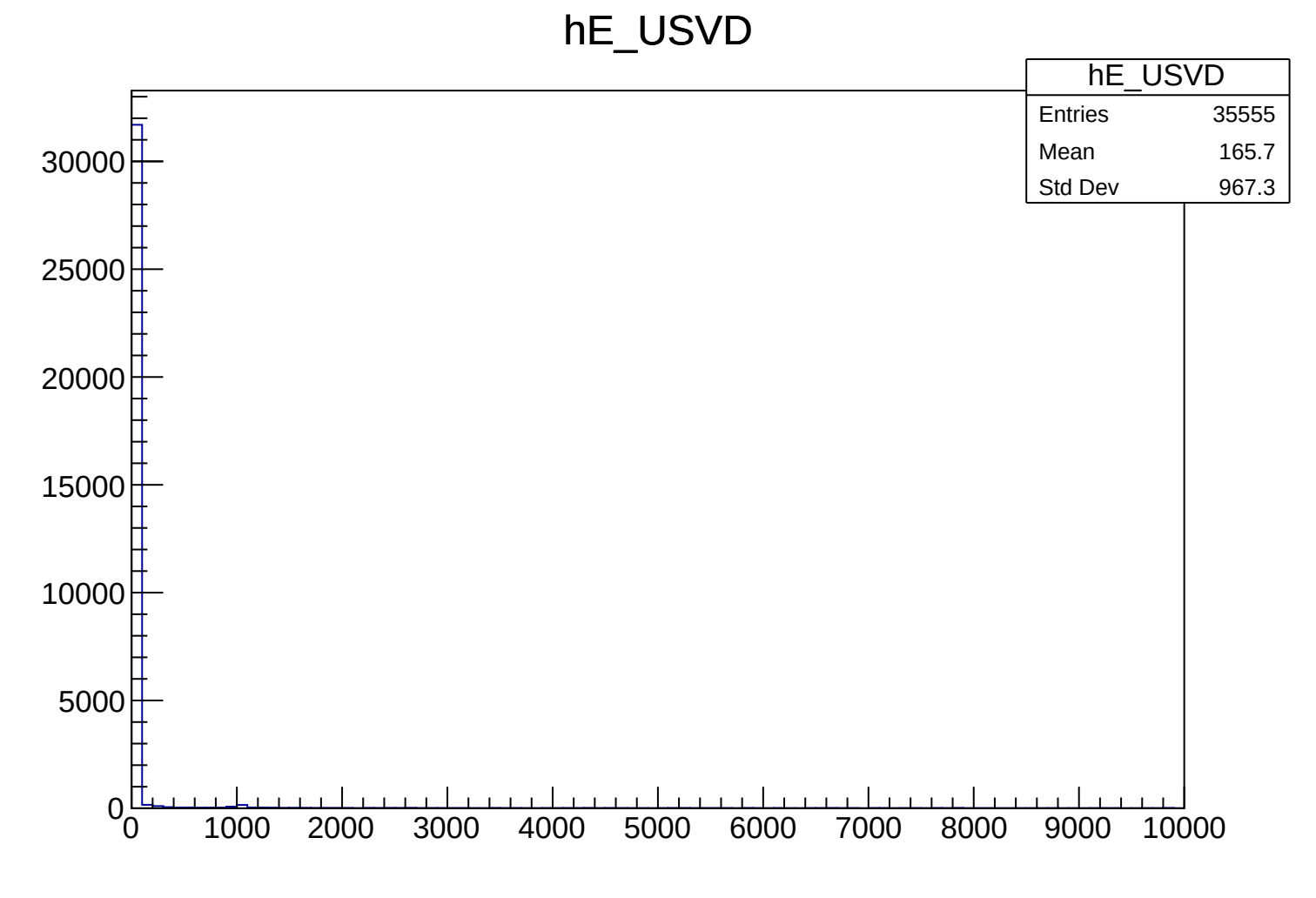
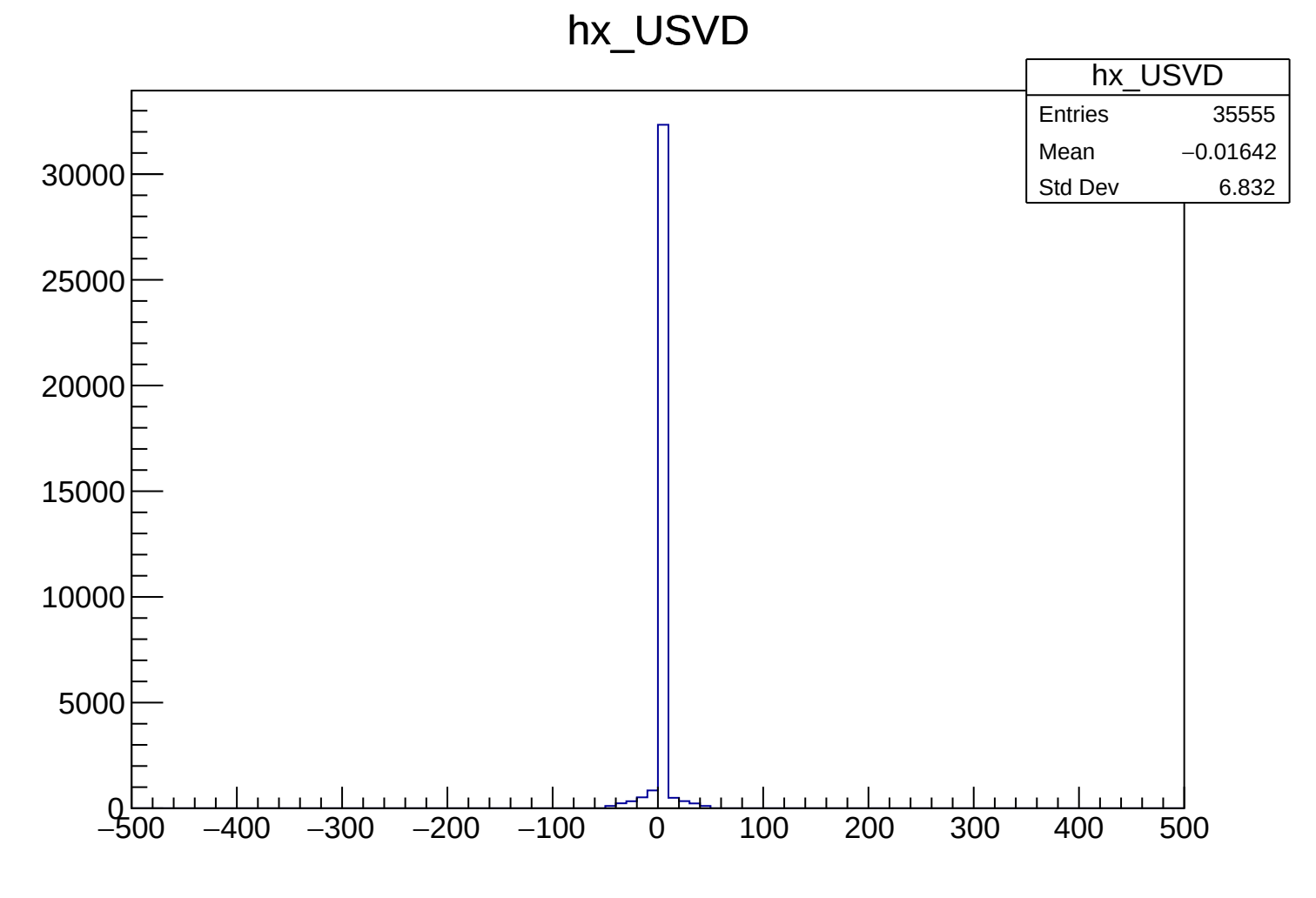
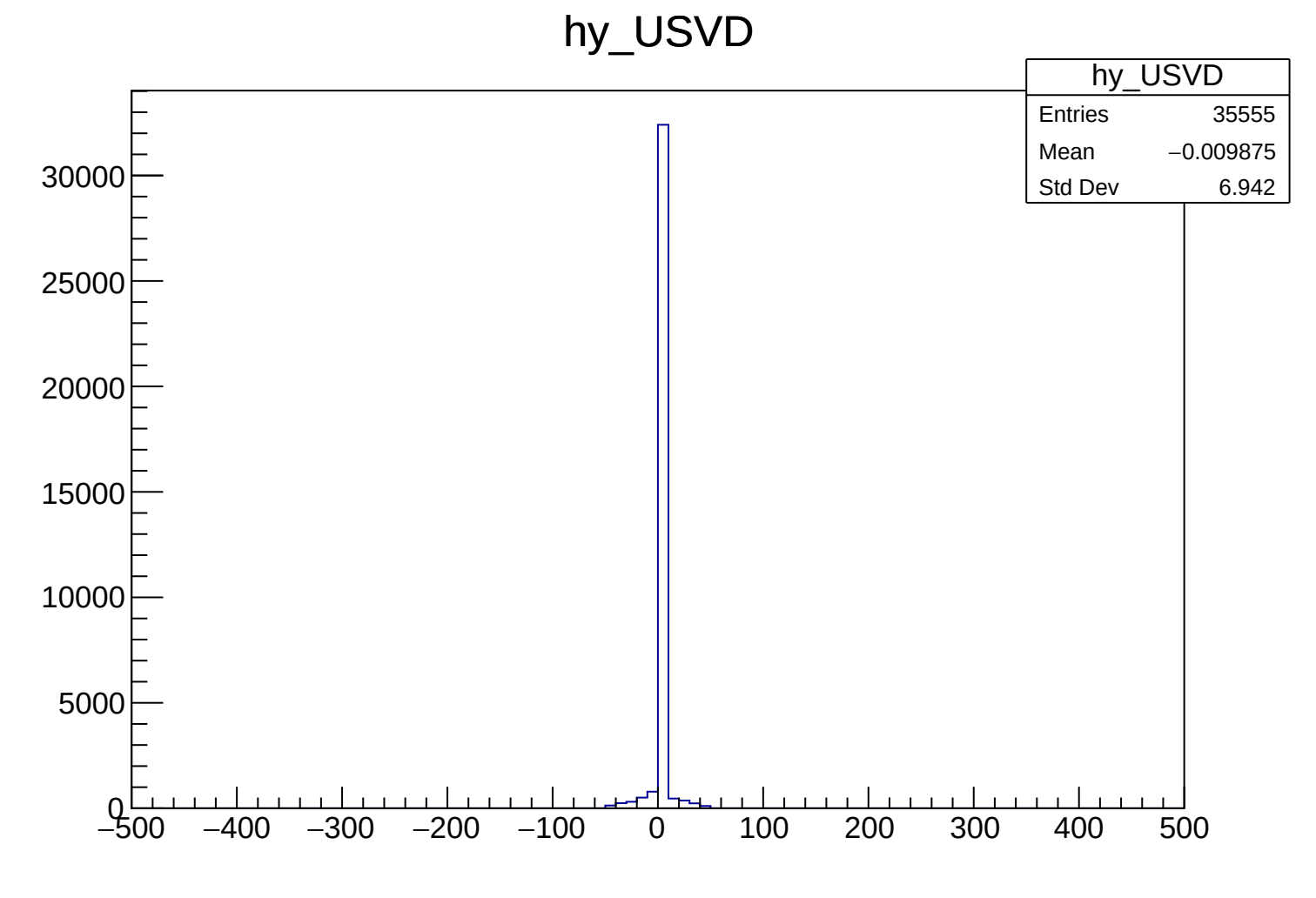
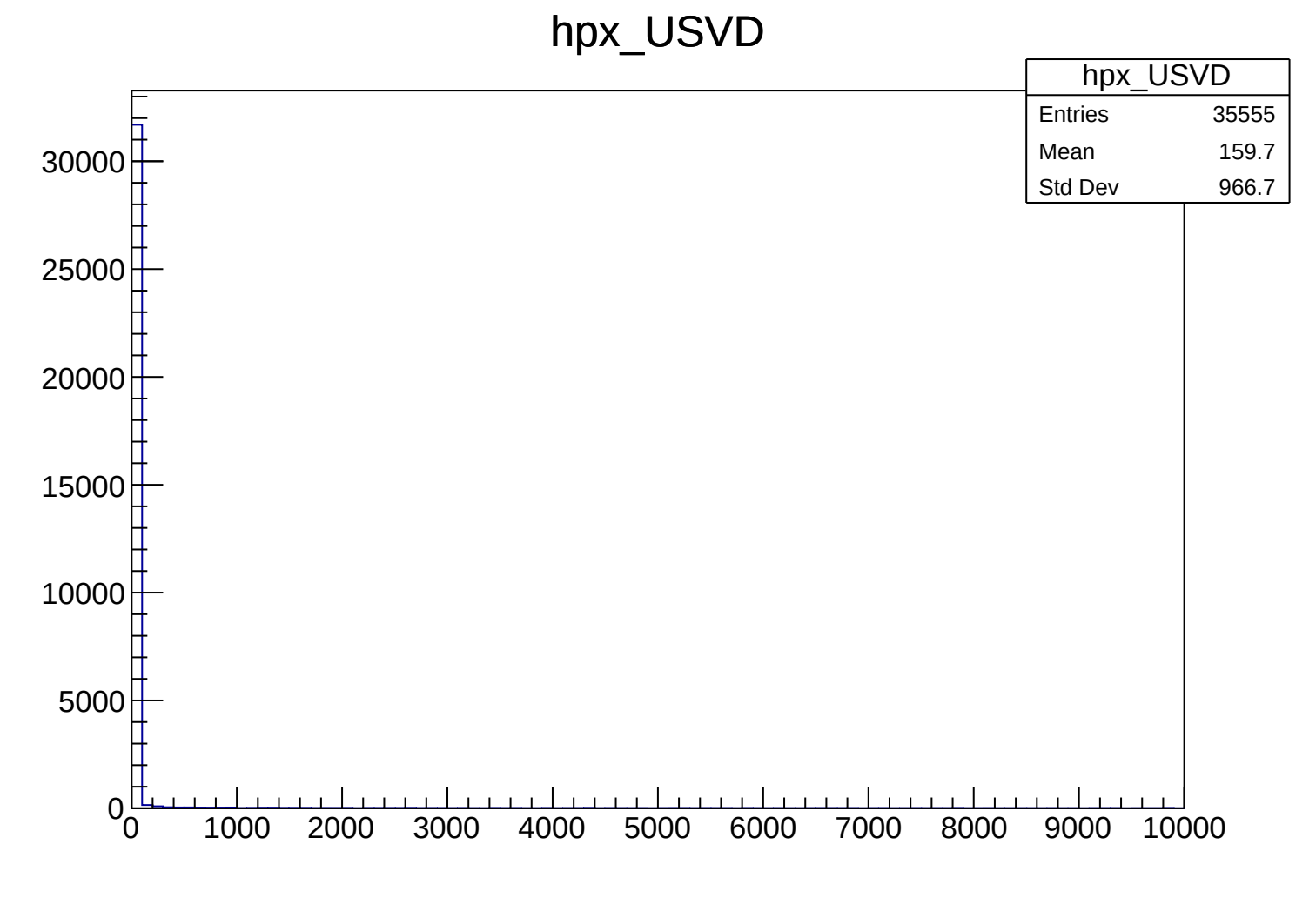
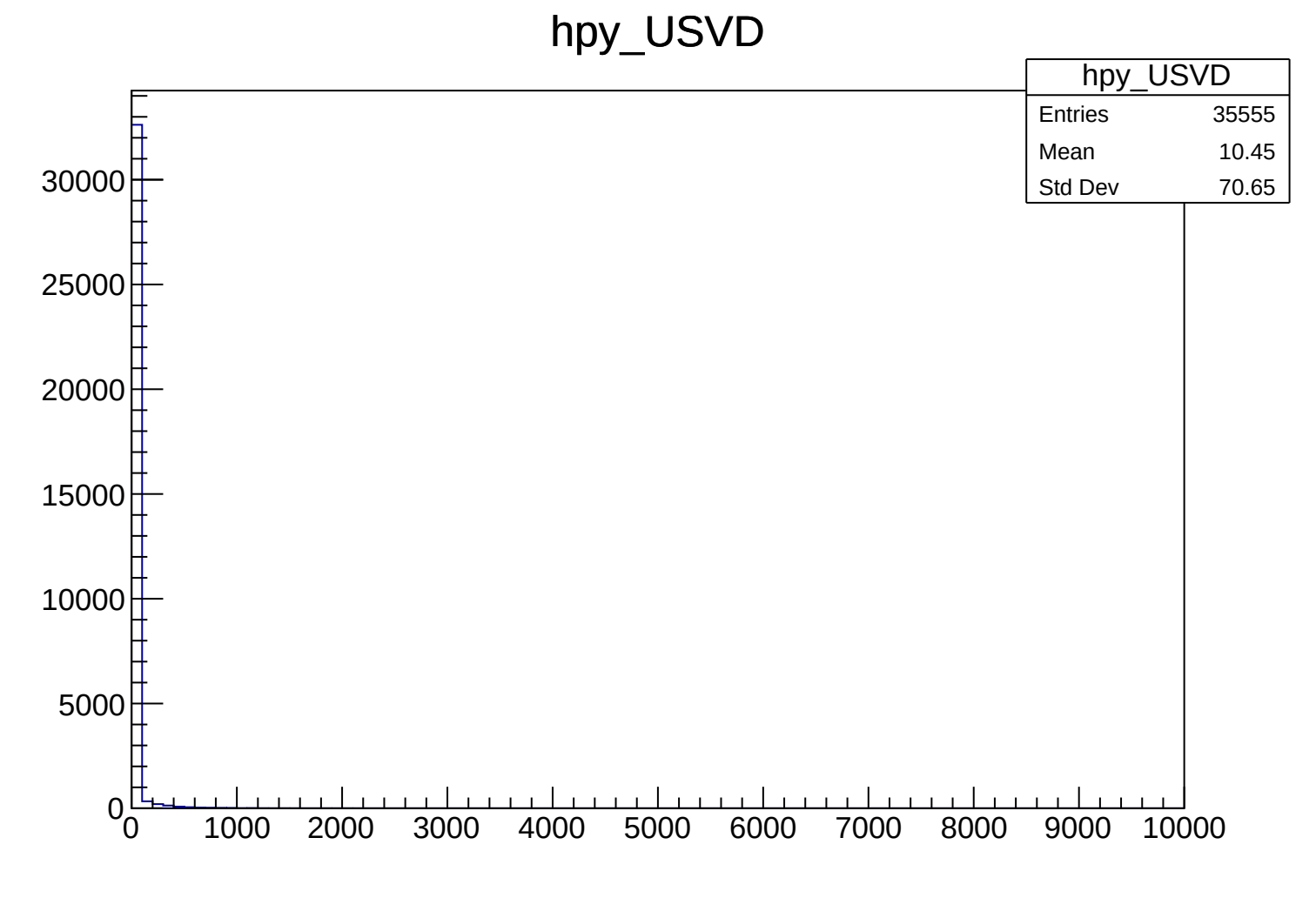
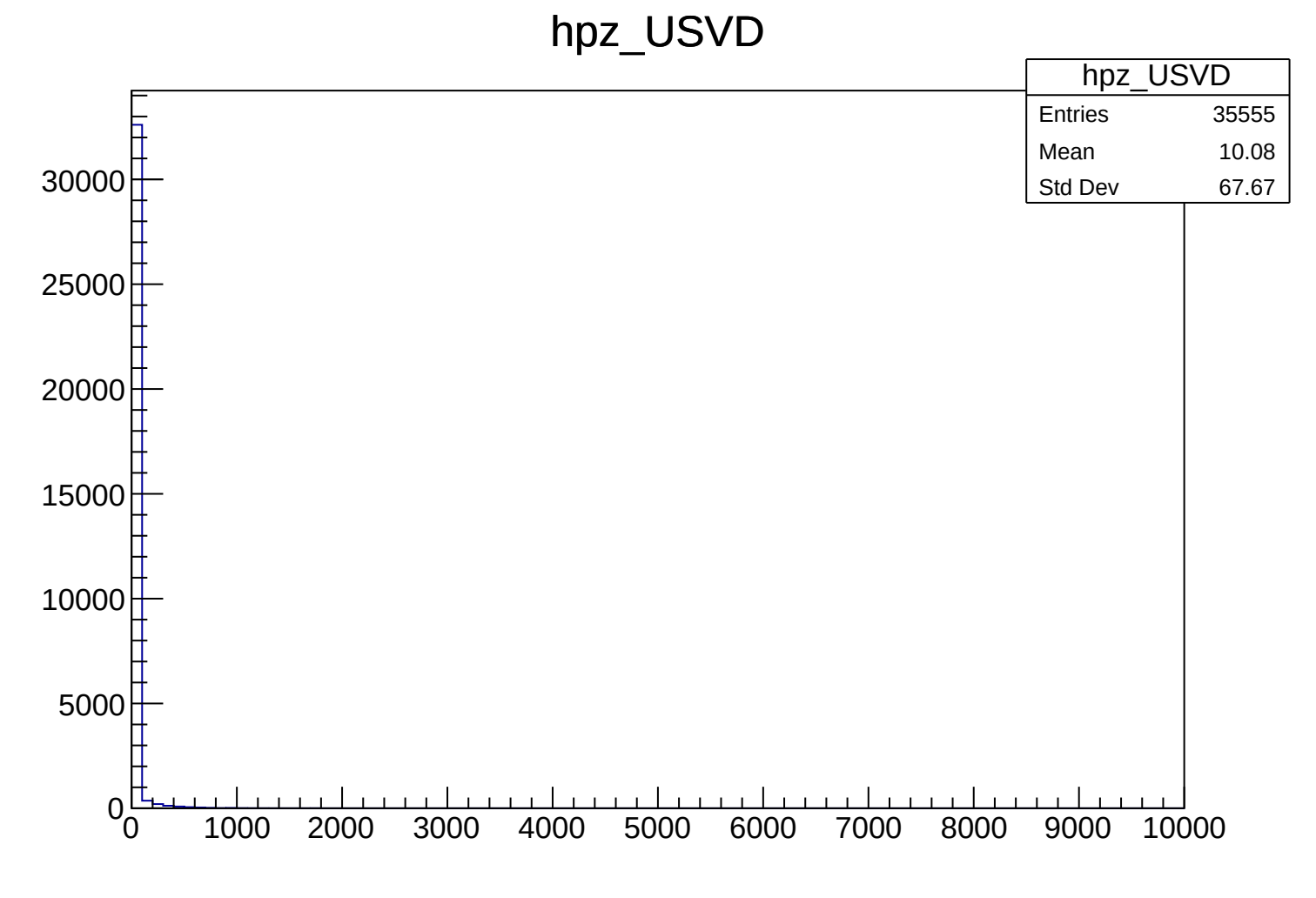

hE_USVD
hE_USVD
Entries 35555
Mean 165.7
Std Dev 967.3
30000
25000
20000
15000
10000
5000
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

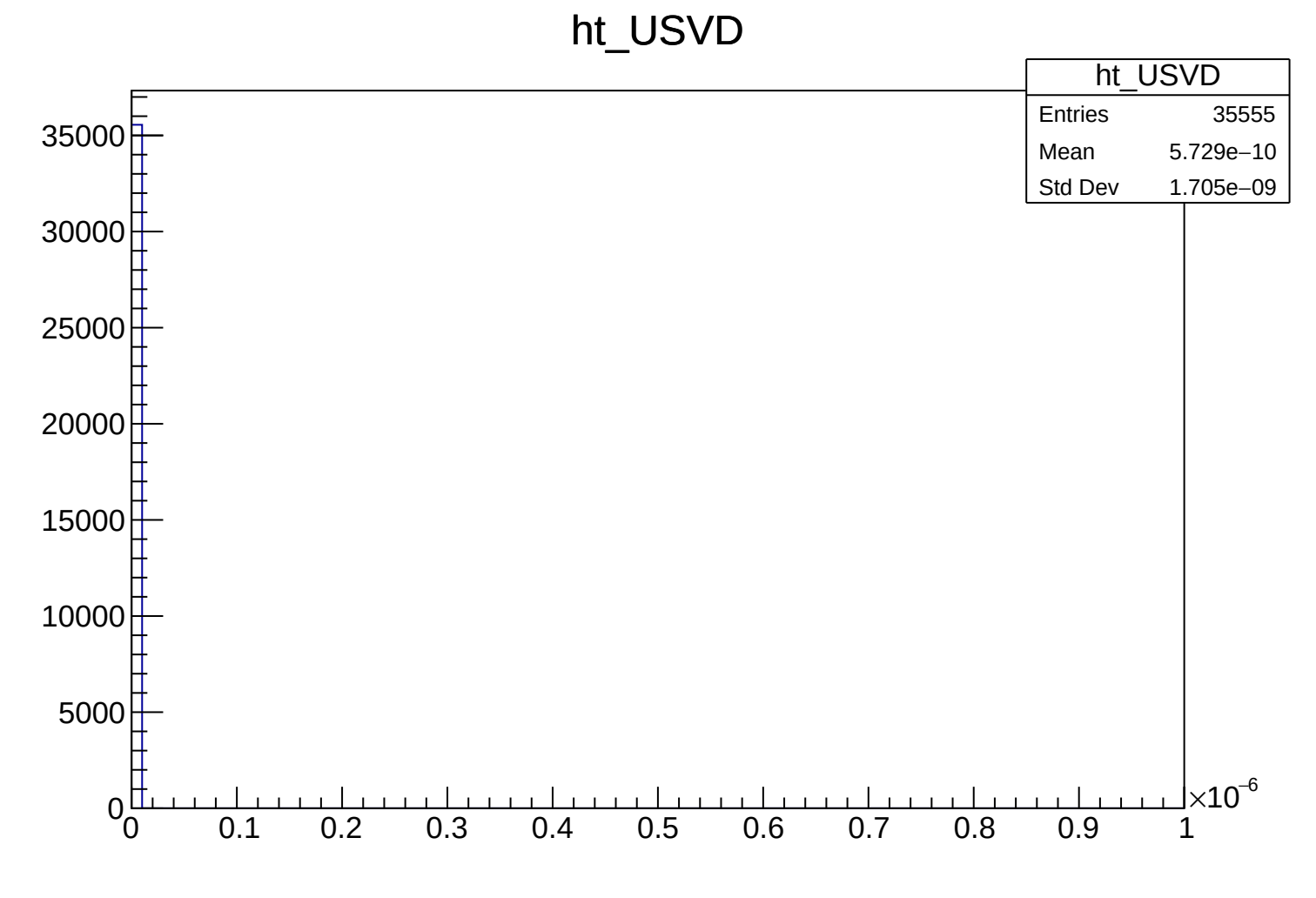

hx_USVD
hx_USVD
Entries 35555
Mean −0.01642
Std Dev 6.832
30000
25000
20000
15000
10000
5000
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

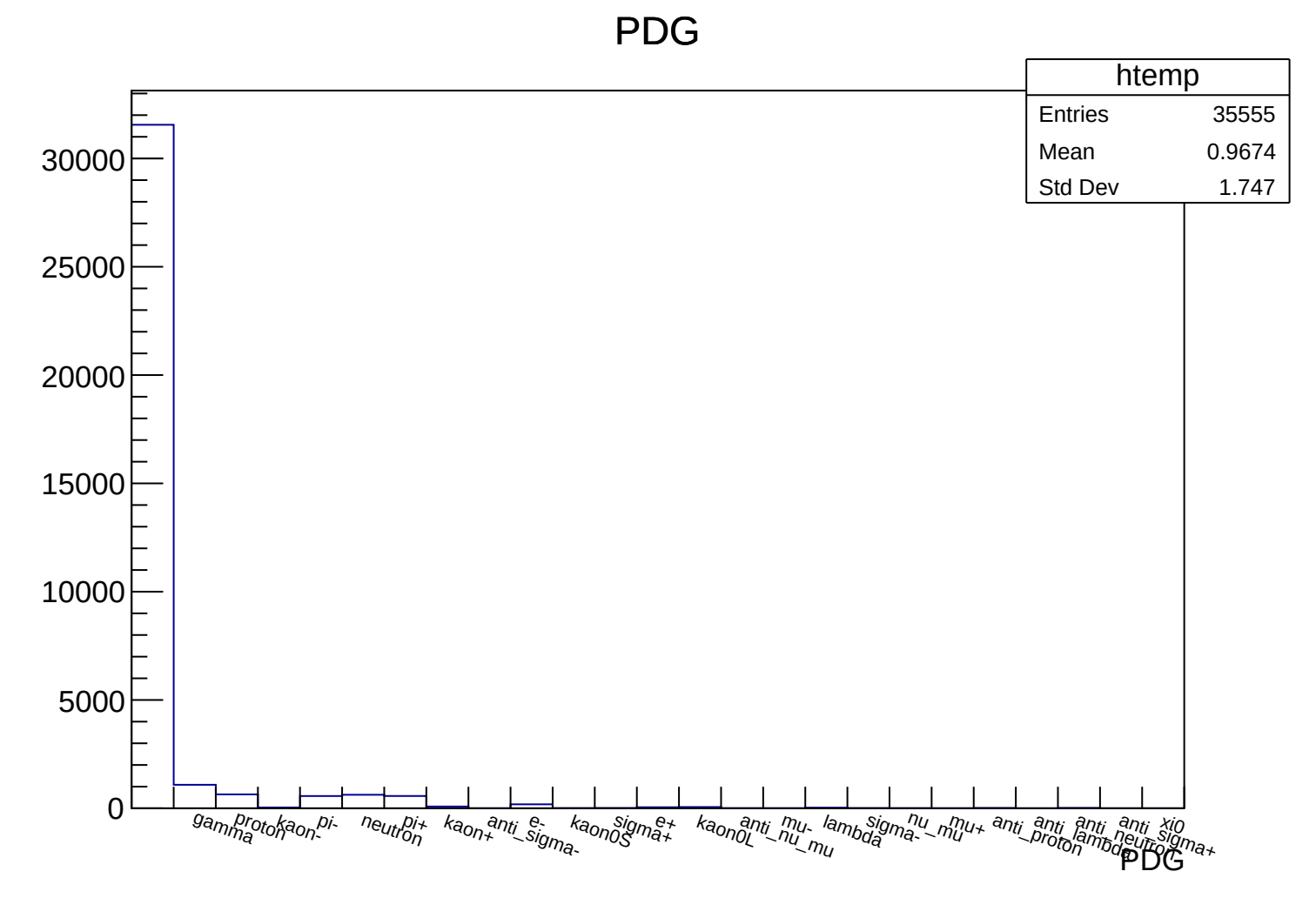

hy_USVD
hy_USVD
Entries 35555
Mean −0.009875
Std Dev 6.942
30000
25000
20000
15000
10000
5000
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

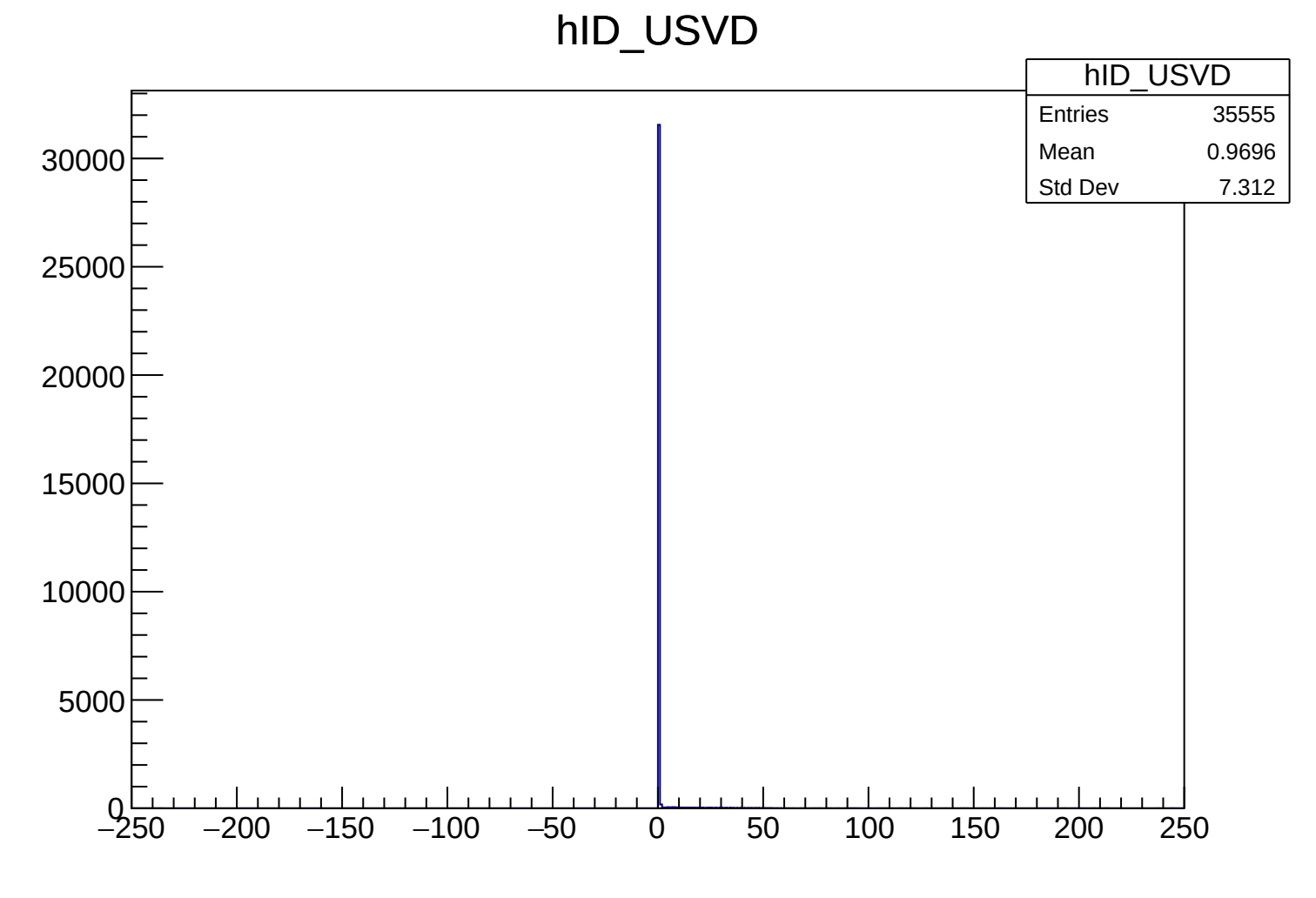

hpx_USVD
hpx_USVD
Entries 35555
Mean 159.7
Std Dev 966.7
30000
25000
20000
15000
10000
5000
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

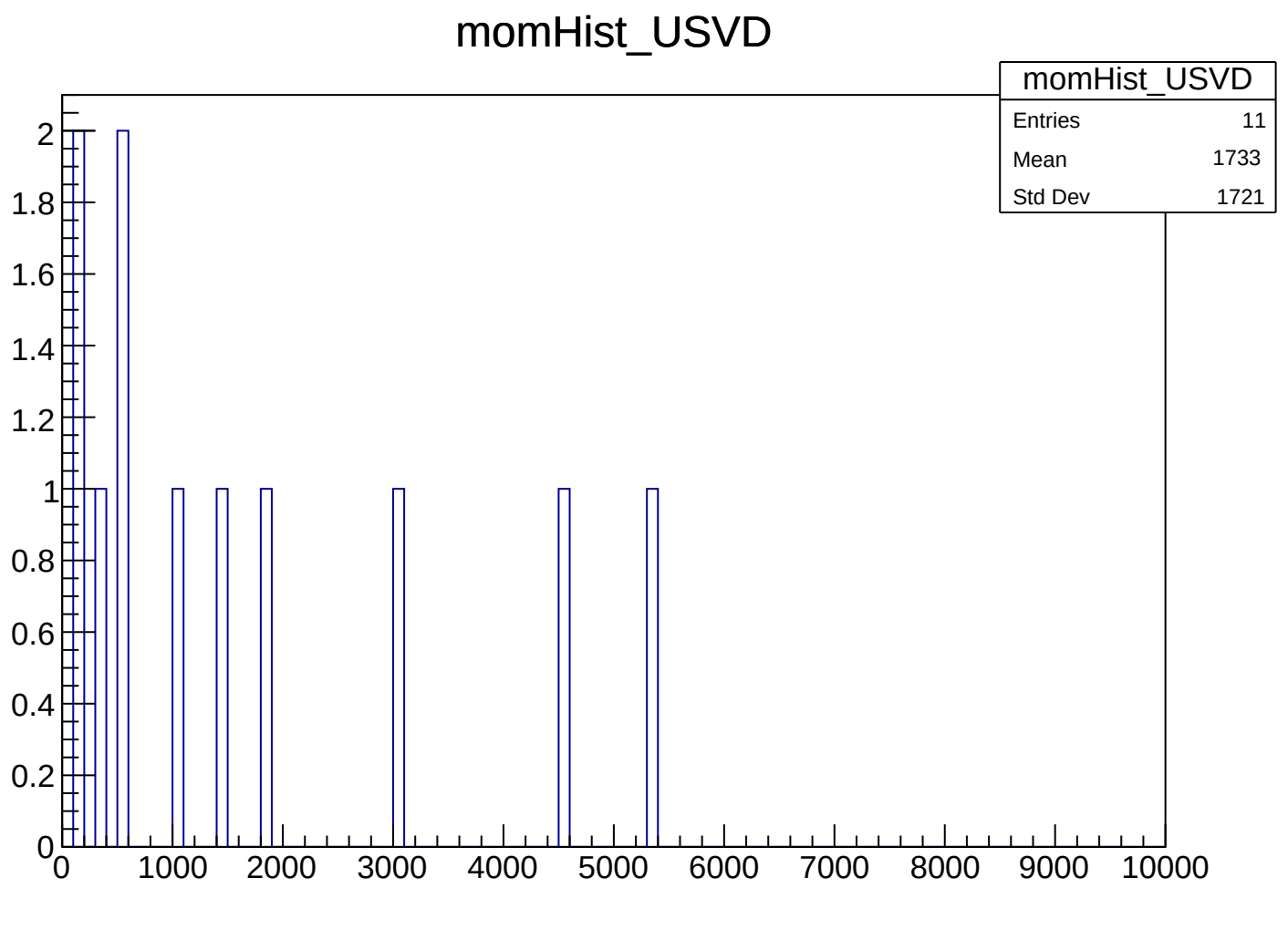

hpy_USVD
hpy_USVD
Entries 35555
Mean 10.45
Std Dev 70.65
30000
25000
20000
15000
10000
5000
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

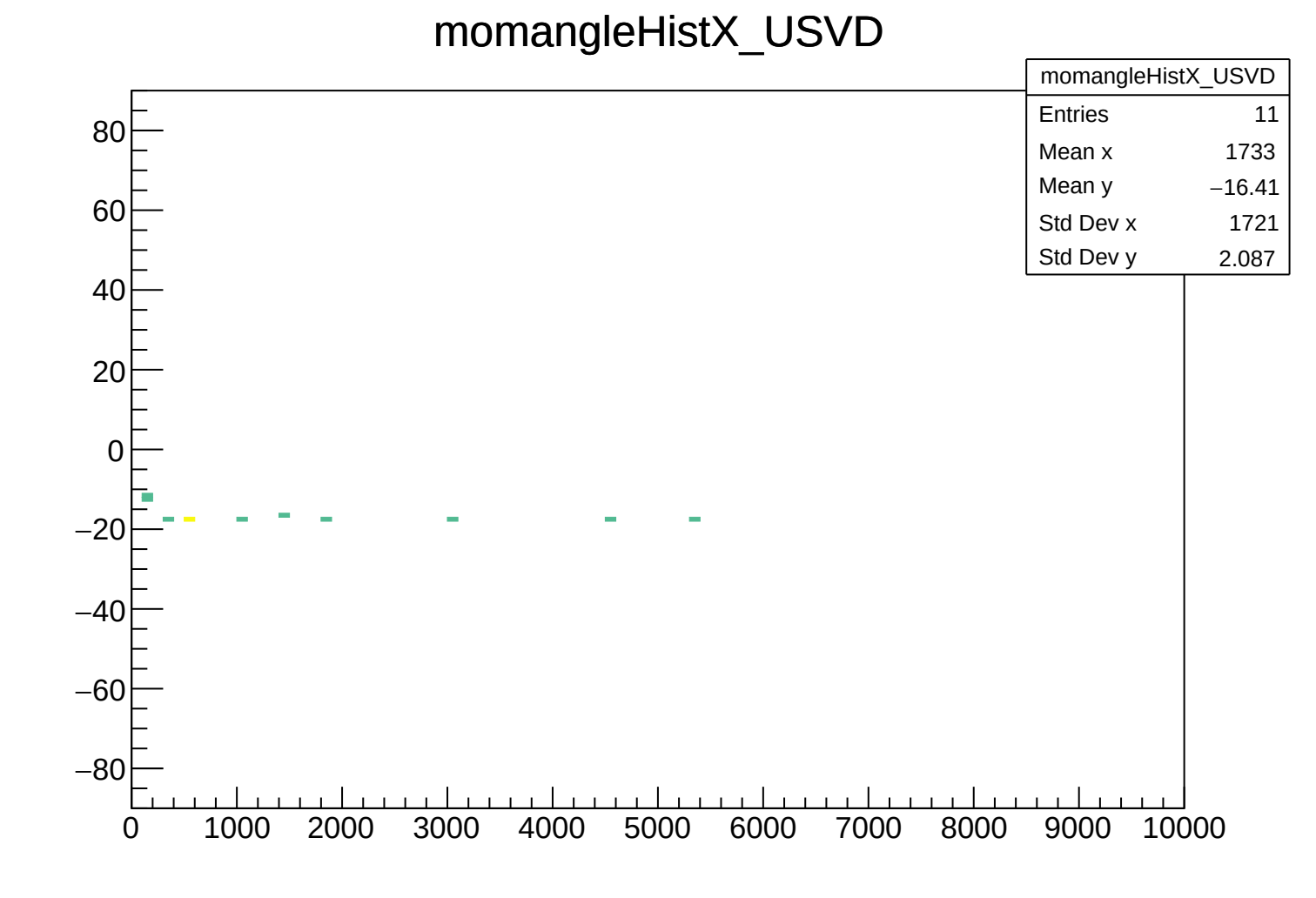

hpz_USVD
hpz_USVD
Entries 35555
Mean 10.08
Std Dev 67.67
30000
25000
20000
15000
10000
5000
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

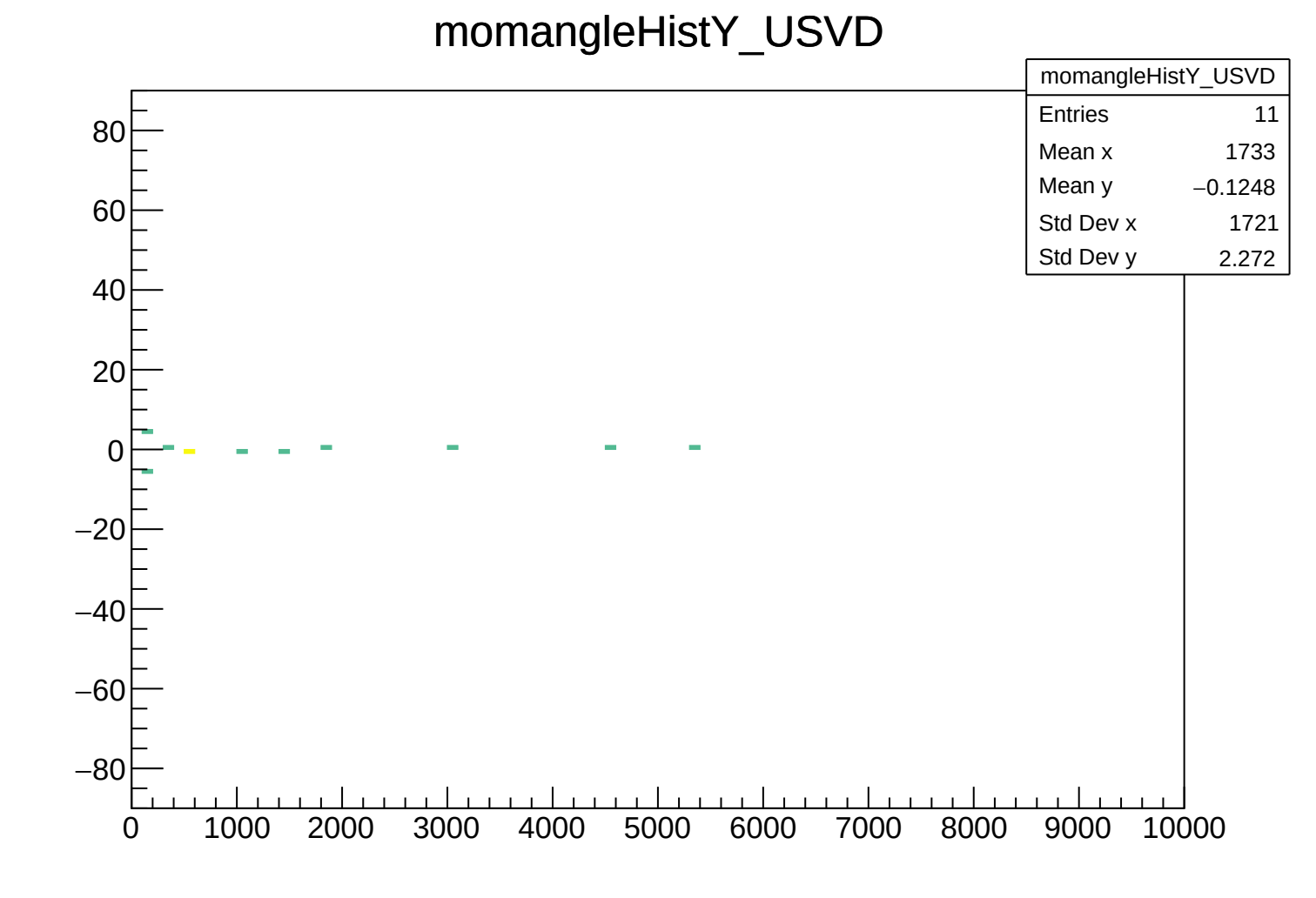

ht_USVD
ht_USVD
Entries 35555
Mean 5.729e−10
Std Dev 1.705e−09
35000
30000
25000
20000
15000
10000
5000
0
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
×10−6

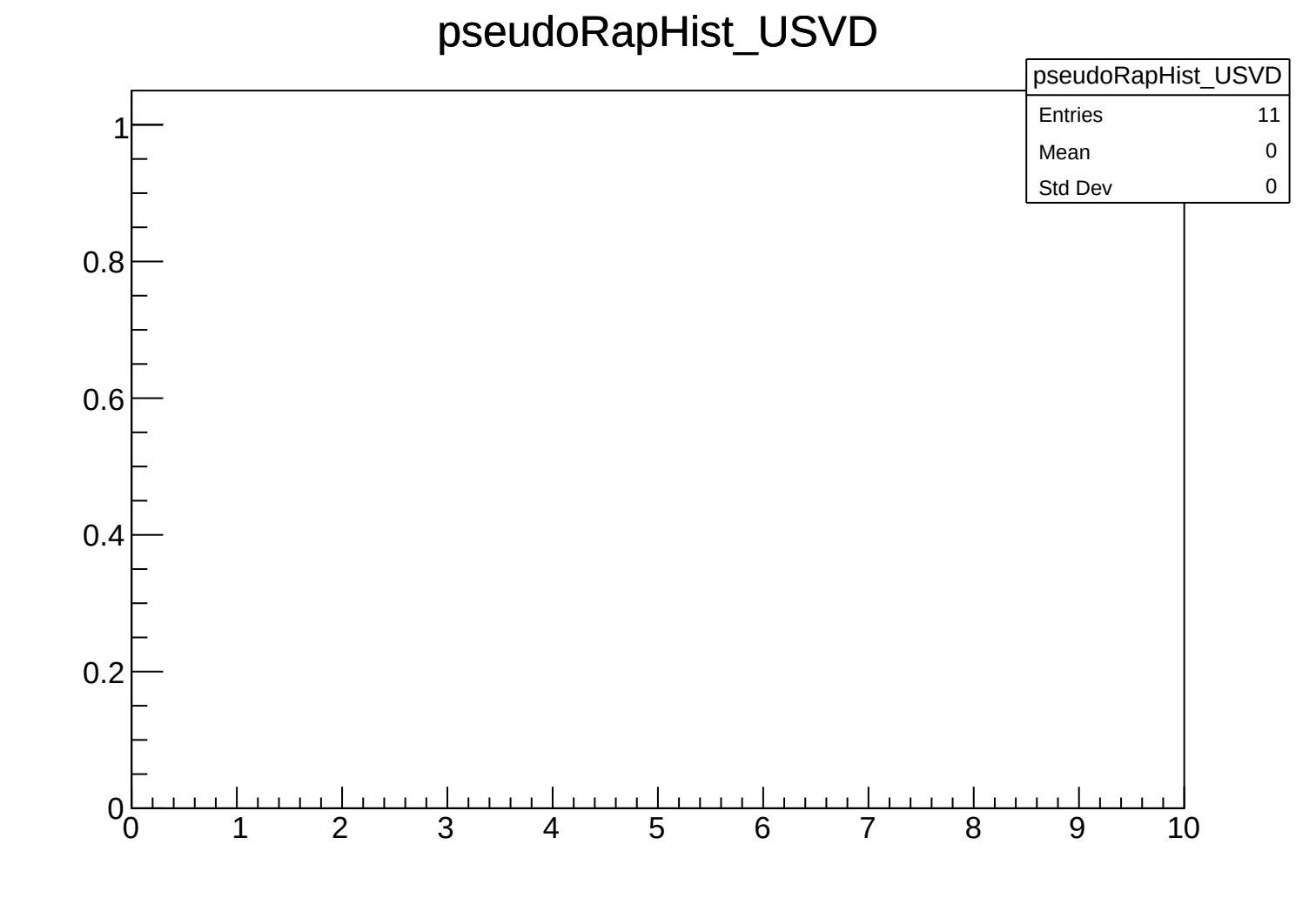

PDG
htemp
Entries 35555
Mean 0.9674
Std Dev 1.747
30000
25000
20000
15000
10000
5000
0
gamma
proton
kaon-
pi-
neutron
pi+
kaon+
anti_sigma-
e-
kaon0S
sigma+
e+
kaon0L
anti_nu_mu
mu-
lambda
sigma-
nu_mu
mu+
anti_proton
anti_lambda
anti_neutron
anti_sigma+
xi0
PDG

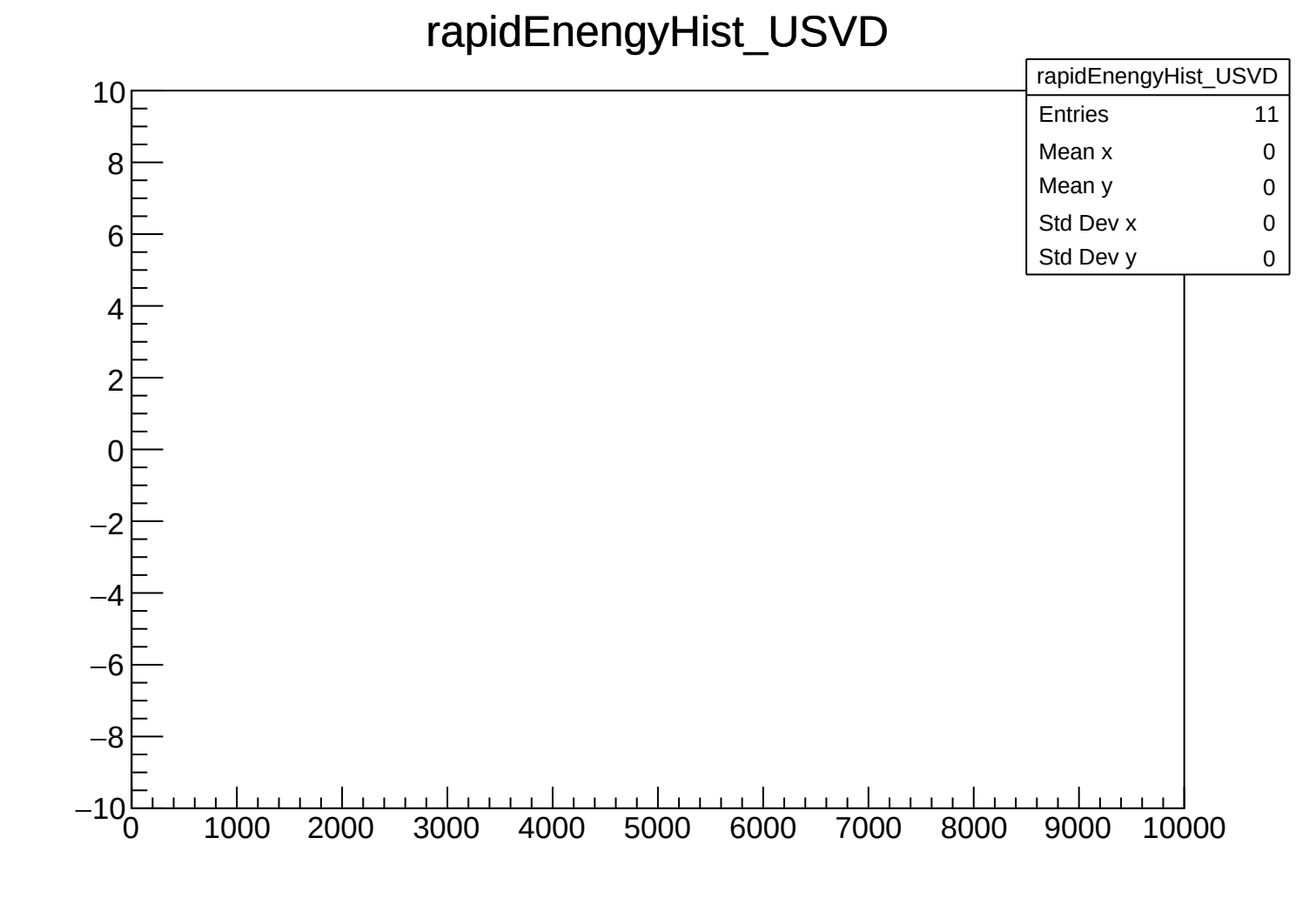

hID_USVD
hID_USVD
Entries 35555
Mean 0.9696
Std Dev 7.312
30000
25000
20000
15000
10000
5000
0
−250
−200
−150
−100
−50
0
50
100
150
200
250

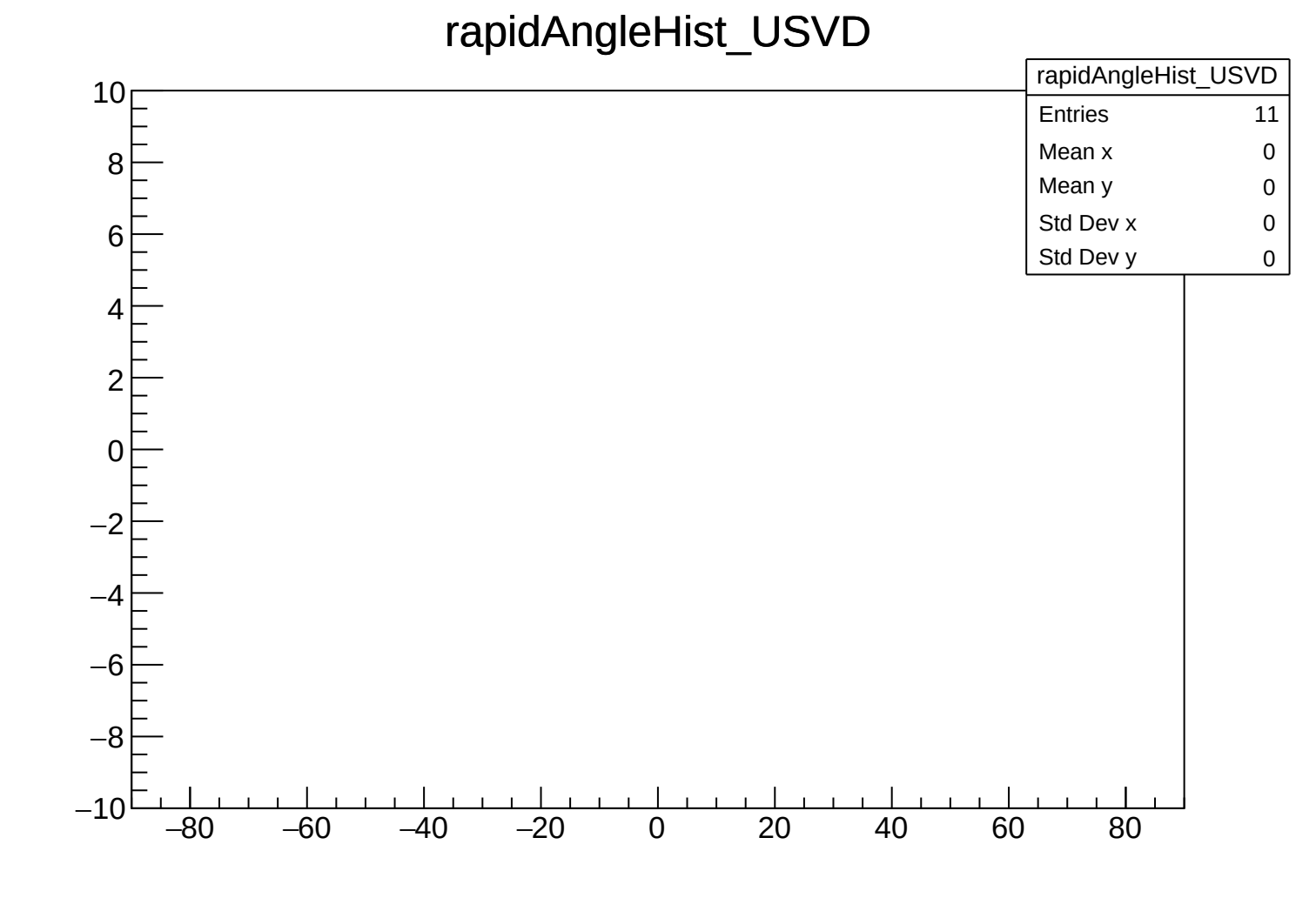

momHist_USVD
momHist_USVD
Entries 11
Mean 1733
Std Dev 1721
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

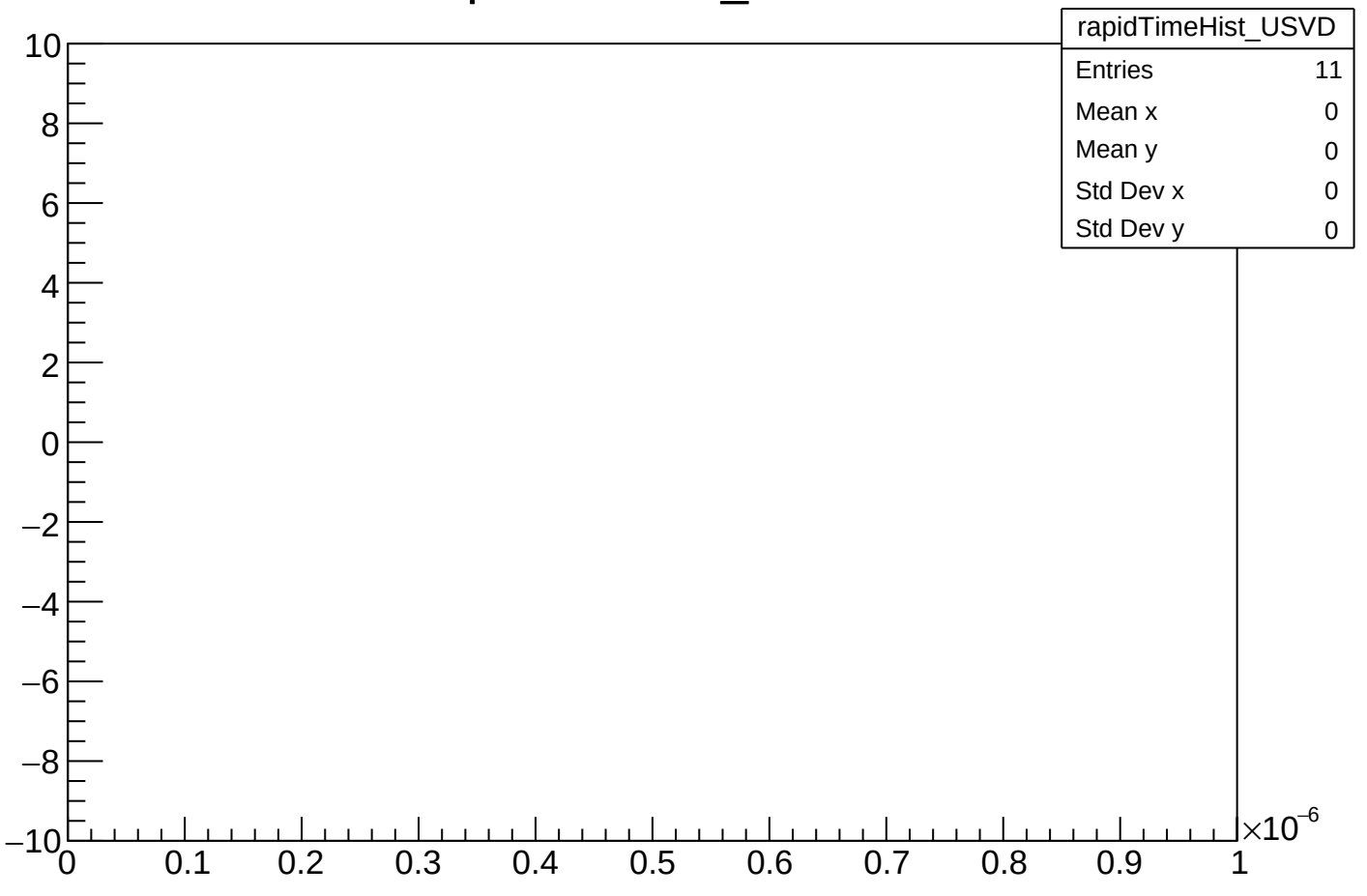

momangleHistX_USVD
momangleHistX_USVD
Entries 11
Mean x 1733
Mean y −16.41
Std Dev x 1721
Std Dev y 2.087
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

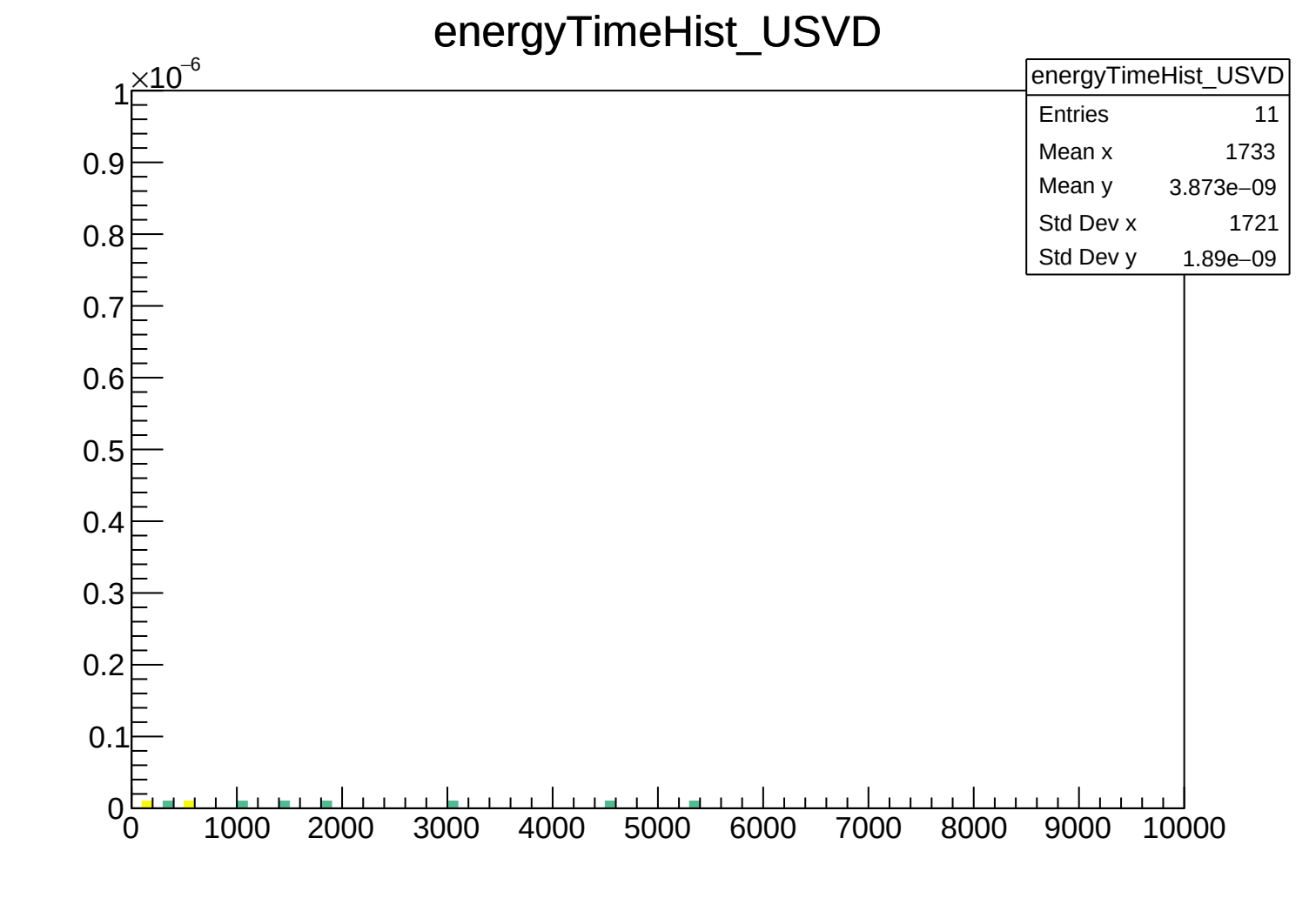

momangleHistY_USVD
momangleHistY_USVD
Entries 11
Mean x 1733
Mean y −0.1248
Std Dev x 1721
Std Dev y 2.272
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

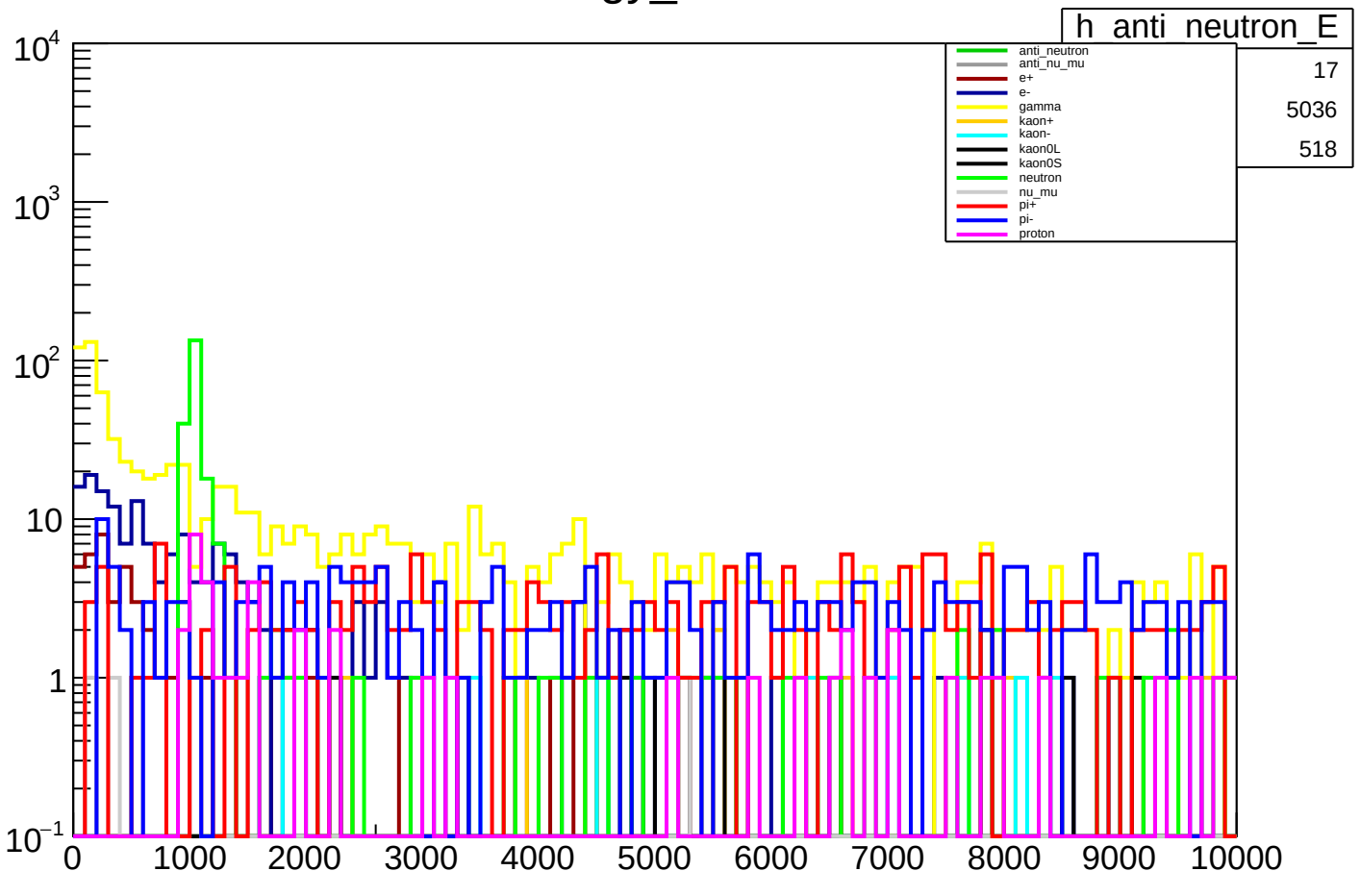

pseudoRapHist_USVD
pseudoRapHist_USVD
Entries 11
Mean 0
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0 1 2 3 4 5 6 7 8 9 10

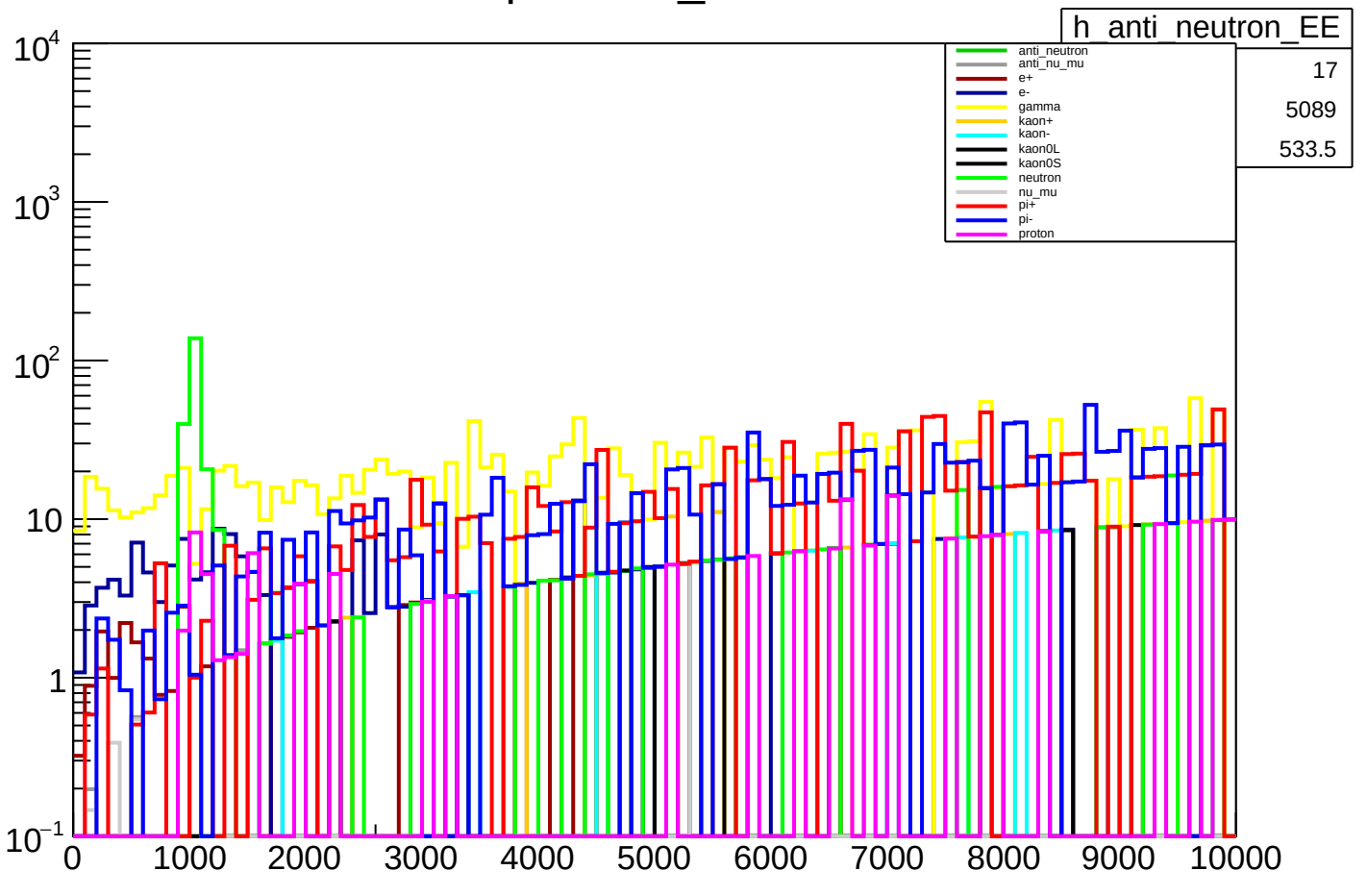

rapidEnengyHist_USVD
rapidEnengyHist_USVD
Entries 11
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

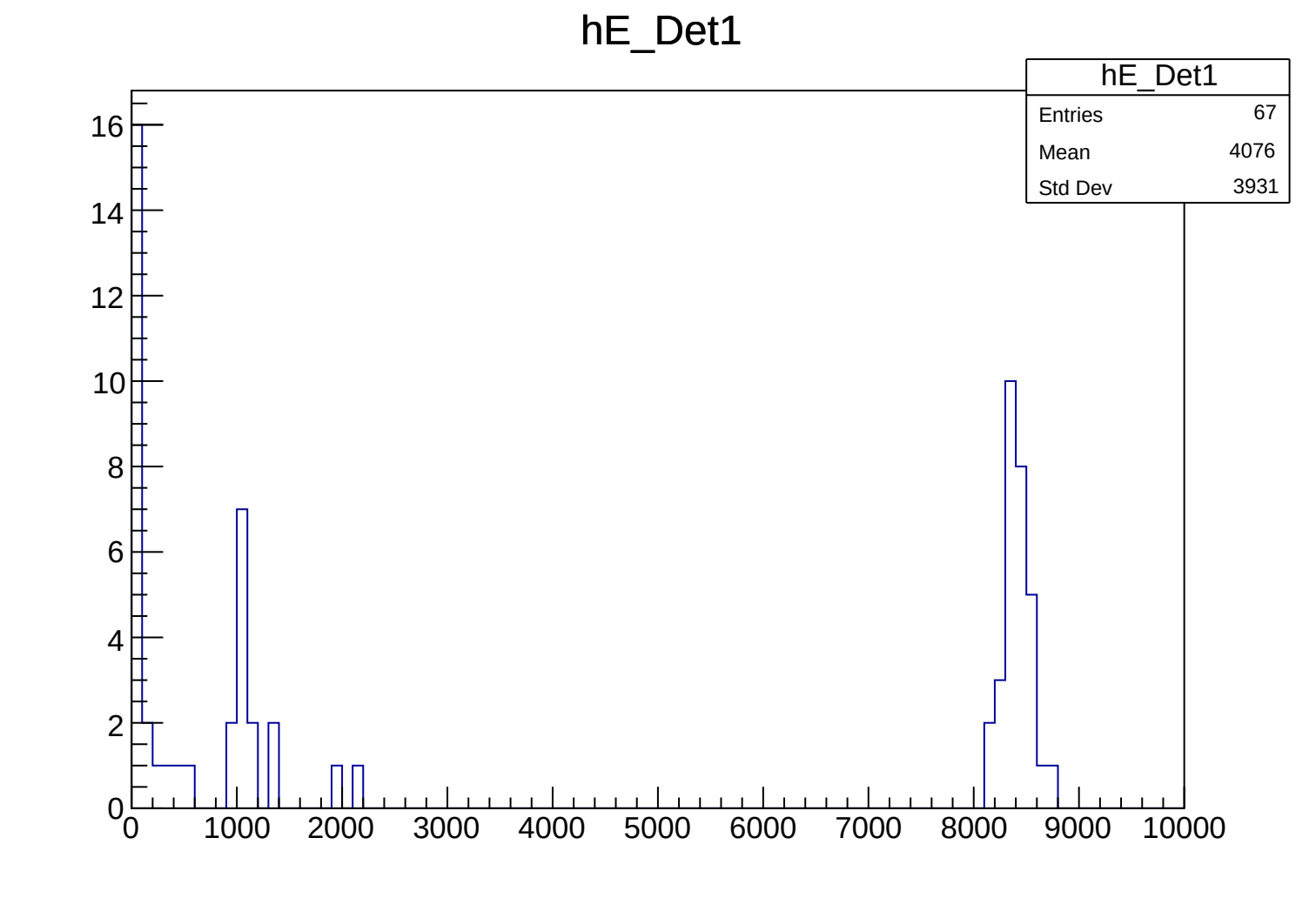

rapidAngleHist_USVD
rapidAngleHist_USVD
Entries 11
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
−80
−60
−40
−20
0
20
40
60
80

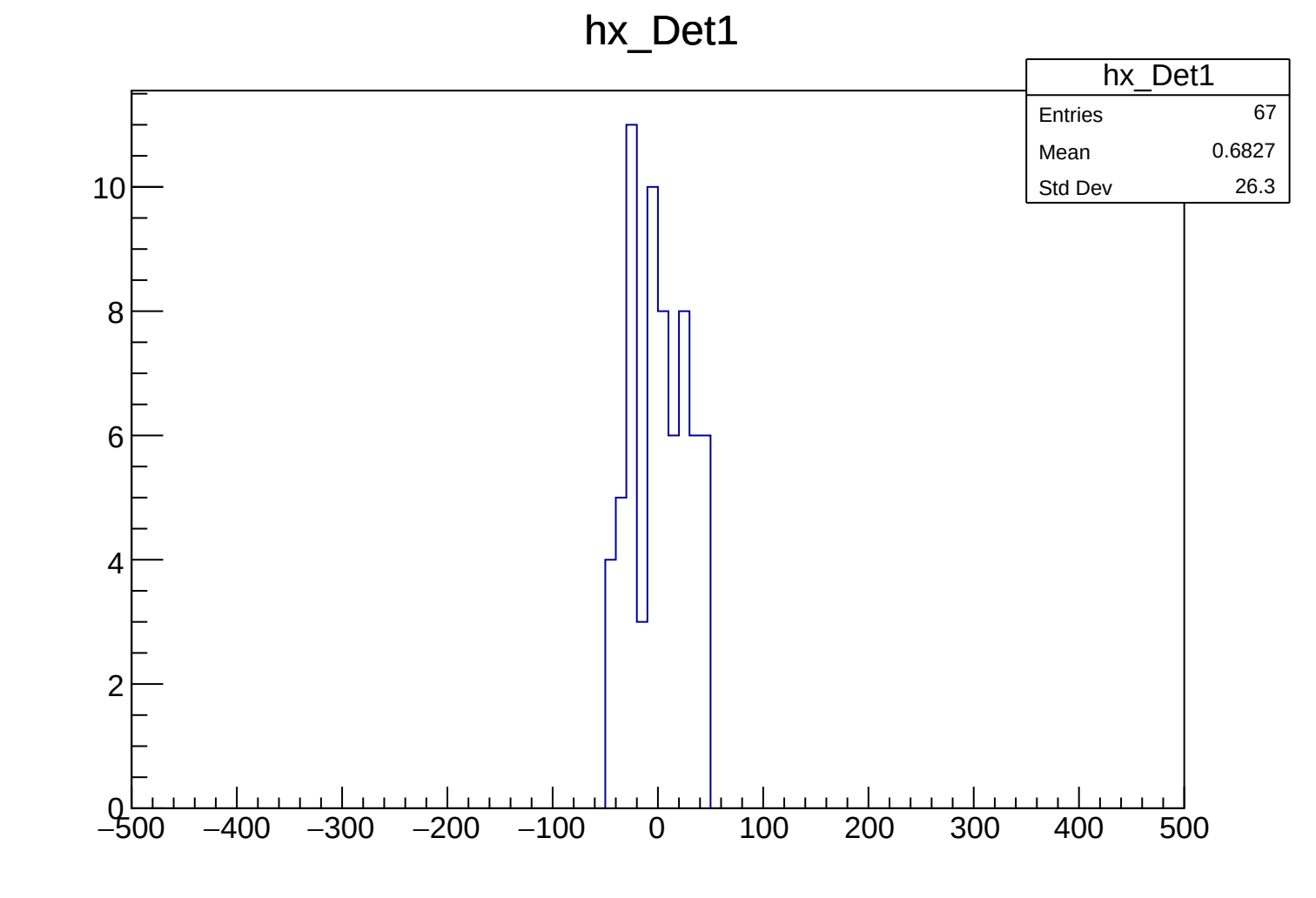

rapidTimeHist_USVD
rapidTimeHist_USVD
Entries 11
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10^−6

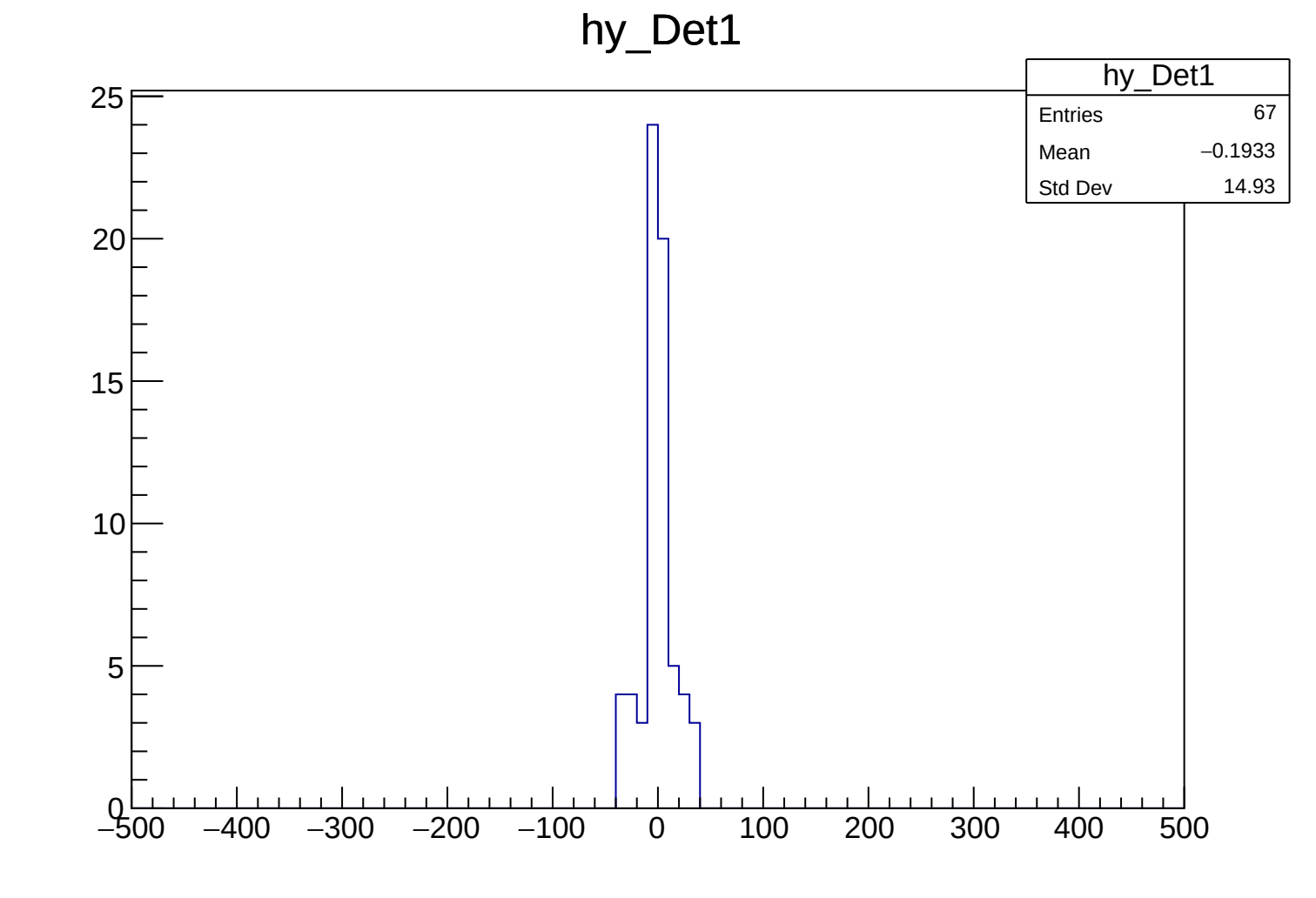

energyTimeHist_USVD
energyTimeHist_USVD
Entries 11
Mean x 1733
Mean y 3.873e−09
Std Dev x 1721
Std Dev y 1.89e−09
×10^−6
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

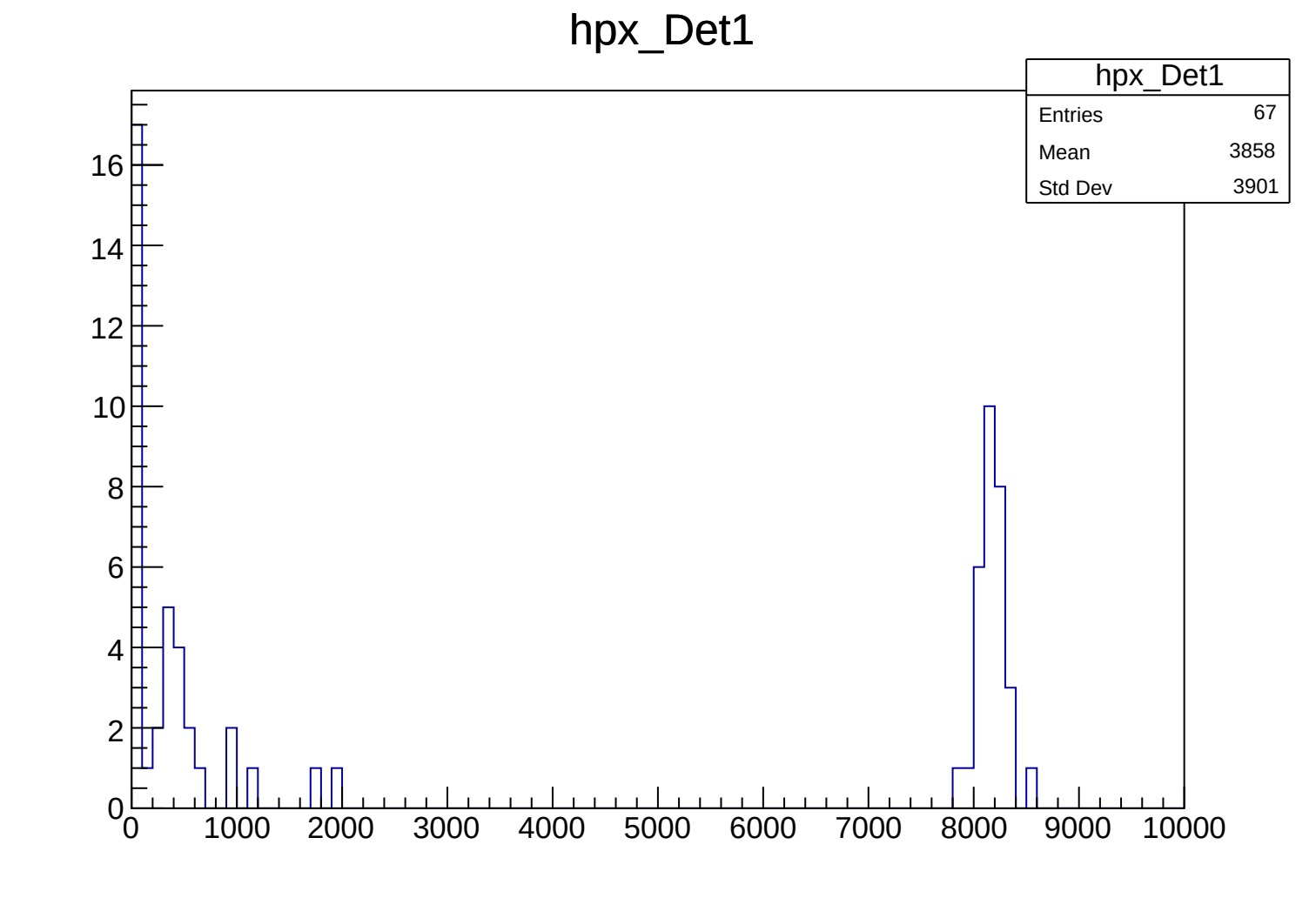

Energy_USVD
h_anti_neutron_E
17
5036
518
anti_neutron
anti_nu_mu
e+
e-
gamma
kaon+
kaon-
kaon0L
kaon0S
neutron
nu_mu
pi+
pi-
proton
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

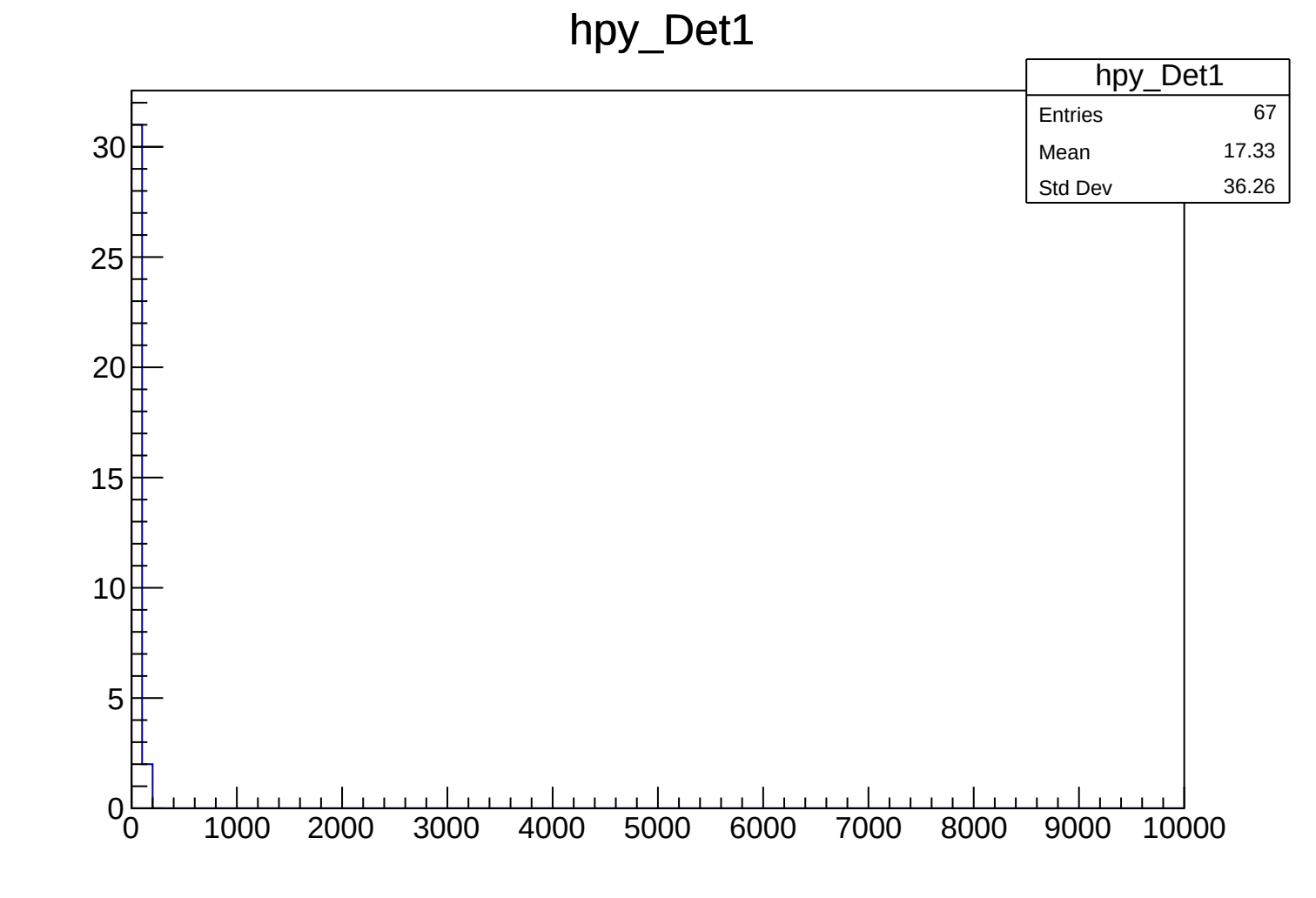

Spectrum_USVD
h_anti_neutron_EE
17
5089
533.5
anti_neutron
anti_nu_mu
e+
e-
gamma
kaon+
kaon-
kaon0L
kaon0S
neutron
nu_mu
pi+
pi-
proton
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

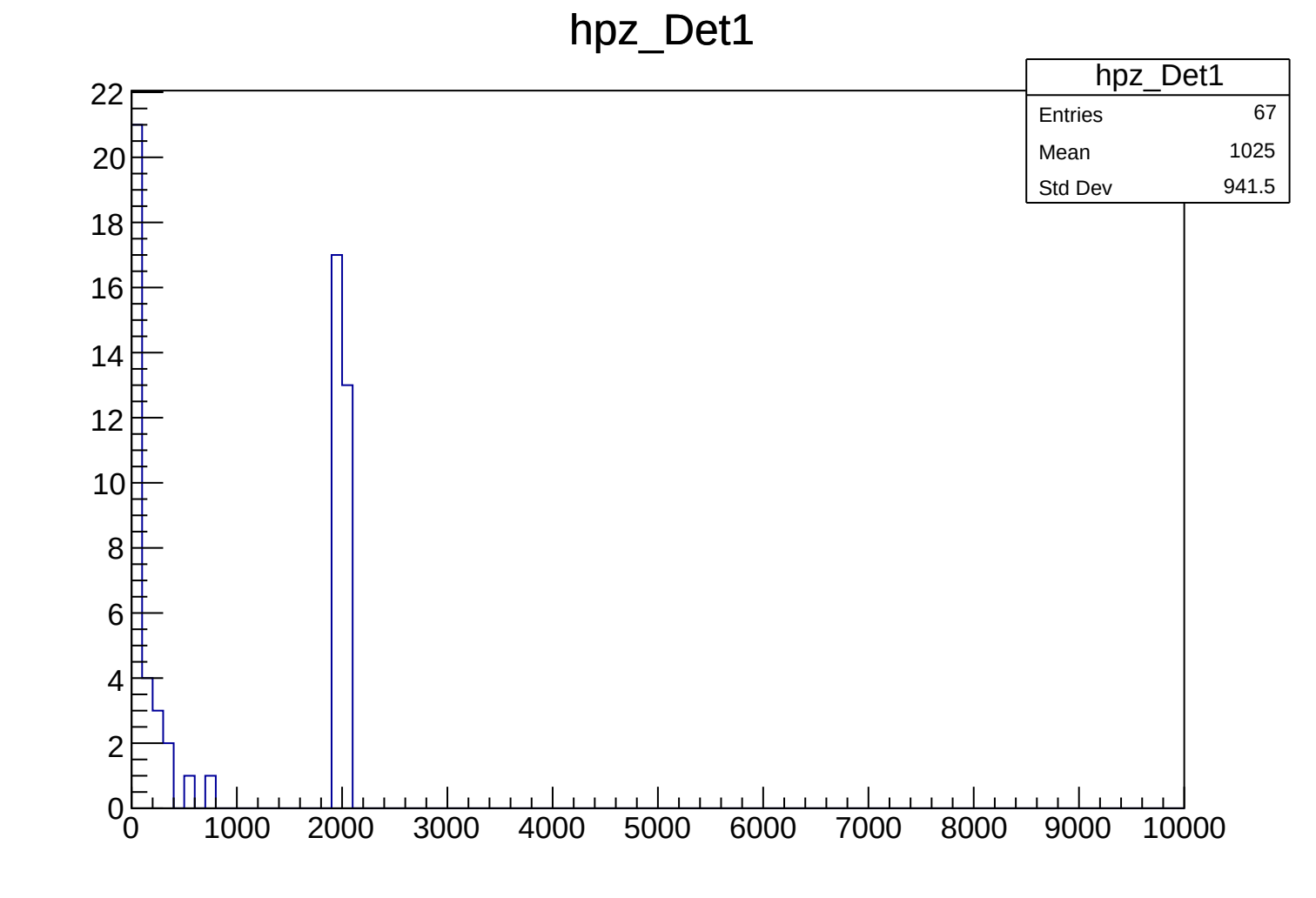

hE_Det1
hE_Det1
Entries 67
Mean 4076
Std Dev 3931
16
14
12
10
8
6
4
2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

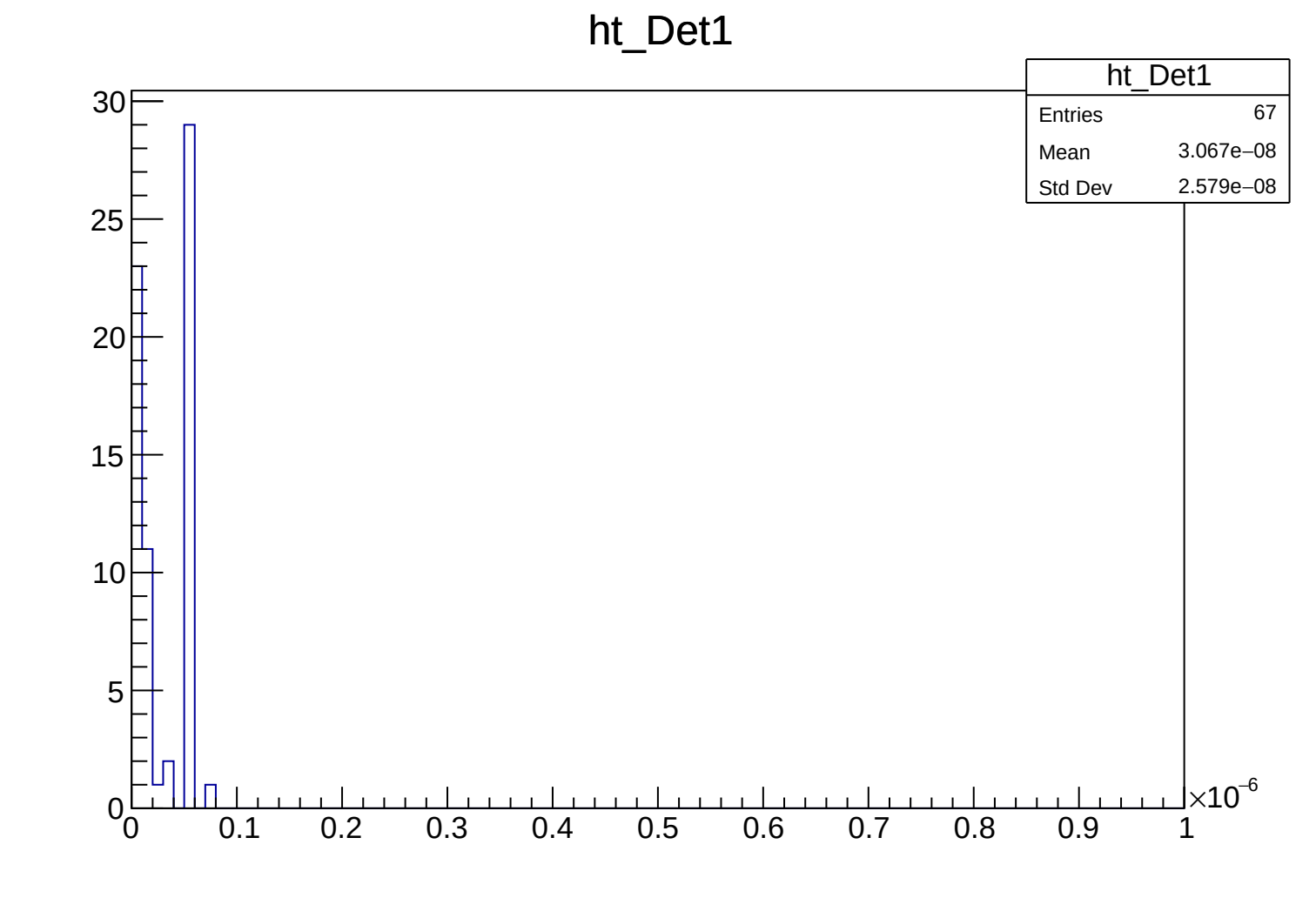

hx_Det1
hx_Det1
Entries 67
Mean 0.6827
Std Dev 26.3
10
8
6
4
2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

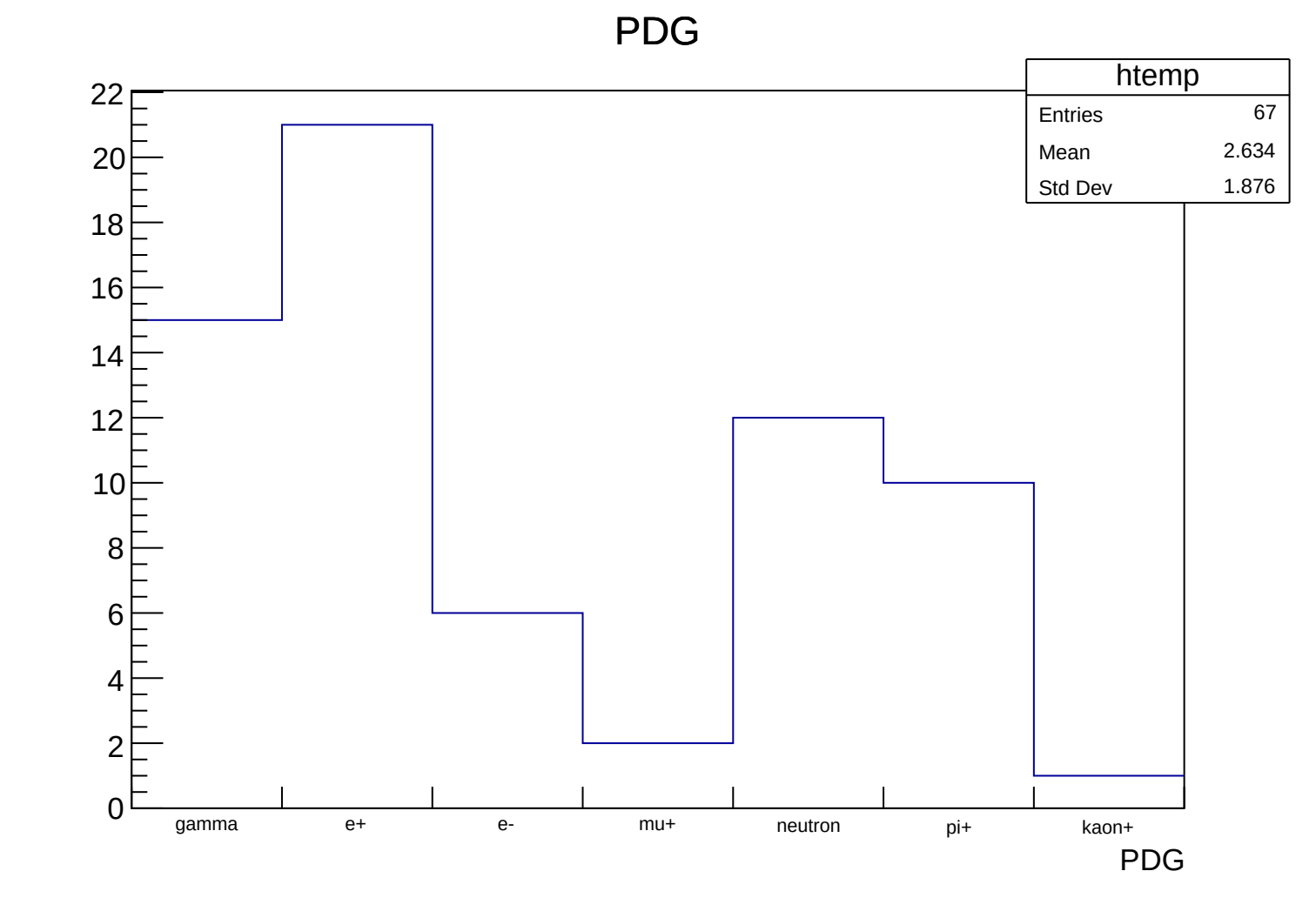

hy_Det1
hy_Det1
Entries 67
Mean −0.1933
Std Dev 14.93
25
20
15
10
5
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

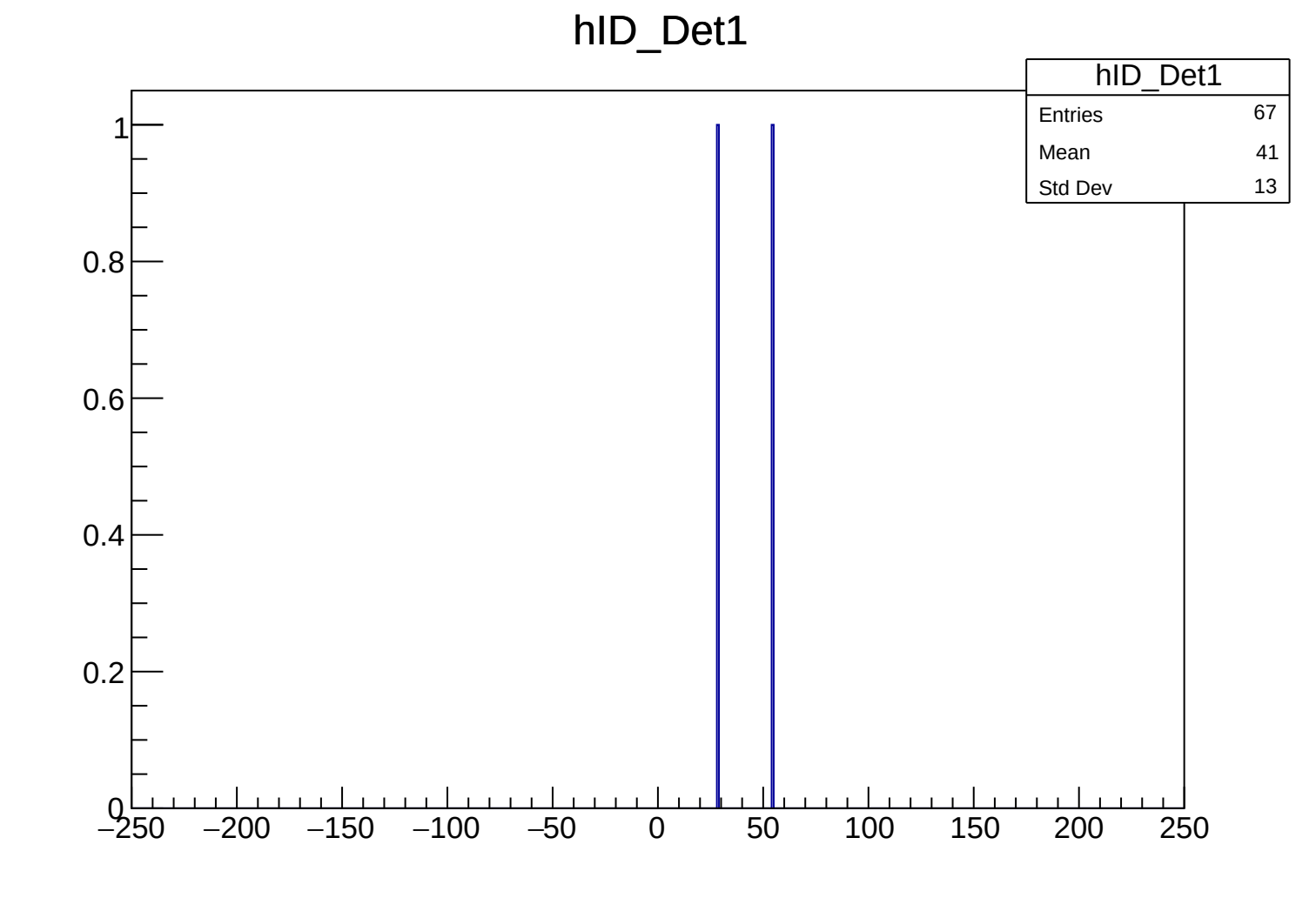

hpx_Det1
hpx_Det1
Entries 67
Mean 3858
Std Dev 3901
16
14
12
10
8
6
4
2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

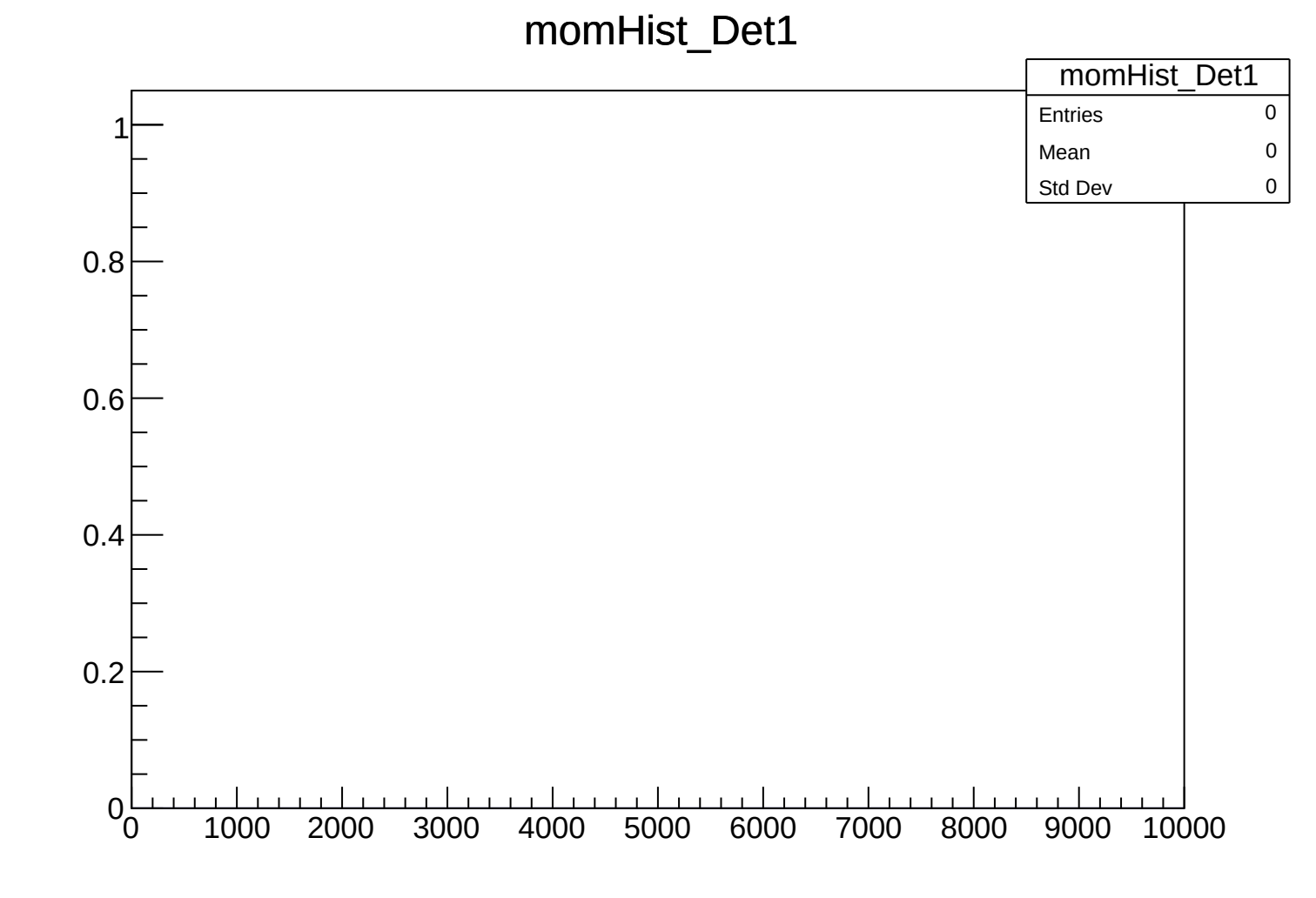

hpy_Det1
hpy_Det1
Entries 67
Mean 17.33
Std Dev 36.26
30
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

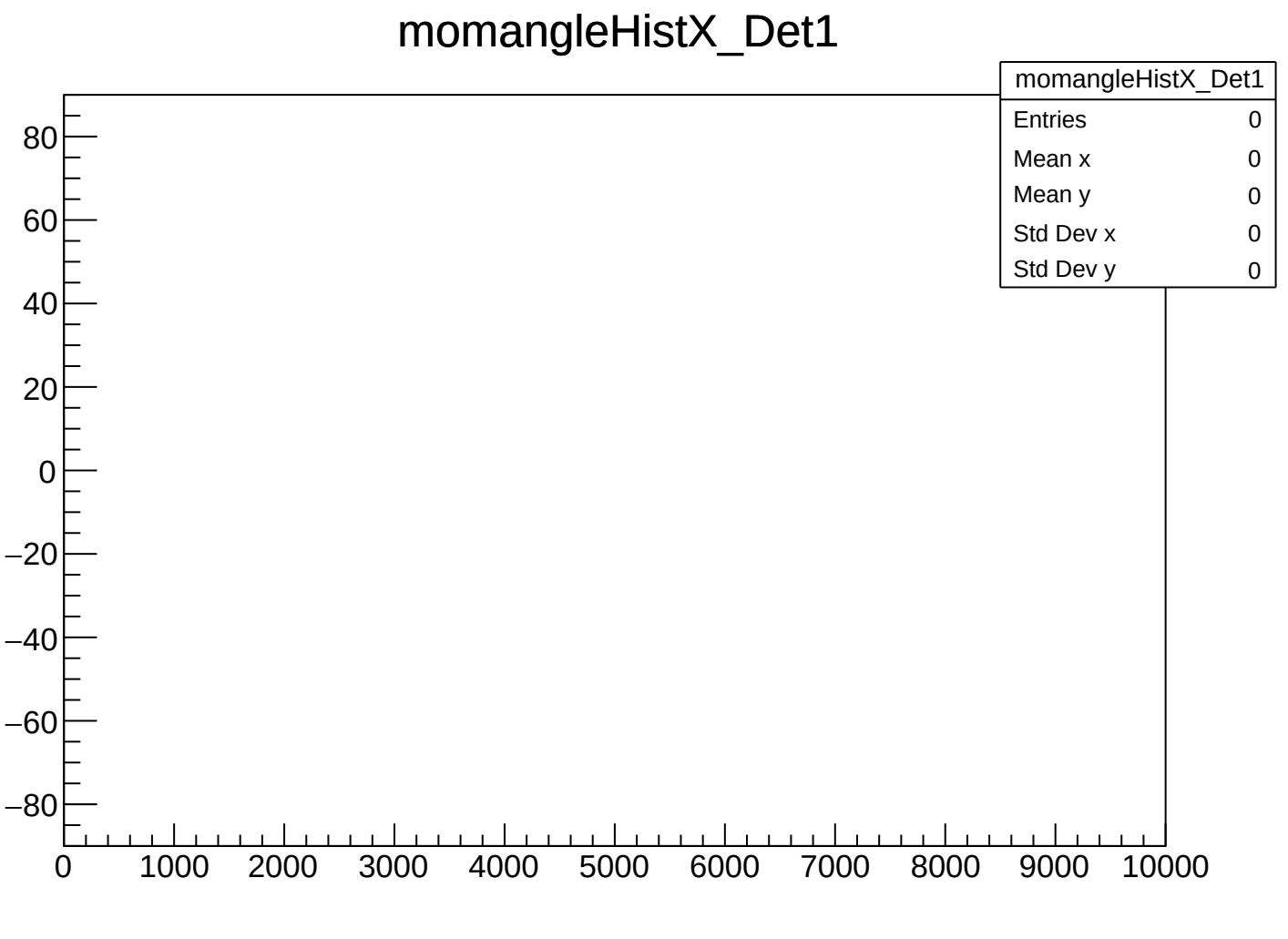

hpz_Det1
hpz_Det1
Entries 67
Mean 1025
Std Dev 941.5
22
20
18
16
14
12
10
8
6
4
2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

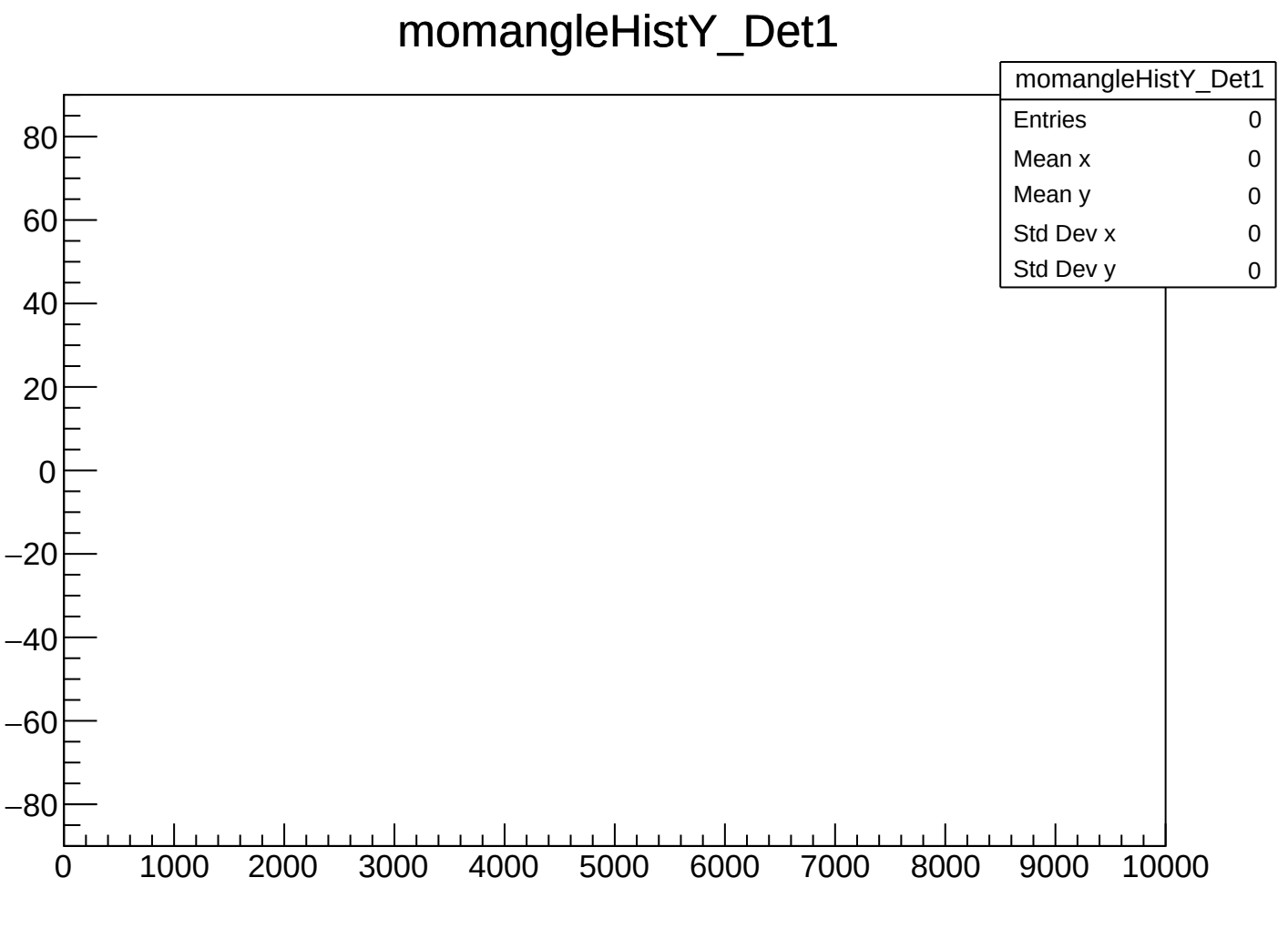

ht_Det1
ht_Det1
Entries 67
Mean 3.067e−08
Std Dev 2.579e−08
30
25
20
15
10
5
0
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
×10−6

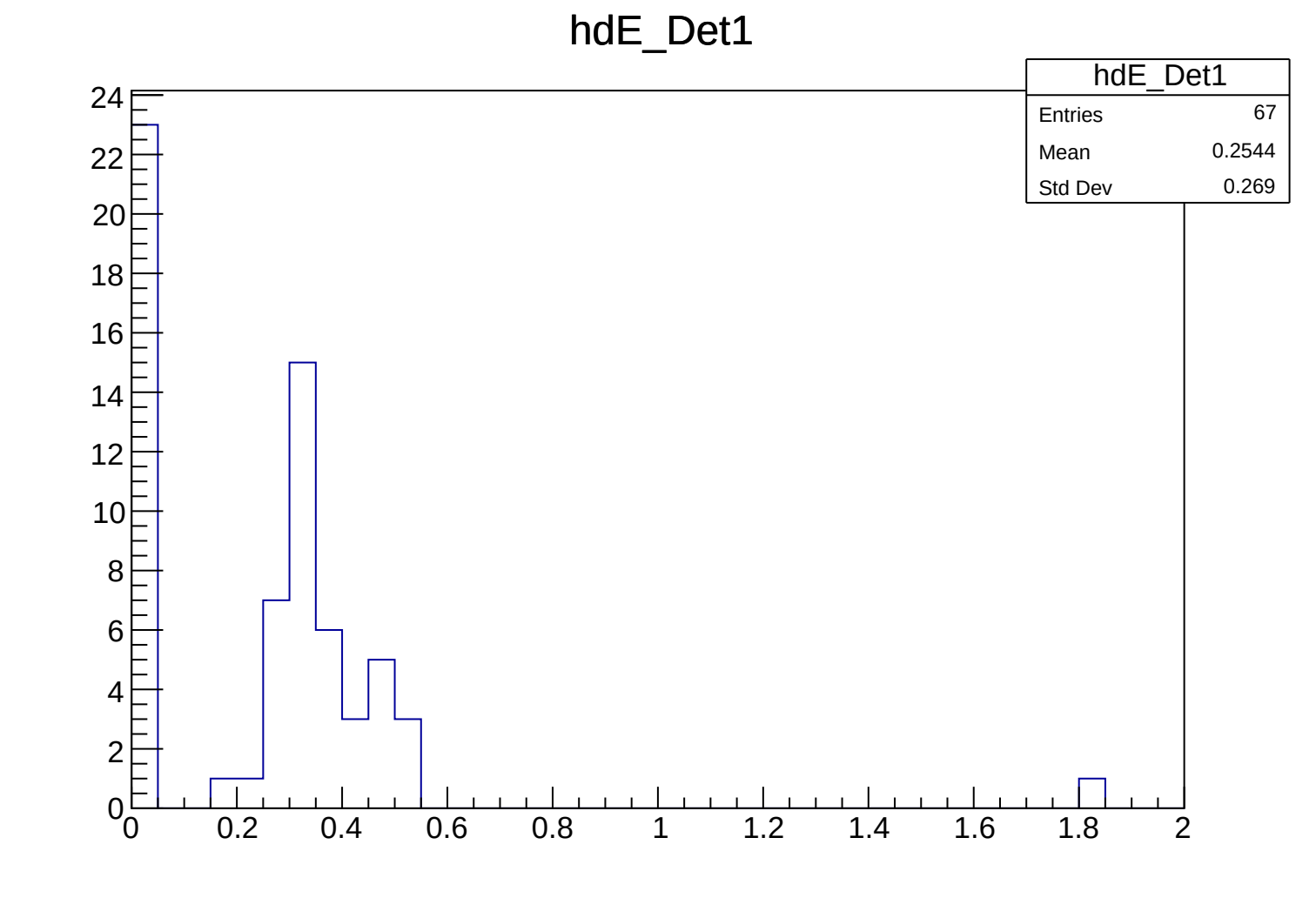

PDG
htemp
Entries 67
Mean 2.634
Std Dev 1.876
22
20
18
16
14
12
10
8
6
4
2
0
gamma
e+
e-
mu+
neutron
pi+
kaon+
PDG

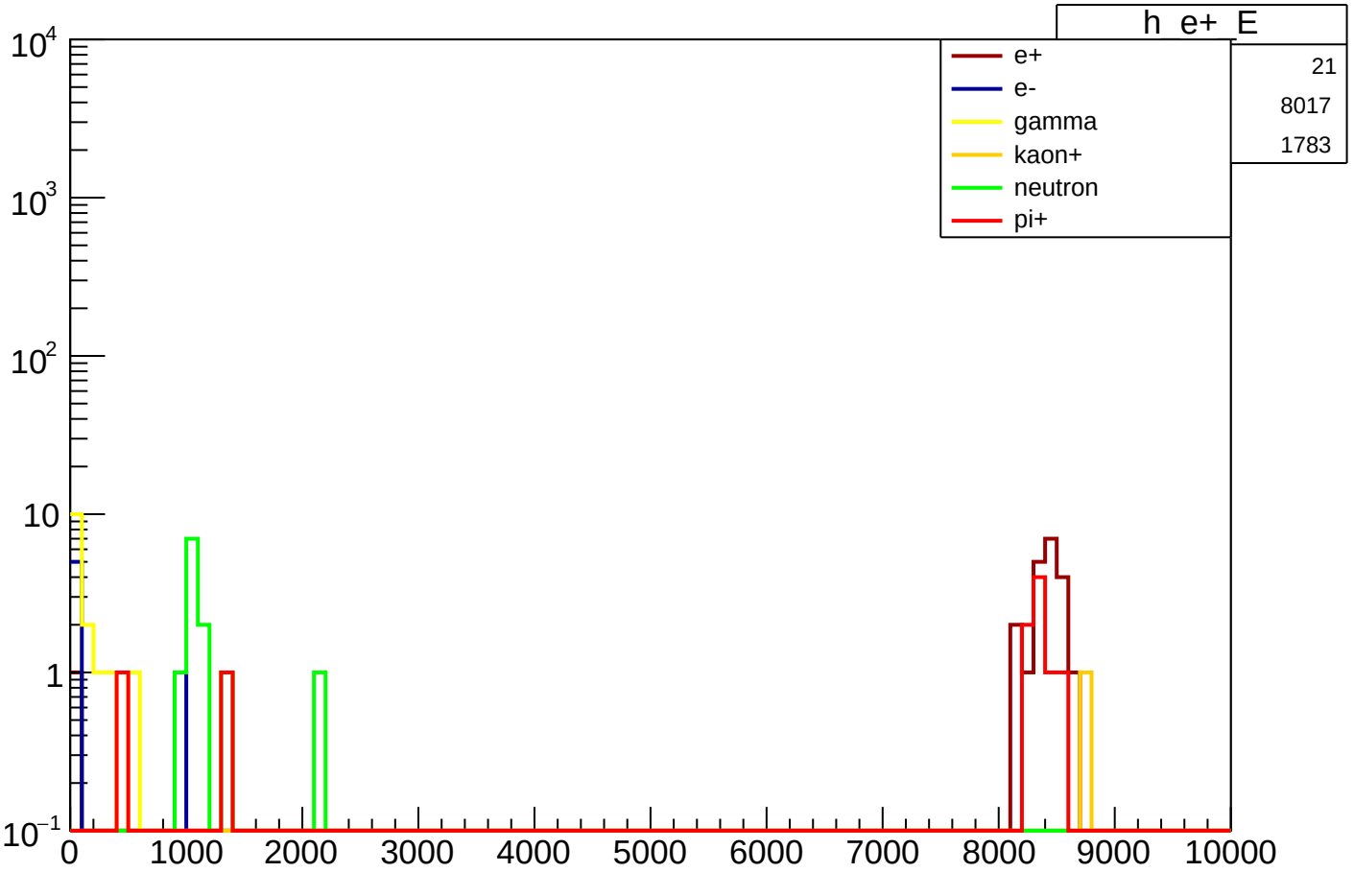

hID_Det1
hID_Det1
Entries 67
Mean 41
Std Dev 13
1
0.8
0.6
0.4
0.2
0
−250
−200
−150
−100
−50
0
50
100
150
200
250

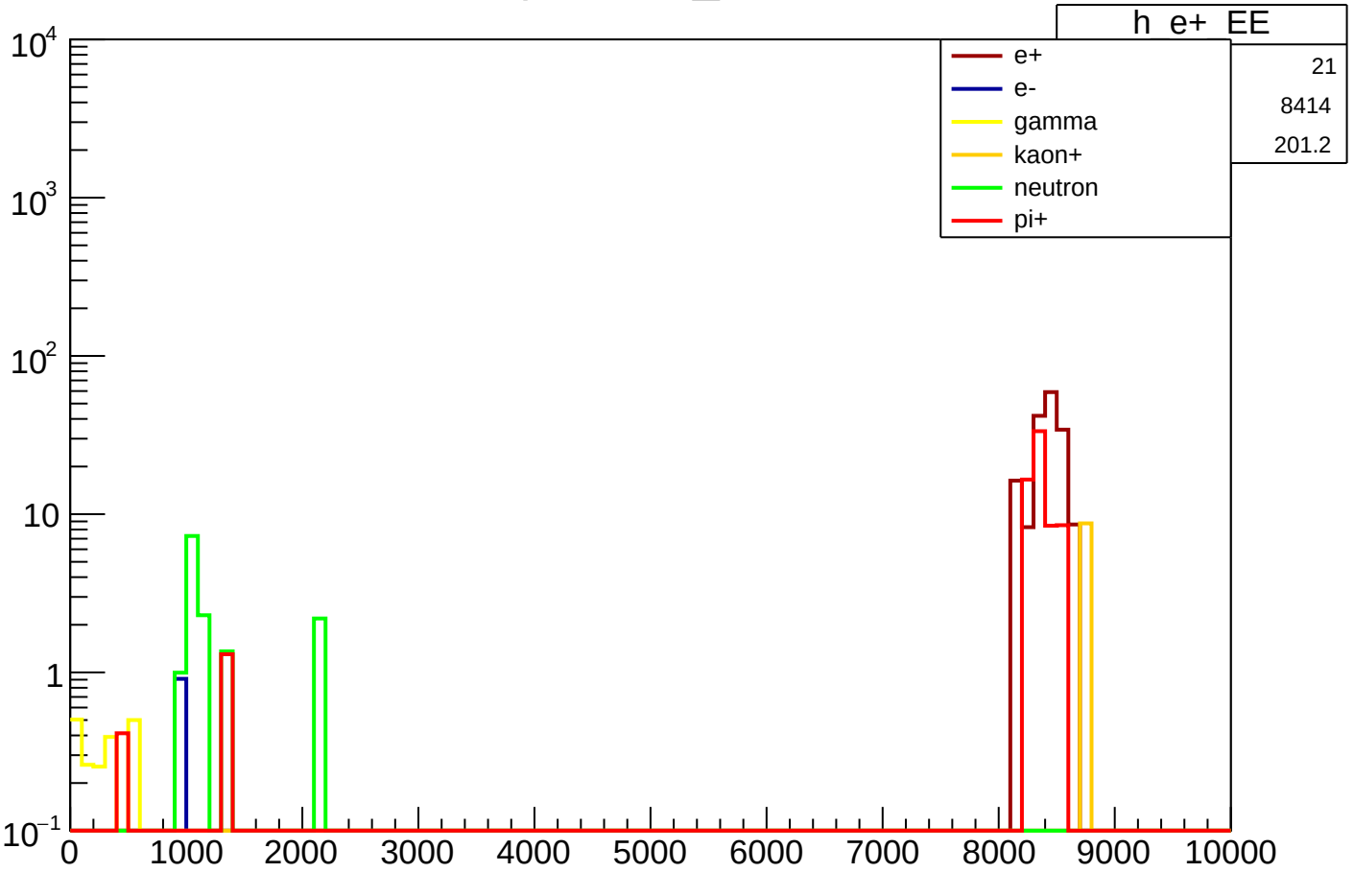

momHist_Det1
momHist_Det1
Entries 0
Mean 0
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

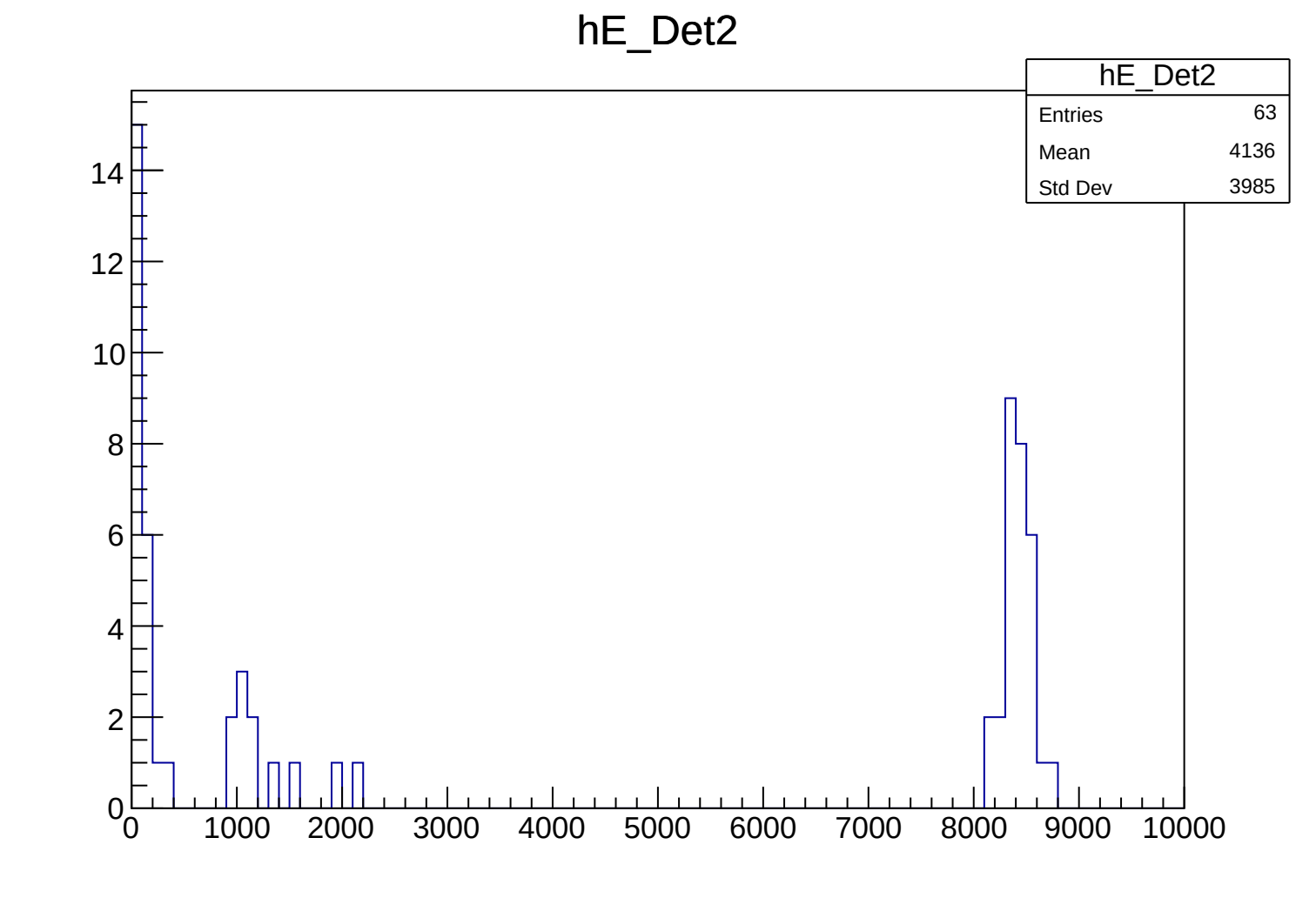

momangleHistX_Det1
momangleHistX_Det1
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
80
60
40
20
0
–20
–40
–60
–80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

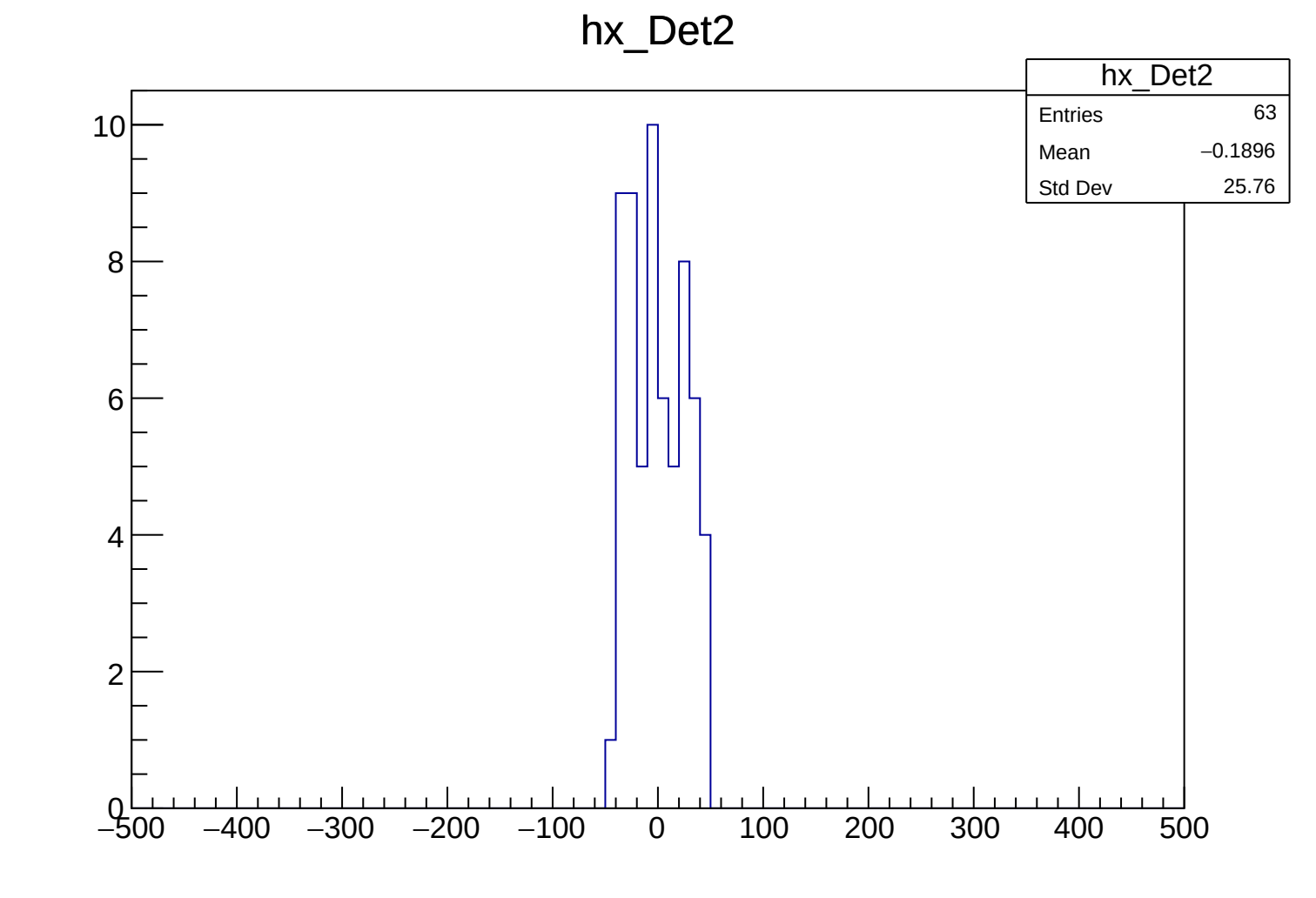

momangleHistY_Det1
momangleHistY_Det1
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
80
60
40
20
0
–20
–40
–60
–80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

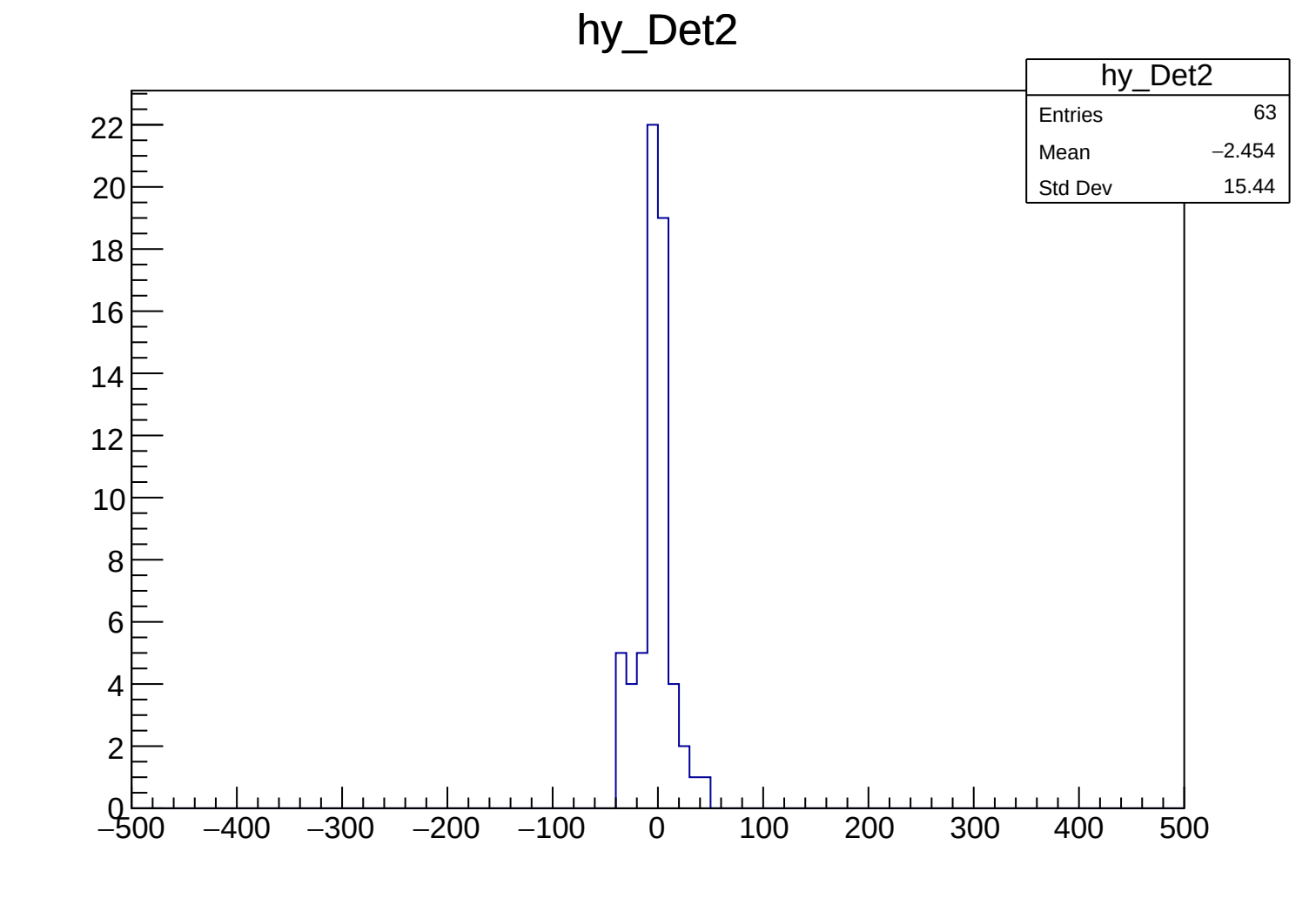

hdE_Det1
hdE_Det1
Entries 67
Mean 0.2544
Std Dev 0.269
24
22
20
18
16
14
12
10
8
6
4
2
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2

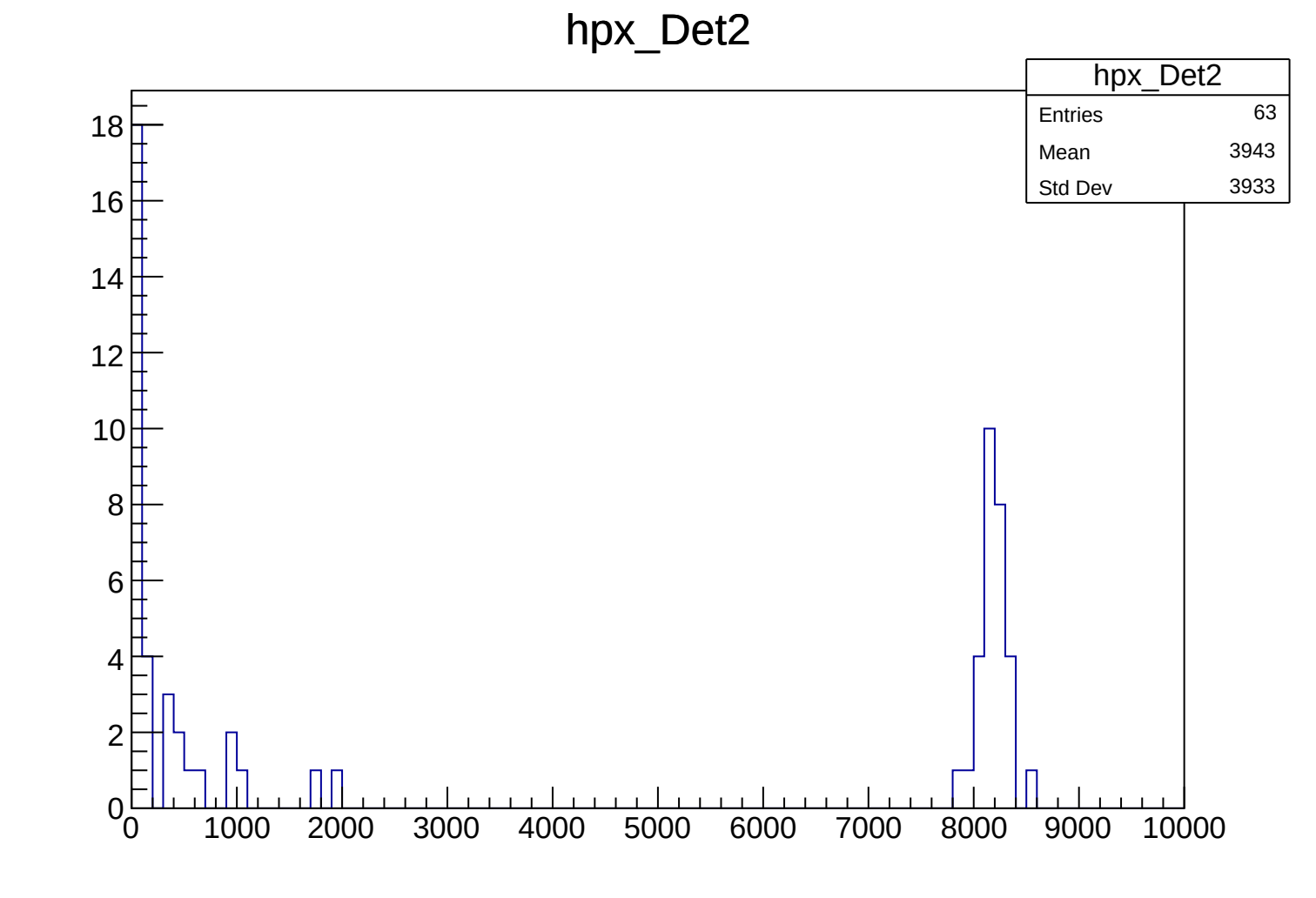

Energy_Det1
h e+ E
21
8017
1783
e+
e-
gamma
kaon+
neutron
pi+
10^4
10^3
10^2
10
1
10^{-1}
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

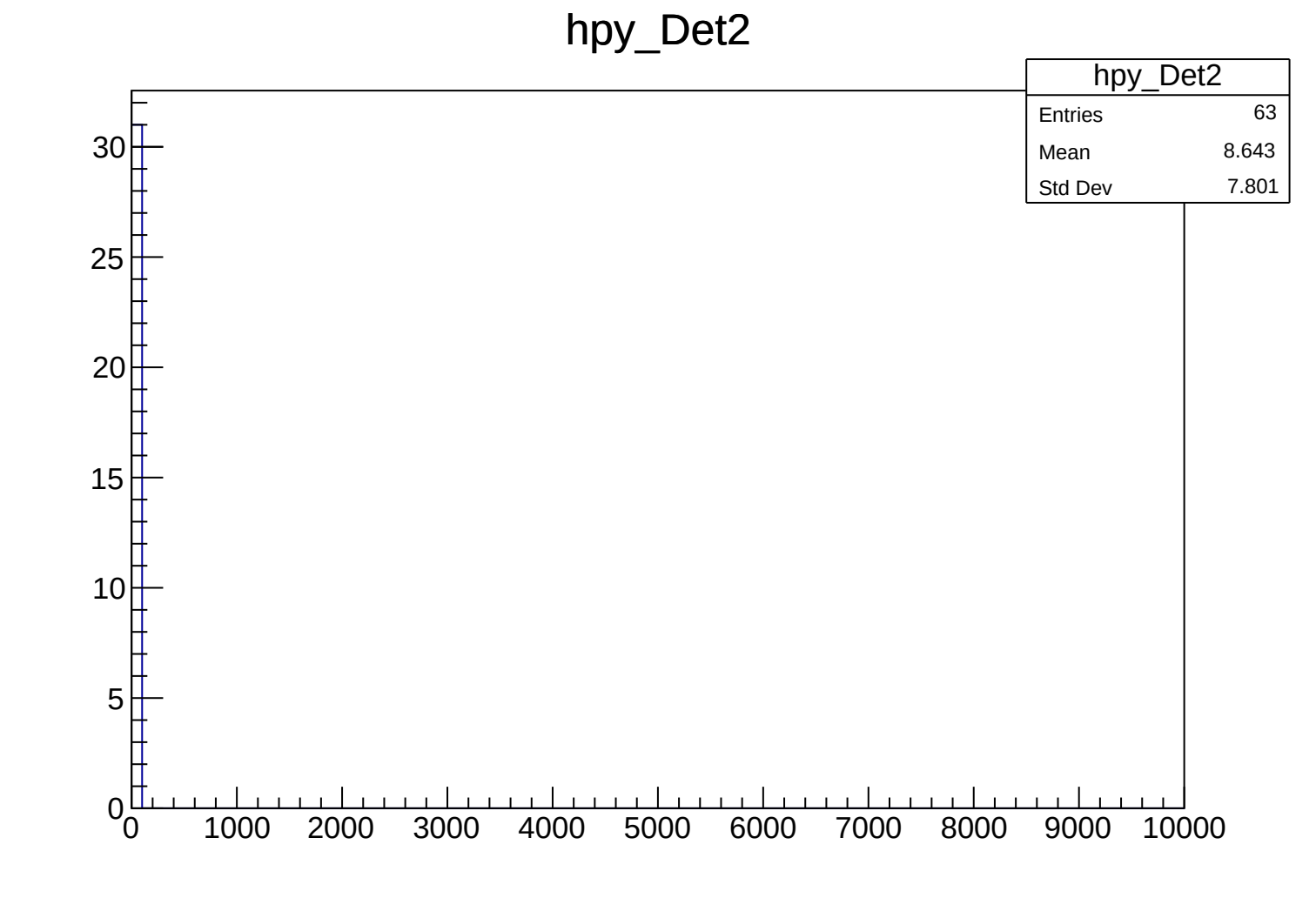

Spectrum_Det1
h_e+_EE
21
8414
201.2
e+
e-
gamma
kaon+
neutron
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

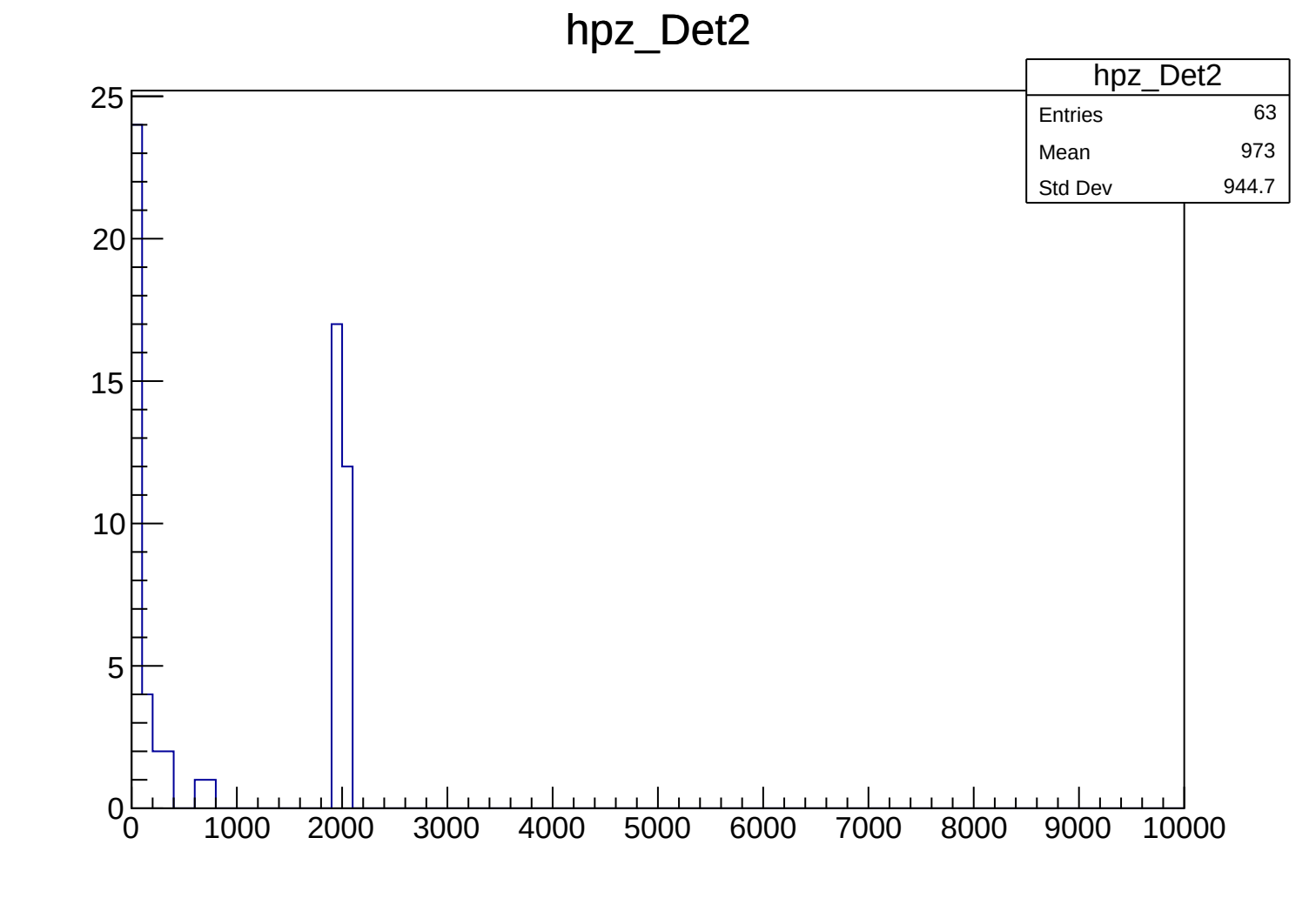

hE_Det2
hE_Det2
Entries 63
Mean 4136
Std Dev 3985
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

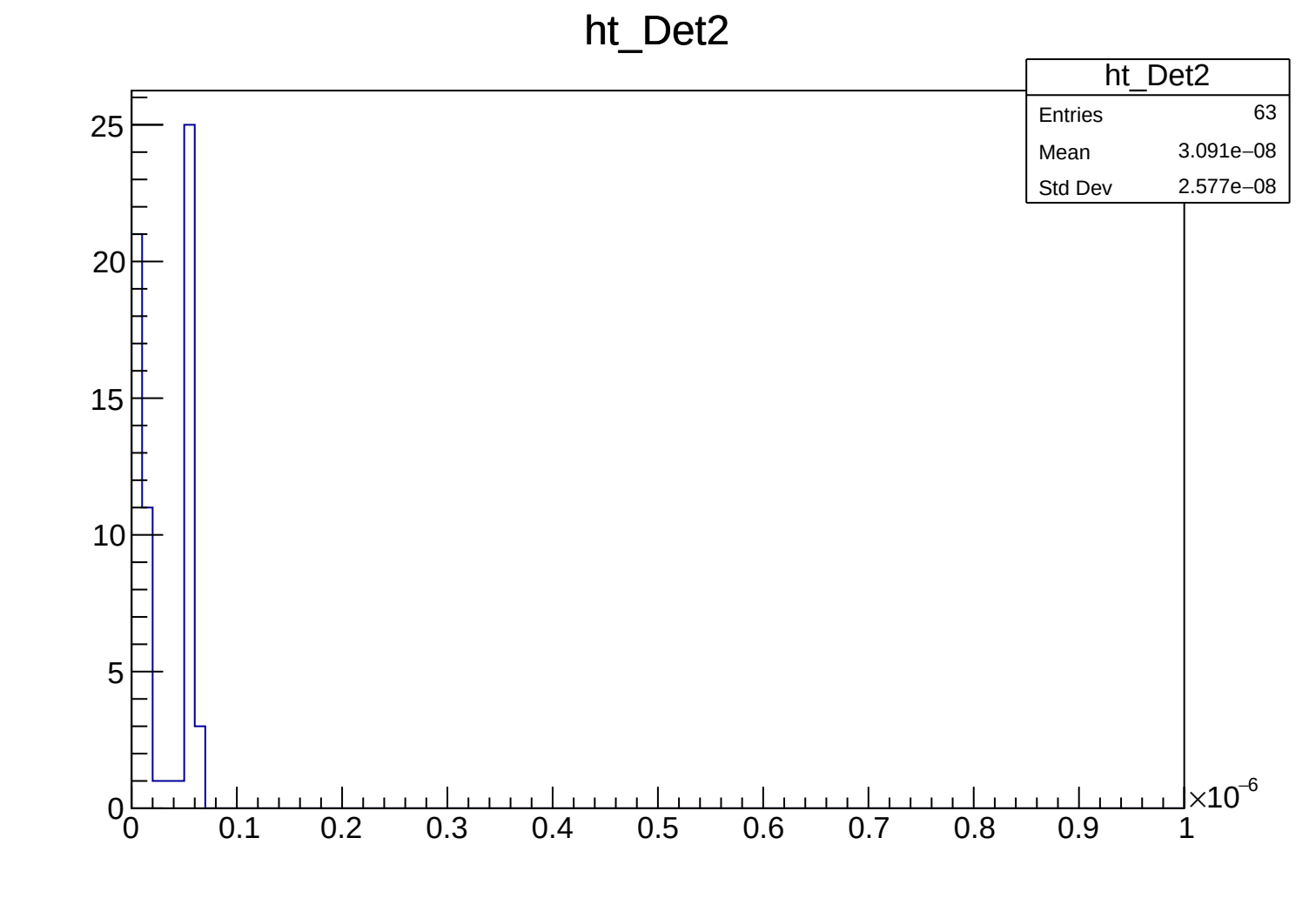

hx_Det2
hx_Det2
Entries 63
Mean −0.1896
Std Dev 25.76
10
8
6
4
2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

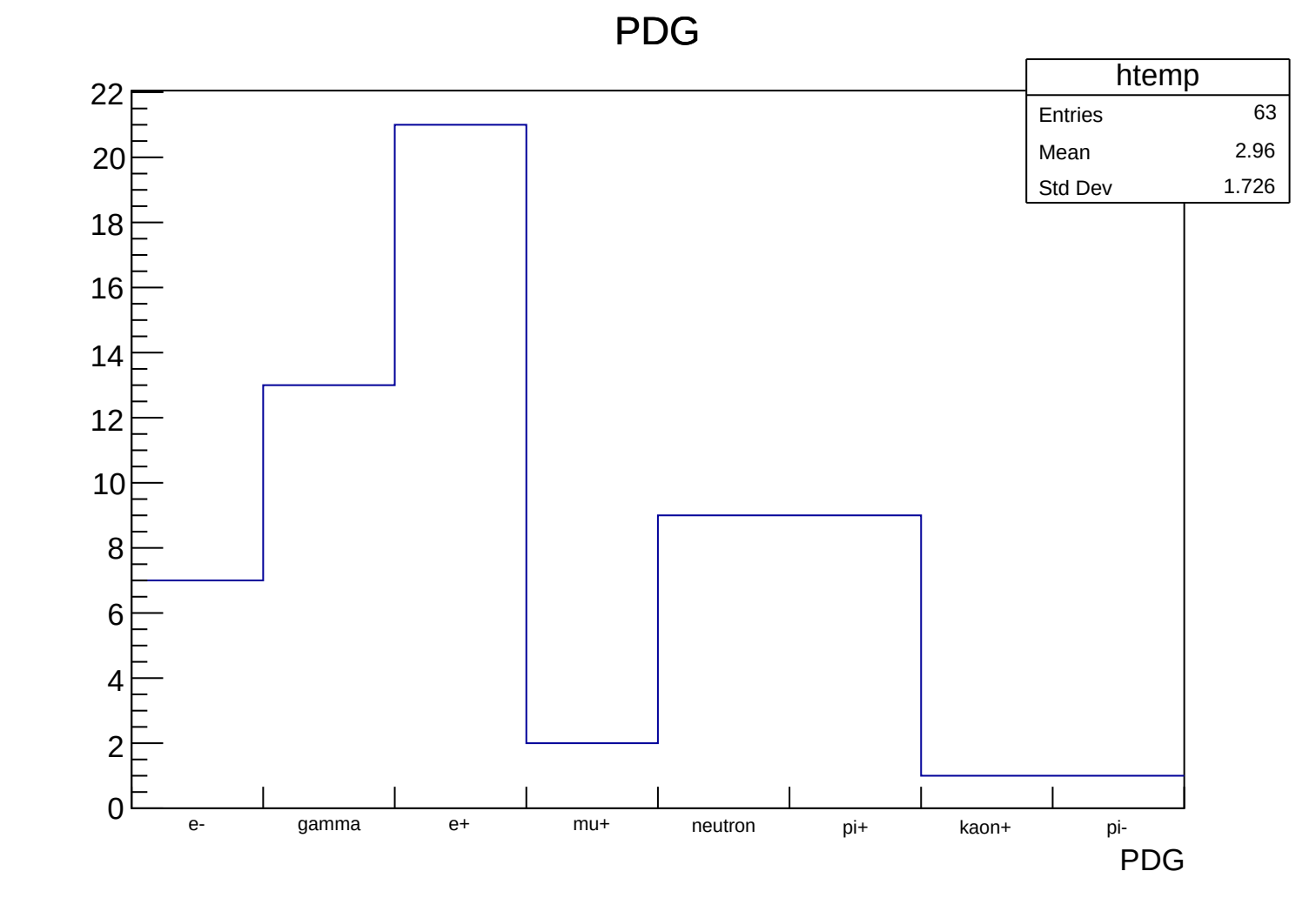

hy_Det2
hy_Det2
Entries 63
Mean −2.454
Std Dev 15.44
22
20
18
16
14
12
10
8
6
4
2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

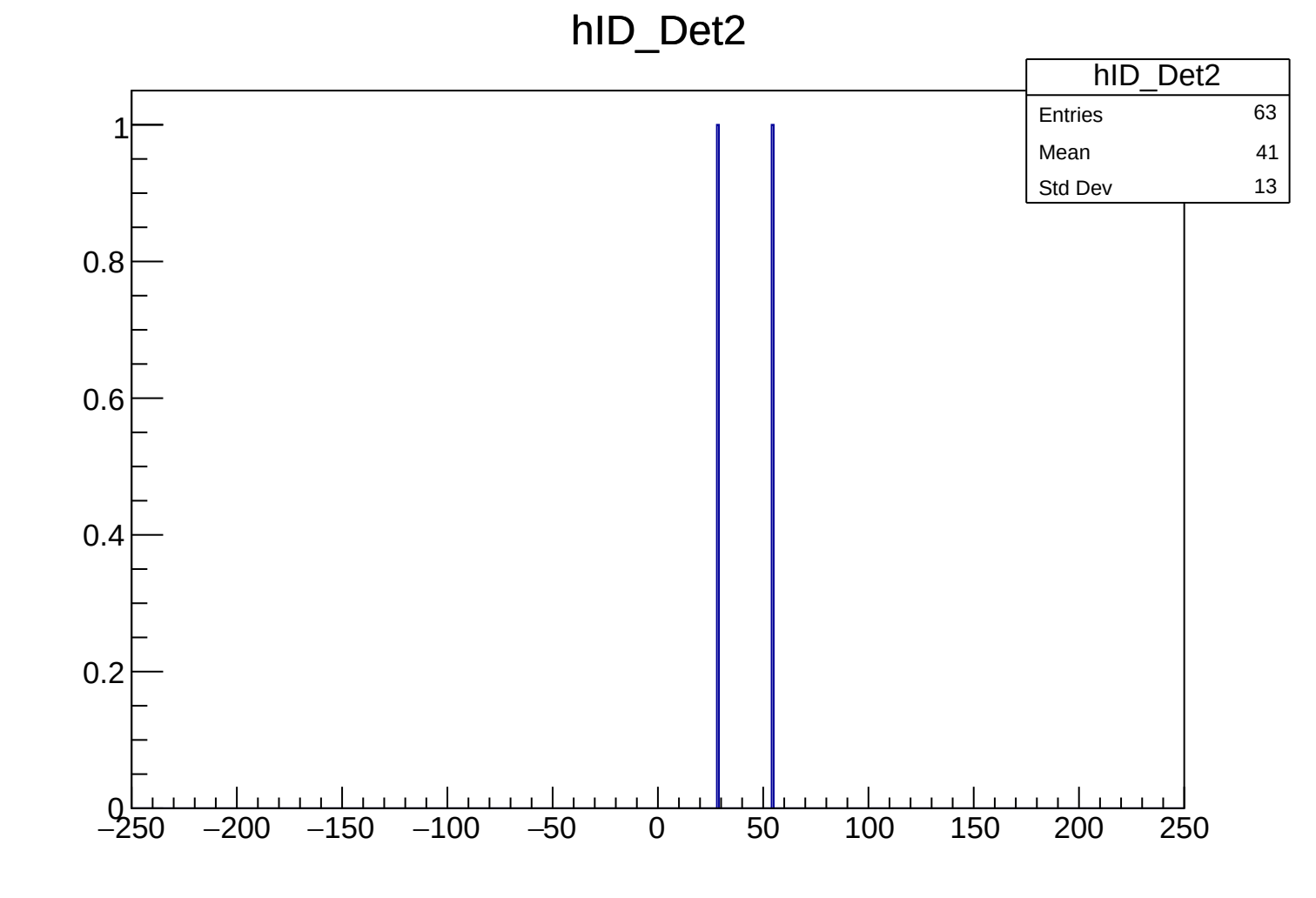

hpx_Det2
hpx_Det2
Entries 63
Mean 3943
Std Dev 3933
0
2
4
6
8
10
12
14
16
18
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

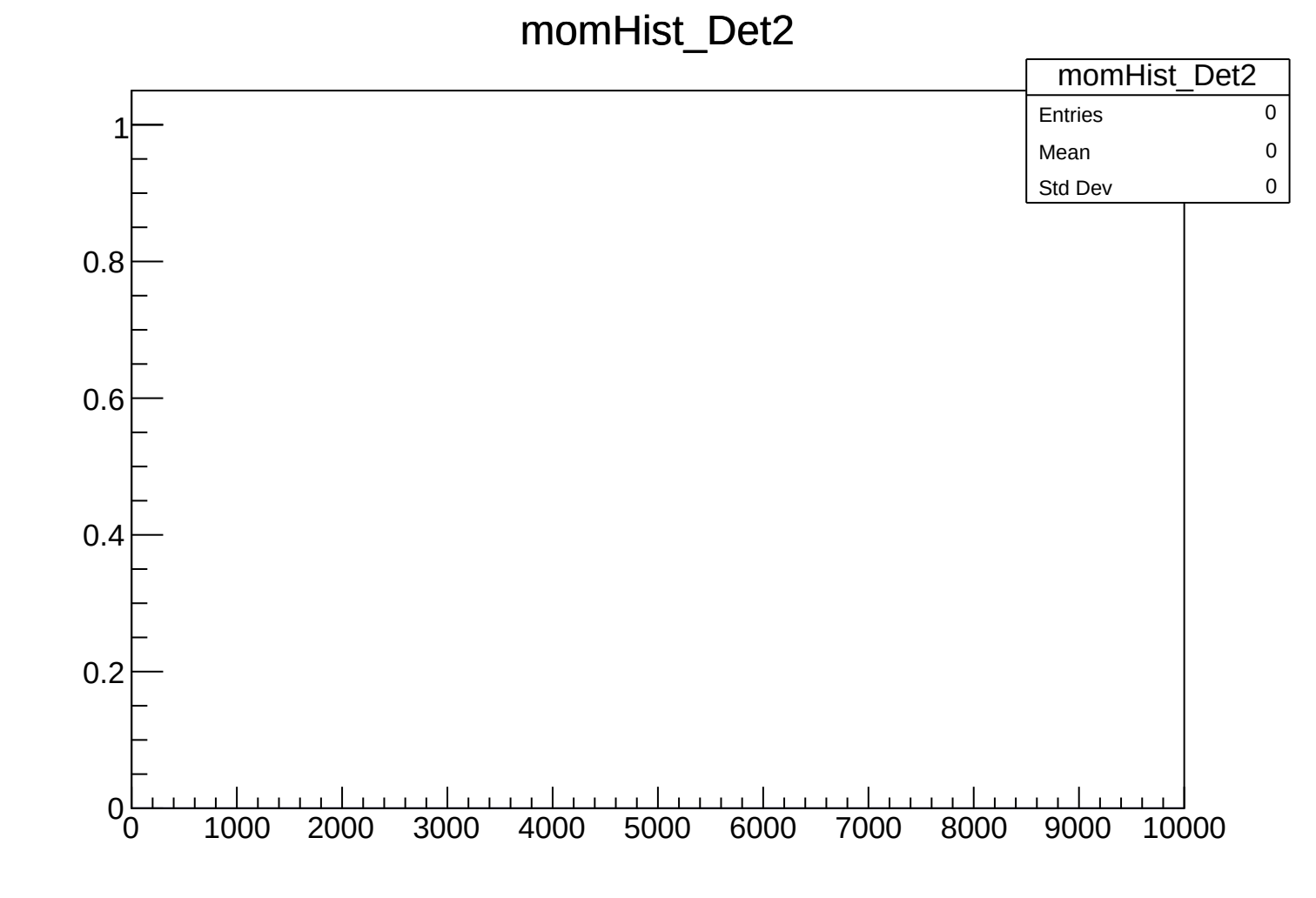

hpy_Det2
hpy_Det2
Entries 63
Mean 8.643
Std Dev 7.801
30
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

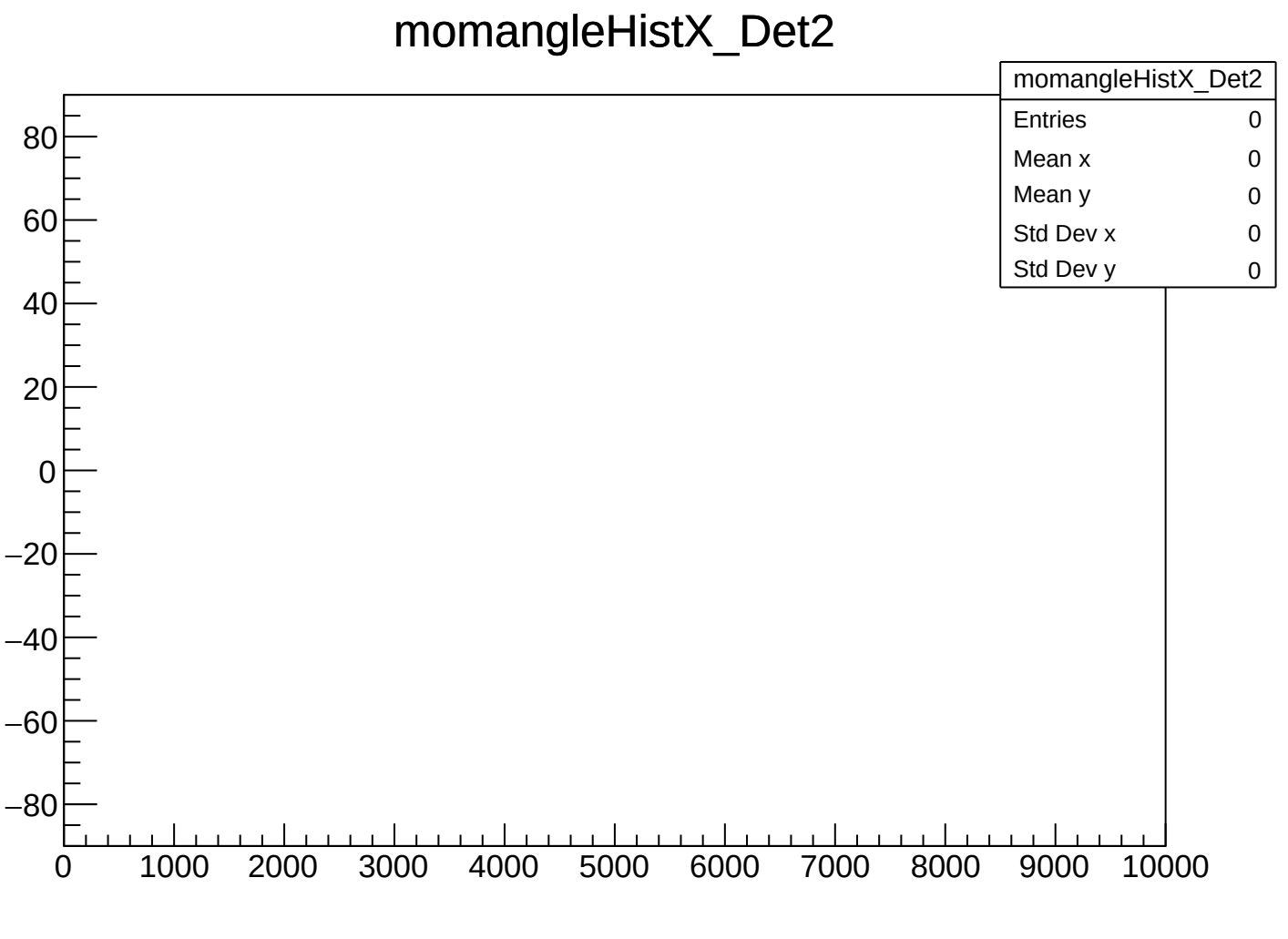

hpz_Det2
hpz_Det2
Entries 63
Mean 973
Std Dev 944.7
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

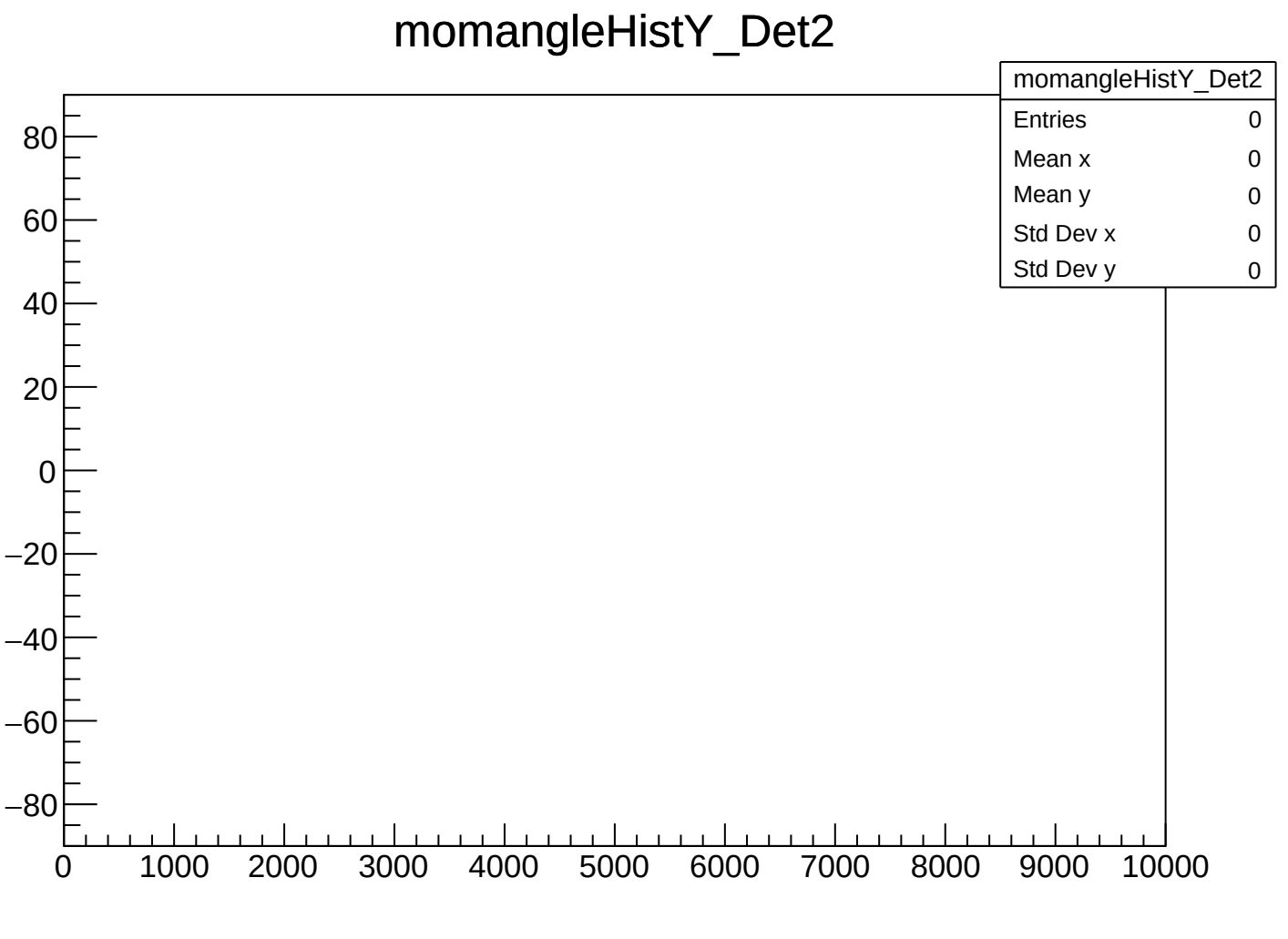

ht_Det2
ht_Det2
Entries 63
Mean 3.091e−08
Std Dev 2.577e−08
25
20
15
10
5
0
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
×10−6

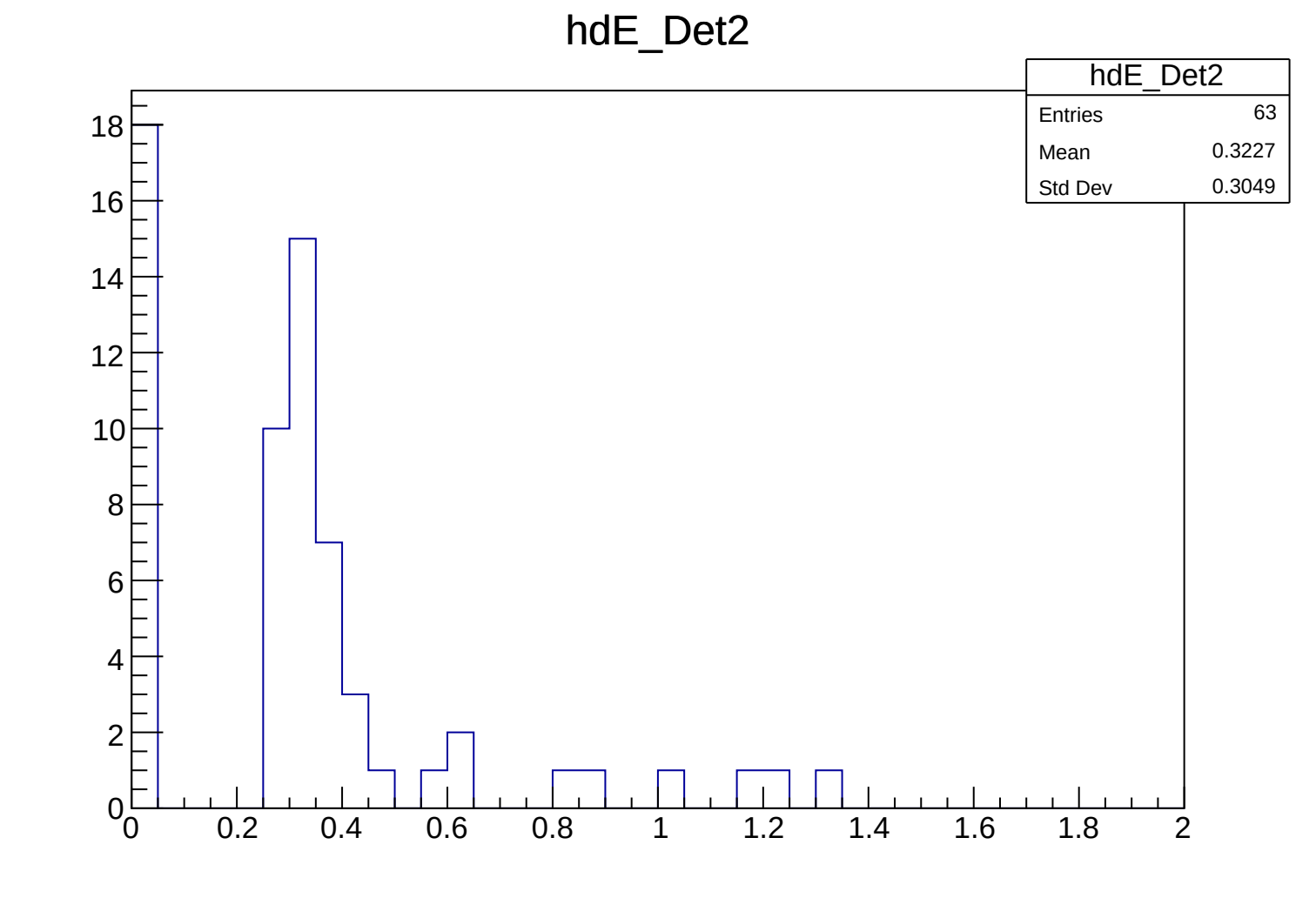

PDG
htemp
Entries 63
Mean 2.96
Std Dev 1.726
22
20
18
16
14
12
10
8
6
4
2
0
e-
gamma
e+
mu+
neutron
pi+
kaon+
pi-
PDG

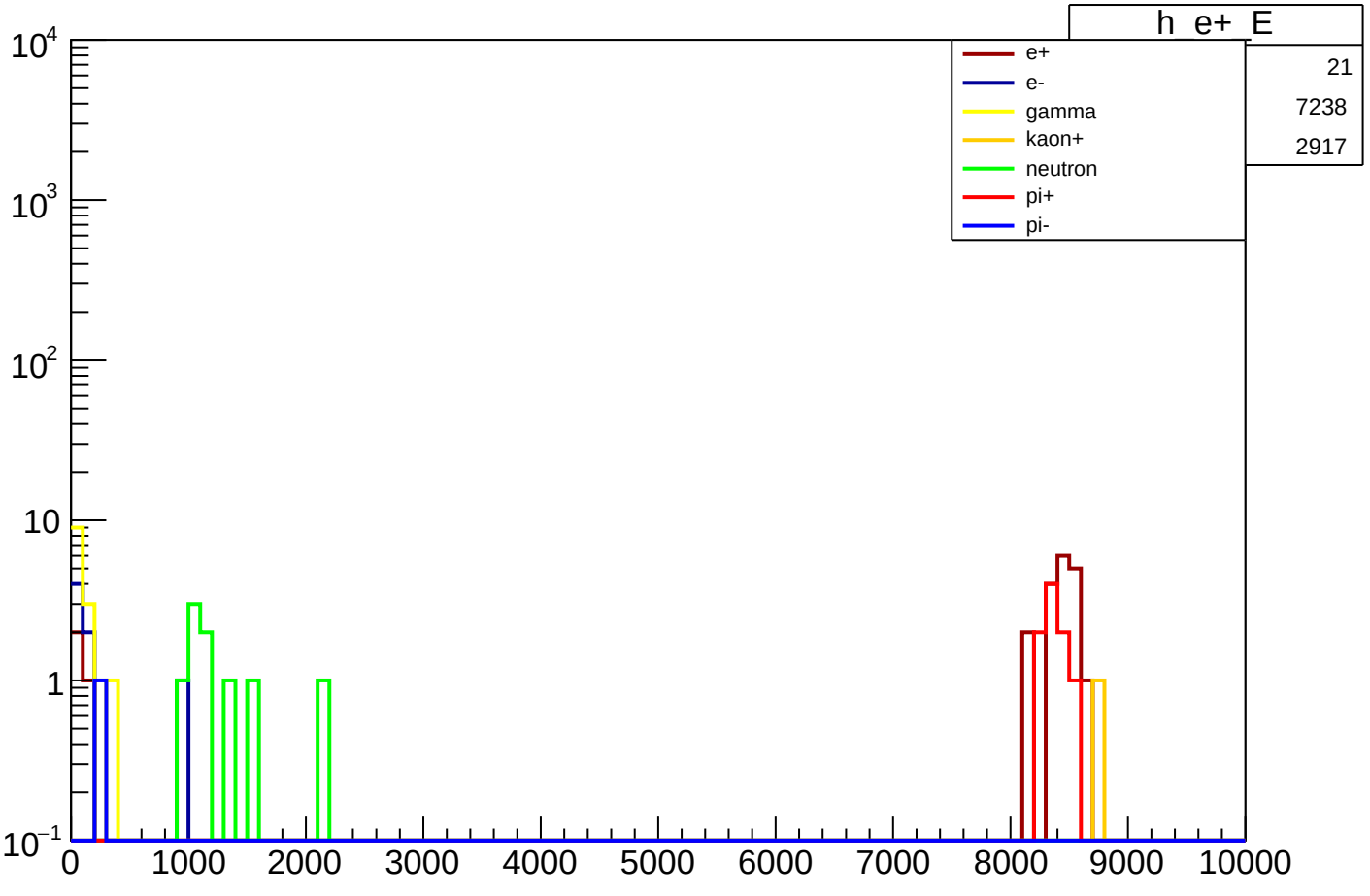

hID_Det2
hID_Det2
Entries 63
Mean 41
Std Dev 13
1
0.8
0.6
0.4
0.2
0
−250
−200
−150
−100
−50
0
50
100
150
200
250

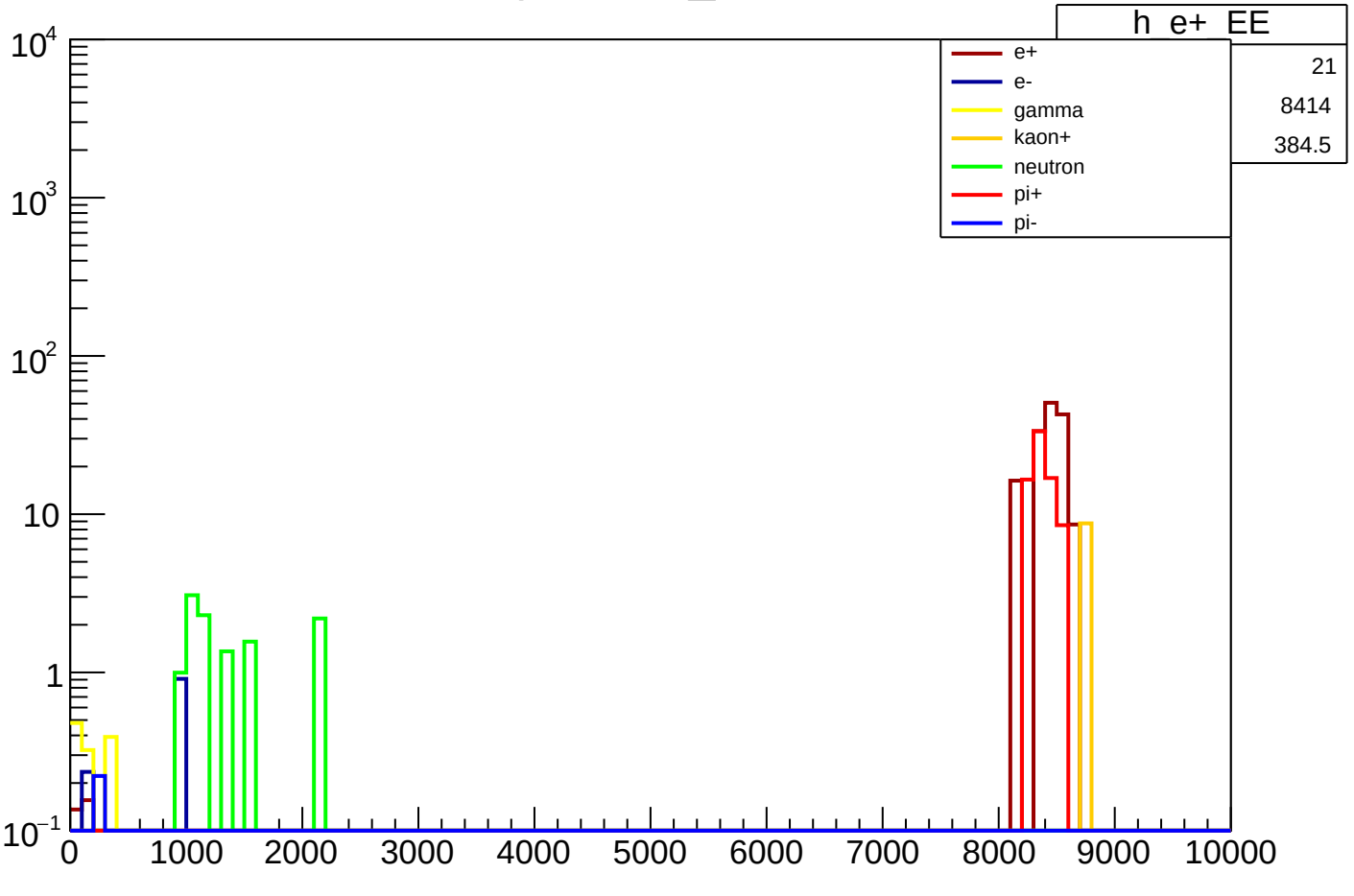

momHist_Det2
momHist_Det2
Entries 0
Mean 0
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

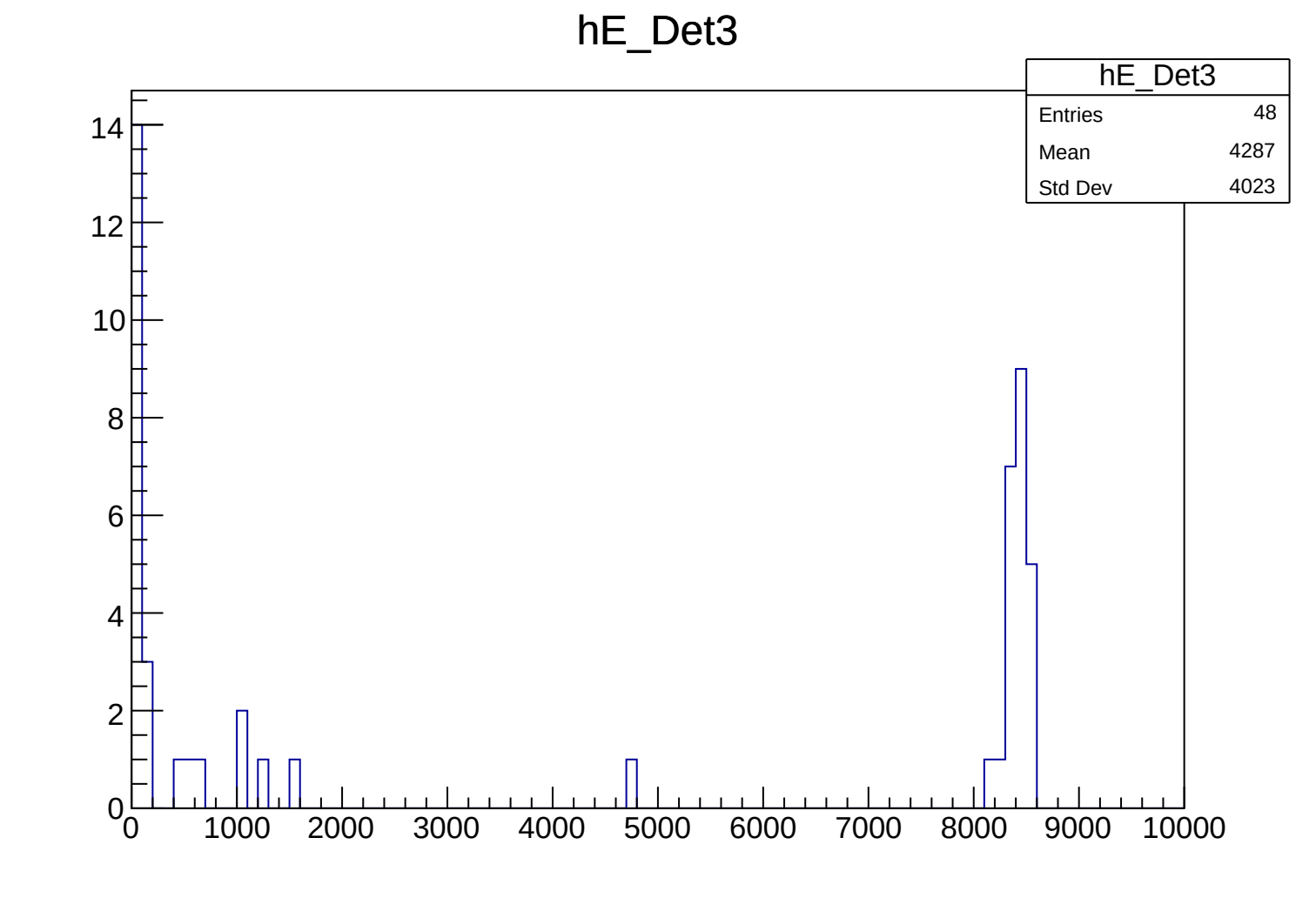

momangleHistX_Det2
momangleHistX_Det2
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
80
60
40
20
0
–20
–40
–60
–80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

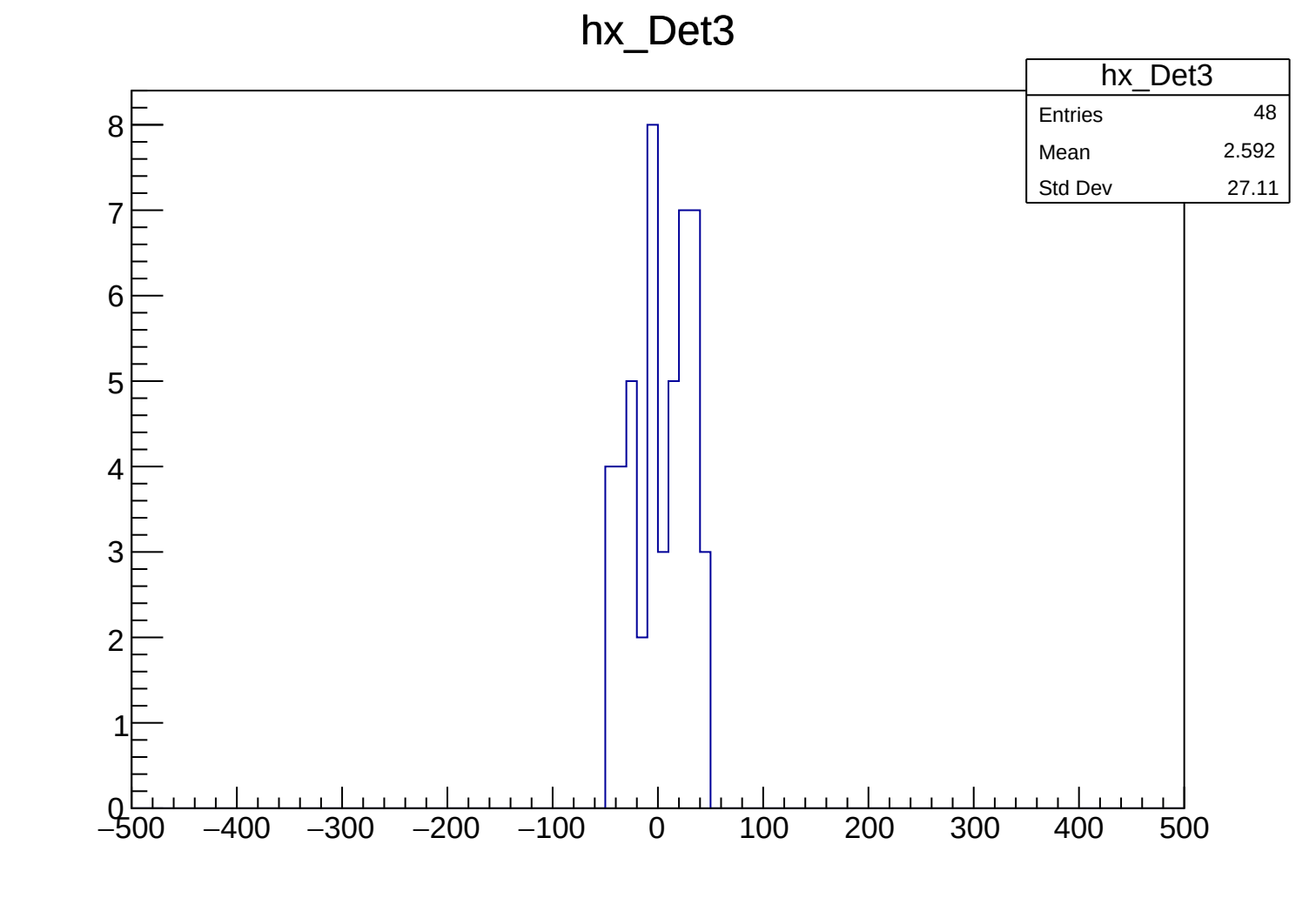

momangleHistY_Det2
momangleHistY_Det2
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

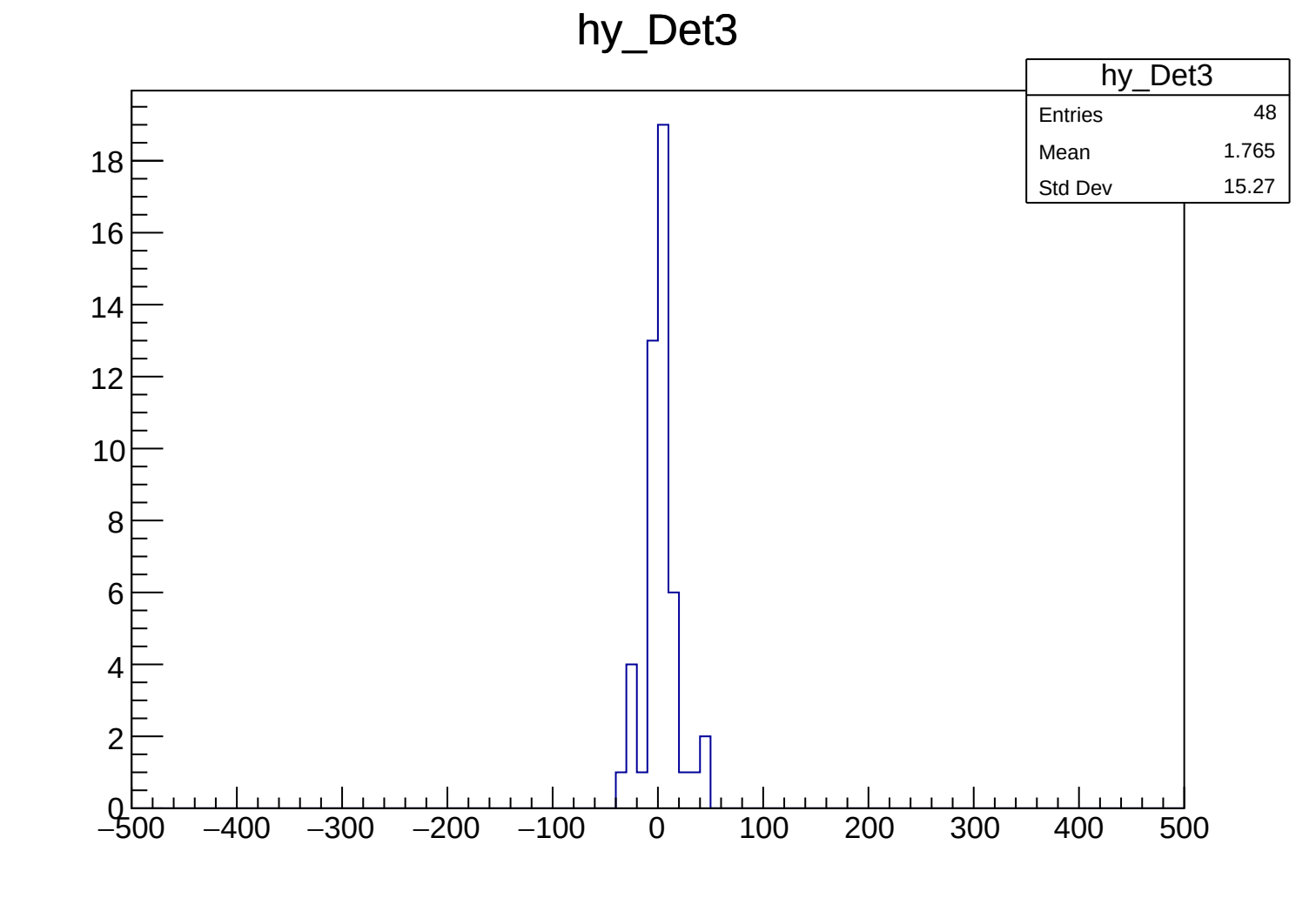

hdE_Det2
hdE_Det2
Entries 63
Mean 0.3227
Std Dev 0.3049
18
16
14
12
10
8
6
4
2
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2

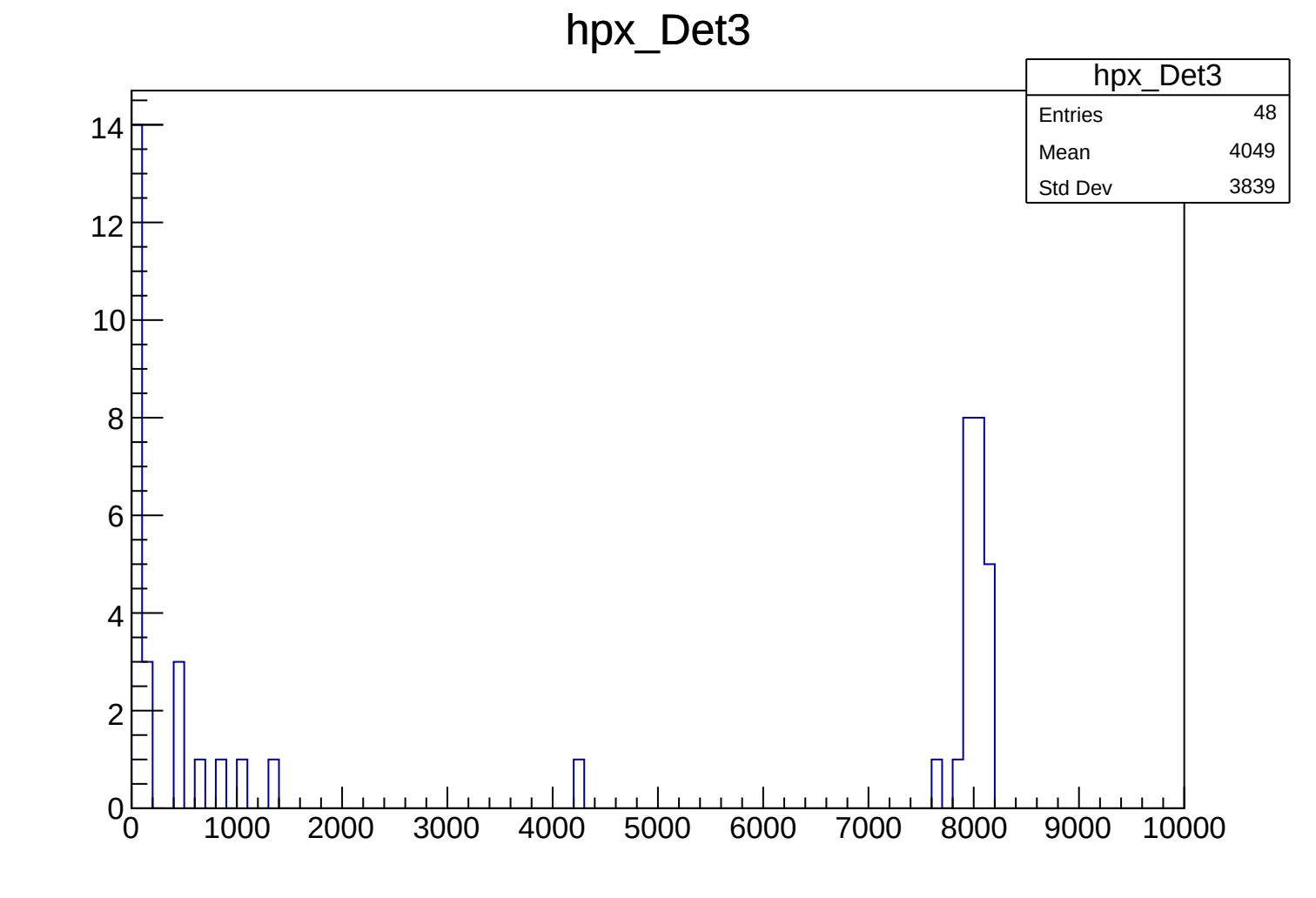

Energy_Det2
h e+ E
21
7238
2917
e+
e-
gamma
kaon+
neutron
pi+
pi-
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

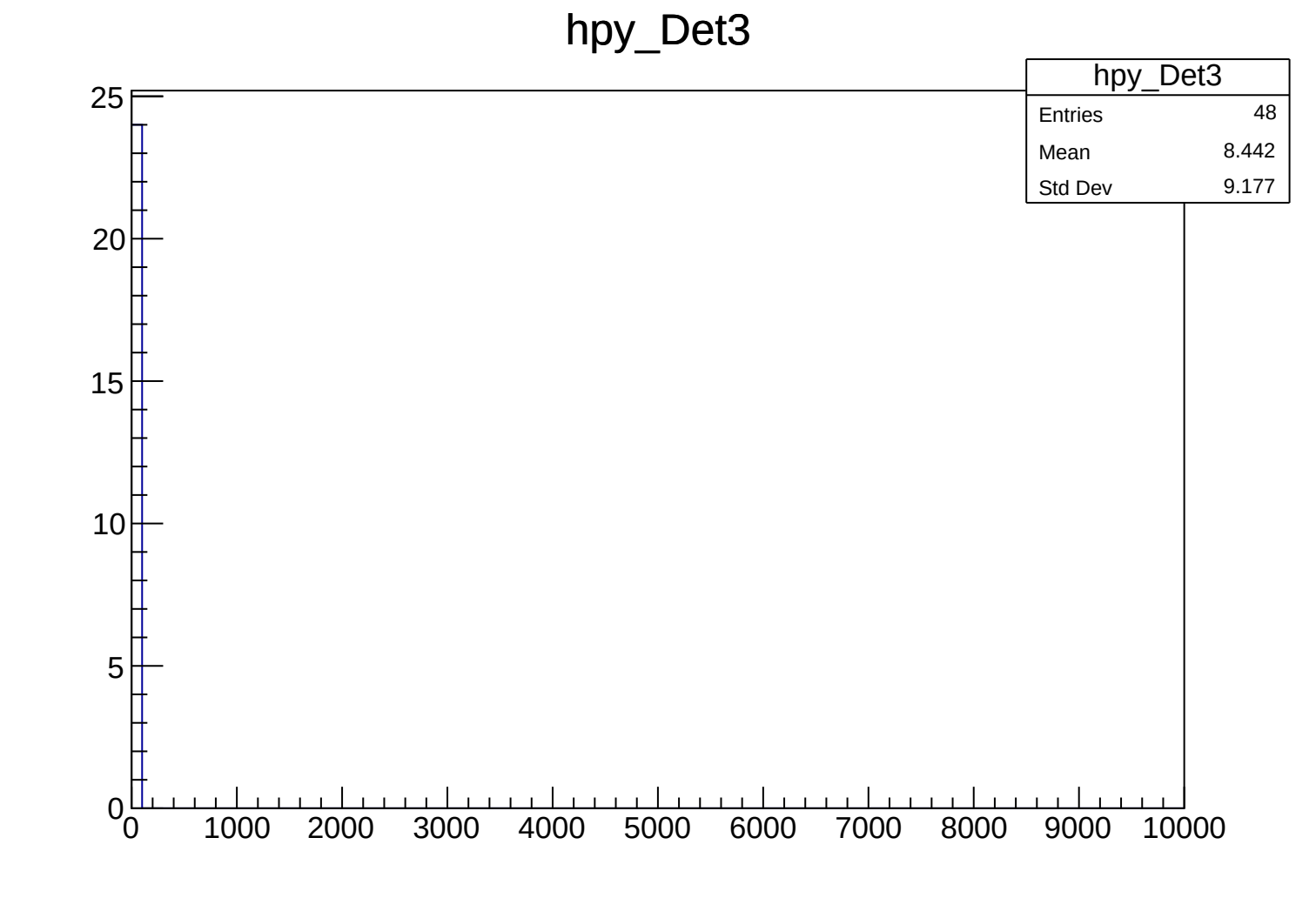

Spectrum_Det2
h_e+_EE
21
8414
384.5
e+
e-
gamma
kaon+
neutron
pi+
pi-
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

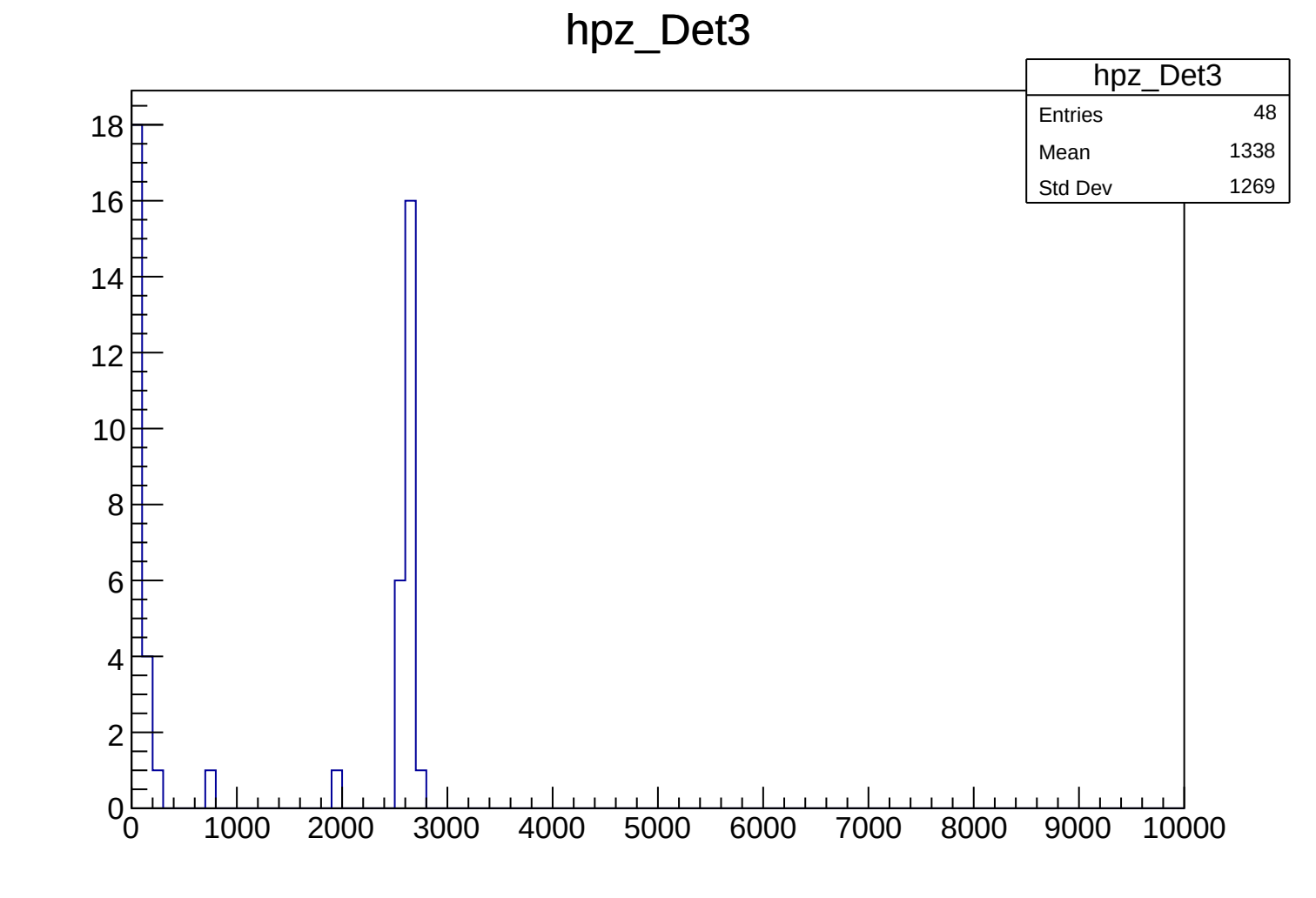

hE_Det3
hE_Det3
Entries 48
Mean 4287
Std Dev 4023
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

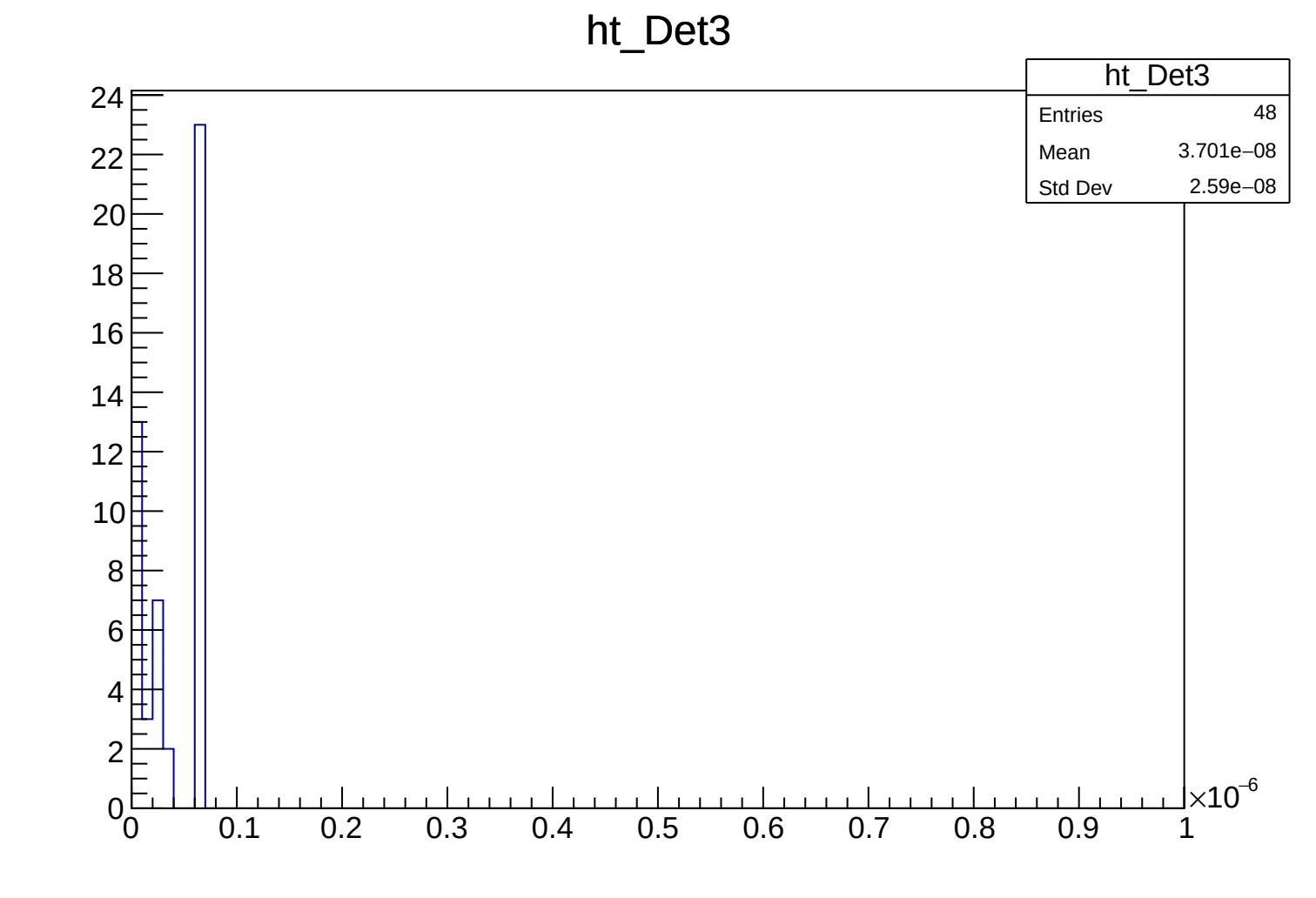

hx_Det3
hx_Det3
Entries 48
Mean 2.592
Std Dev 27.11
8
7
6
5
4
3
2
1
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

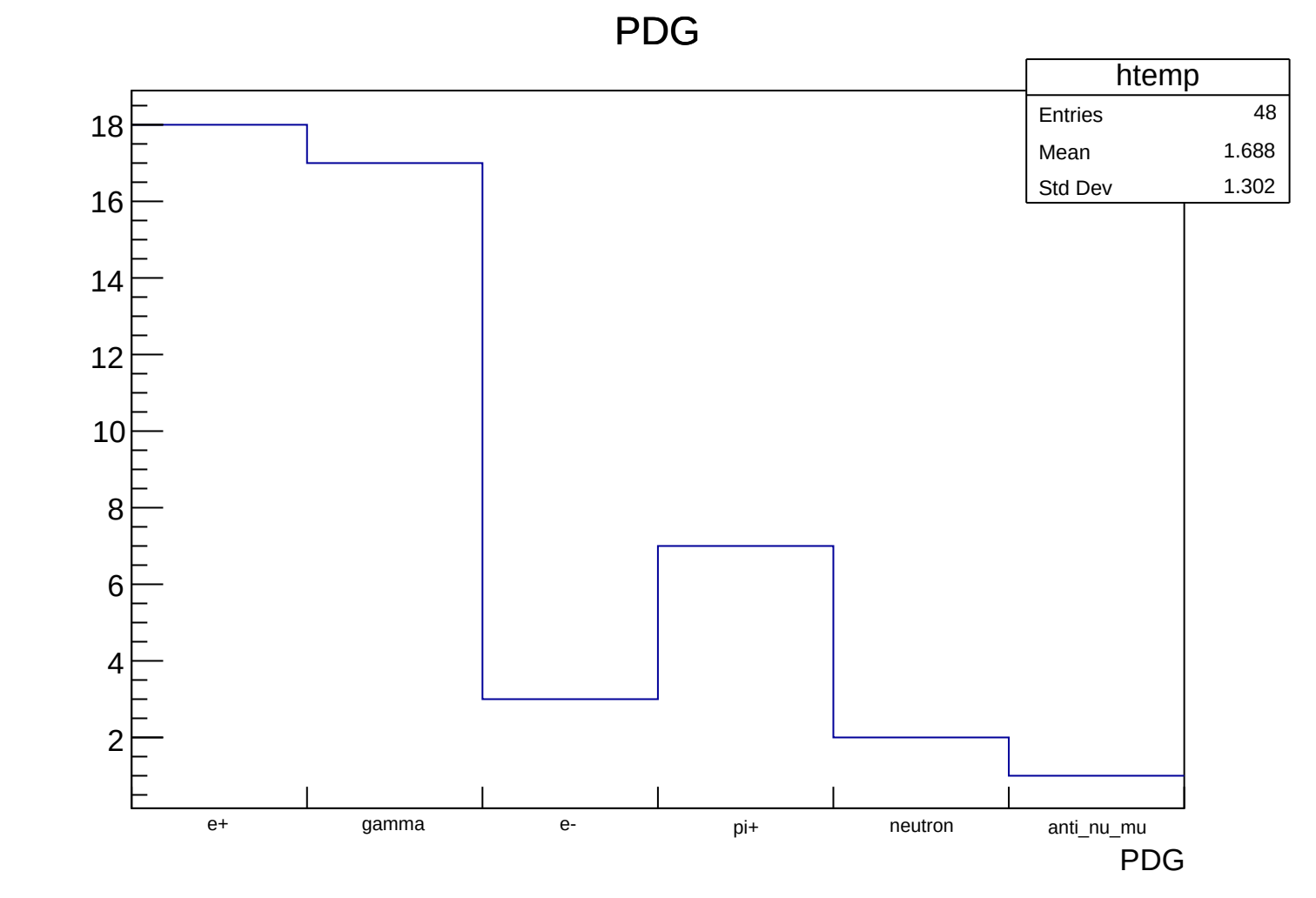

hy_Det3
hy_Det3
Entries 48
Mean 1.765
Std Dev 15.27
18
16
14
12
10
8
6
4
2
0
–500
–400
–300
–200
–100
0
100
200
300
400
500

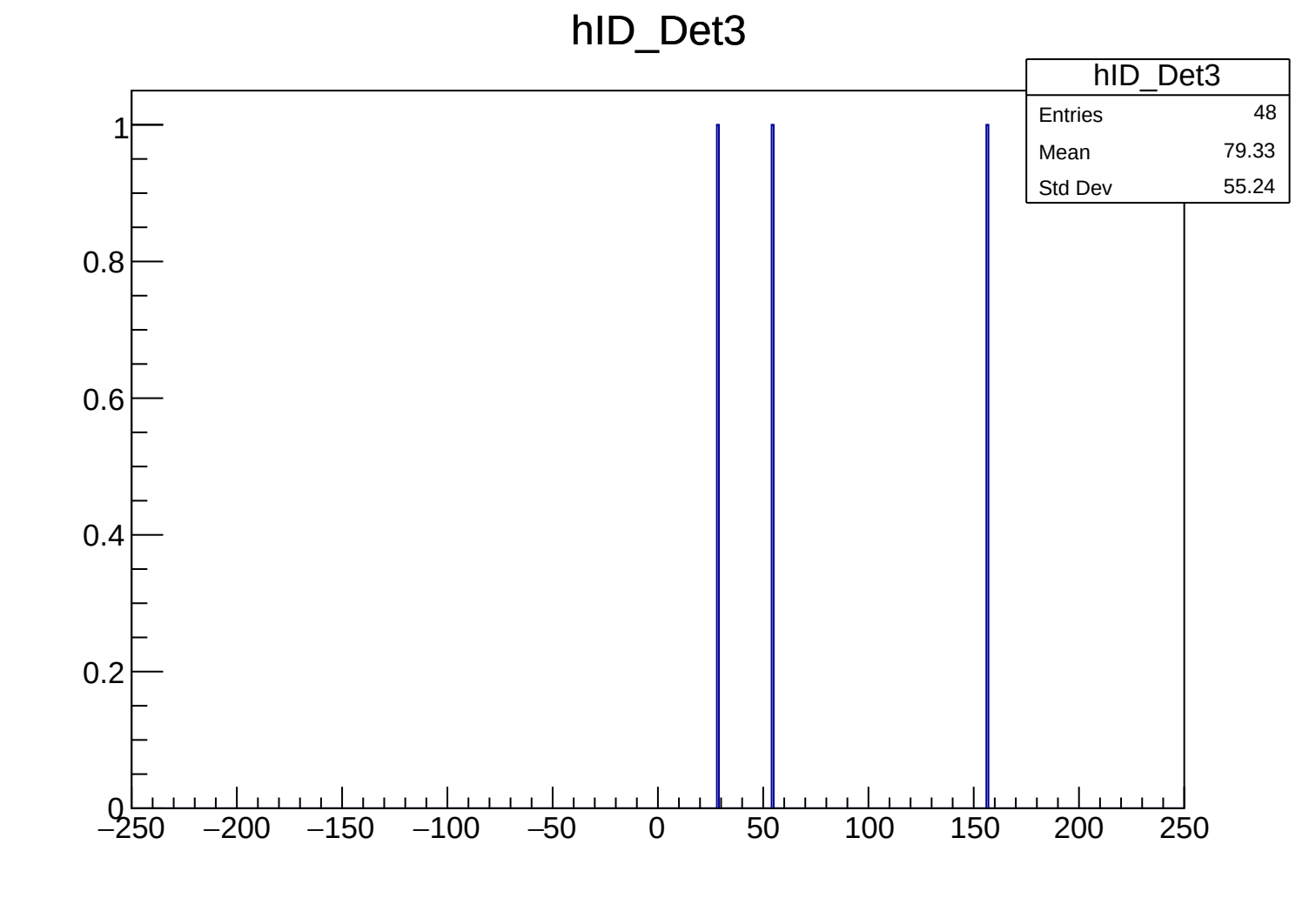

hpx_Det3
hpx_Det3
Entries 48
Mean 4049
Std Dev 3839
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

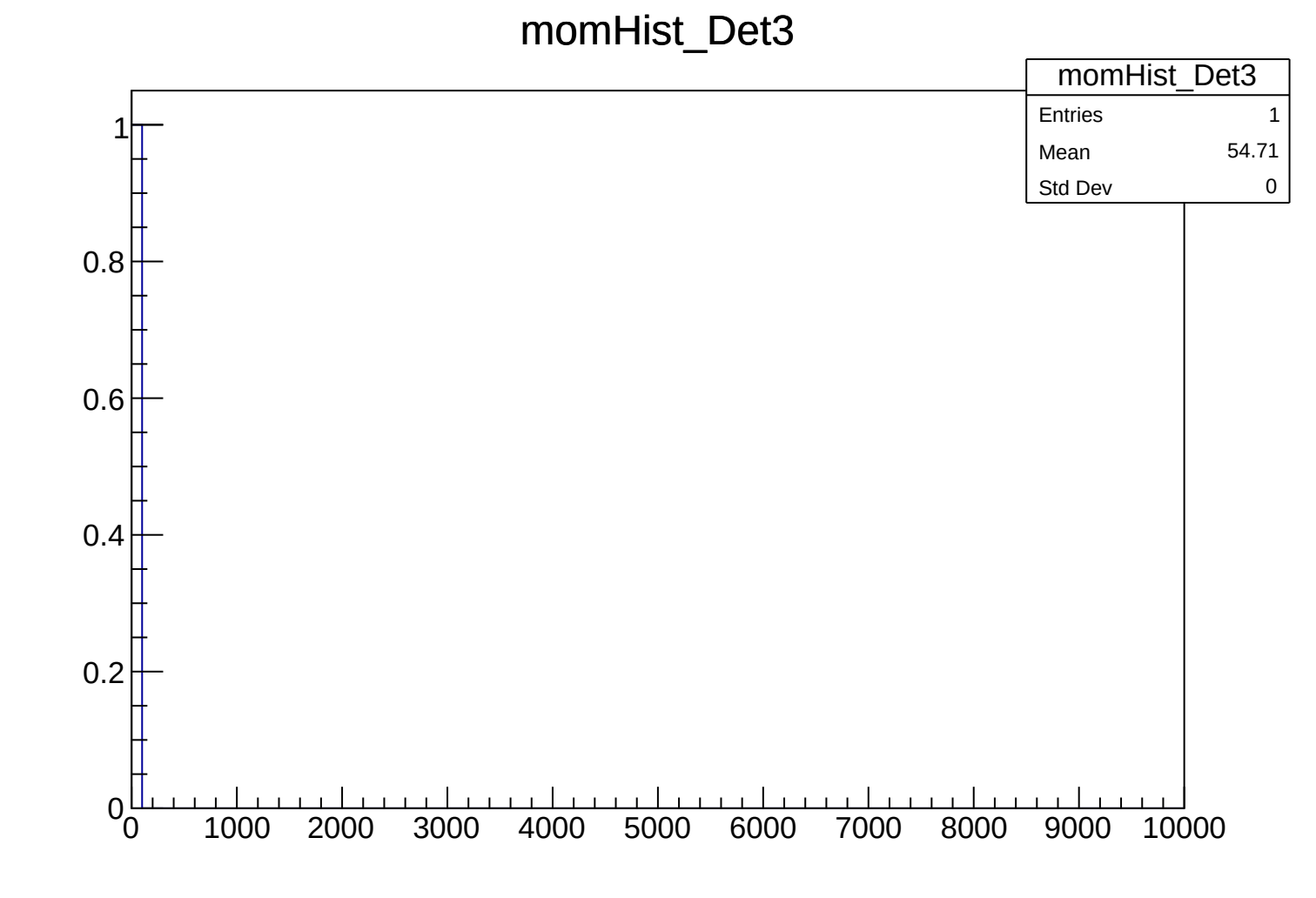

hpy_Det3
hpy_Det3
Entries 48
Mean 8.442
Std Dev 9.177
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

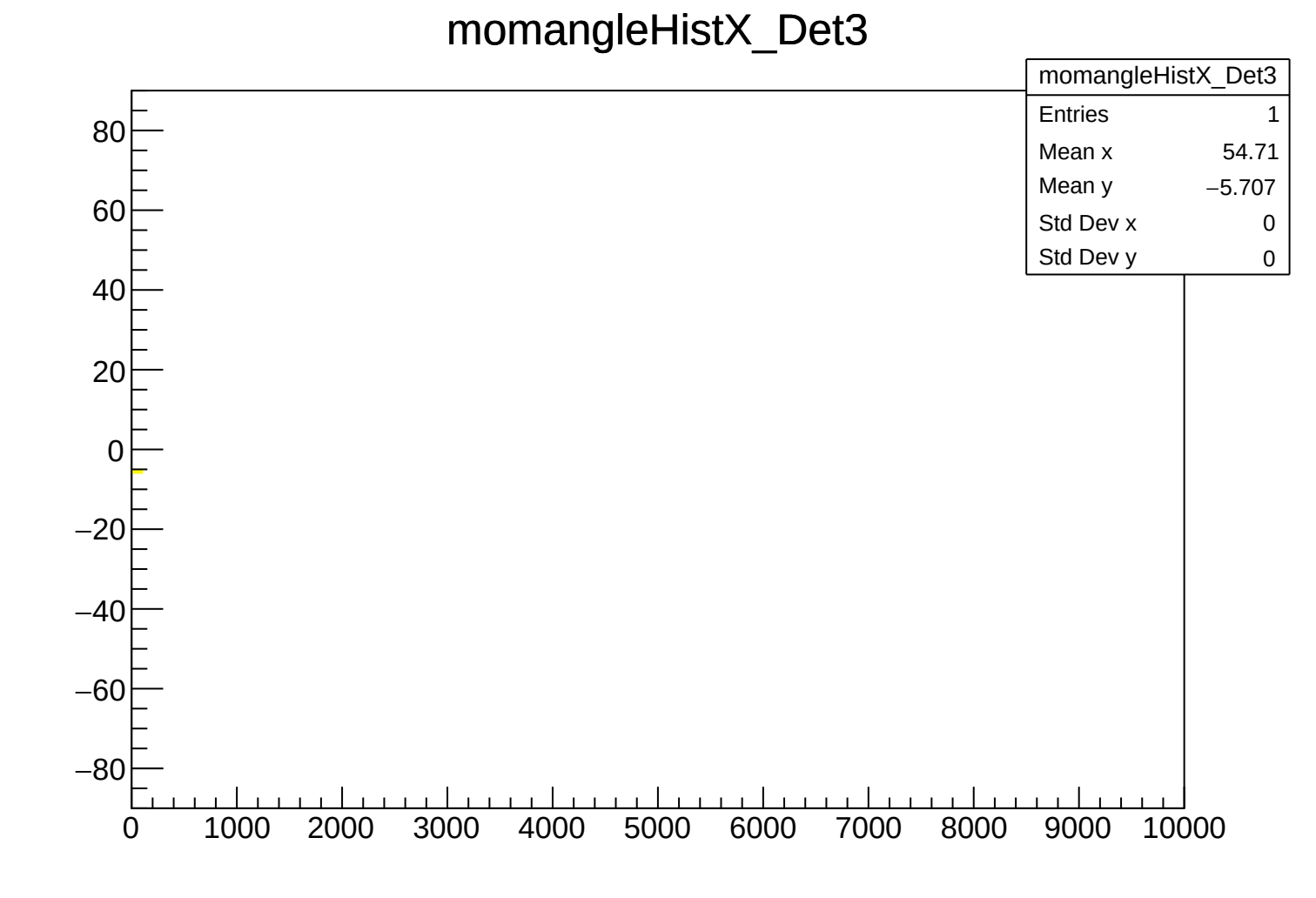

hpz_Det3
hpz_Det3
Entries 48
Mean 1338
Std Dev 1269
0
2
4
6
8
10
12
14
16
18
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

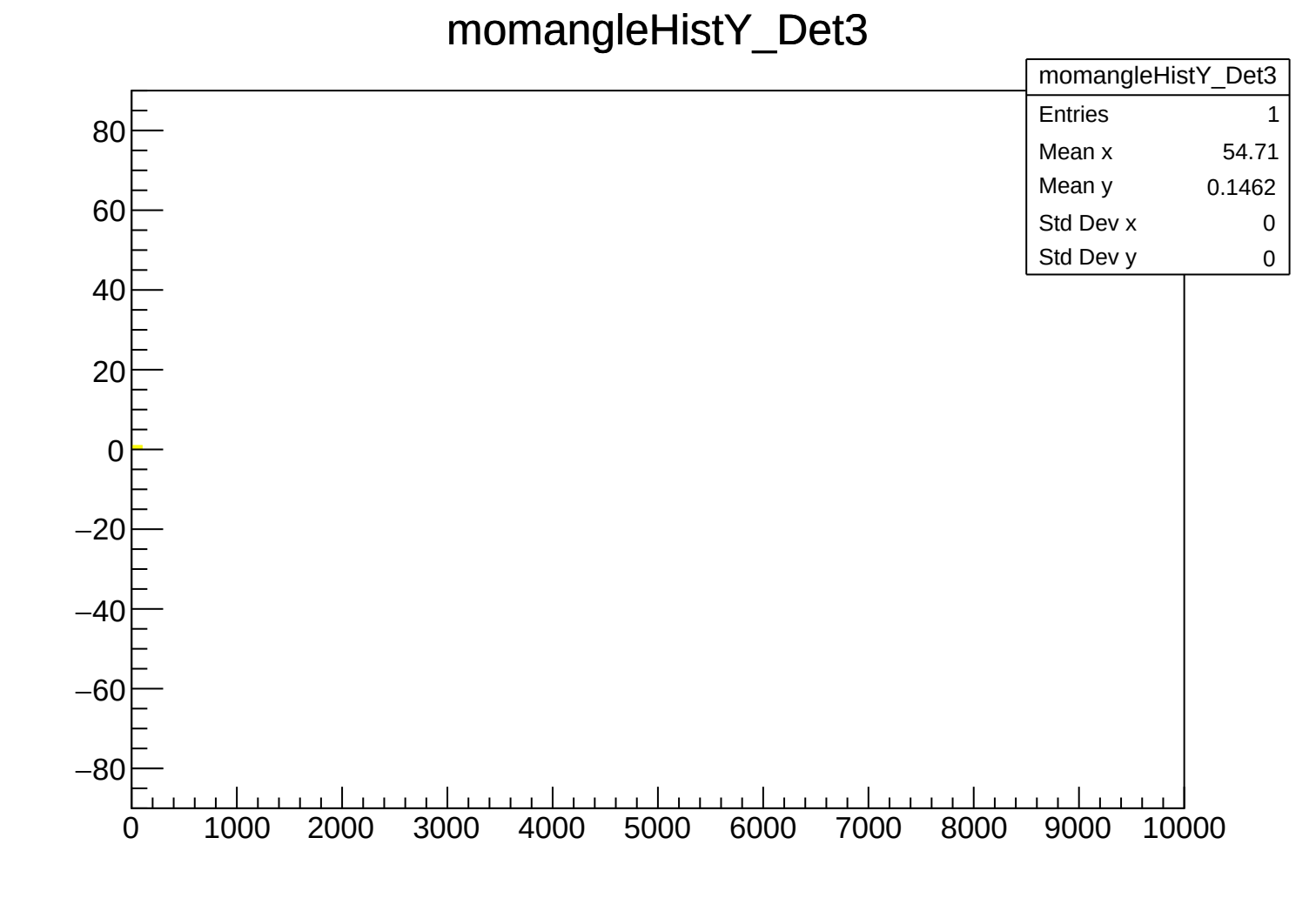

ht_Det3
ht_Det3
Entries 48
Mean 3.701e−08
Std Dev 2.59e−08
24
22
20
18
16
14
12
10
8
6
4
2
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6

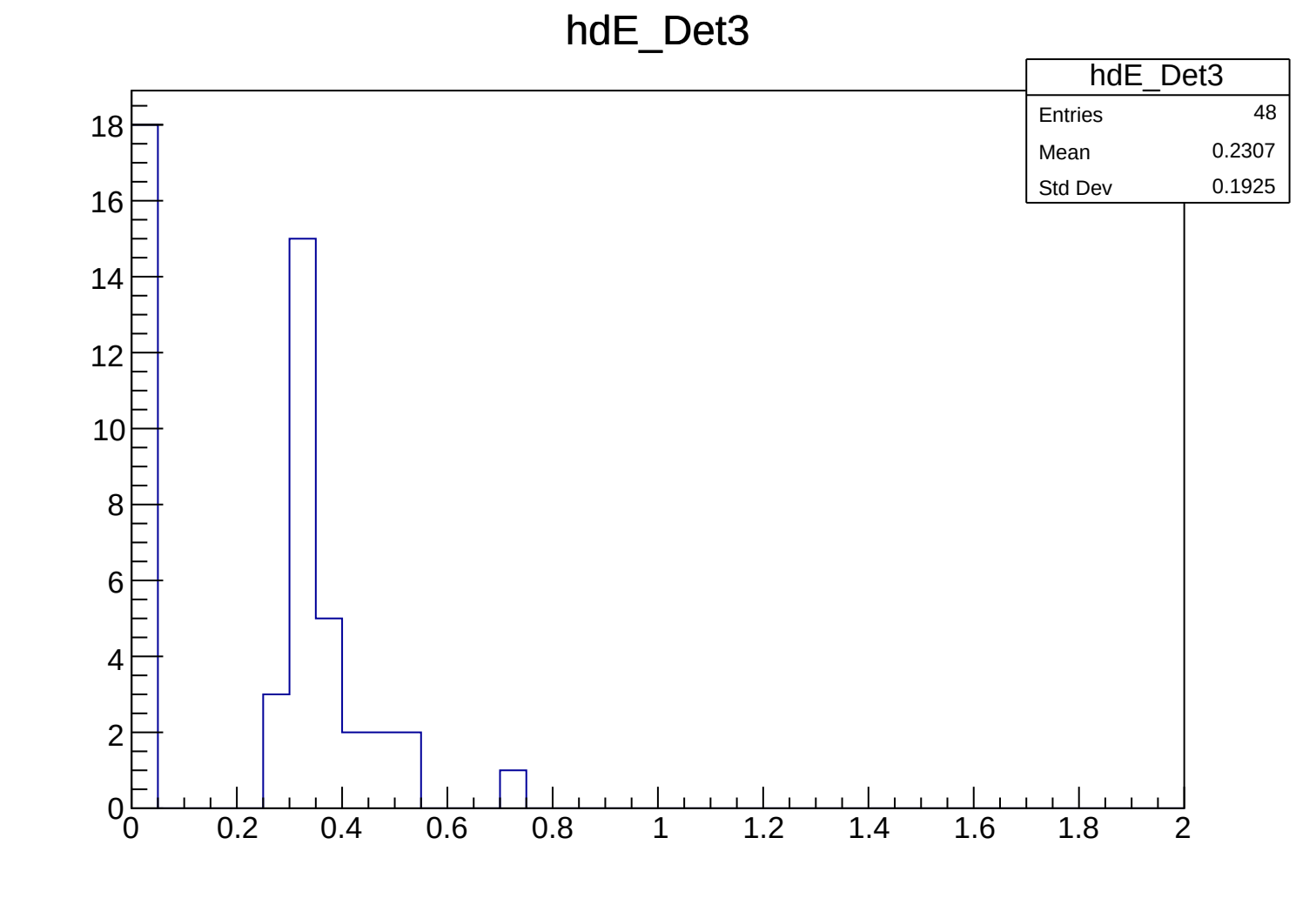

PDG
htemp
Entries 48
Mean 1.688
Std Dev 1.302
18
16
14
12
10
8
6
4
2
e+
gamma
e-
pi+
neutron
anti_nu_mu
PDG

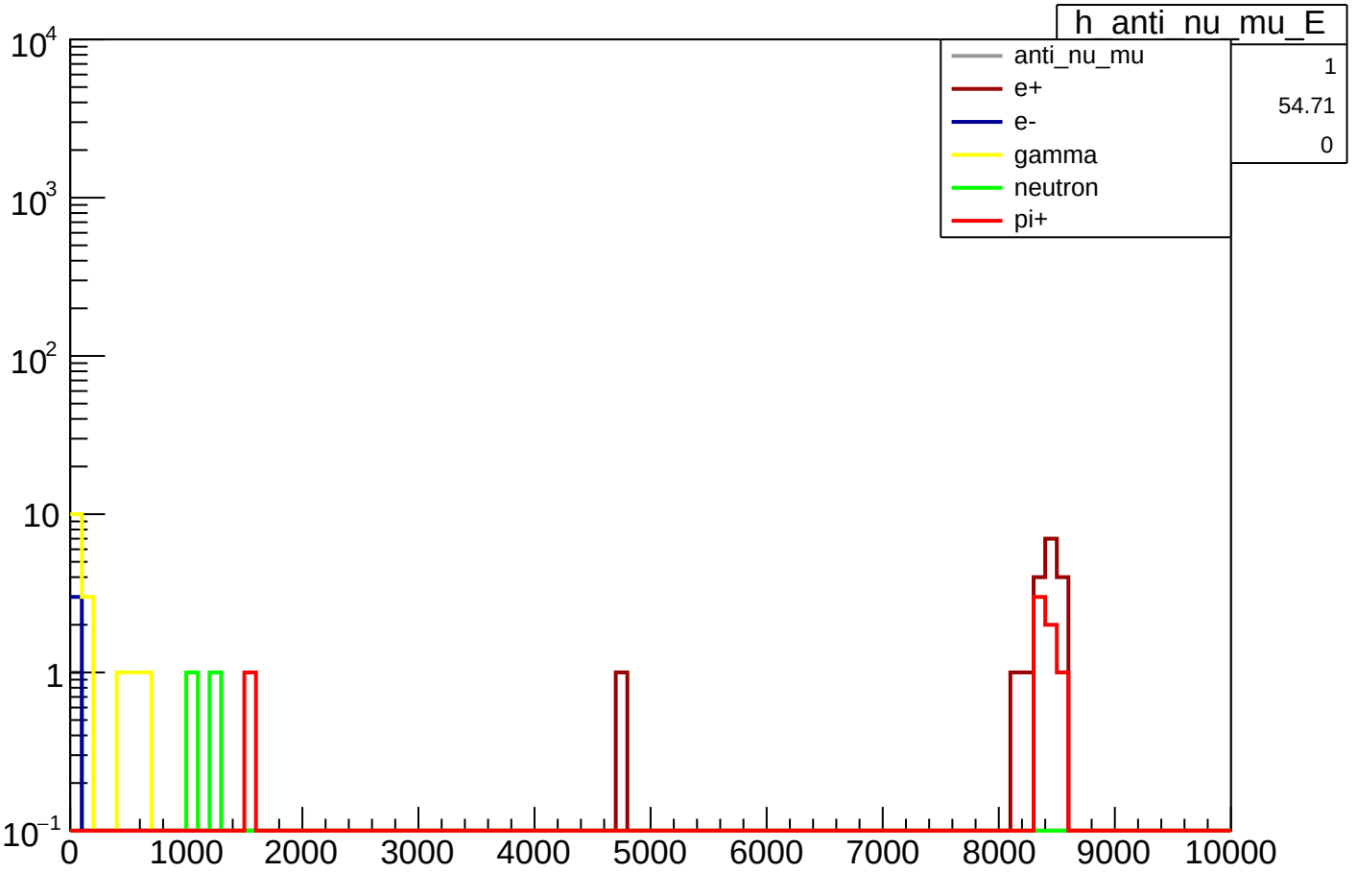

hID_Det3
hID_Det3
Entries 48
Mean 79.33
Std Dev 55.24
1
0.8
0.6
0.4
0.2
0
−250
−200
−150
−100
−50
0
50
100
150
200
250

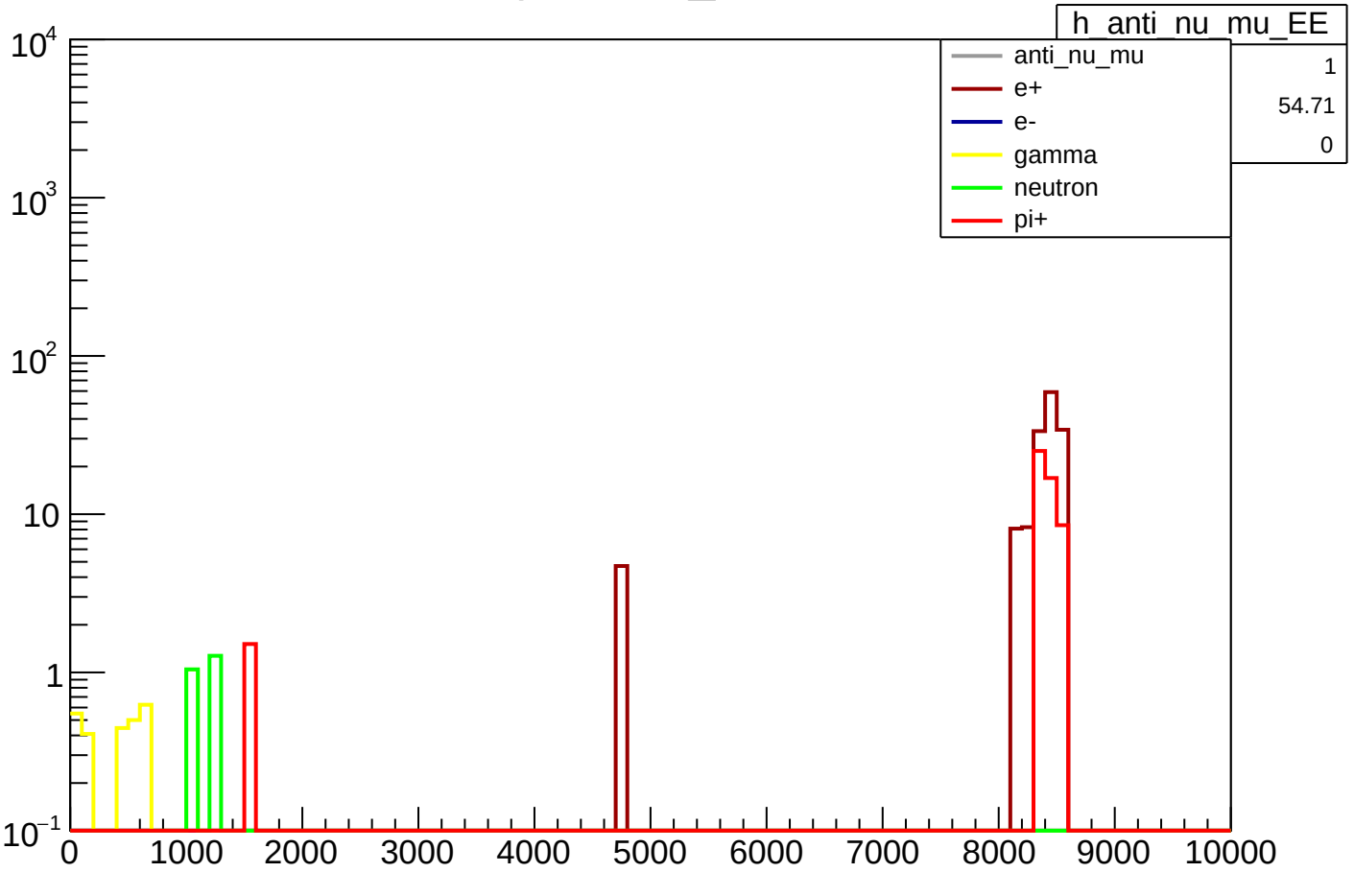

momHist_Det3
momHist_Det3
Entries 1
Mean 54.71
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

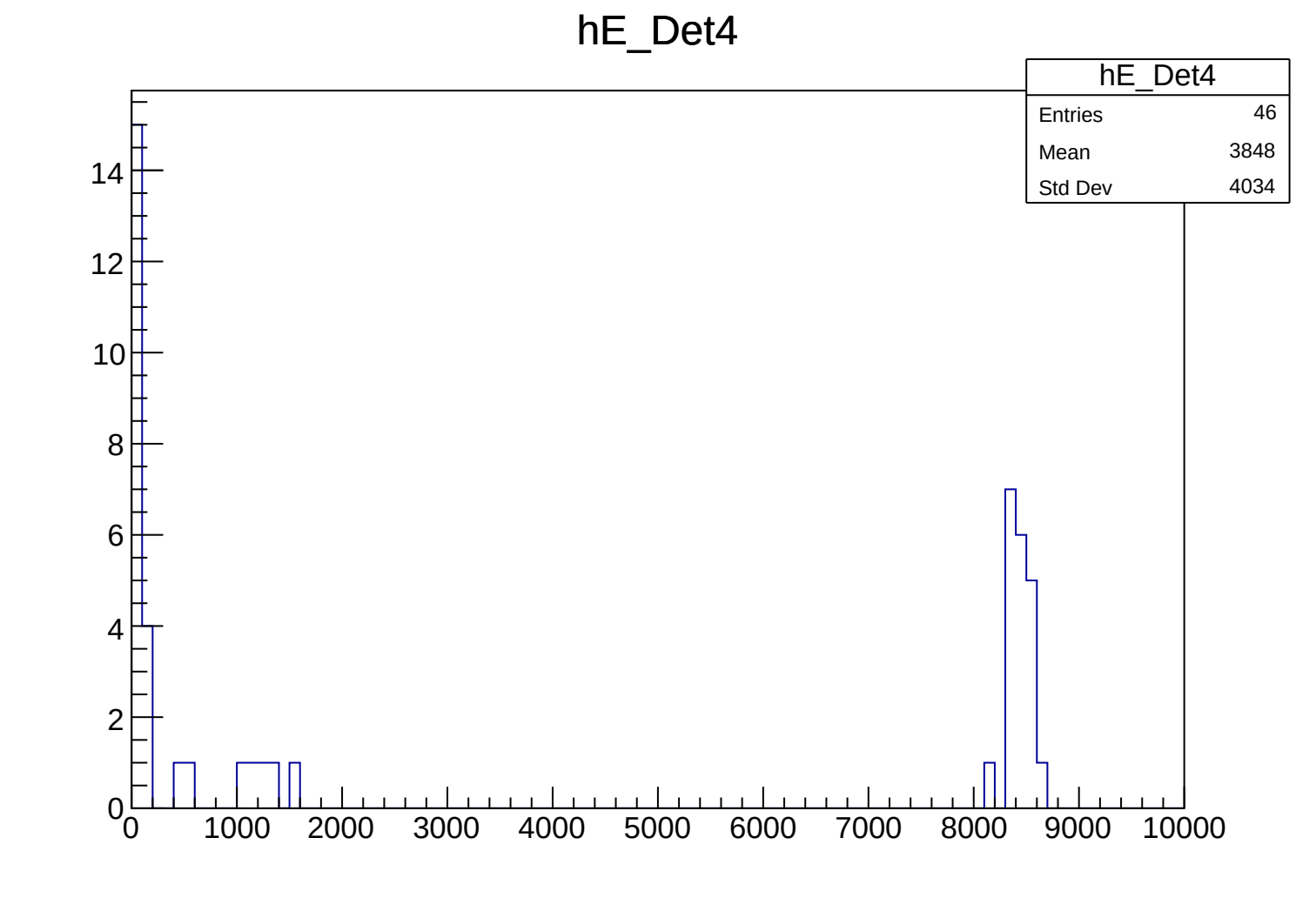

momangleHistX_Det3
momangleHistX_Det3
Entries 1
Mean x 54.71
Mean y –5.707
Std Dev x 0
Std Dev y 0
80
60
40
20
0
–20
–40
–60
–80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

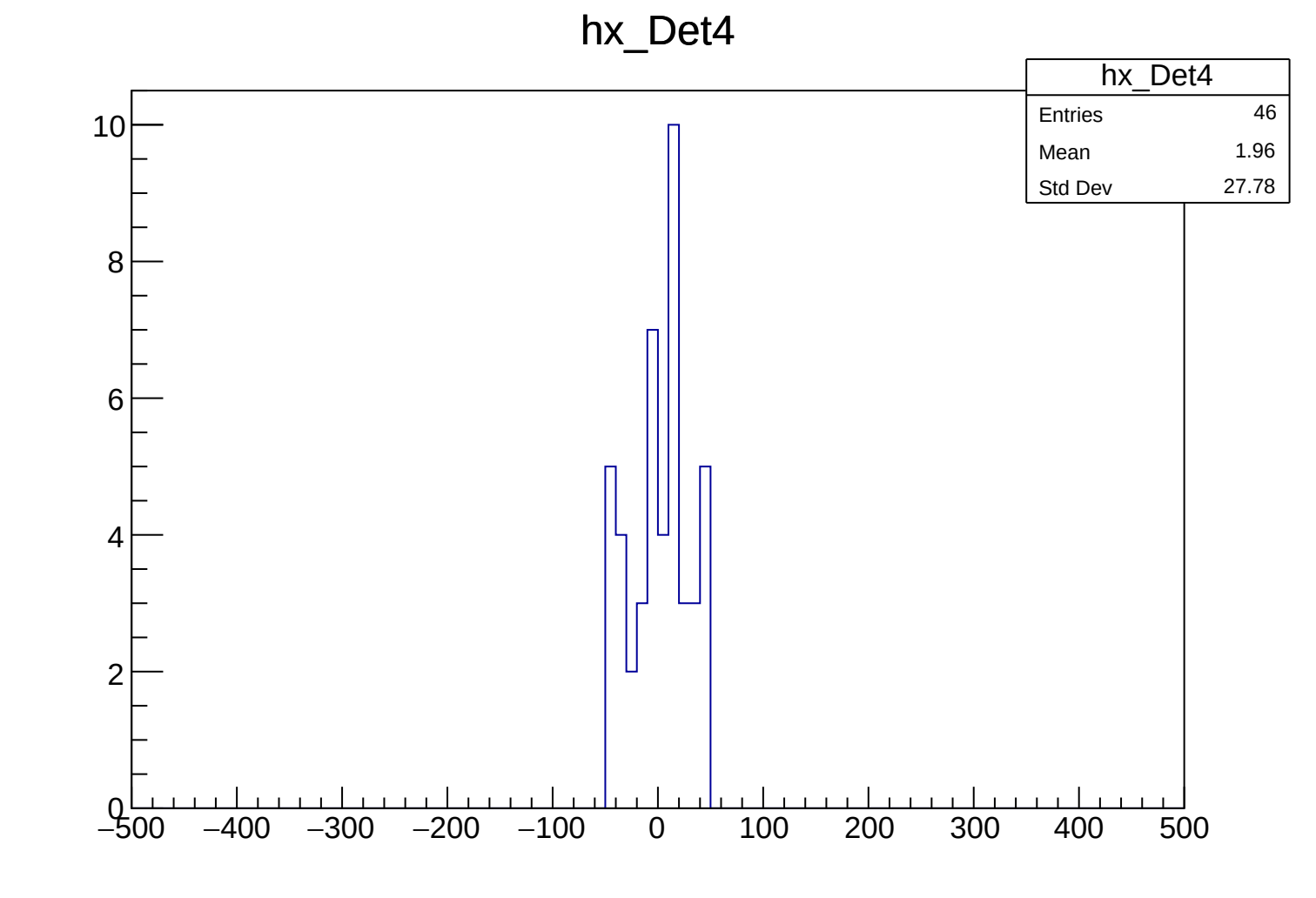

momangleHistY_Det3
momangleHistY_Det3
Entries 1
Mean x 54.71
Mean y 0.1462
Std Dev x 0
Std Dev y 0
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

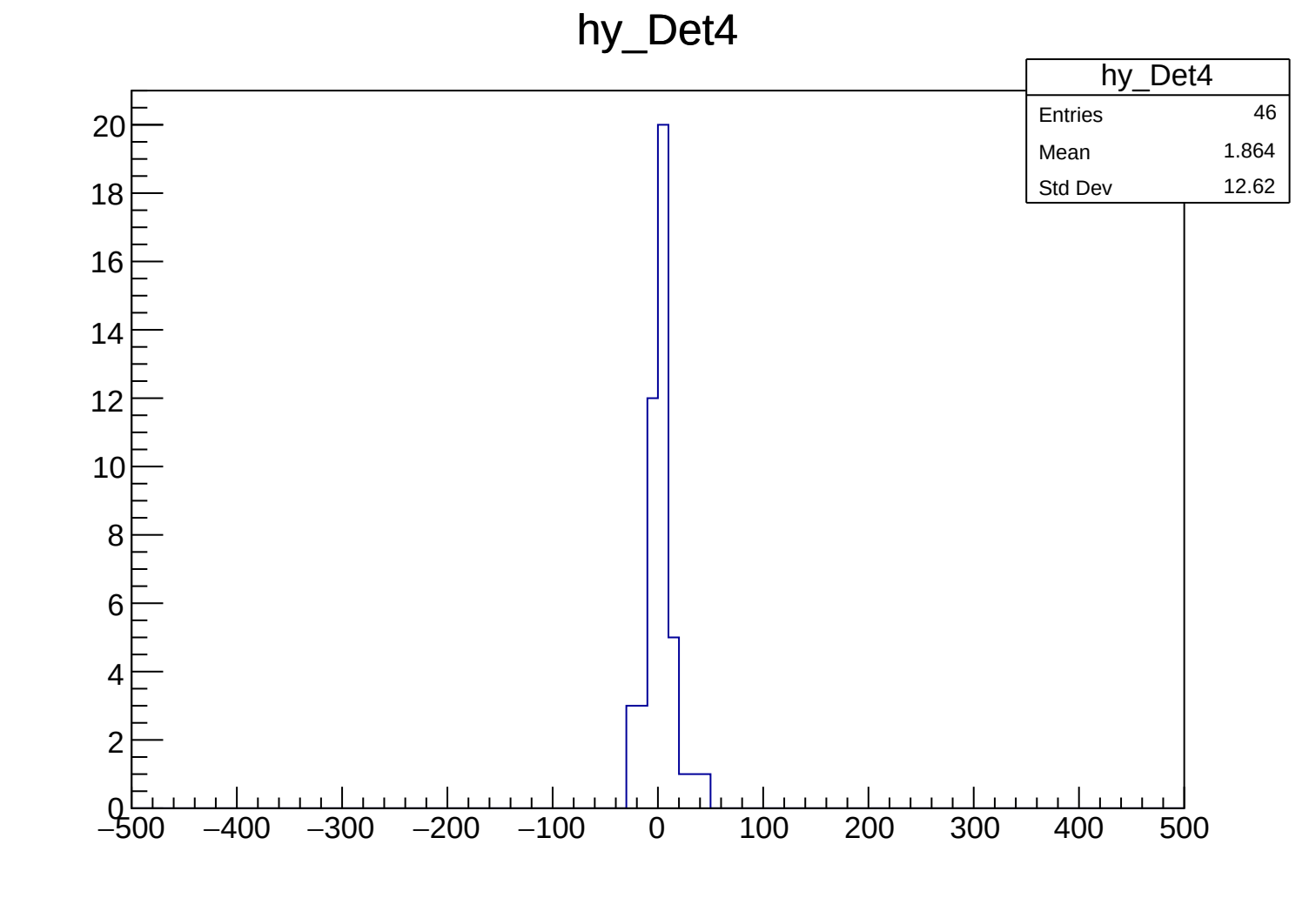

hdE_Det3
hdE_Det3
Entries 48
Mean 0.2307
Std Dev 0.1925
18
16
14
12
10
8
6
4
2
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2

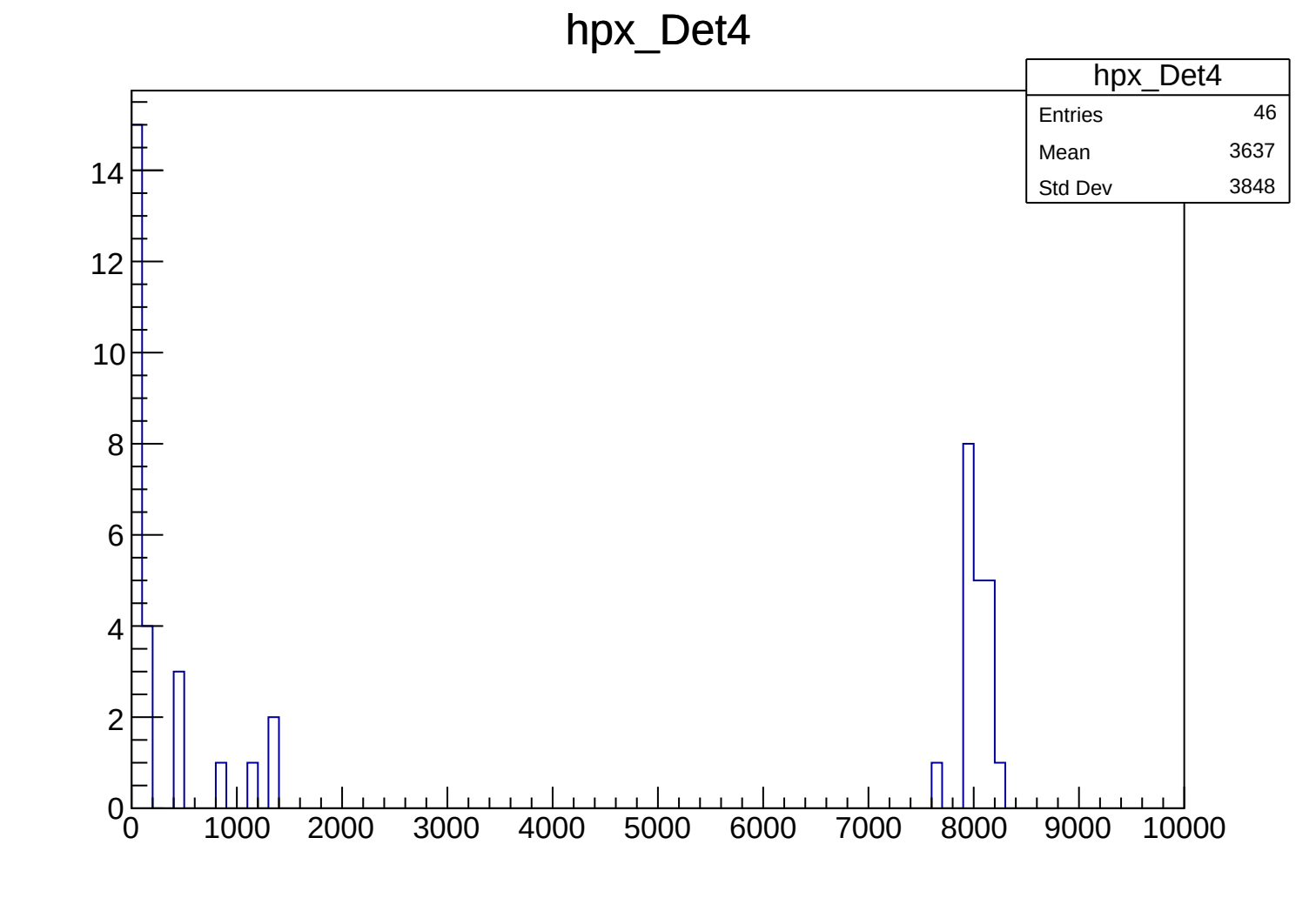

Energy_Det3
h_anti_nu_mu_E
1
54.71
0
anti_nu_mu
e+
e-
gamma
neutron
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Spectrum_Det3
h_anti_nu_mu_EE
1
54.71
0
anti_nu_mu
e+
e-
gamma
neutron
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hE_Det4
hE_Det4
Entries 46
Mean 3848
Std Dev 4034
0
2
4
6
8
10
12
14
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hx_Det4
hx_Det4
Entries 46
Mean 1.96
Std Dev 27.78
10
8
6
4
2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500


hy_Det4
hy_Det4
Entries 46
Mean 1.864
Std Dev 12.62
20
18
16
14
12
10
8
6
4
2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500


hpx_Det4
hpx_Det4
Entries 46
Mean 3637
Std Dev 3848
0
2
4
6
8
10
12
14
0
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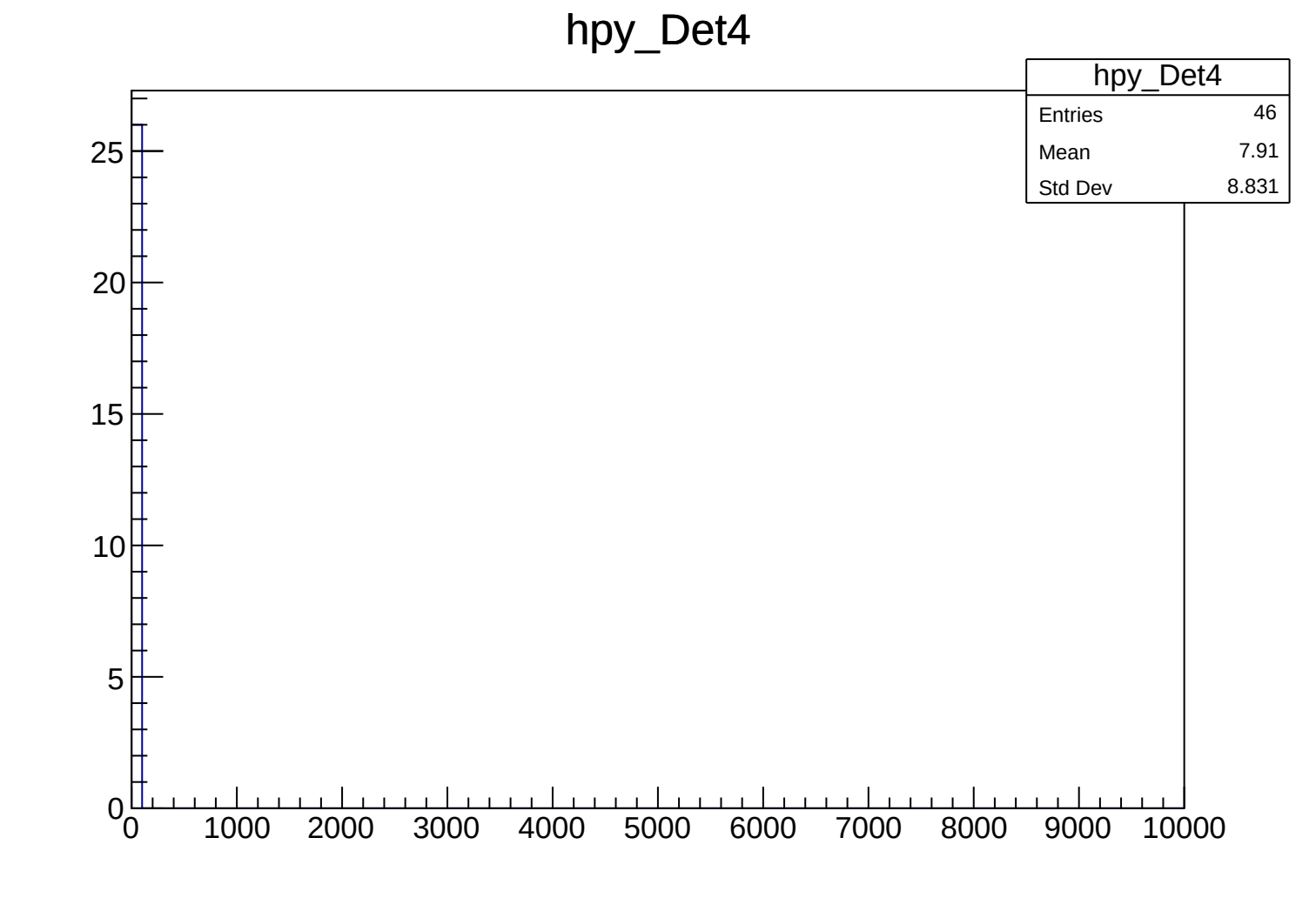
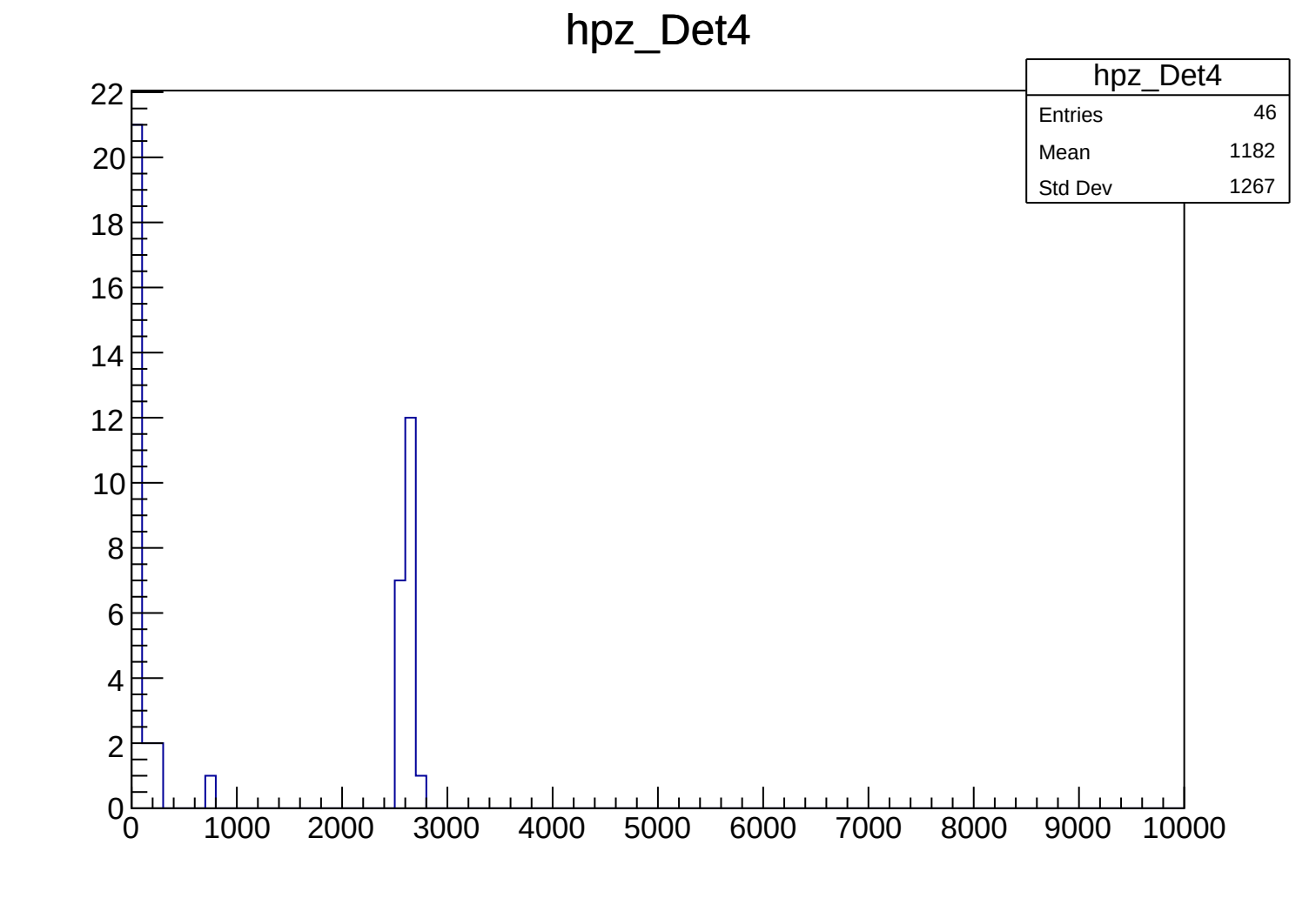
2000
3000
4000
5000
6000
7000
8000
9000
10000


hpy_Det4
hpy_Det4
Entries 46
Mean 7.91
Std Dev 8.831
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hpz_Det4
hpz_Det4
Entries 46
Mean 1182
Std Dev 1267
22
20
18
16
14
12
10
8
6
4
2
0
0
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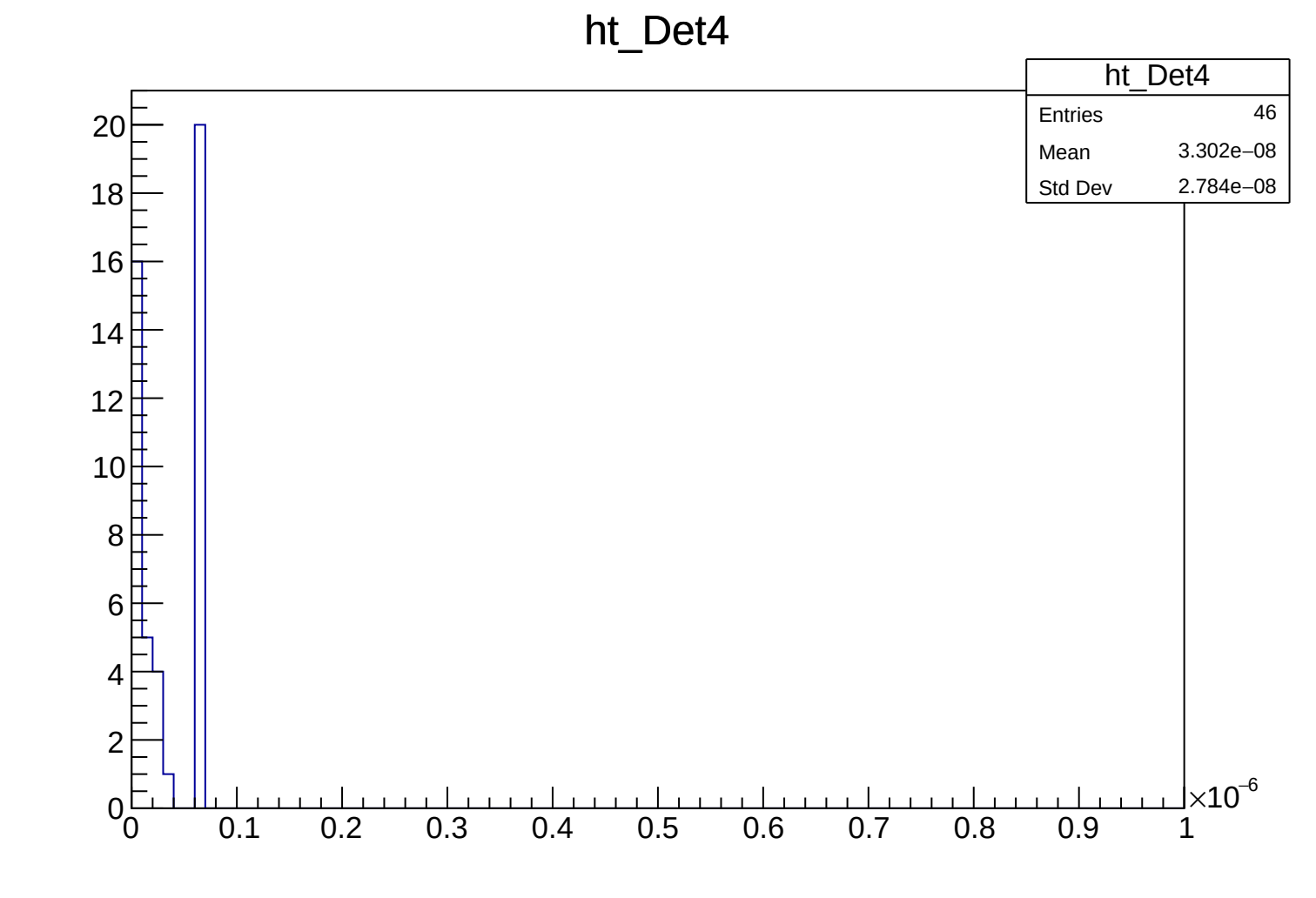
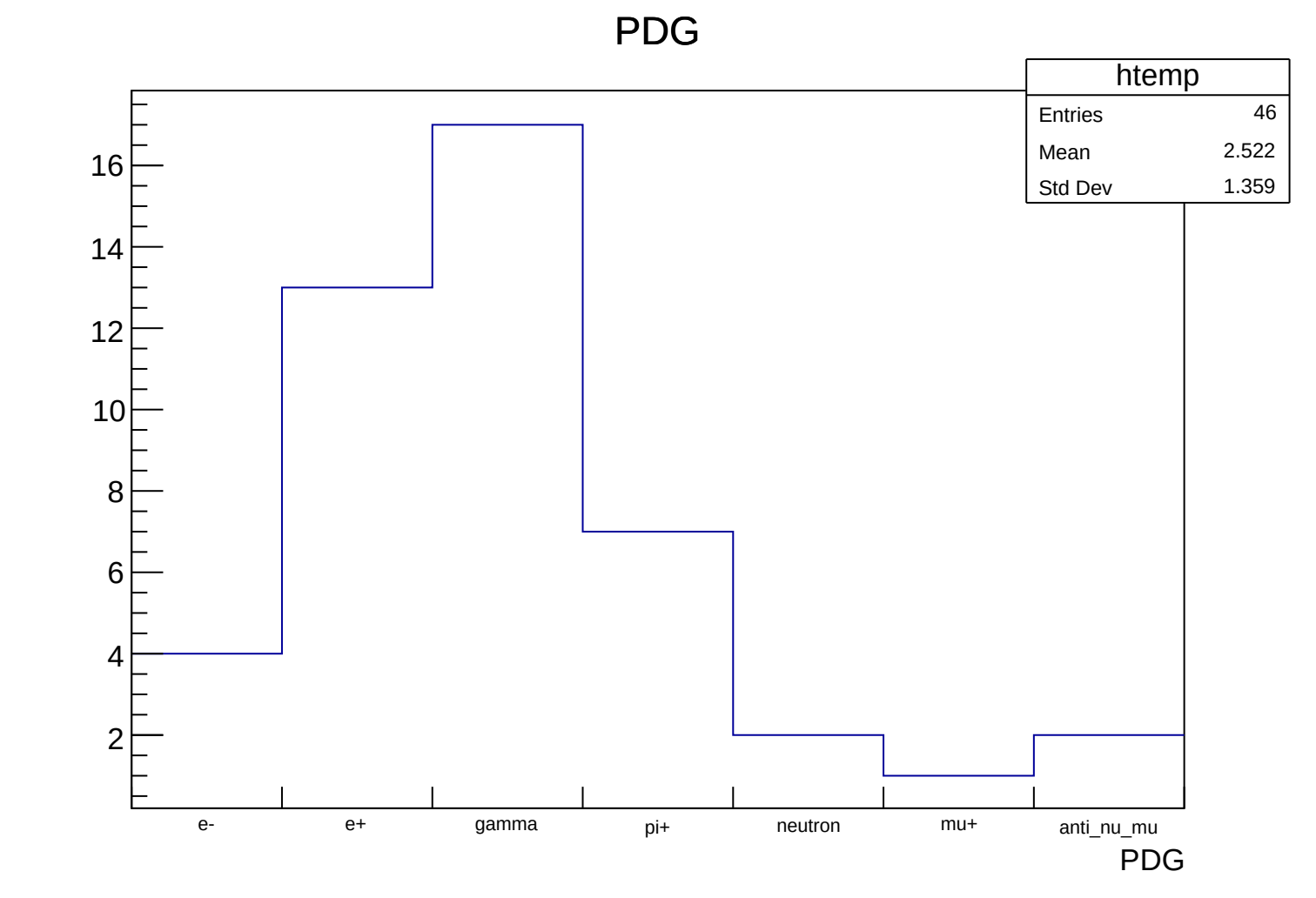
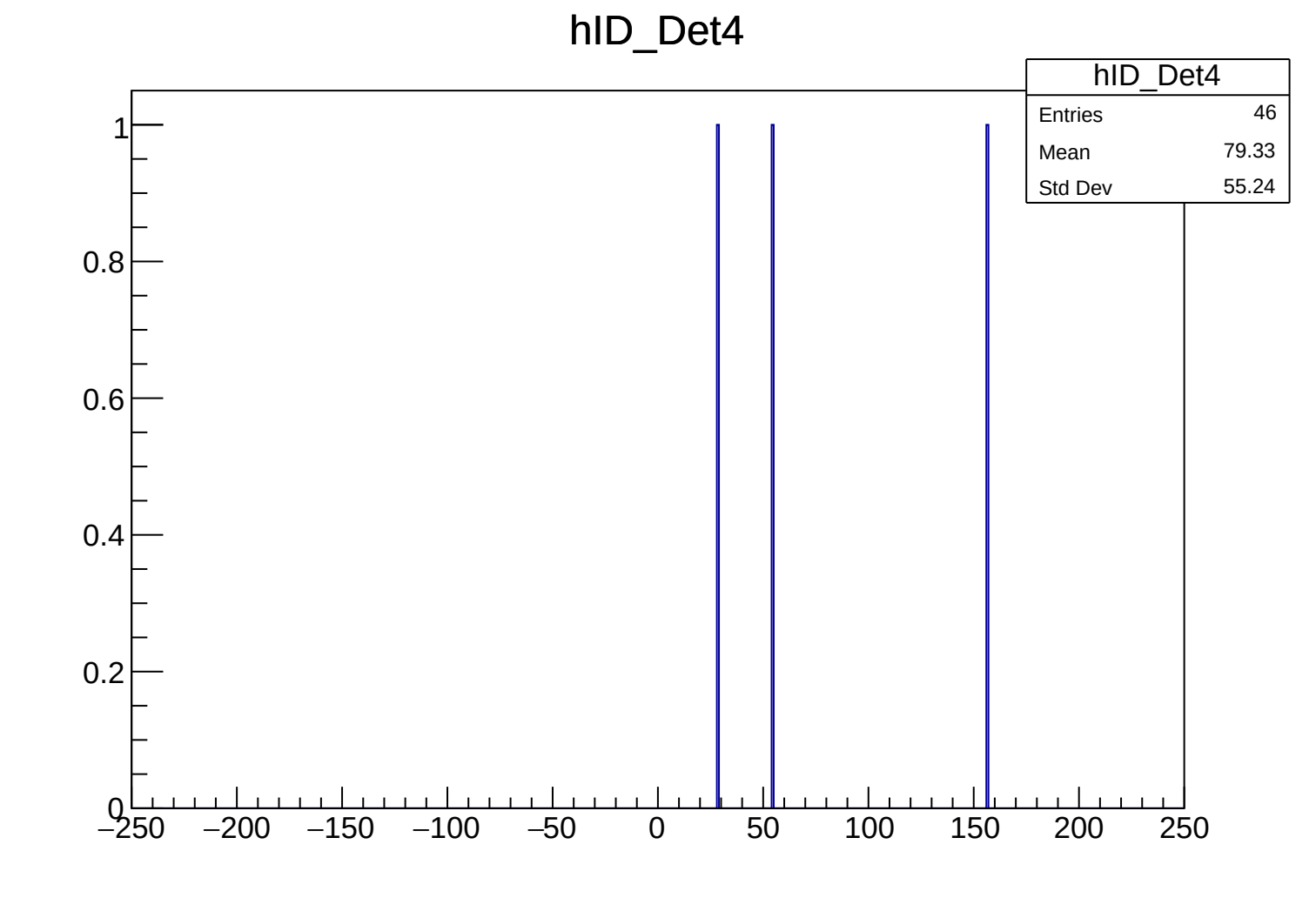
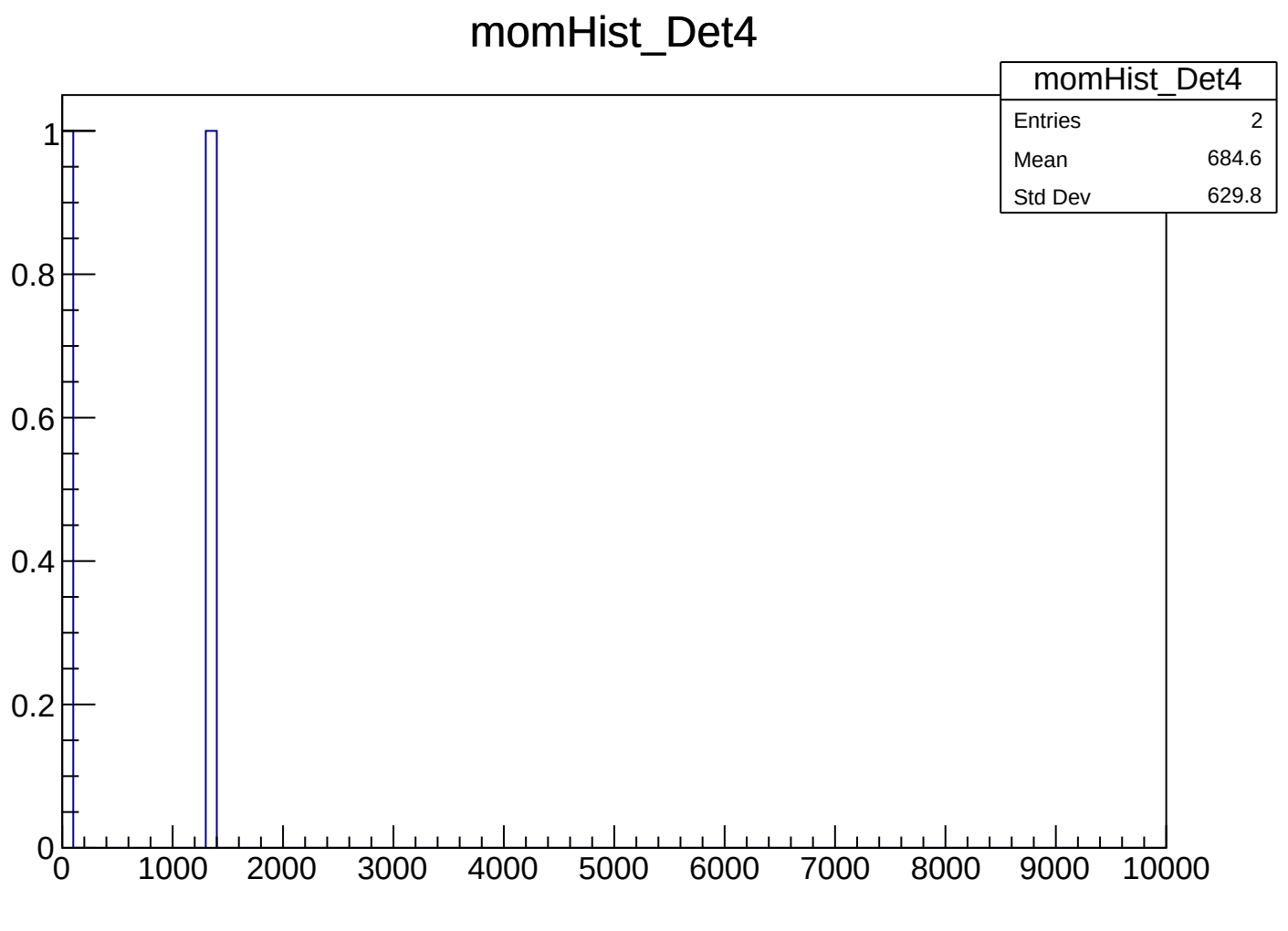
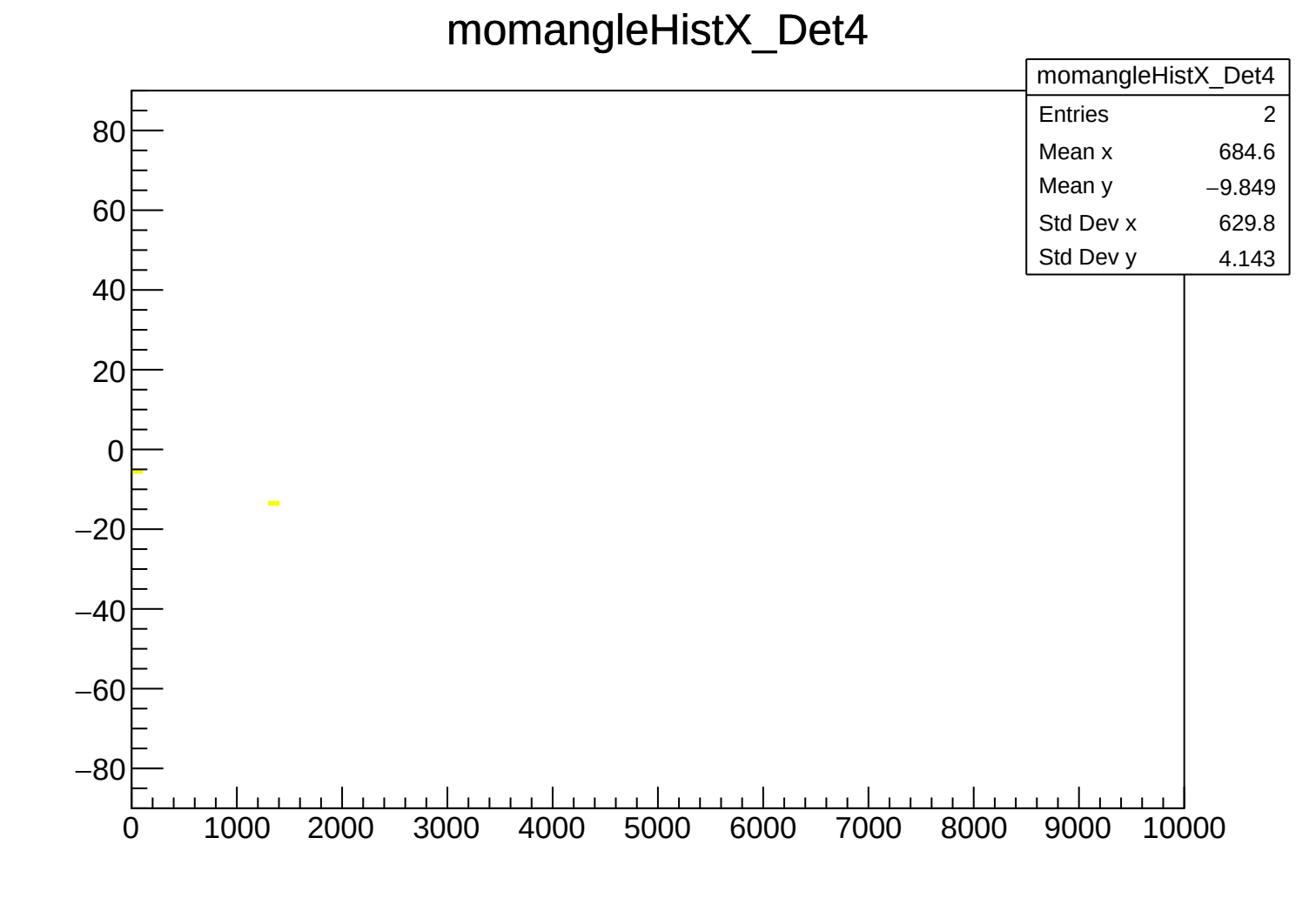
2000
3000
4000
5000
6000
7000
8000
9000
10000

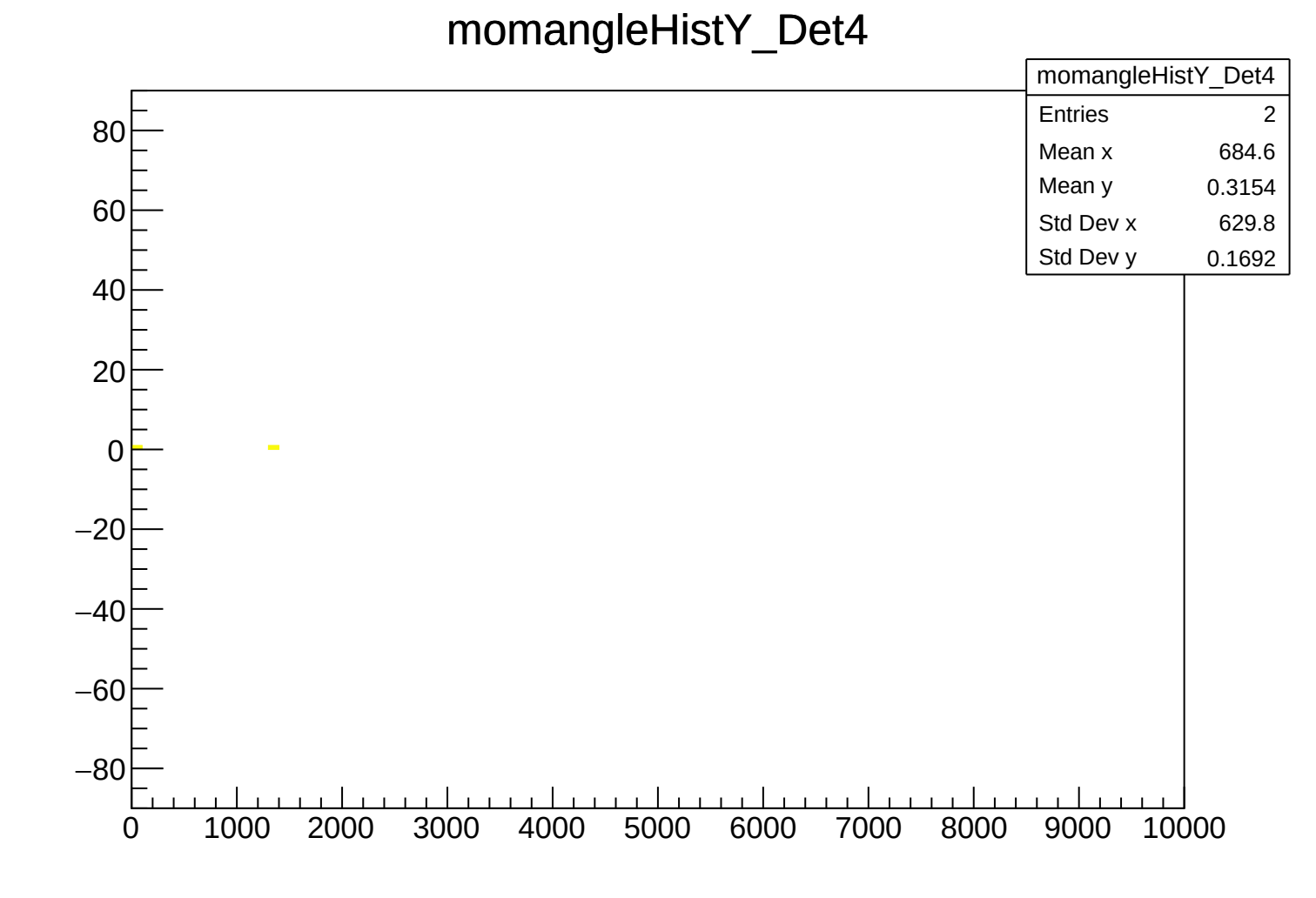

ht_Det4
ht_Det4
Entries 46
Mean 3.302e−08
Std Dev 2.784e−08
20
18
16
14
12
10
8
6
4
2
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6

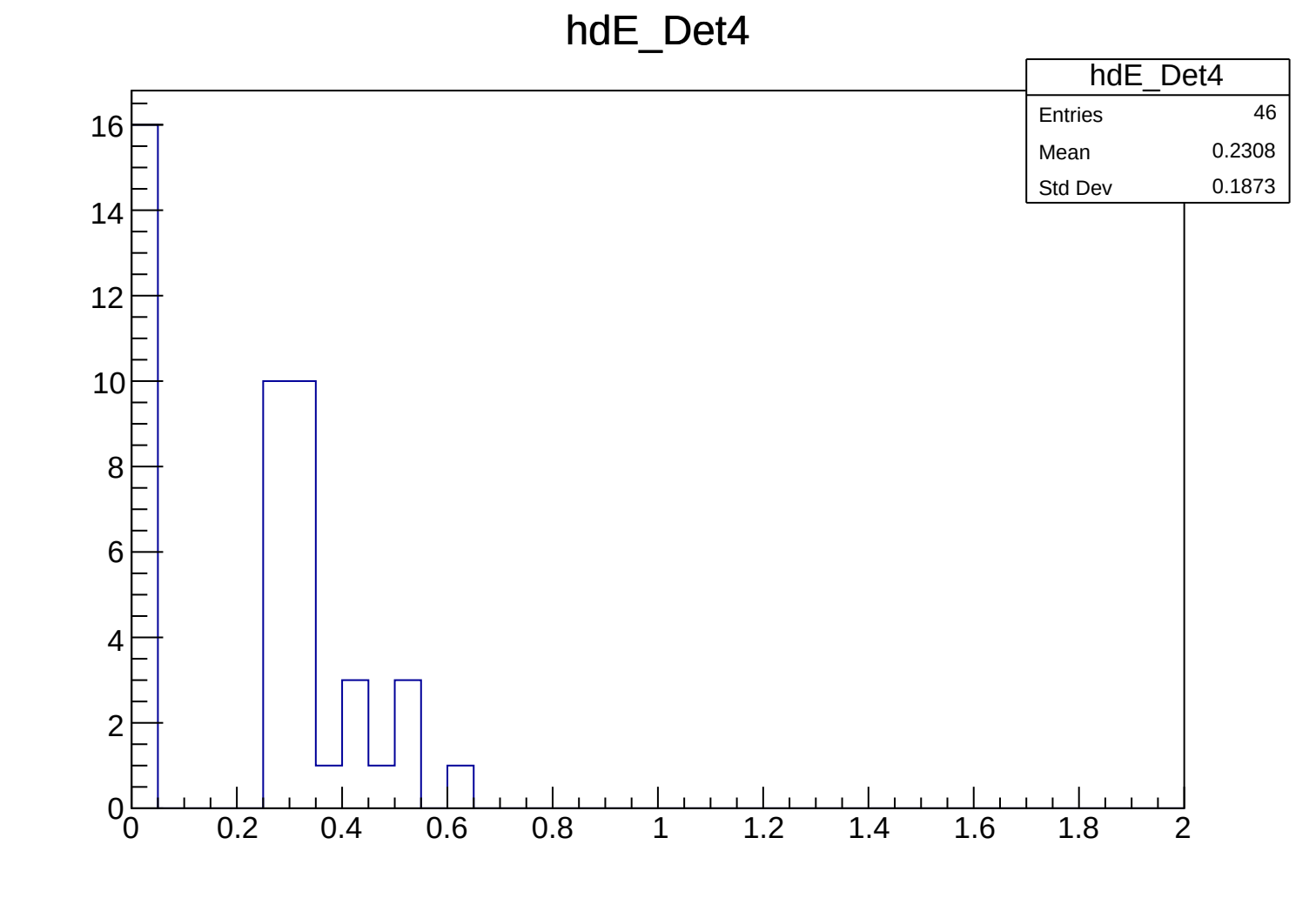

PDG
htemp
Entries 46
Mean 2.522
Std Dev 1.359
16
14
12
10
8
6
4
2
e-
e+
gamma
pi+
neutron
mu+
anti_nu_mu
PDG

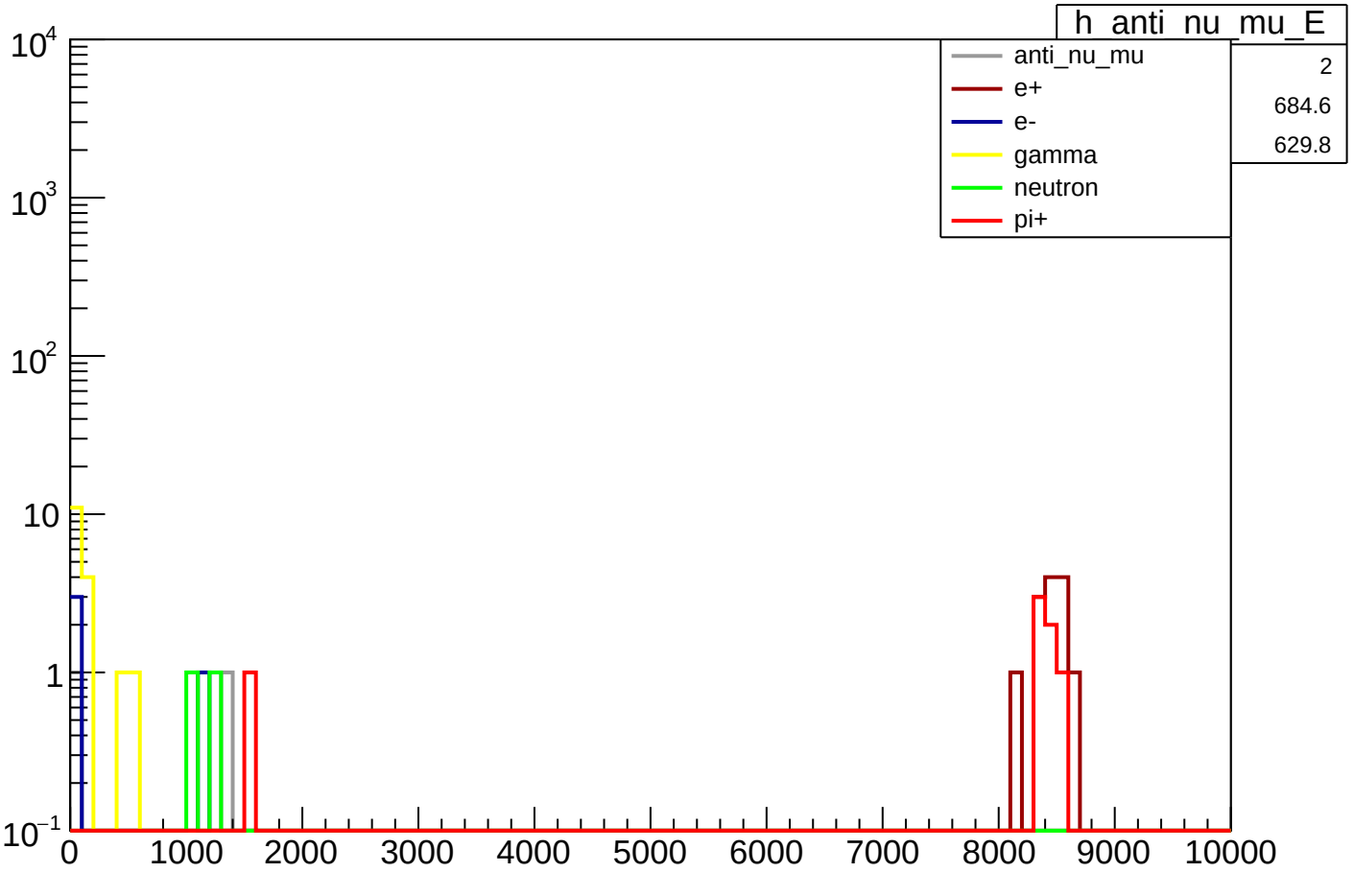

hID_Det4
hID_Det4
Entries 46
Mean 79.33
Std Dev 55.24
1
0.8
0.6
0.4
0.2
0
−250 −200 −150 −100 −50 0 50 100 150 200 250

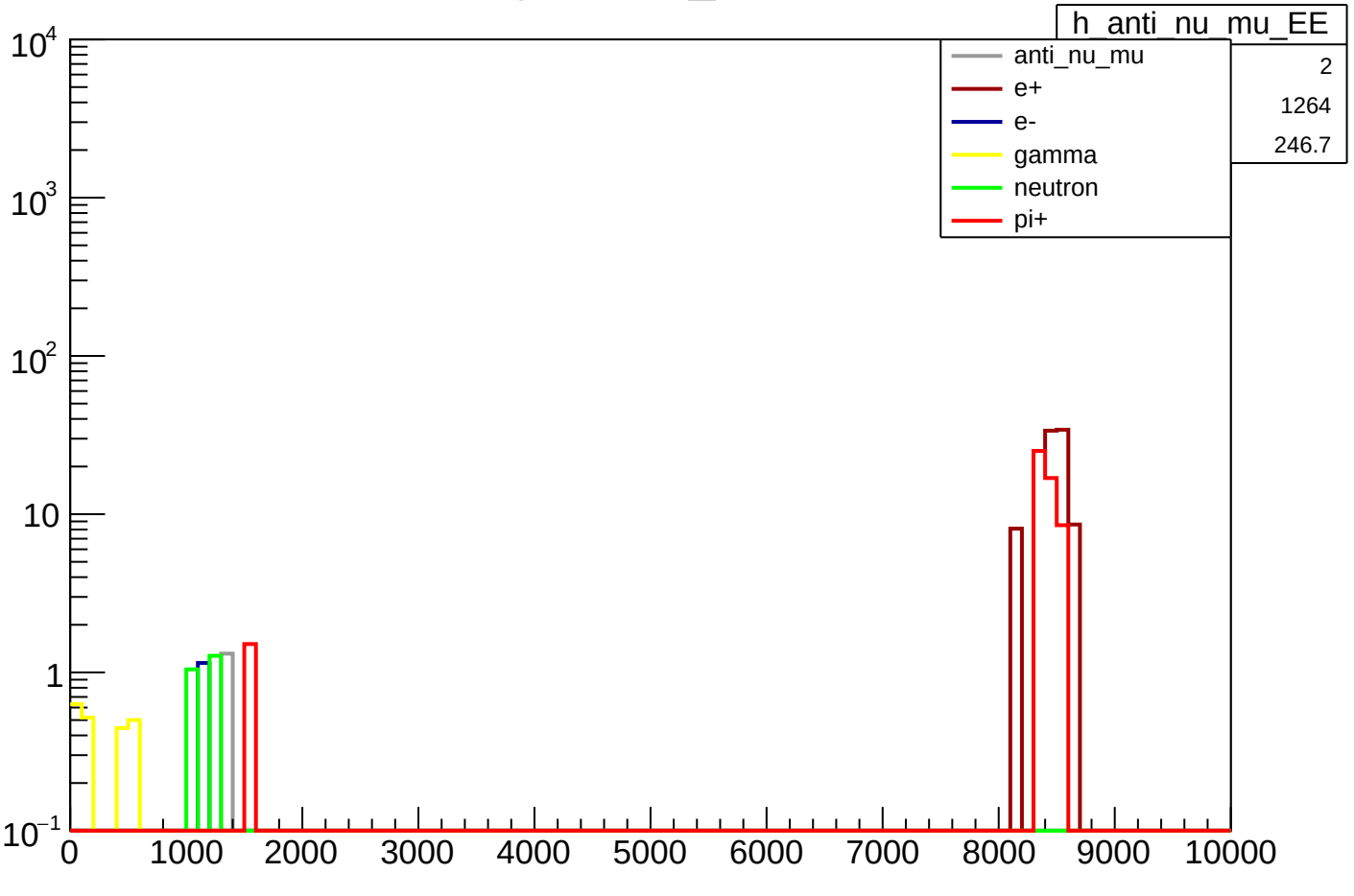

momHist_Det4
momHist_Det4
Entries 2
Mean 684.6
Std Dev 629.8
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

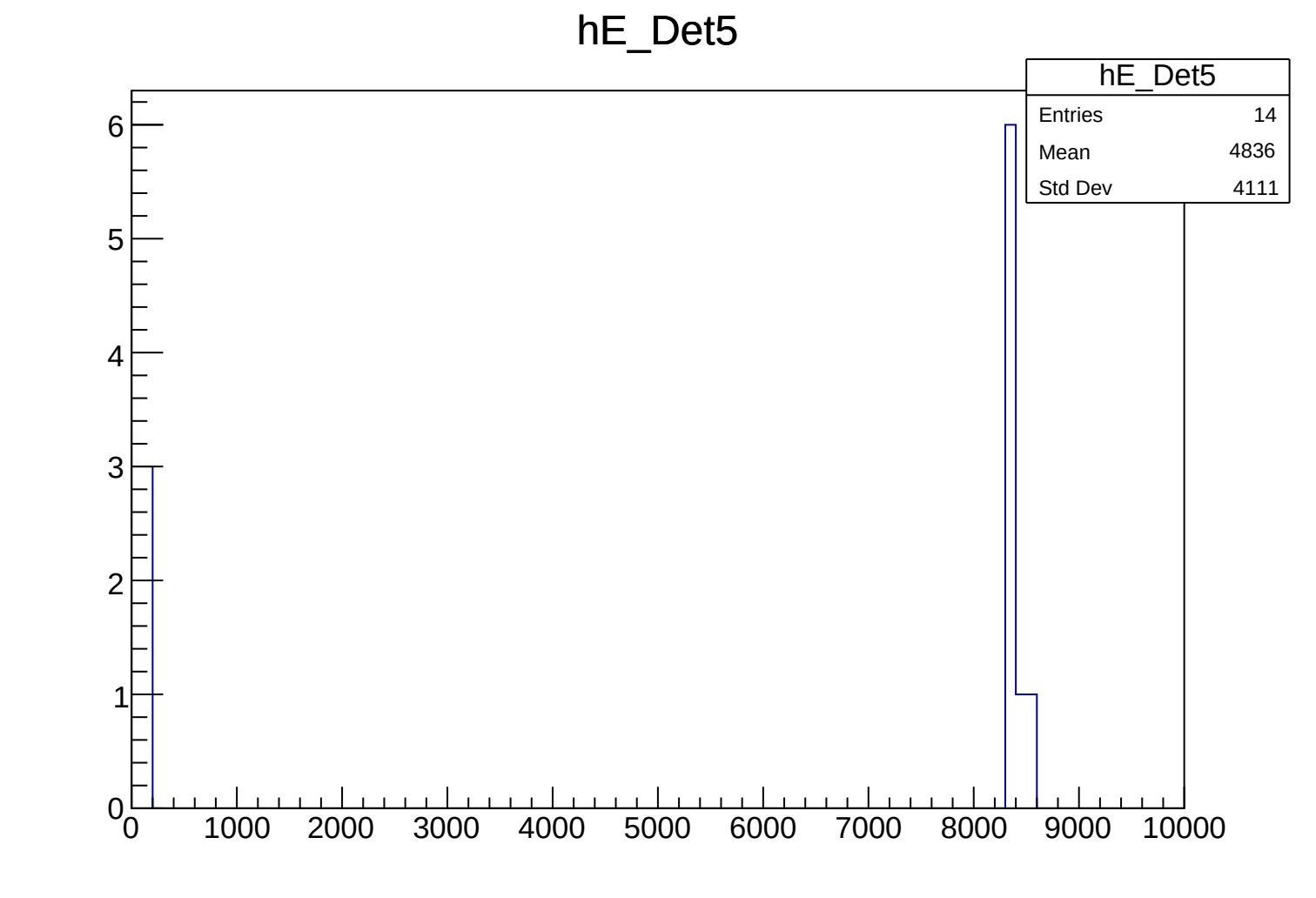

momangleHistX_Det4
momangleHistX_Det4
Entries 2
Mean x 684.6
Mean y −9.849
Std Dev x 629.8
Std Dev y 4.143
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


momangleHistY_Det4
momangleHistY_Det4
Entries 2
Mean x 684.6
Mean y 0.3154
Std Dev x 629.8
Std Dev y 0.1692
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hdE_Det4
hdE_Det4
Entries 46
Mean 0.2308
Std Dev 0.1873
16
14
12
10
8
6
4
2
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2


Energy_Det4
h_anti_nu_mu_E
2
684.6
629.8
anti_nu_mu
e+
e-
gamma
neutron
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Spectrum_Det4
h_anti_nu_mu_EE
2
1264
246.7
anti_nu_mu
e+
e-
gamma
neutron
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hE_Det5
hE_Det5
Entries 14
Mean 4836
Std Dev 4111
0
1
2
3
4
5
6
0
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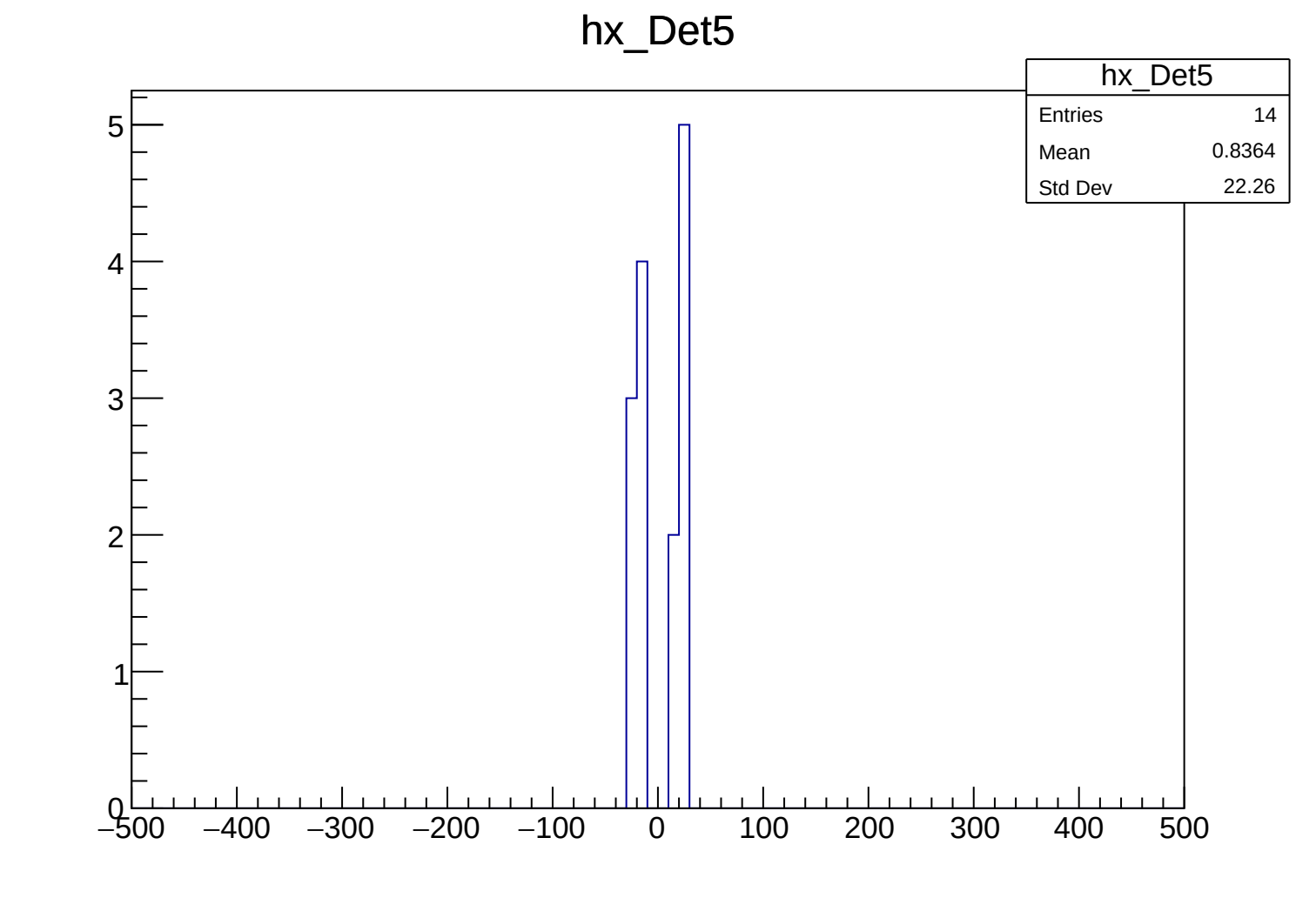
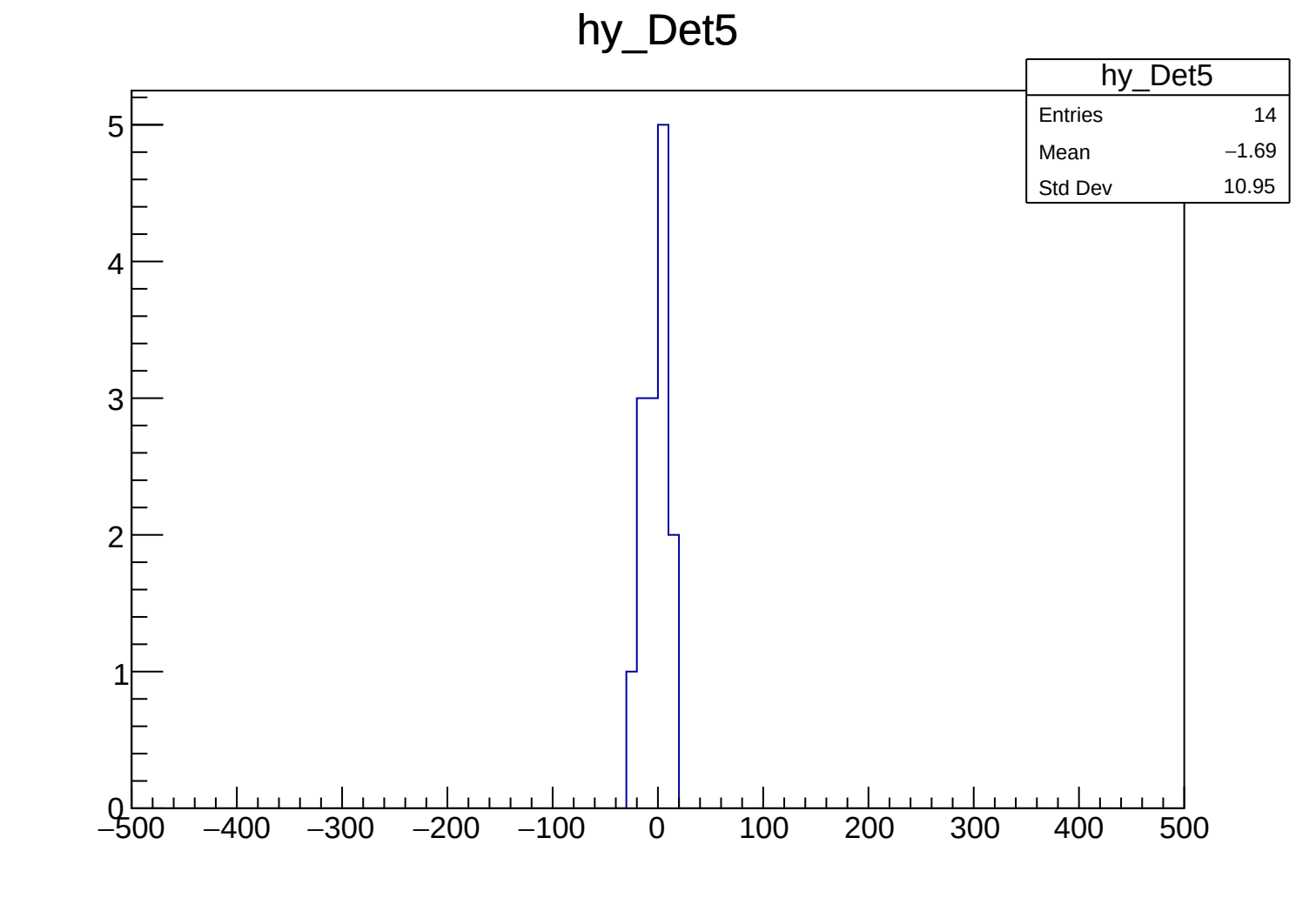
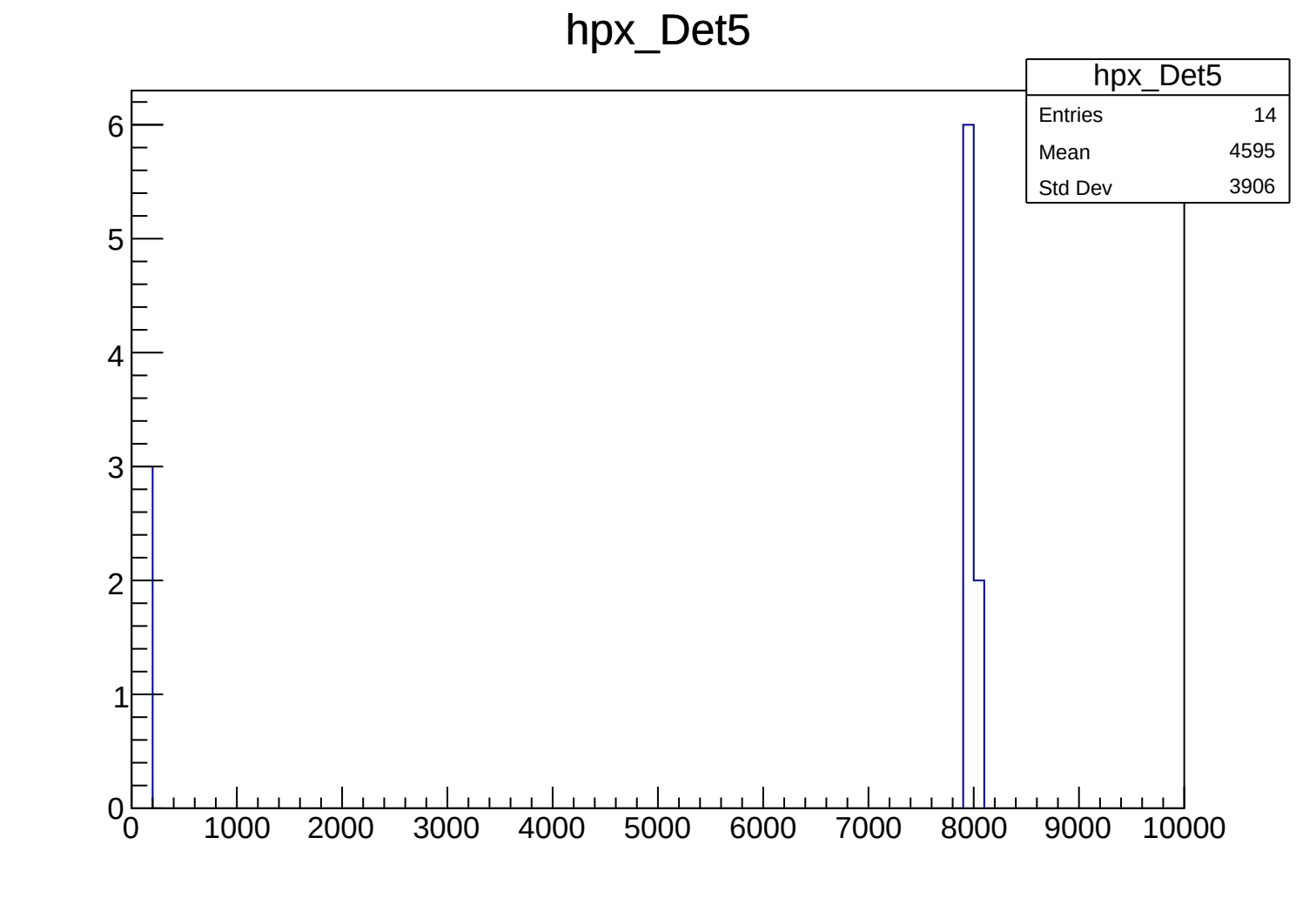
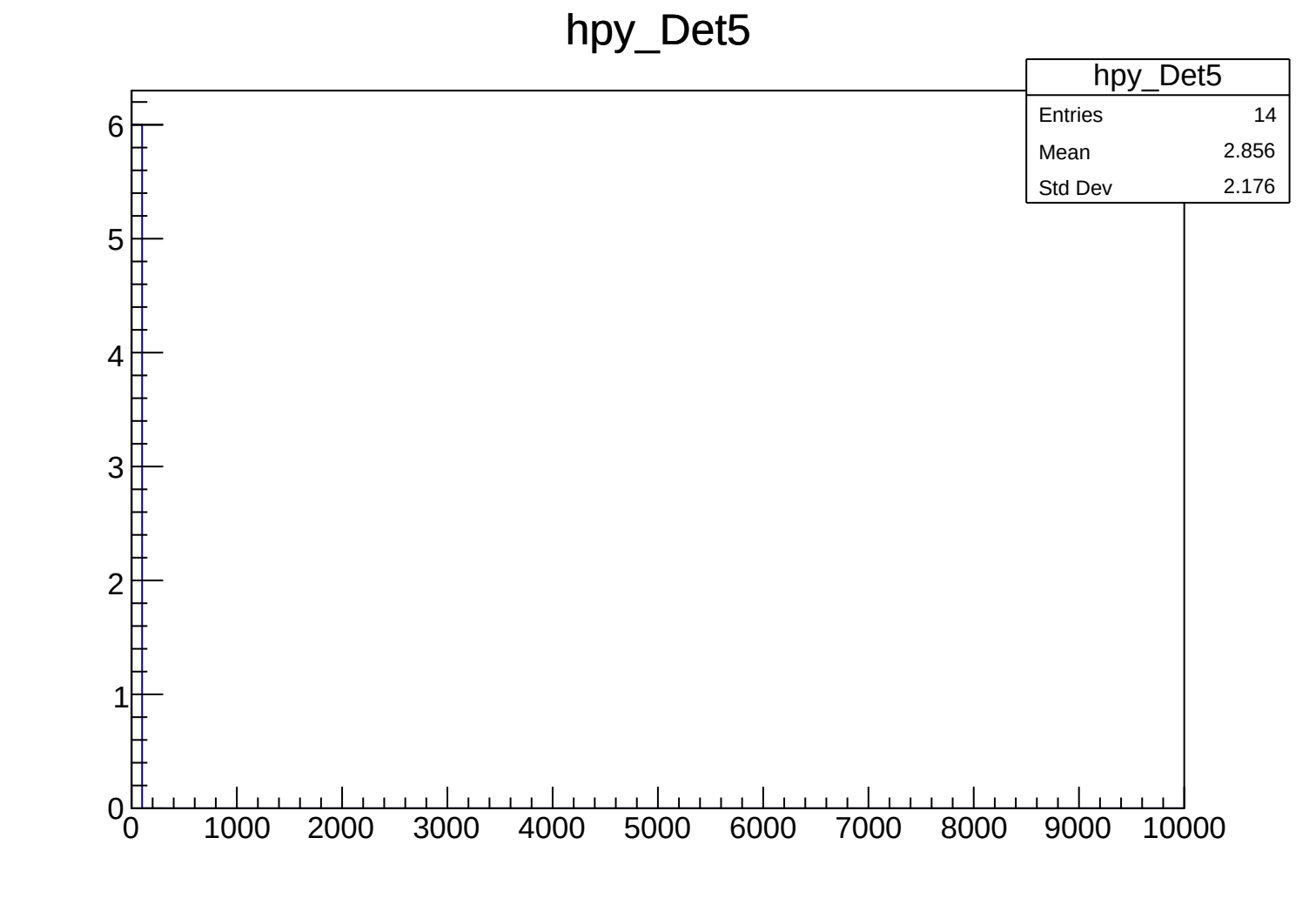
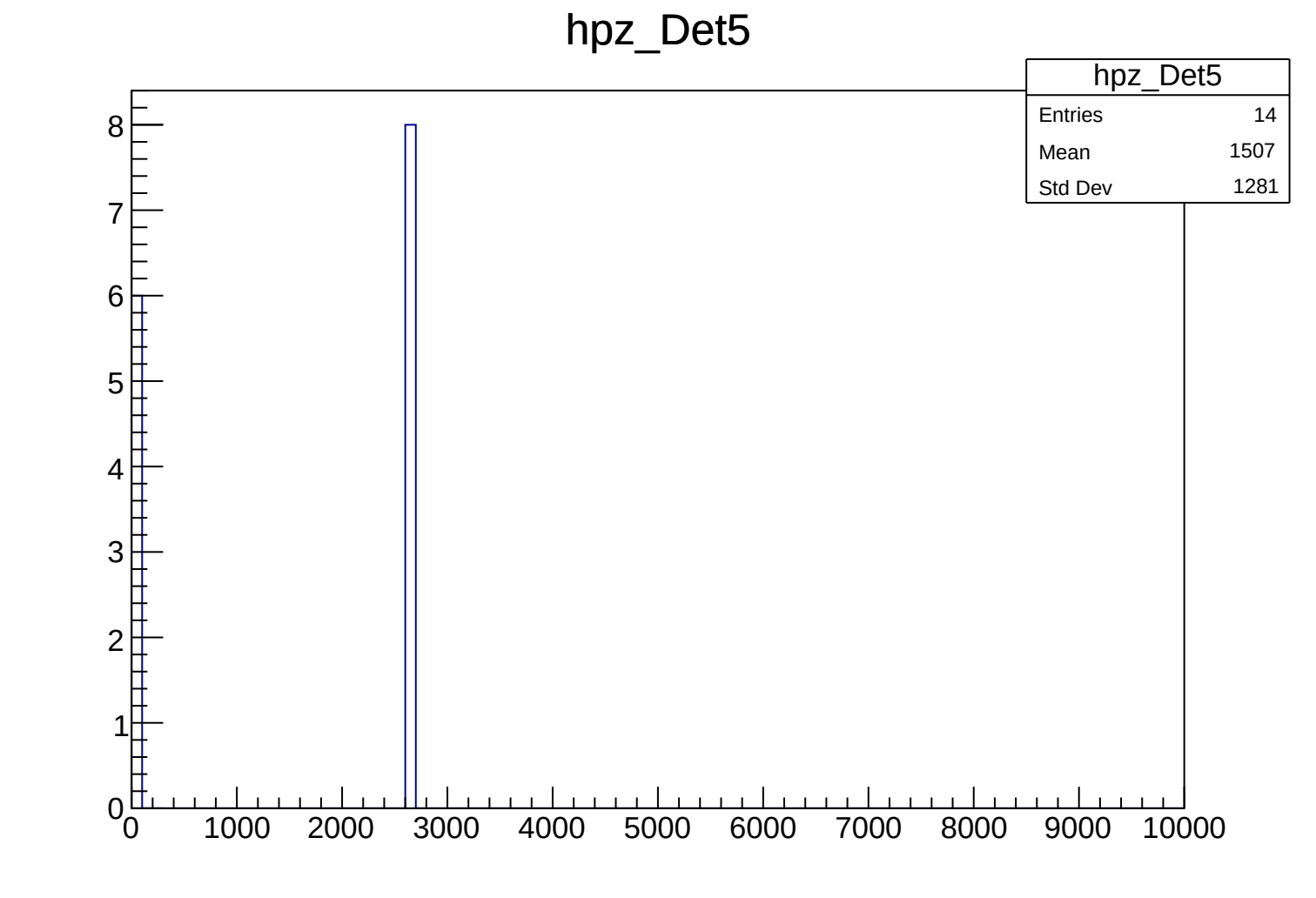
2000
3000
4000
5000
6000
7000
8000
9000
10000

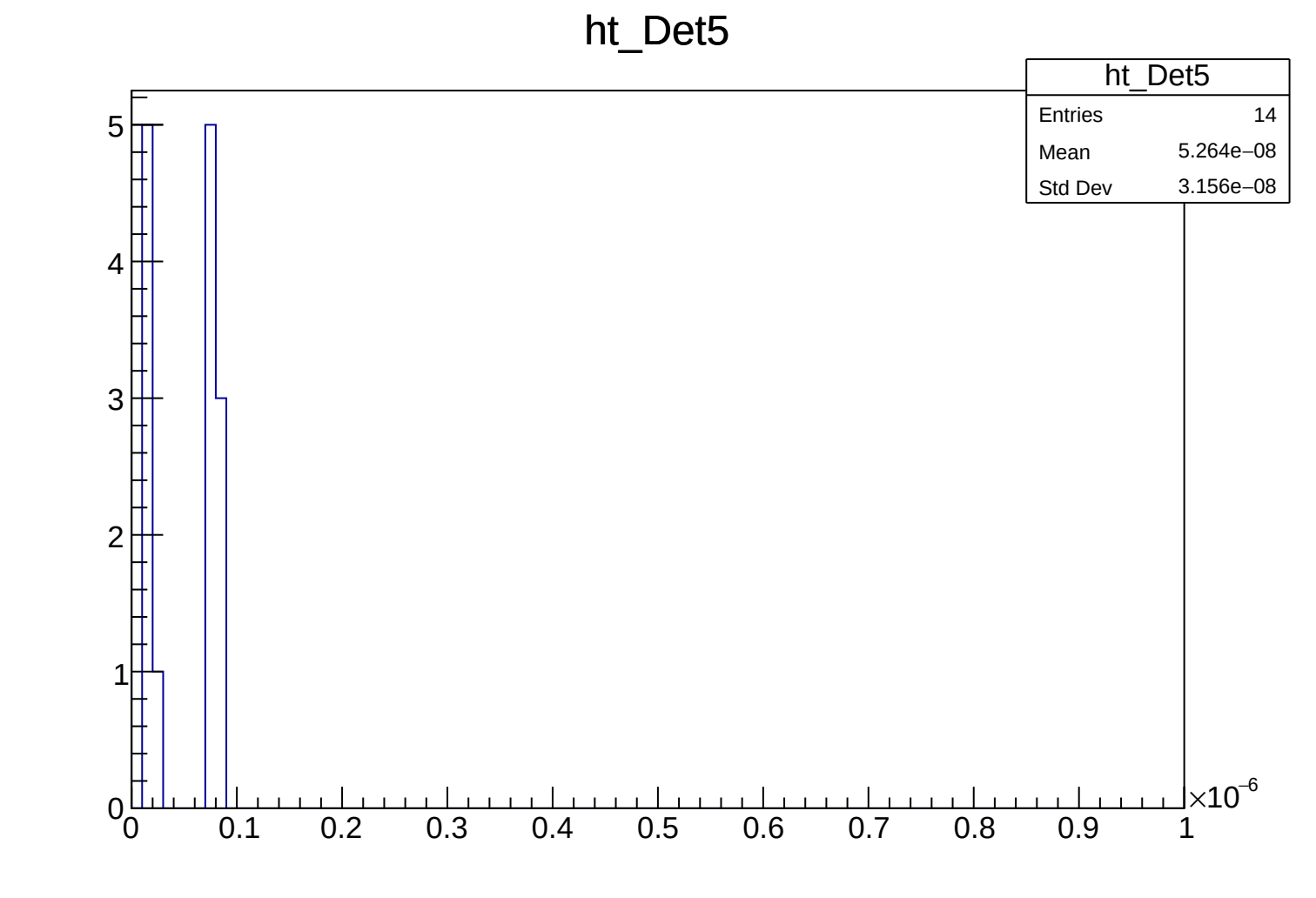

hx_Det5
hx_Det5
Entries 14
Mean 0.8364
Std Dev 22.26
5
4
3
2
1
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

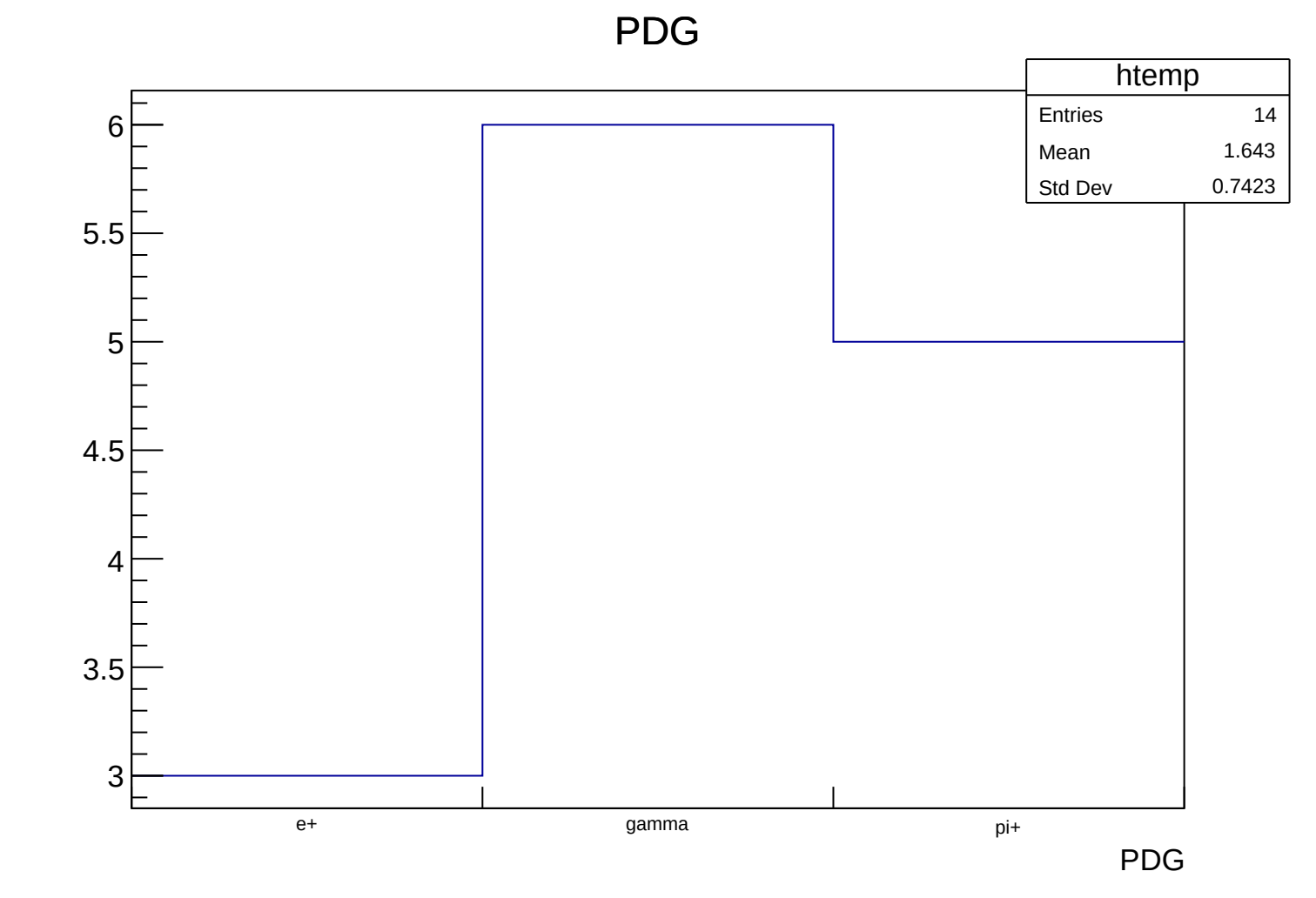

hy_Det5
hy_Det5
Entries 14
Mean −1.69
Std Dev 10.95
5
4
3
2
1
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

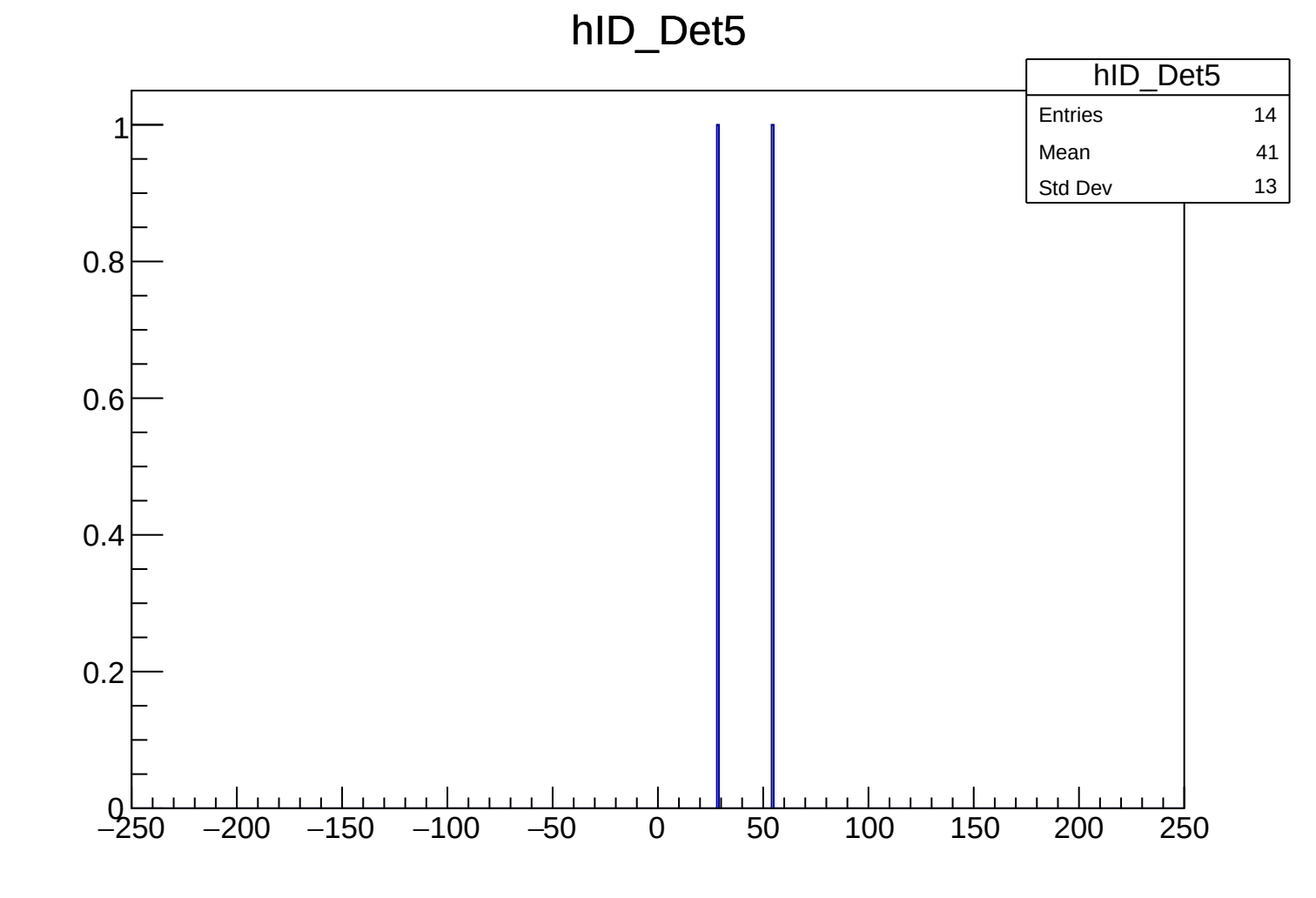

hpx_Det5
hpx_Det5
Entries 14
Mean 4595
Std Dev 3906
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

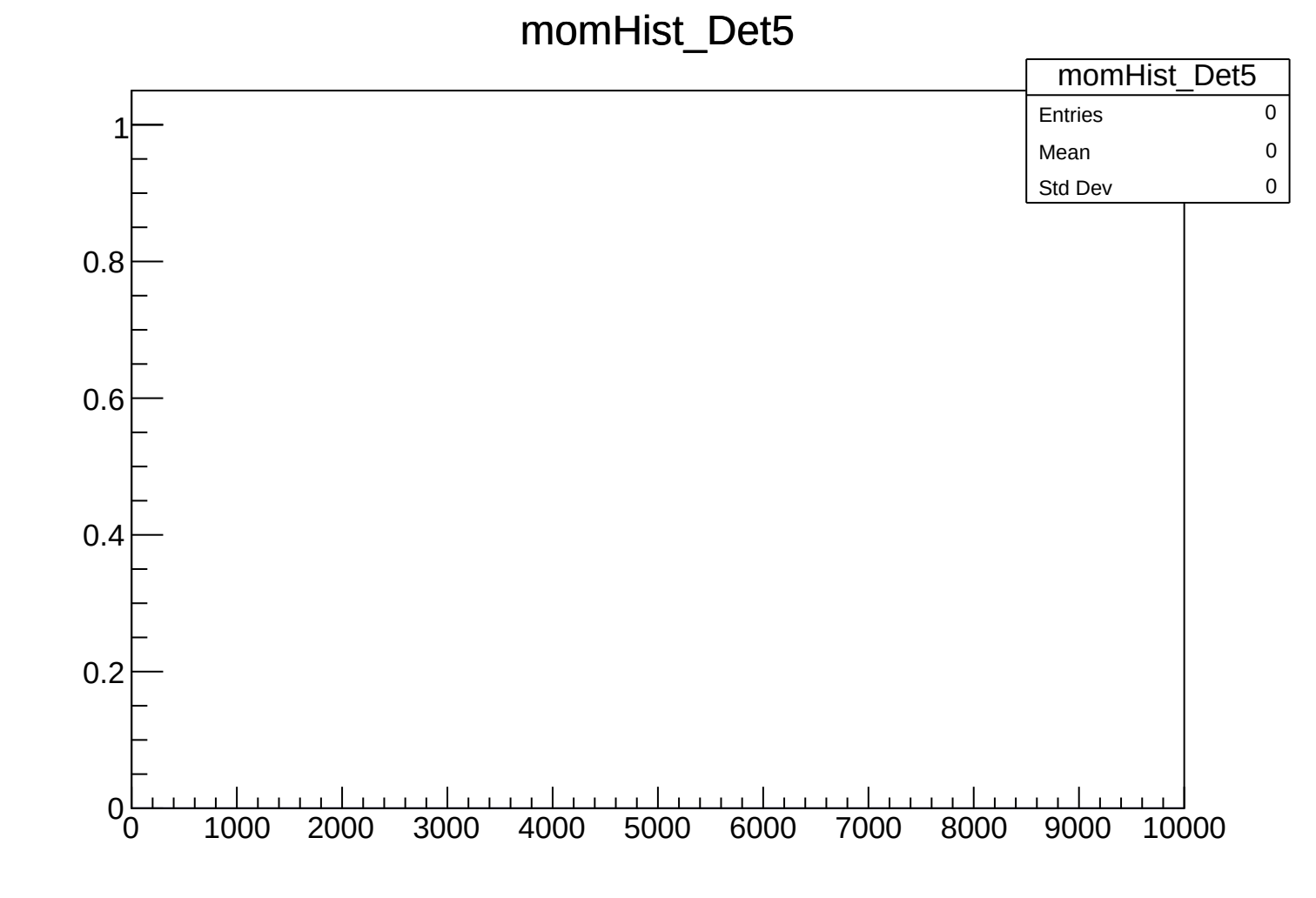

hpy_Det5
hpy_Det5
Entries 14
Mean 2.856
Std Dev 2.176
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hpz_Det5
hpz_Det5
Entries 14
Mean 1507
Std Dev 1281
0
1
2
3
4
5
6
7
8
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


ht_Det5
ht_Det5
Entries 14
Mean 5.264e−08
Std Dev 3.156e−08
5
4
3
2
1
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6


PDG
htemp
Entries 14
Mean 1.643
Std Dev 0.7423
6
5.5
5
4.5
4
3.5
3
e+
gamma
pi+
PDG


hID_Det5
hID_Det5
Entries 14
Mean 41
Std Dev 13
1
0.8
0.6
0.4
0.2
0
−250
−200
−150
−100
−50
0
50
100
150
200
250


momHist_Det5
momHist_Det5
Entries 0
Mean 0
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0
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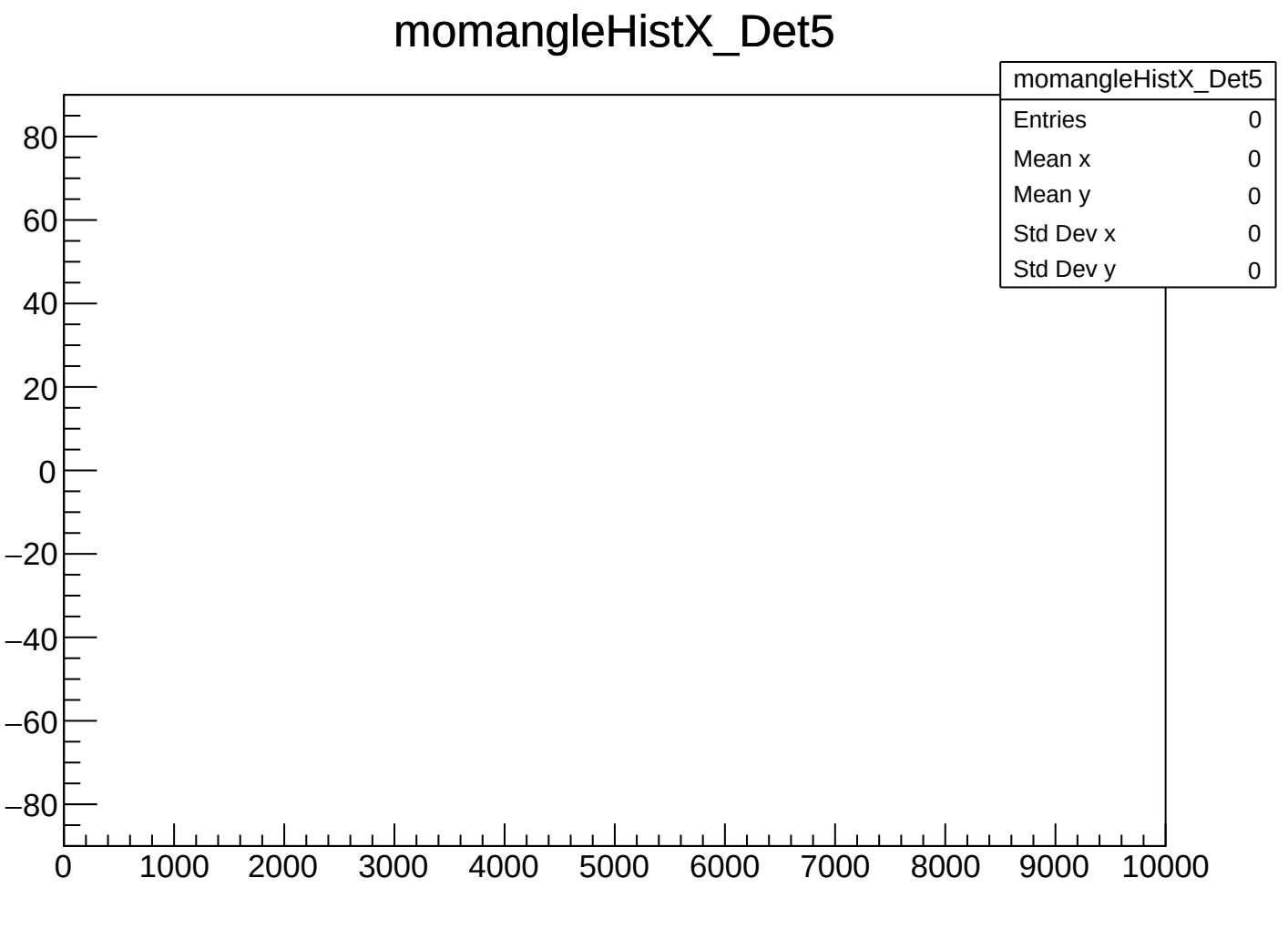
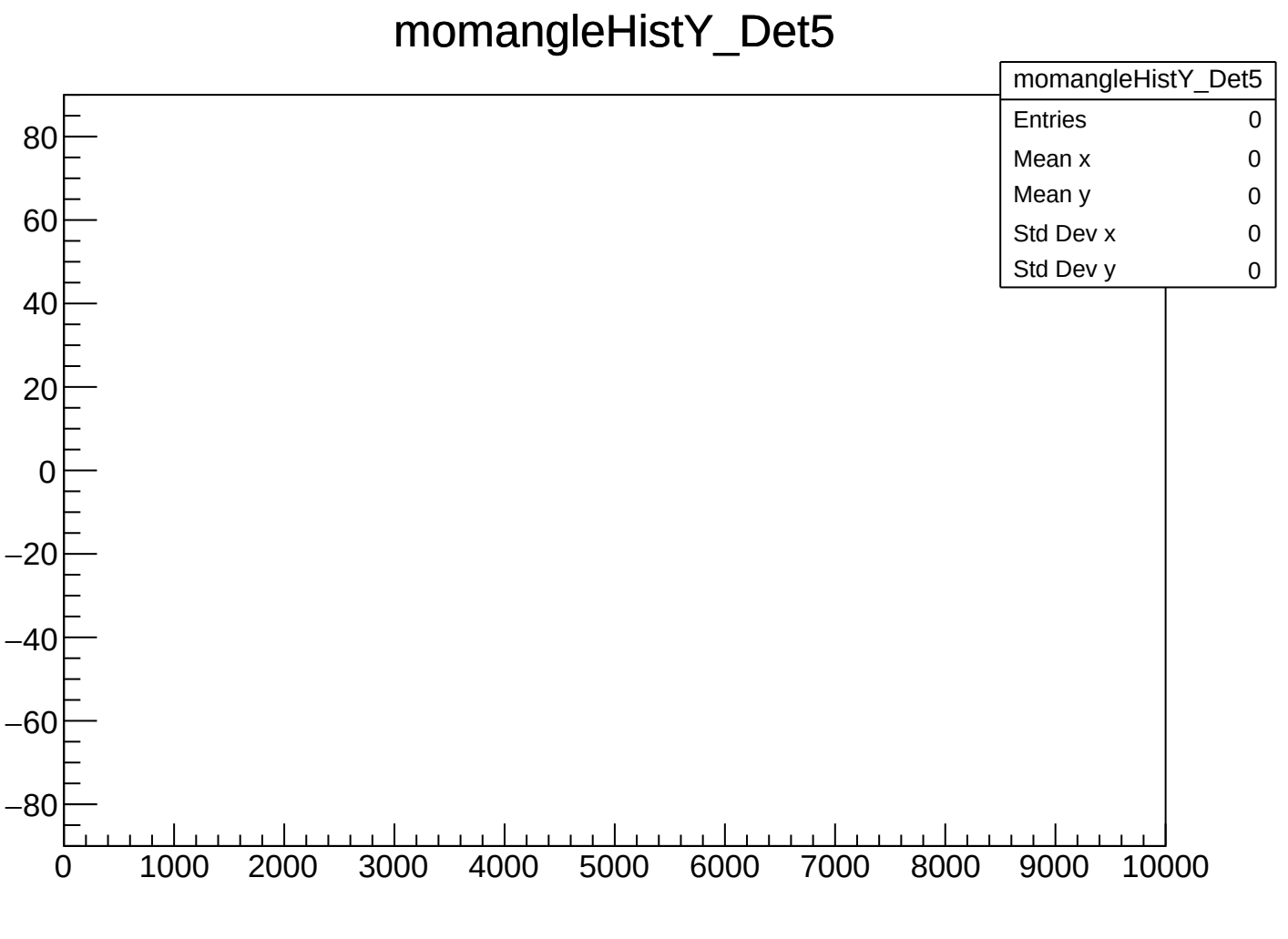
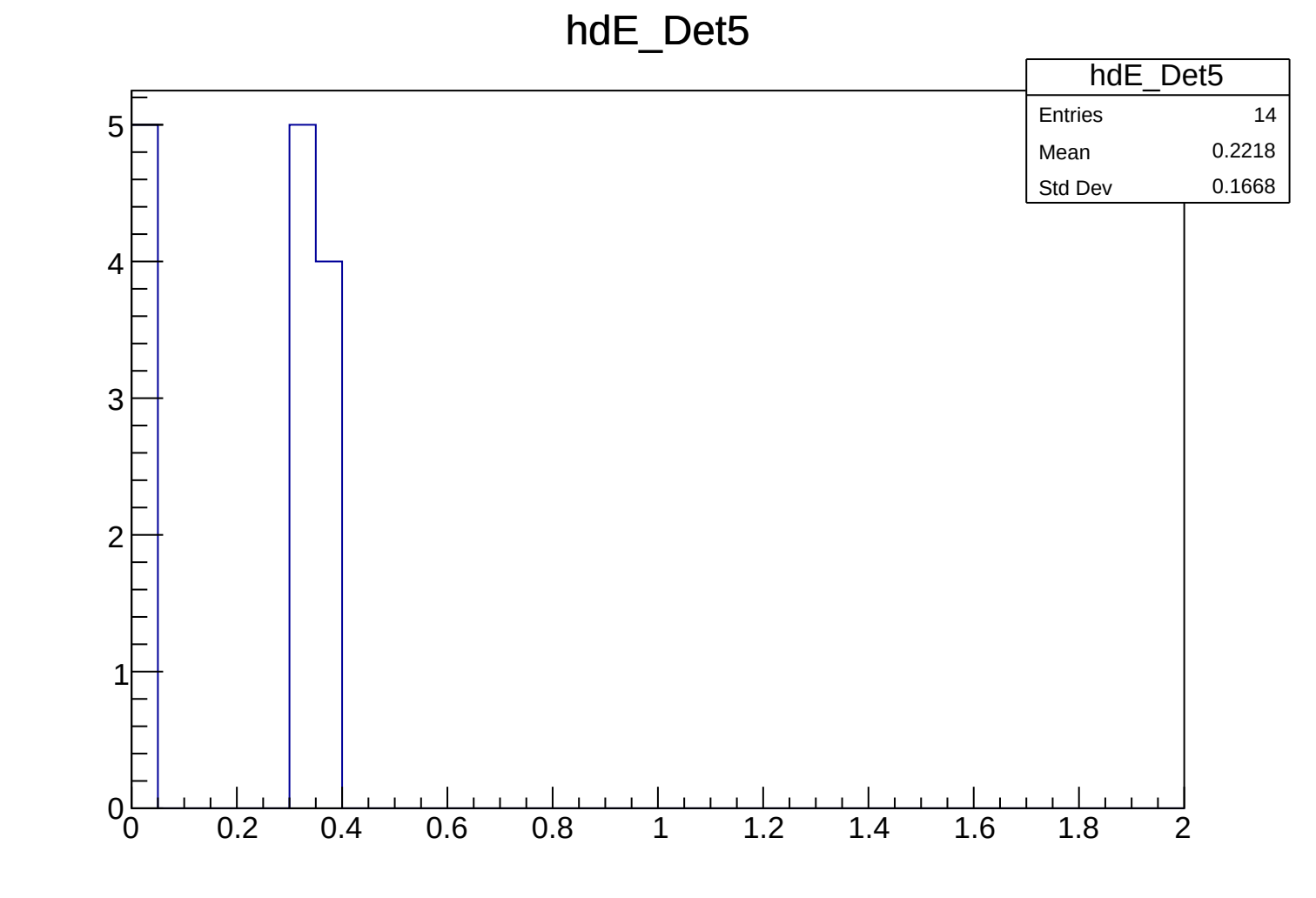
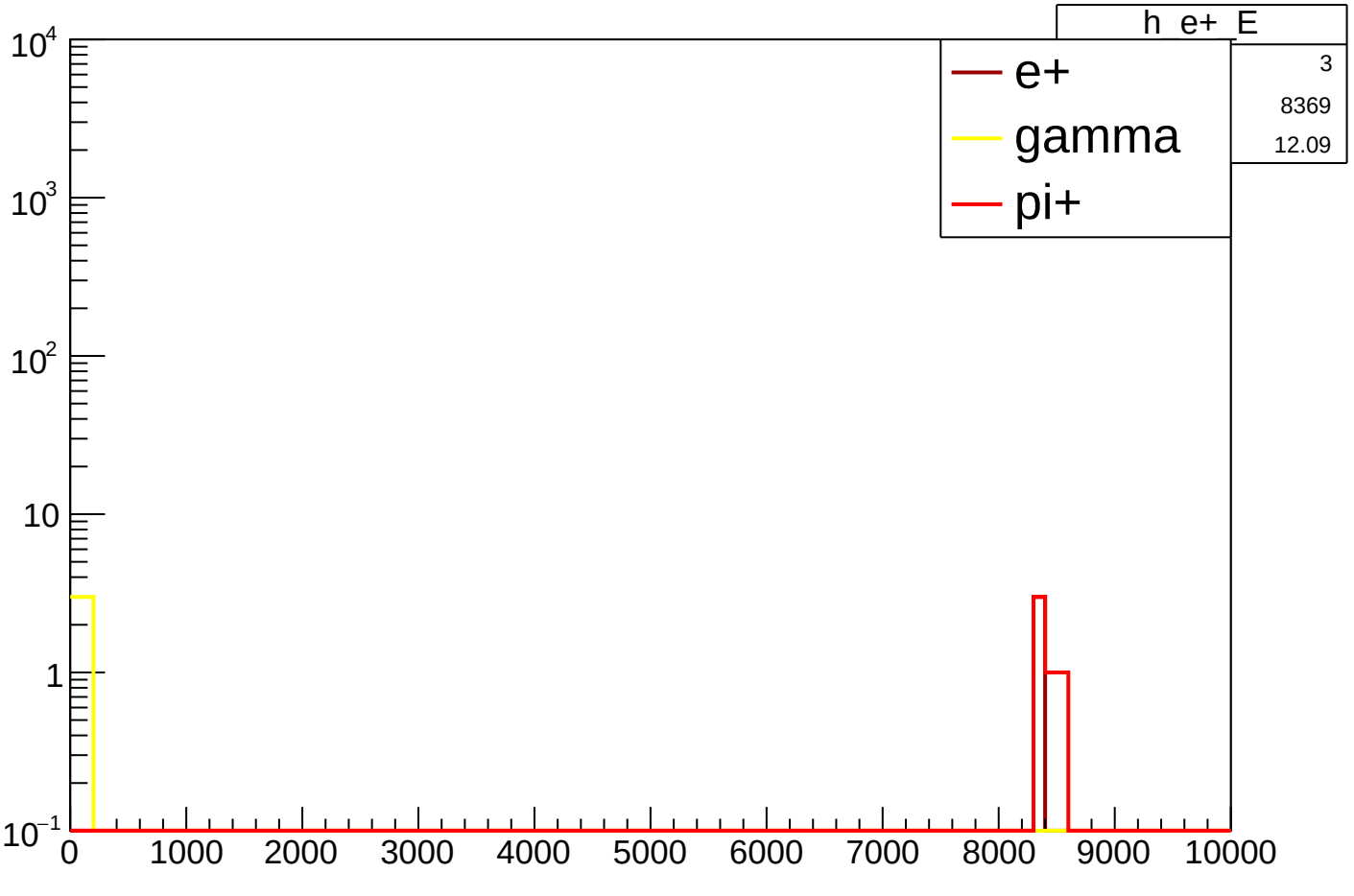
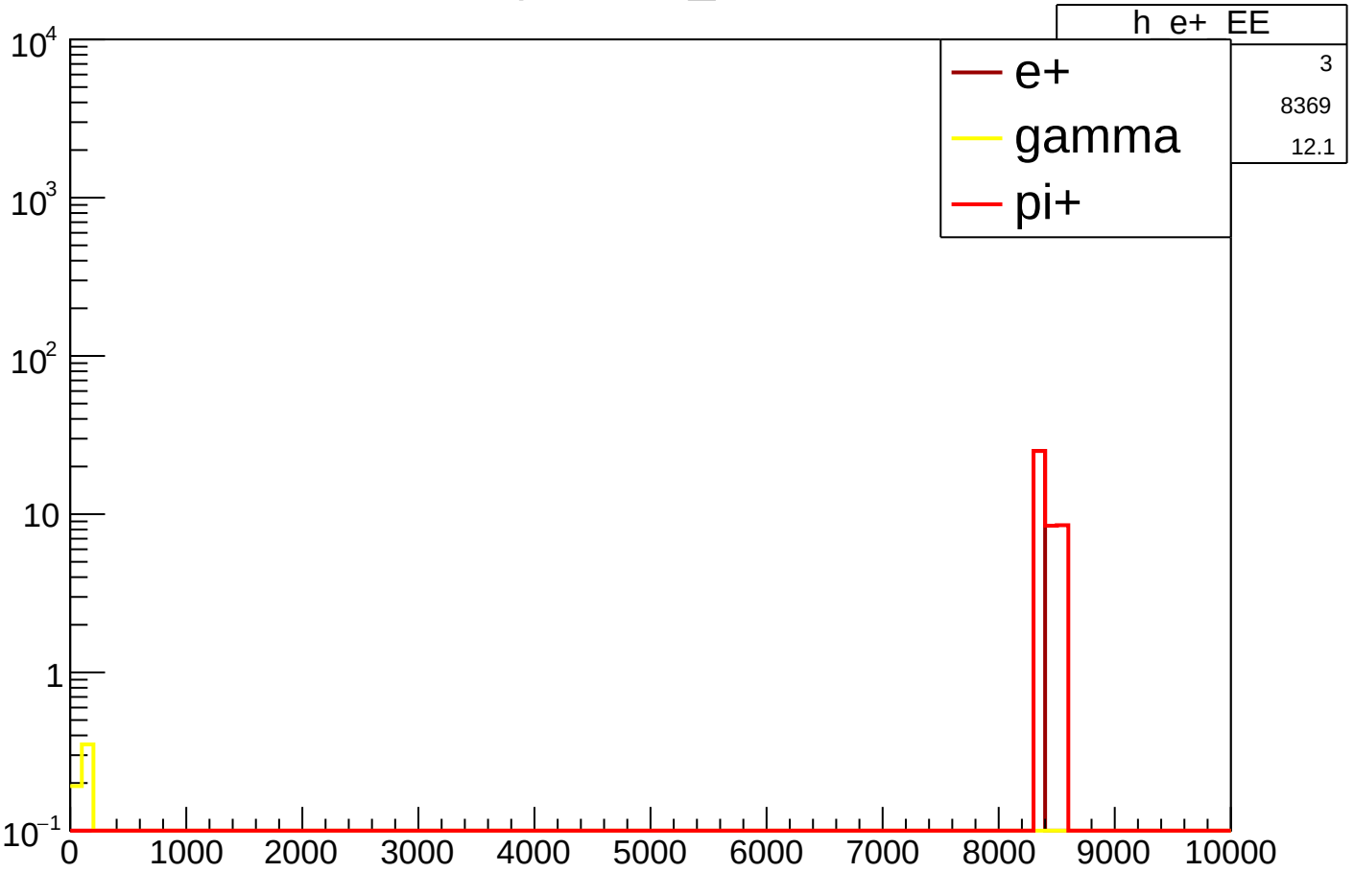
8000
9000
10000

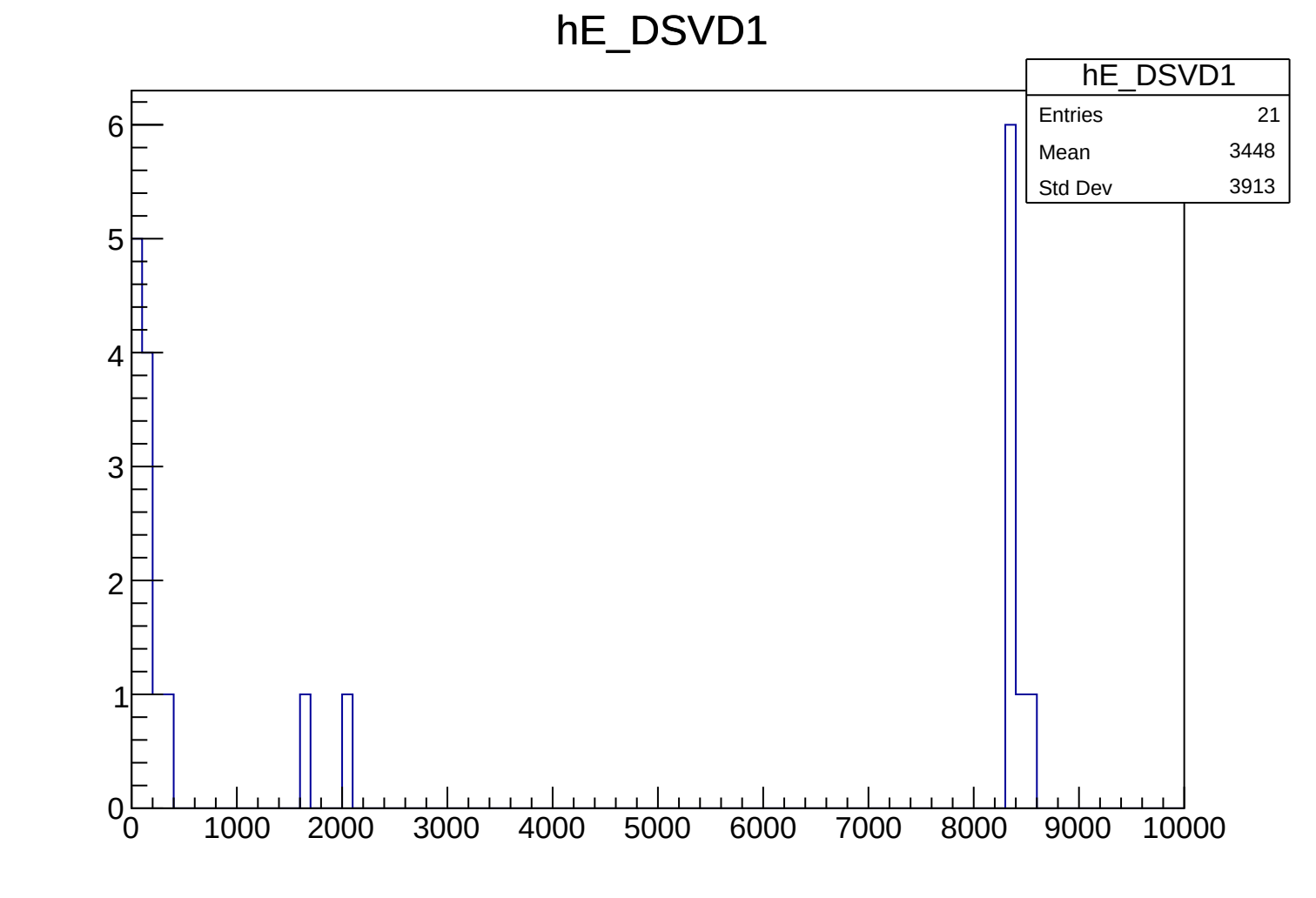

momangleHistX_Det5
momangleHistX_Det5
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
80
60
40
20
0
–20
–40
–60
–80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

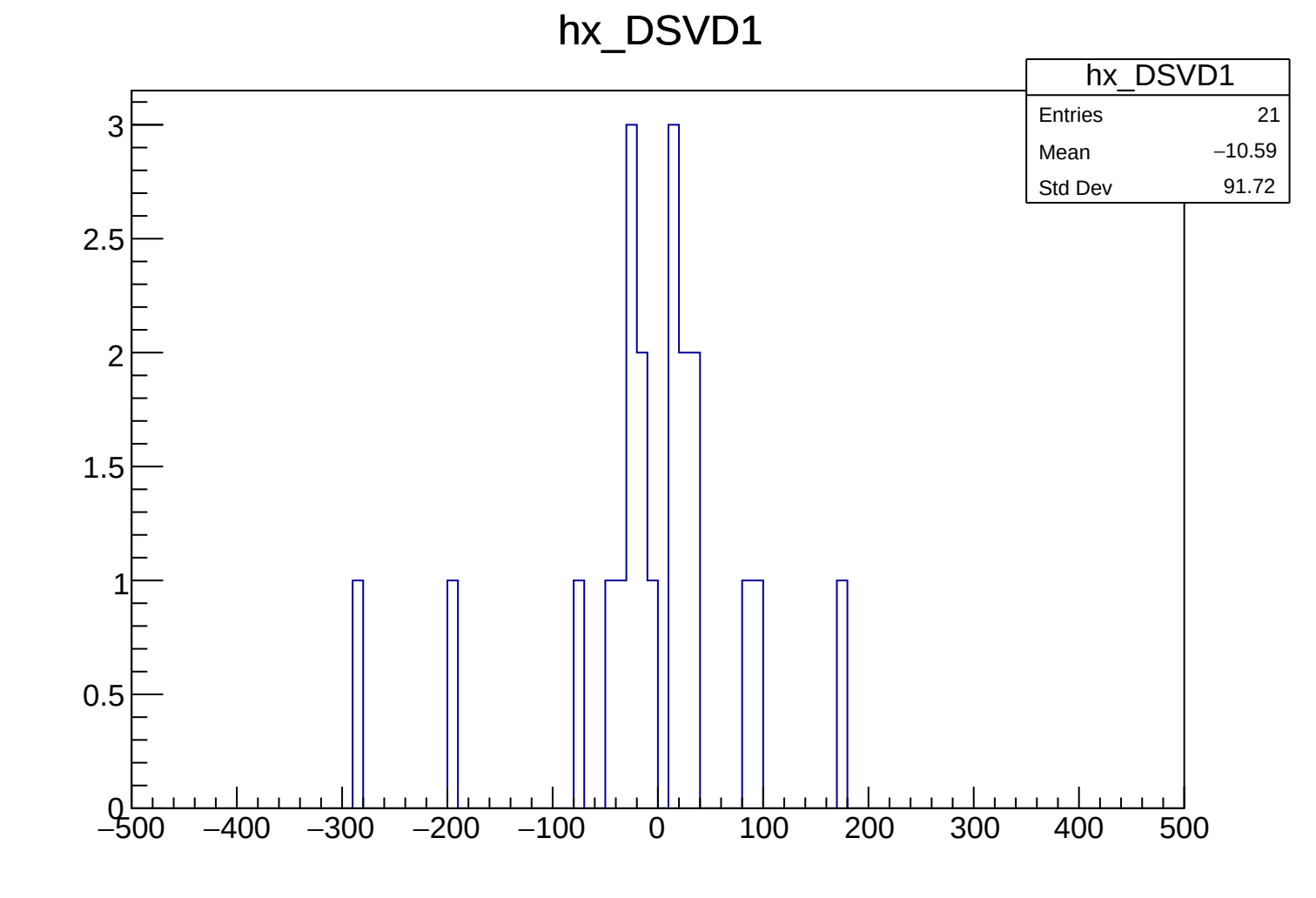

momangleHistY_Det5
momangleHistY_Det5
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
80
60
40
20
0
–20
–40
–60
–80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

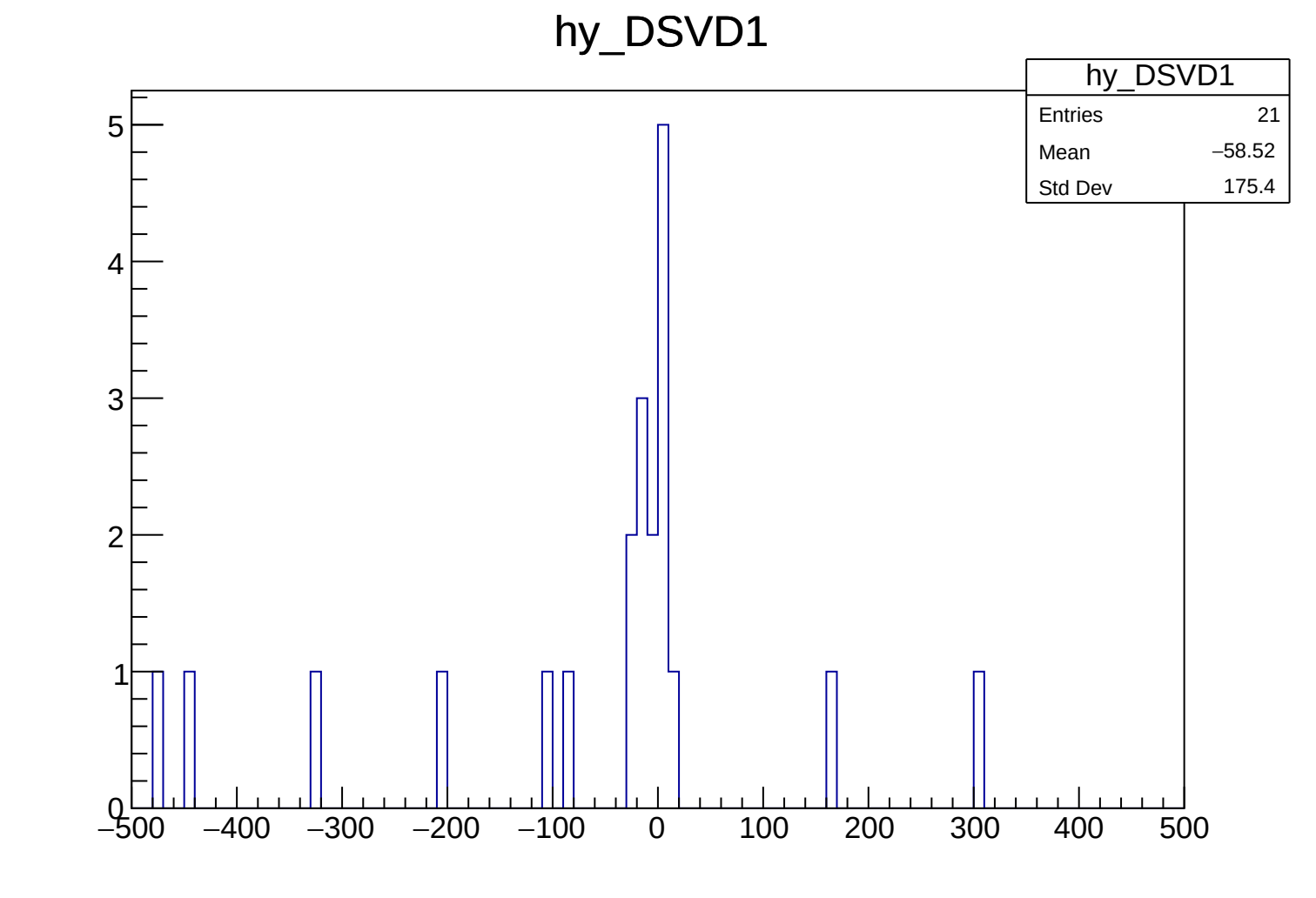

hdE_Det5
hdE_Det5
Entries 14
Mean 0.2218
Std Dev 0.1668
0
1
2
3
4
5
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2

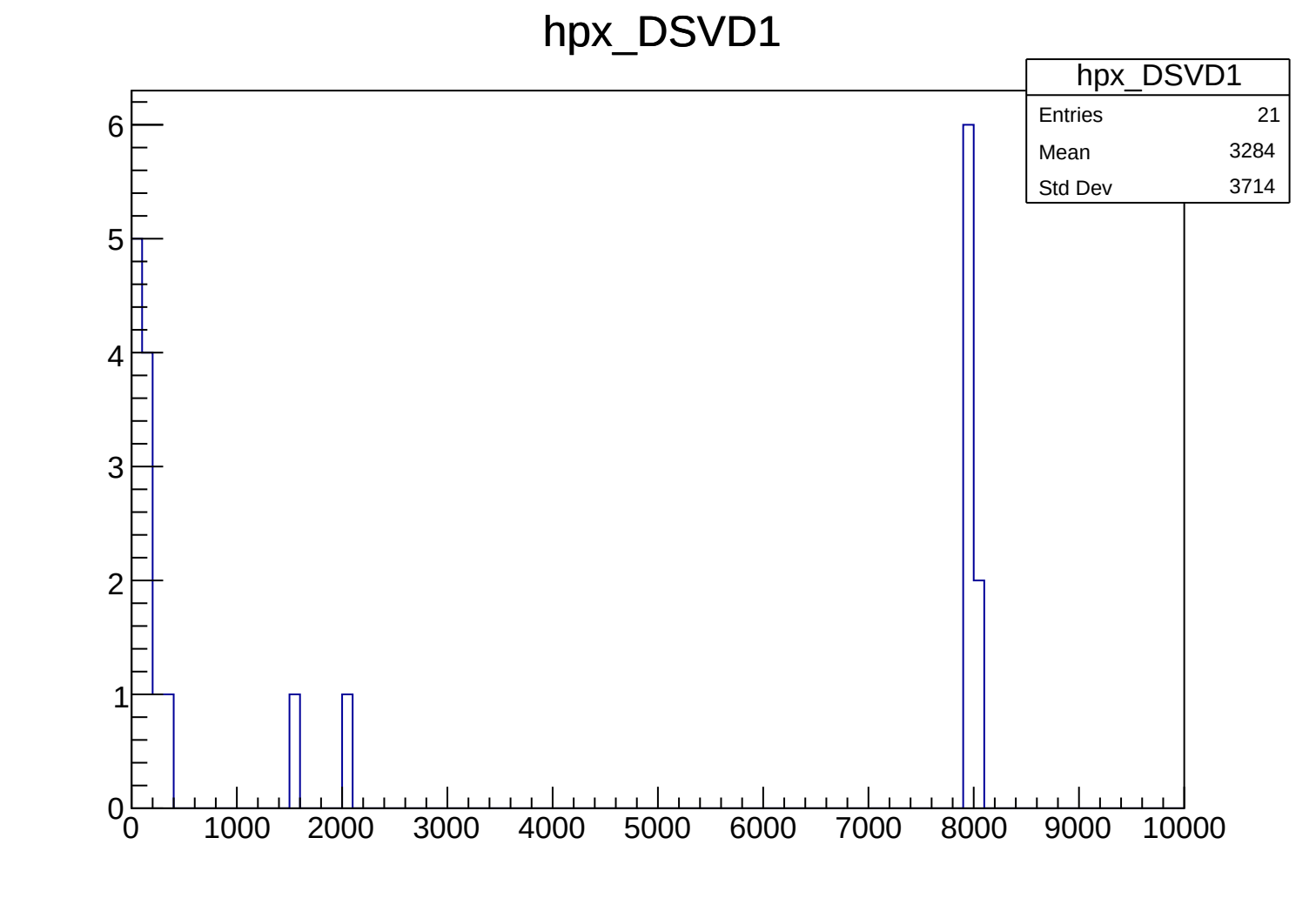

Energy_Det5
h e+ E
3
8369
12.09
e+
gamma
pi+
10^4
10^3
10^2
10
1
10^{-1}
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

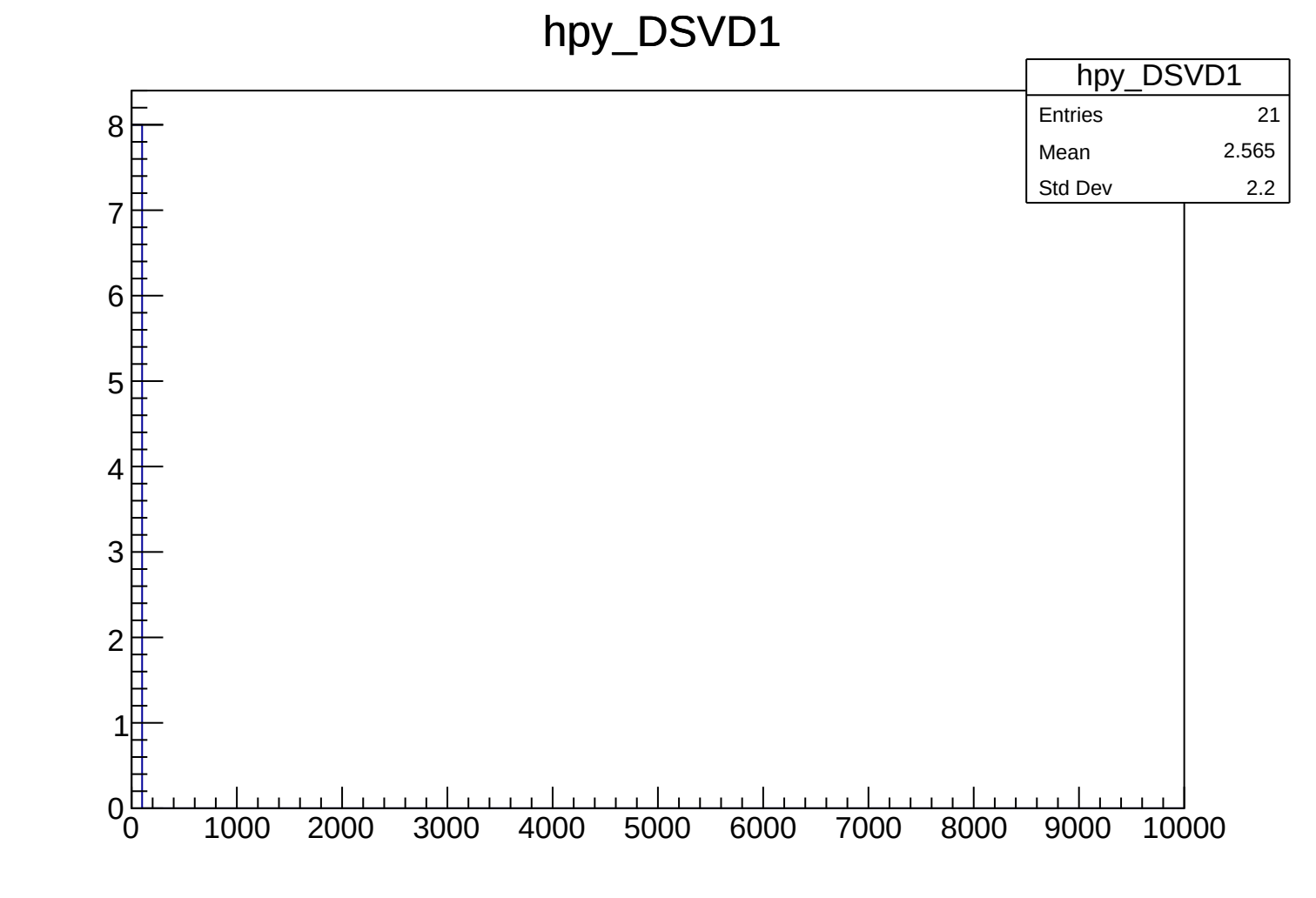

Spectrum_Det5
h_e+_EE
3
8369
12.1
e+
gamma
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hE_DSVD1
hE_DSVD1
Entries 21
Mean 3448
Std Dev 3913
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hx_DSVD1
hx_DSVD1
Entries 21
Mean −10.59
Std Dev 91.72
3
2.5
2
1.5
1
0.5
0
−500
−400
−300
−200
−100
0
100
200
300
400
500


hy_DSVD1
hy_DSVD1
Entries 21
Mean –58.52
Std Dev 175.4
5
4
3
2
1
0
–500
–400
–300
–200
–100
0
100
200
300
400
500


hpx_DSVD1
hpx_DSVD1
Entries 21
Mean 3284
Std Dev 3714
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hpy_DSVD1
hpy_DSVD1
Entries 21
Mean 2.565
Std Dev 2.2
0
1
2
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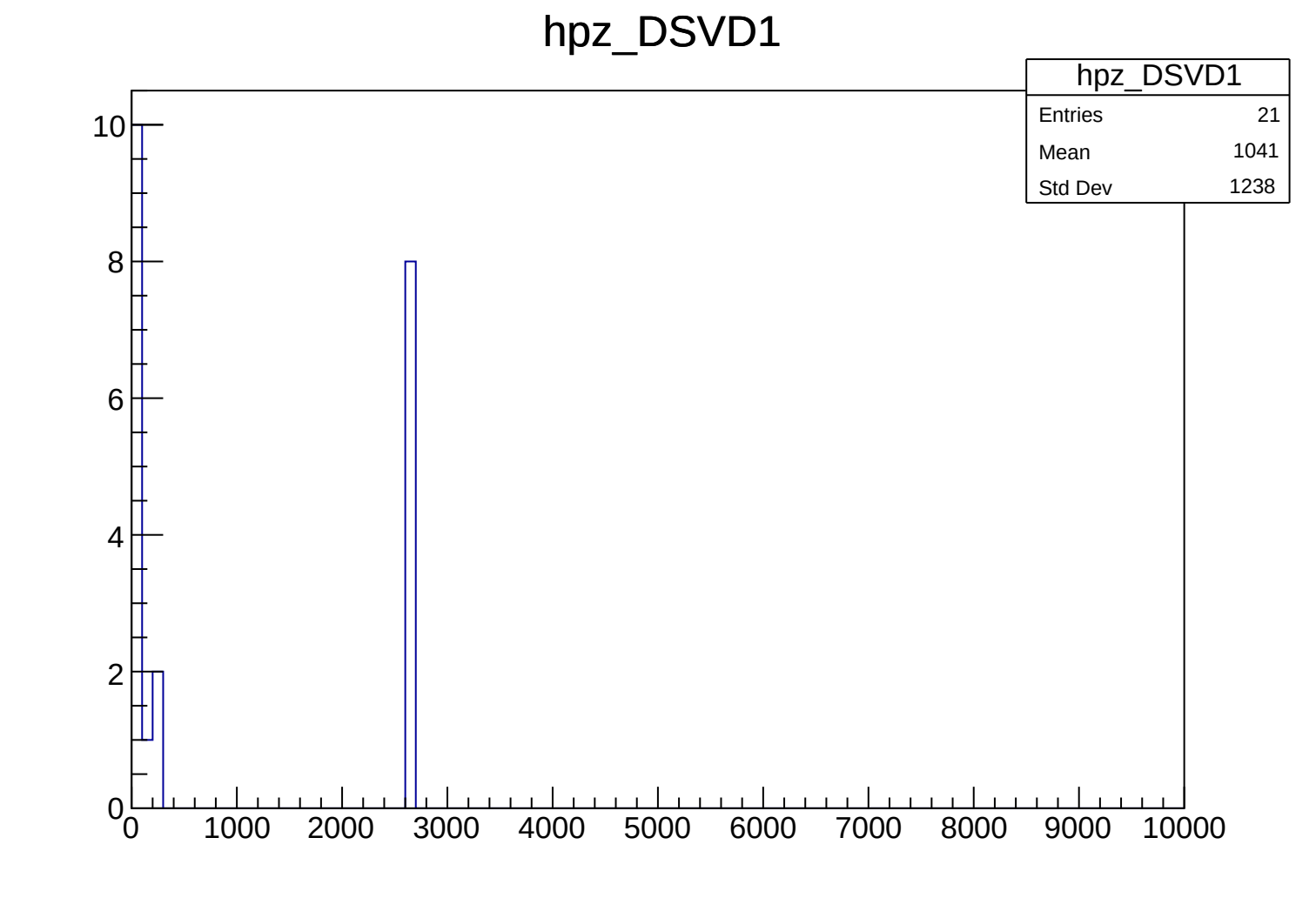
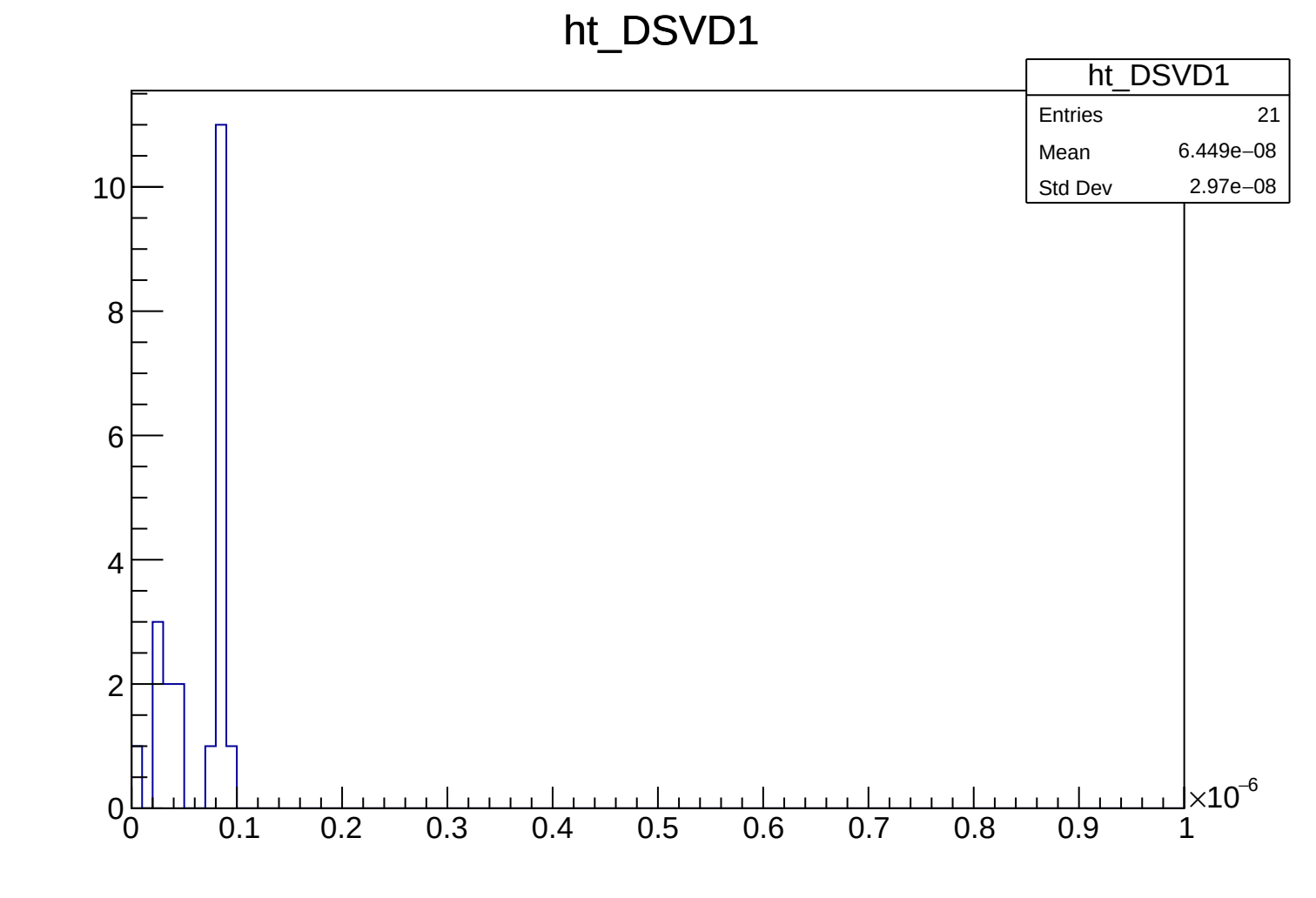
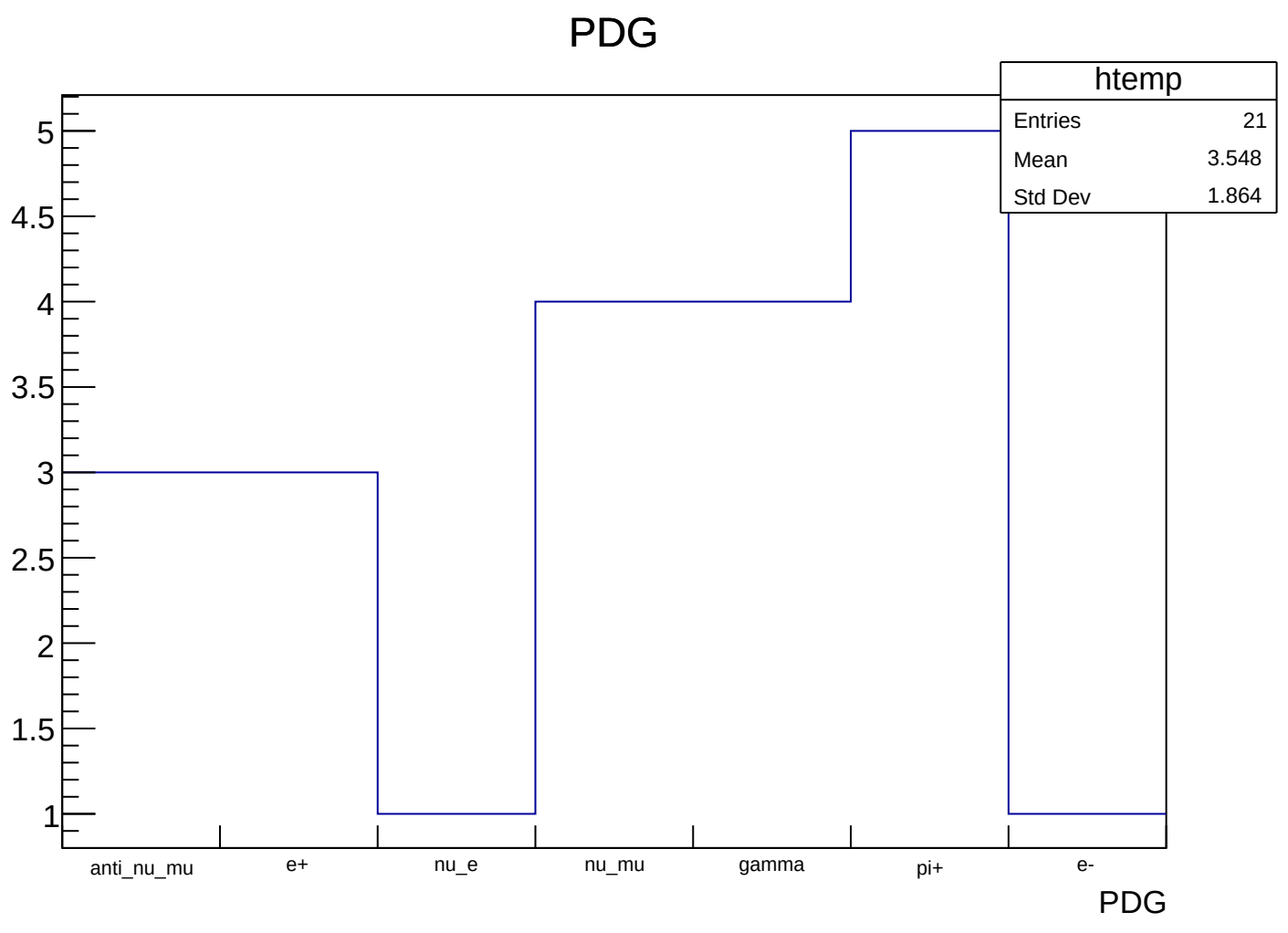
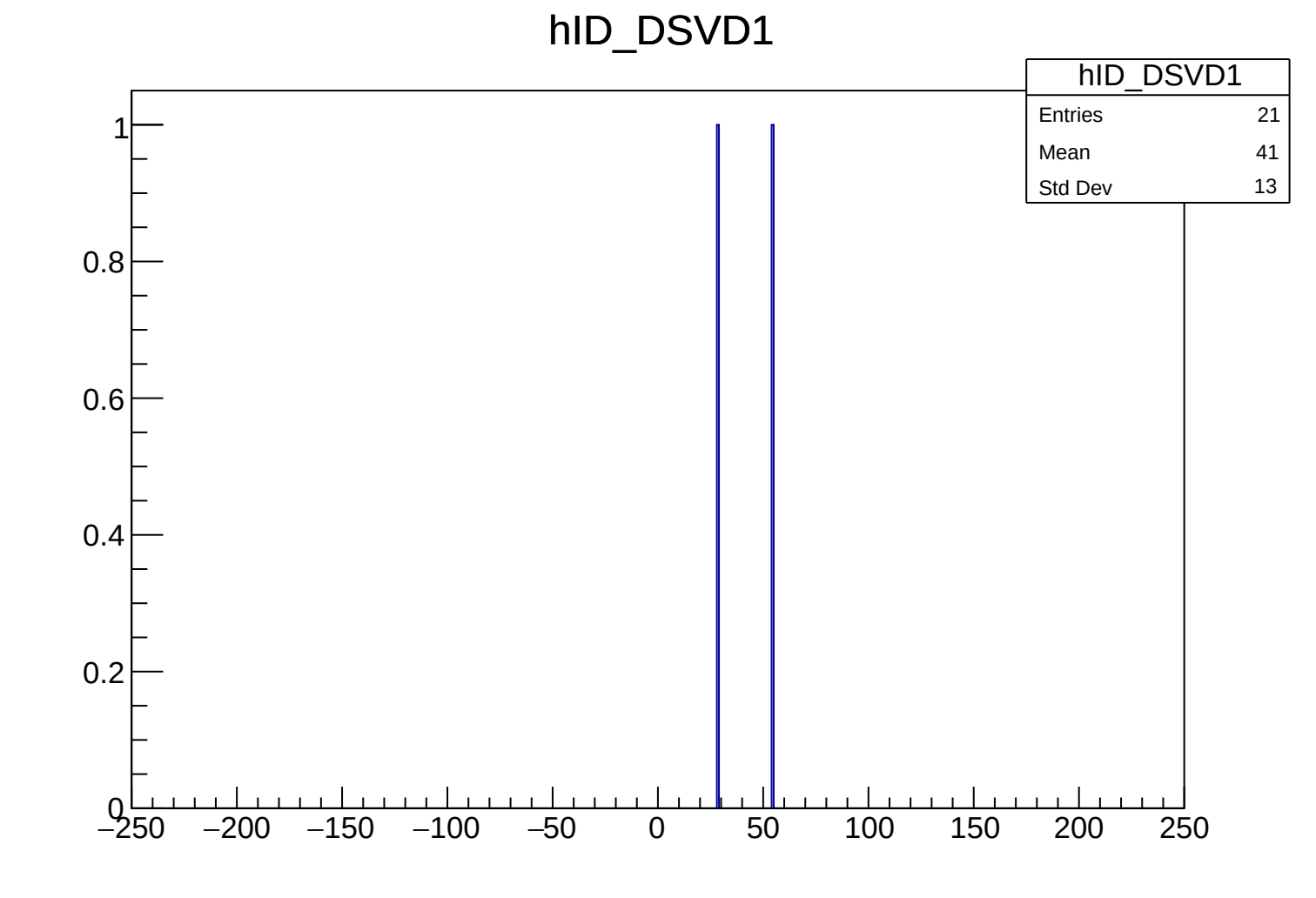
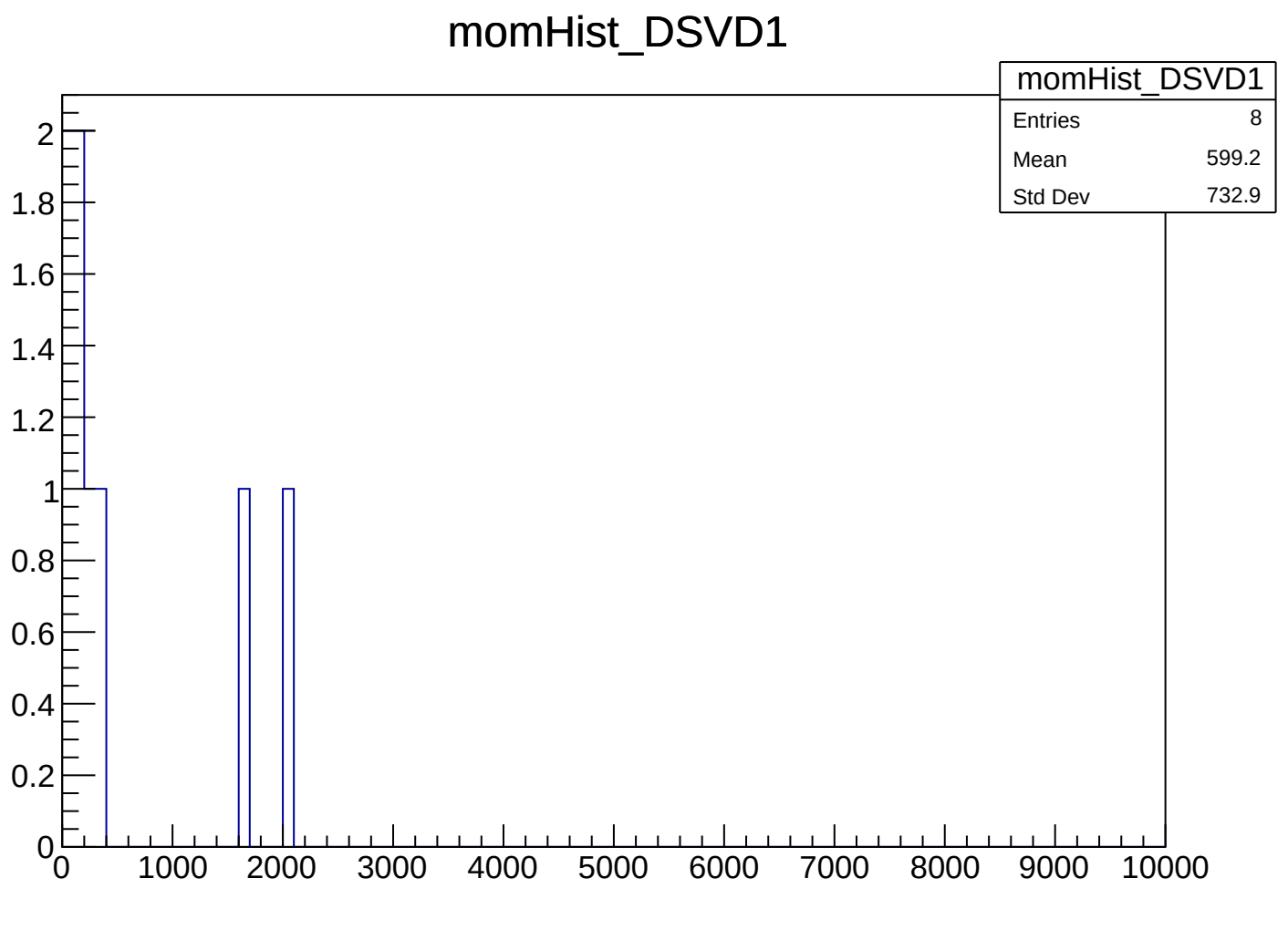
4
5
6
7
8
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

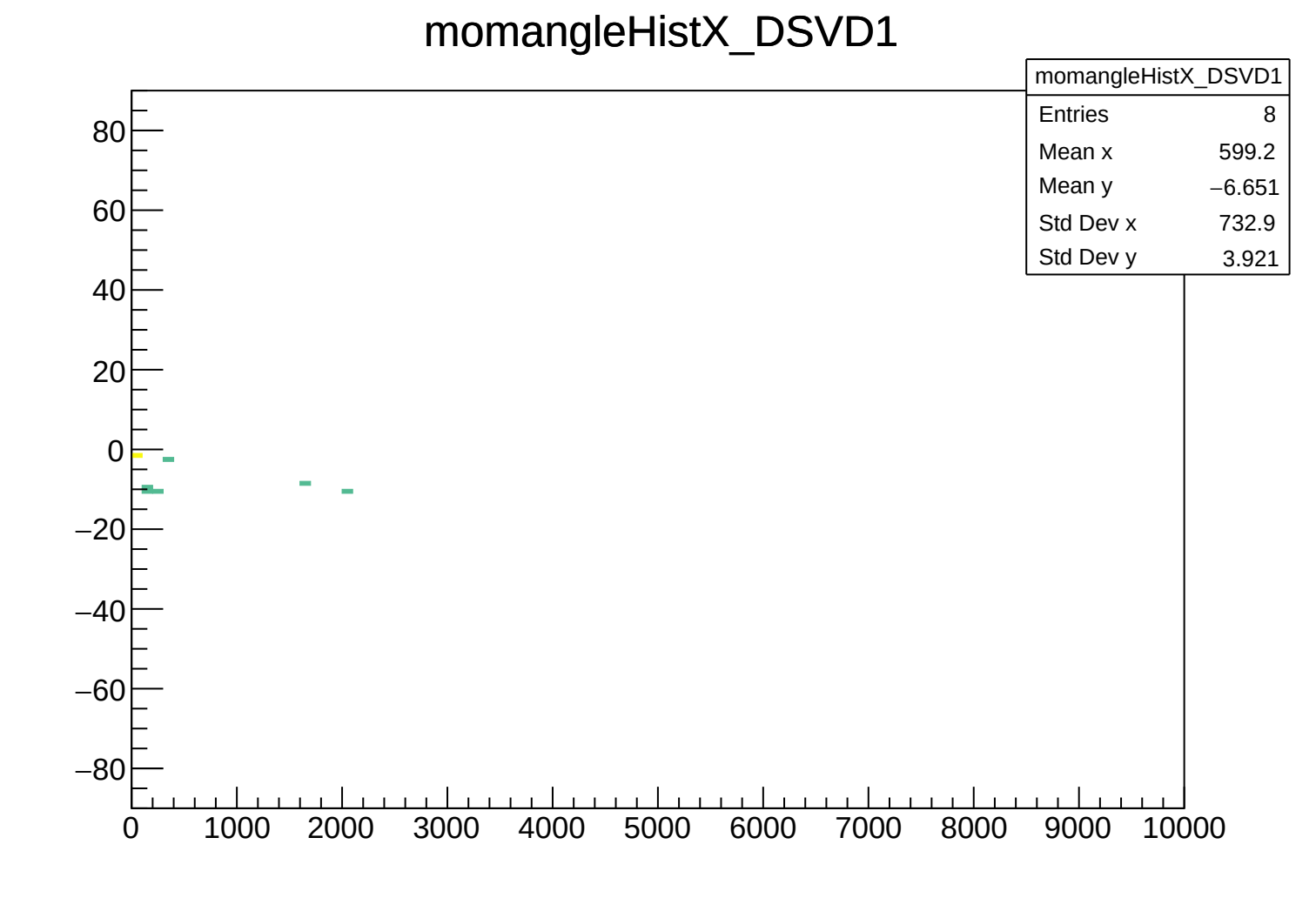

hpz_DSVD1
hpz_DSVD1
Entries 21
Mean 1041
Std Dev 1238
10
8
6
4
2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

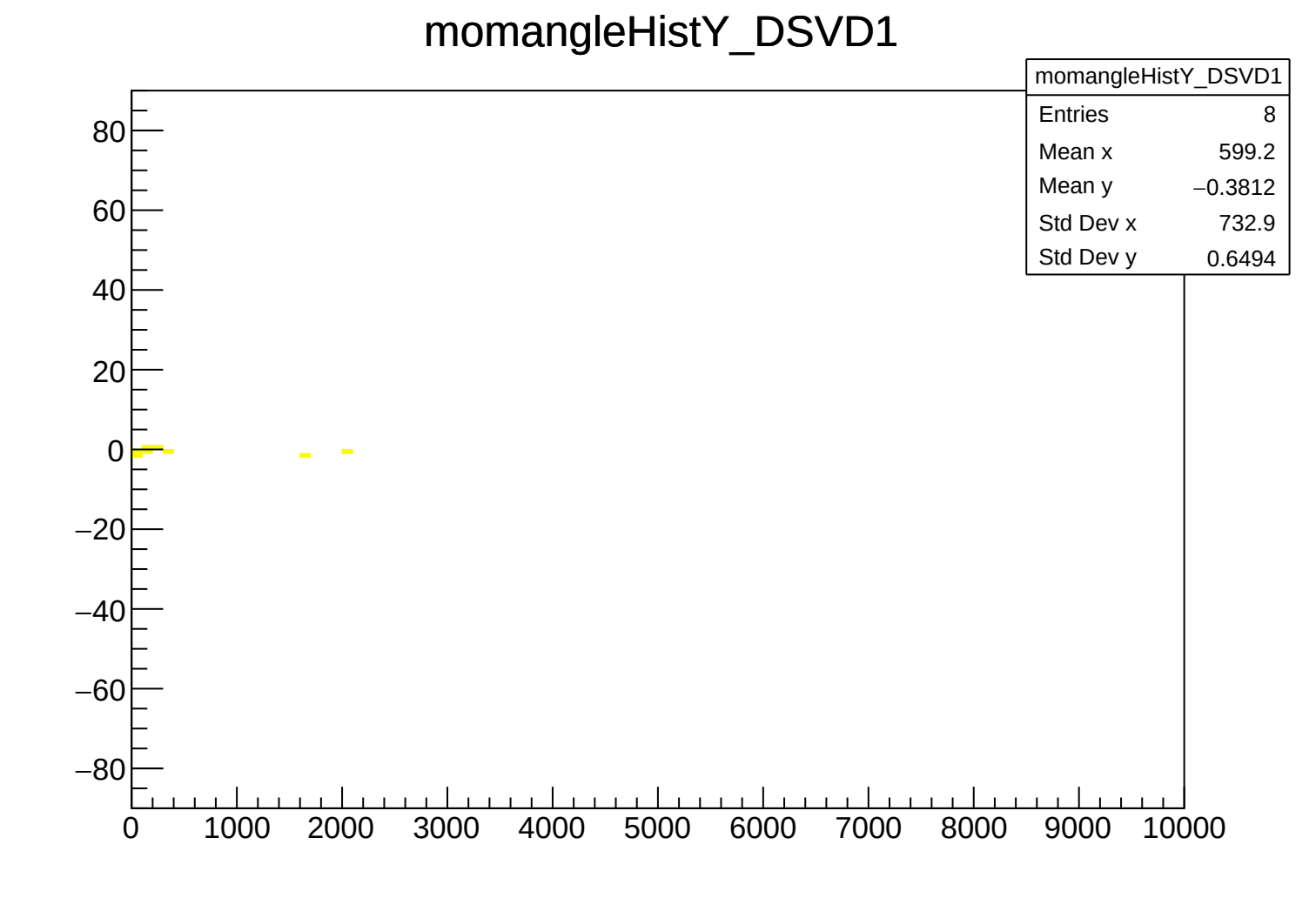

ht_DSVD1
ht_DSVD1
Entries 21
Mean 6.449e−08
Std Dev 2.97e−08
10
8
6
4
2
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6

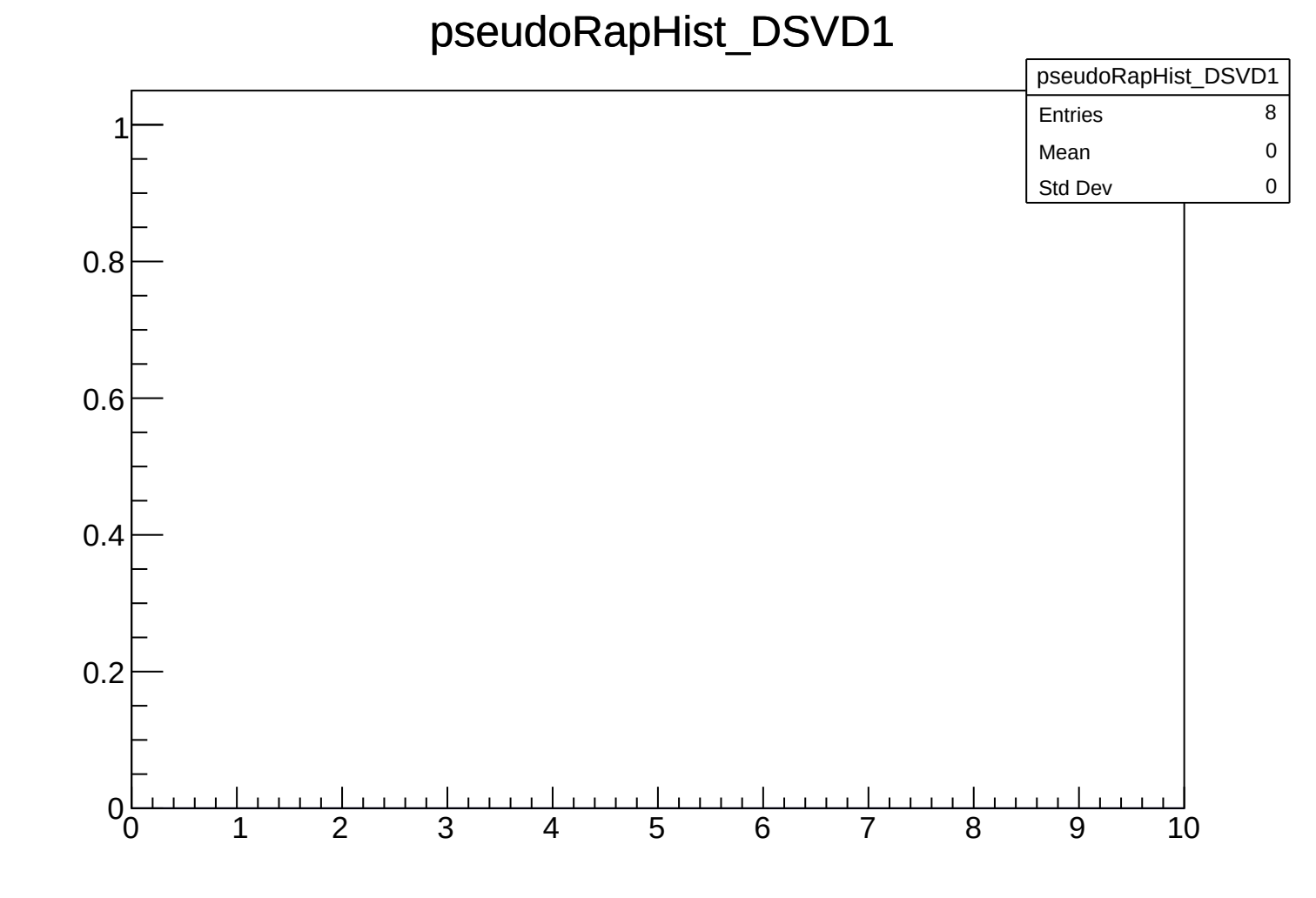

PDG
htemp
Entries 21
Mean 3.548
Std Dev 1.864
5
4.5
4
3.5
3
2.5
2
1.5
1
anti_nu_mu
e+
nu_e
nu_mu
gamma
pi+
e-
PDG

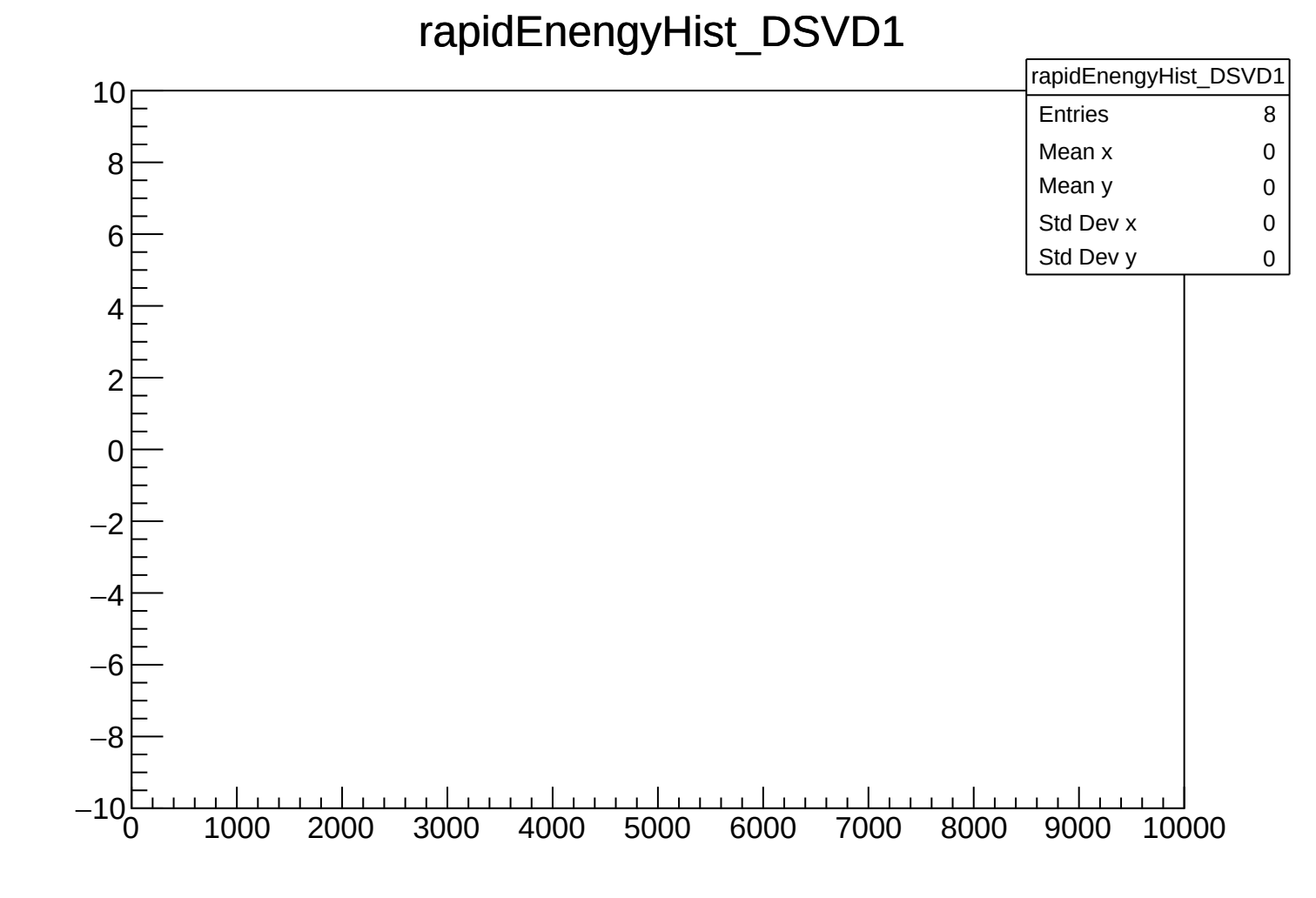

hID_DSVD1
hID_DSVD1
Entries 21
Mean 41
Std Dev 13
1
0.8
0.6
0.4
0.2
0
−250
−200
−150
−100
−50
0
50
100
150
200
250

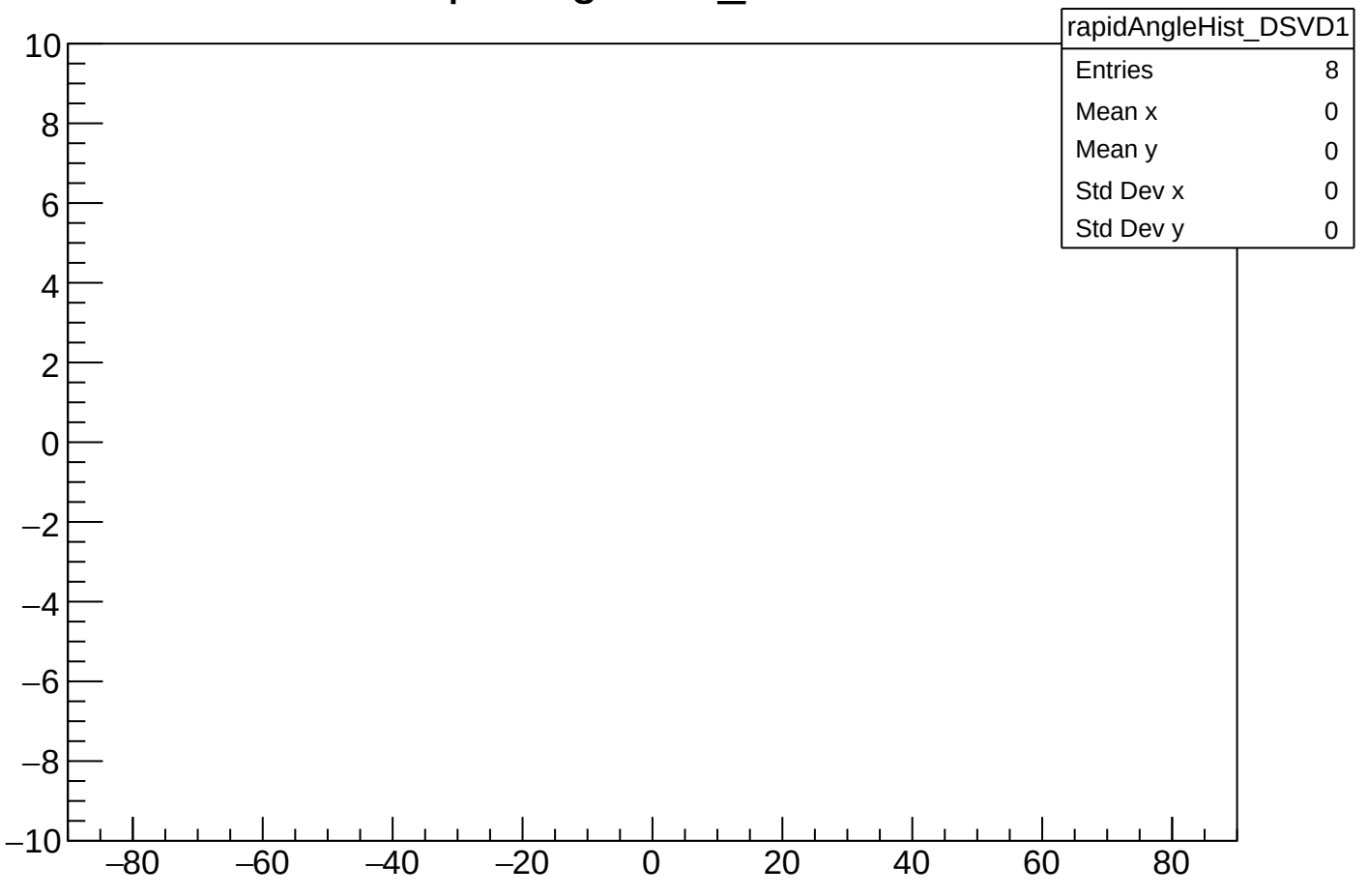

momHist_DSVD1
momHist_DSVD1
Entries 8
Mean 599.2
Std Dev 732.9
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

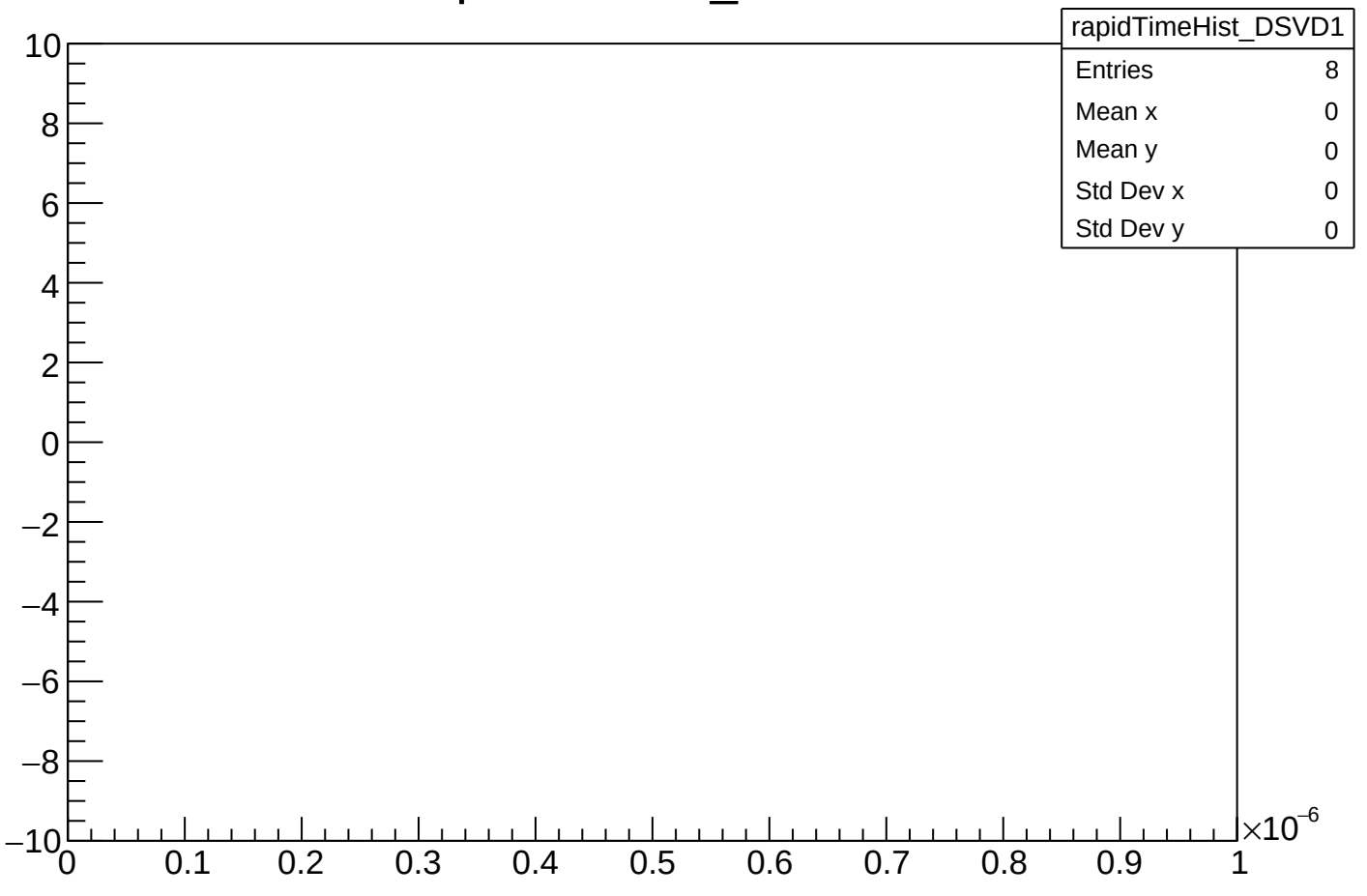

momangleHistX_DSVD1
momangleHistX_DSVD1
Entries 8
Mean x 599.2
Mean y −6.651
Std Dev x 732.9
Std Dev y 3.921
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

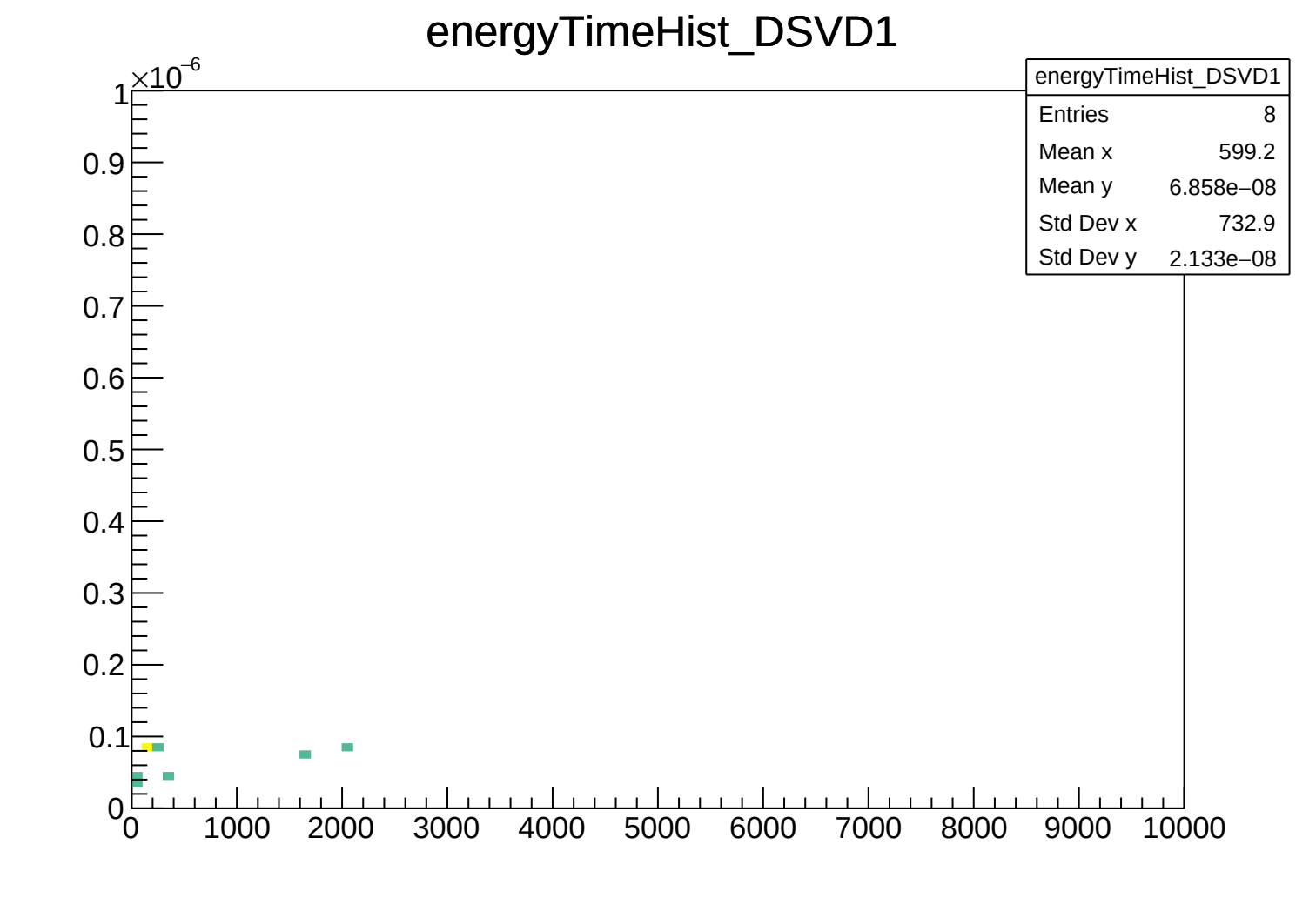

momangleHistY_DSVD1
momangleHistY_DSVD1
Entries 8
Mean x 599.2
Mean y −0.3812
Std Dev x 732.9
Std Dev y 0.6494
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

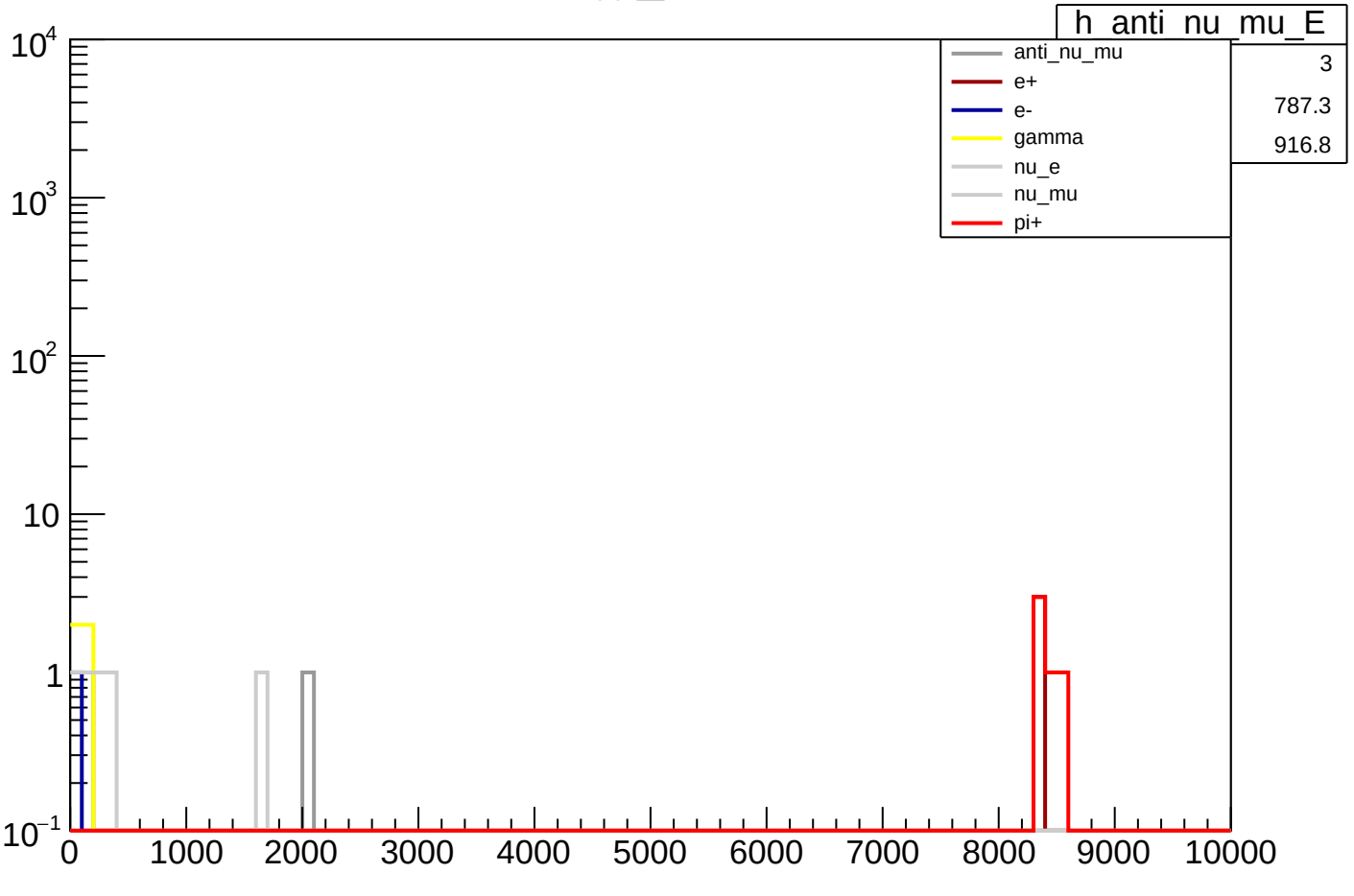

pseudoRapHist_DSVD1
pseudoRapHist_DSVD1
Entries 8
Mean 0
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0 1 2 3 4 5 6 7 8 9 10

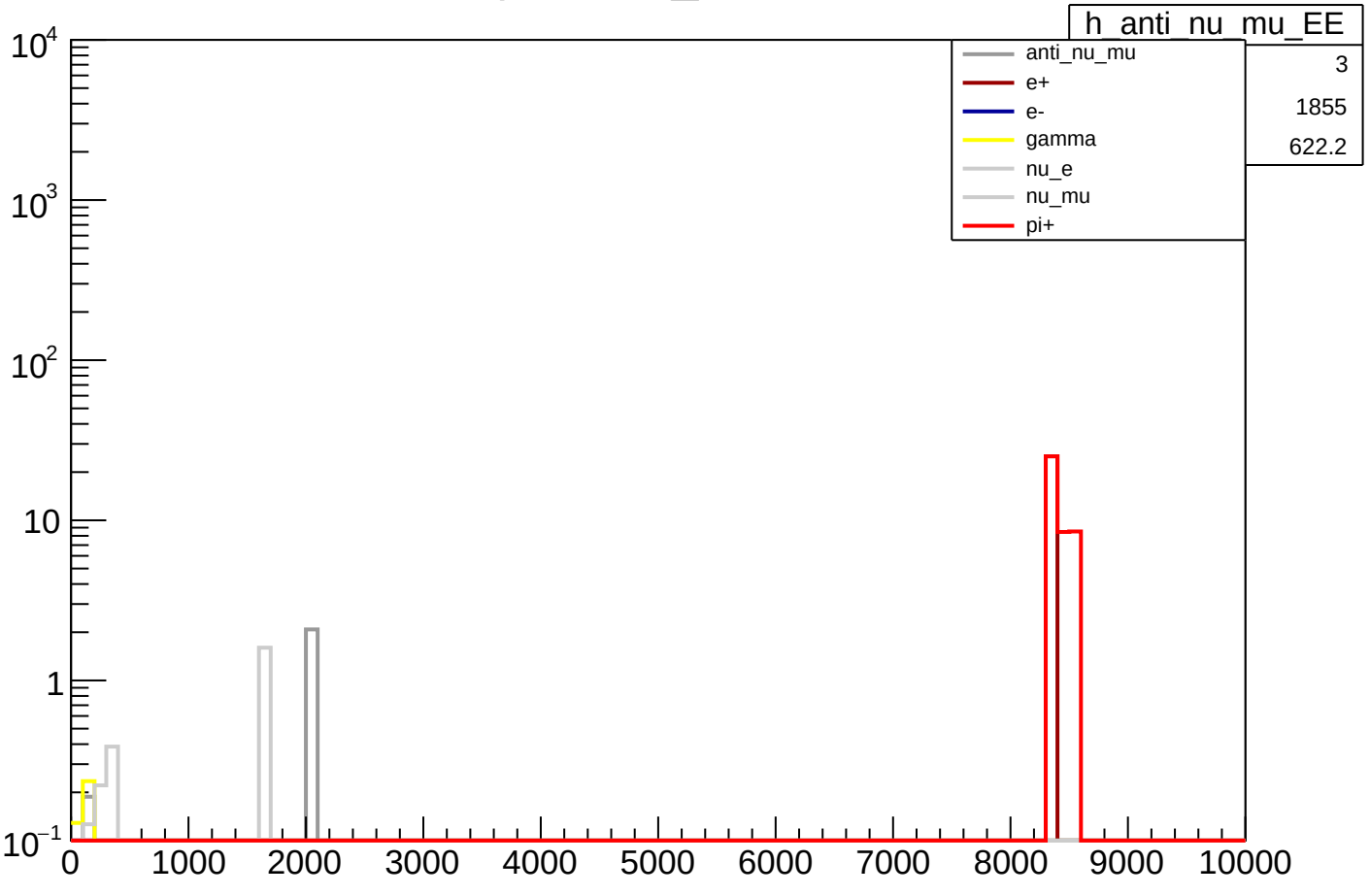

rapidEnengyHist_DSVD1
rapidEnengyHist_DSVD1
Entries 8
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

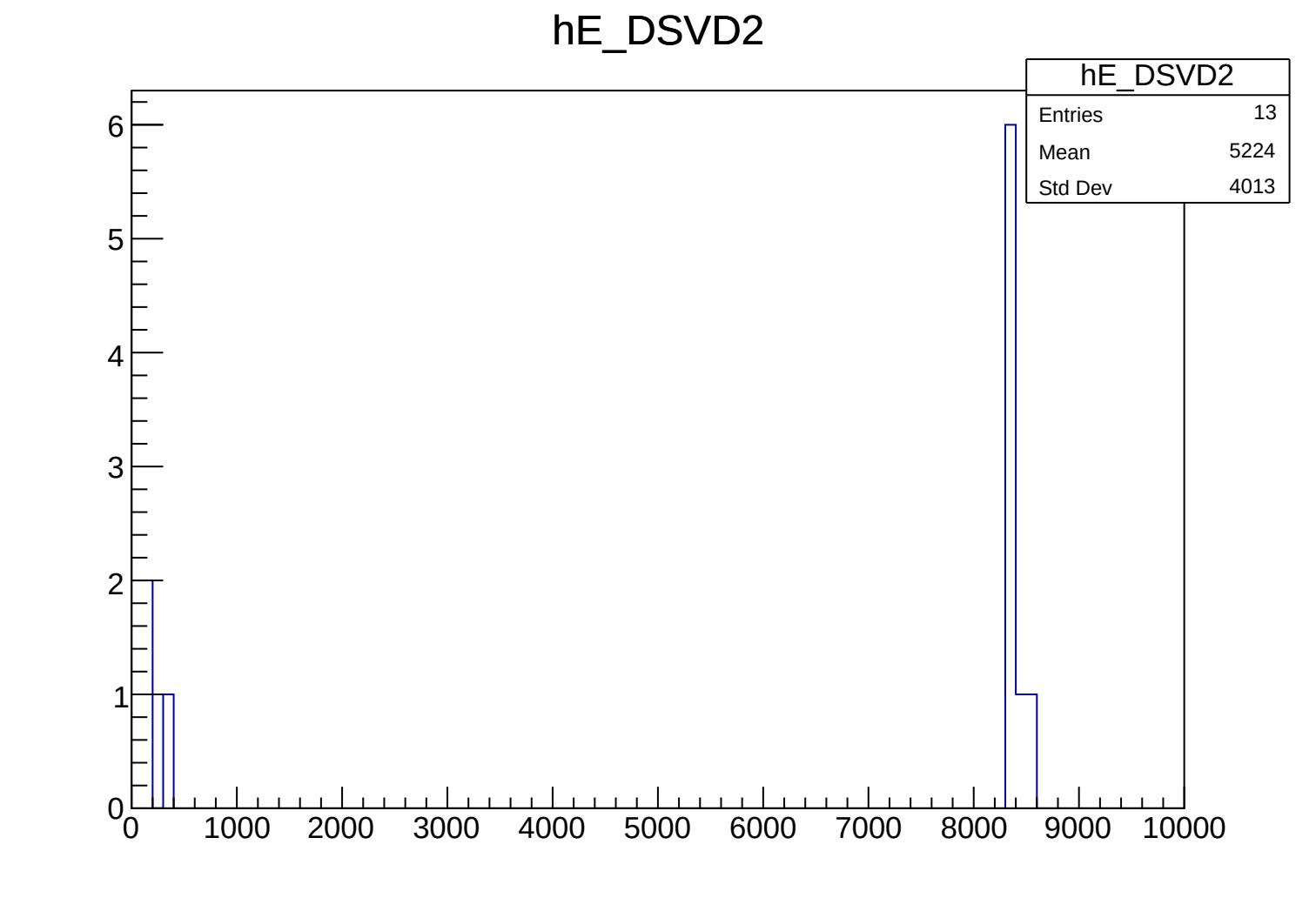

rapidAngleHist_DSVD1
rapidAngleHist_DSVD1
Entries 8
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
–2
–4
–6
–8
–10
–80
–60
–40
–20
0
20
40
60
80

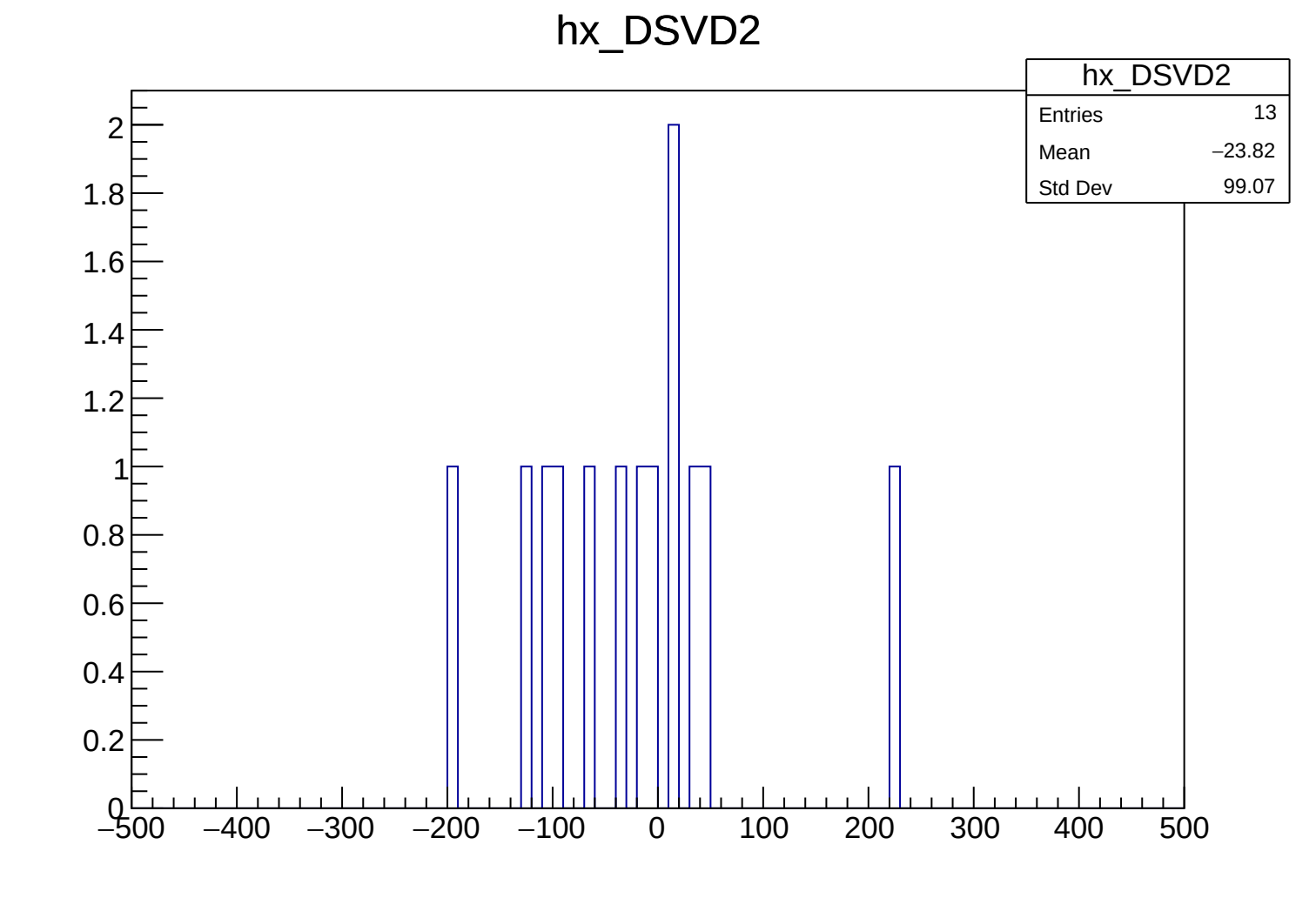

rapidTimeHist_DSVD1
rapidTimeHist_DSVD1
Entries 8
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6

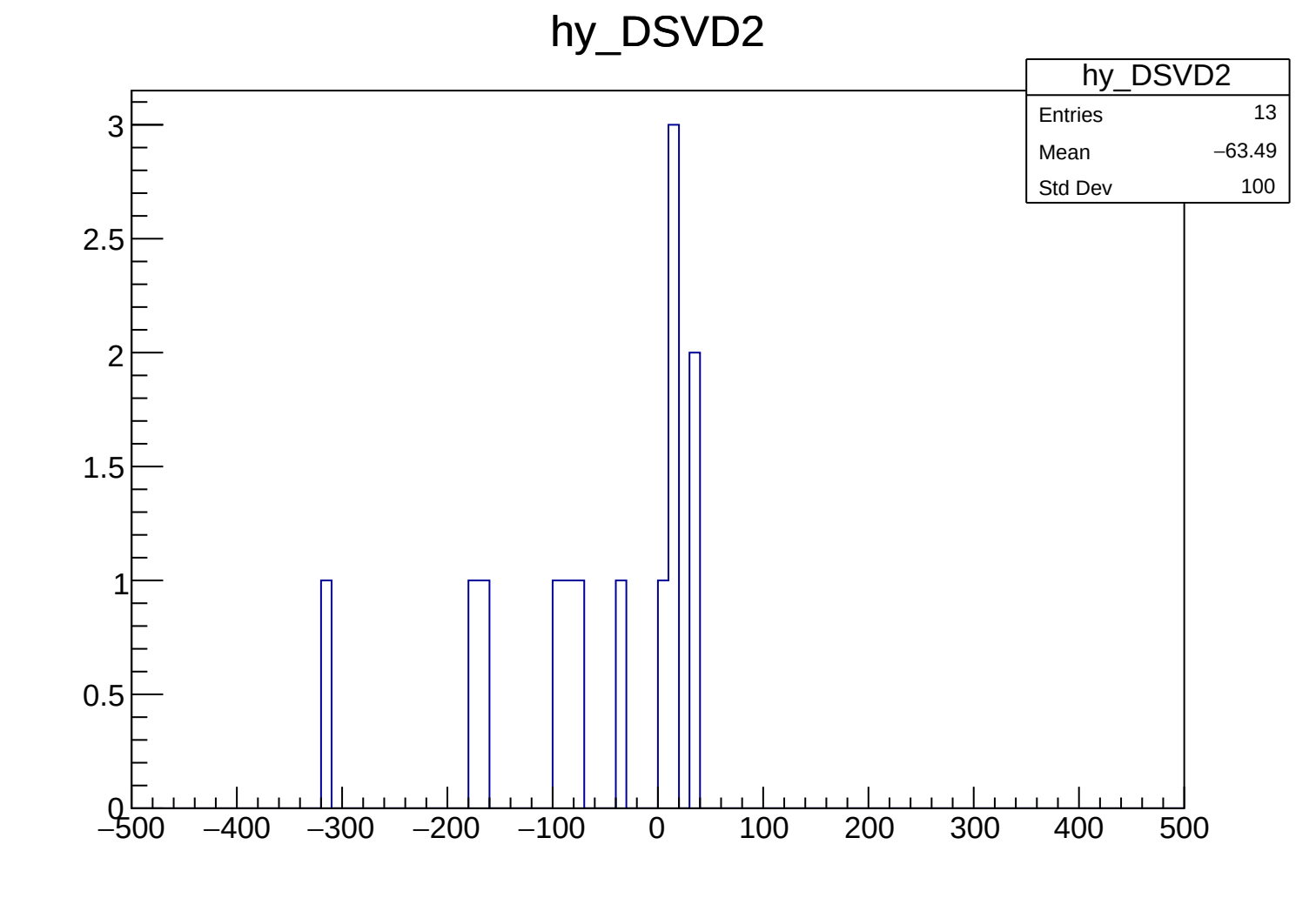

energyTimeHist_DSVD1
energyTimeHist_DSVD1
Entries 8
Mean x 599.2
Mean y 6.858e−08
Std Dev x 732.9
Std Dev y 2.133e−08
×10^−6
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

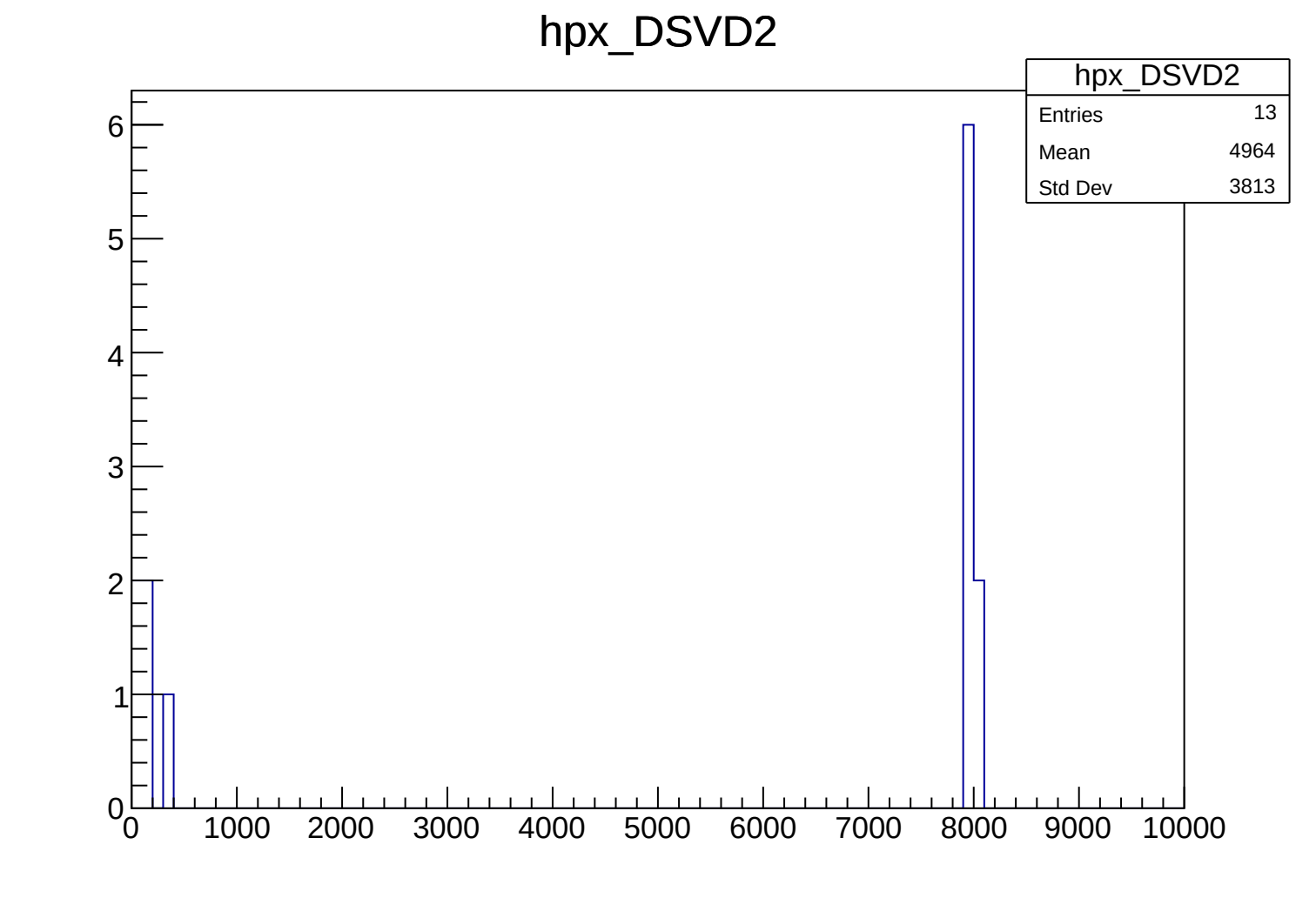

Energy_DSVD1
h_anti_nu_mu_E
3
787.3
916.8
anti_nu_mu
e+
e-
gamma
nu_e
nu_mu
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

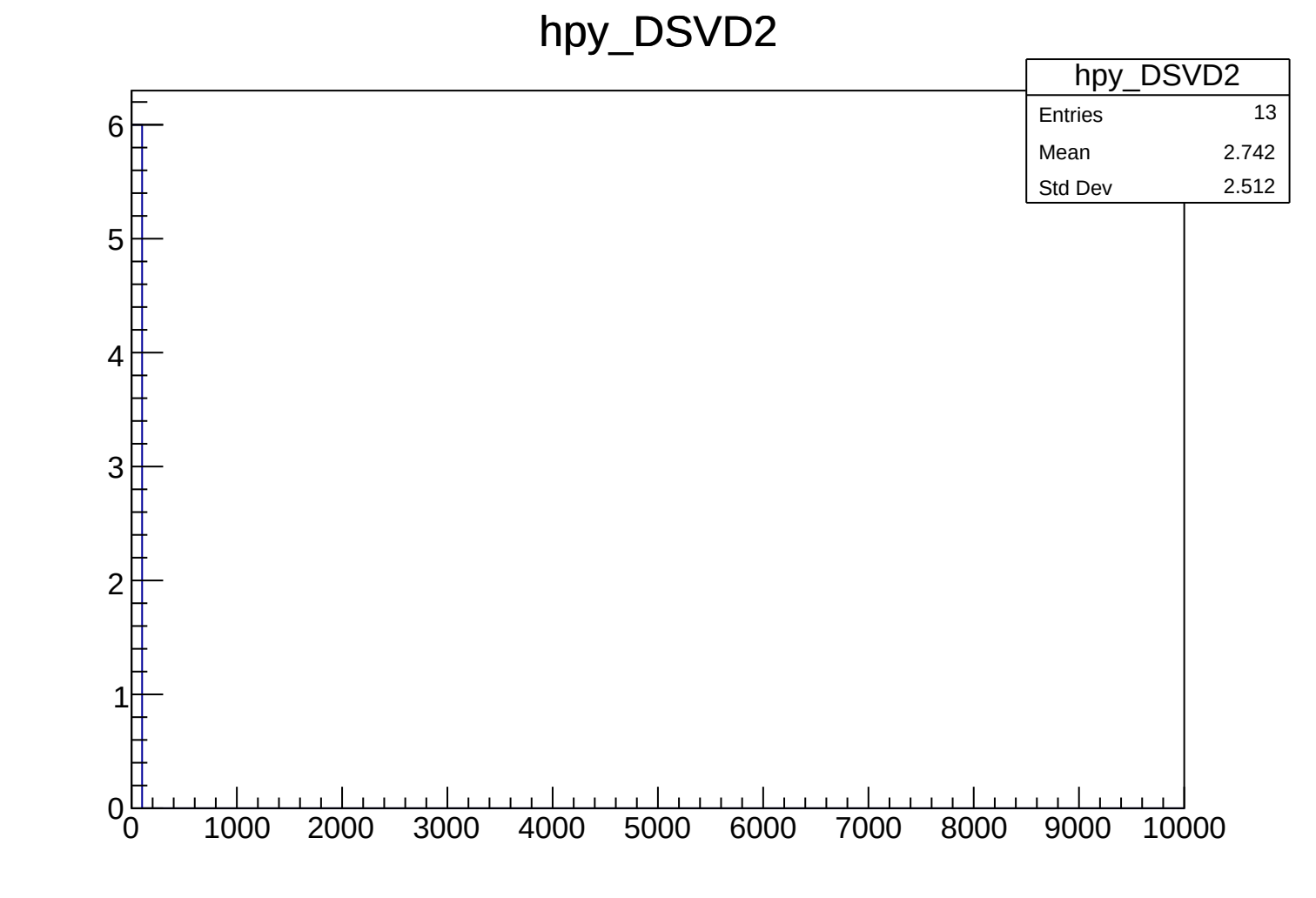

Spectrum_DSVD1
h_anti_nu_mu_EE
3
1855
622.2
anti_nu_mu
e+
e-
gamma
nu_e
nu_mu
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

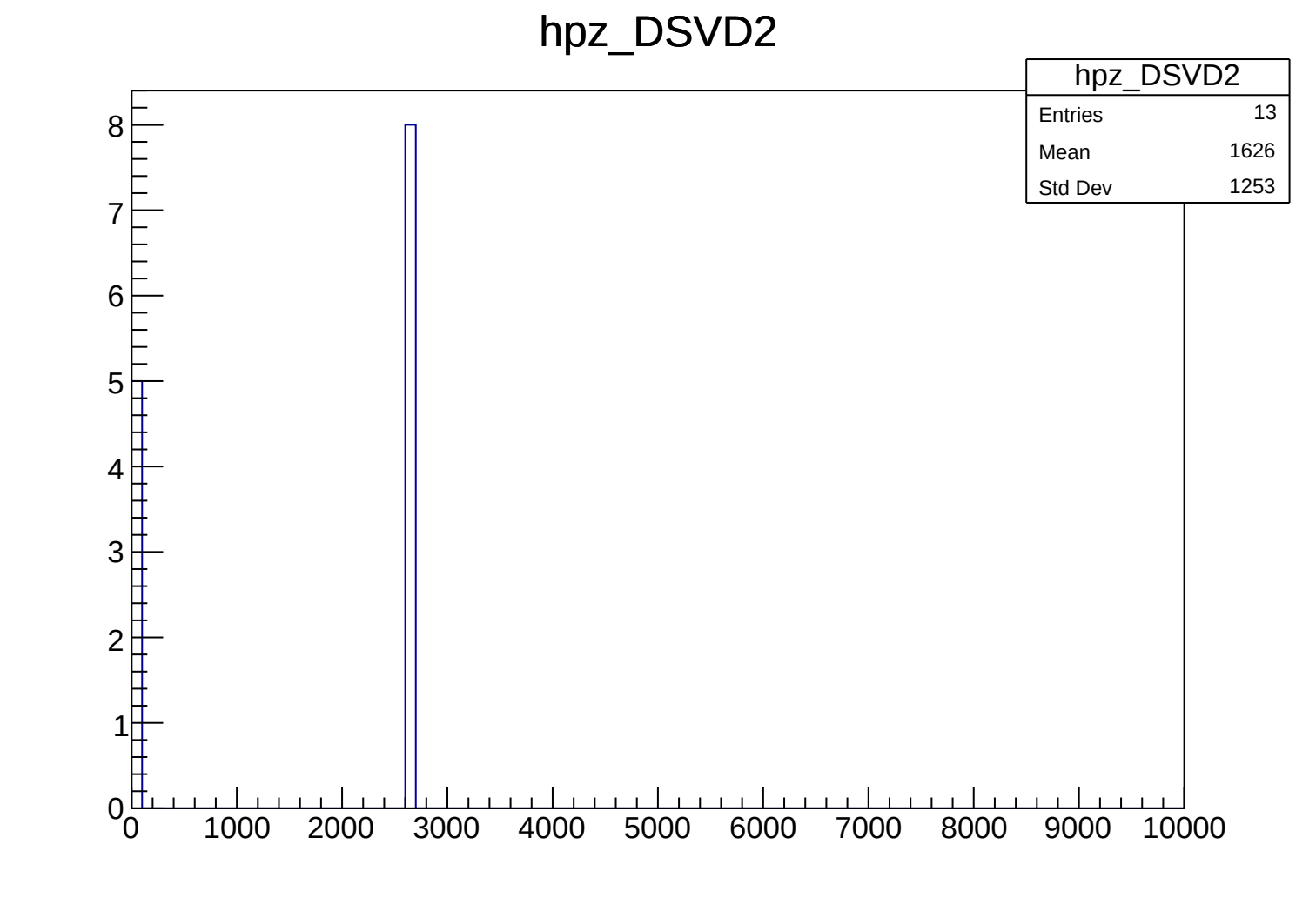

hE_DSVD2
hE_DSVD2
Entries 13
Mean 5224
Std Dev 4013
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

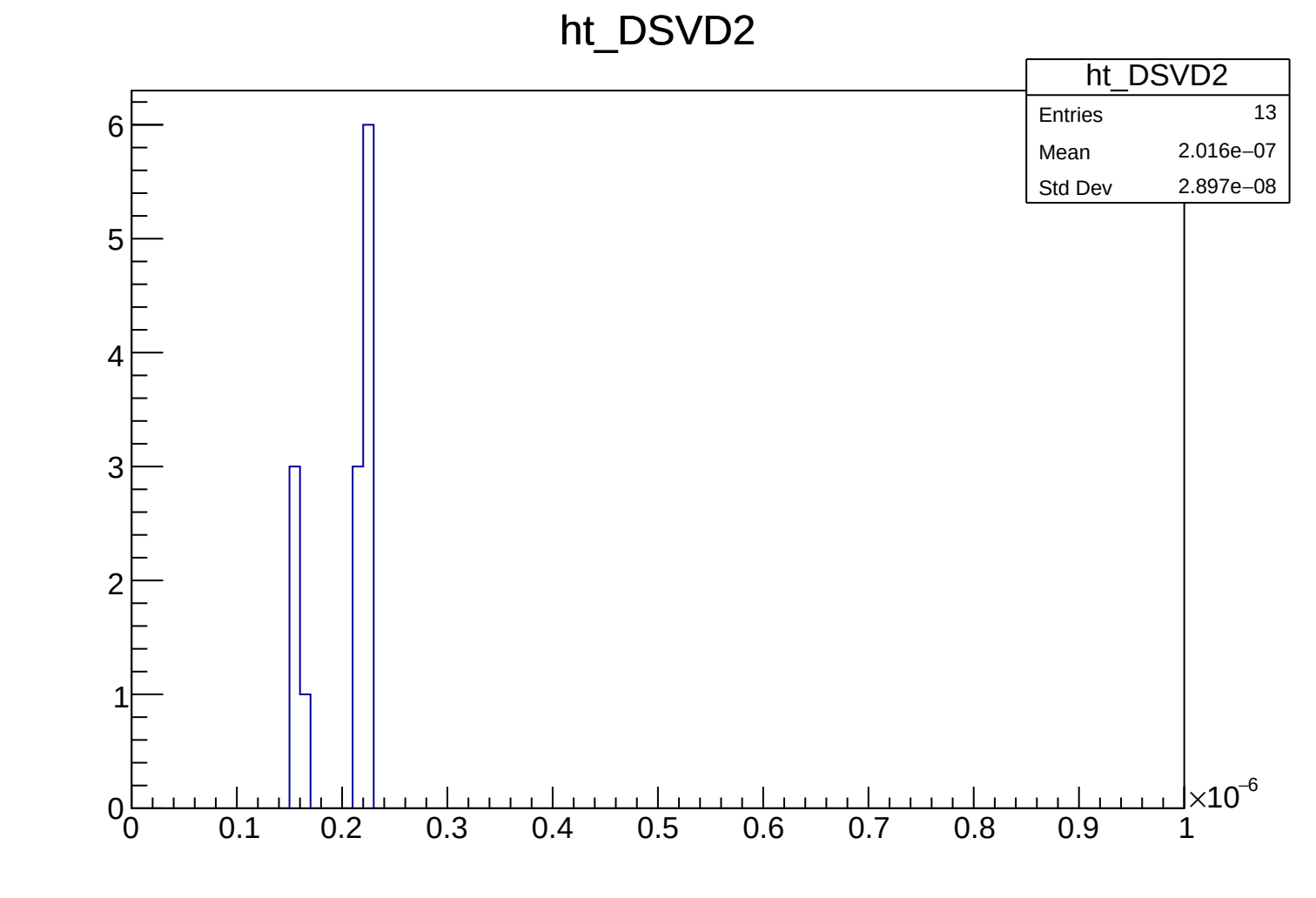

hx_DSVD2
hx_DSVD2
Entries 13
Mean −23.82
Std Dev 99.07
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

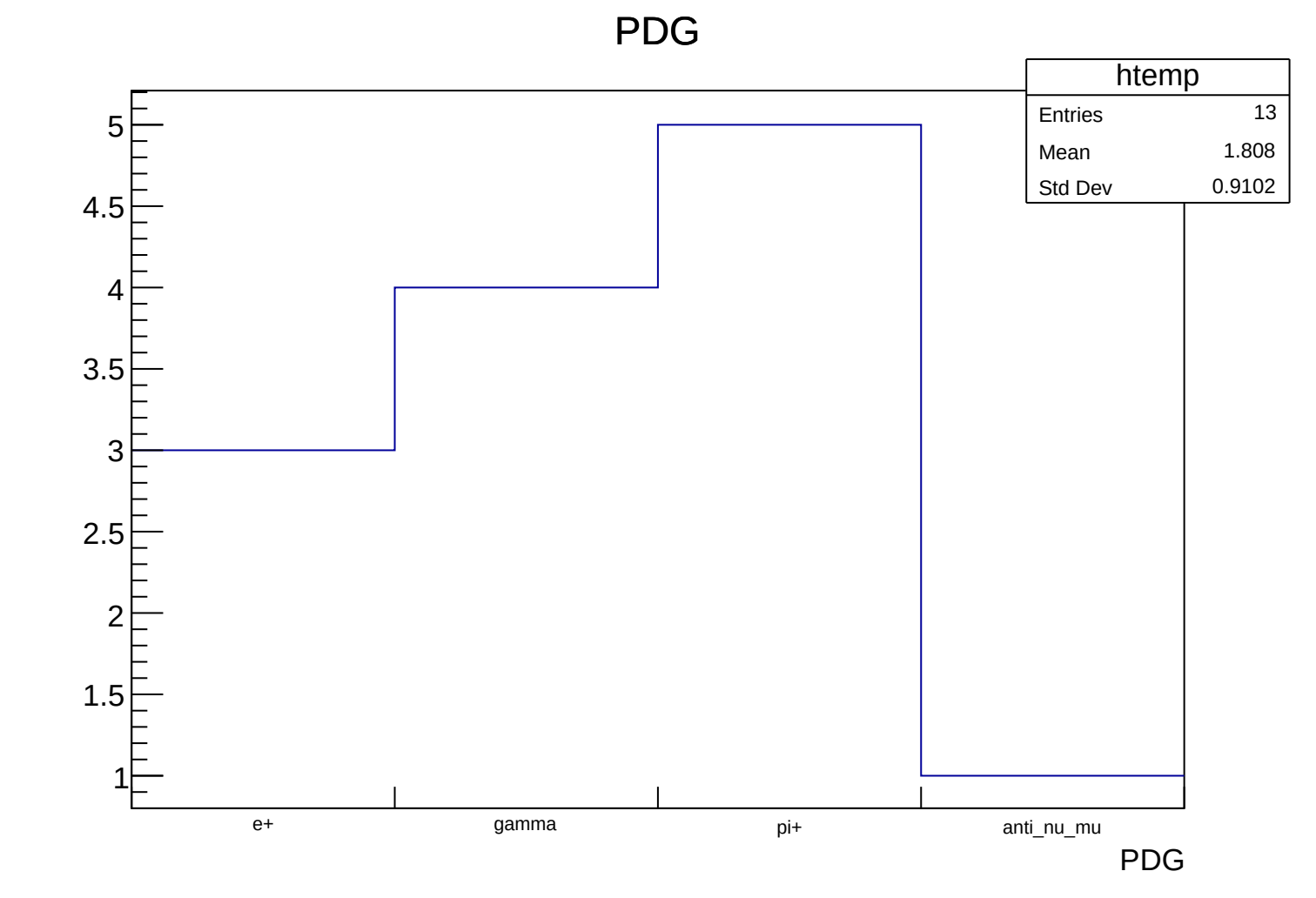

hy_DSVD2
hy_DSVD2
Entries 13
Mean −63.49
Std Dev 100
3
2.5
2
1.5
1
0.5
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

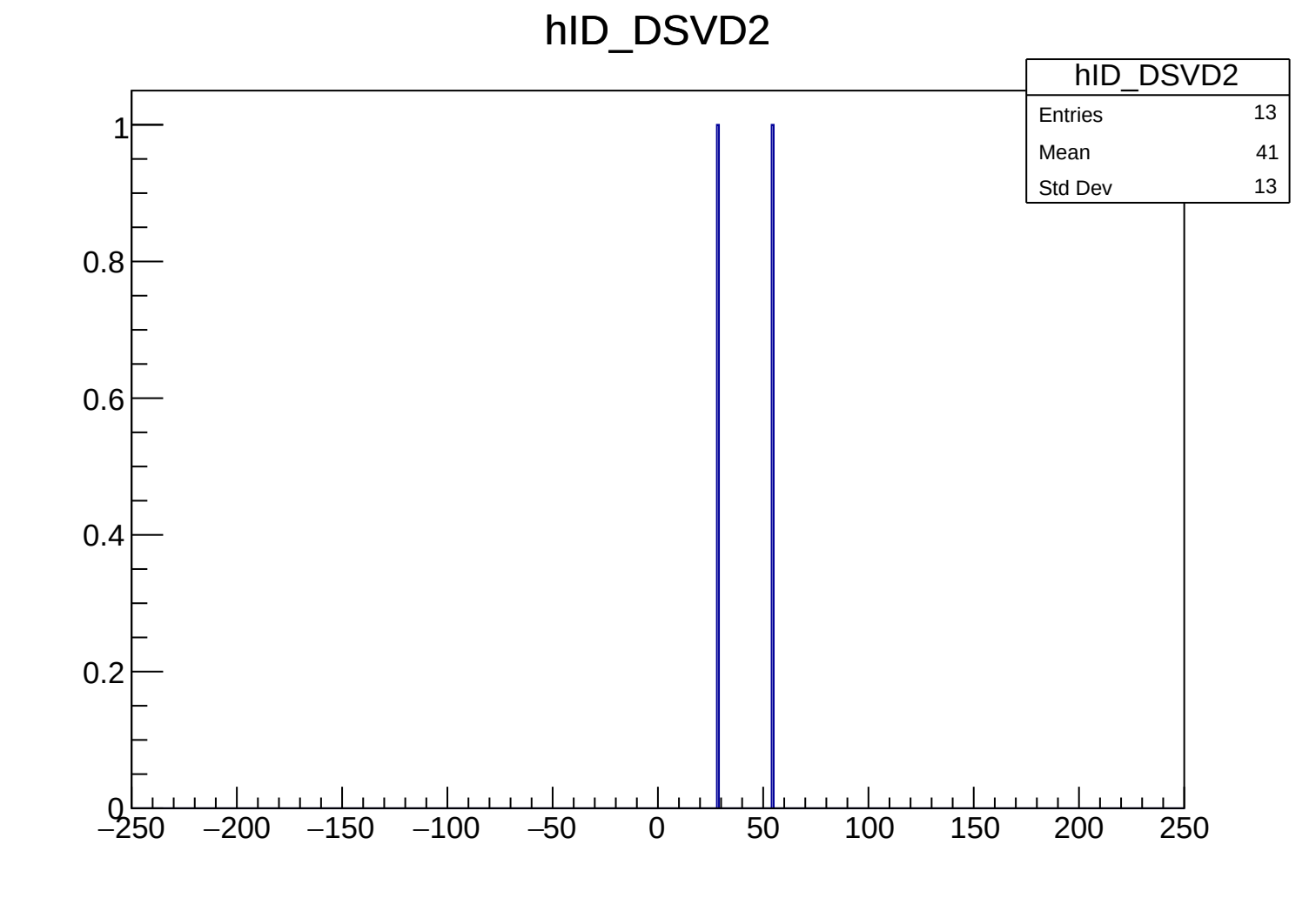

hpx_DSVD2
hpx_DSVD2
Entries 13
Mean 4964
Std Dev 3813
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

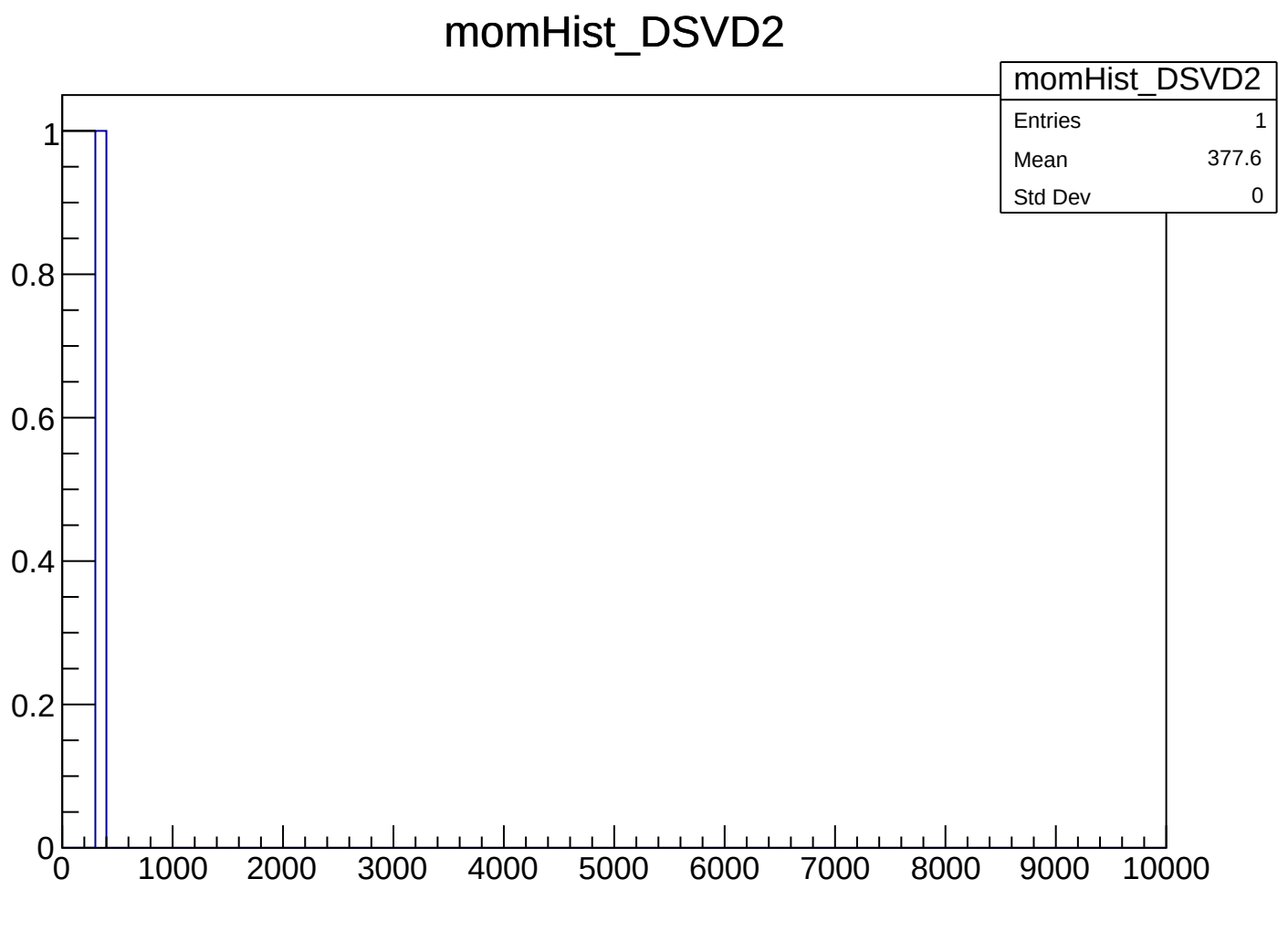

hpy_DSVD2
hpy_DSVD2
Entries 13
Mean 2.742
Std Dev 2.512
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

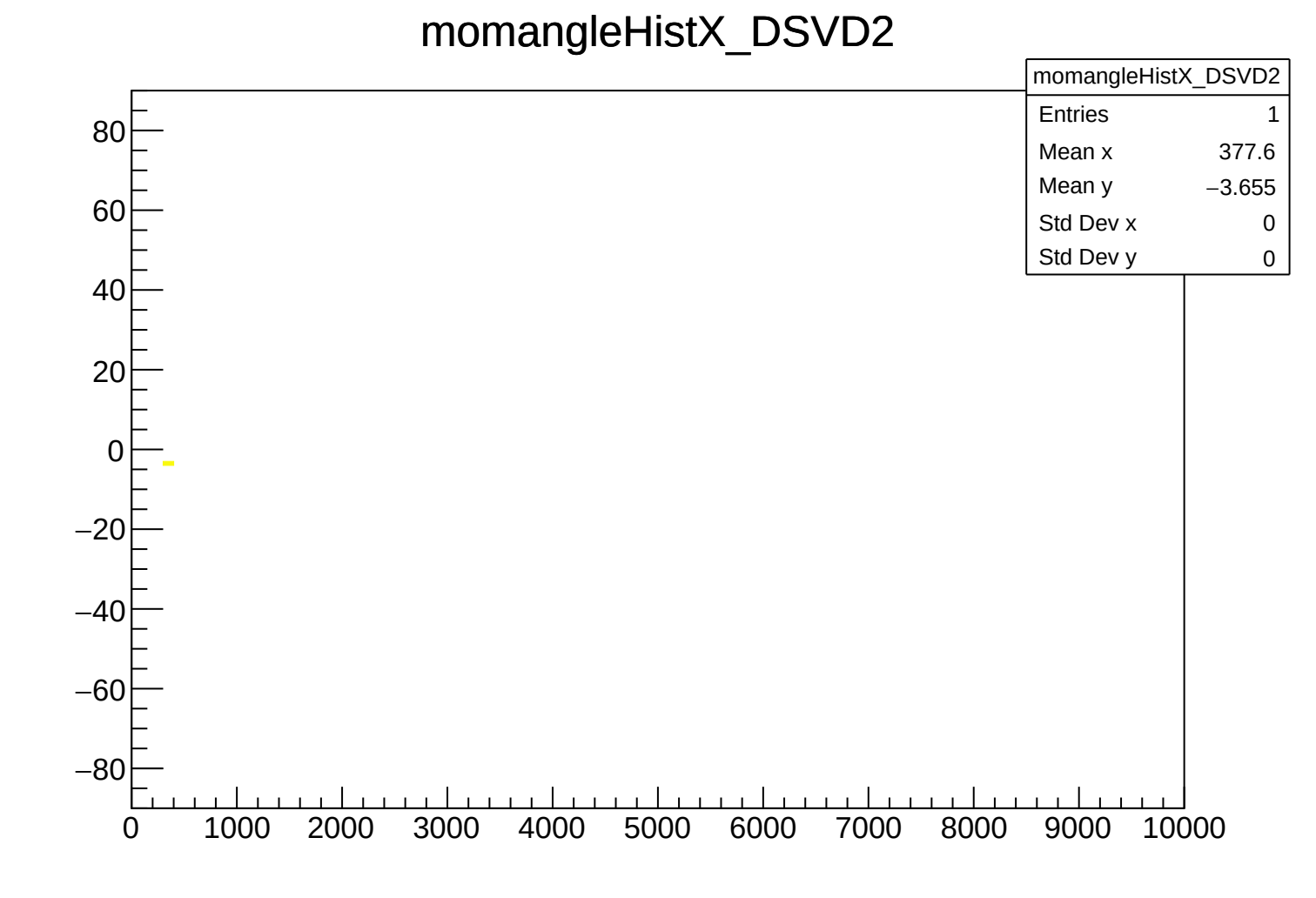

hpz_DSVD2
hpz_DSVD2
Entries 13
Mean 1626
Std Dev 1253
0
1
2
3
4
5
6
7
8
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

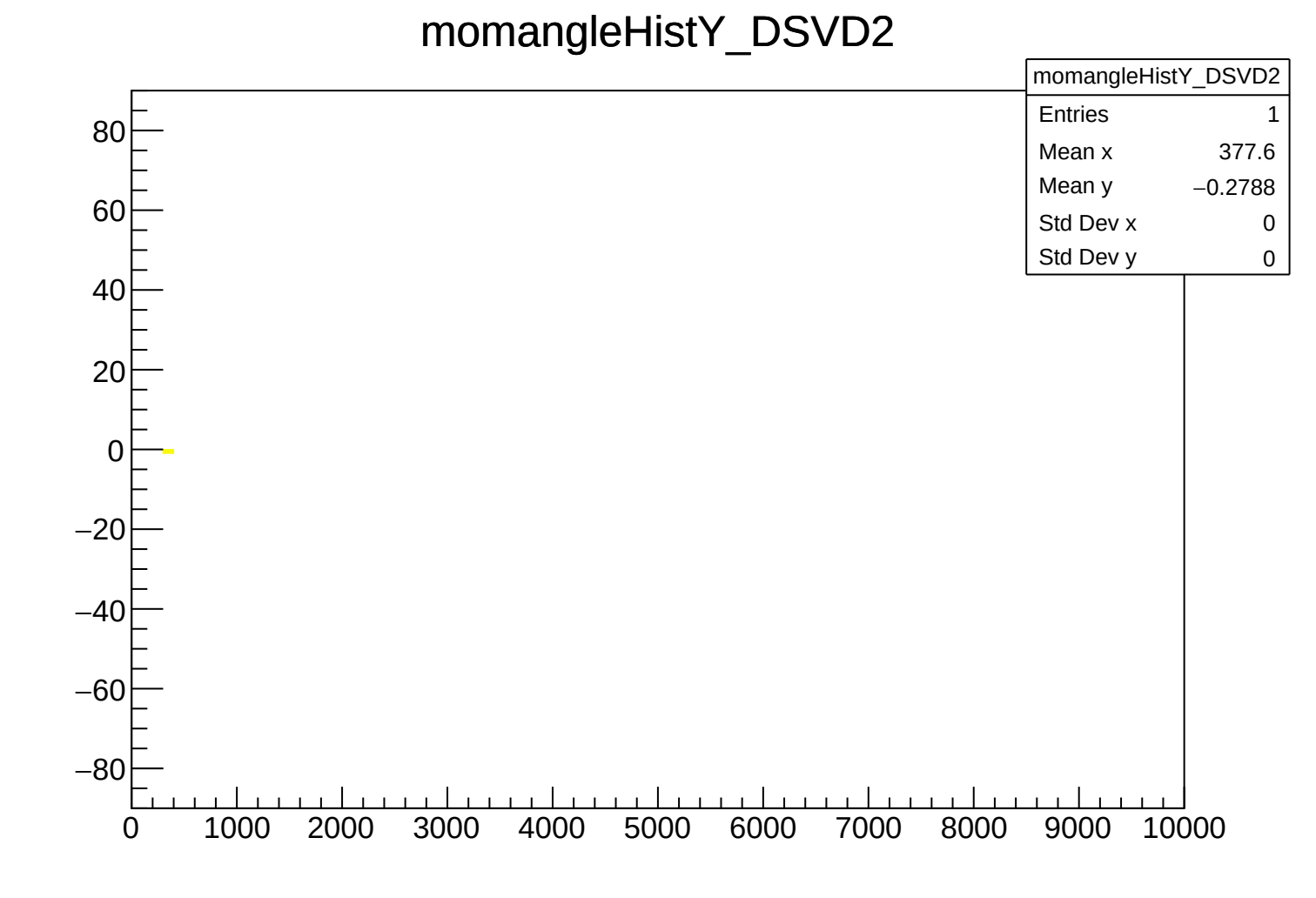

ht_DSVD2
ht_DSVD2
Entries 13
Mean 2.016e−07
Std Dev 2.897e−08
0
1
2
3
4
5
6
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6

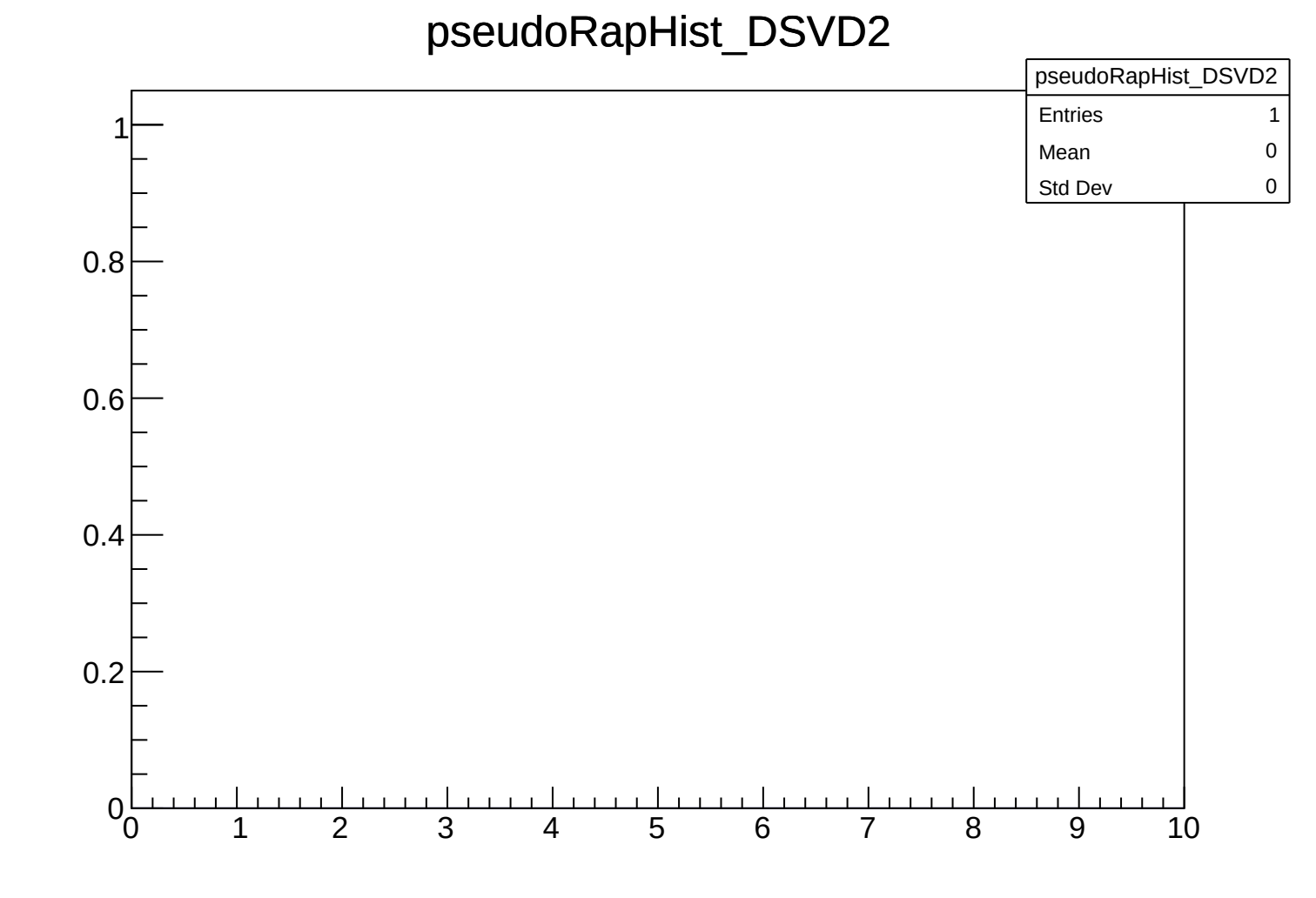

PDG
htemp
Entries 13
Mean 1.808
Std Dev 0.9102
5
4.5
4
3.5
3
2.5
2
1.5
1
e+
gamma
pi+
anti_nu_mu
PDG

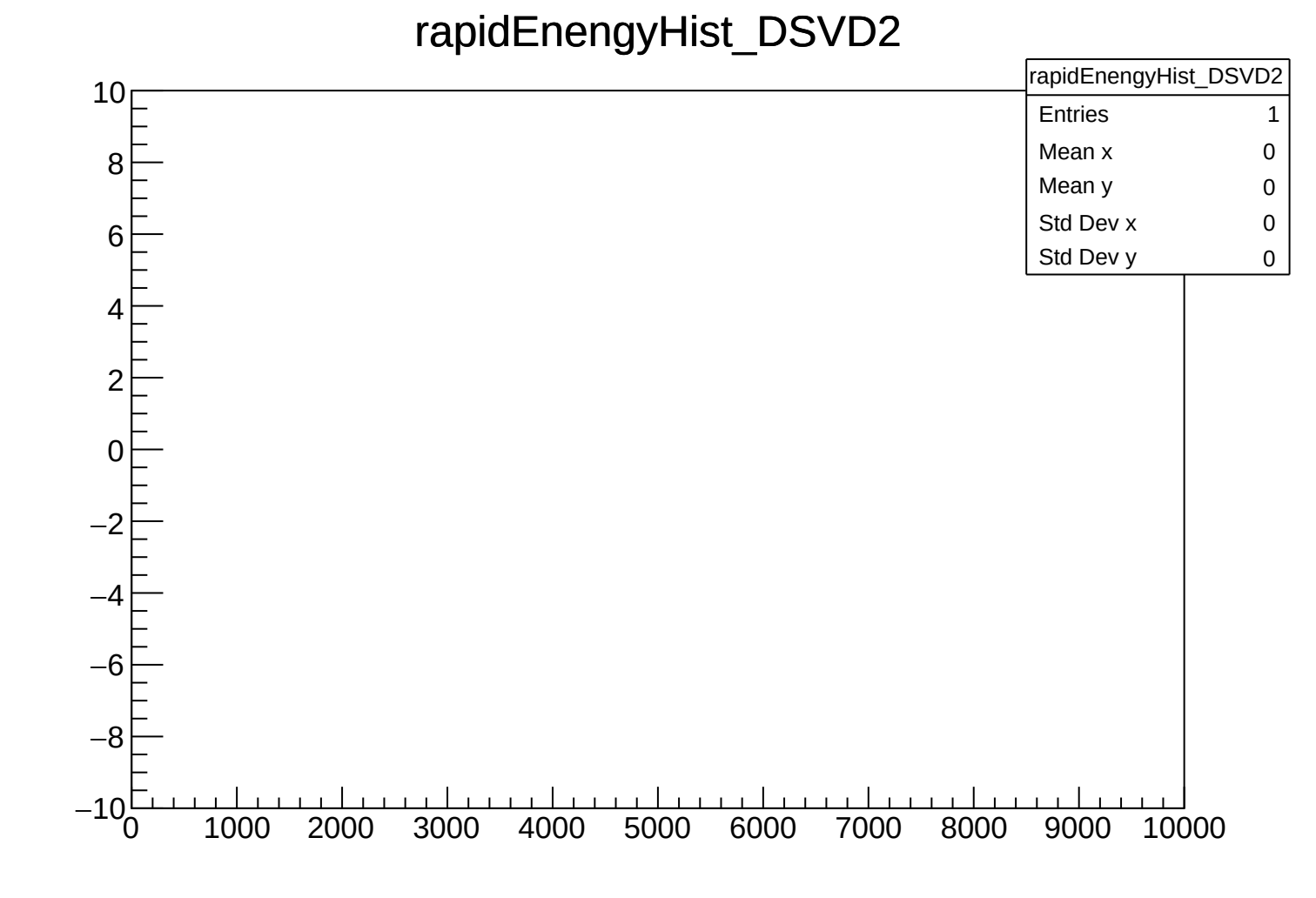

hID_DSVD2
hID_DSVD2
Entries 13
Mean 41
Std Dev 13
1
0.8
0.6
0.4
0.2
0
−250
−200
−150
−100
−50
0
50
100
150
200
250

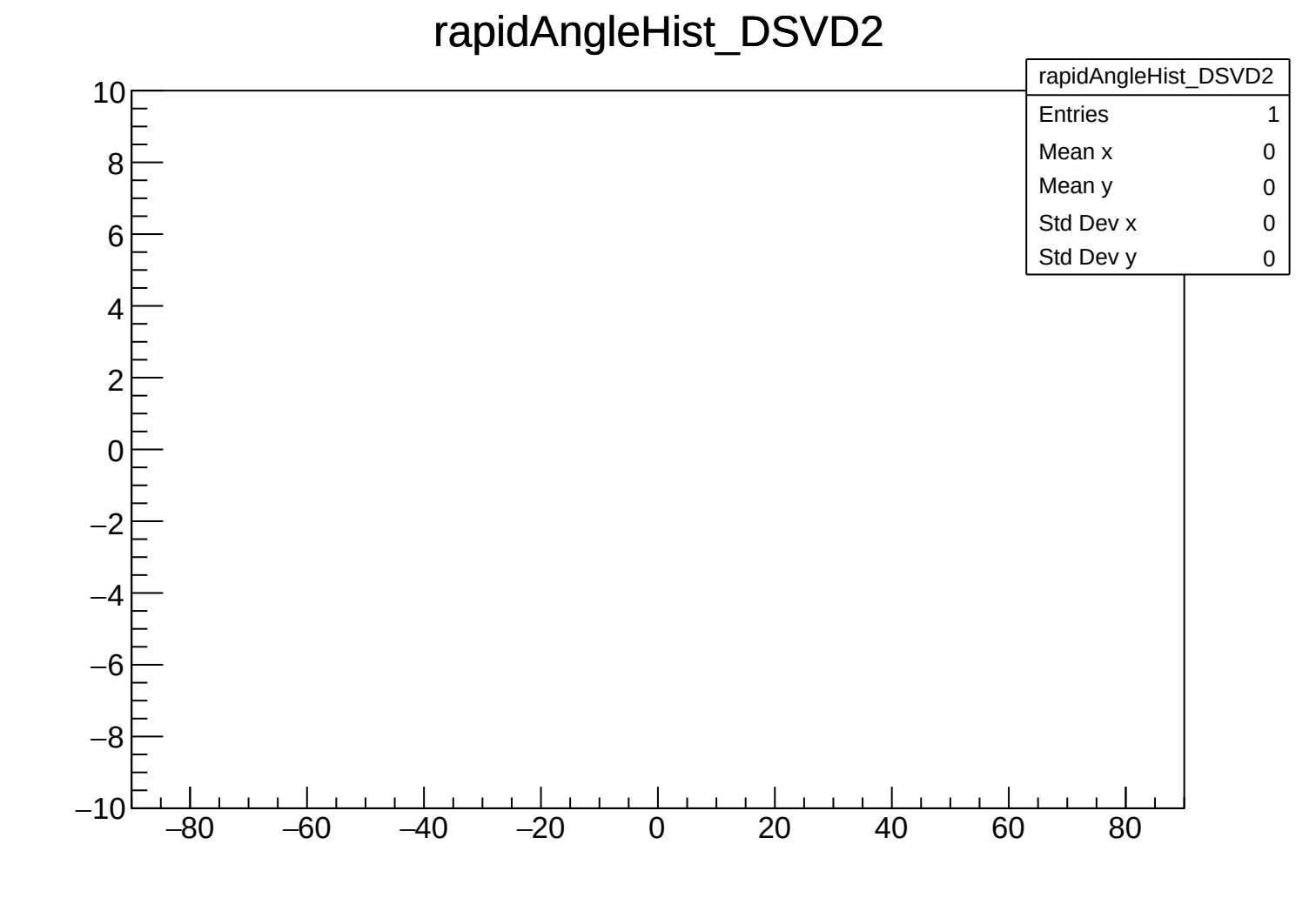

momHist_DSVD2
momHist_DSVD2
Entries 1
Mean 377.6
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

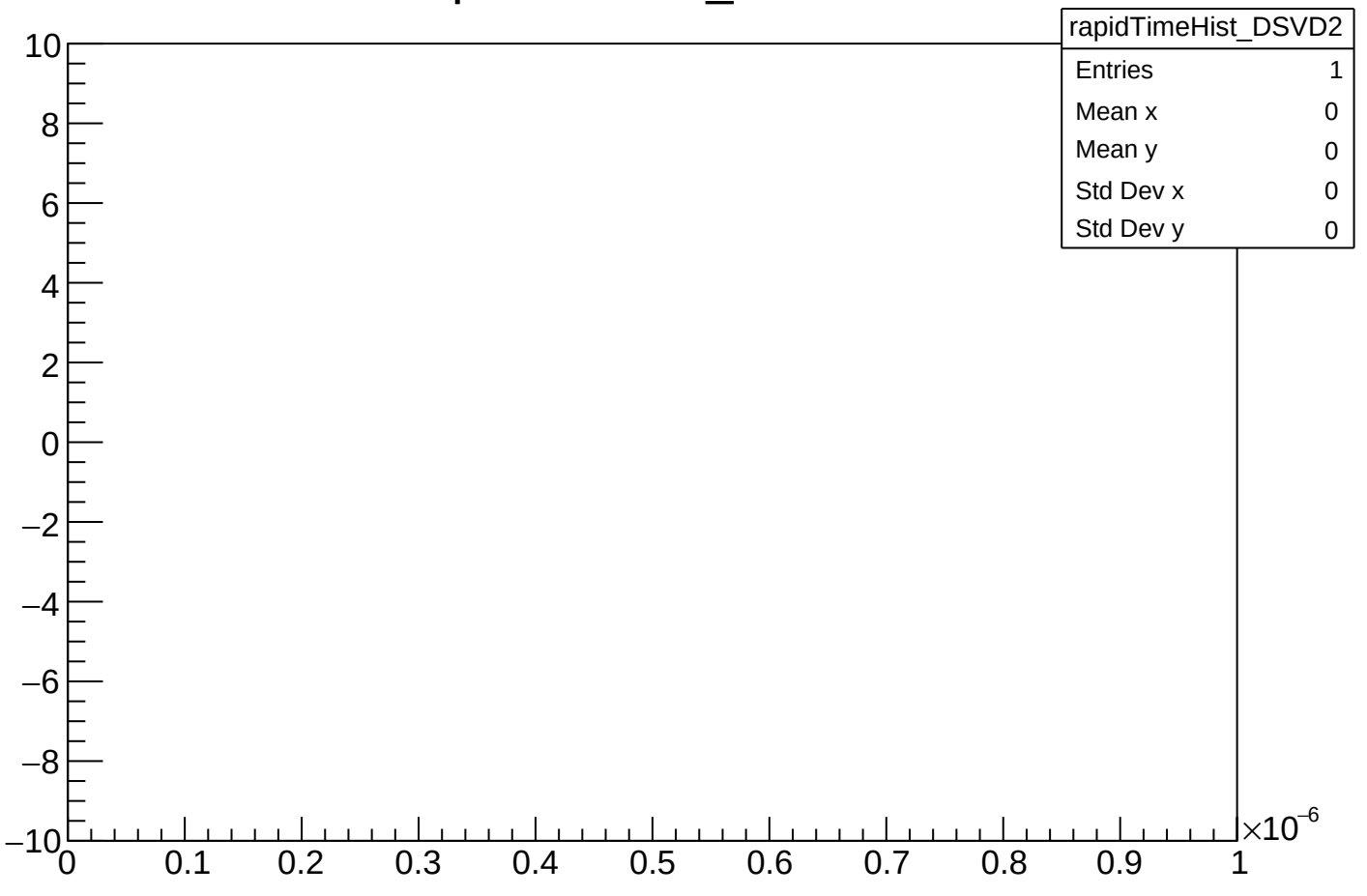

momangleHistX_DSVD2
momangleHistX_DSVD2
Entries 1
Mean x 377.6
Mean y −3.655
Std Dev x 0
Std Dev y 0
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

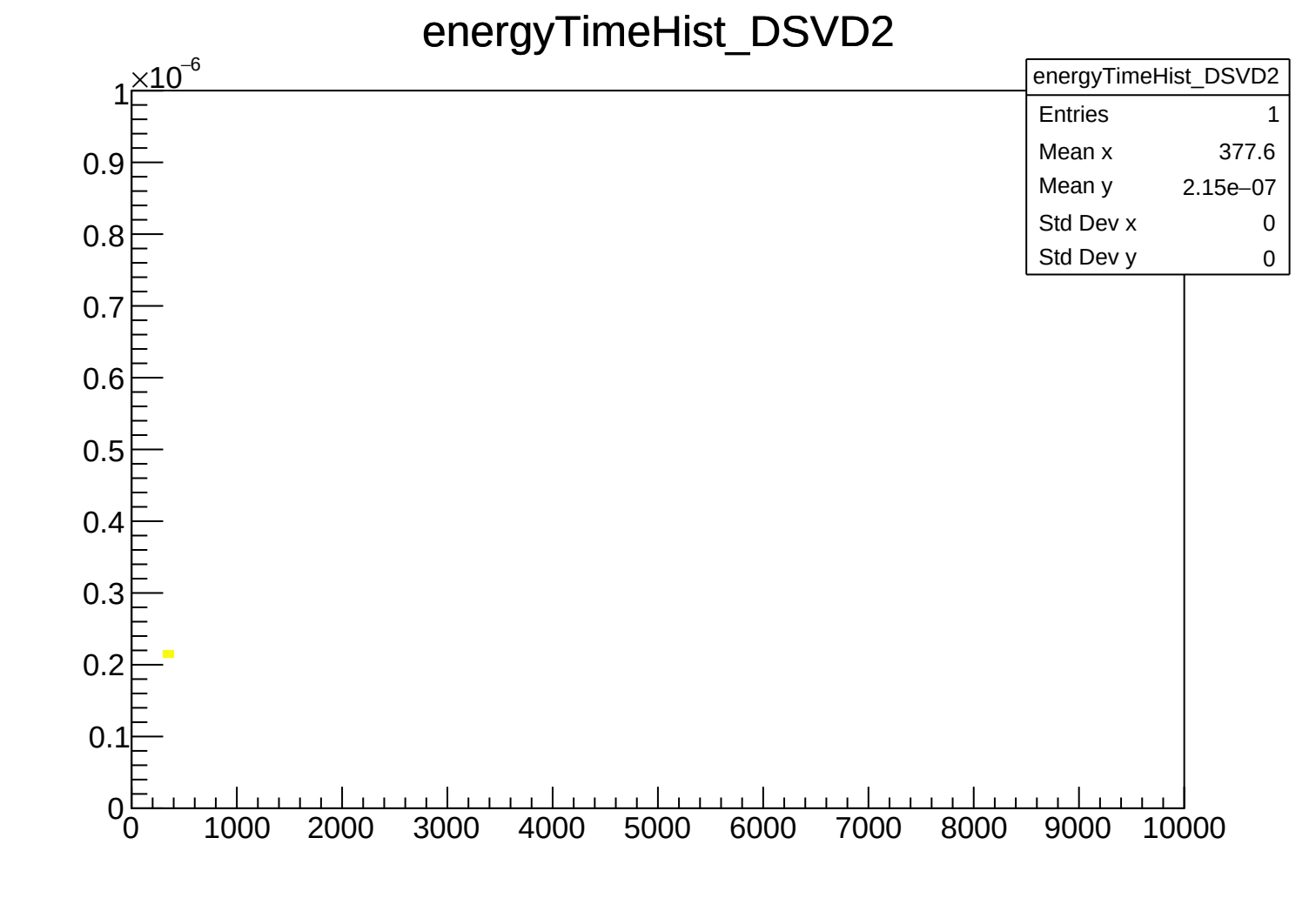

momangleHistY_DSVD2
momangleHistY_DSVD2
Entries 1
Mean x 377.6
Mean y −0.2788
Std Dev x 0
Std Dev y 0
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

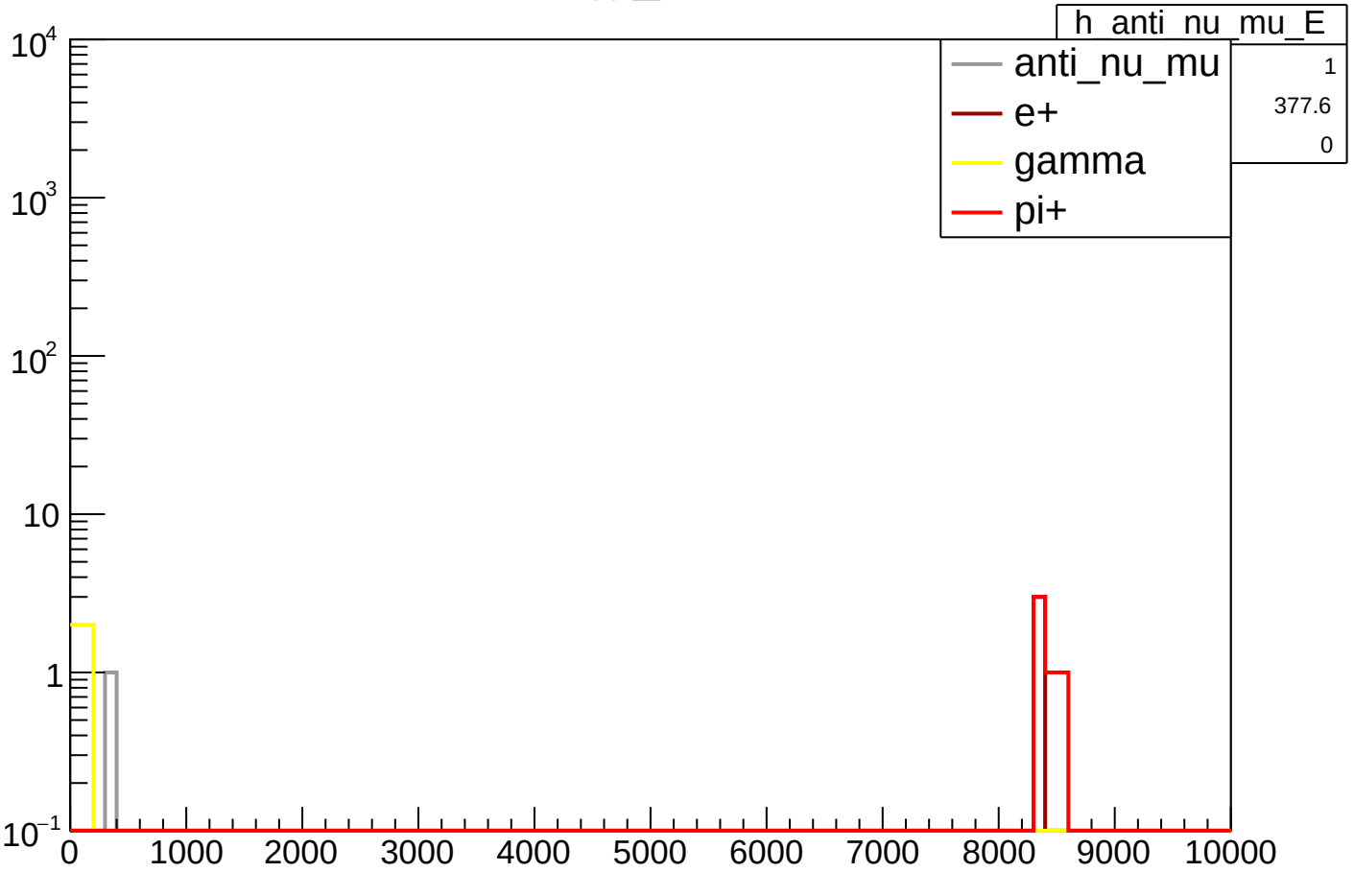

pseudoRapHist_DSVD2
pseudoRapHist_DSVD2
Entries 1
Mean 0
Std Dev 0
1
0.8
0.6
0.4
0.2
0
0 1 2 3 4 5 6 7 8 9 10

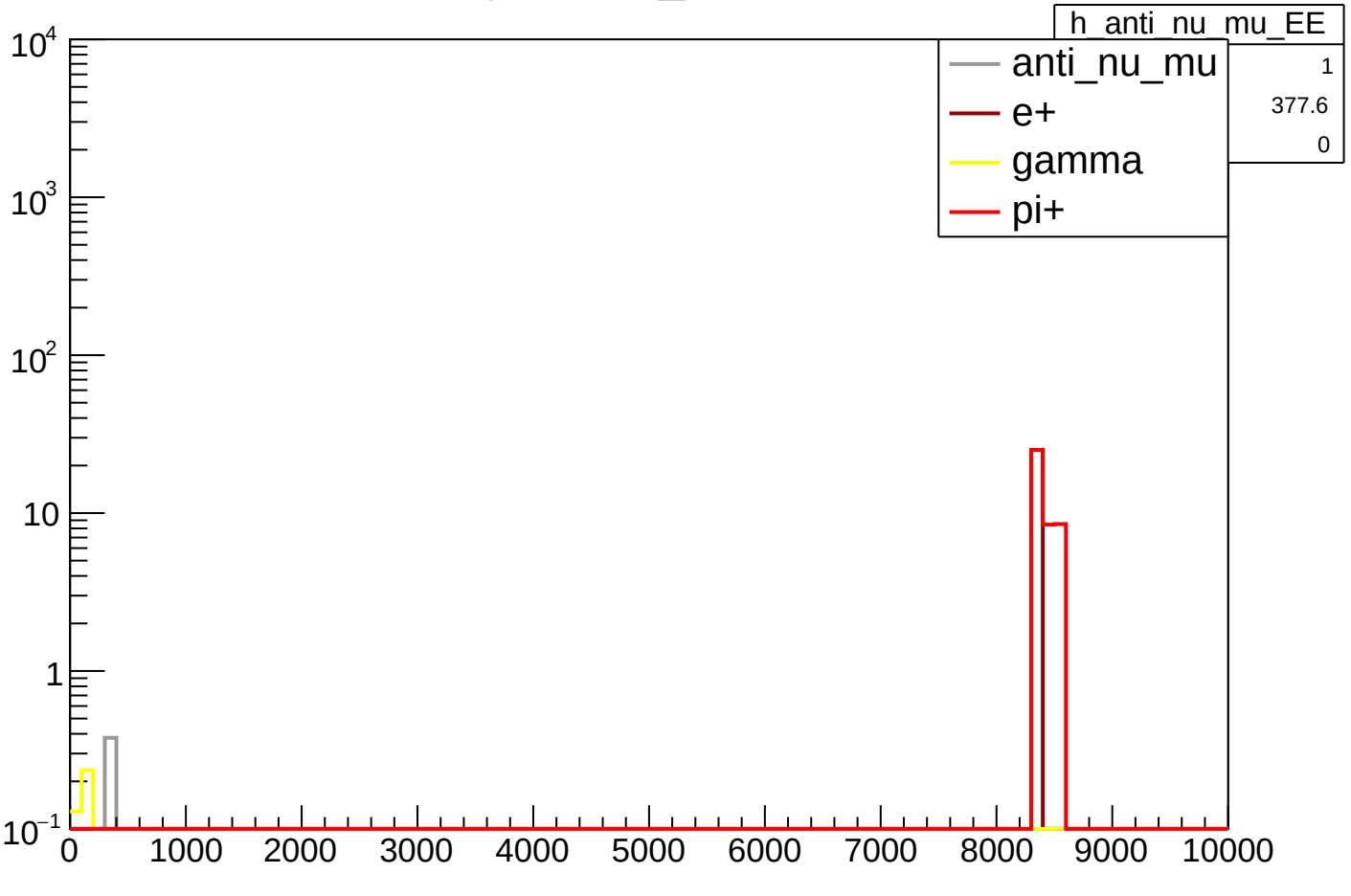

rapidEnengyHist_DSVD2
rapidEnengyHist_DSVD2
Entries 1
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

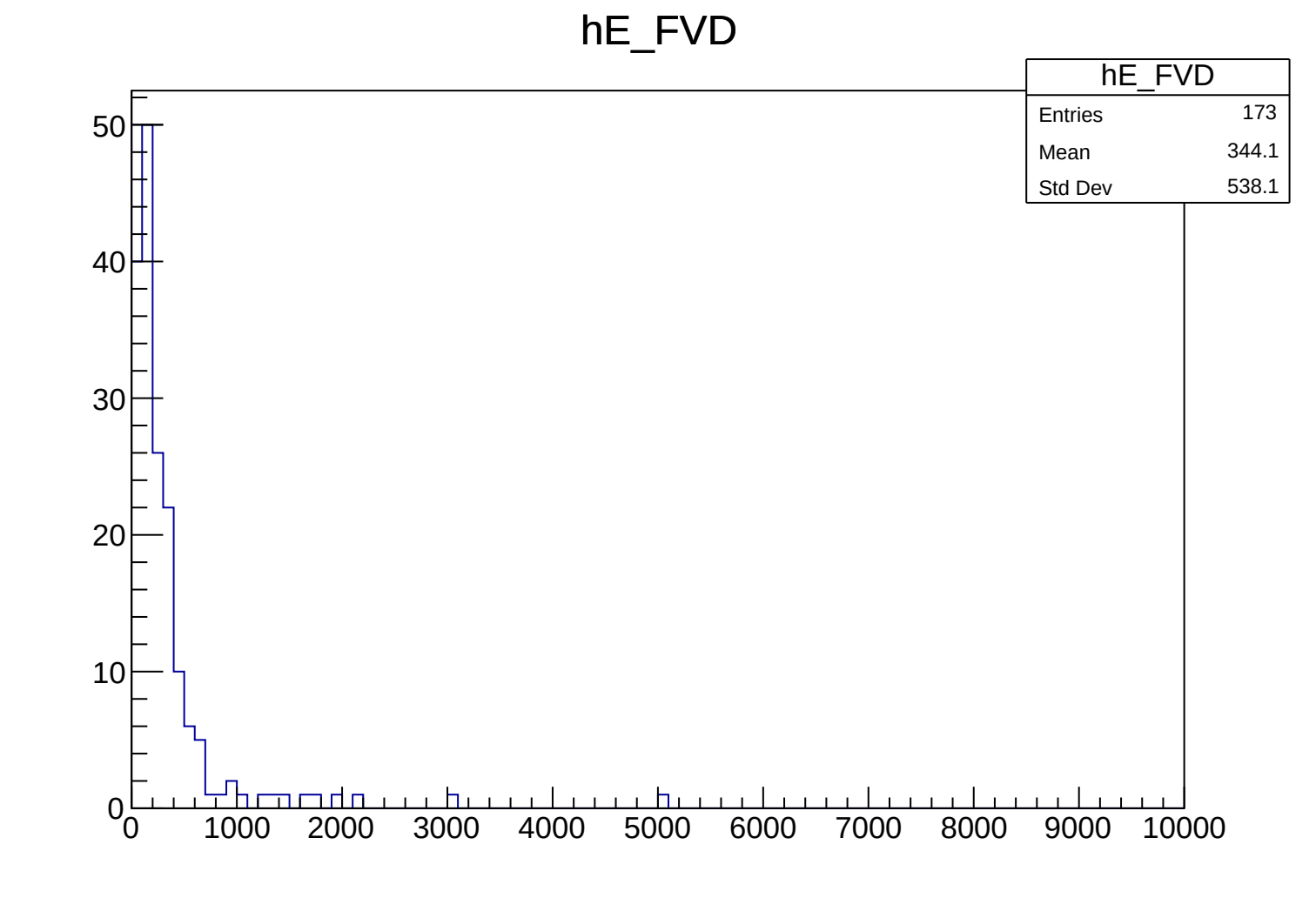

rapidAngleHist_DSVD2
rapidAngleHist_DSVD2
Entries 1
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
−80
−60
−40
−20
0
20
40
60
80

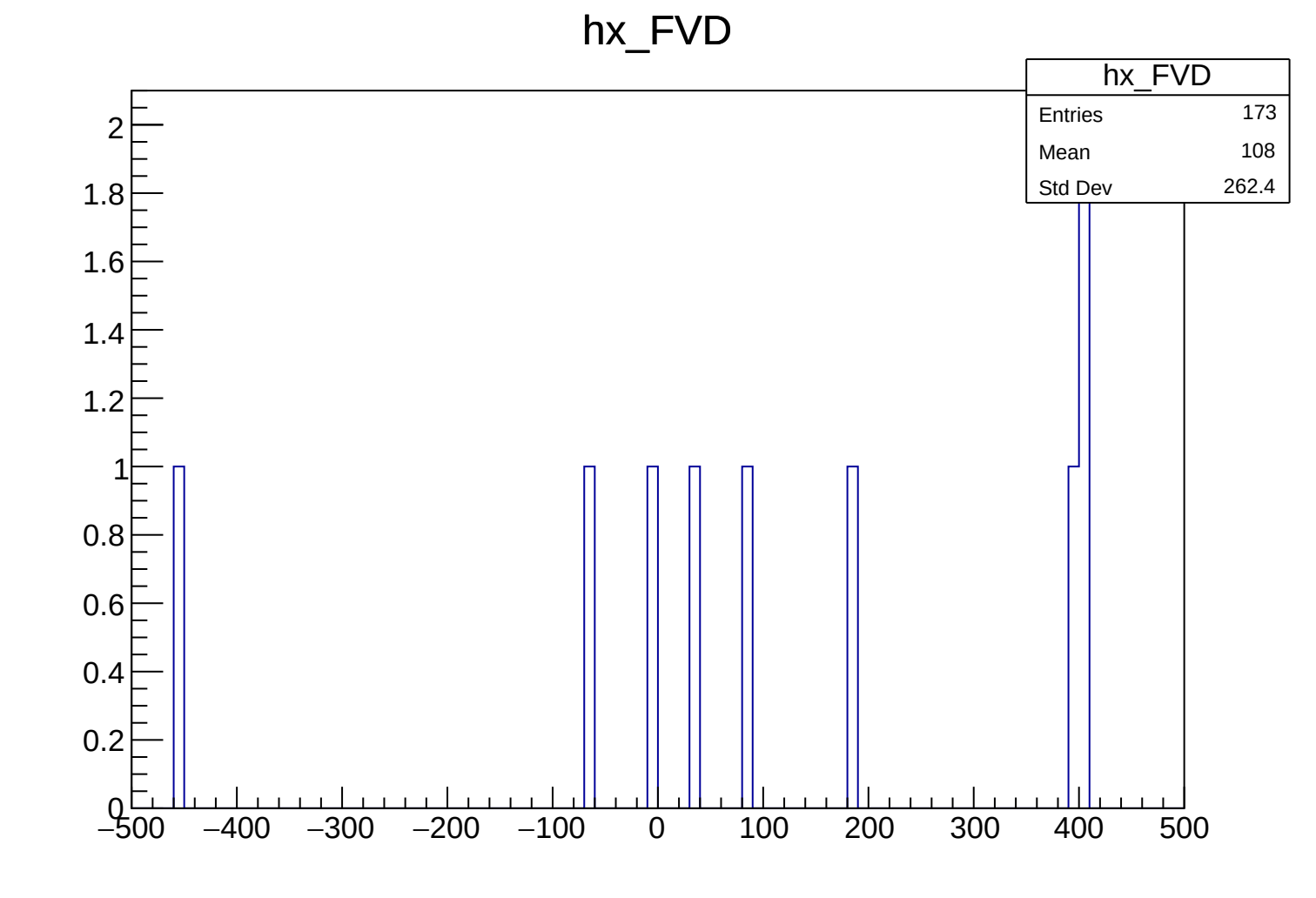

rapidTimeHist_DSVD2
rapidTimeHist_DSVD2
Entries 1
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6

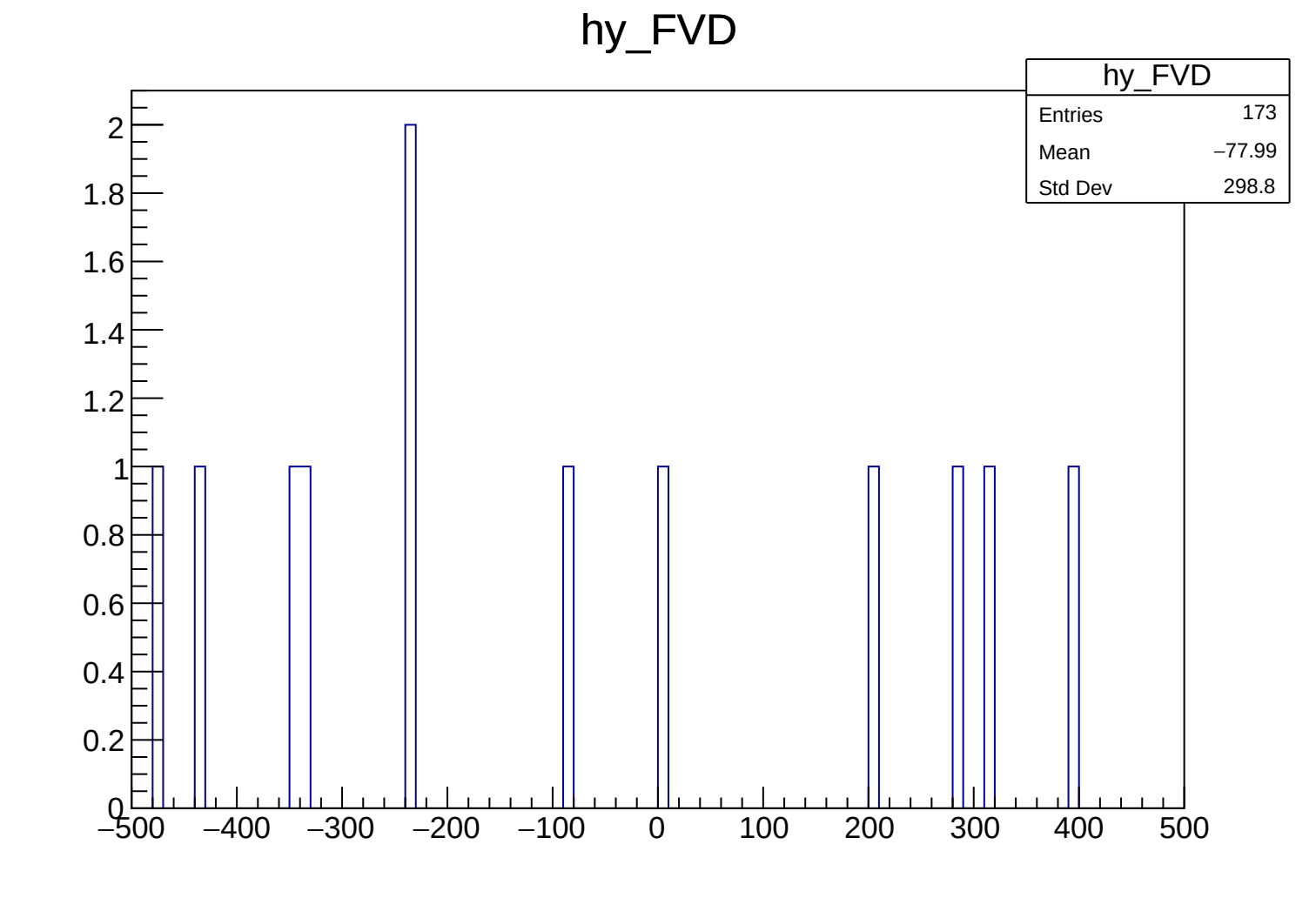

energyTimeHist_DSVD2
×10⁻⁶
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
energyTimeHist_DSVD2
Entries 1
Mean x 377.6
Mean y 2.15e−07
Std Dev x 0
Std Dev y 0

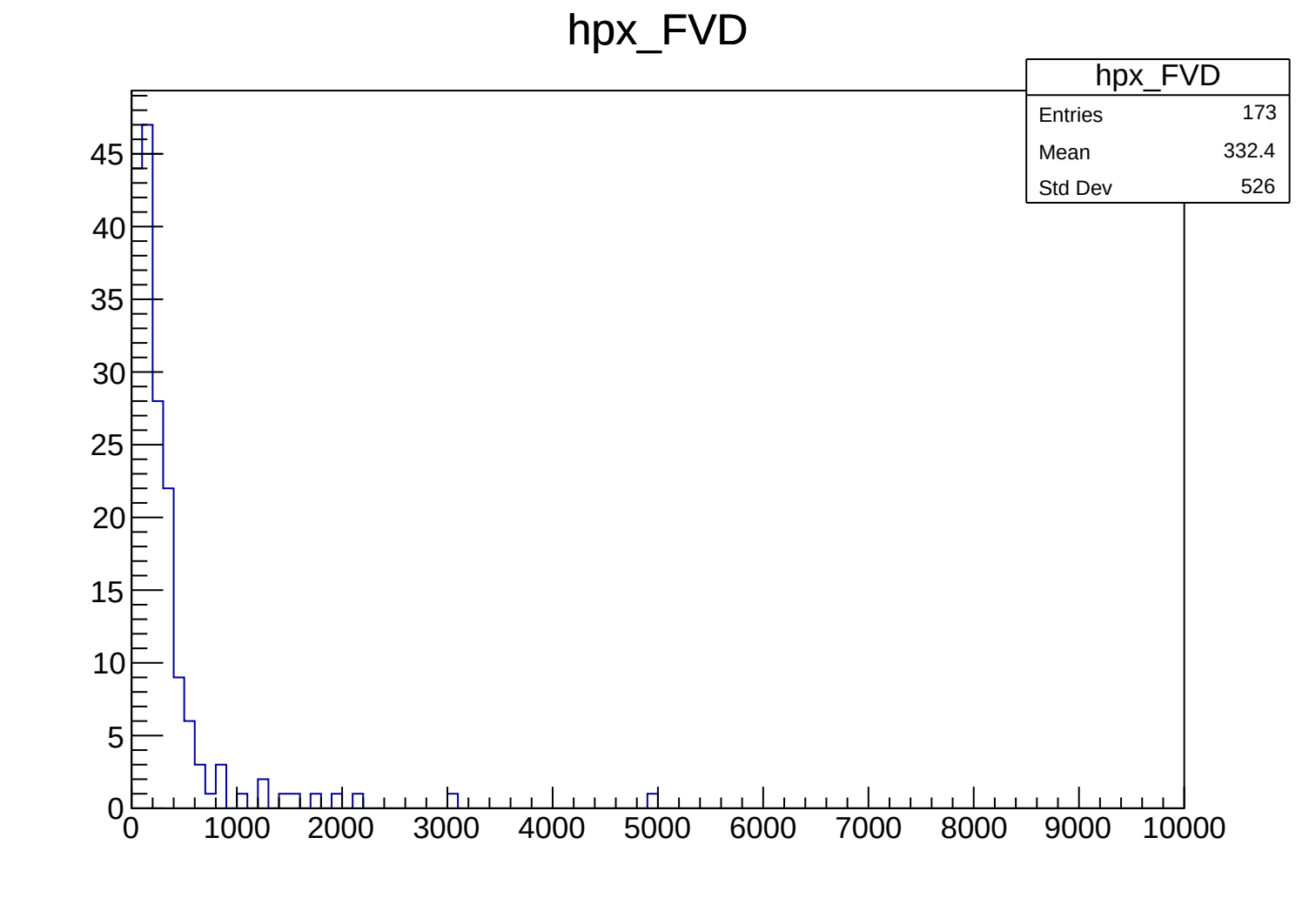

Energy_DSVD2
h_anti_nu_mu_E
1
377.6
0
anti_nu_mu
e+
gamma
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

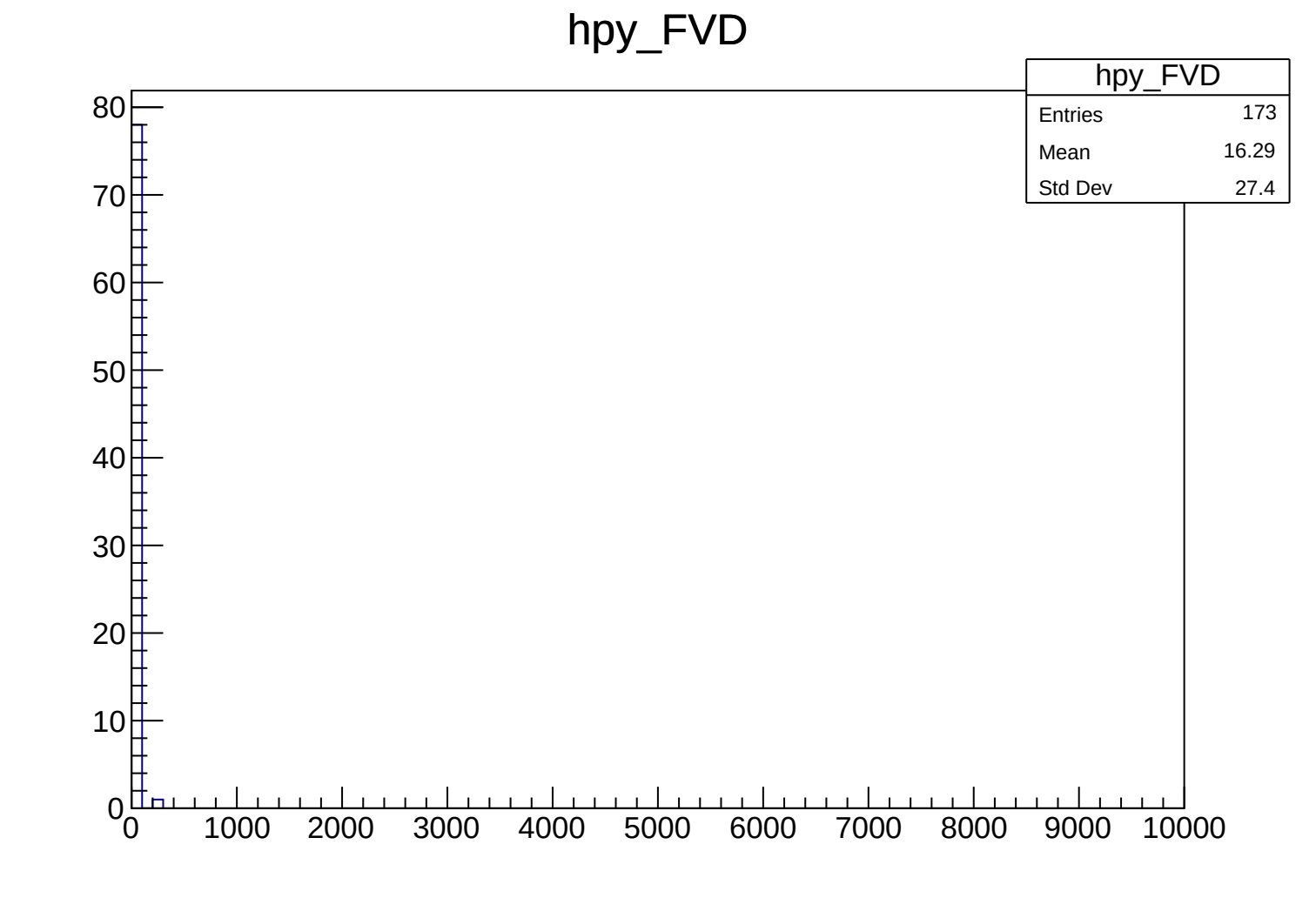

Spectrum_DSVD2
h_anti_nu_mu_EE
1
377.6
0
anti_nu_mu
e+
gamma
pi+
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

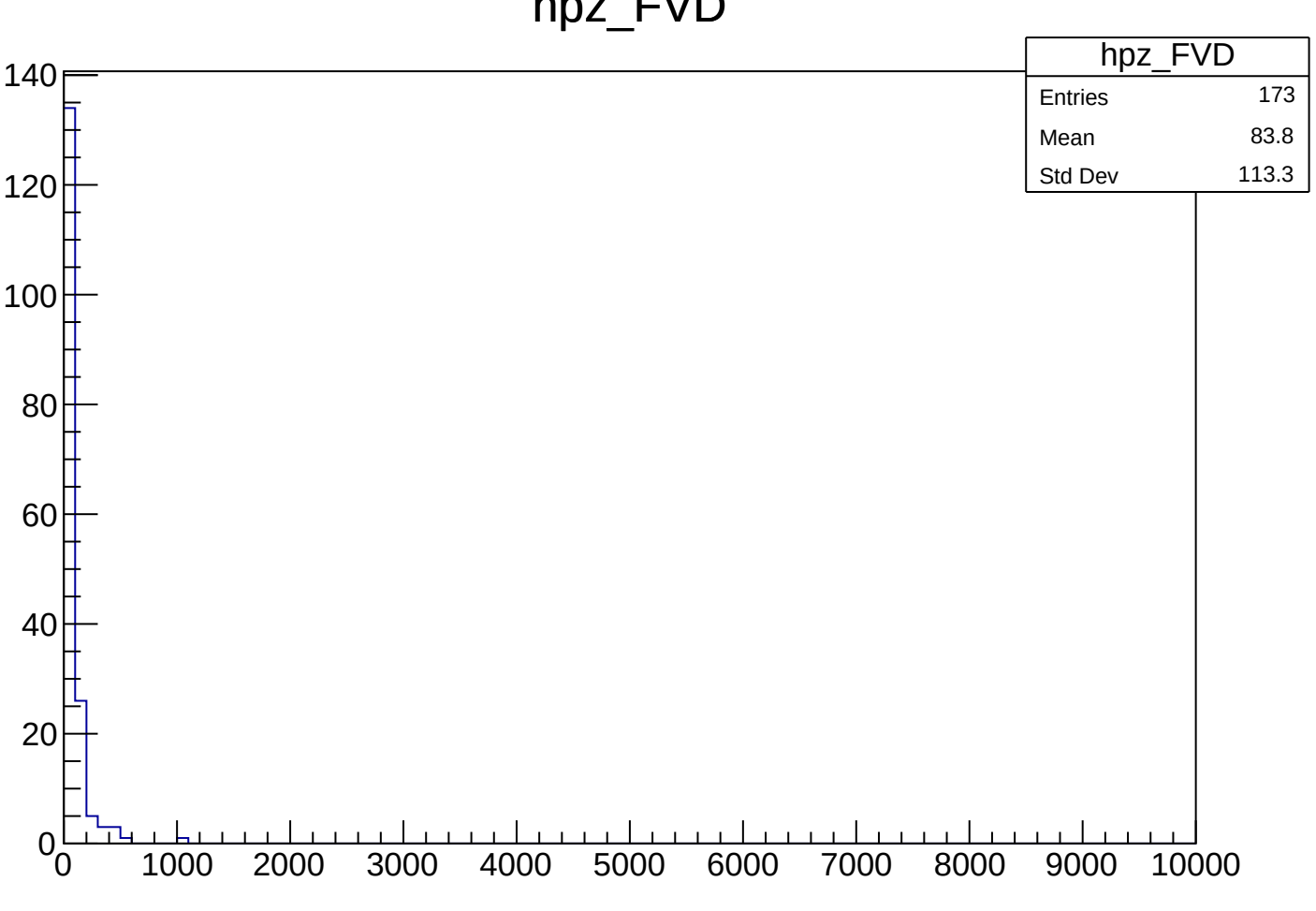

hE_FVD
hE_FVD
Entries 173
Mean 344.1
Std Dev 538.1
50
40
30
20
10
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

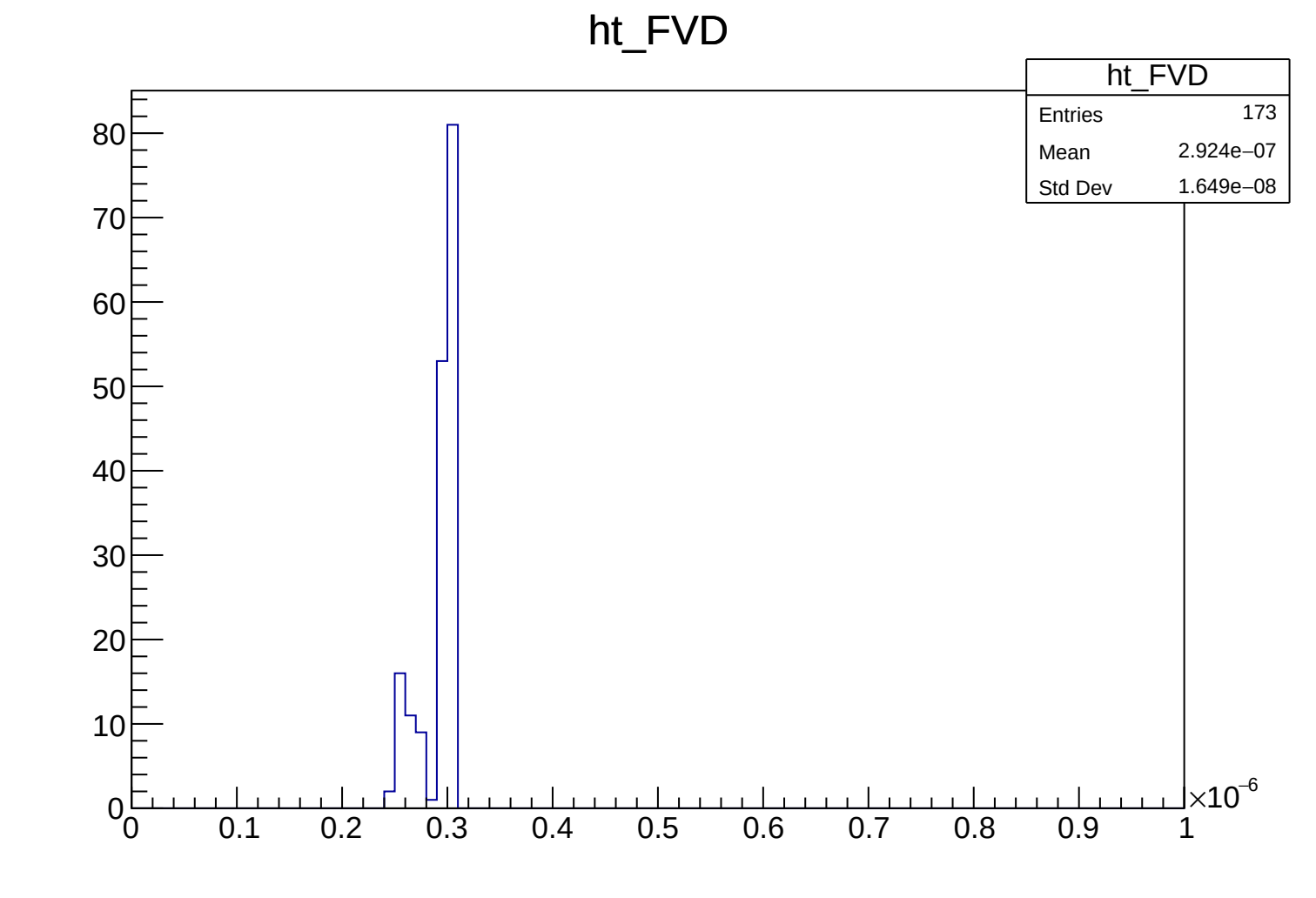

hx_FVD
hx_FVD
Entries 173
Mean 108
Std Dev 262.4
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

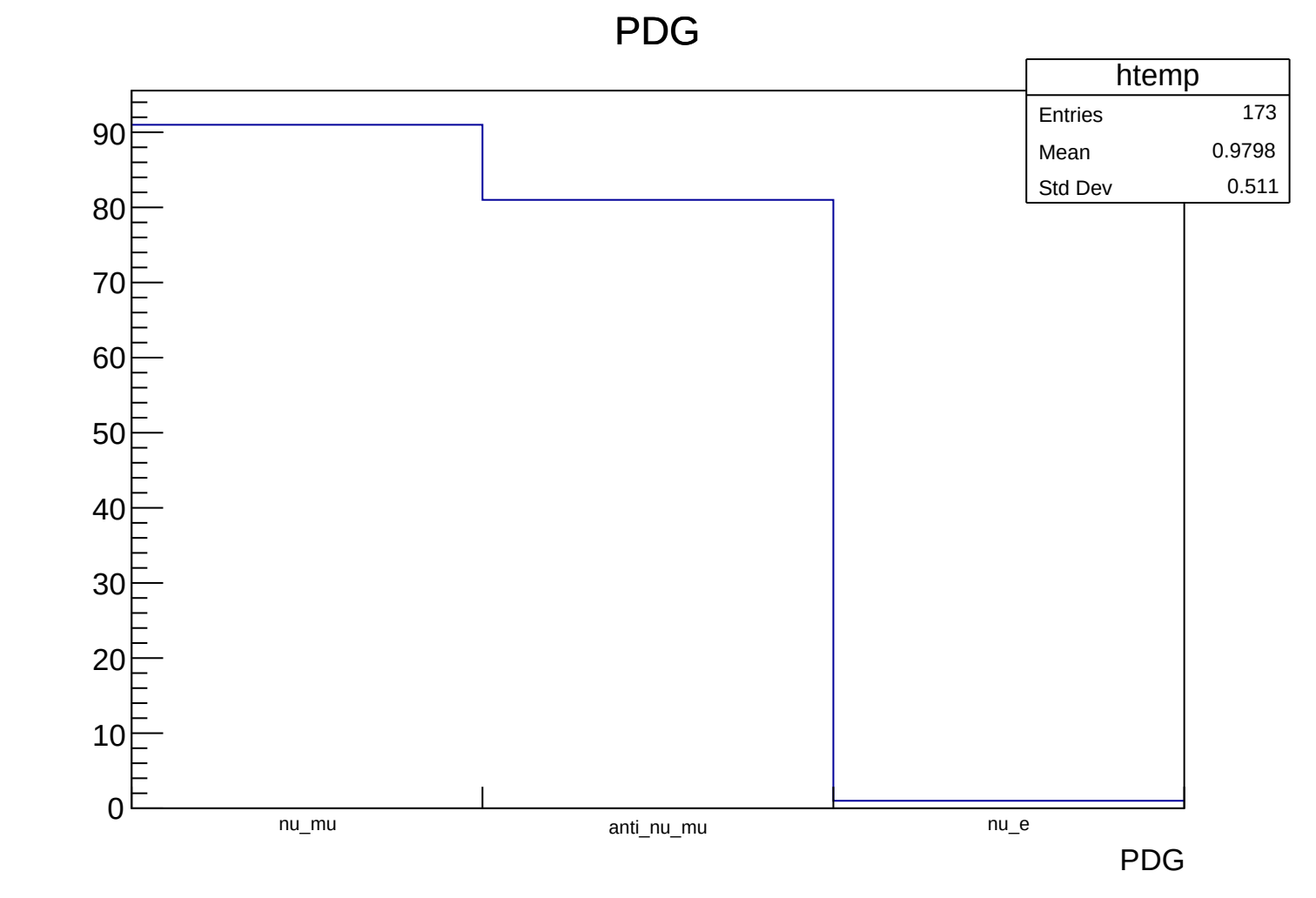

hy_FVD
hy_FVD
Entries 173
Mean −77.99
Std Dev 298.8
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−500
−400
−300
−200
−100
0
100
200
300
400
500

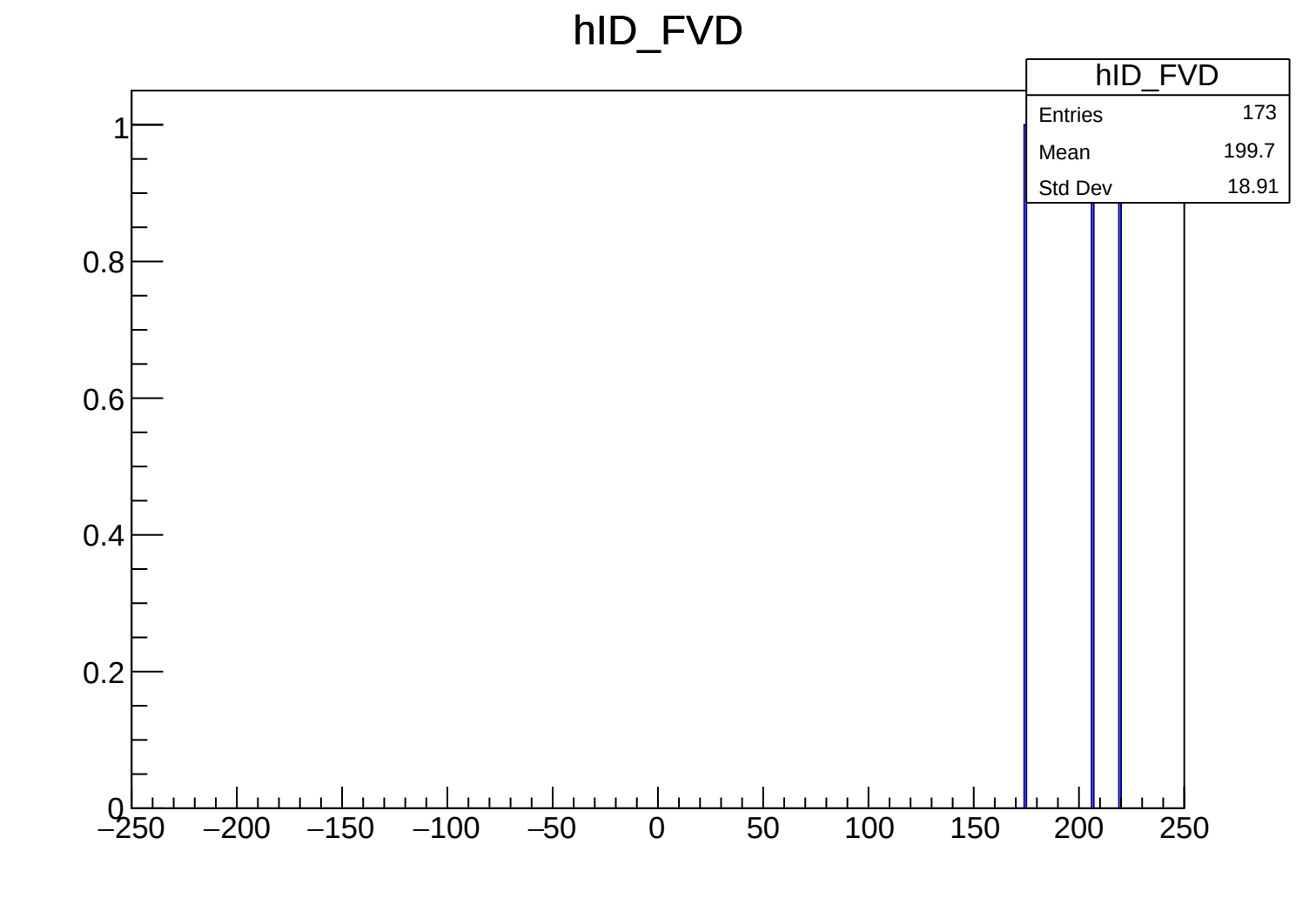

hpx_FVD
hpx_FVD
Entries 173
Mean 332.4
Std Dev 526
45
40
35
30
25
20
15
10
5
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

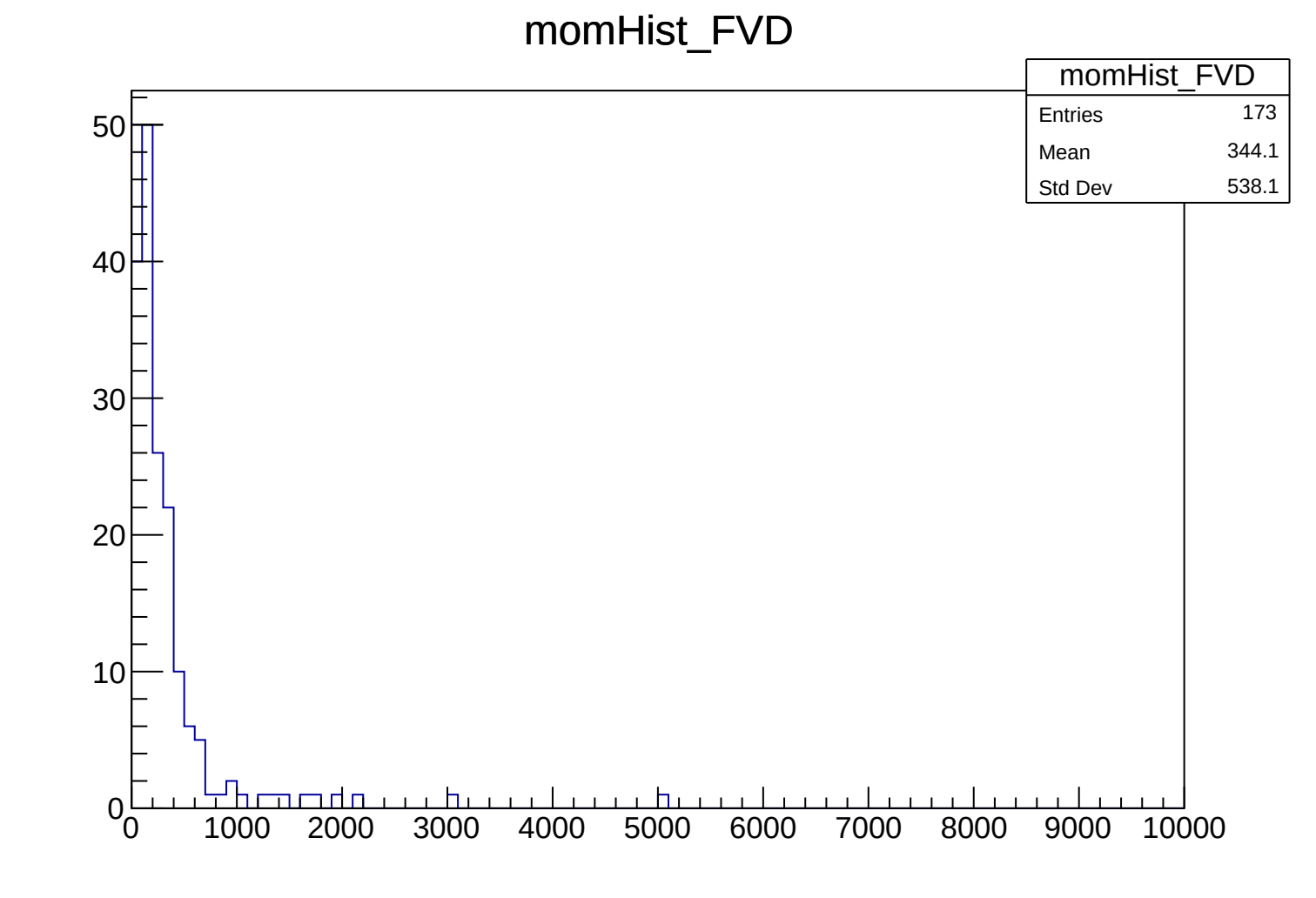

hpy_FVD
hpy_FVD
Entries 173
Mean 16.29
Std Dev 27.4
80
70
60
50
40
30
20
10
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

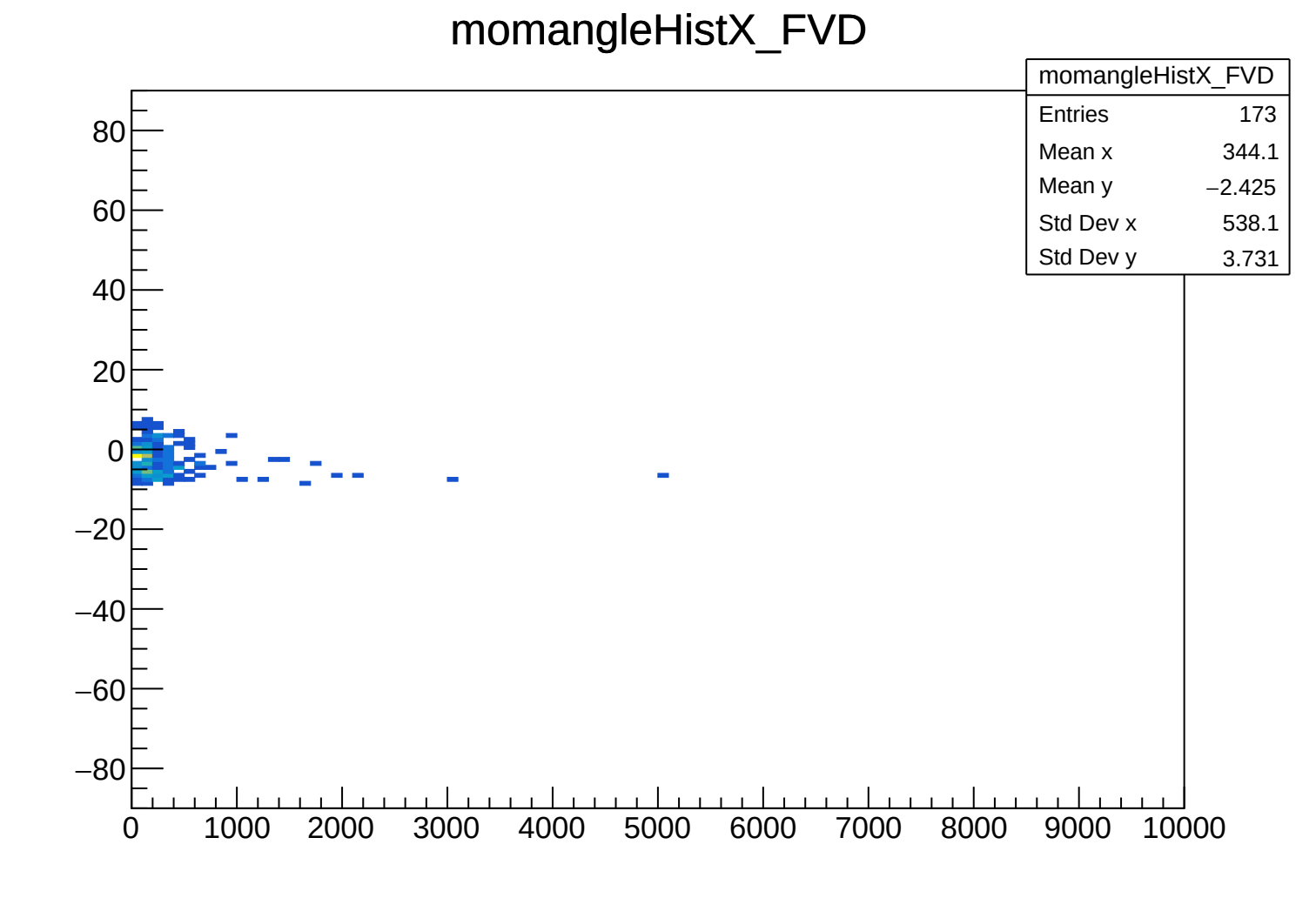

hpz_FVD
hpz_FVD
Entries 173
Mean 83.8
Std Dev 113.3
140
120
100
80
60
40
20
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

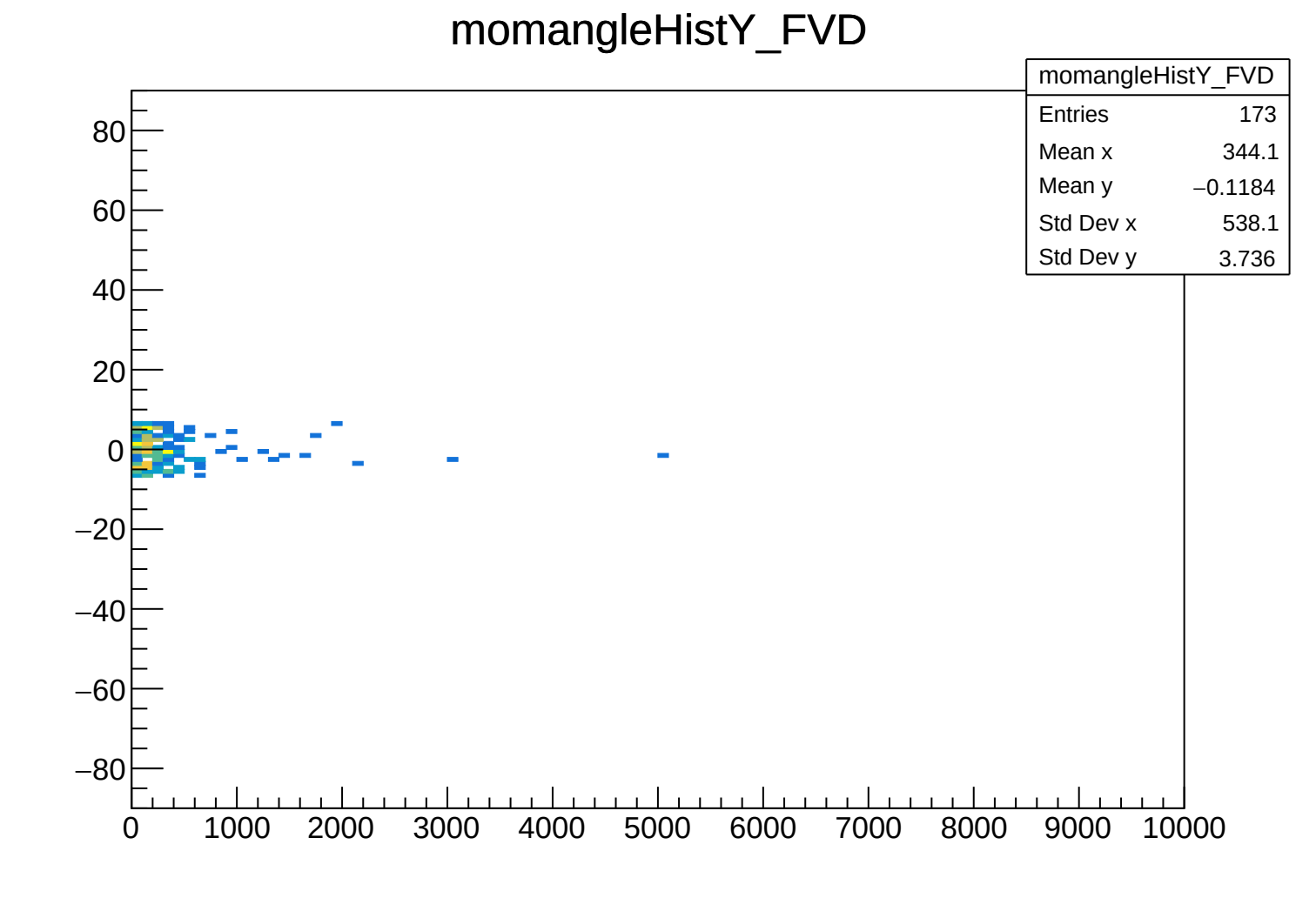

ht_FVD
ht_FVD
Entries 173
Mean 2.924e−07
Std Dev 1.649e−08
80
70
60
50
40
30
20
10
0
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
×10−6

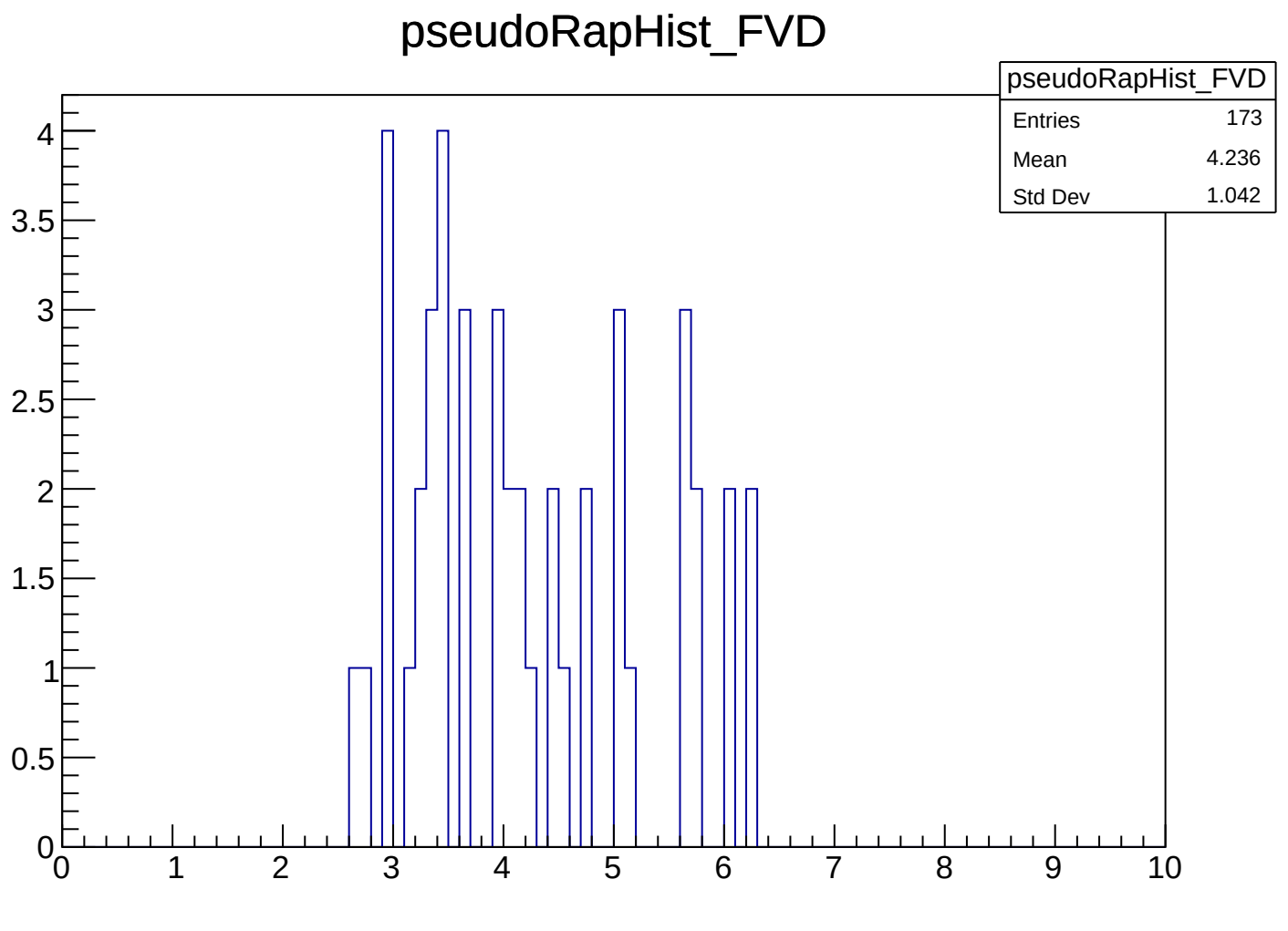

PDG
htemp
Entries 173
Mean 0.9798
Std Dev 0.511
90
80
70
60
50
40
30
20
10
0
nu_mu
anti_nu_mu
nu_e
PDG

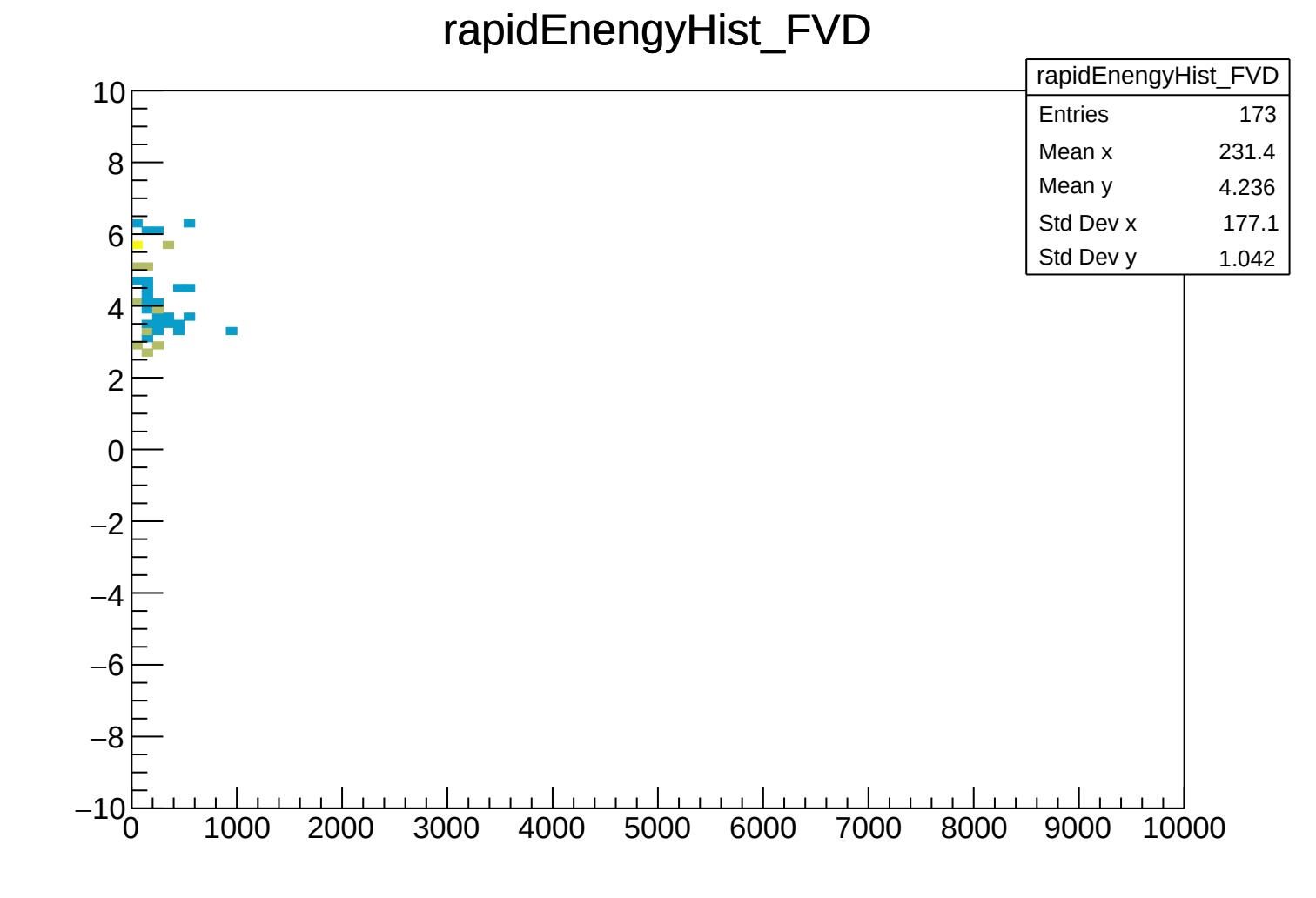

hID_FVD
hID_FVD
Entries 173
Mean 199.7
Std Dev 18.91
1
0.8
0.6
0.4
0.2
0
−250
−200
−150
−100
−50
0
50
100
150
200
250

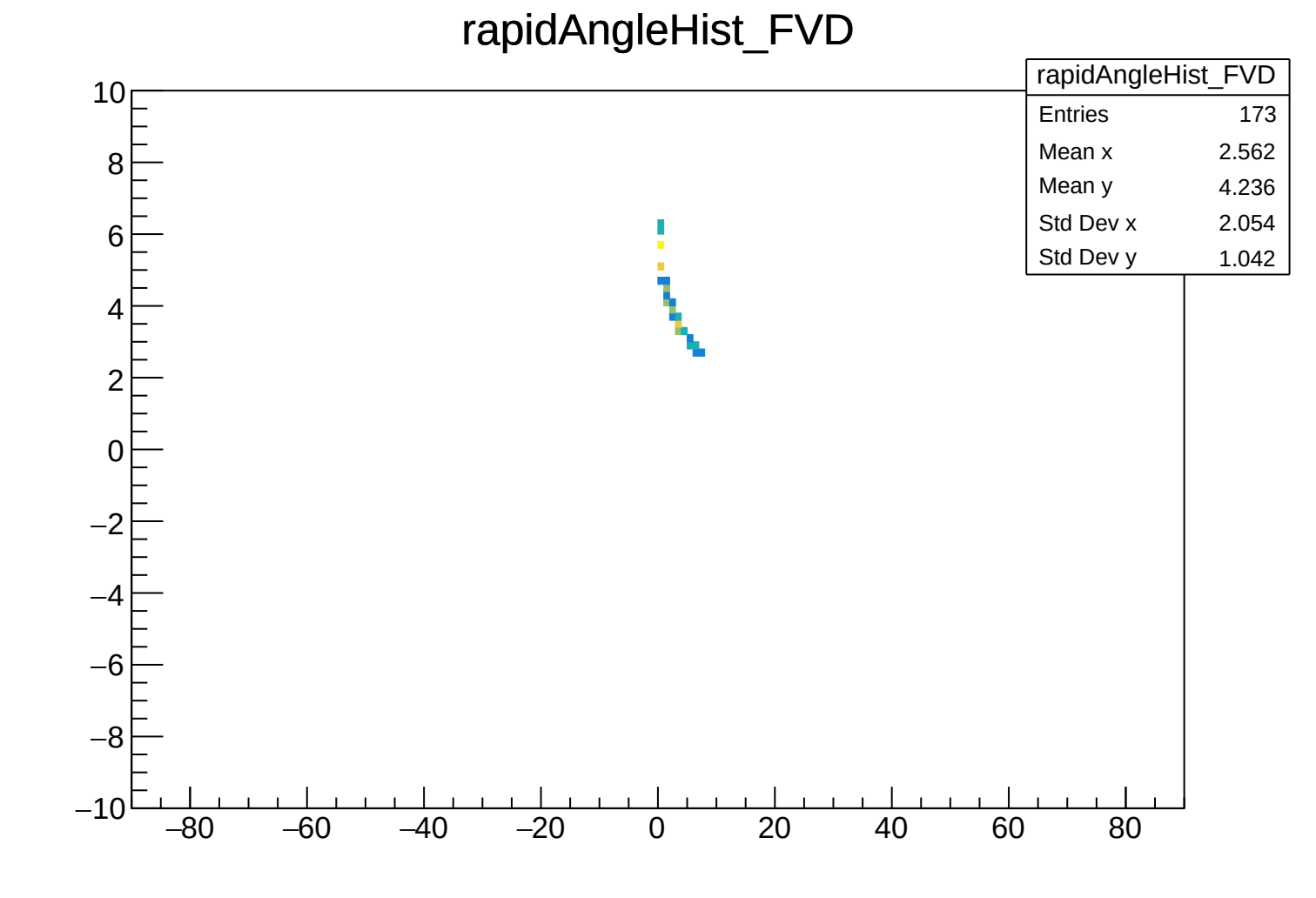

momHist_FVD
momHist_FVD
Entries 173
Mean 344.1
Std Dev 538.1
50
40
30
20
10
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

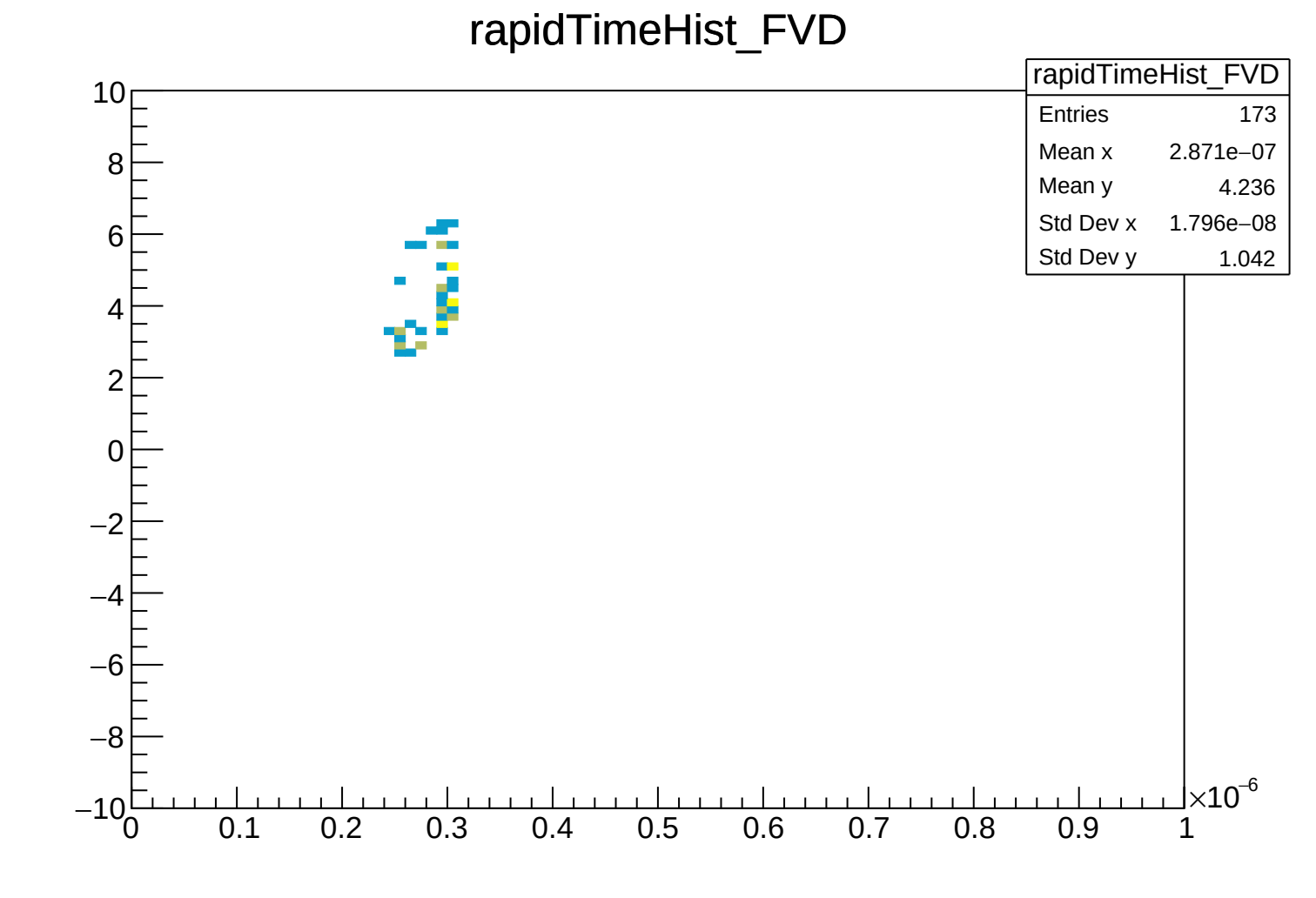

momangleHistX_FVD
momangleHistX_FVD
Entries 173
Mean x 344.1
Mean y −2.425
Std Dev x 538.1
Std Dev y 3.731
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

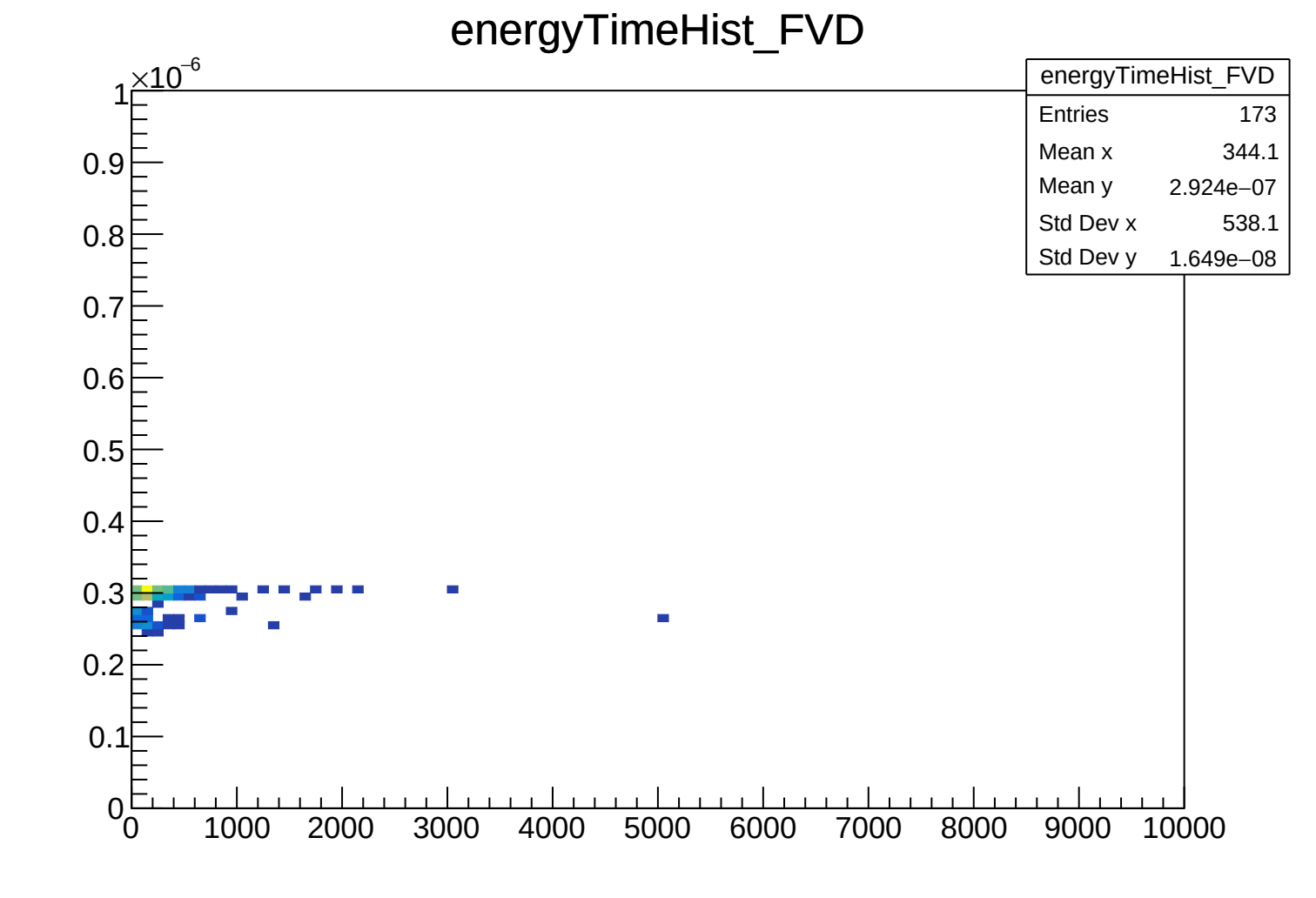

momangleHistY_FVD
momangleHistY_FVD
Entries 173
Mean x 344.1
Mean y −0.1184
Std Dev x 538.1
Std Dev y 3.736
80
60
40
20
0
−20
−40
−60
−80
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

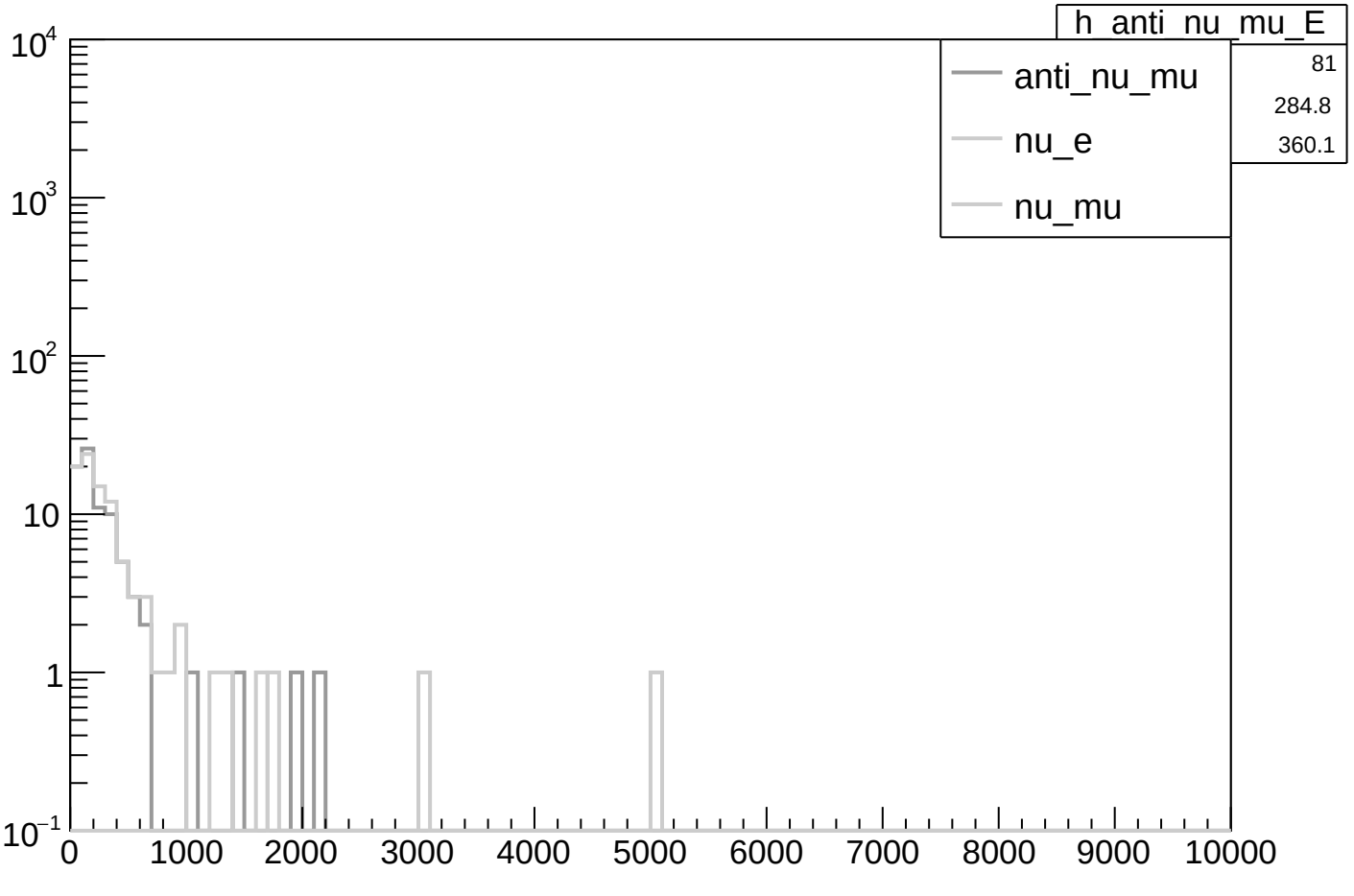

pseudoRapHist_FVD
pseudoRapHist_FVD
Entries 173
Mean 4.236
Std Dev 1.042
0
0.5
1
1.5
2
2.5
3
3.5
4
0
1
2
3
4
5
6
7
8
9
10

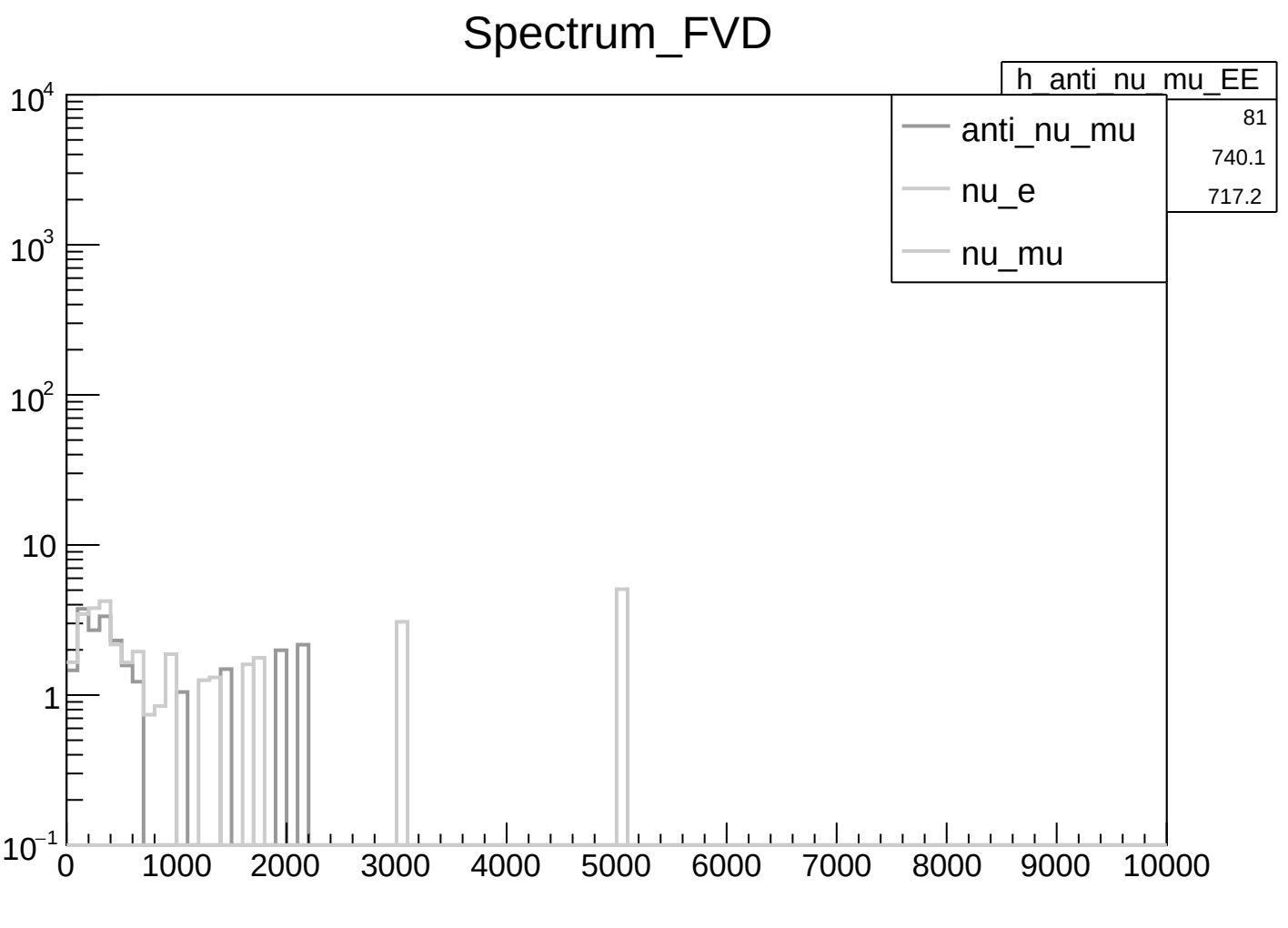

rapidEnengyHist_FVD
rapidEnengyHist_FVD
Entries 173
Mean x 231.4
Mean y 4.236
Std Dev x 177.1
Std Dev y 1.042
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000

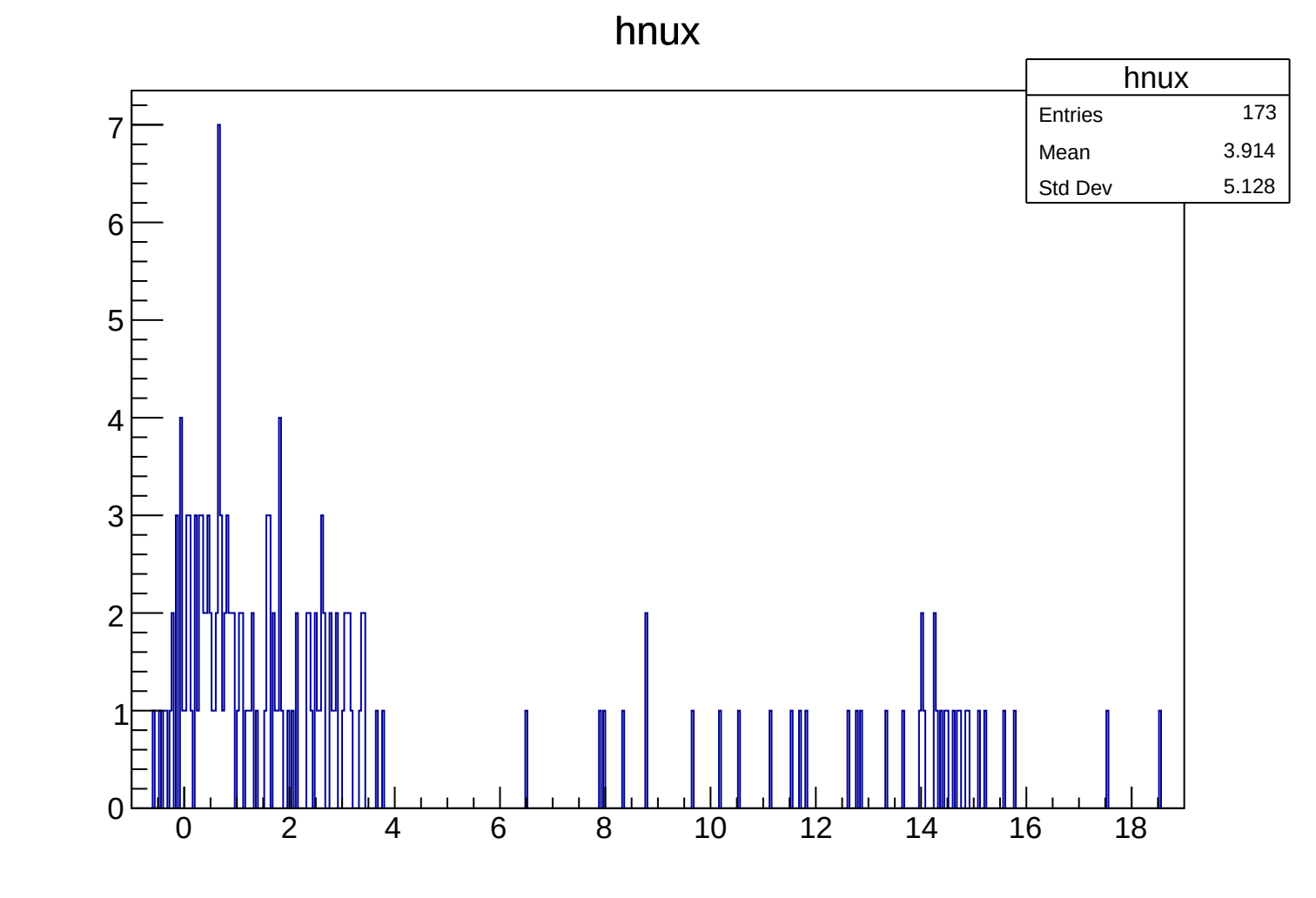

rapidAngleHist_FVD
rapidAngleHist_FVD
Entries 173
Mean x 2.562
Mean y 4.236
Std Dev x 2.054
Std Dev y 1.042
10
8
6
4
2
0
−2
−4
−6
−8
−10
−80
−60
−40
−20
0
20
40
60
80

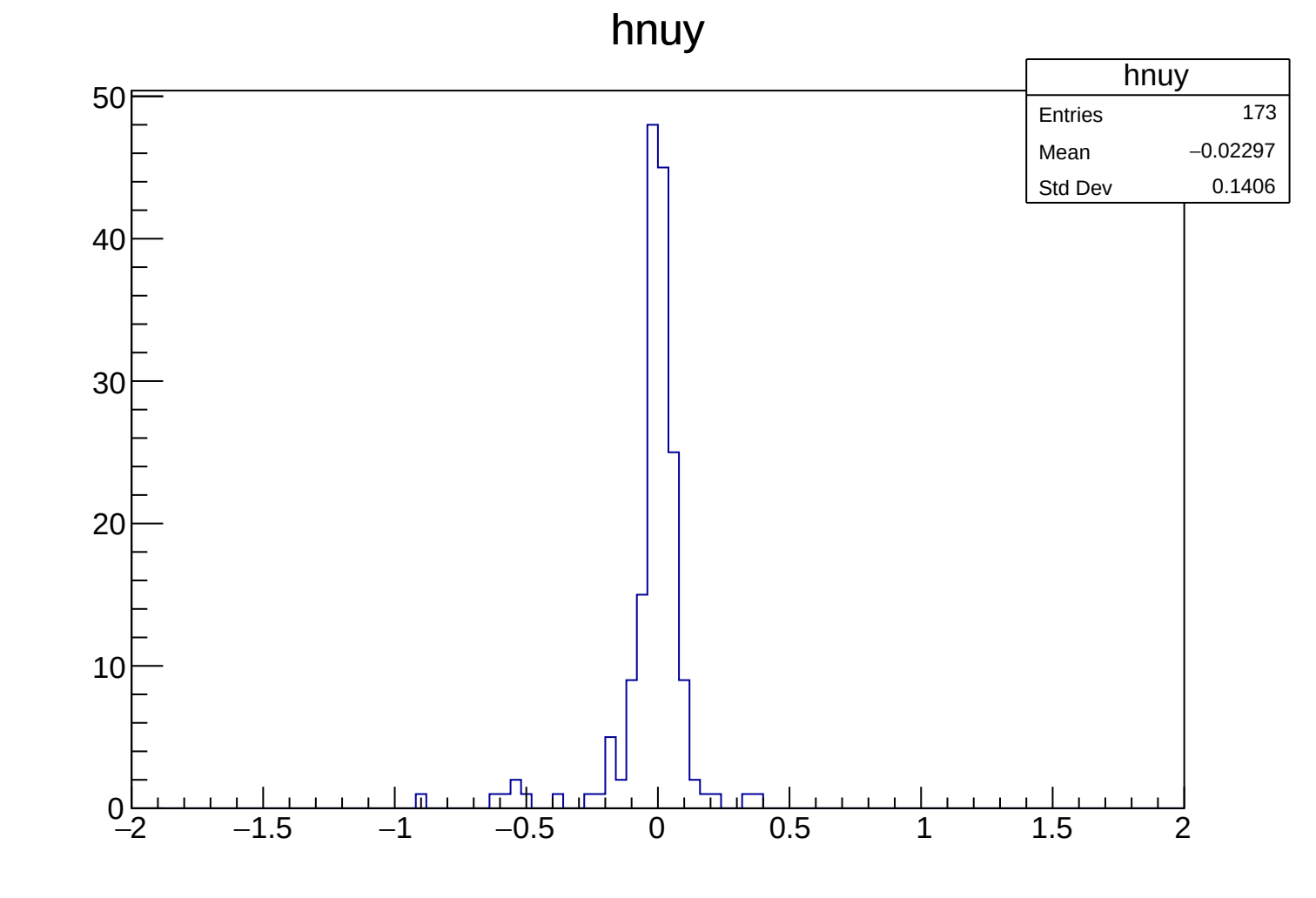

rapidTimeHist_FVD
rapidTimeHist_FVD
Entries 173
Mean x 2.871e−07
Mean y 4.236
Std Dev x 1.796e−08
Std Dev y 1.042
10
8
6
4
2
0
−2
−4
−6
−8
−10
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
×10−6

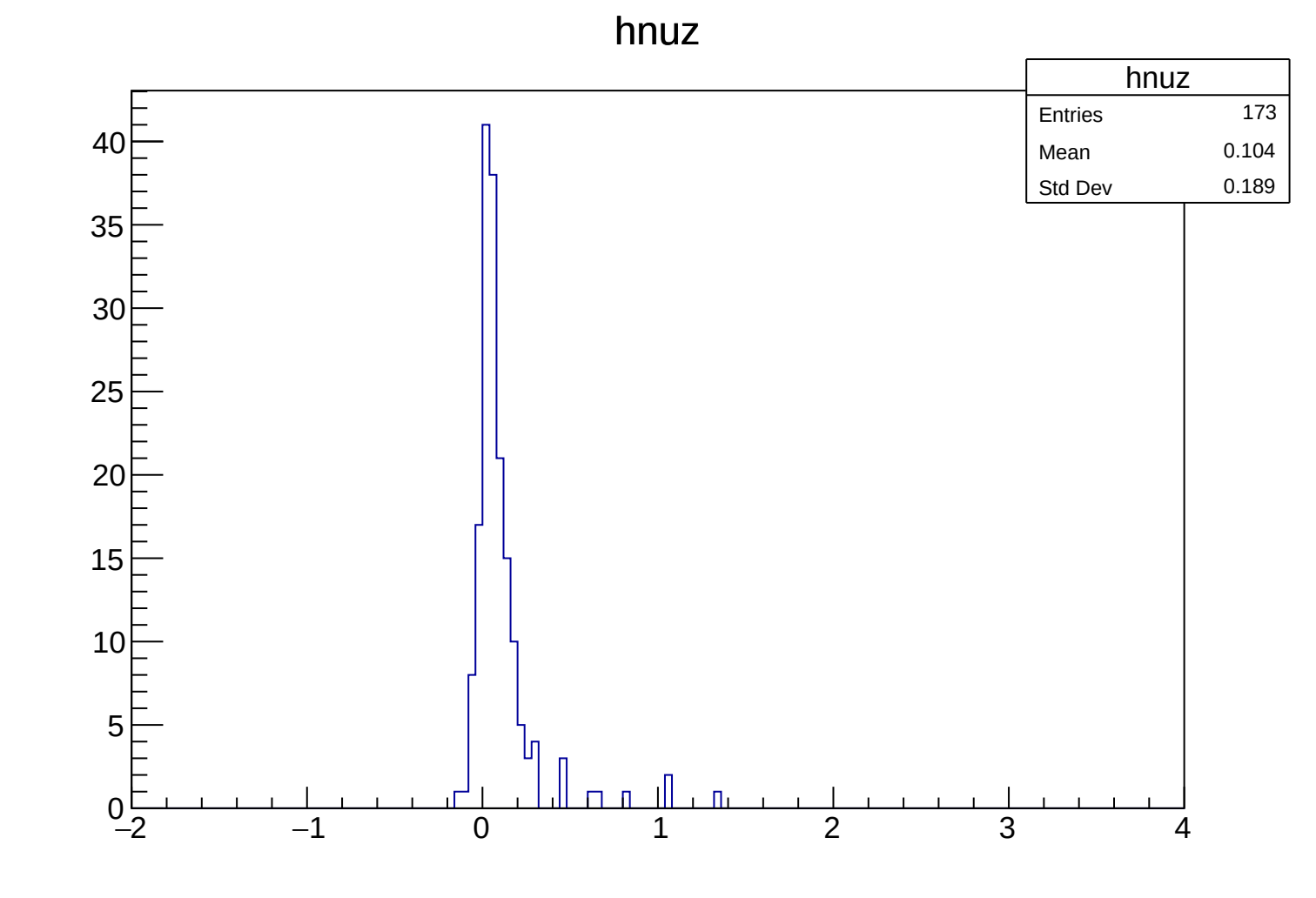

energyTimeHist_FVD
×10⁻⁶
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
energyTimeHist_FVD
Entries 173
Mean x 344.1
Mean y 2.924e−07
Std Dev x 538.1
Std Dev y 1.649e−08

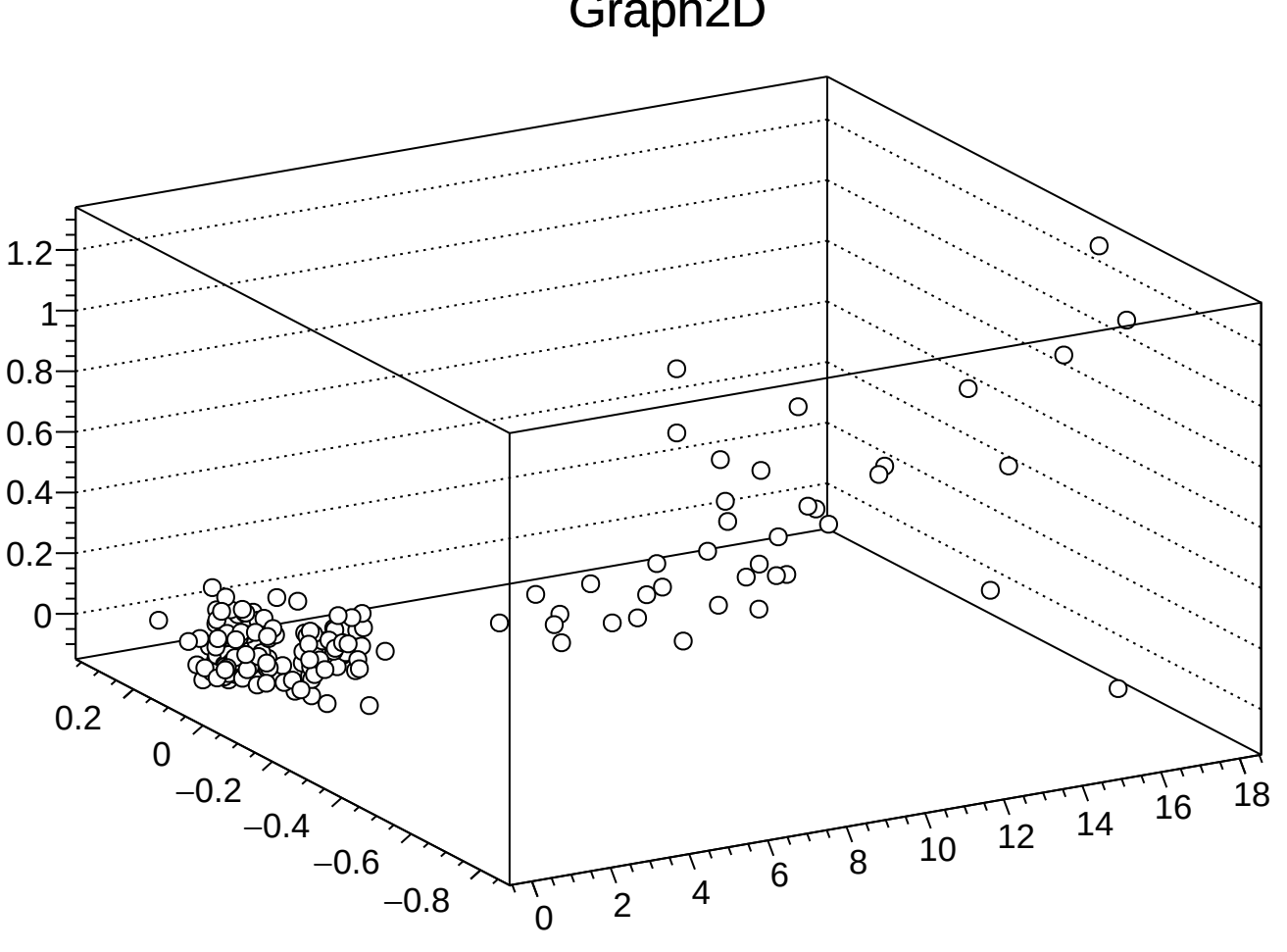

Energy_FVD
h_anti_nu_mu_E
81
284.8
360.1
anti_nu_mu
nu_e
nu_mu
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


Spectrum_FVD
h_anti_nu_mu_EE
81
740.1
717.2
anti_nu_mu
nu_e
nu_mu
10^4
10^3
10^2
10
1
10^-1
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000


hnux
hnux
Entries 173
Mean 3.914
Std Dev 5.128
0
1
2
3
4
5
6
7
0
2
4
6
8
10
12
14
16
18


hnuy
hnuy
Entries 173
Mean −0.02297
Std Dev 0.1406
50
40
30
20
10
0
−2
−1.5
−1
−0.5
0
0.5
1
1.5
2


hnuz
hnuz
Entries 173
Mean 0.104
Std Dev 0.189
40
35
30
25
20
15
10
5
0
–2
–1
0
1
2
3
4


Graph2D
1.2
1
0.8
0.6
0.4
0.2
0
0.2
0
–0.2
–0.4
–0.6
–0.8
0
2
4
6
8
10
12
14
16
18