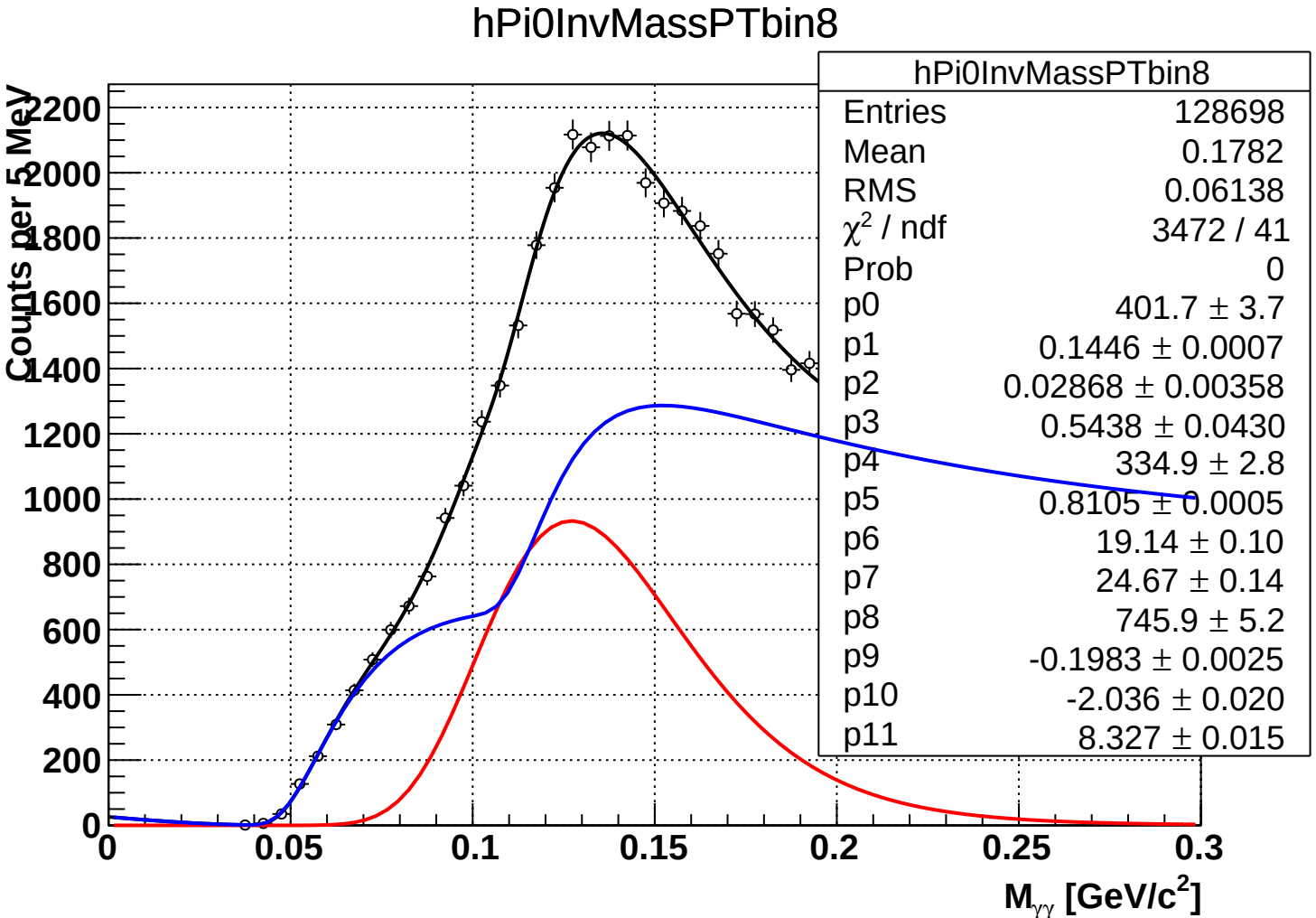

hPi0InvMassPTbin3
hPi0InvMassPTbin3
Entries 438798
Mean 0.1615
RMS 0.06895
χ² / ndf 2.119e+04 / 44
Prob 0
p0 502.5 ± 1.4
p1 14.59 ± 1.38
p2 18.23 ± 1.38
p3 20.67 ± 1.40
p4 6578 ± 1.4
p5 0.3111 ± 0.0004
p6 -3.38 ± 0.01
p7 -11.39 ± 0.02
p8 -918.4 ± 1.4
p9 -3.784 ± 0.040
p10 39.37 ± 0.20
p11 -10.5 ± 0.1
Counts per 5 MeV
0
2000
4000
6000
8000
10000
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]

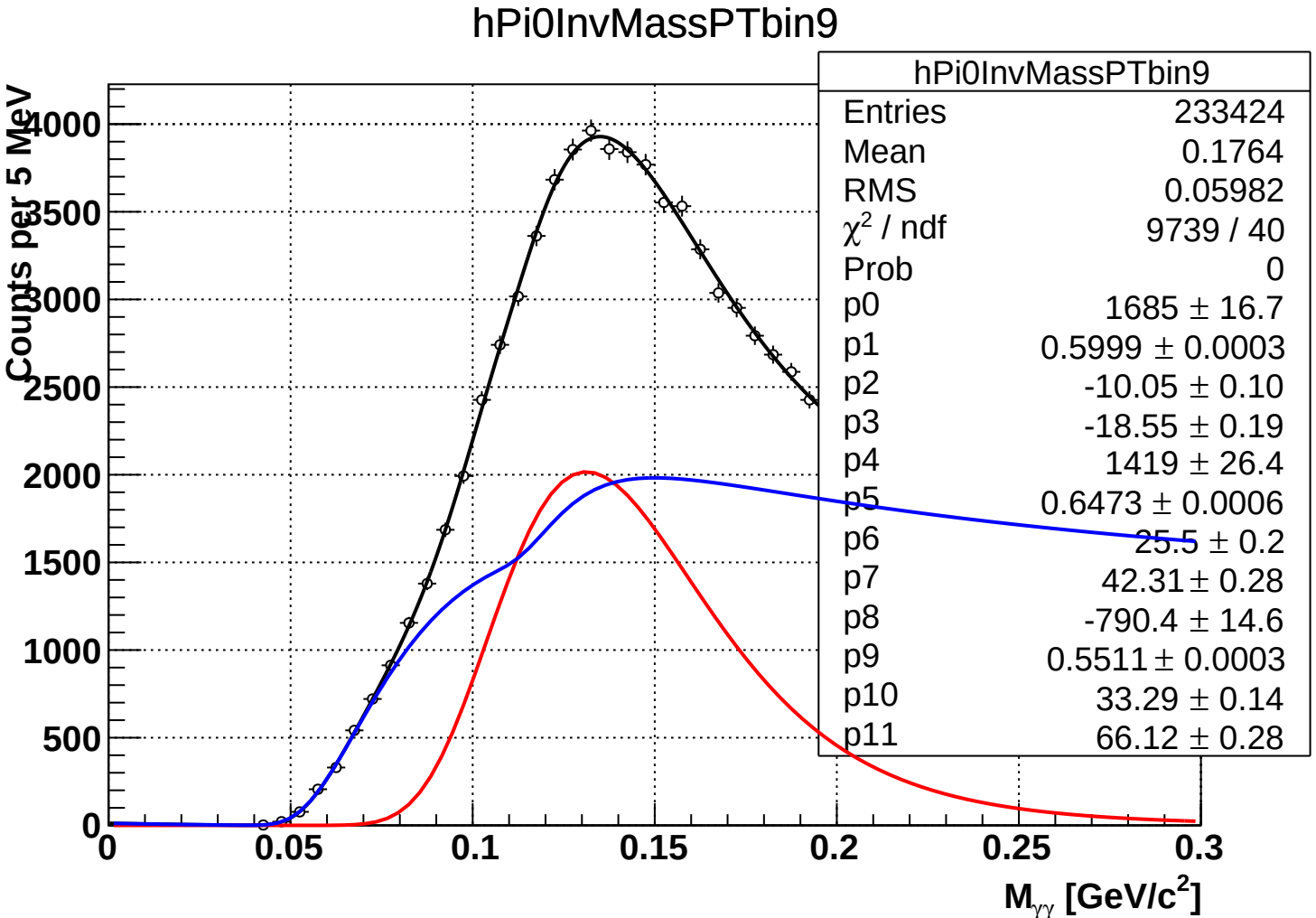

hPi0InvMassPTbin4
hPi0InvMassPTbin4
Entries 317979
Mean 0.1702
RMS 0.06799
χ² / ndf 9797 / 44
Prob 0
p0 1207 ± 5.8
p1 0.6516 ± 0.0004
p2 3.79 ± 0.04
p3 5.706 ± 0.064
p4 3600 ± 7.2
p5 0.2983 ± 0.0007
p6 2.074 ± 0.008
p7 7.272 ± 0.048
p8 -4.994 ± 1.545
p9 1.725 ± 0.032
p10 5.158 ± 0.210
p11 -29.59 ± 0.08
Counts per 5 MeV
0
1000
2000
3000
4000
5000
6000
7000
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]

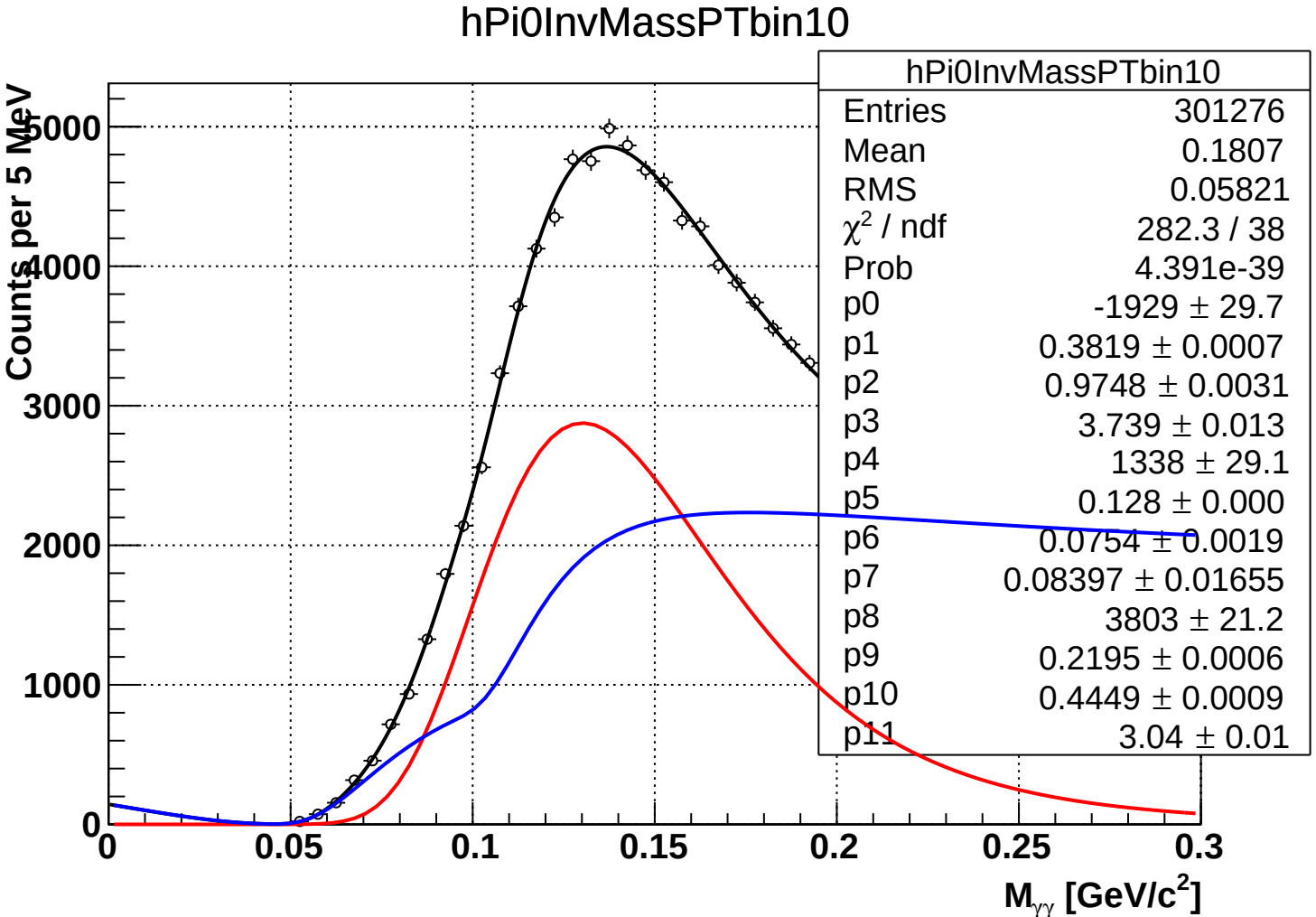

hPi0InvMassPTbin5
hPi0InvMassPTbin5
Entries 236674
Mean 0.175
RMS 0.066
χ² / ndf 1.172e+05 / 43
Prob 0
p0 237.8 ± 0.0
p1 1.296 ± 2.866
p2 6.048 ± 0.004
p3 4.923 ± 0.004
p4 243.7 ± 0.0
p5 0.5744 ± 0.0000
p6 2.264 ± 0.000
p7 3.684 ± 0.000
p8 242.3 ± 0.0
p9 0.9051 ± 0.0001
p10 4.09 ± 0.00
p11 4.152 ± 0.000
Counts per 5 MeV
0
500
1000
1500
2000
2500
3000
3500
4000
4500
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]

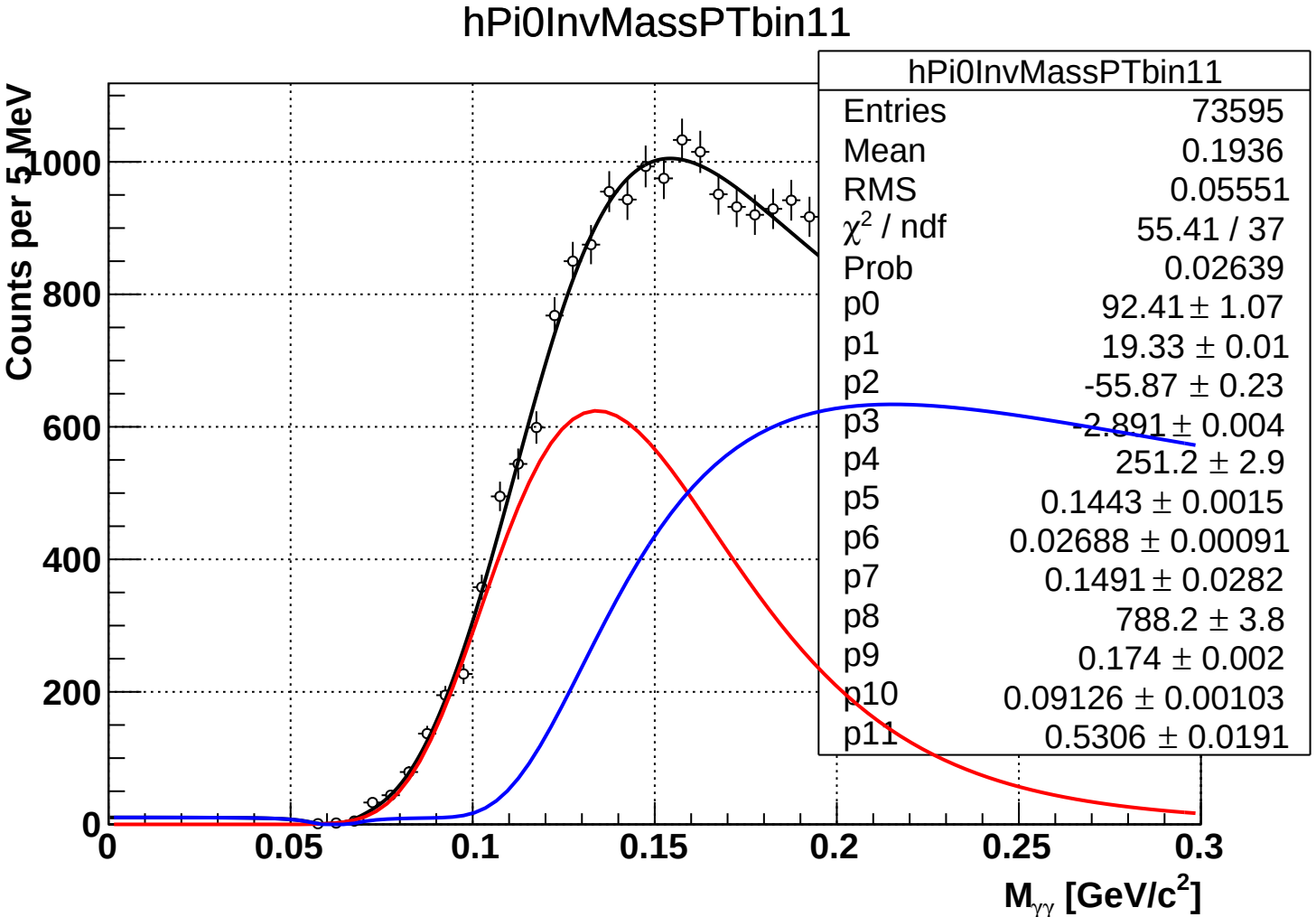

hPi0InvMassPTbin6
Counts per 5 MeV
0
500
1000
1500
2000
2500
3000
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin6
Entries 182569
Mean 0.1778
RMS 0.06429
χ^2 / ndf 4004 / 42
Prob 0
p0 -60.42 ± 5.25
p1 -1.039 ± 0.006
p2 -2.572 ± 0.034
p3 46.3 ± 0.2
p4 989.4 ± 15.7
p5 0.4781 ± 0.0053
p6 4.098 ± 0.044
p7 9.6 ± 0.0
p8 1315 ± 18.2
p9 0.1605 ± 0.0002
p10 0.2967 ± 0.0174
p11 1.96 ± 0.14

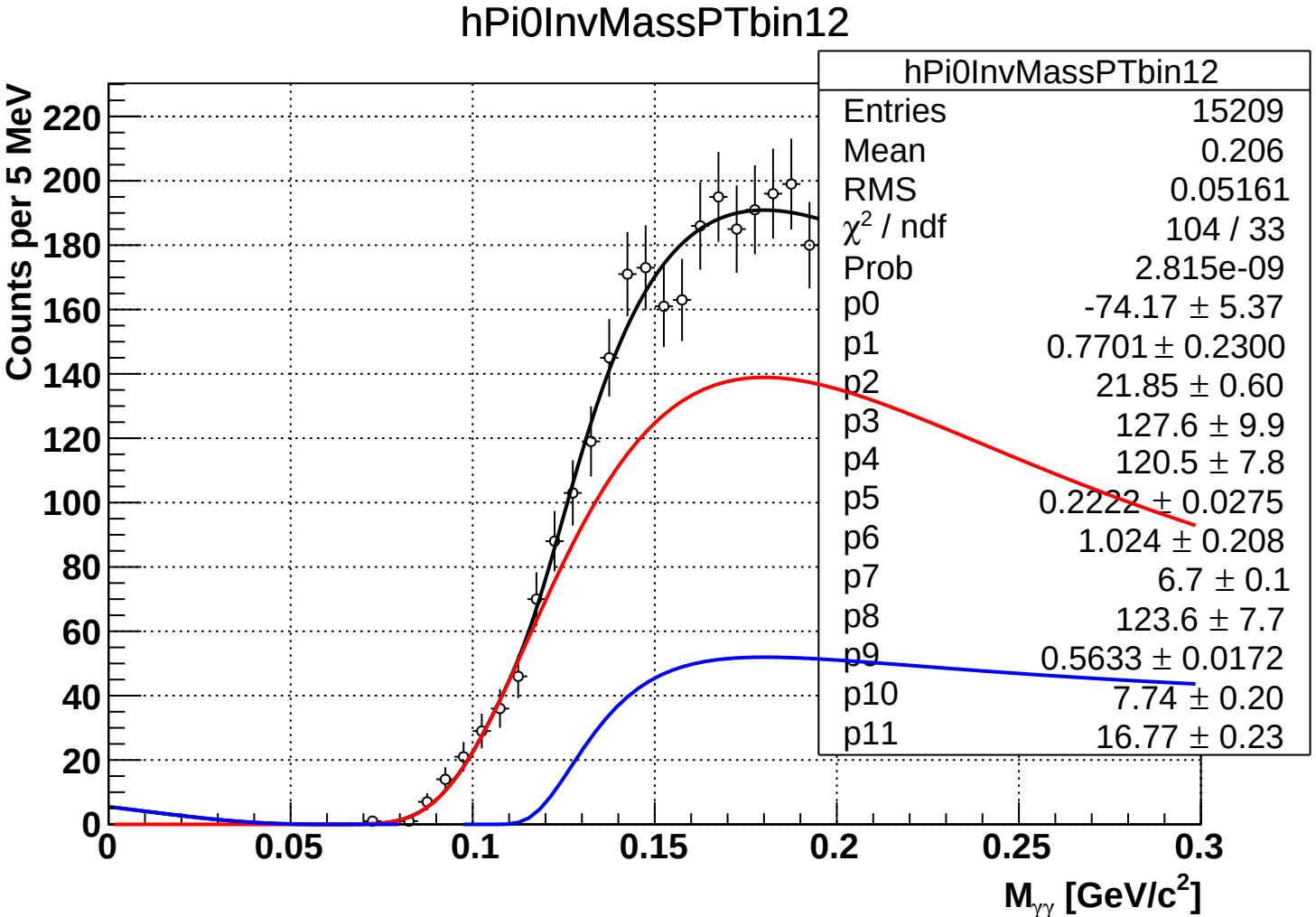

hPi0InvMassPTbin7
Counts per 5 MeV
2500
2000
1500
1000
500
0
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin7
Entries 148289
Mean 0.179
RMS 0.06266
χ^2 / ndf 52.56 / 42
Prob 0.1273
p0 897.4 ± 28.6
p1 0.1791 ± 0.0027
p2 0.4796 ± 0.0109
p3 3.14 ± 0.07
p4 358 ± 37.6
p5 0.1914 ± 0.0083
p6 0.3046 ± 0.0324
p7 2.21 ± 0.15
p8 1174 ± 29.4
p9 0.1361 ± 0.0008
p10 0.02849 ± 0.00079
p11 0.2326 ± 0.0201

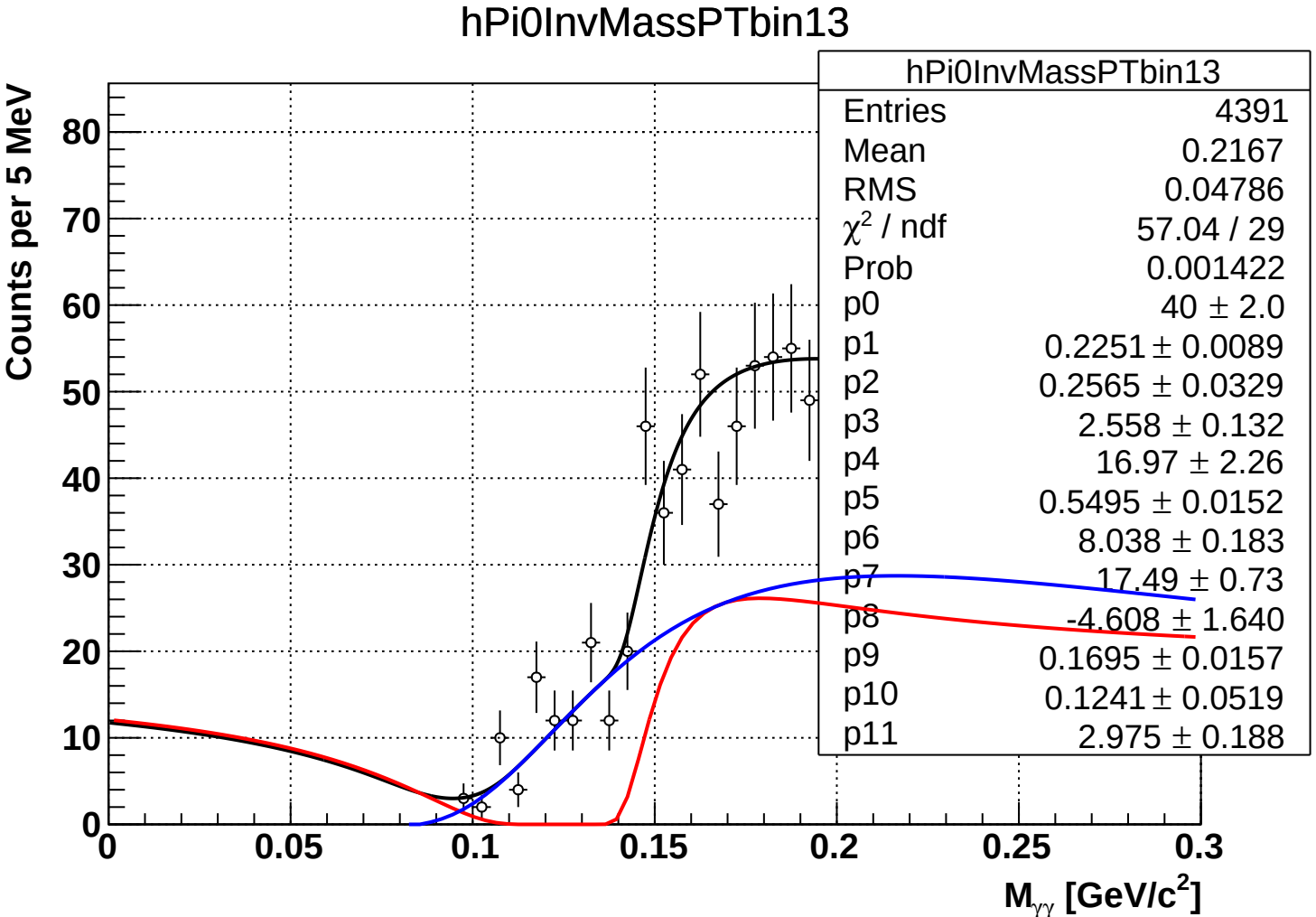

hPi0InvMassPTbin8
hPi0InvMassPTbin8
Entries 128698
Mean 0.1782
RMS 0.06138
χ² / ndf 3472 / 41
Prob 0
p0 401.7 ± 3.7
p1 0.1446 ± 0.0007
p2 0.02868 ± 0.00358
p3 0.5438 ± 0.0430
p4 334.9 ± 2.8
p5 0.8105 ± 0.0005
p6 19.14 ± 0.10
p7 24.67 ± 0.14
p8 745.9 ± 5.2
p9 -0.1983 ± 0.0025
p10 -2.036 ± 0.020
p11 8.327 ± 0.015
Counts per 5 MeV
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]


hPi0InvMassPTbin9
hPi0InvMassPTbin9
Entries 233424
Mean 0.1764
RMS 0.05982
χ2 / ndf 9739 / 40
Prob 0
p0 1685 ± 16.7
p1 0.5999 ± 0.0003
p2 -10.05 ± 0.10
p3 -18.55 ± 0.19
p4 1419 ± 26.4
p5 0.6473 ± 0.0006
p6 25.5 ± 0.2
p7 42.31 ± 0.28
p8 -790.4 ± 14.6
p9 0.5511 ± 0.0003
p10 33.29 ± 0.14
p11 66.12 ± 0.28
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]


hPi0InvMassPTbin10
Counts per 5 MeV
5000
4000
3000
2000
1000
0
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin10
Entries 301276
Mean 0.1807
RMS 0.05821
χ^2 / ndf 282.3 / 38
Prob 4.391e-39
p0 -1929 ± 29.7
p1 0.3819 ± 0.0007
p2 0.9748 ± 0.0031
p3 3.739 ± 0.013
p4 1338 ± 29.1
p5 0.128 ± 0.000
p6 0.0754 ± 0.0019
p7 0.08397 ± 0.01655
p8 3803 ± 21.2
p9 0.2195 ± 0.0006
p10 0.4449 ± 0.0009
p11 3.04 ± 0.01


hPi0InvMassPTbin11
hPi0InvMassPTbin11
Entries 73595
Mean 0.1936
RMS 0.05551
χ² / ndf 55.41 / 37
Prob 0.02639
p0 92.41 ± 1.07
p1 19.33 ± 0.01
p2 -55.87 ± 0.23
p3 -2.891 ± 0.004
p4 251.2 ± 2.9
p5 0.1443 ± 0.0015
p6 0.02688 ± 0.00091
p7 0.1491 ± 0.0282
p8 788.2 ± 3.8
p9 0.174 ± 0.002
p10 0.09126 ± 0.00103
p11 0.5306 ± 0.0191
Counts per 5 MeV
0
200
400
600
800
1000
0
0.05
0.1
0.15
0.2
0.25
0.3
M_γγ [GeV/c²]


hPi0InvMassPTbin12
Counts per 5 MeV
$M_{\gamma\gamma}$ [GeV/c^2]
0
20
40
60
80
100
120
140
160
180
200
220
0
0.05
0.1
0.15
0.2
0.25
0.3
hPi0InvMassPTbin12
Entries 15209
Mean 0.206
RMS 0.05161
χ^2 / ndf 104 / 33
Prob 2.815e-09
p0 -74.17 ± 5.37
p1 0.7701 ± 0.2300
p2 21.85 ± 0.60
p3 127.6 ± 9.9
p4 120.5 ± 7.8
p5 0.2222 ± 0.0275
p6 1.024 ± 0.208
p7 6.7 ± 0.1
p8 123.6 ± 7.7
p9 0.5633 ± 0.0172
p10 7.74 ± 0.20
p11 16.77 ± 0.23


hPi0InvMassPTbin13
Counts per 5 MeV
0
10
20
30
40
50
60
70
80
0
0.05
0.1
0.15
0.2
0.25
0.3
$M_{\gamma\gamma}$ [GeV/c^2]
hPi0InvMassPTbin13
Entries 4391
Mean 0.2167
RMS 0.04786
χ^2 / ndf 57.04 / 29
Prob 0.001422
p0 40 ± 2.0
p1 0.2251 ± 0.0089
p2 0.2565 ± 0.0329
p3 2.558 ± 0.132
p4 16.97 ± 2.26
p5 0.5495 ± 0.0152
p6 8.038 ± 0.183
p7 17.49 ± 0.73
p8 -4.608 ± 1.640
p9 0.1695 ± 0.0157
p10 0.1241 ± 0.0519
p11 2.975 ± 0.188