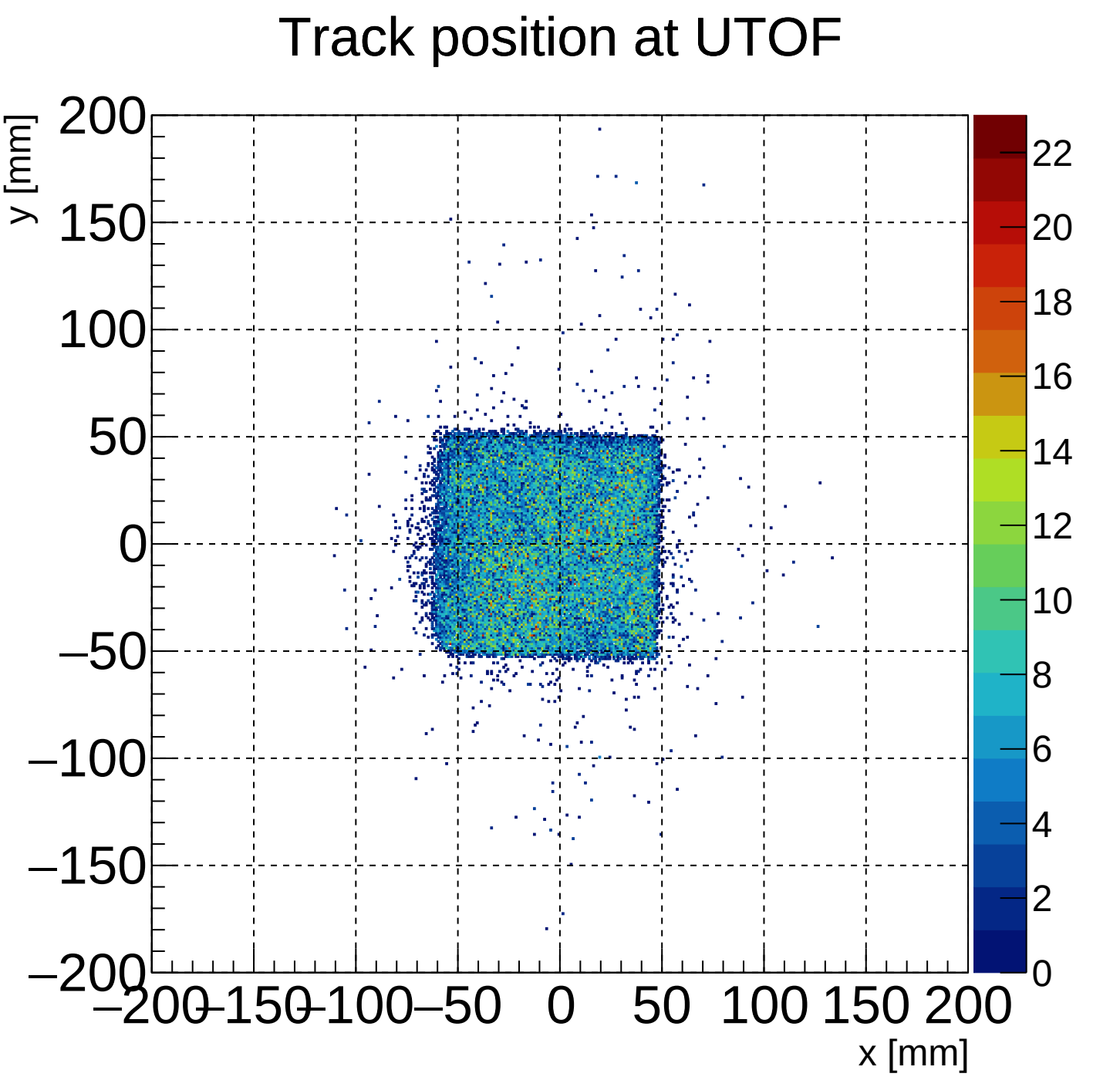
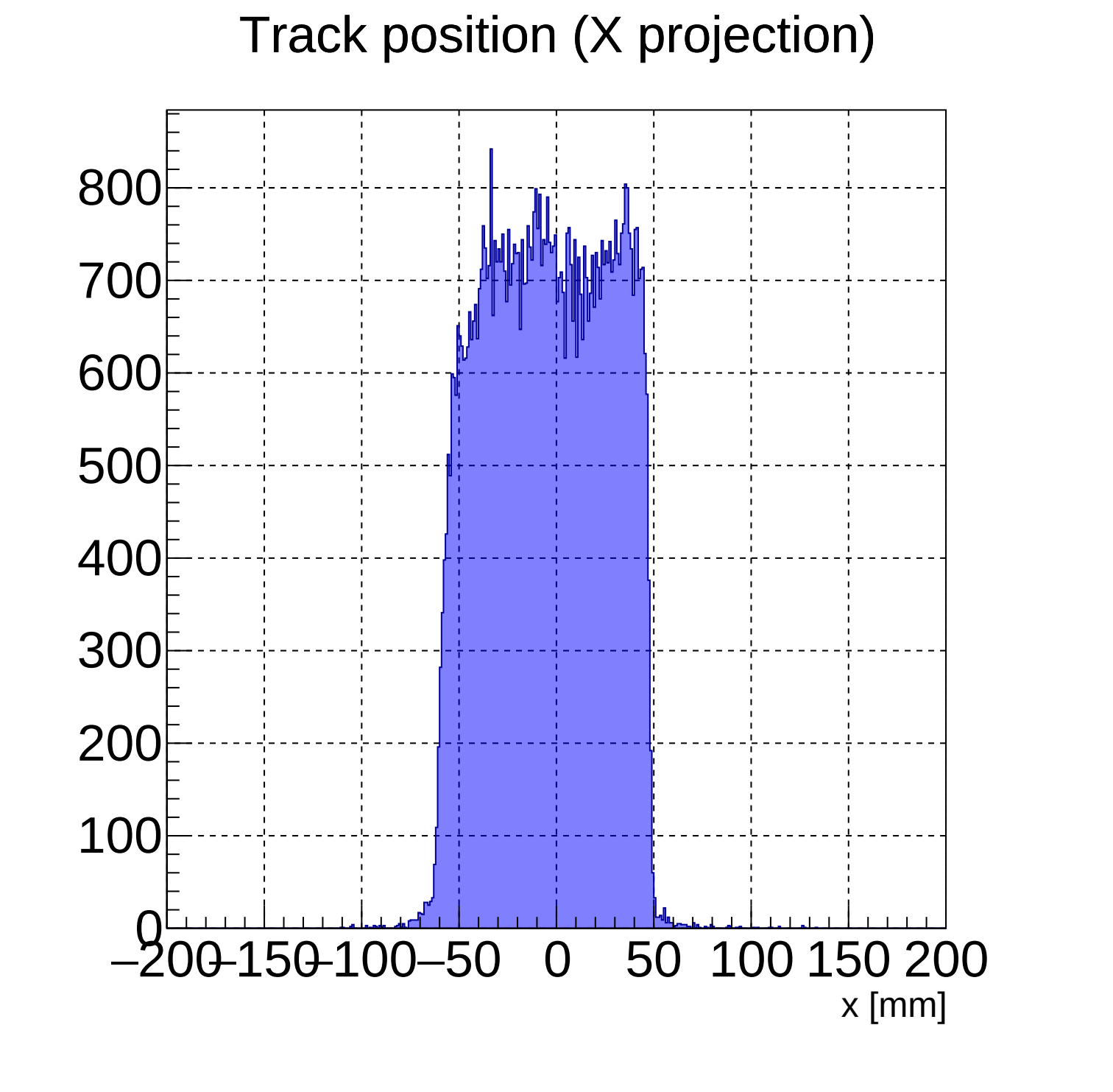
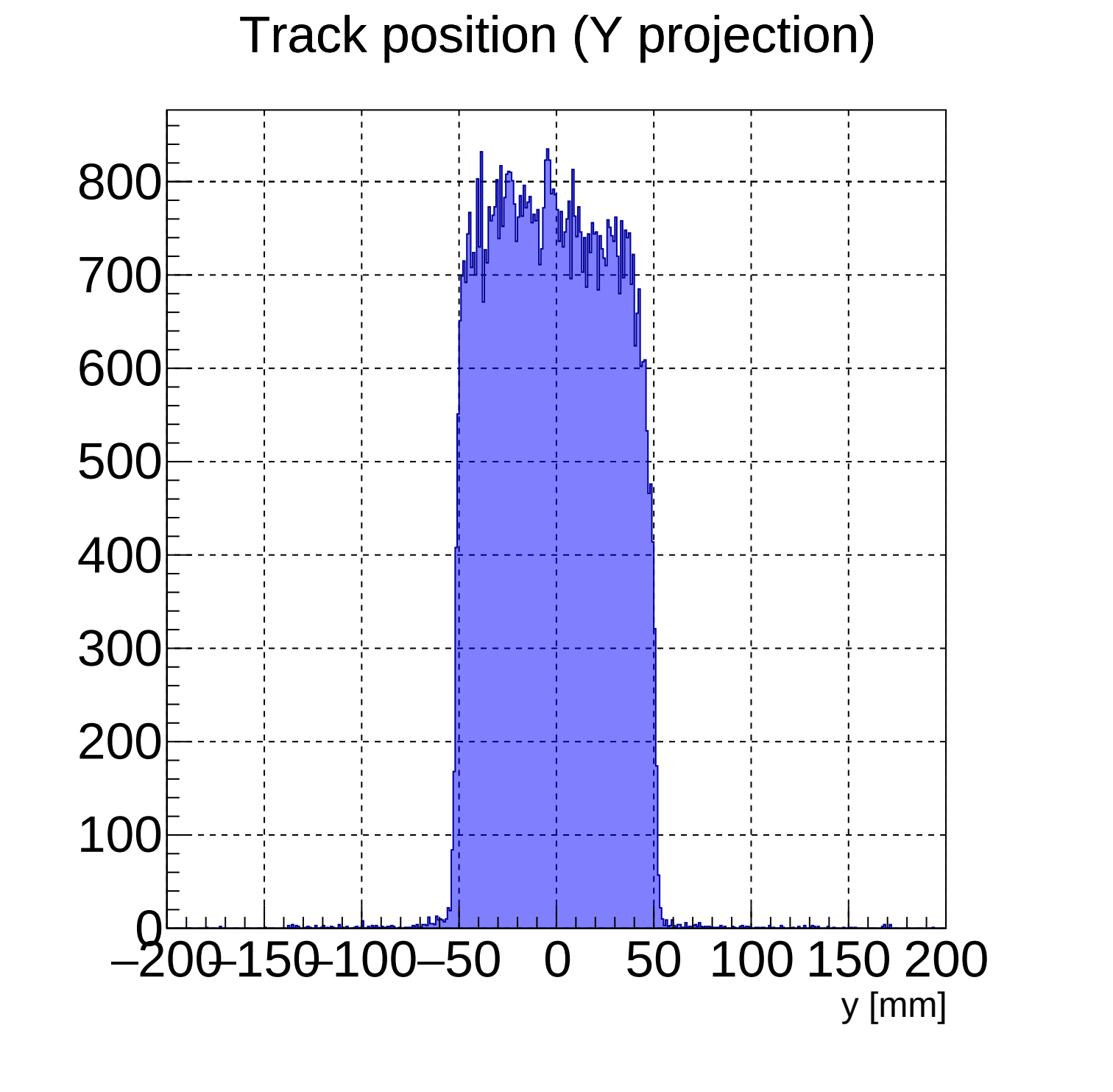
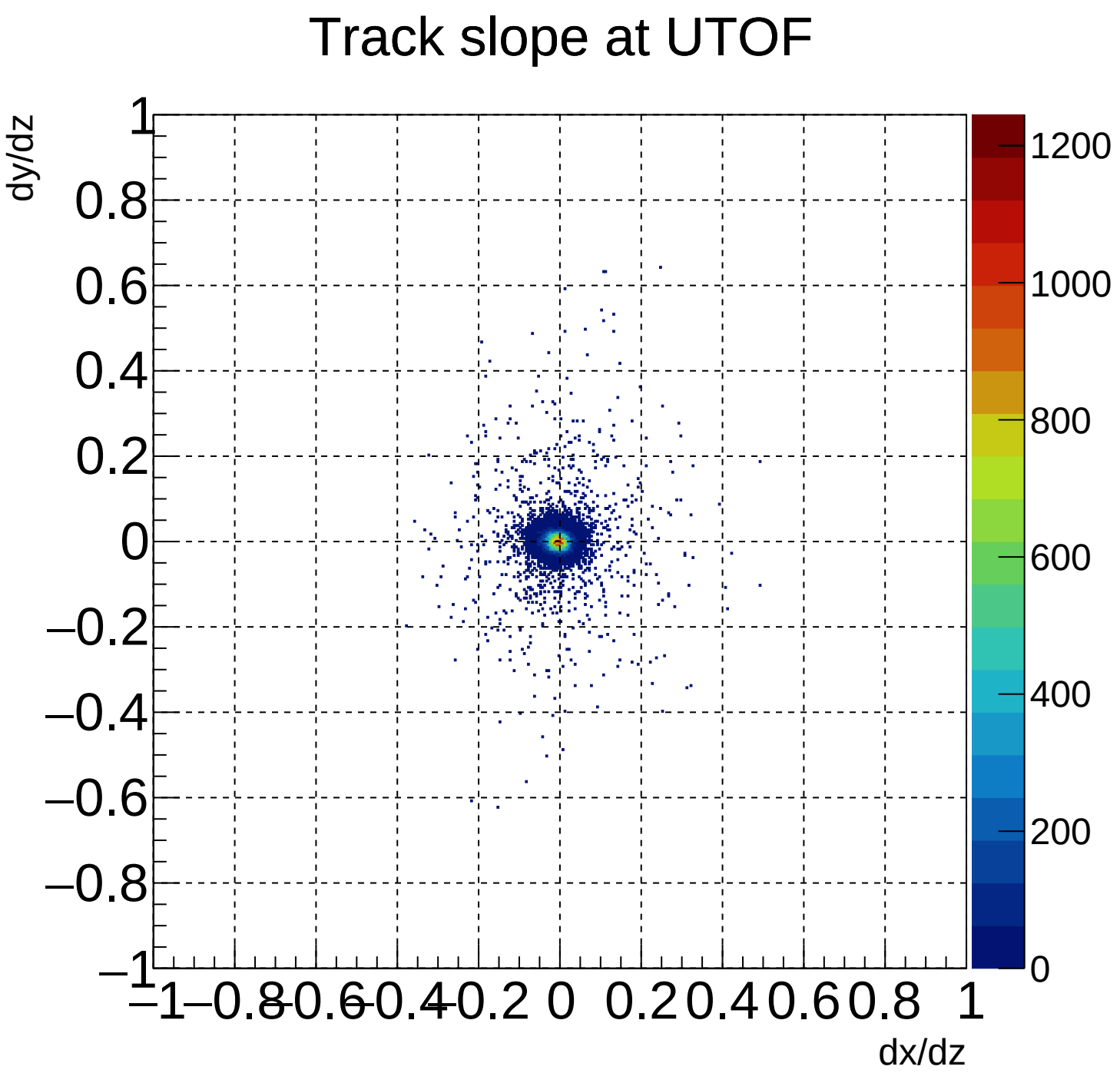
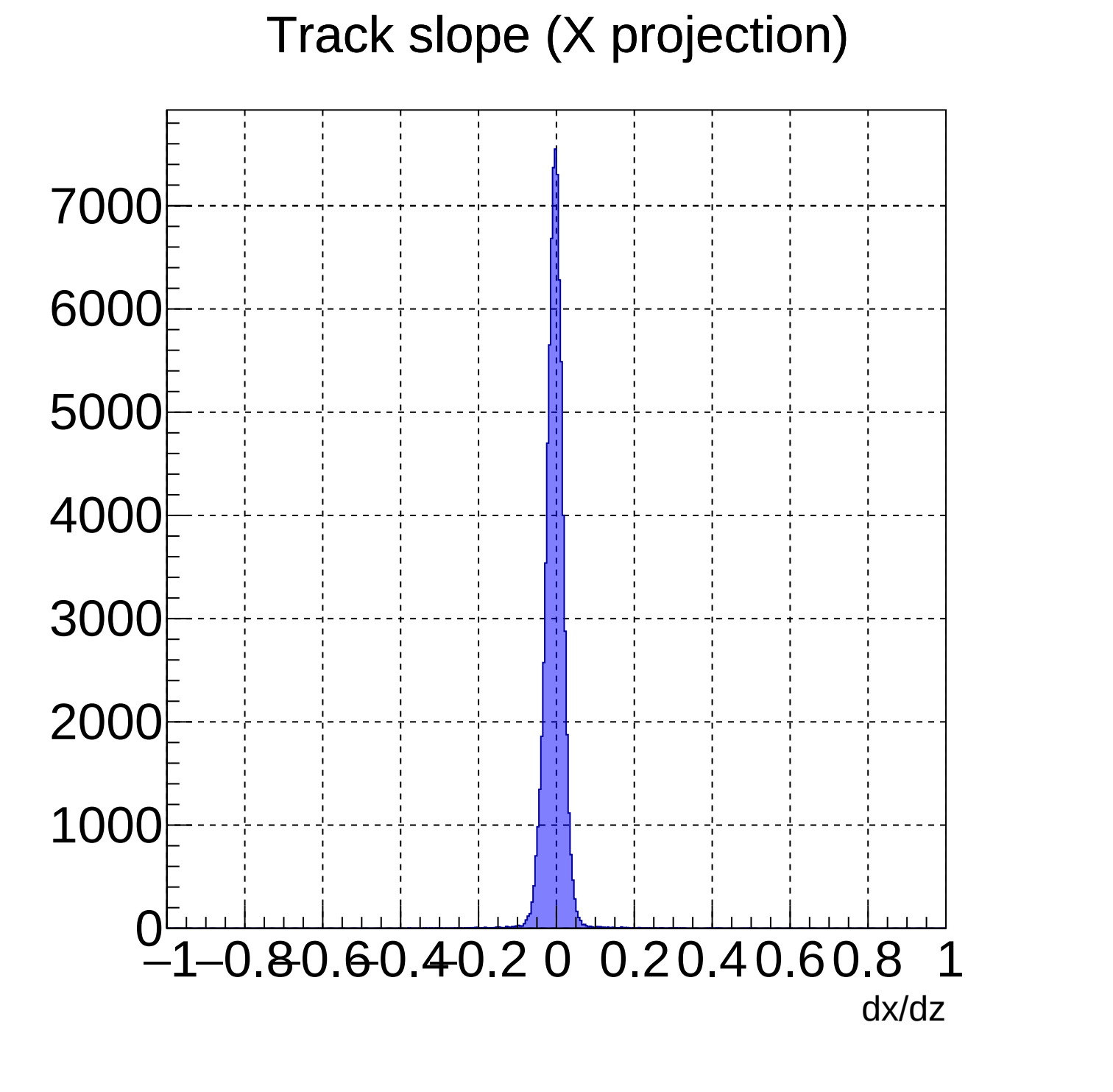
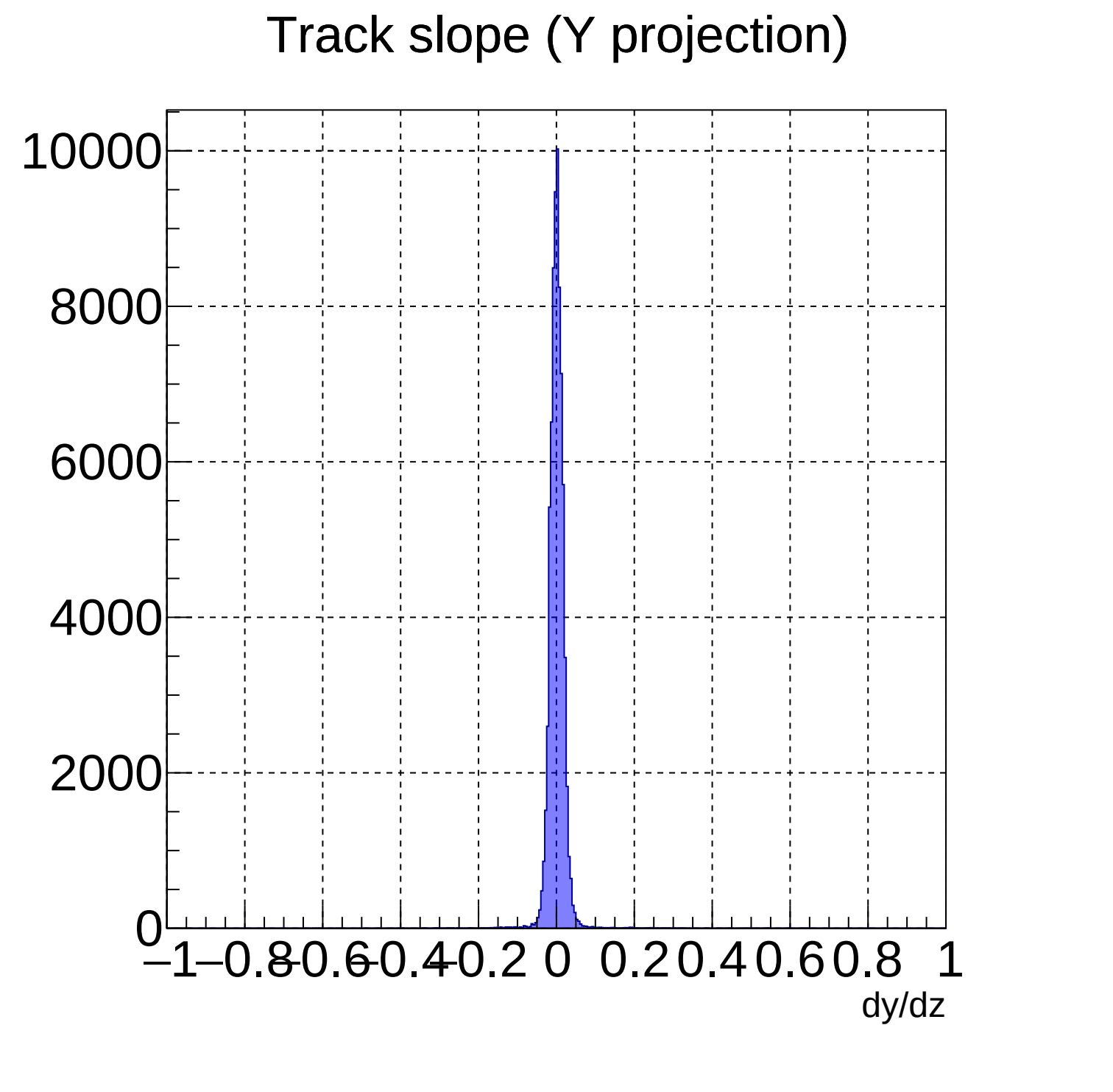

Track position at UTOF
y [mm]
200
150
100
50
0
–50
–100
–150
–200
–200
–150
–100
–50
0
50
100
150
200
x [mm]
22
20
18
16
14
12
10
8
6
4
2
0

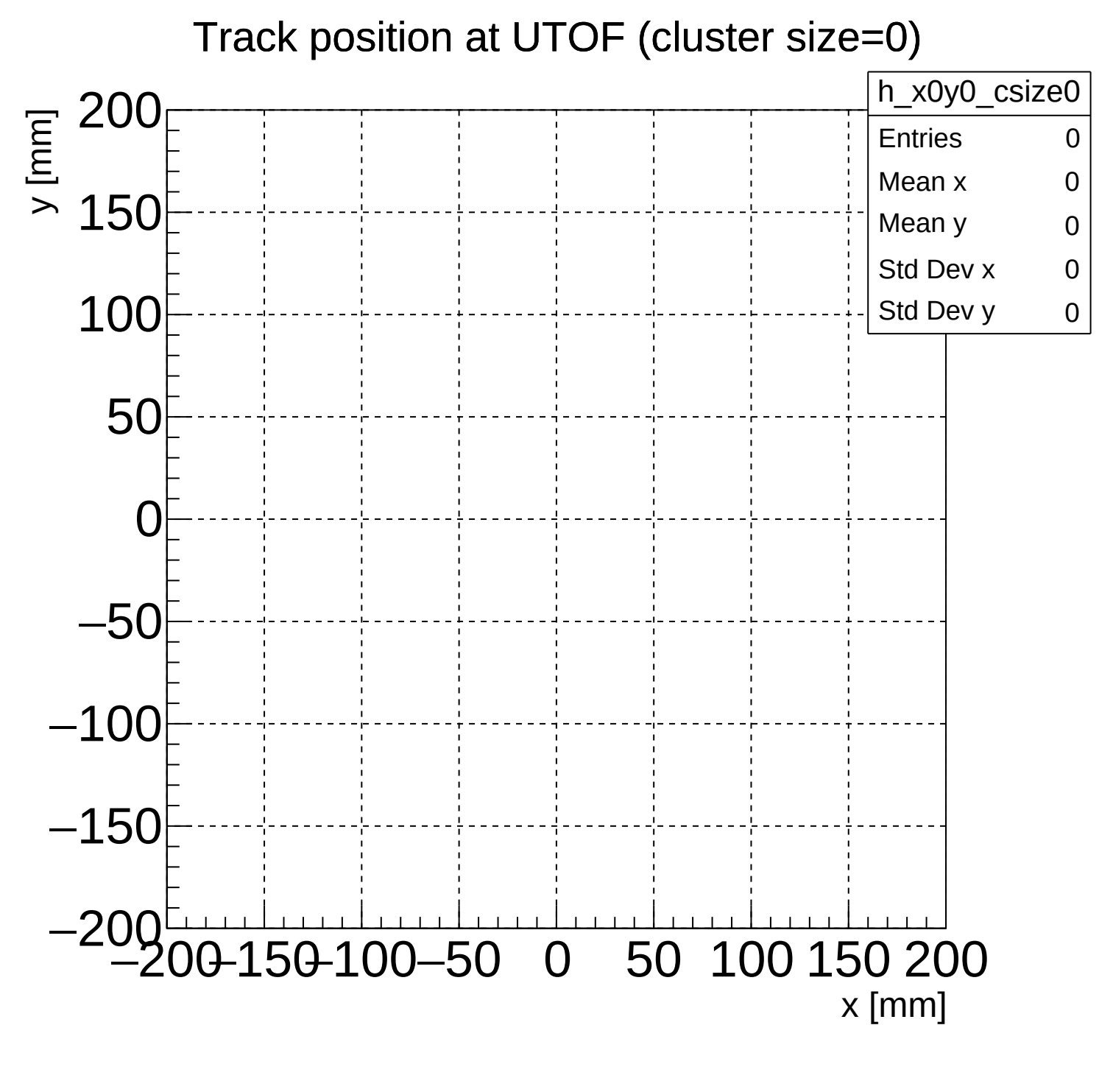

Track position (X projection)
800
700
600
500
400
300
200
100
0
–200
–150
–100
–50
0
50
100
150
200
x [mm]

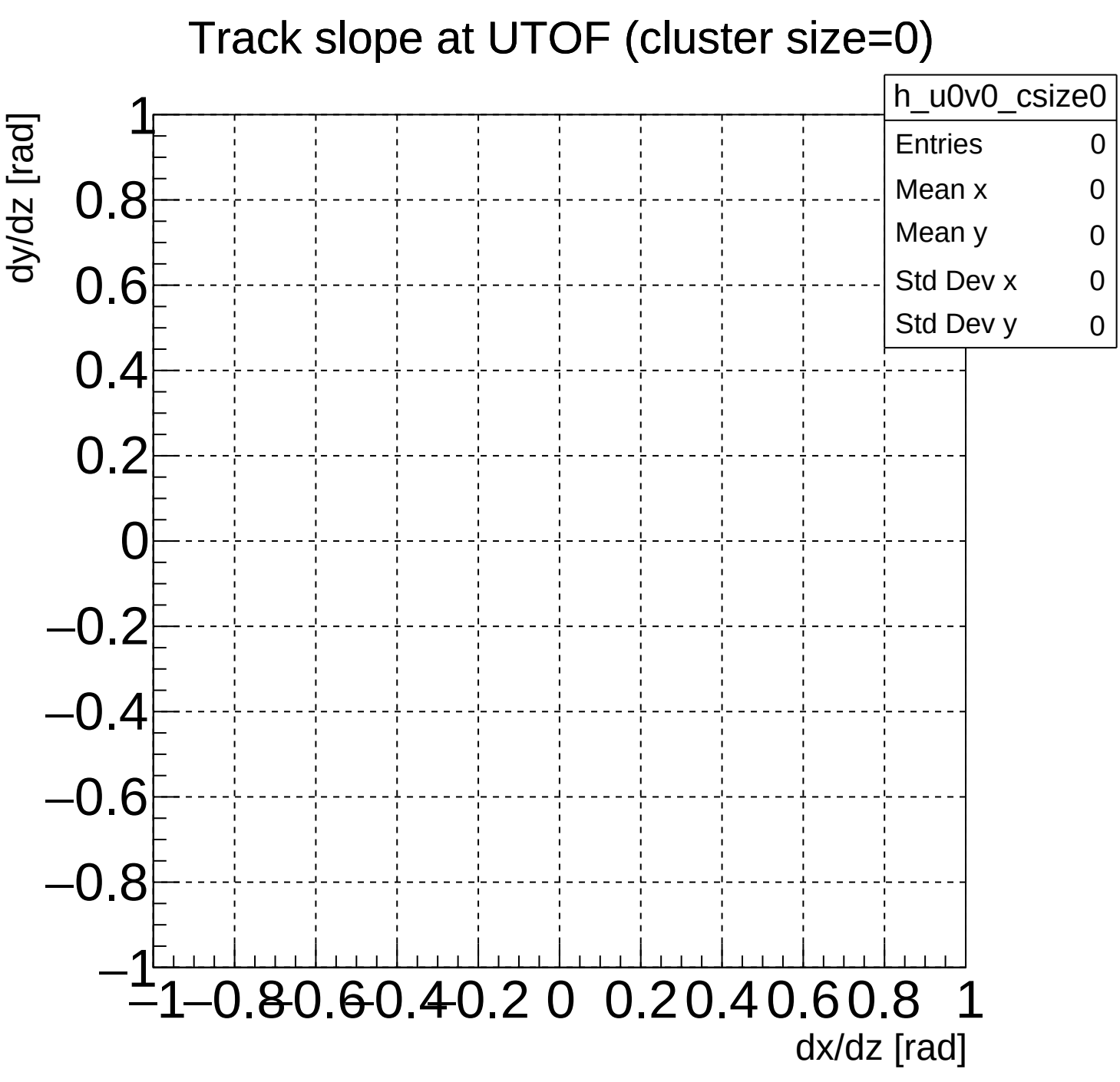

Track position (Y projection)
800
700
600
500
400
300
200
100
0
–200
–150
–100
–50
0
50
100
150
200
y [mm]

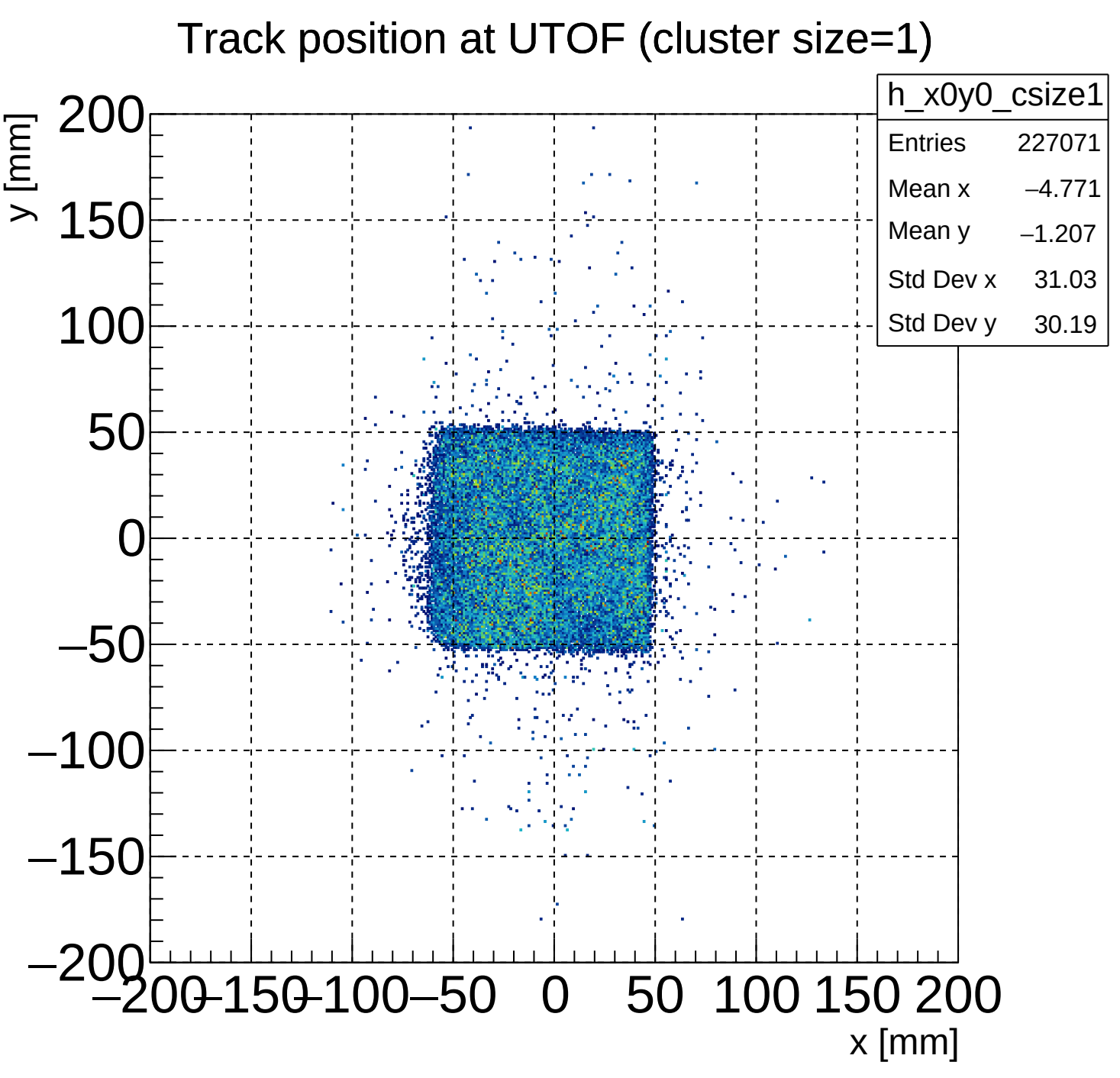

Track slope at UTOF
dy/dz
dx/dz
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
–0.8
–1
–1
–0.8
–0.6
–0.4
–0.2
0
0.2
0.4
0.6
0.8
1
1200
1000
800
600
400
200
0

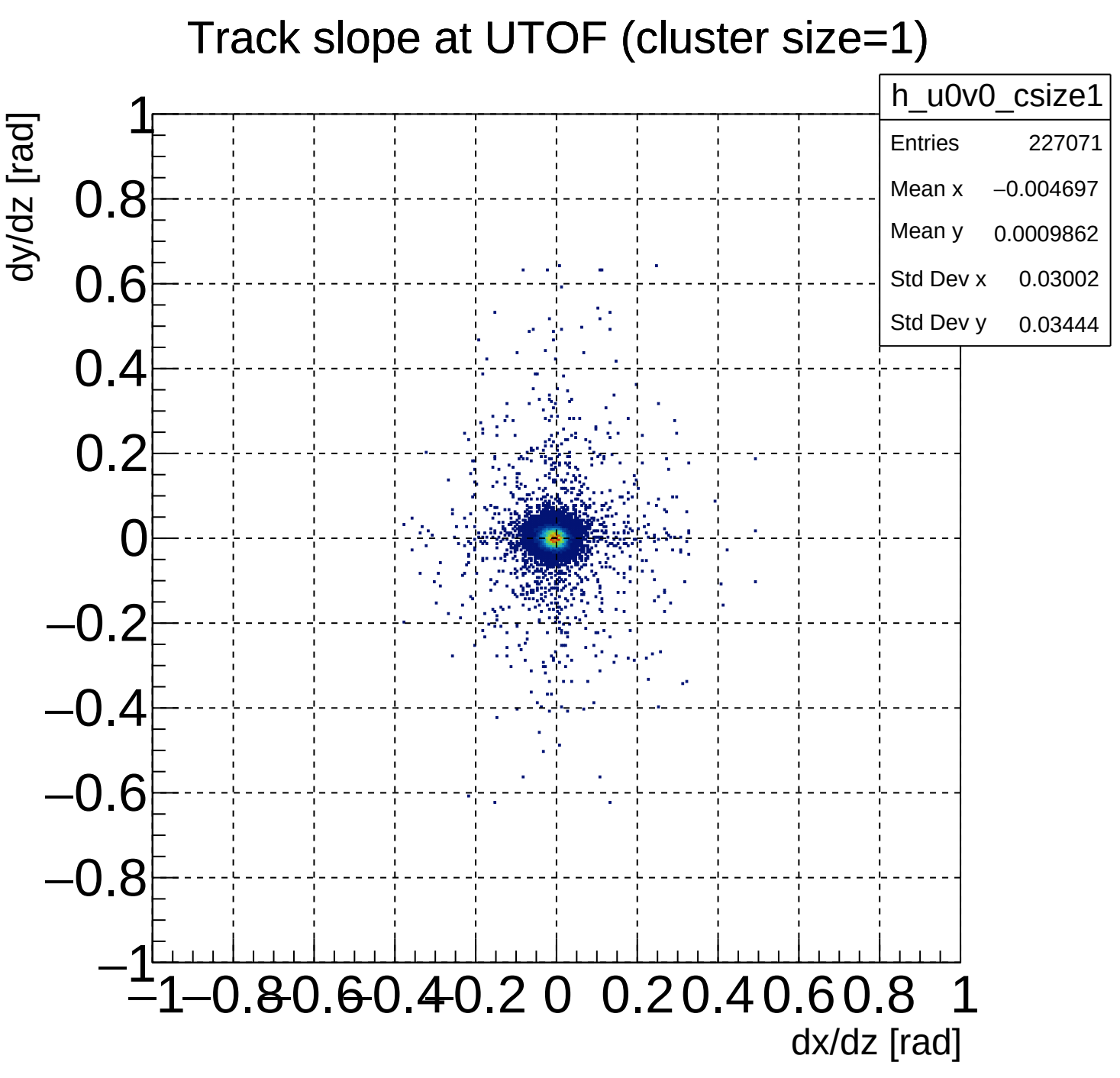

Track slope (X projection)
7000
6000
5000
4000
3000
2000
1000
0
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
dx/dz

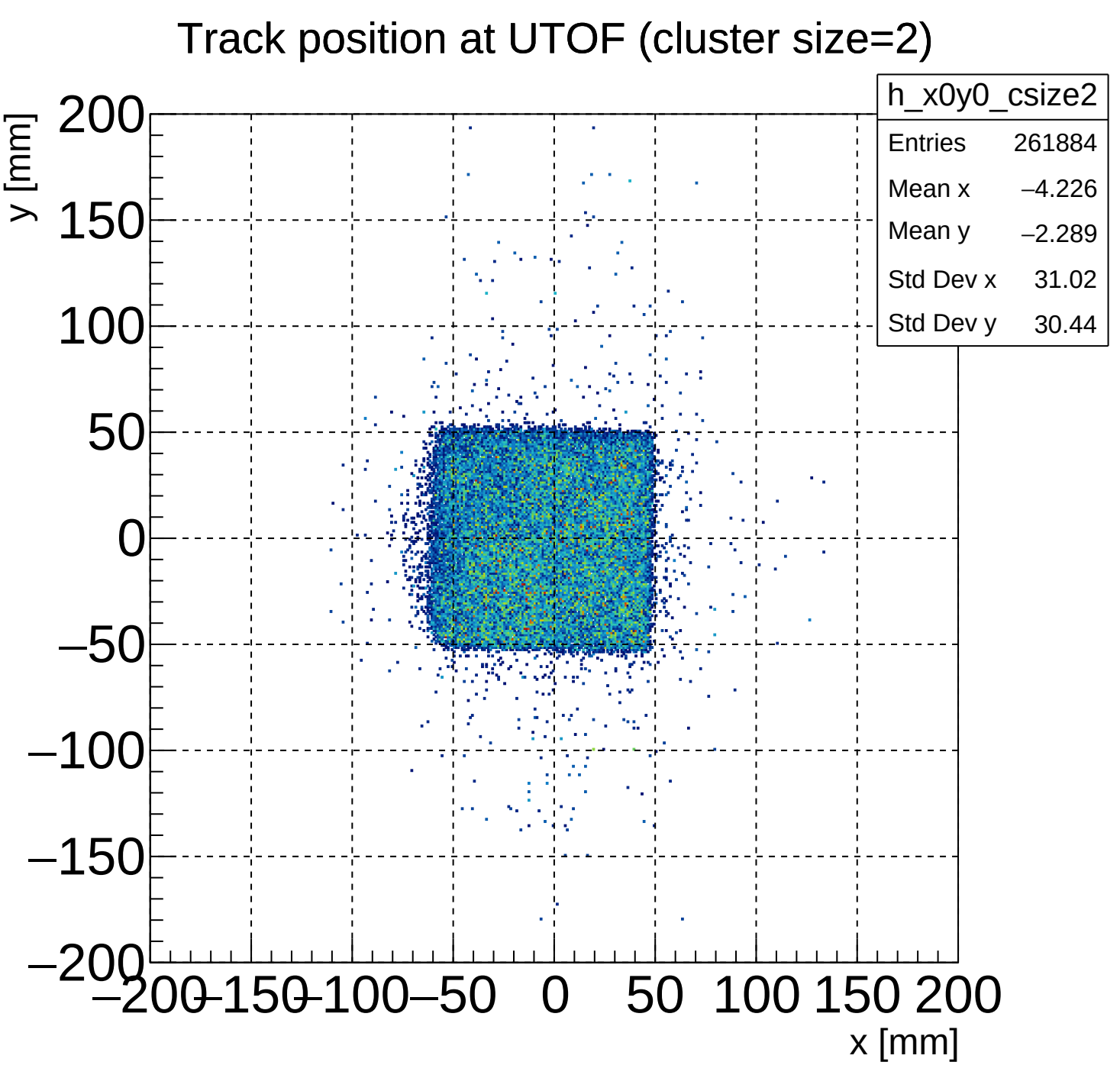

Track slope (Y projection)
10000
8000
6000
4000
2000
0
−1
−0.8
−0.6
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
dy/dz

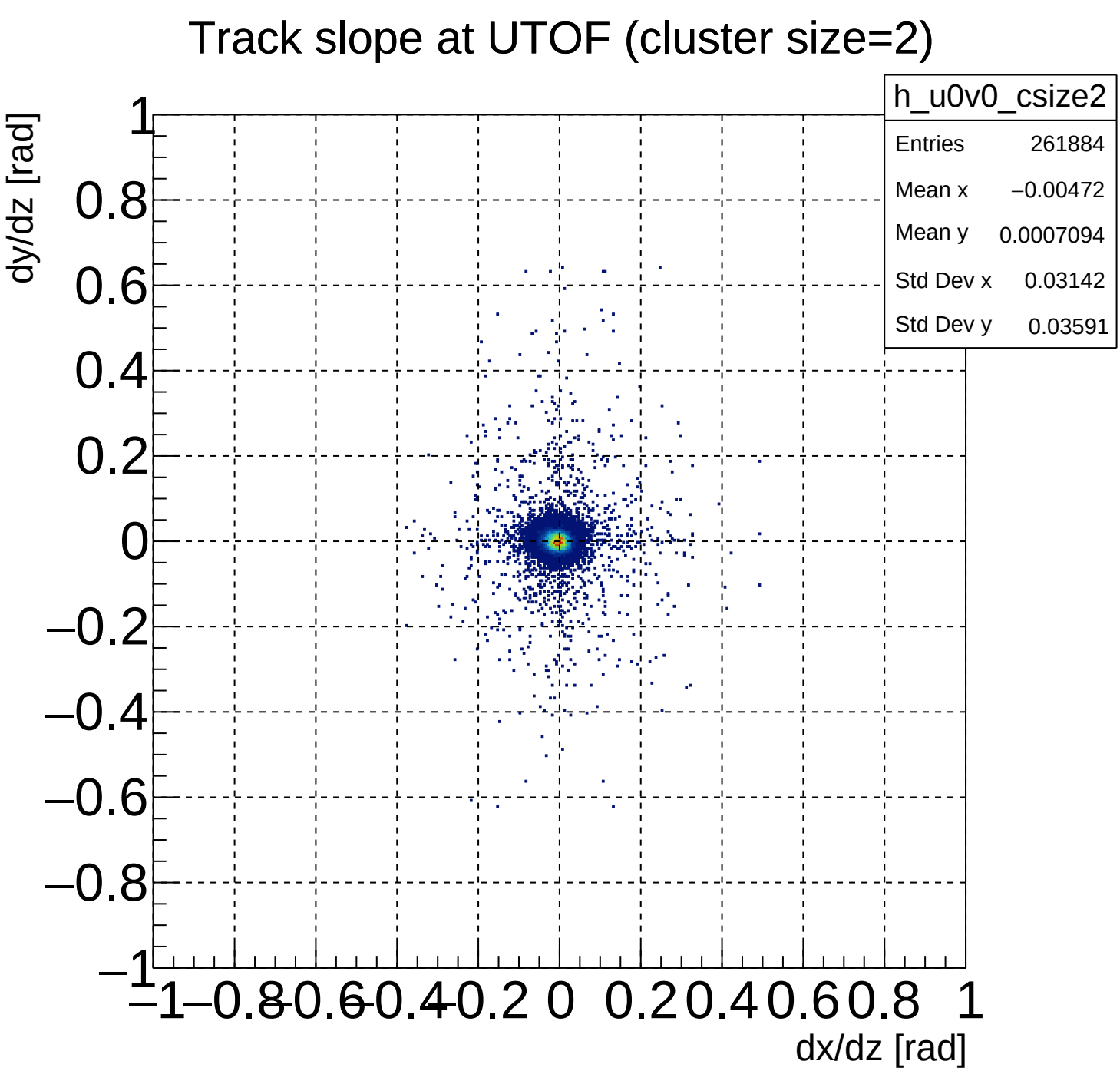

Track position at UTOF (cluster size=0)
h_x0y0_csize0
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
y [mm]
200
150
100
50
0
–50
–100
–150
–200
–200 –150 –100 –50 0 50 100 150 200
x [mm]

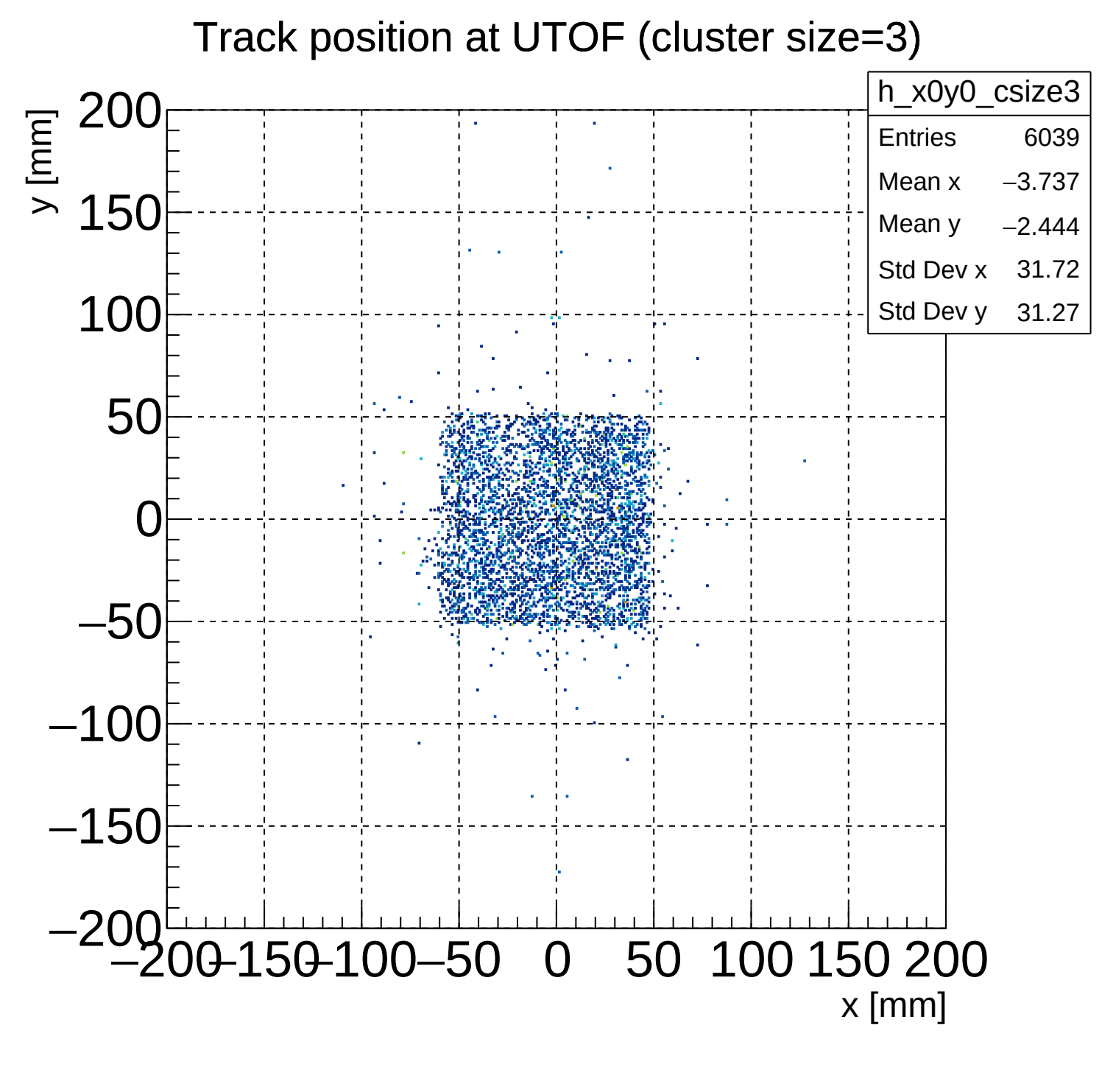

Track slope at UTOF (cluster size=0)
h_u0v0_csize0
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
dy/dz [rad]
dx/dz [rad]
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
–0.8
–1
–1
–0.8
–0.6
–0.4
–0.2
0
0.2
0.4
0.6
0.8
1

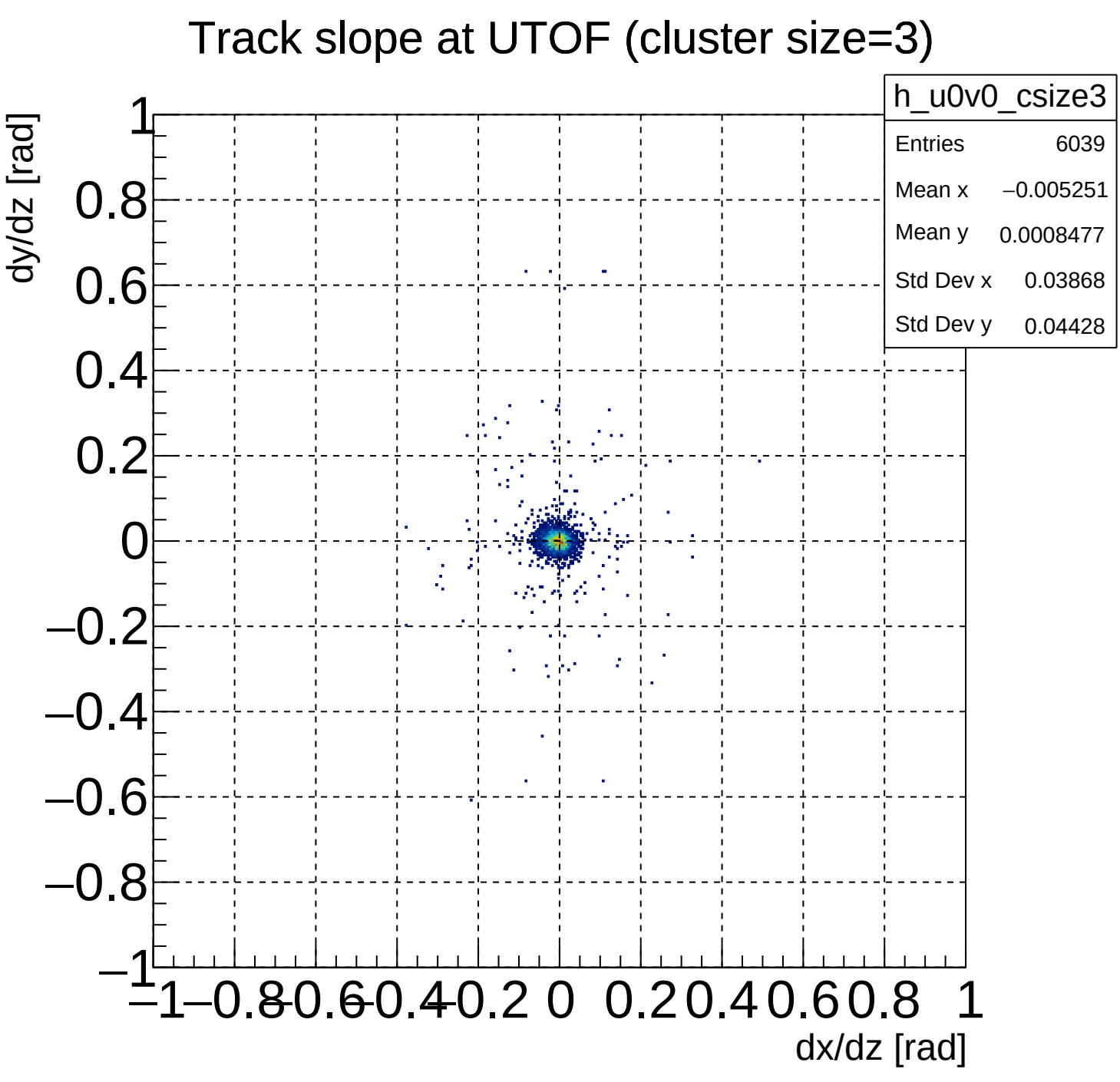

Track position at UTOF (cluster size=1)
h_x0y0_csize1
Entries 227071
Mean x −4.771
Mean y −1.207
Std Dev x 31.03
Std Dev y 30.19
y [mm]
200
150
100
50
0
−50
−100
−150
−200
−200 −150 −100 −50 0 50 100 150 200
x [mm]

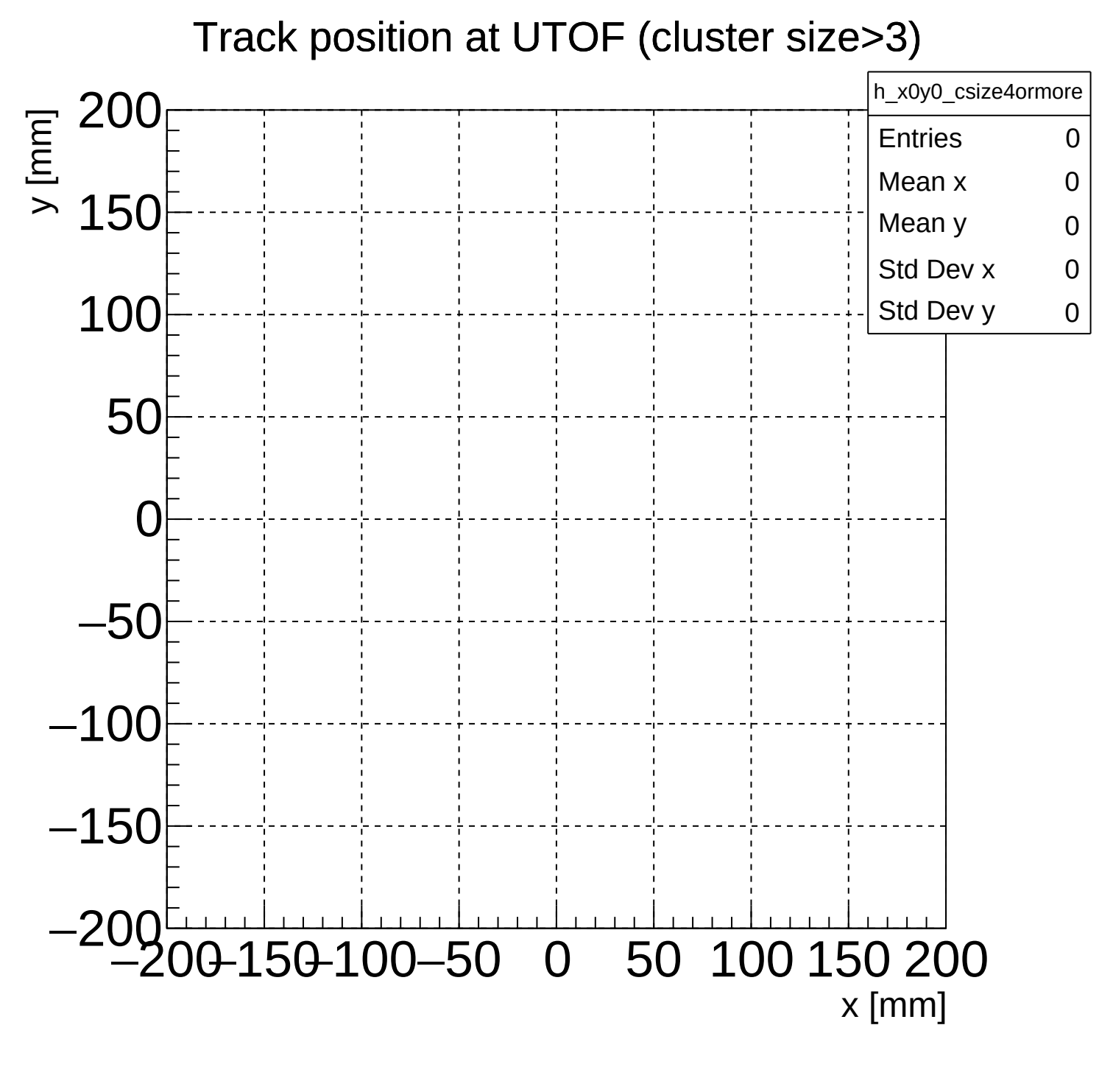

Track slope at UTOF (cluster size=1)
h_u0v0_csize1
Entries 227071
Mean x −0.004697
Mean y 0.0009862
Std Dev x 0.03002
Std Dev y 0.03444
dy/dz [rad]
dx/dz [rad]
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1 −0.8 −0.6 −0.4 −0.2 0 0.2 0.4 0.6 0.8 1

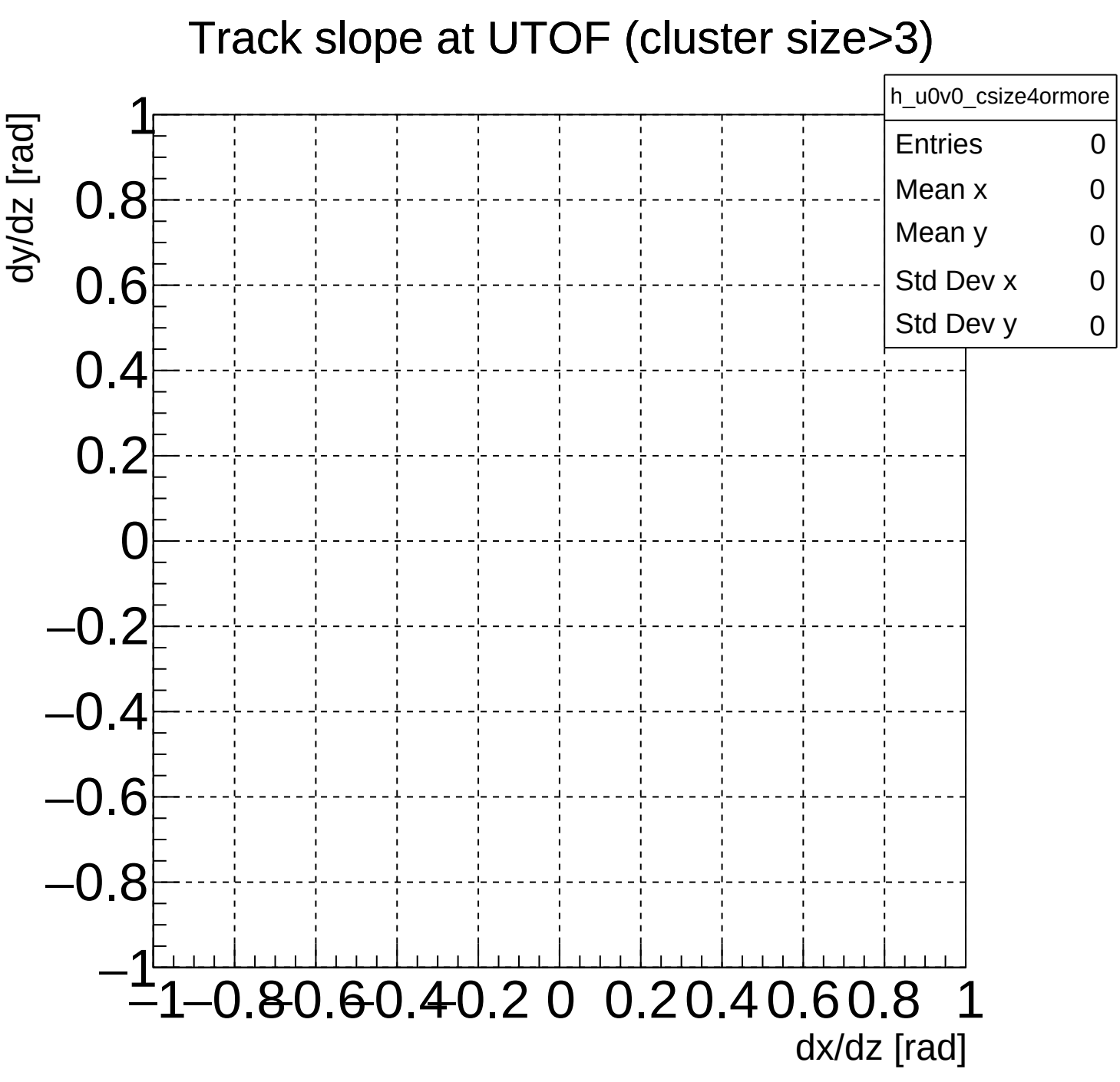

Track position at UTOF (cluster size=2)
h_x0y0_csize2
Entries 261884
Mean x −4.226
Mean y −2.289
Std Dev x 31.02
Std Dev y 30.44
y [mm]
200
150
100
50
0
−50
−100
−150
−200
−200 −150 −100 −50 0 50 100 150 200
x [mm]

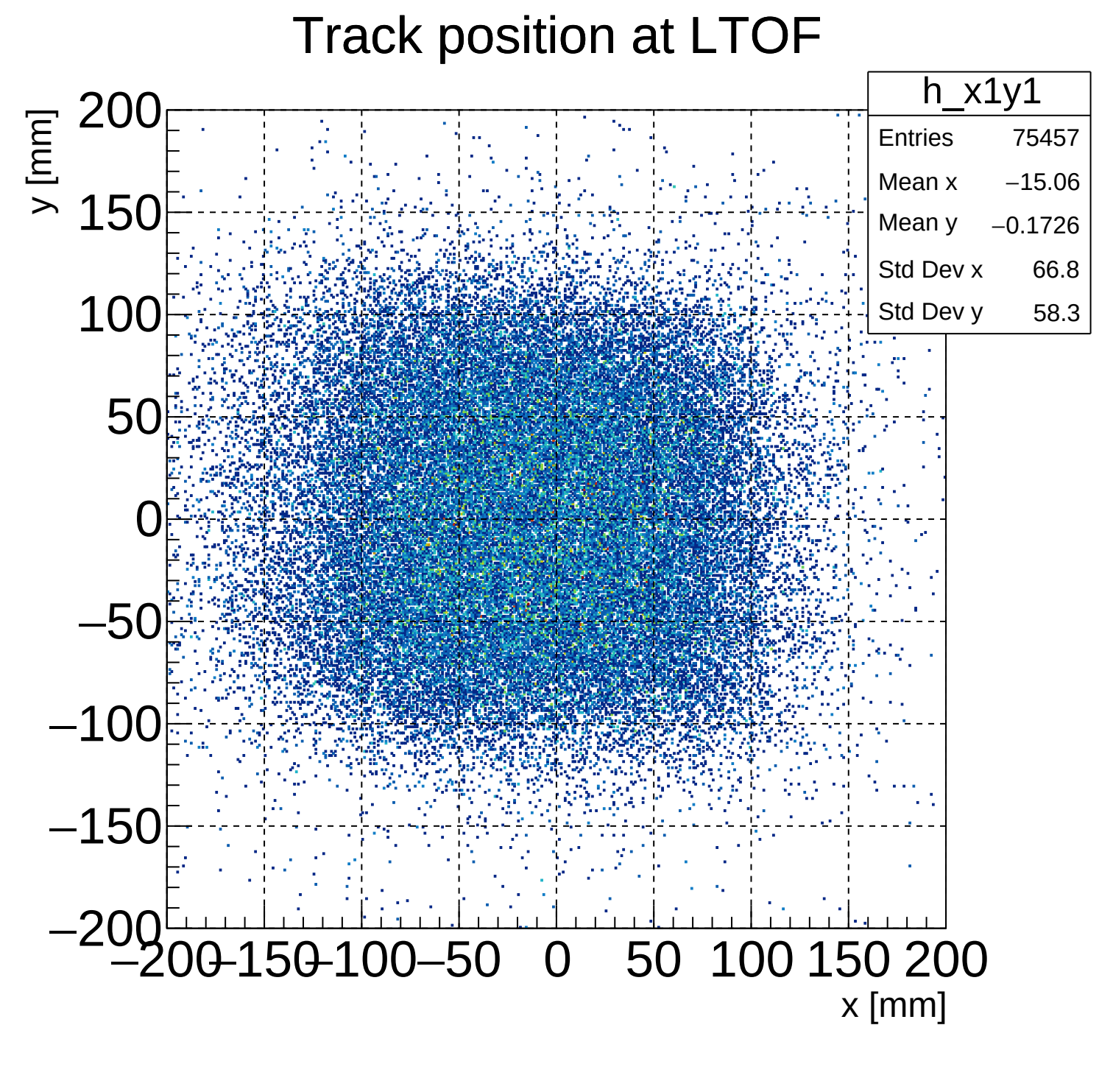

Track slope at UTOF (cluster size=2)
h_u0v0_csize2
Entries 261884
Mean x −0.00472
Mean y 0.0007094
Std Dev x 0.03142
Std Dev y 0.03591
dy/dz [rad]
dx/dz [rad]
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1 −0.8 −0.6 −0.4 −0.2 0 0.2 0.4 0.6 0.8 1

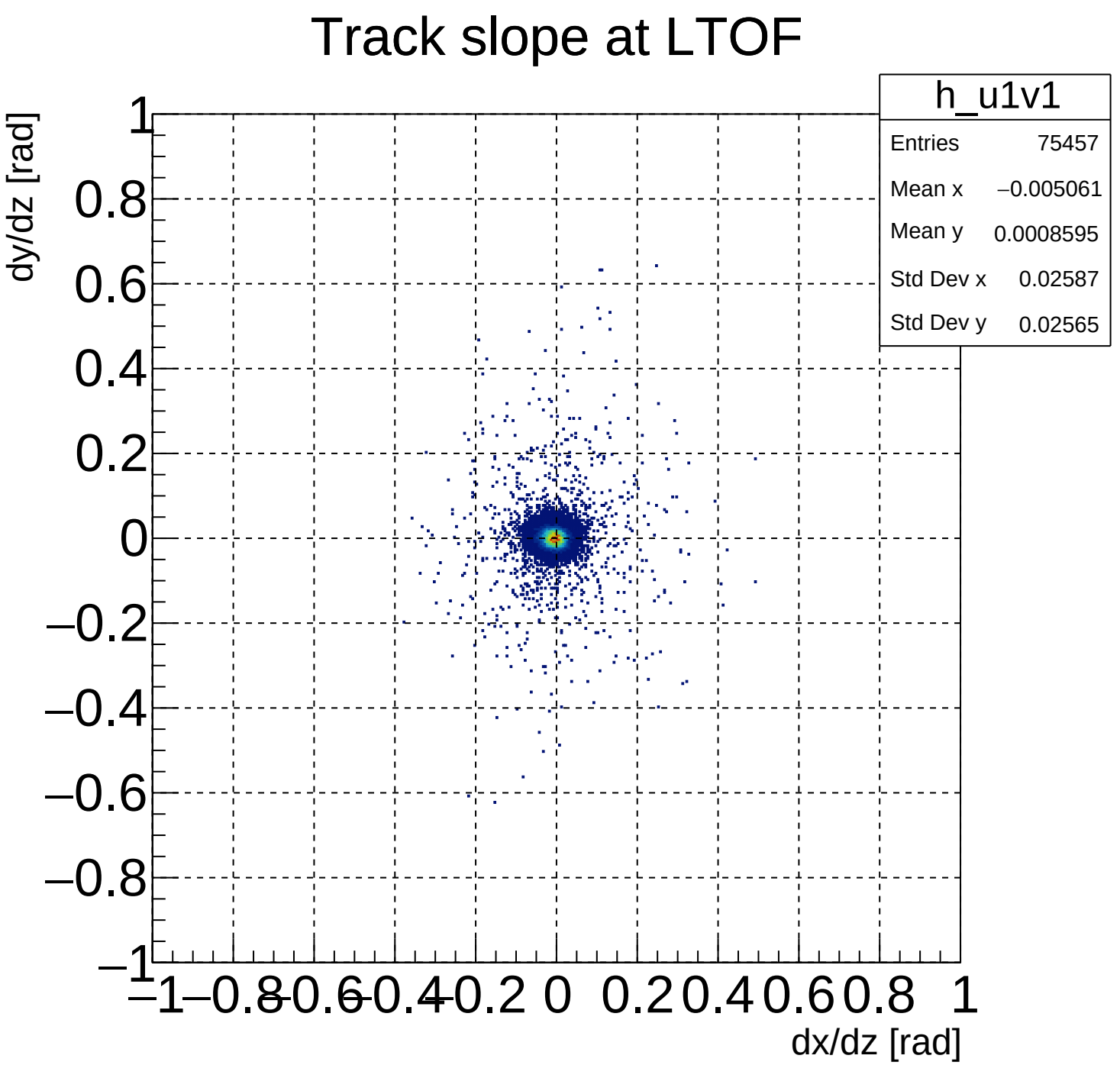

Track position at UTOF (cluster size=3)
h_x0y0_csize3
Entries 6039
Mean x −3.737
Mean y −2.444
Std Dev x 31.72
Std Dev y 31.27
y [mm]
200
150
100
50
0
−50
−100
−150
−200
−200 −150 −100 −50 0 50 100 150 200
x [mm]

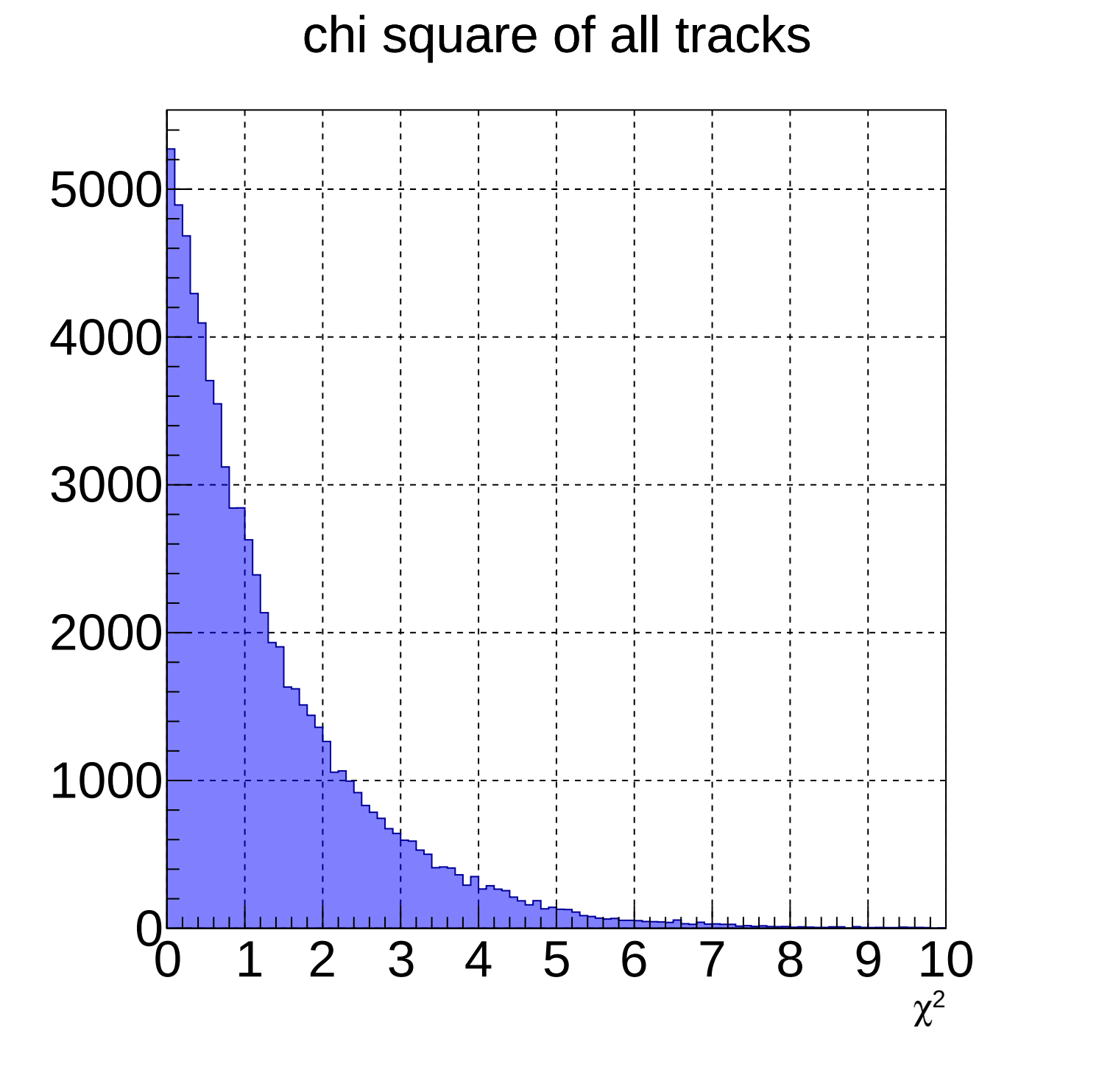

Track slope at UTOF (cluster size=3)
h_u0v0_csize3
Entries 6039
Mean x −0.005251
Mean y 0.0008477
Std Dev x 0.03868
Std Dev y 0.04428
dy/dz [rad]
dx/dz [rad]
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1 −0.8 −0.6 −0.4 −0.2 0 0.2 0.4 0.6 0.8 1

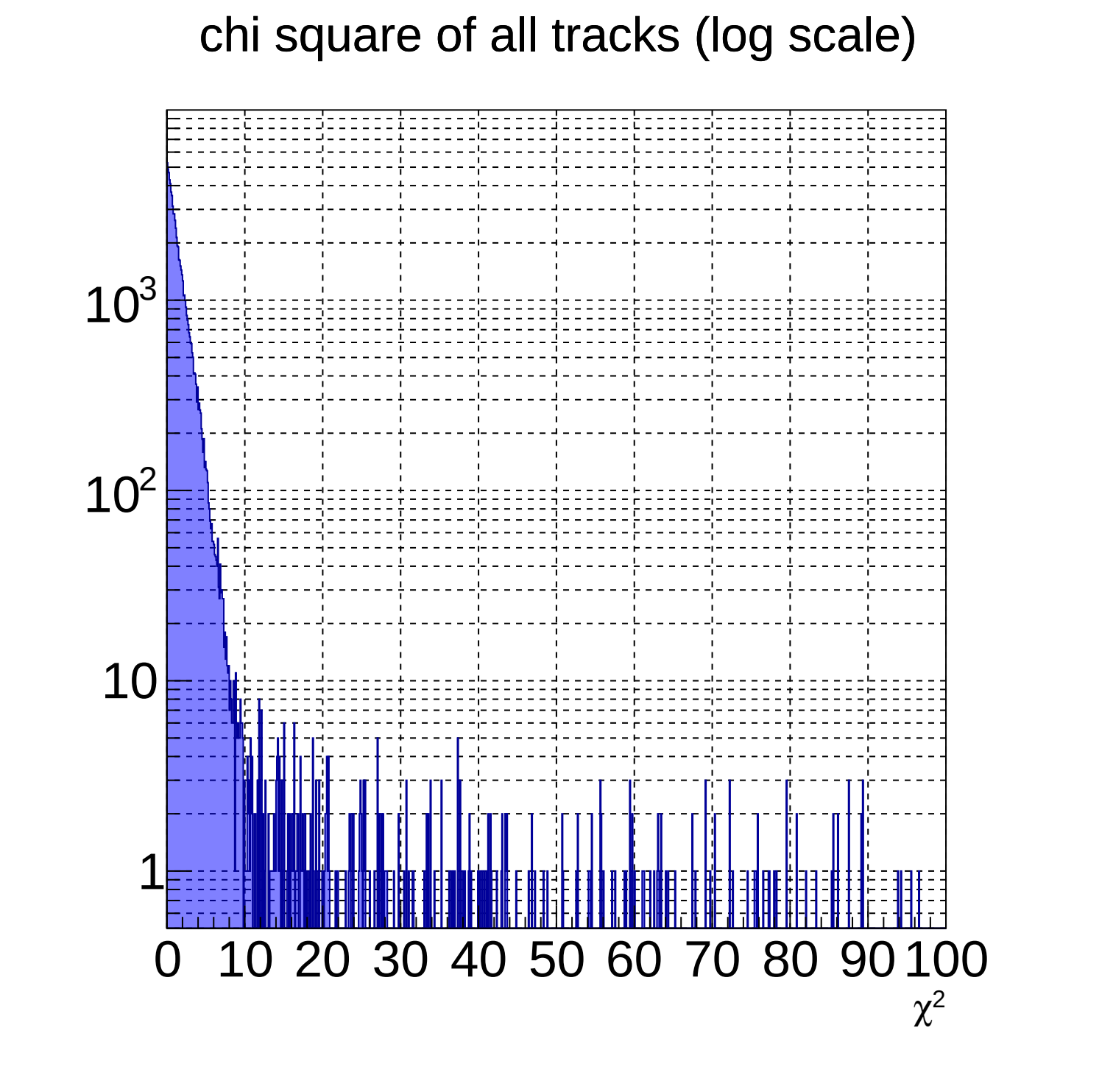

Track position at UTOF (cluster size>3)
h_x0y0_csize4ormore
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
y [mm]
200
150
100
50
0
–50
–100
–150
–200
–200 –150 –100 –50 0 50 100 150 200
x [mm]

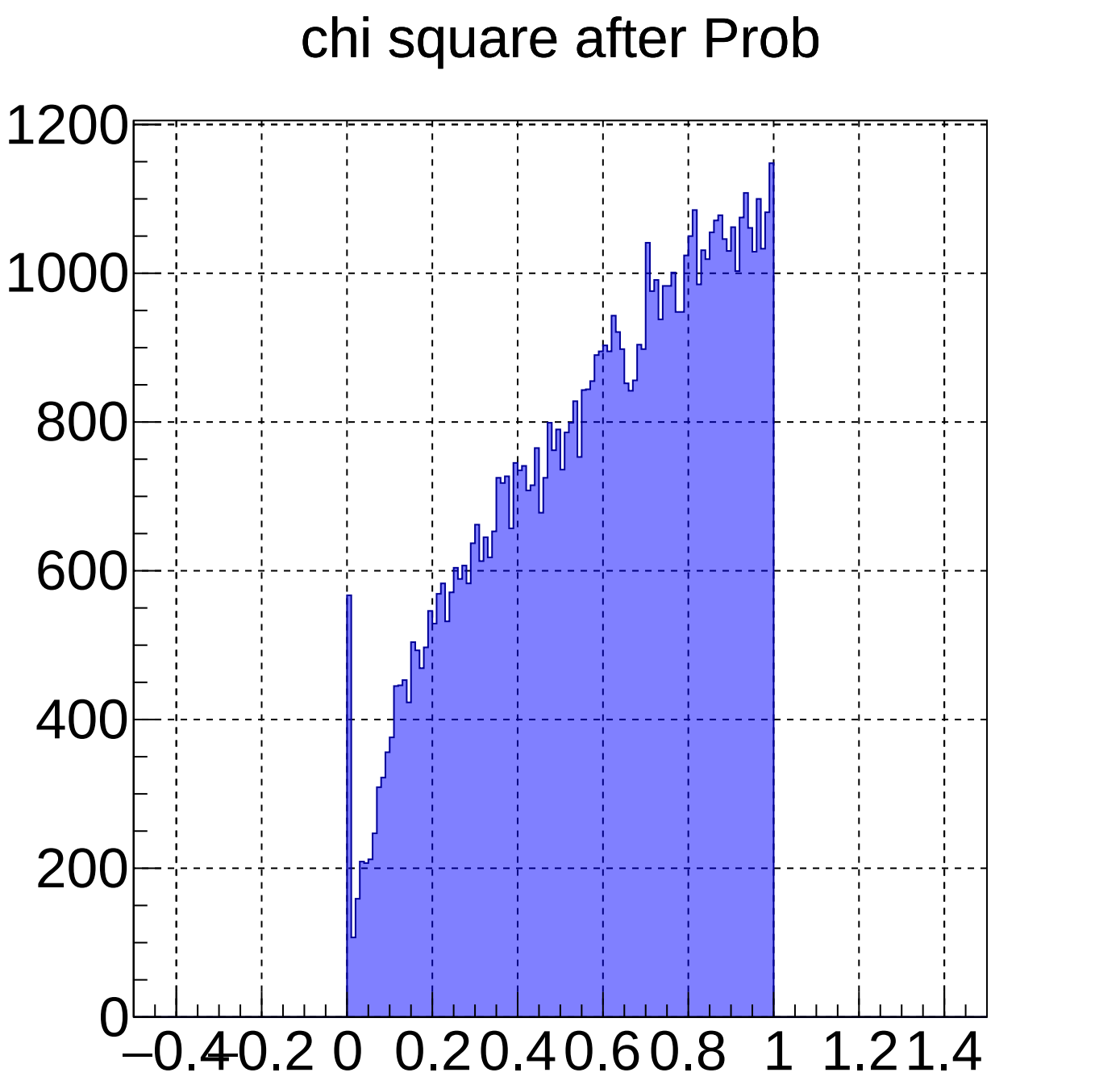

Track slope at UTOF (cluster size>3)
h_u0v0_csize4ormore
Entries 0
Mean x 0
Mean y 0
Std Dev x 0
Std Dev y 0
dy/dz [rad]
dx/dz [rad]
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
–0.8
–1
–1 –0.8 –0.6 –0.4 –0.2 0 0.2 0.4 0.6 0.8 1

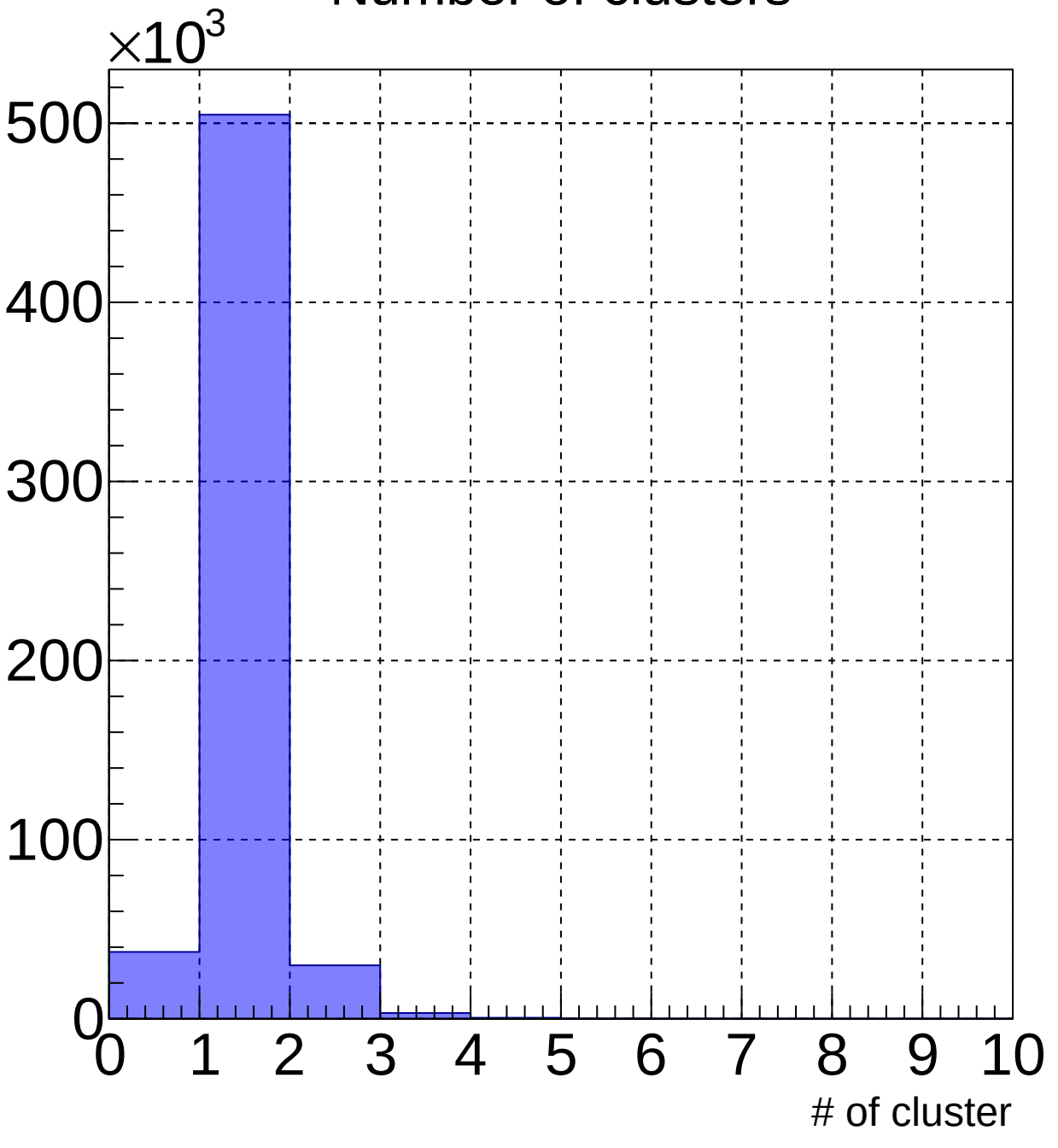

Track position at LTOF
h_x1y1
Entries 75457
Mean x −15.06
Mean y −0.1726
Std Dev x 66.8
Std Dev y 58.3
y [mm]
200
150
100
50
0
−50
−100
−150
−200
−200 −150 −100 −50 0 50 100 150 200
x [mm]

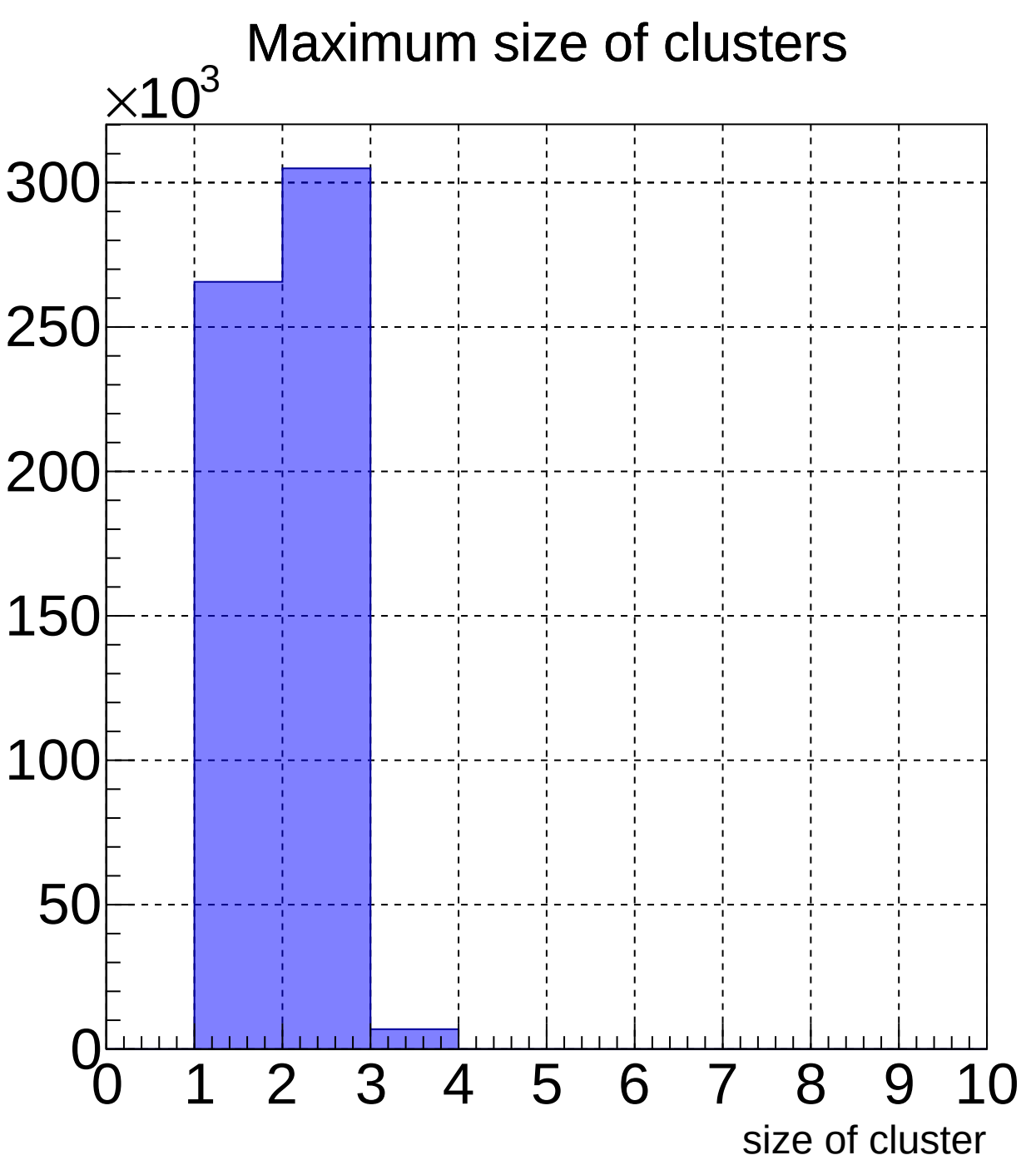

Track slope at LTOF
h_u1v1
Entries 75457
Mean x −0.005061
Mean y 0.0008595
Std Dev x 0.02587
Std Dev y 0.02565
dy/dz [rad]
dx/dz [rad]
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1 −0.8 −0.6 −0.4 −0.2 0 0.2 0.4 0.6 0.8 1

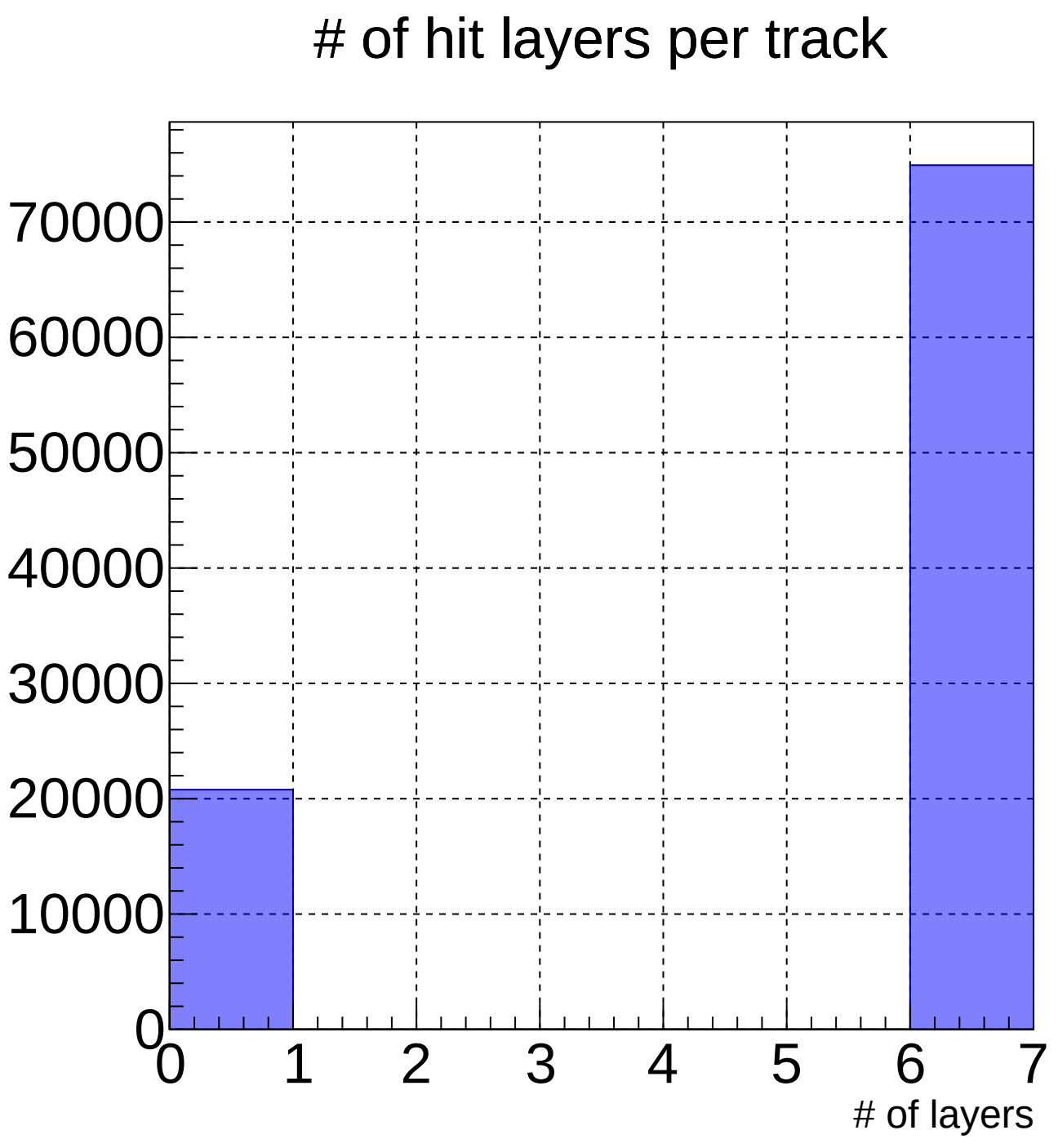

chi square of all tracks
5000
4000
3000
2000
1000
0
0
1
2
3
4
5
6
7
8
9
10
χ^2

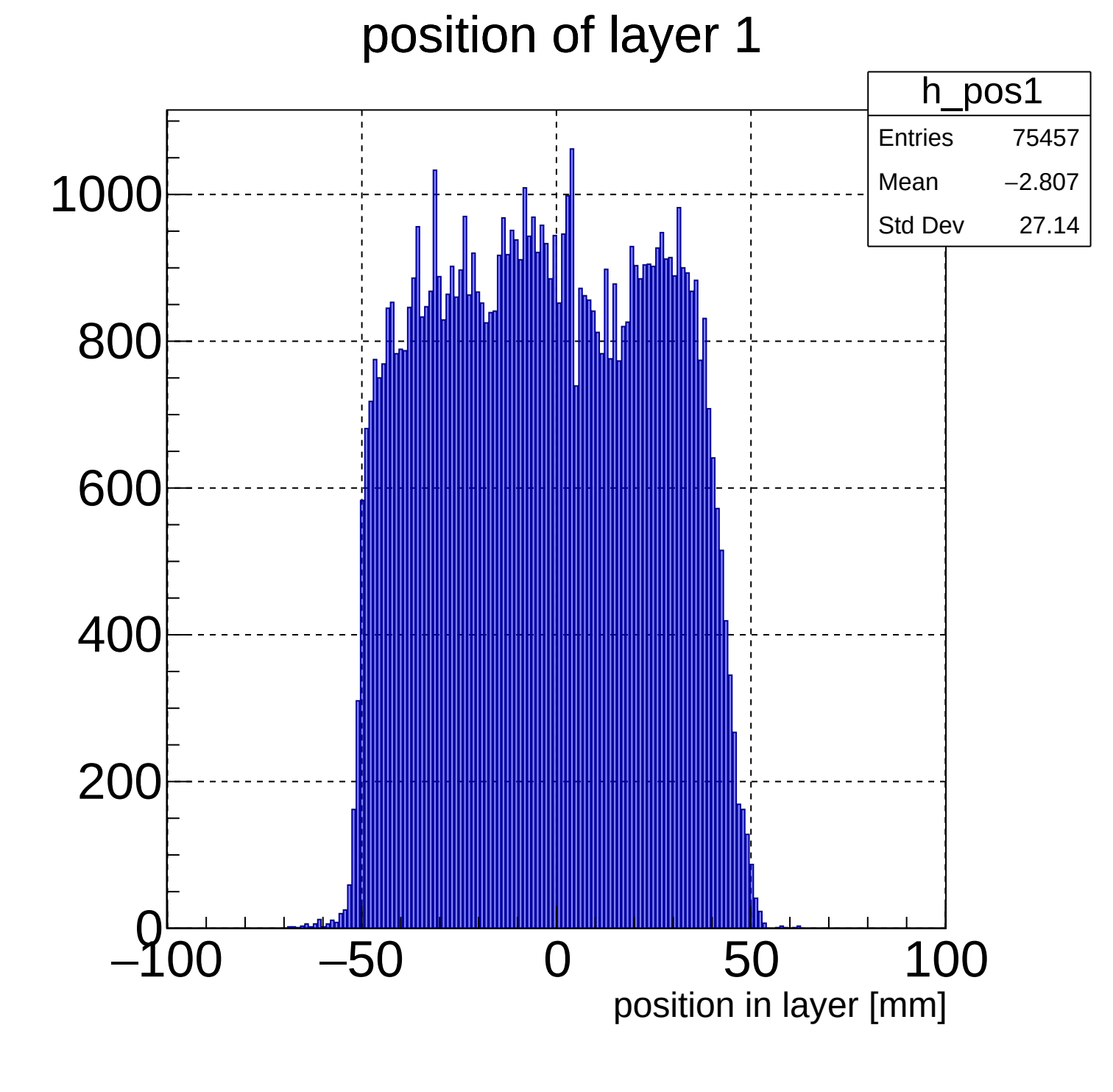

chi square of all tracks (log scale)
10^3
10^2
10
1
0 10 20 30 40 50 60 70 80 90 100
χ^2

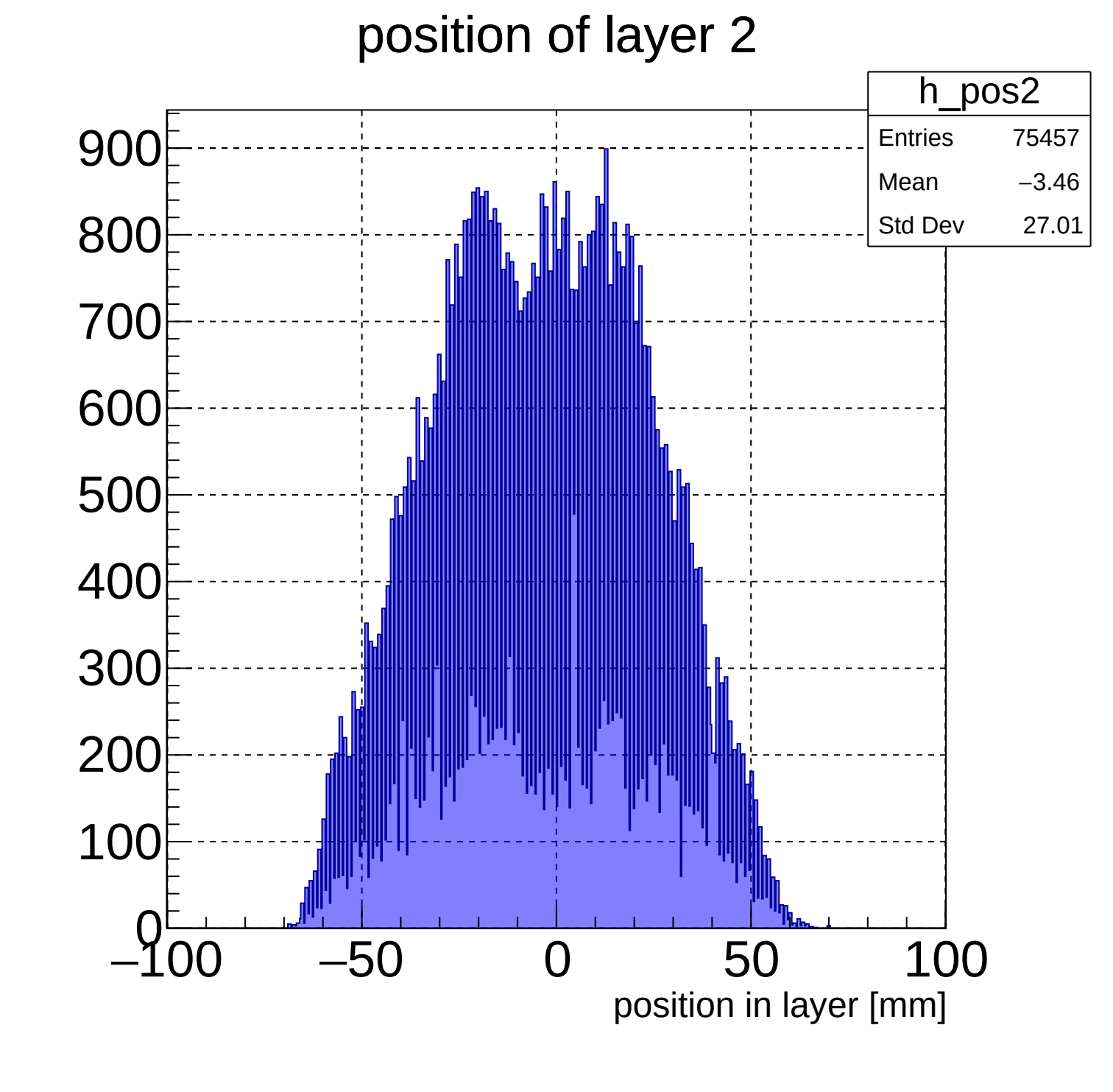

chi square after Prob
1200
1000
800
600
400
200
0
−0.4
−0.2
0
0.2
0.4
0.6
0.8
1
1.2
1.4

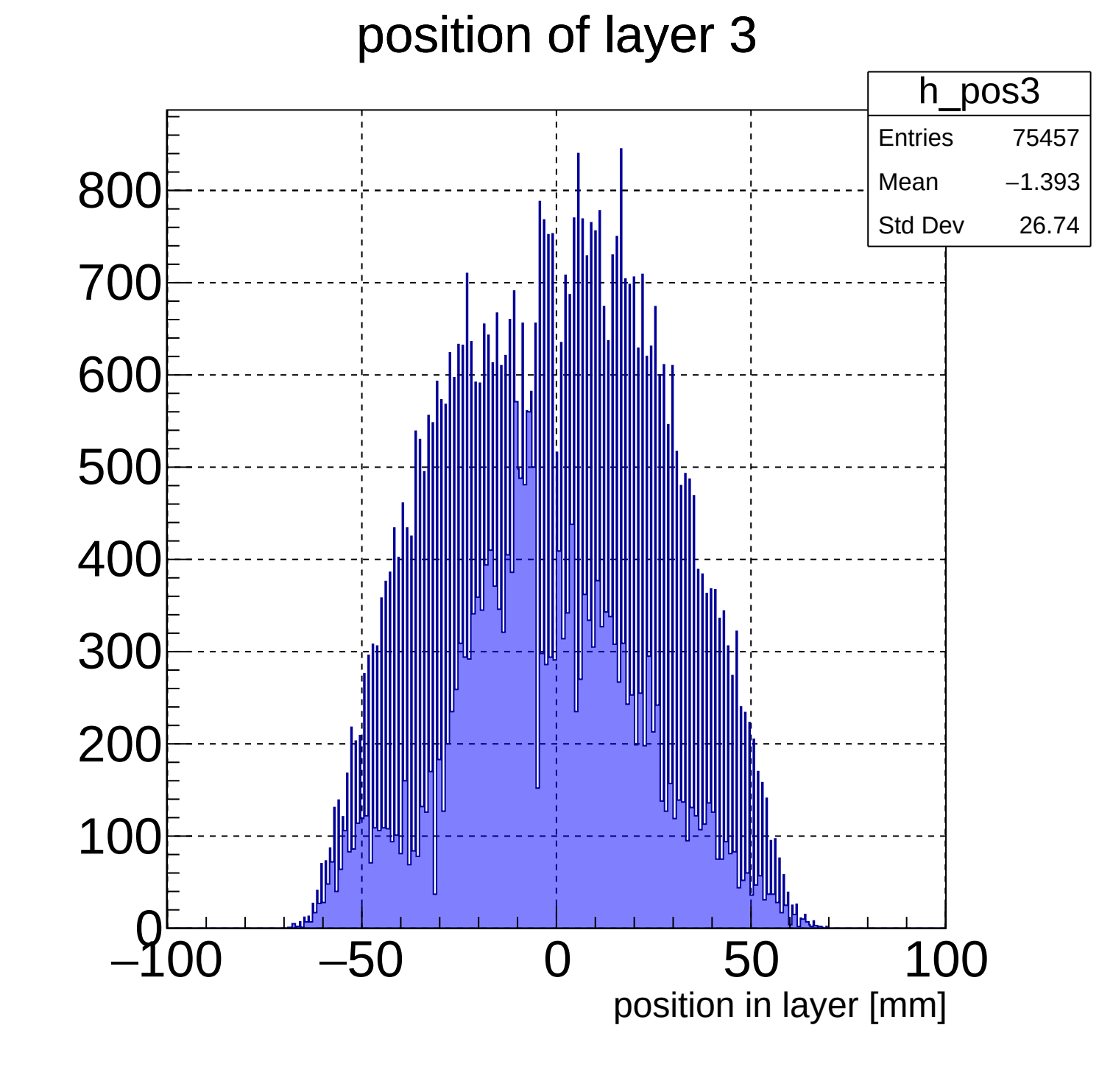

Number of clusters
×10^3
500
400
300
200
100
0
0 1 2 3 4 5 6 7 8 9 10
# of cluster

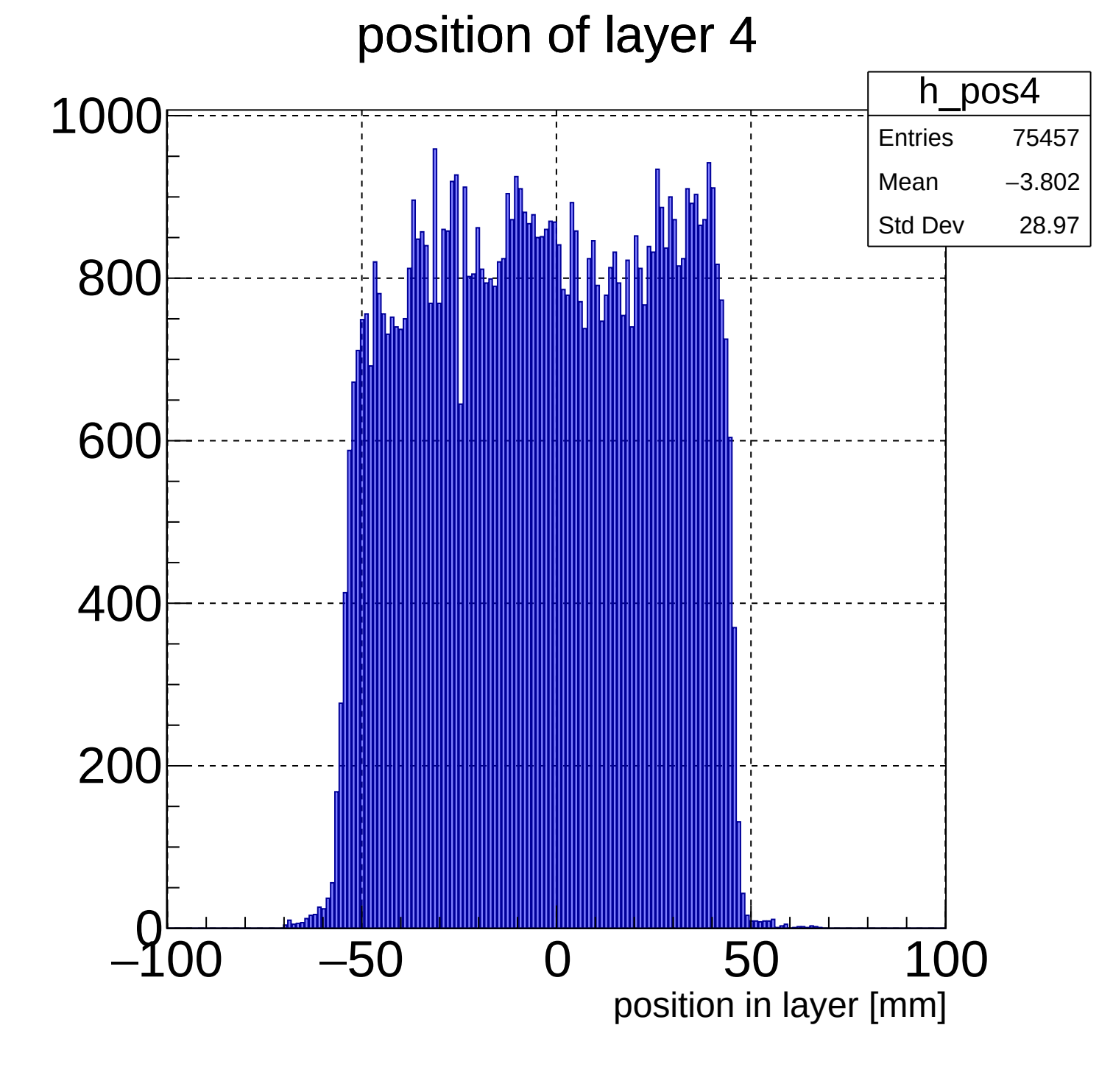

Maximum size of clusters
×10^3
300
250
200
150
100
50
0
0
1
2
3
4
5
6
7
8
9
10
size of cluster

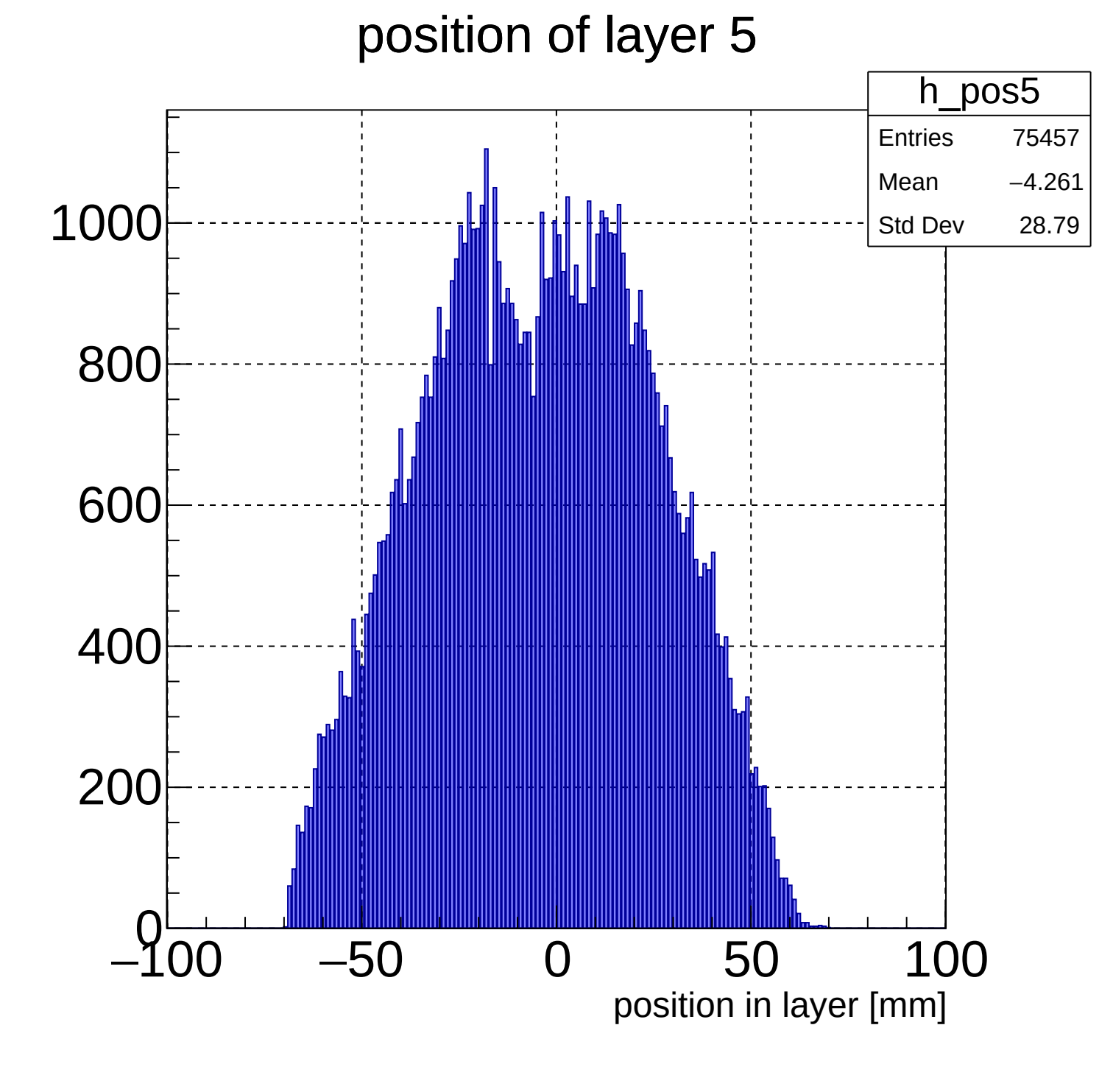

# of hit layers per track
70000
60000
50000
40000
30000
20000
10000
0
0
1
2
3
4
5
6
7
# of layers

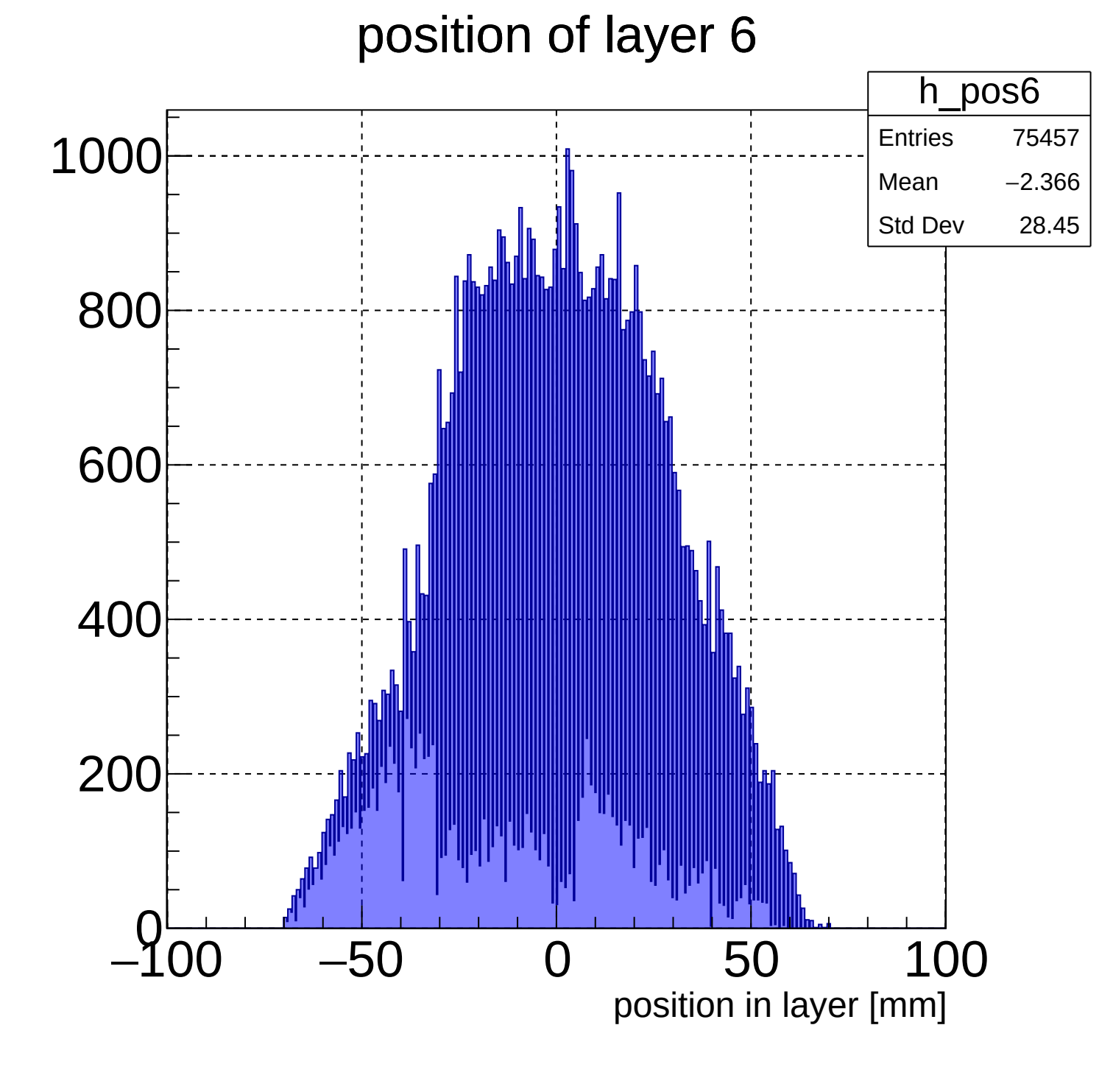

position of layer 1
h_pos1
Entries 75457
Mean −2.807
Std Dev 27.14
1000
800
600
400
200
0
−100
−50
0
50
100
position in layer [mm]

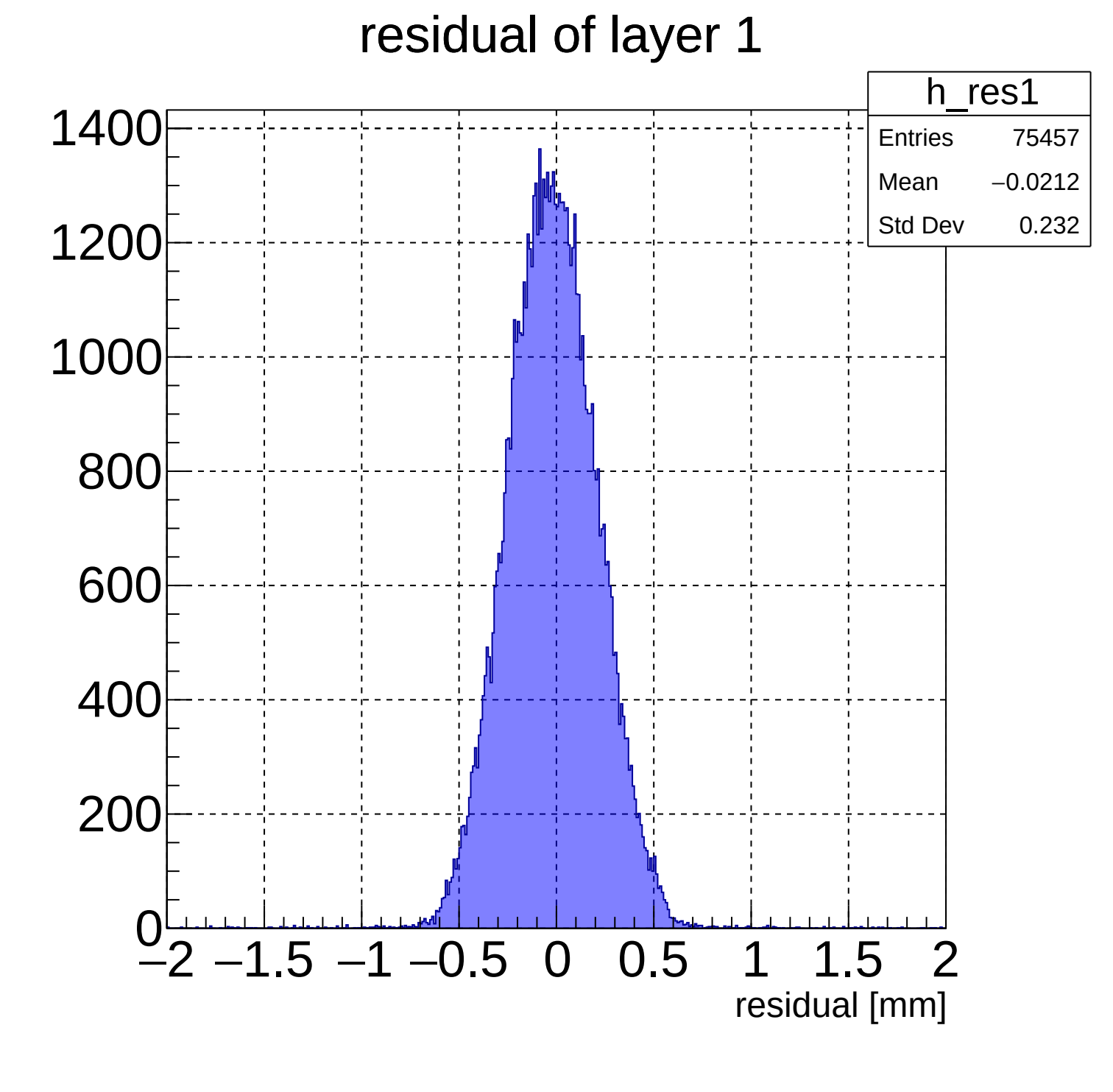

position of layer 2
h_pos2
Entries 75457
Mean –3.46
Std Dev 27.01
900
800
700
600
500
400
300
200
100
0
–100
–50
0
50
100
position in layer [mm]

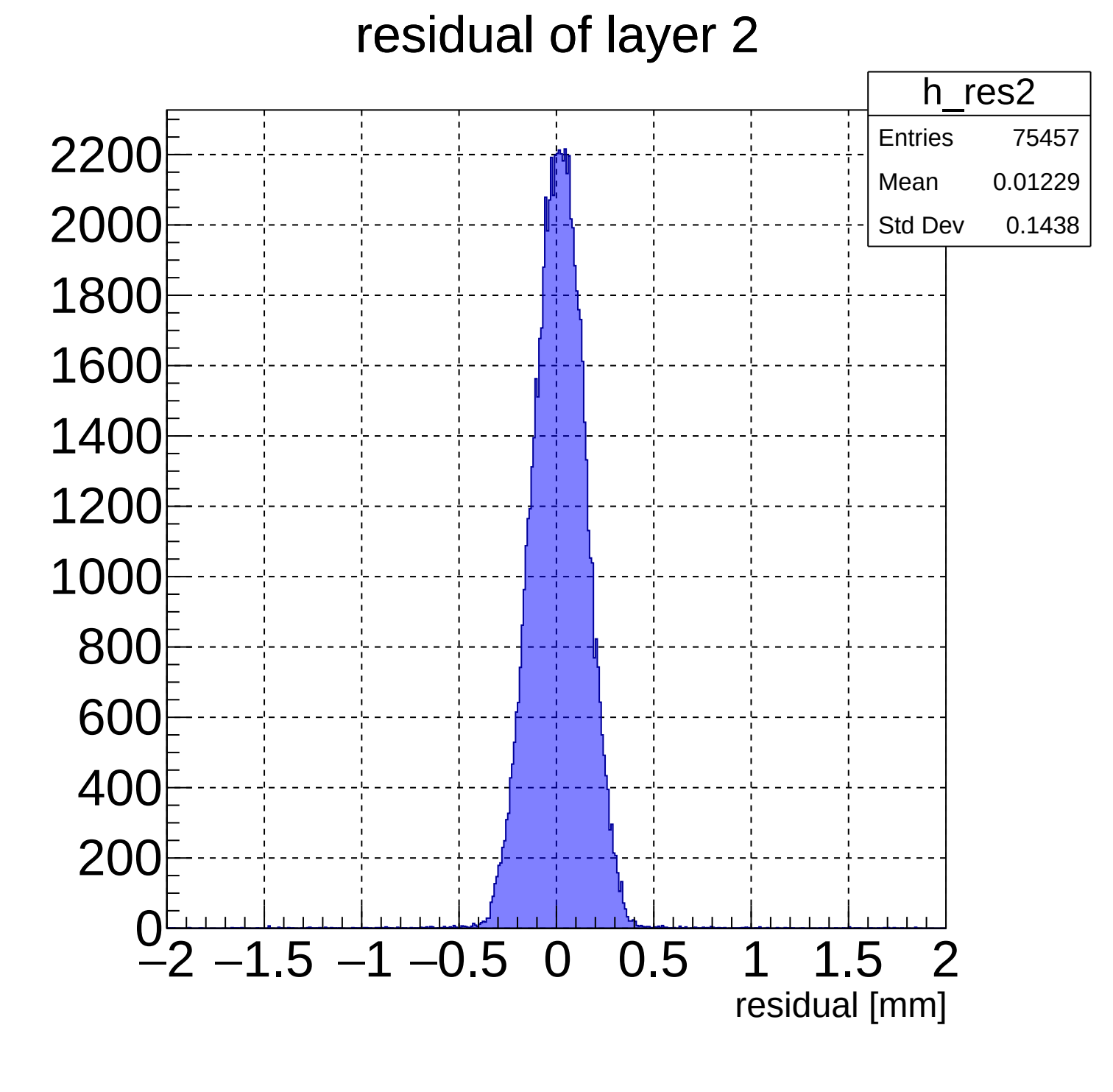

position of layer 3
h_pos3
Entries 75457
Mean −1.393
Std Dev 26.74
800
700
600
500
400
300
200
100
0
−100
−50
0
50
100
position in layer [mm]

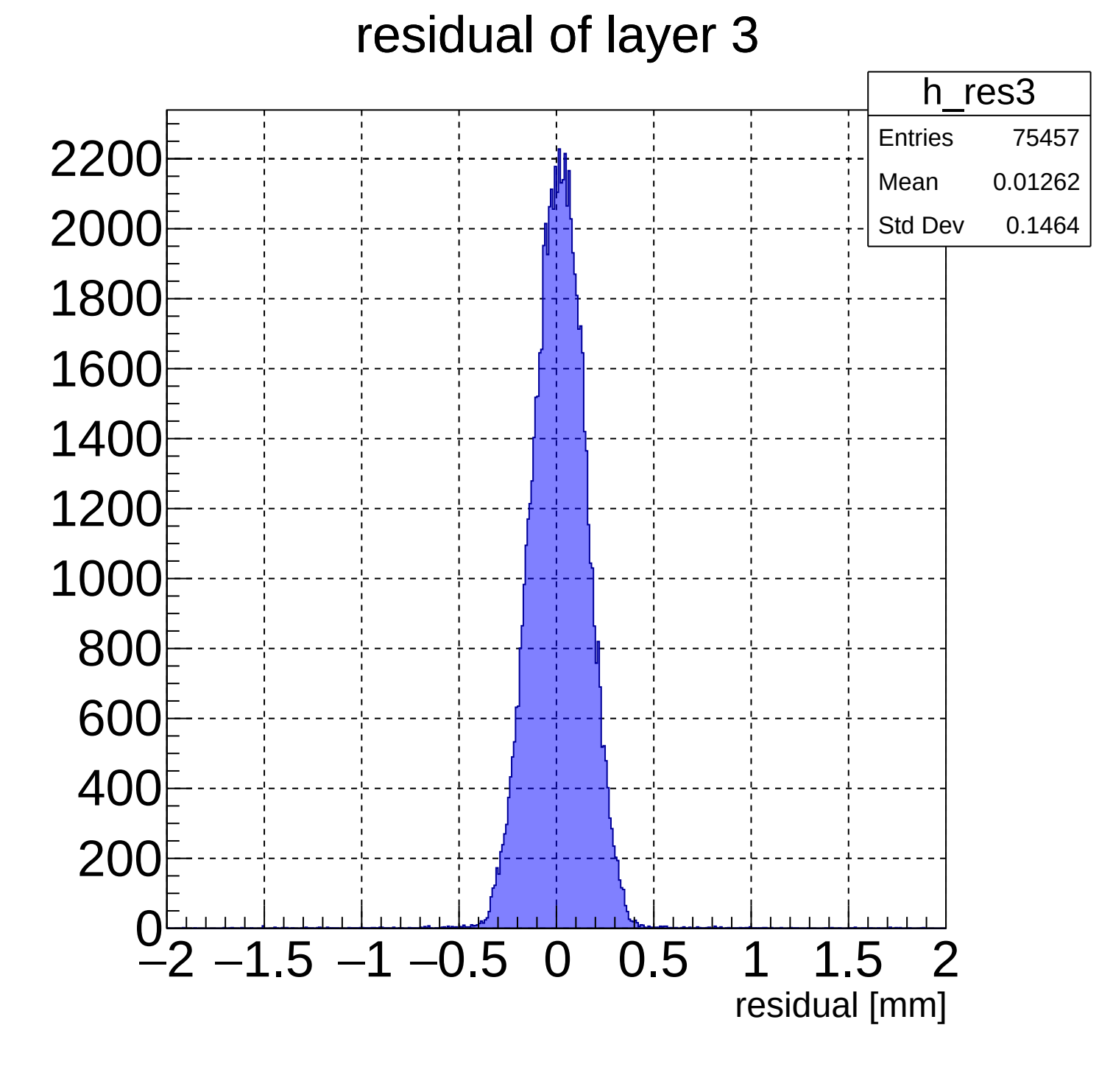

position of layer 4
h_pos4
Entries 75457
Mean −3.802
Std Dev 28.97
1000
800
600
400
200
0
−100
−50
0
50
100
position in layer [mm]

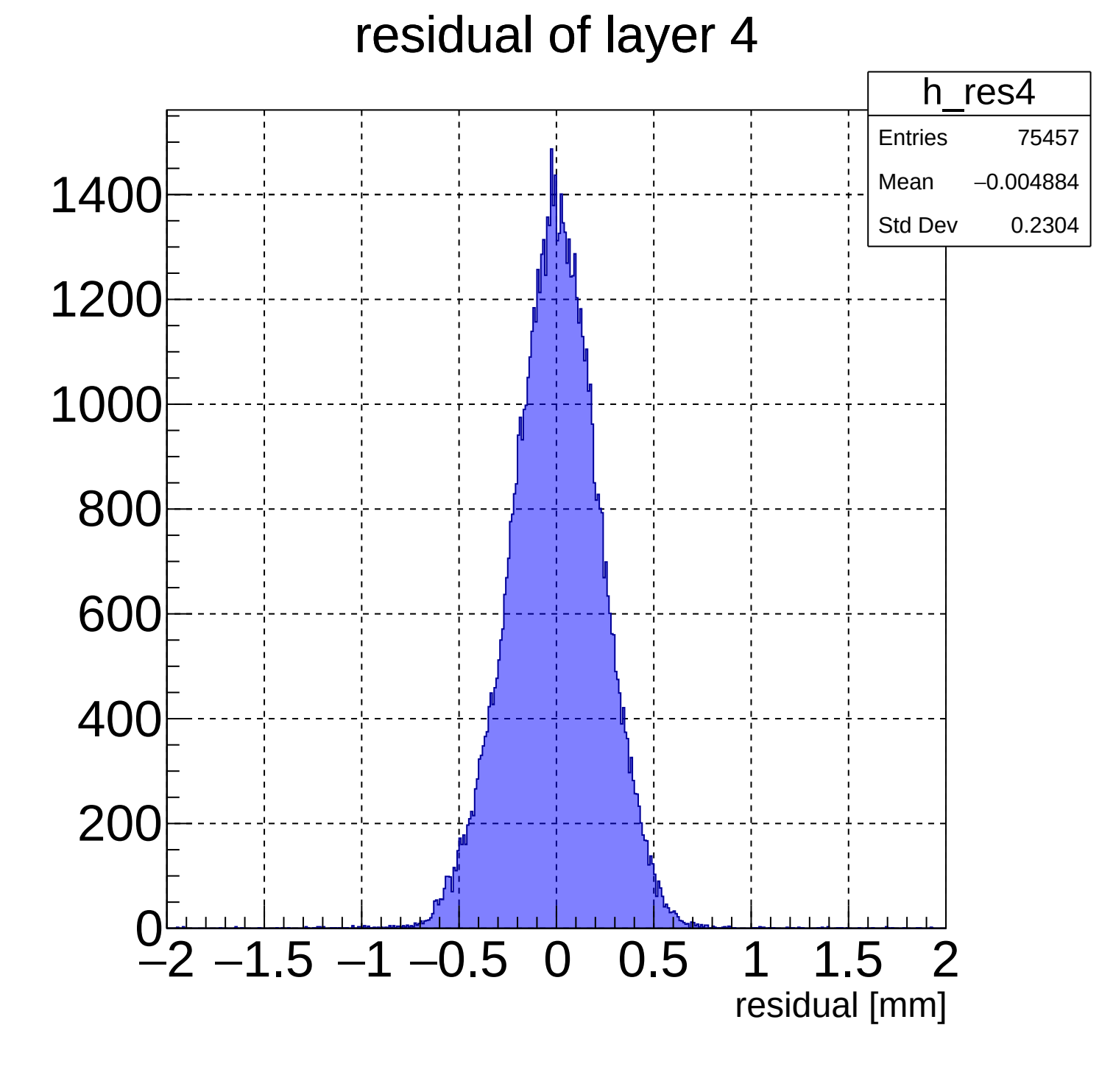

position of layer 5
h_pos5
Entries 75457
Mean −4.261
Std Dev 28.79
1000
800
600
400
200
0
−100
−50
0
50
100
position in layer [mm]

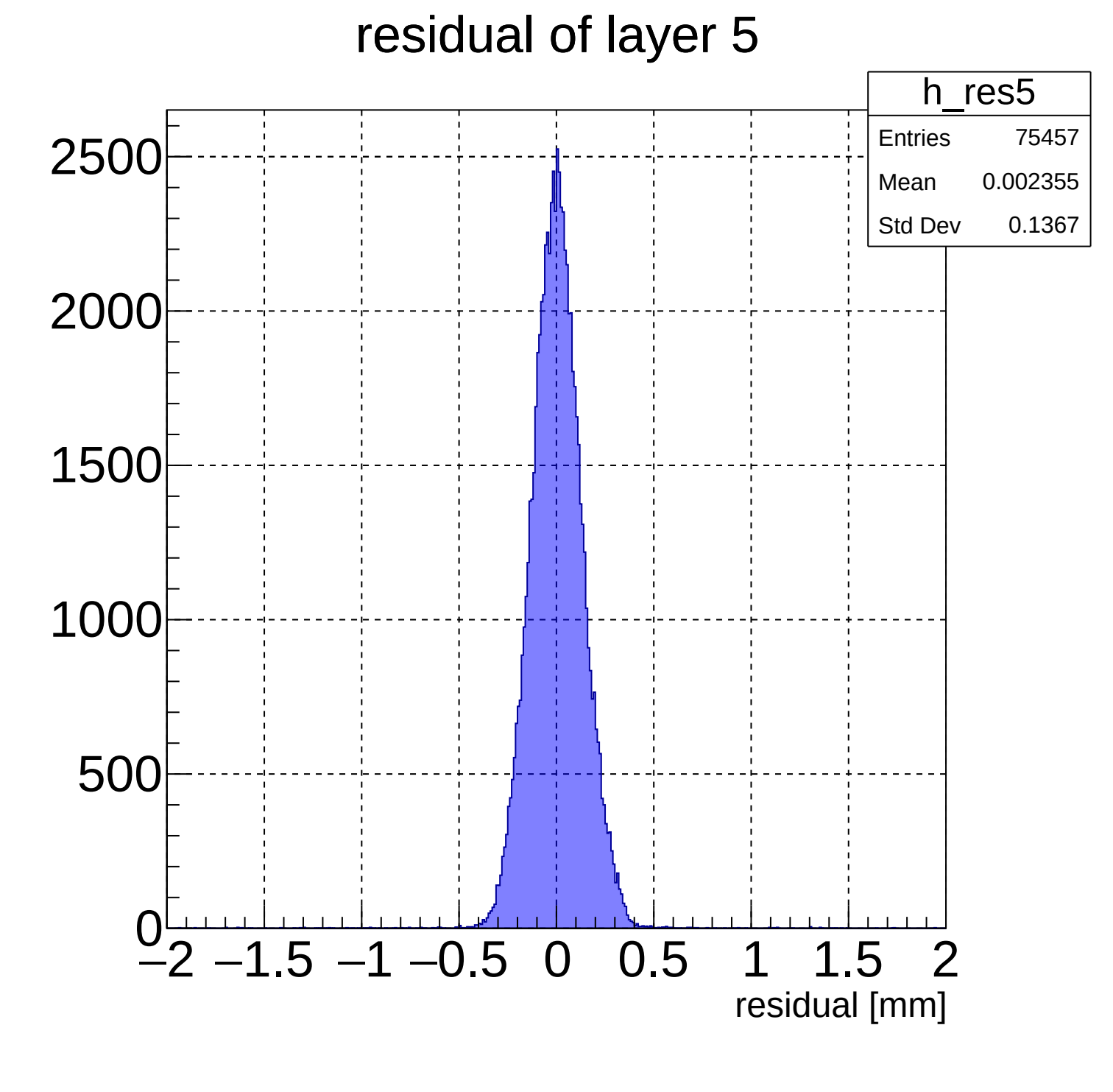

position of layer 6
h_pos6
Entries 75457
Mean −2.366
Std Dev 28.45
1000
800
600
400
200
0
−100
−50
0
50
100
position in layer [mm]

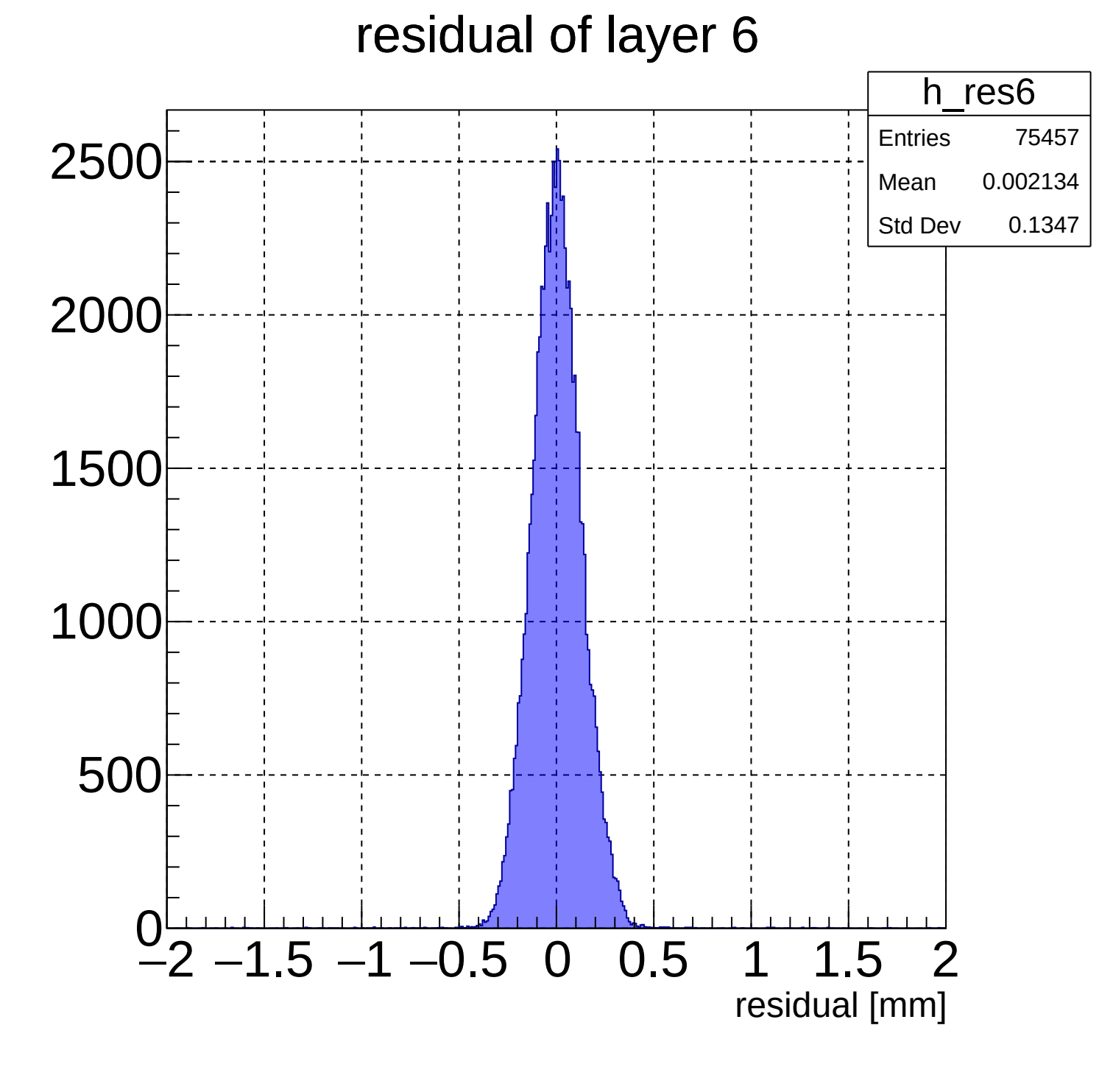

residual of layer 1
h_res1
Entries 75457
Mean −0.0212
Std Dev 0.232
1400
1200
1000
800
600
400
200
0
−2 −1.5 −1 −0.5 0 0.5 1 1.5 2
residual [mm]

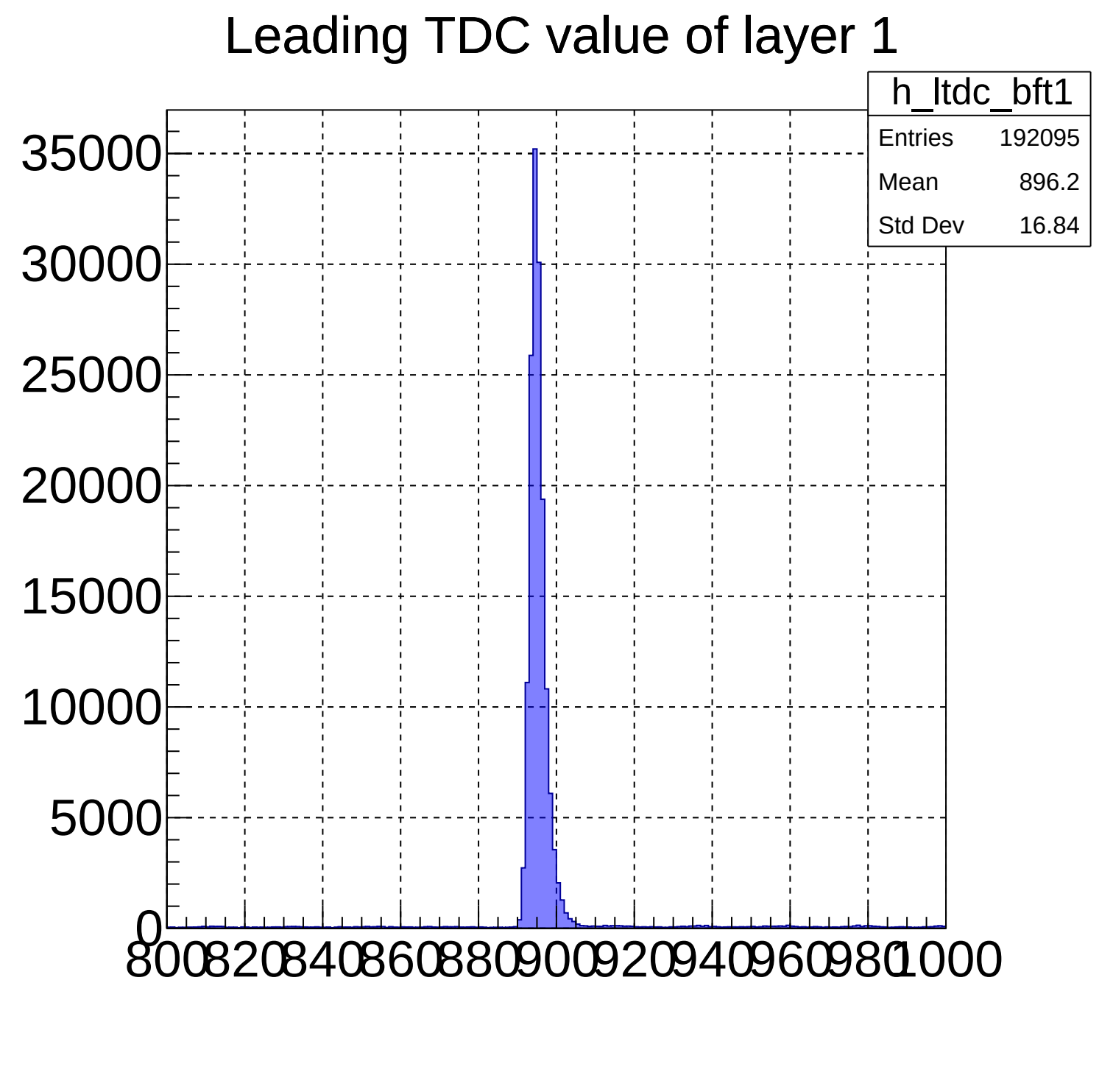

residual of layer 2
h_res2
Entries 75457
Mean 0.01229
Std Dev 0.1438
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
−2 −1.5 −1 −0.5 0 0.5 1 1.5 2
residual [mm]

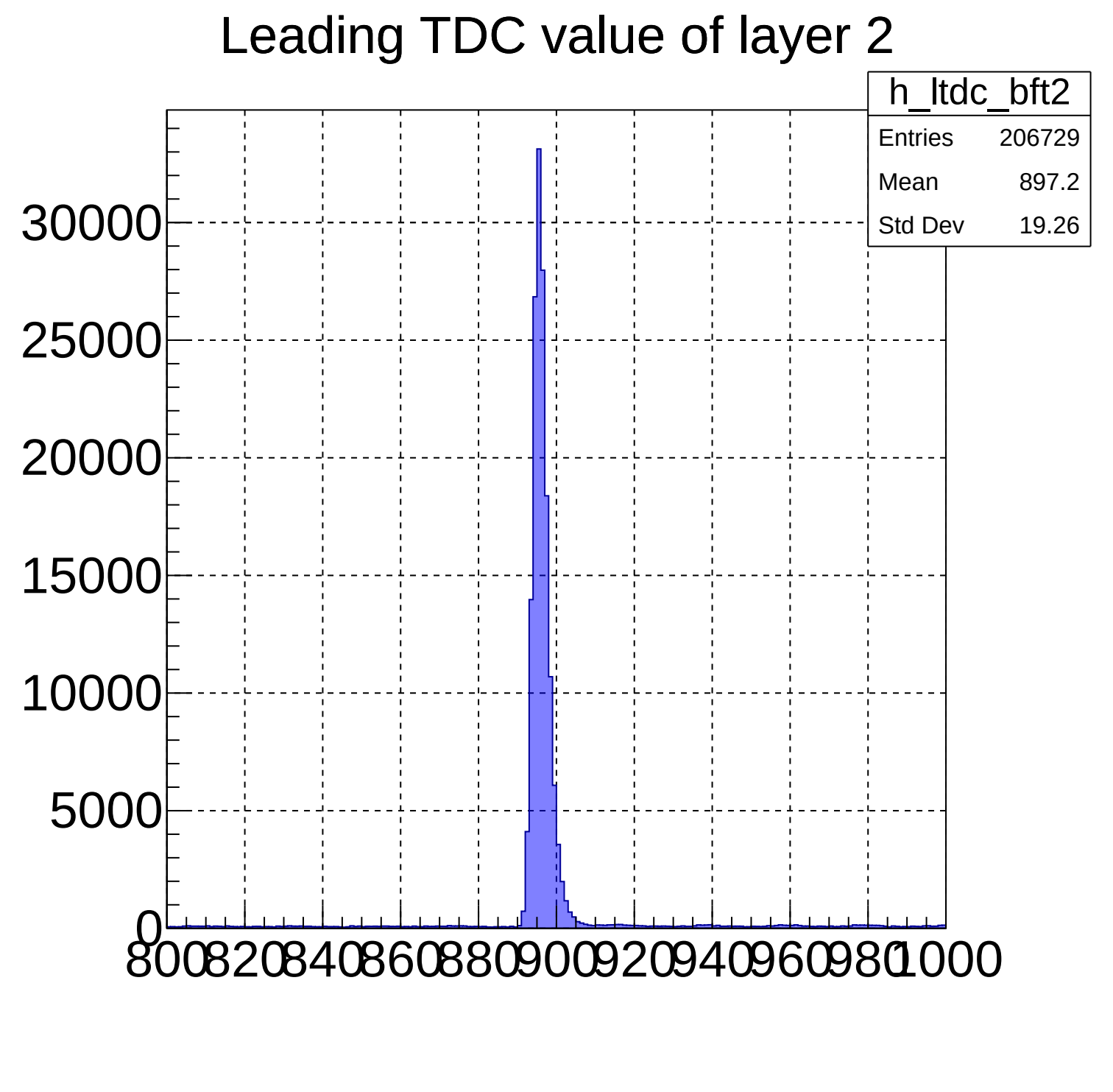

residual of layer 3
h_res3
Entries 75457
Mean 0.01262
Std Dev 0.1464
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
−2 −1.5 −1 −0.5 0 0.5 1 1.5 2
residual [mm]

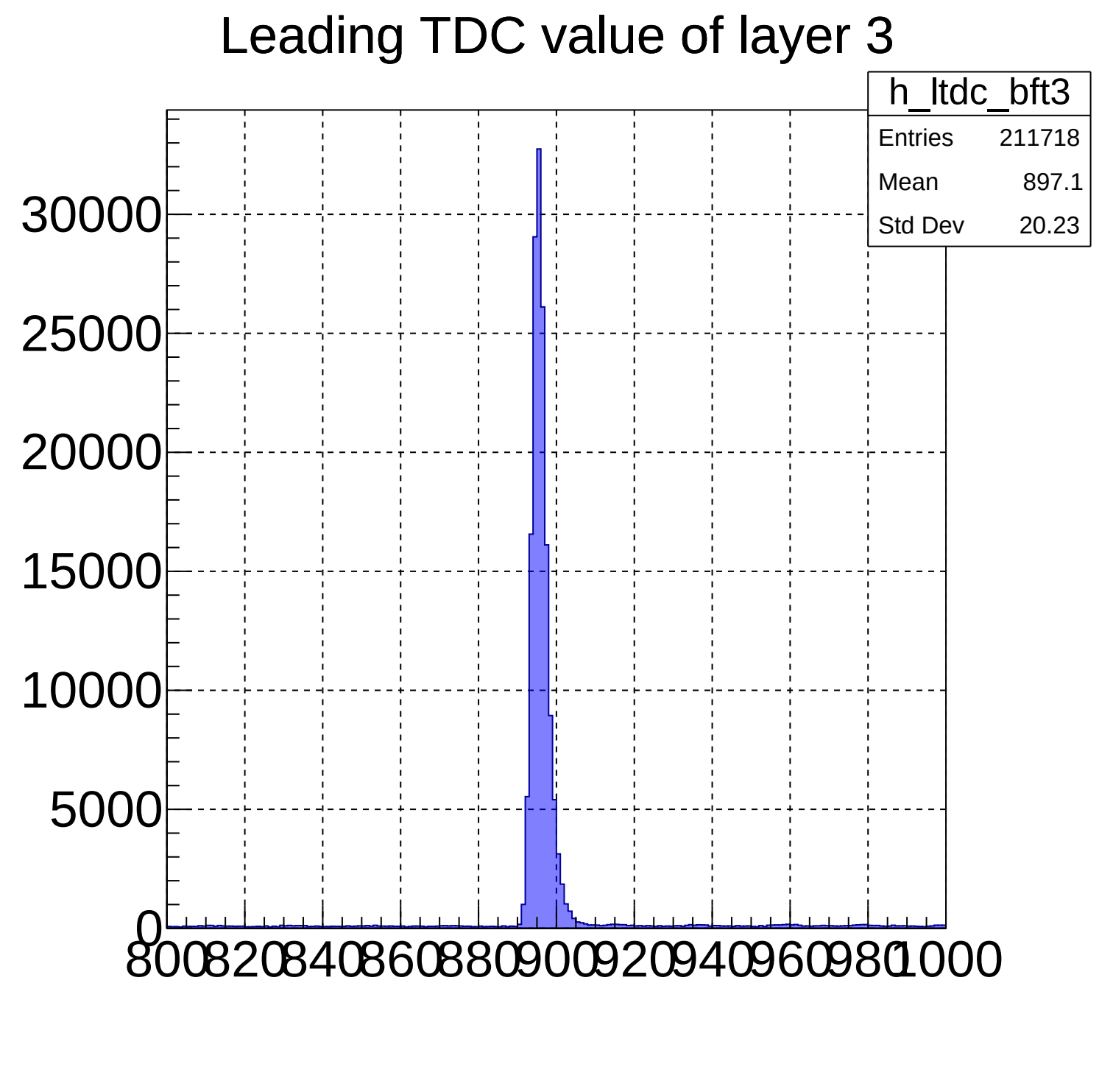

residual of layer 4
h_res4
Entries 75457
Mean –0.004884
Std Dev 0.2304
1400
1200
1000
800
600
400
200
0
–2
–1.5
–1
–0.5
0
0.5
1
1.5
2
residual [mm]

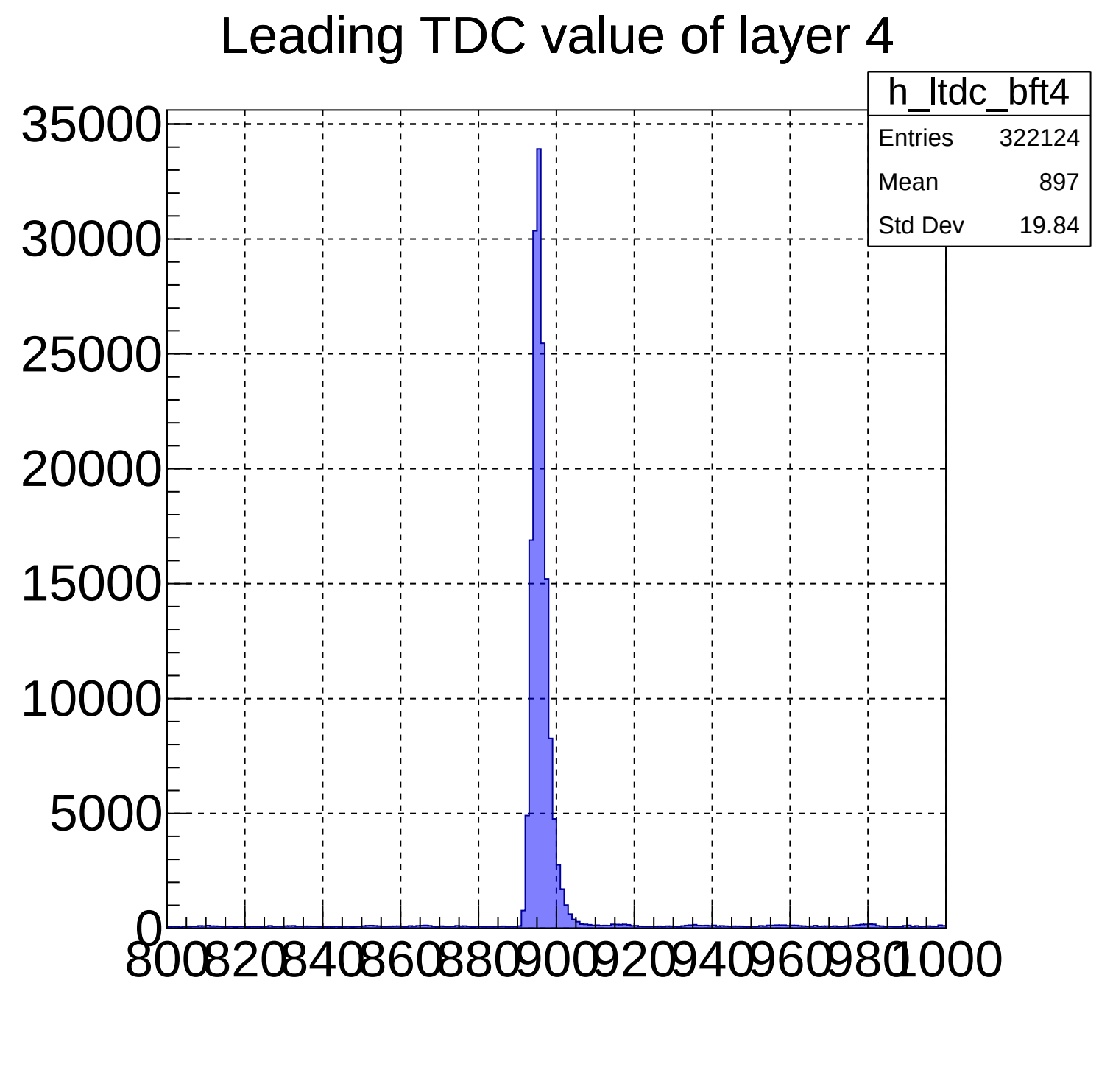

residual of layer 5
h_res5
Entries 75457
Mean 0.002355
Std Dev 0.1367
2500
2000
1500
1000
500
0
−2 −1.5 −1 −0.5 0 0.5 1 1.5 2
residual [mm]

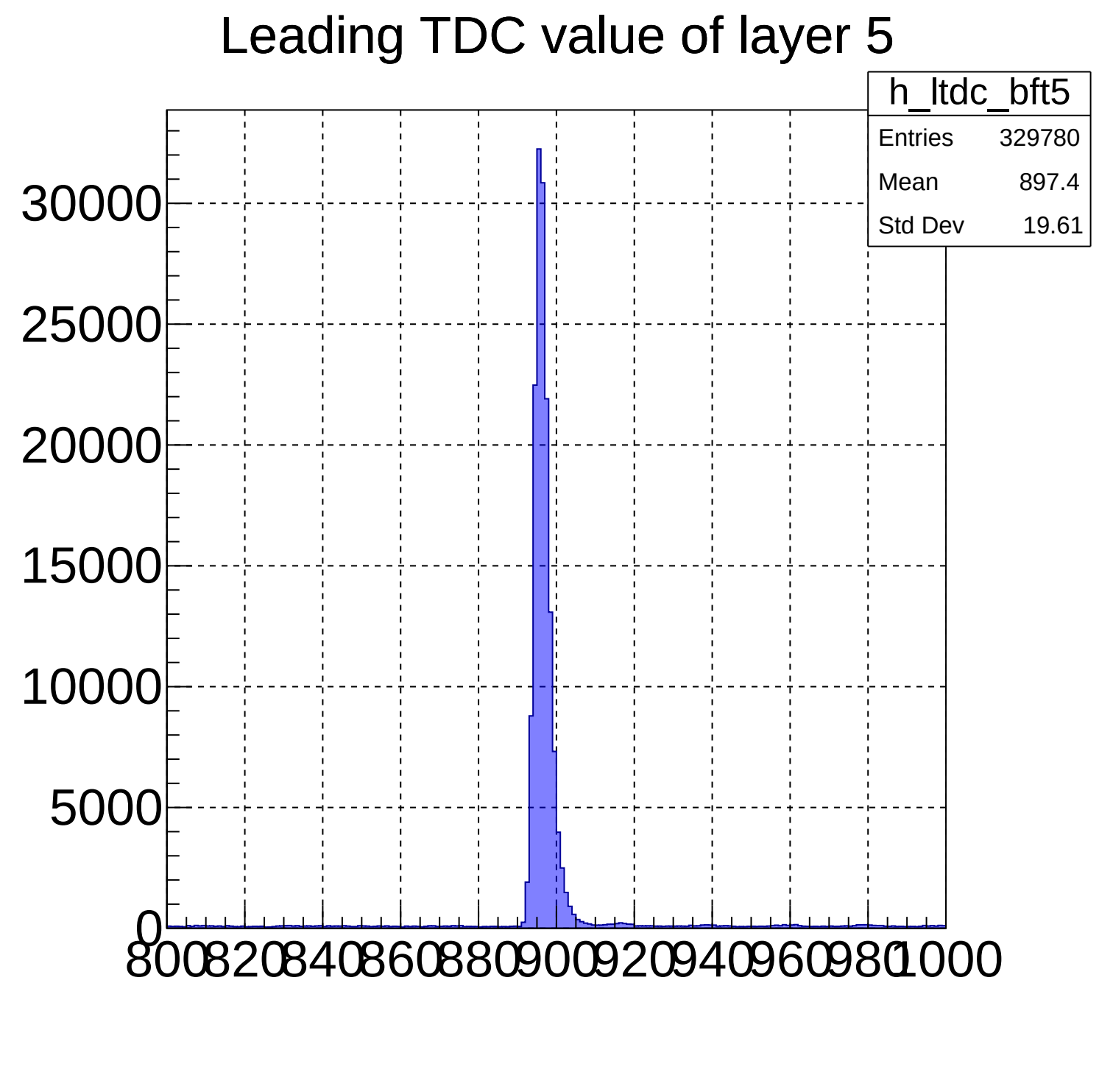

residual of layer 6
h_res6
Entries 75457
Mean 0.002134
Std Dev 0.1347
2500
2000
1500
1000
500
0
−2 −1.5 −1 −0.5 0 0.5 1 1.5 2
residual [mm]

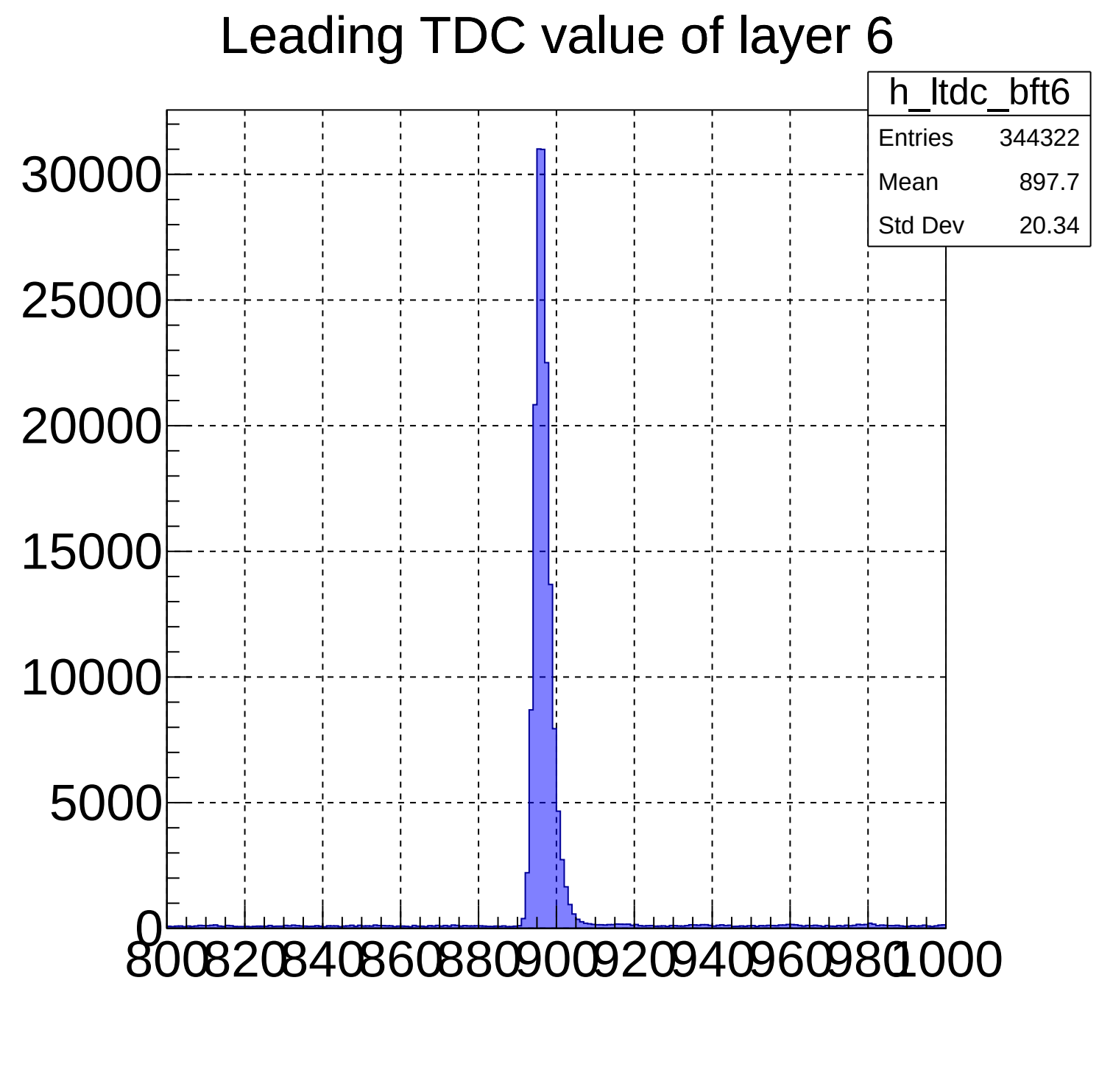

Leading TDC value of layer 1
h_ltdc_bft1
Entries 192095
Mean 896.2
Std Dev 16.84
35000
30000
25000
20000
15000
10000
5000
0
800
820
840
860
880
900
920
940
960
980
1000

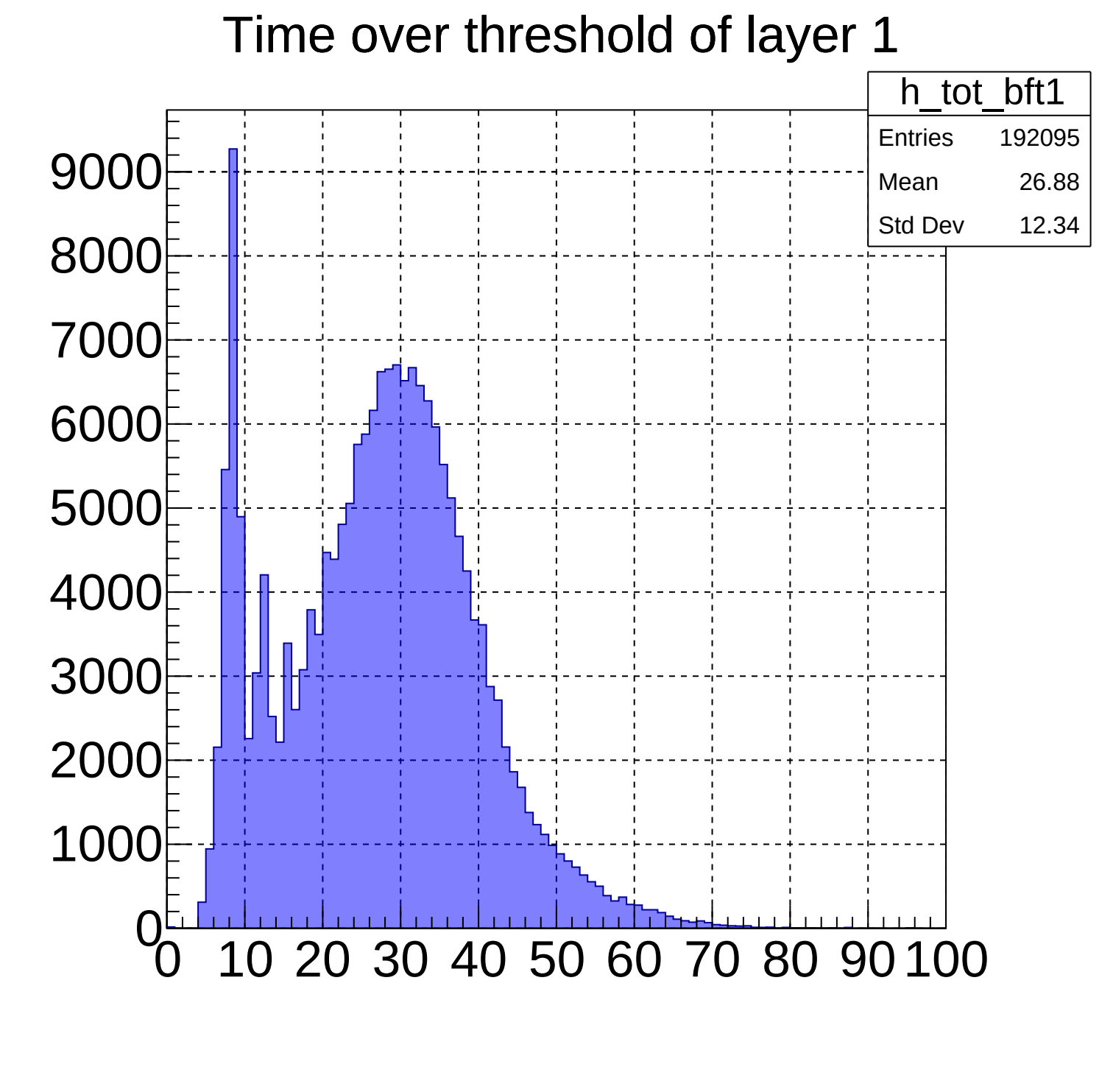

Leading TDC value of layer 2
h_ltdc_bft2
Entries 206729
Mean 897.2
Std Dev 19.26
30000
25000
20000
15000
10000
5000
0
800
820
840
860
880
900
920
940
960
980
1000

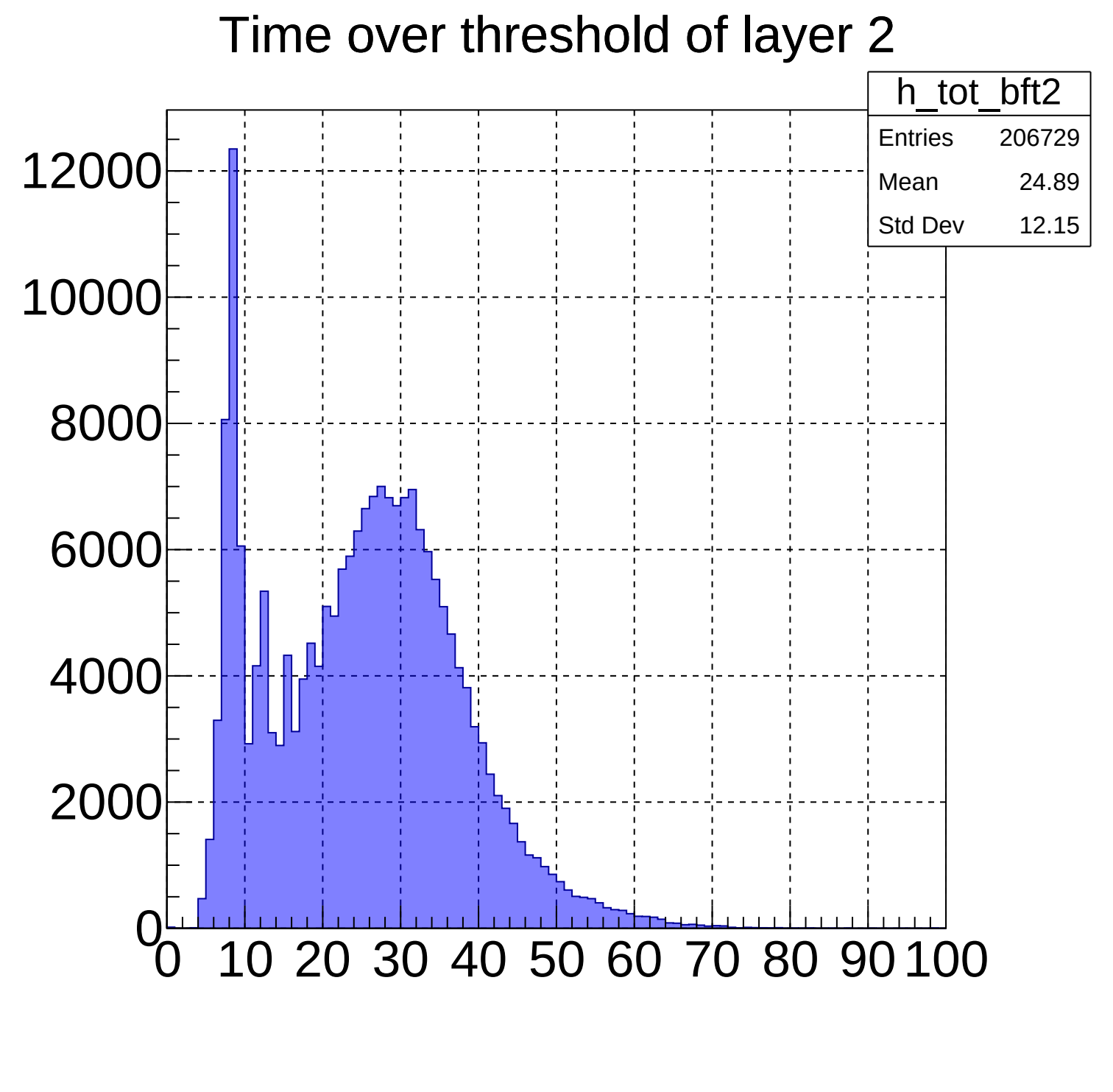

Leading TDC value of layer 3
h_ltdc_bft3
Entries 211718
Mean 897.1
Std Dev 20.23
30000
25000
20000
15000
10000
5000
0
800
820
840
860
880
900
920
940
960
980
1000

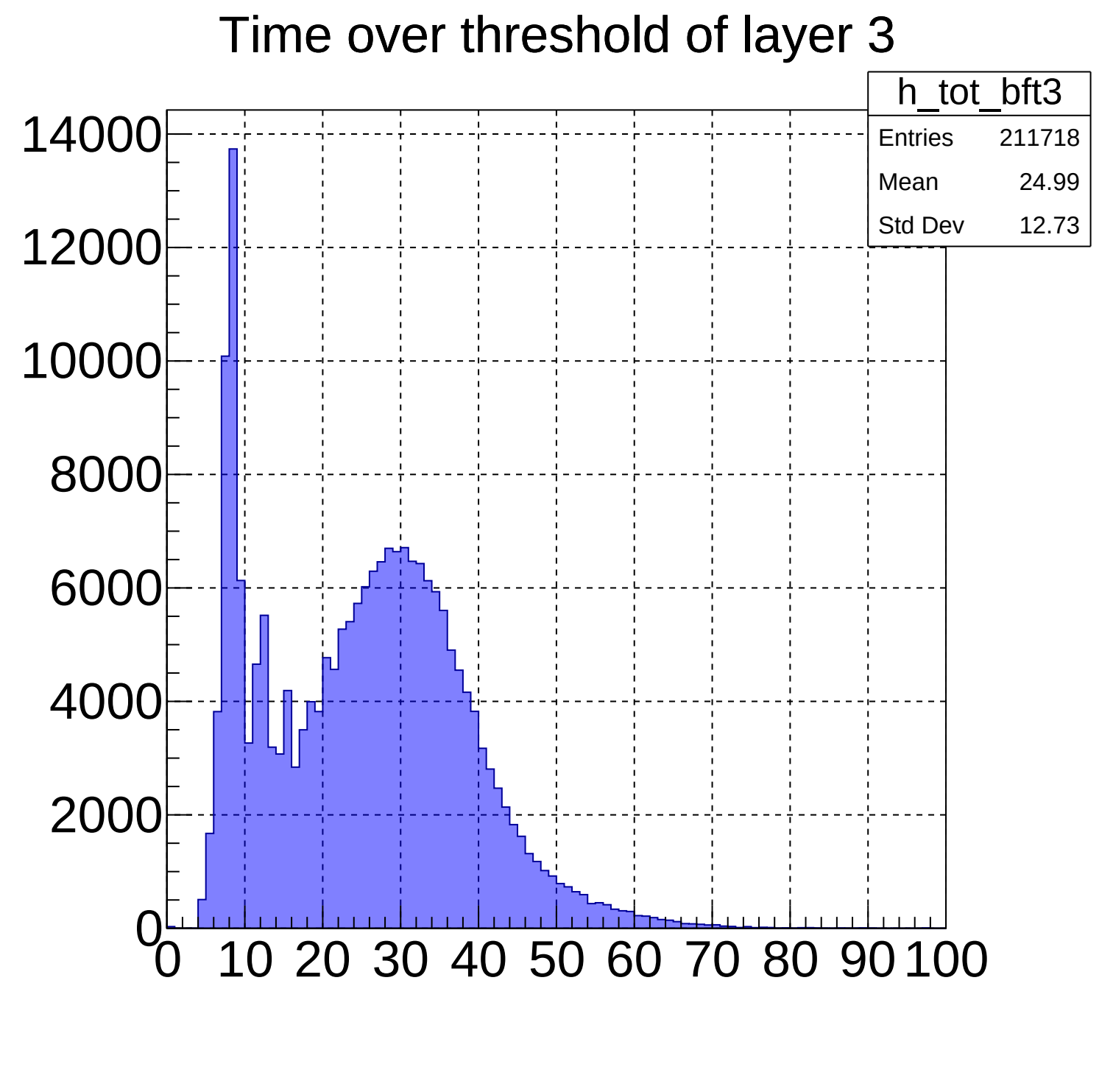

Leading TDC value of layer 4
h_ltdc_bft4
Entries 322124
Mean 897
Std Dev 19.84
35000
30000
25000
20000
15000
10000
5000
0
800
820
840
860
880
900
920
940
960
980
1000

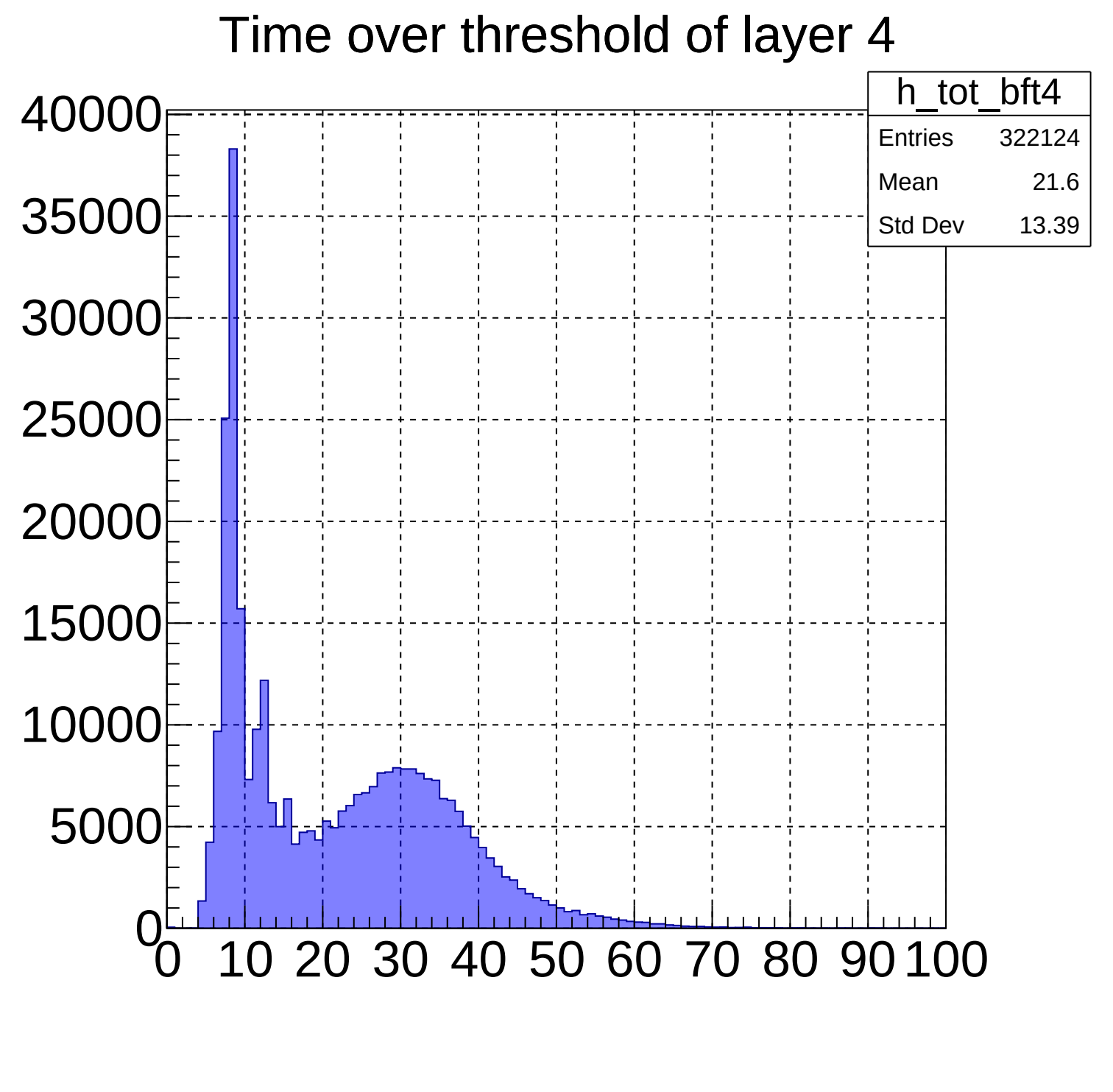

Leading TDC value of layer 5
h_ltdc_bft5
Entries 329780
Mean 897.4
Std Dev 19.61
30000
25000
20000
15000
10000
5000
0
800
820
840
860
880
900
920
940
960
980
1000

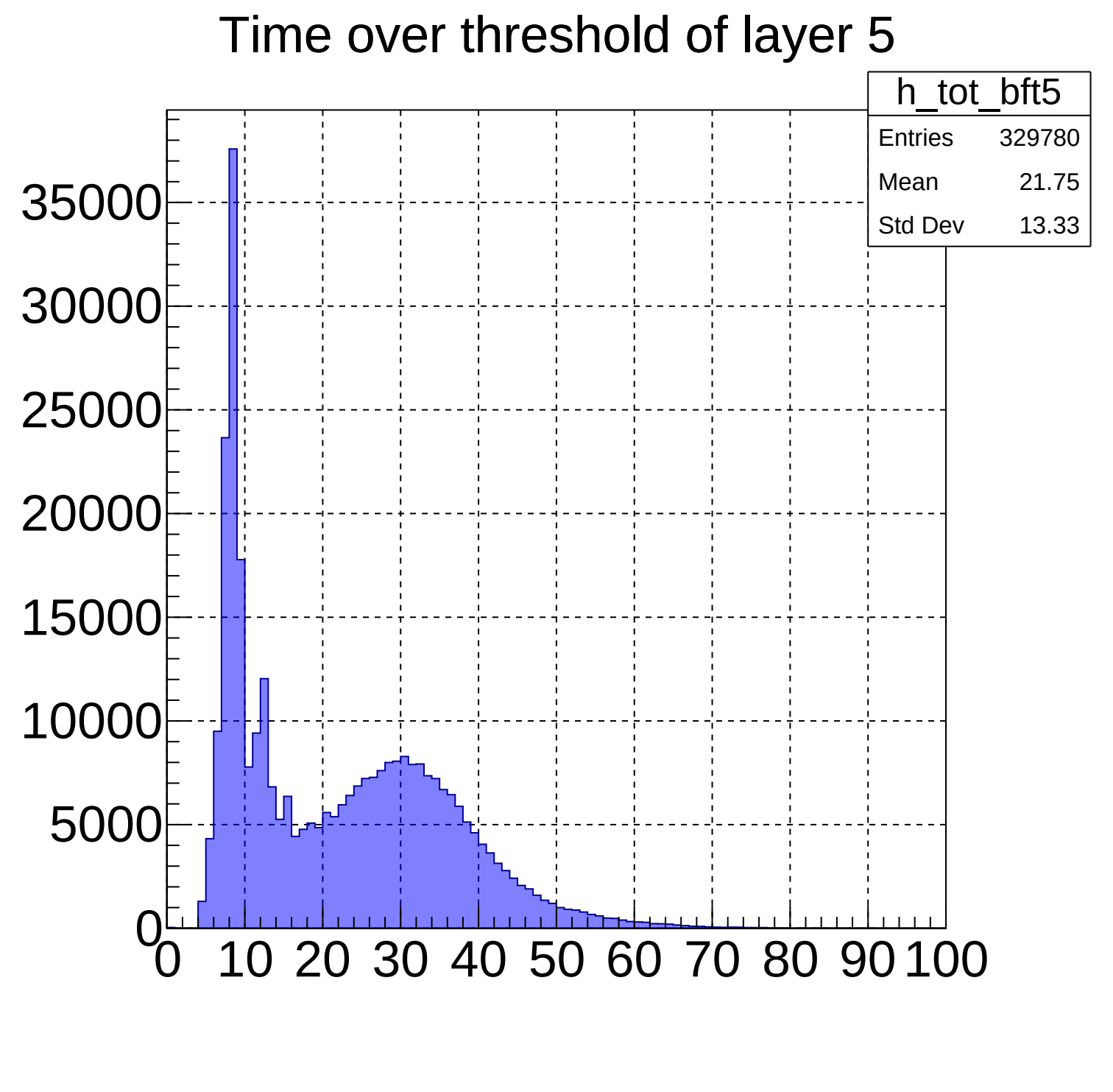

Leading TDC value of layer 6
h_ltdc_bft6
Entries 344322
Mean 897.7
Std Dev 20.34
30000
25000
20000
15000
10000
5000
0
800
820
840
860
880
900
920
940
960
980
1000

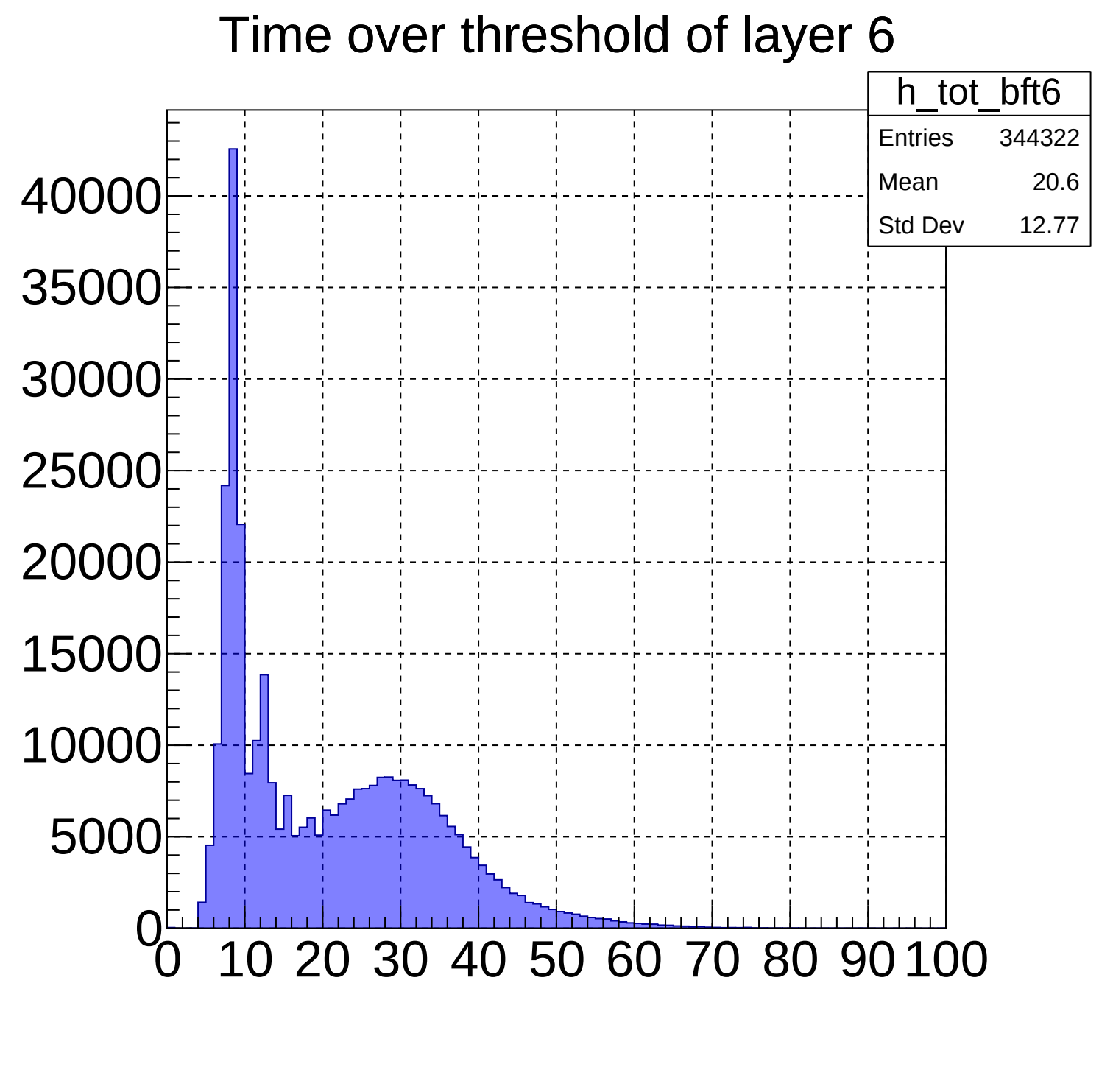

Time over threshold of layer 1
h_tot_bft1
Entries 192095
Mean 26.88
Std Dev 12.34
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0 10 20 30 40 50 60 70 80 90 100

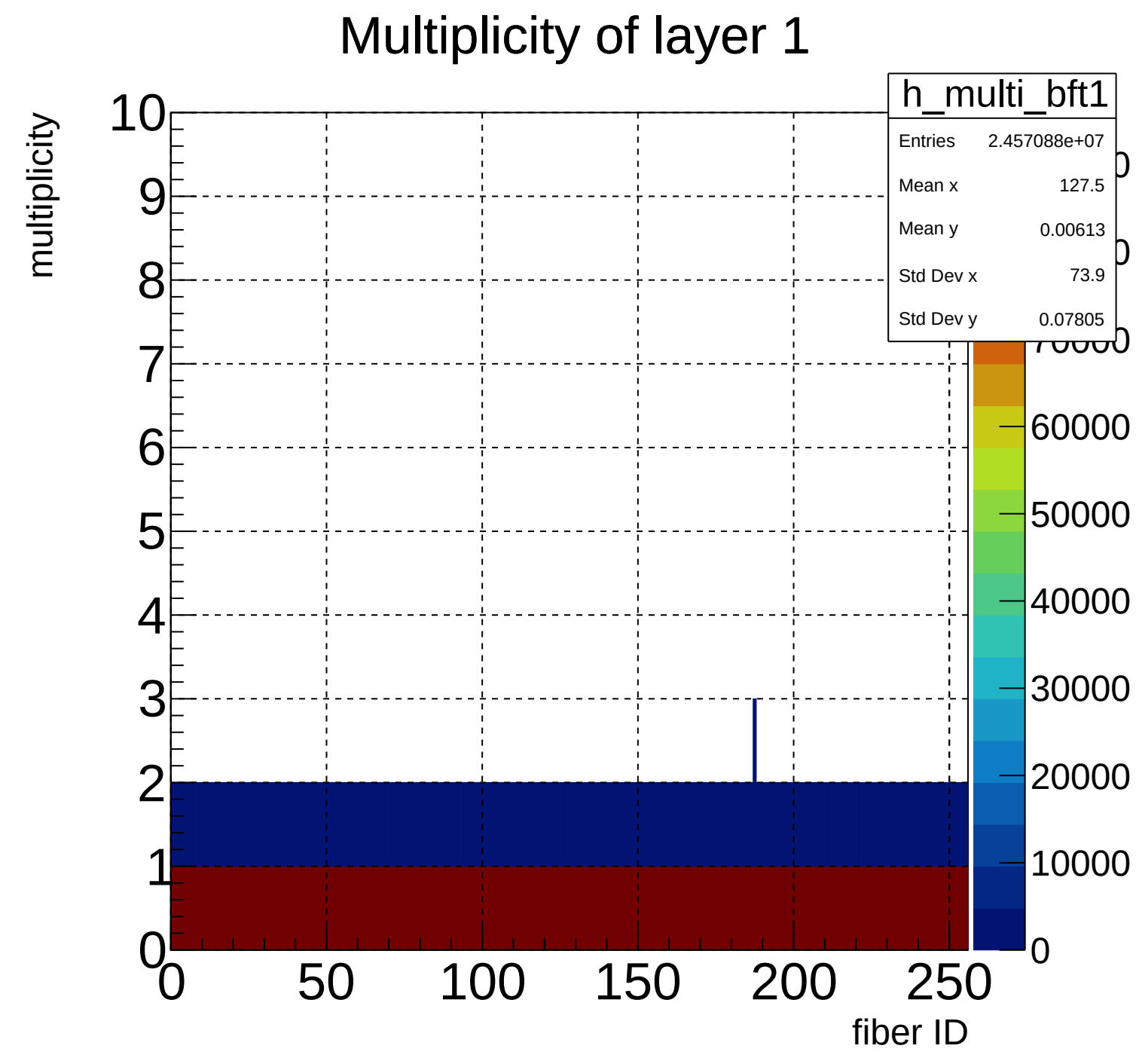

Time over threshold of layer 2
h_tot_bft2
Entries 206729
Mean 24.89
Std Dev 12.15
12000
10000
8000
6000
4000
2000
0
0 10 20 30 40 50 60 70 80 90 100

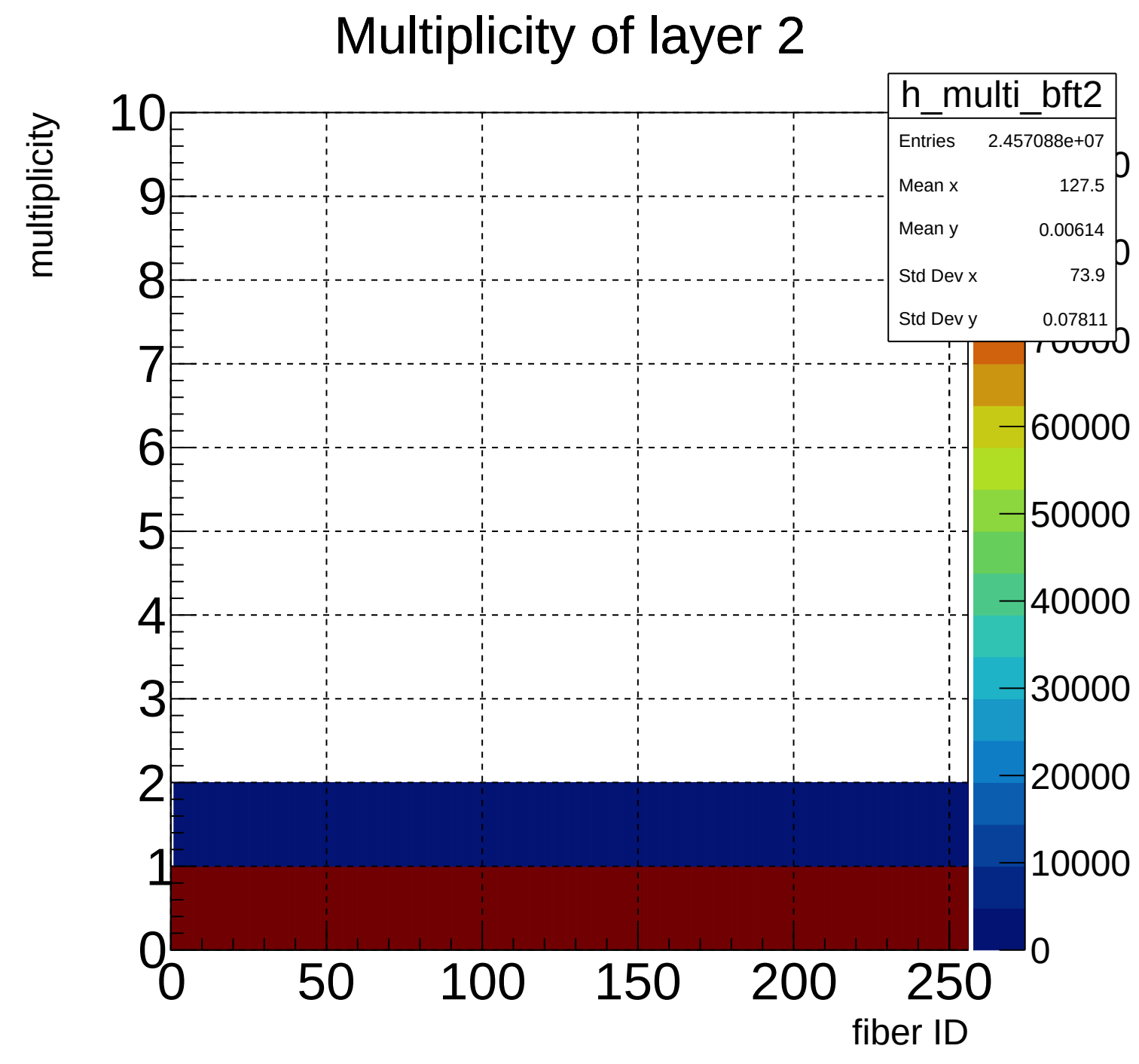

Time over threshold of layer 3
h_tot_bft3
Entries 211718
Mean 24.99
Std Dev 12.73
14000
12000
10000
8000
6000
4000
2000
0
0 10 20 30 40 50 60 70 80 90 100

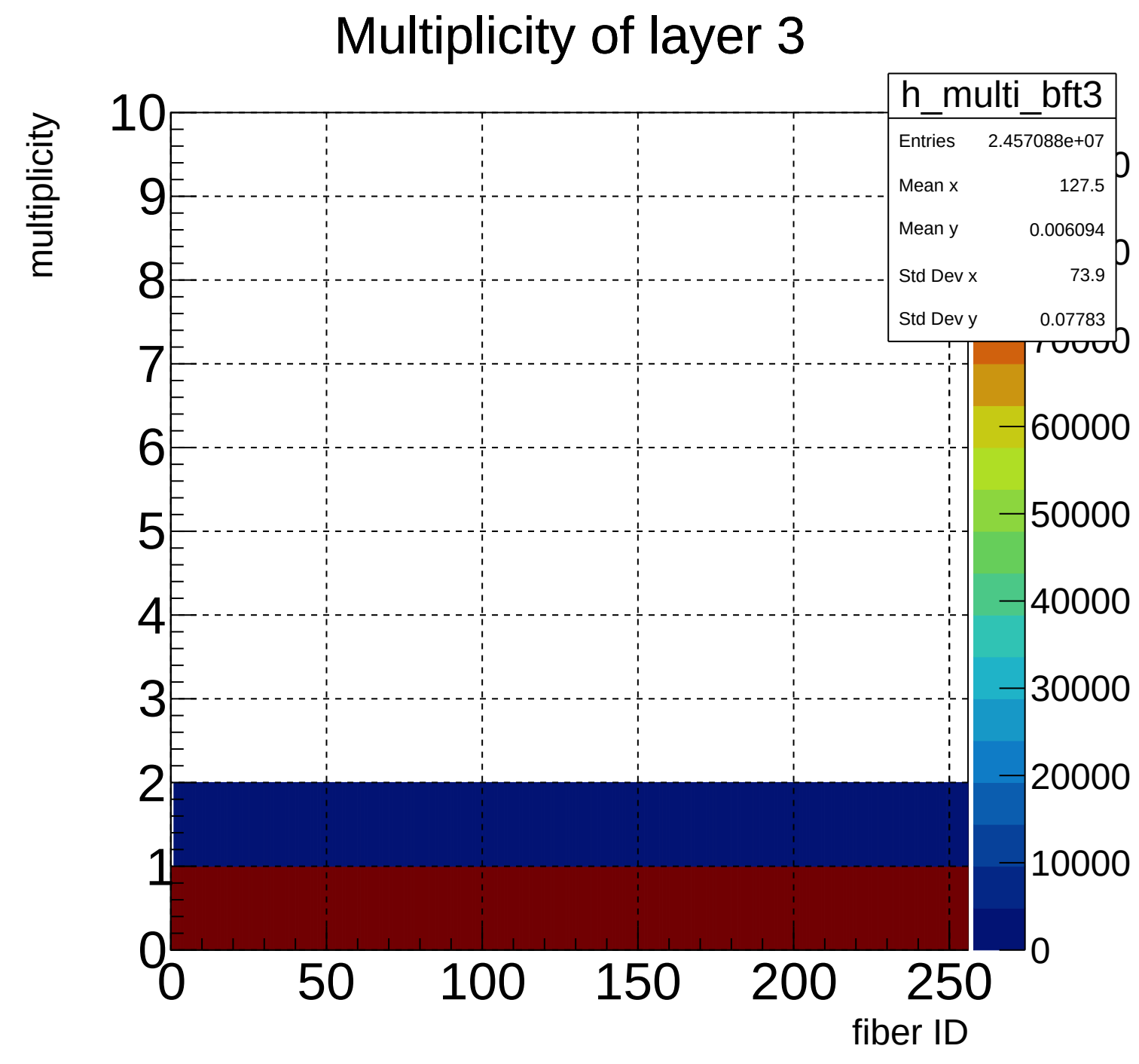

Time over threshold of layer 4
h_tot_bft4
Entries 322124
Mean 21.6
Std Dev 13.39
40000
35000
30000
25000
20000
15000
10000
5000
0
0 10 20 30 40 50 60 70 80 90 100

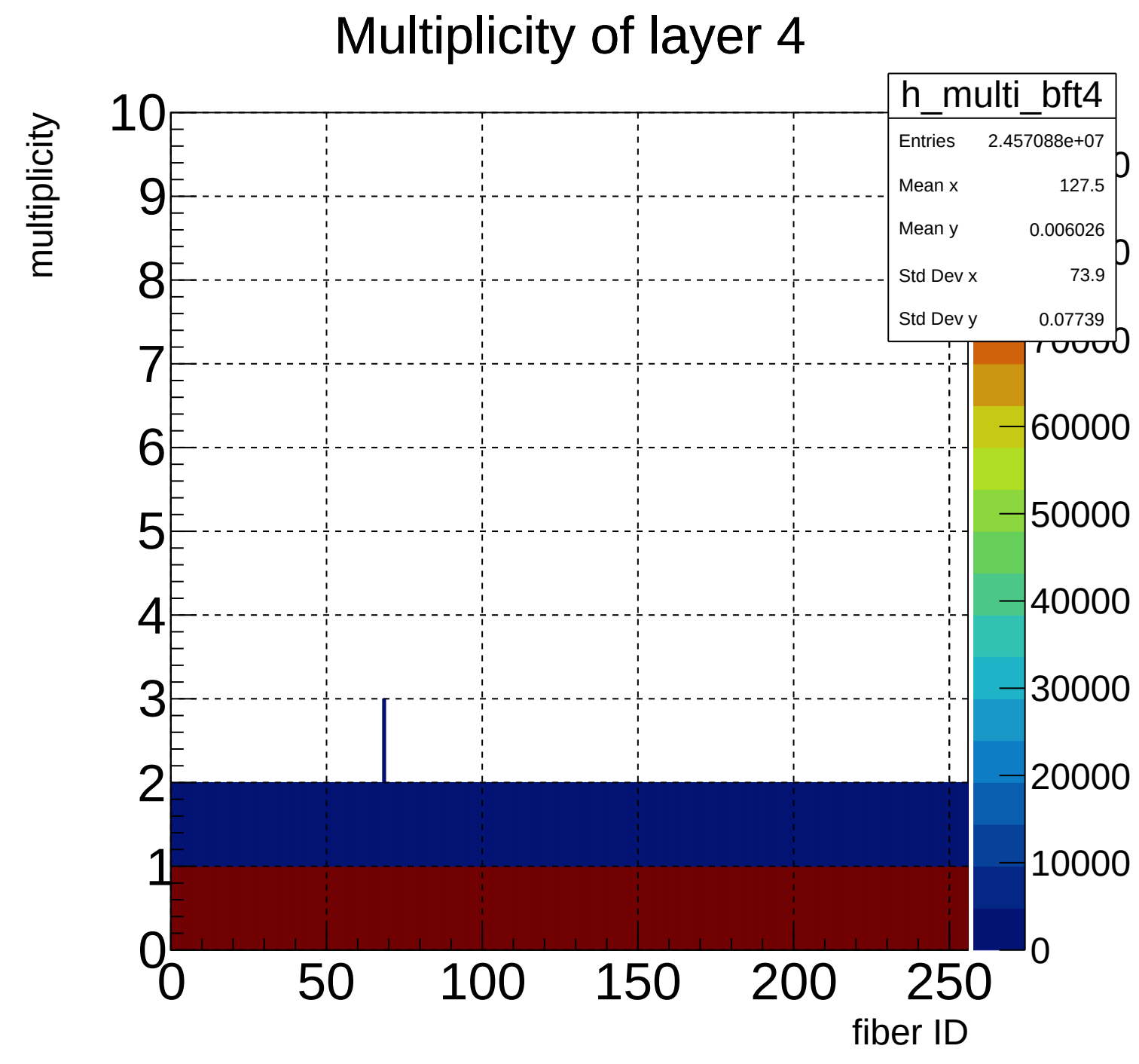

Time over threshold of layer 5
h_tot_bft5
Entries 329780
Mean 21.75
Std Dev 13.33
35000
30000
25000
20000
15000
10000
5000
0
0 10 20 30 40 50 60 70 80 90 100

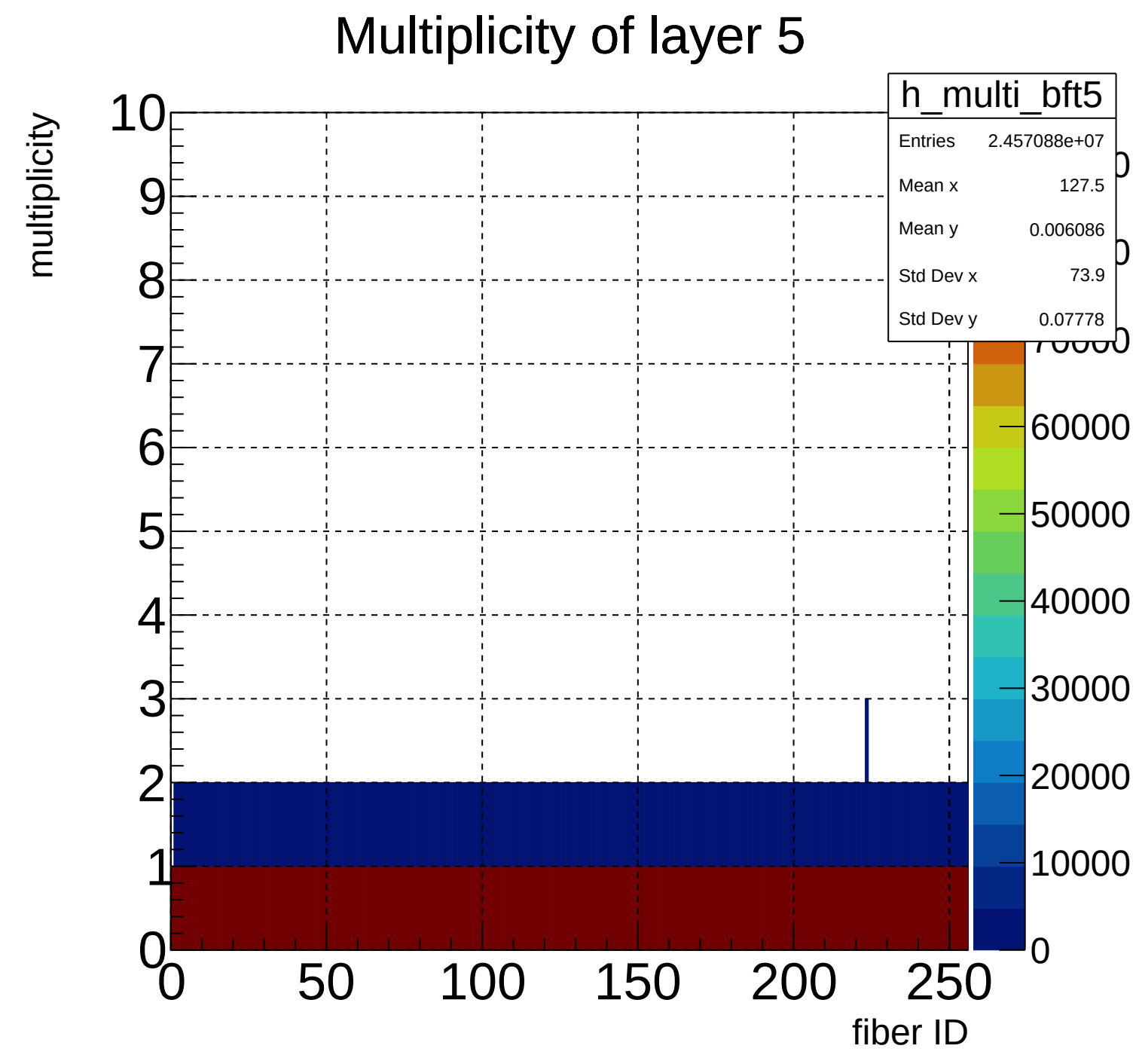

Time over threshold of layer 6
h_tot_bft6
Entries 344322
Mean 20.6
Std Dev 12.77
40000
35000
30000
25000
20000
15000
10000
5000
0
0 10 20 30 40 50 60 70 80 90 100

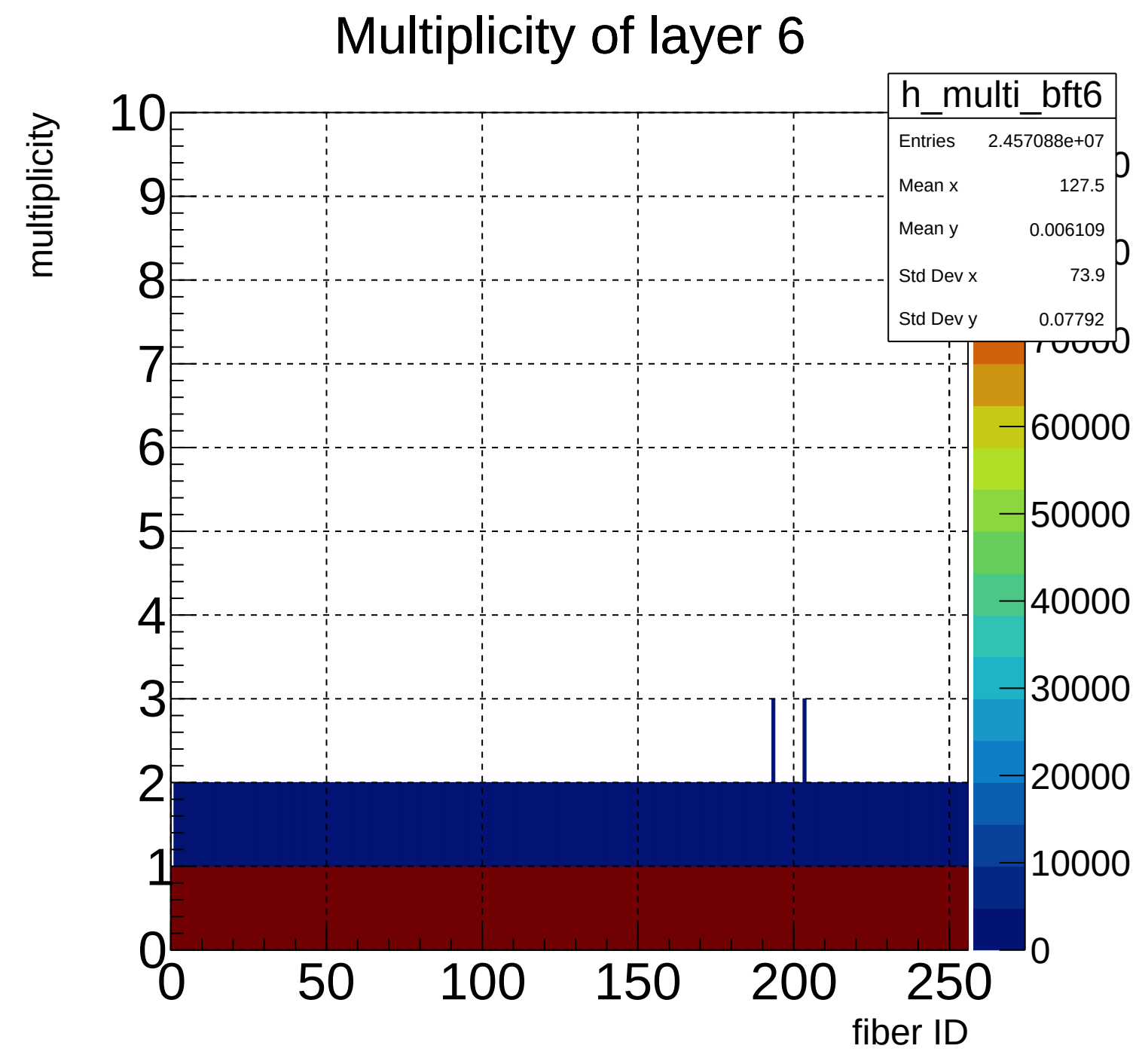

Multiplicity of layer 1
h_multi_bft1
Entries 2.457088e+07
Mean x 127.5
Mean y 0.00613
Std Dev x 73.9
Std Dev y 0.07805
multiplicity
fiber ID
0
50
100
150
200
250
1
2
3
4
5
6
7
8
9
10
60000
50000
40000
30000
20000
10000

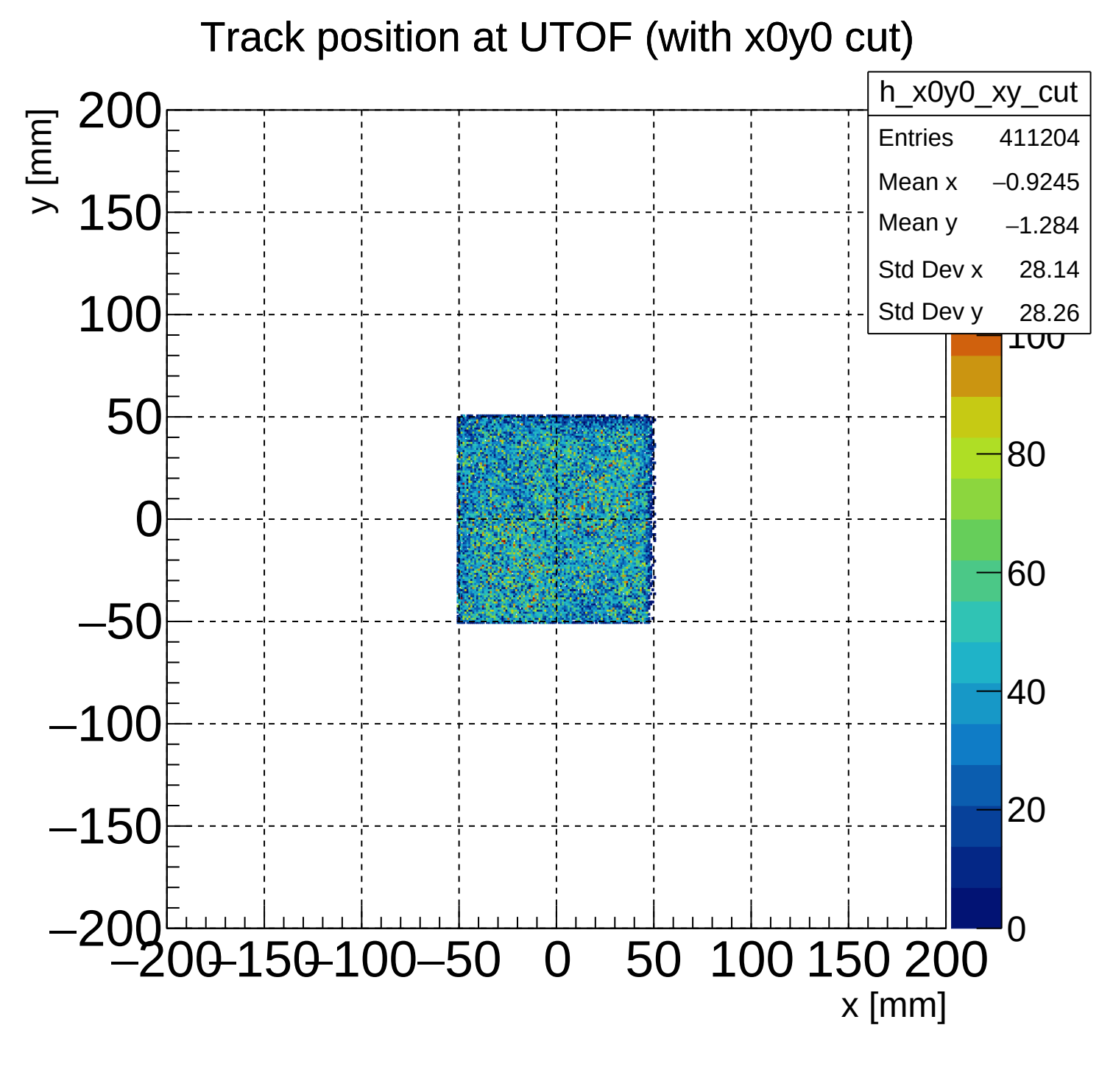

Multiplicity of layer 2
h_multi_bft2
Entries 2.457088e+07
Mean x 127.5
Mean y 0.00614
Std Dev x 73.9
Std Dev y 0.07811
multiplicity
fiber ID
0
50
100
150
200
250
1
2
3
4
5
6
7
8
9
10
60000
50000
40000
30000
20000
10000

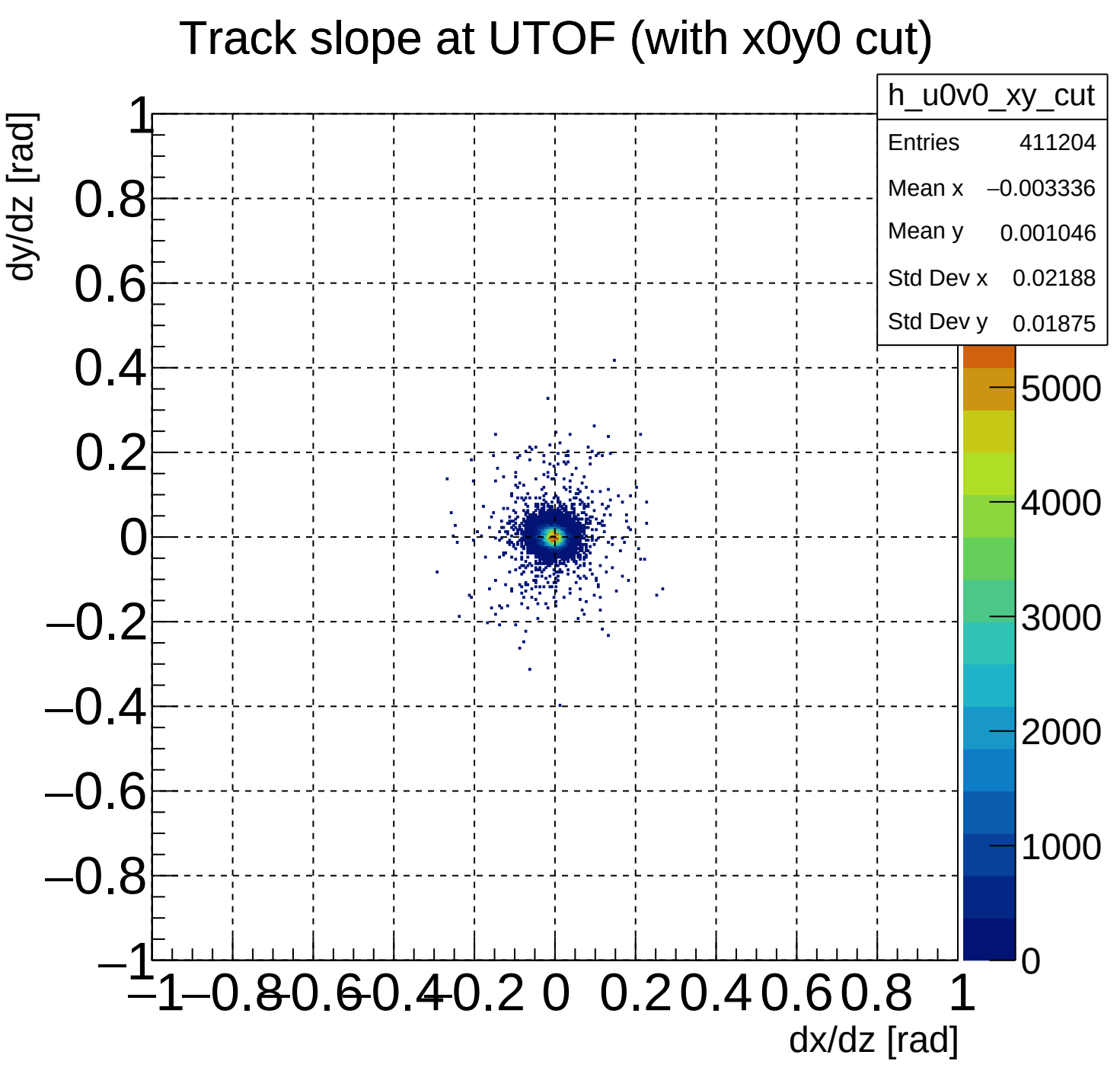

Multiplicity of layer 3
h_multi_bft3
Entries 2.457088e+07
Mean x 127.5
Mean y 0.006094
Std Dev x 73.9
Std Dev y 0.07783
multiplicity
fiber ID
0
1
2
3
4
5
6
7
8
9
10
0
50
100
150
200
250
60000
50000
40000
30000
20000
10000
0

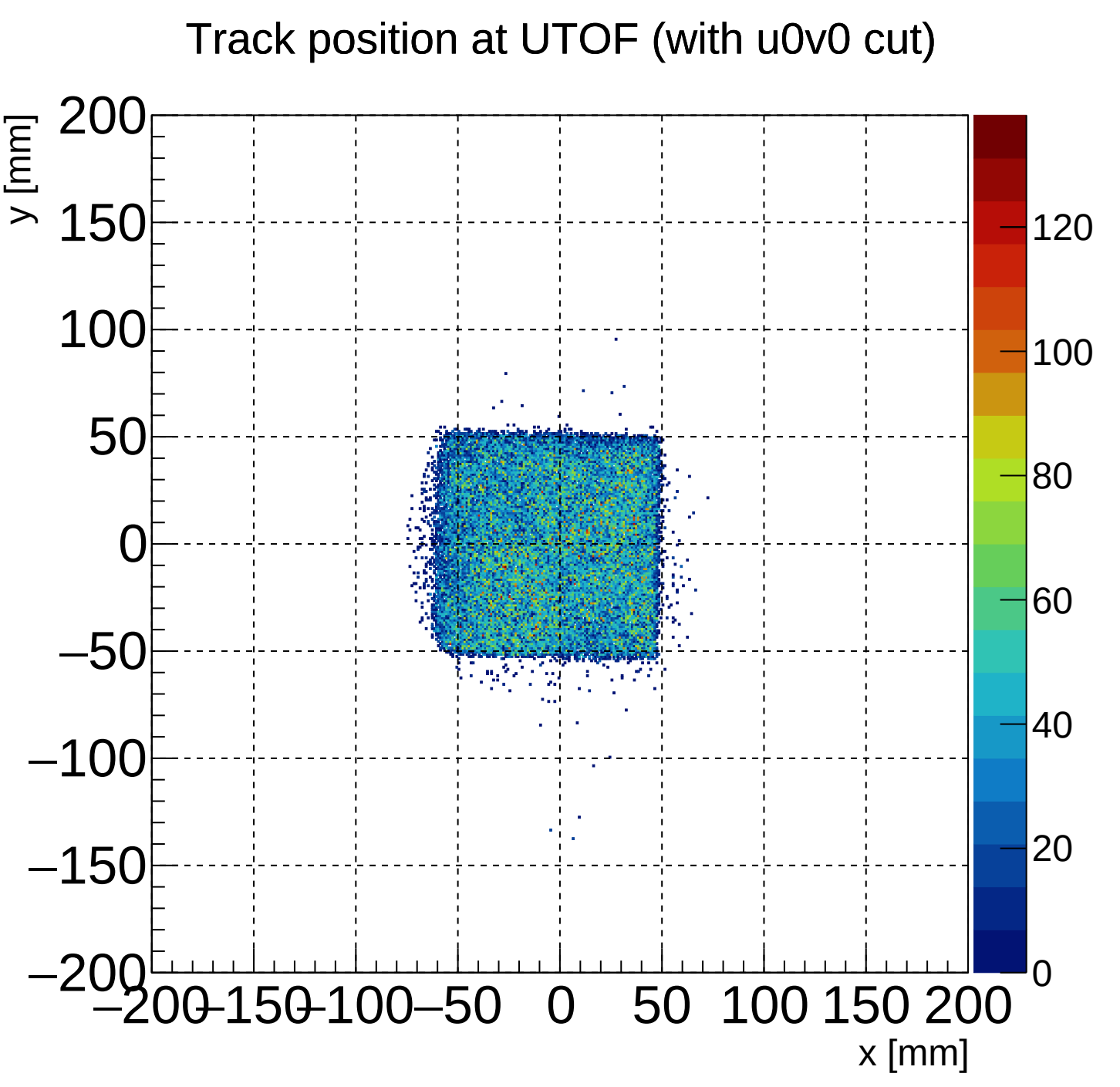

Multiplicity of layer 4
h_multi_bft4
Entries 2.457088e+07
Mean x 127.5
Mean y 0.006026
Std Dev x 73.9
Std Dev y 0.07739
multiplicity
fiber ID
0
50
100
150
200
250
1
2
3
4
5
6
7
8
9
10
60000
50000
40000
30000
20000
10000
0

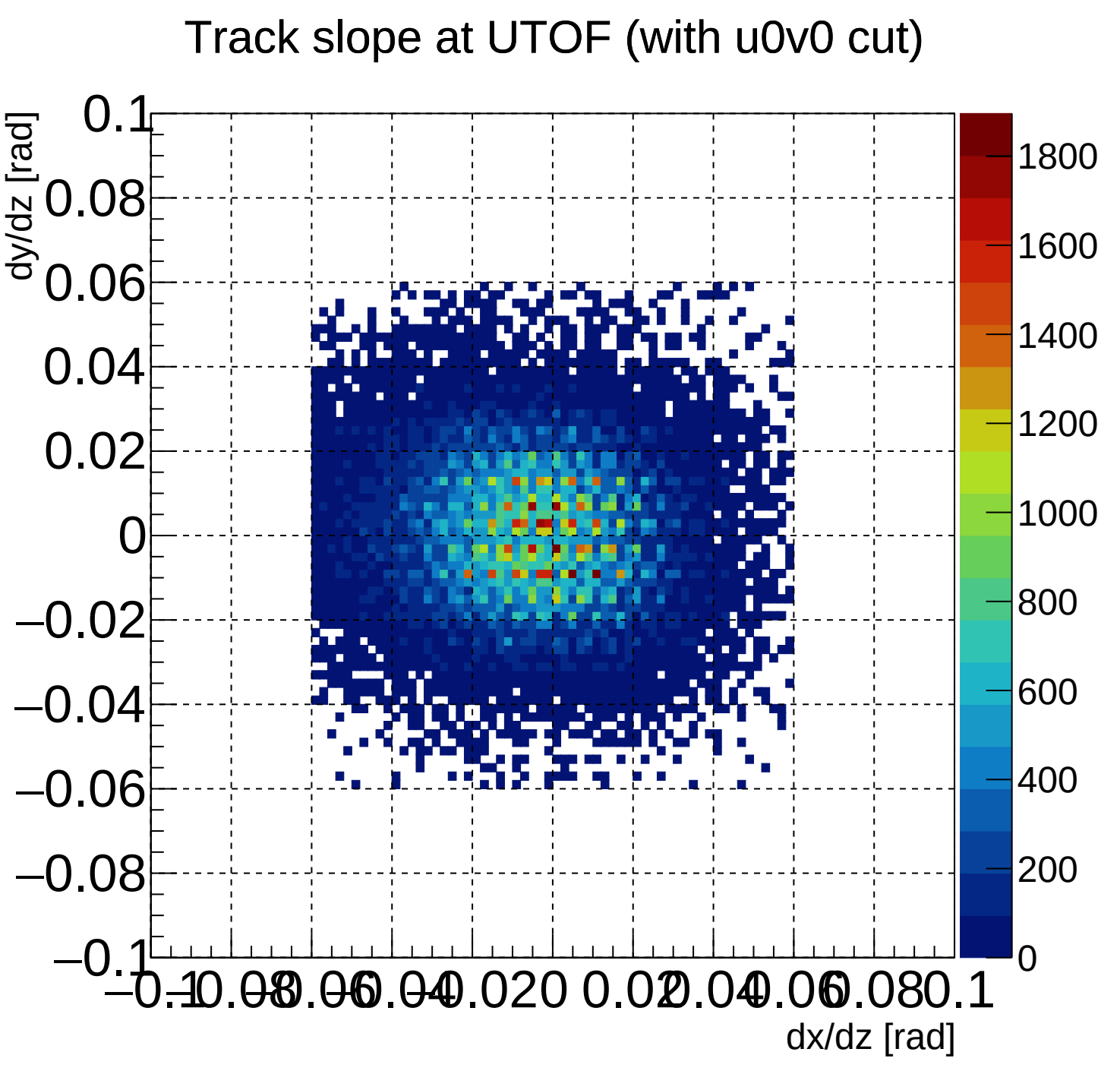

Multiplicity of layer 5
h_multi_bft5
Entries 2.457088e+07
Mean x 127.5
Mean y 0.006086
Std Dev x 73.9
Std Dev y 0.07778
multiplicity
fiber ID
0
50
100
150
200
250
1
2
3
4
5
6
7
8
9
10
60000
50000
40000
30000
20000
10000
0

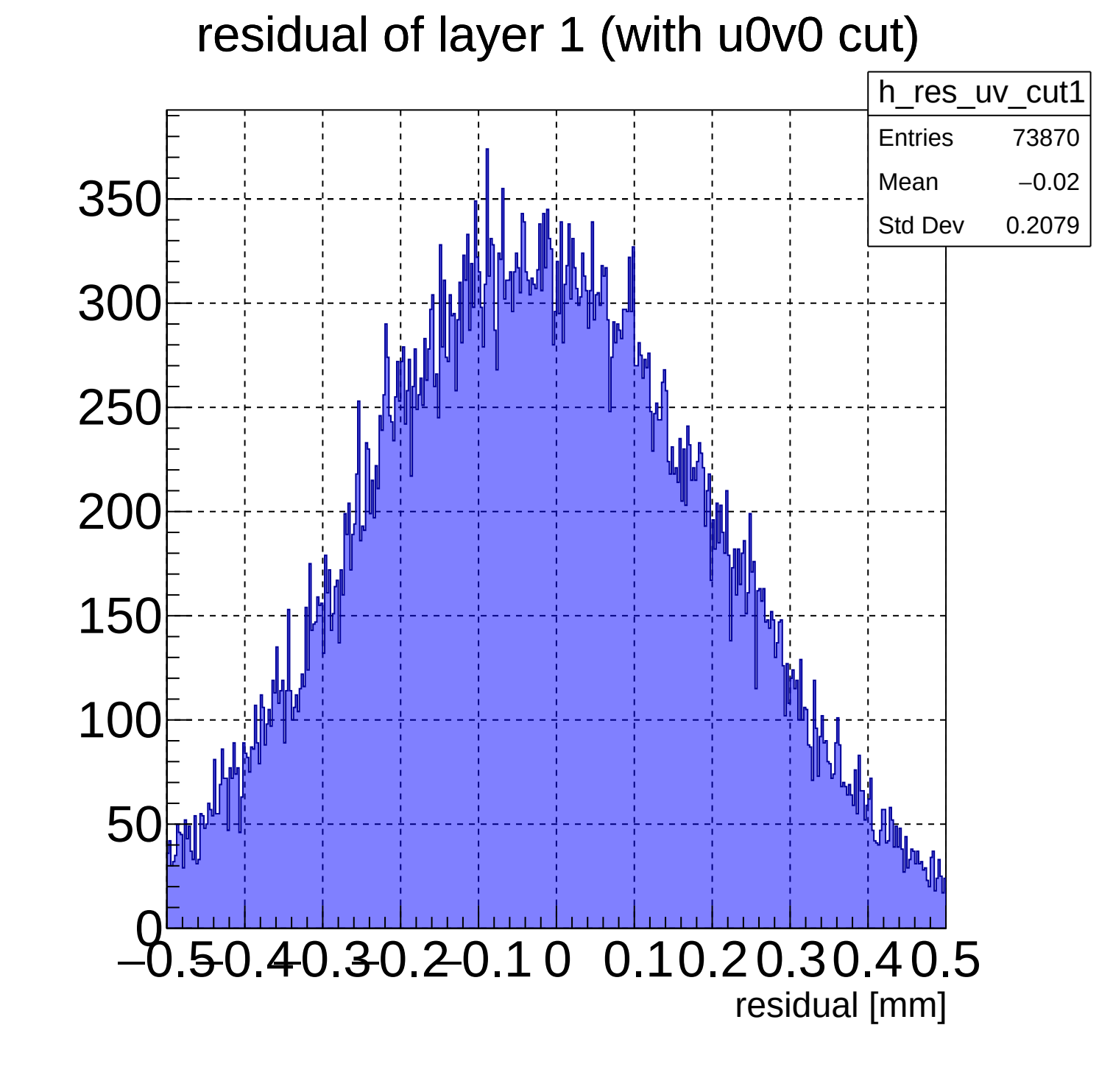

Multiplicity of layer 6
h_multi_bft6
Entries 2.457088e+07
Mean x 127.5
Mean y 0.006109
Std Dev x 73.9
Std Dev y 0.07792
multiplicity
fiber ID
0
50
100
150
200
250
1
2
3
4
5
6
7
8
9
10
60000
50000
40000
30000
20000
10000

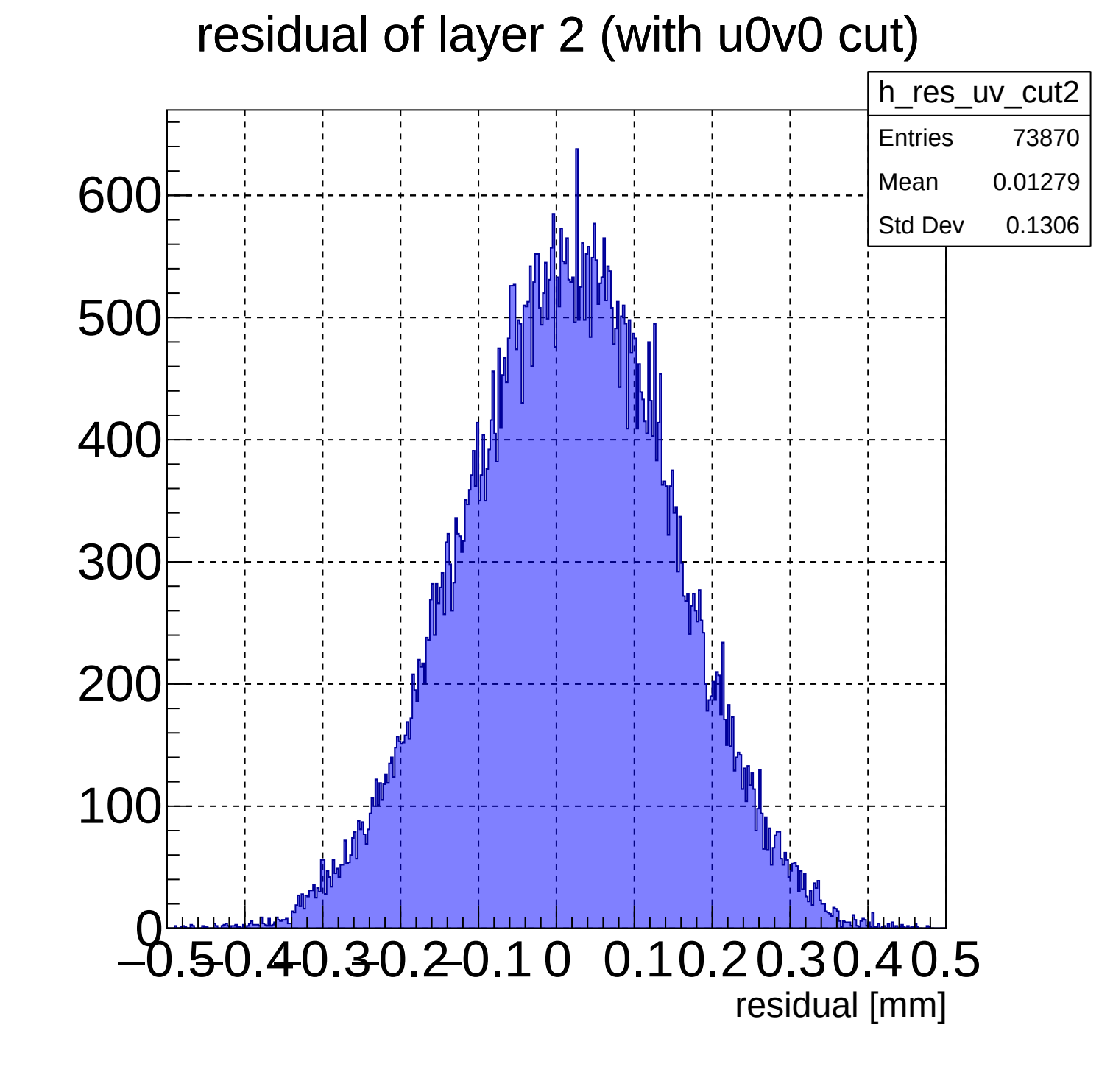

Track position at UTOF (with x0y0 cut)
h_x0y0_xy_cut
Entries 411204
Mean x –0.9245
Mean y –1.284
Std Dev x 28.14
Std Dev y 28.26
y [mm]
x [mm]
200
150
100
50
0
–50
–100
–150
–200
100
80
60
40
20
0

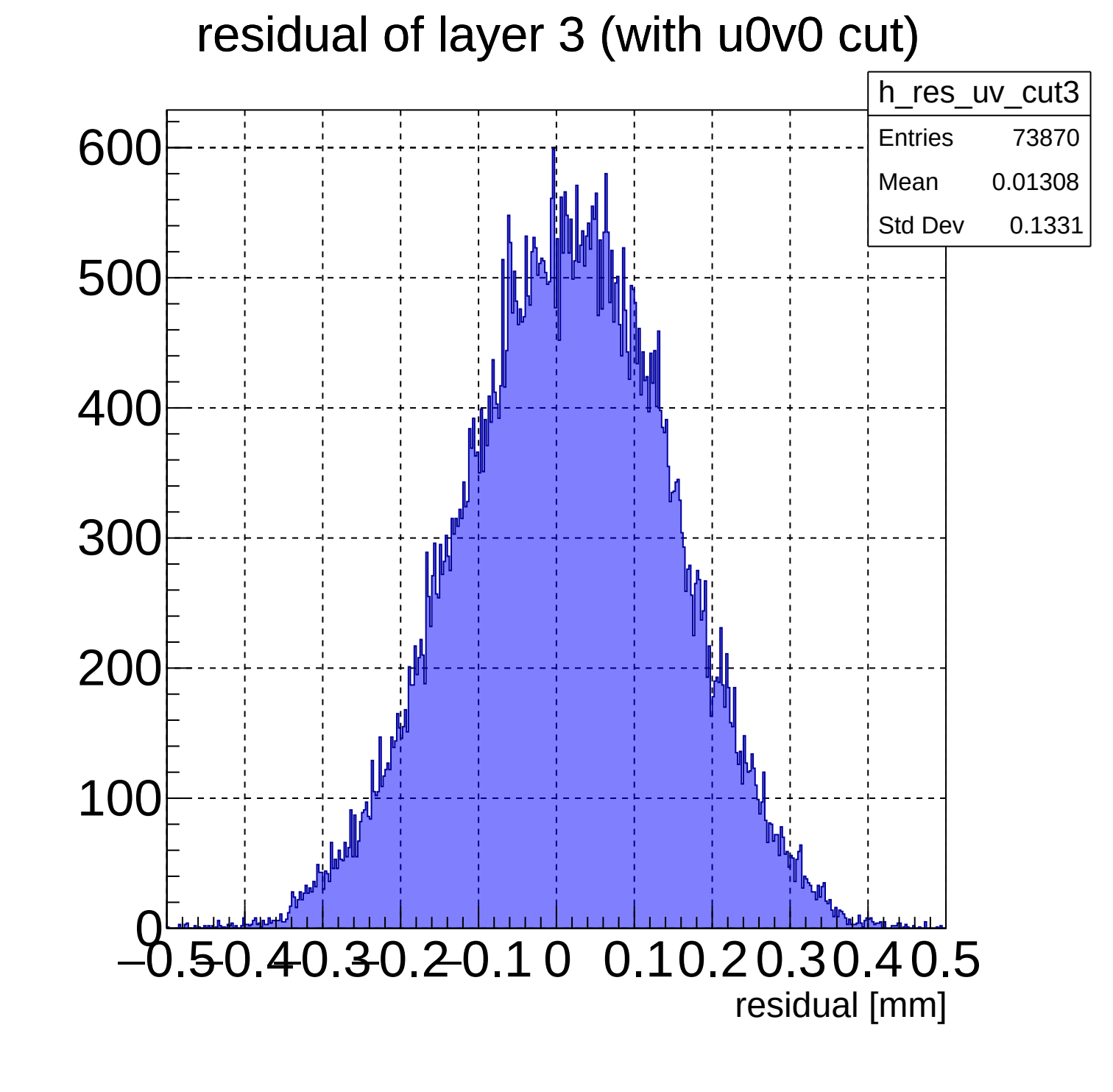

Track slope at UTOF (with x0y0 cut)
h_u0v0_xy_cut
Entries 411204
Mean x –0.003336
Mean y 0.001046
Std Dev x 0.02188
Std Dev y 0.01875
dy/dz [rad]
dx/dz [rad]
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
–0.8
–1
–1 –0.8 –0.6 –0.4 –0.2 0 0.2 0.4 0.6 0.8 1
5000
4000
3000
2000
1000
0

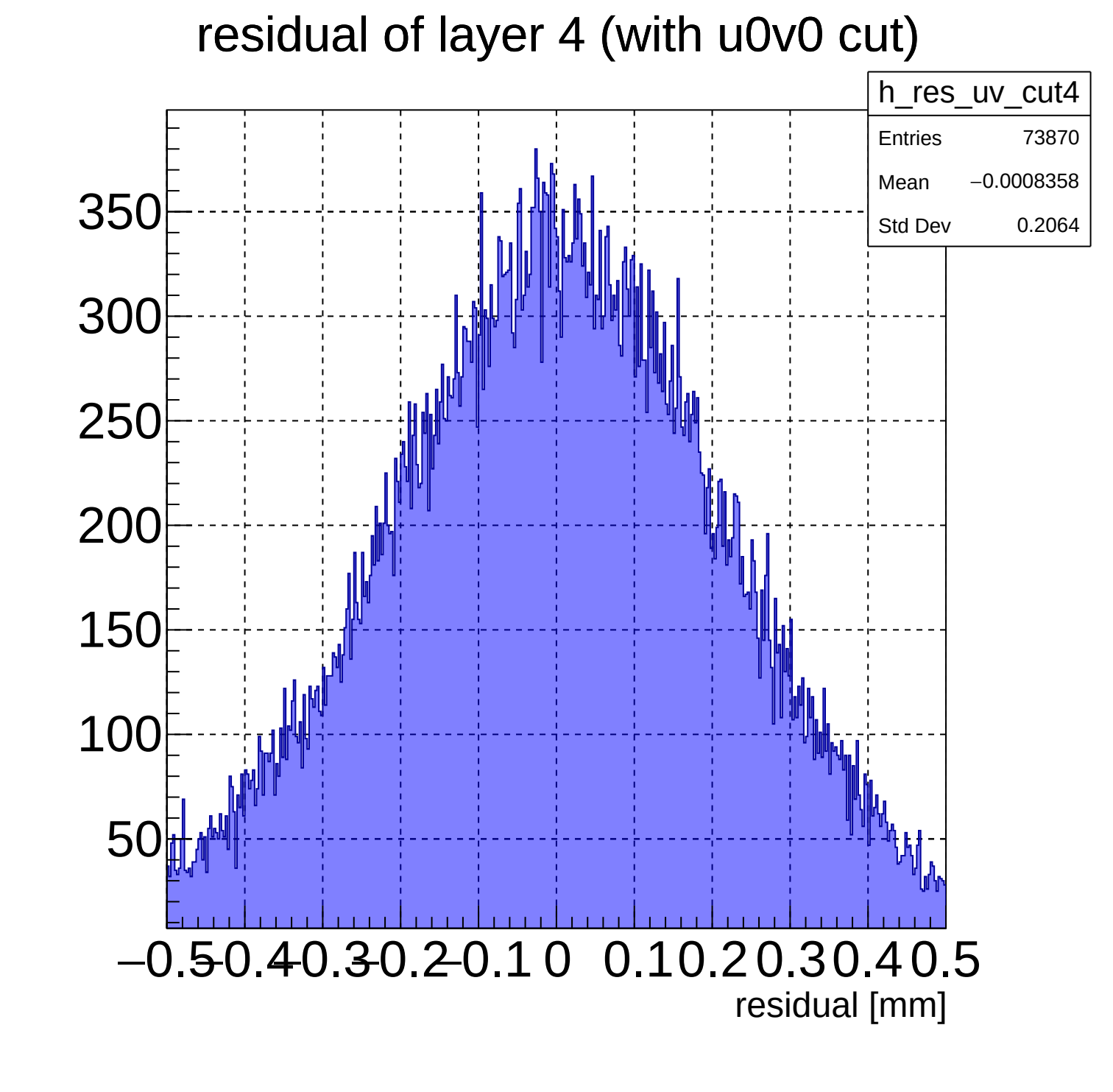

Track position at UTOF (with u0v0 cut)
y [mm]
200
150
100
50
0
−50
−100
−150
−200
−200 −150 −100 −50 0 50 100 150 200
x [mm]
120
100
80
60
40
20
0

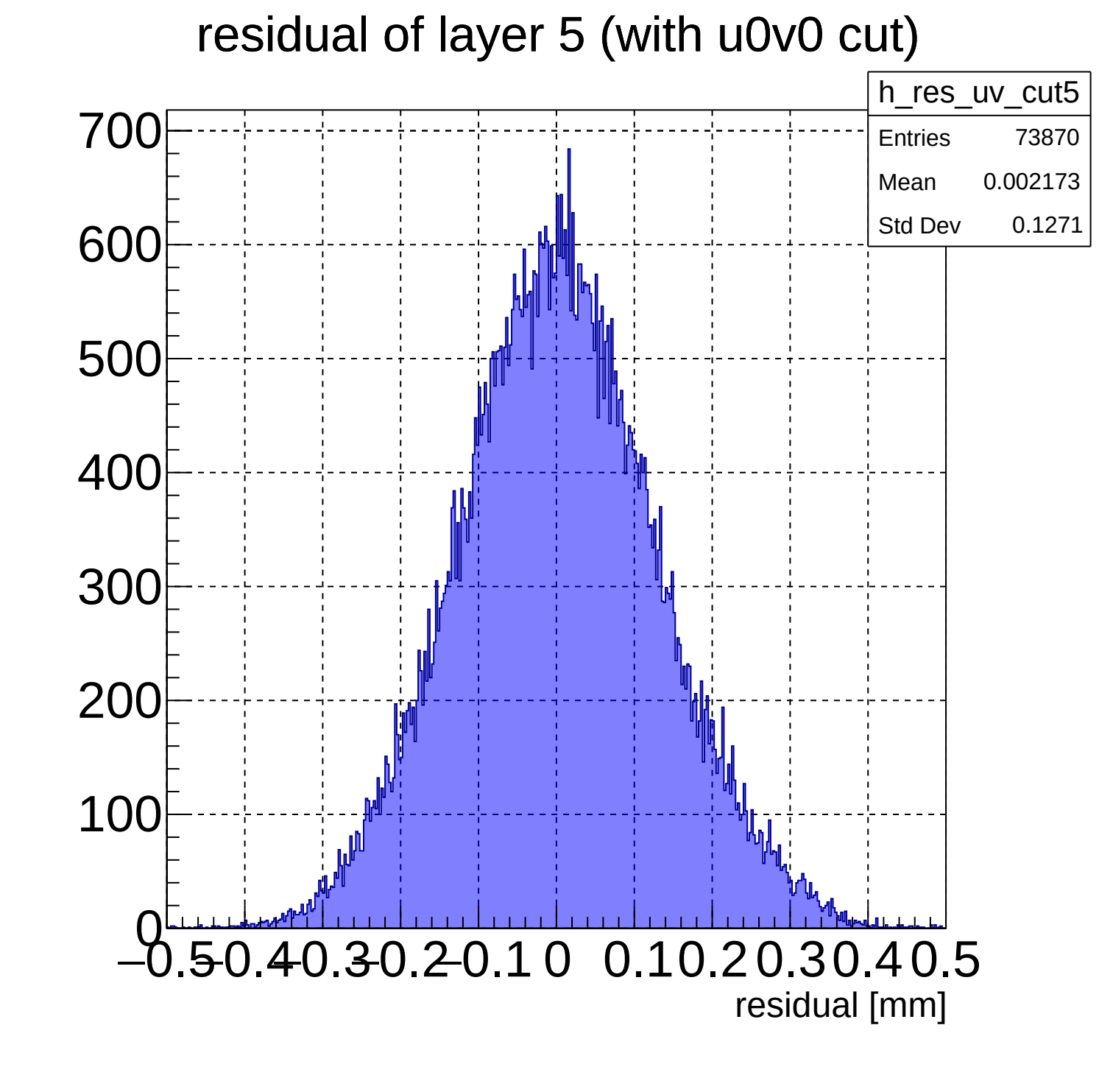

Track slope at UTOF (with u0v0 cut)
dy/dz [rad]
0.1
0.08
0.06
0.04
0.02
0
–0.02
–0.04
–0.06
–0.08
–0.1
–0.1
–0.08
–0.06
–0.04
–0.02
0
0.02
0.04
0.06
0.08
0.1
dx/dz [rad]
1800
1600
1400
1200
1000
800
600
400
200
0

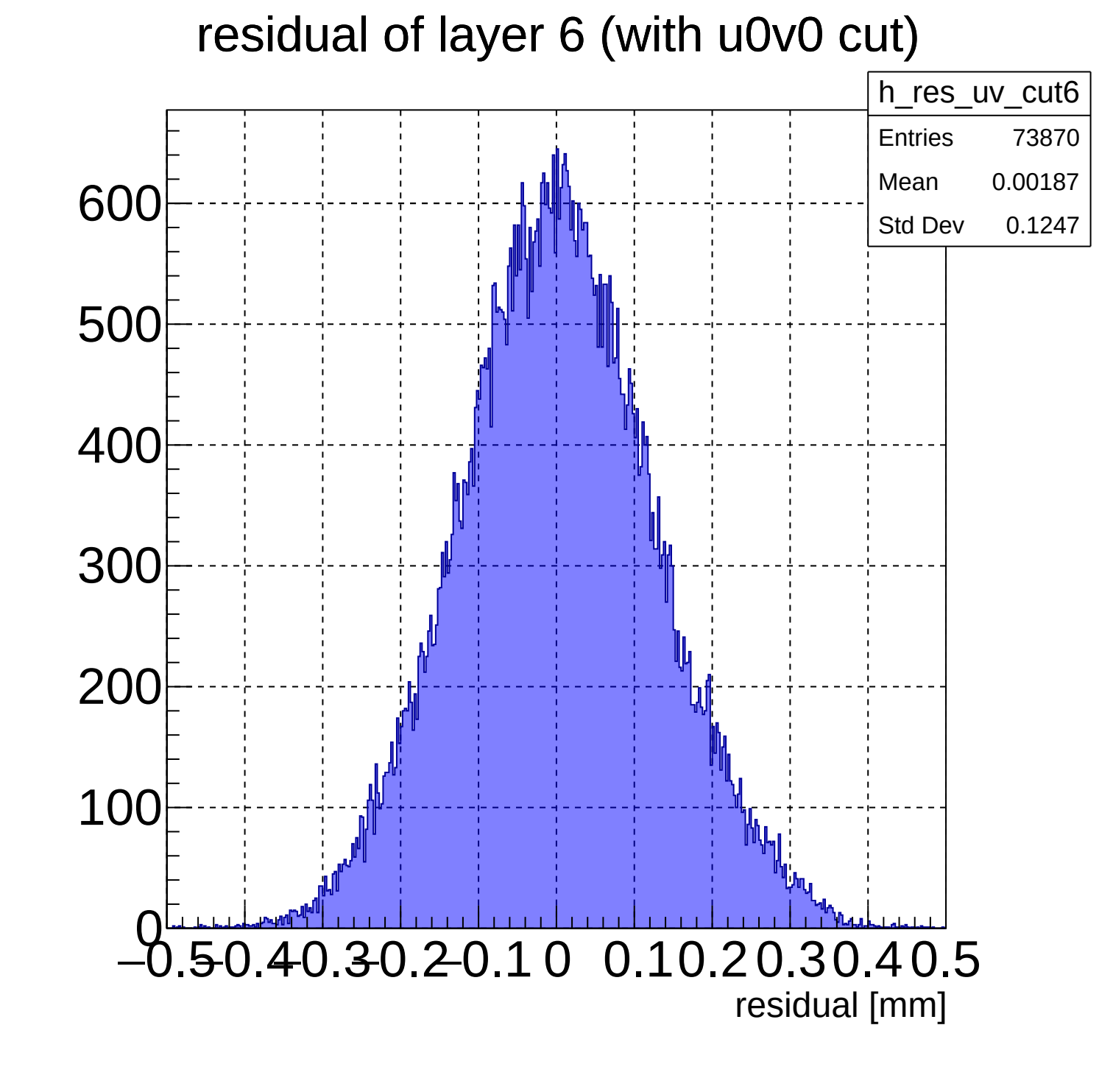

residual of layer 1 (with u0v0 cut)
h_res_uv_cut1
Entries 73870
Mean −0.02
Std Dev 0.2079
350
300
250
200
150
100
50
0
−0.5 −0.4 −0.3 −0.2 −0.1 0 0.1 0.2 0.3 0.4 0.5
residual [mm]

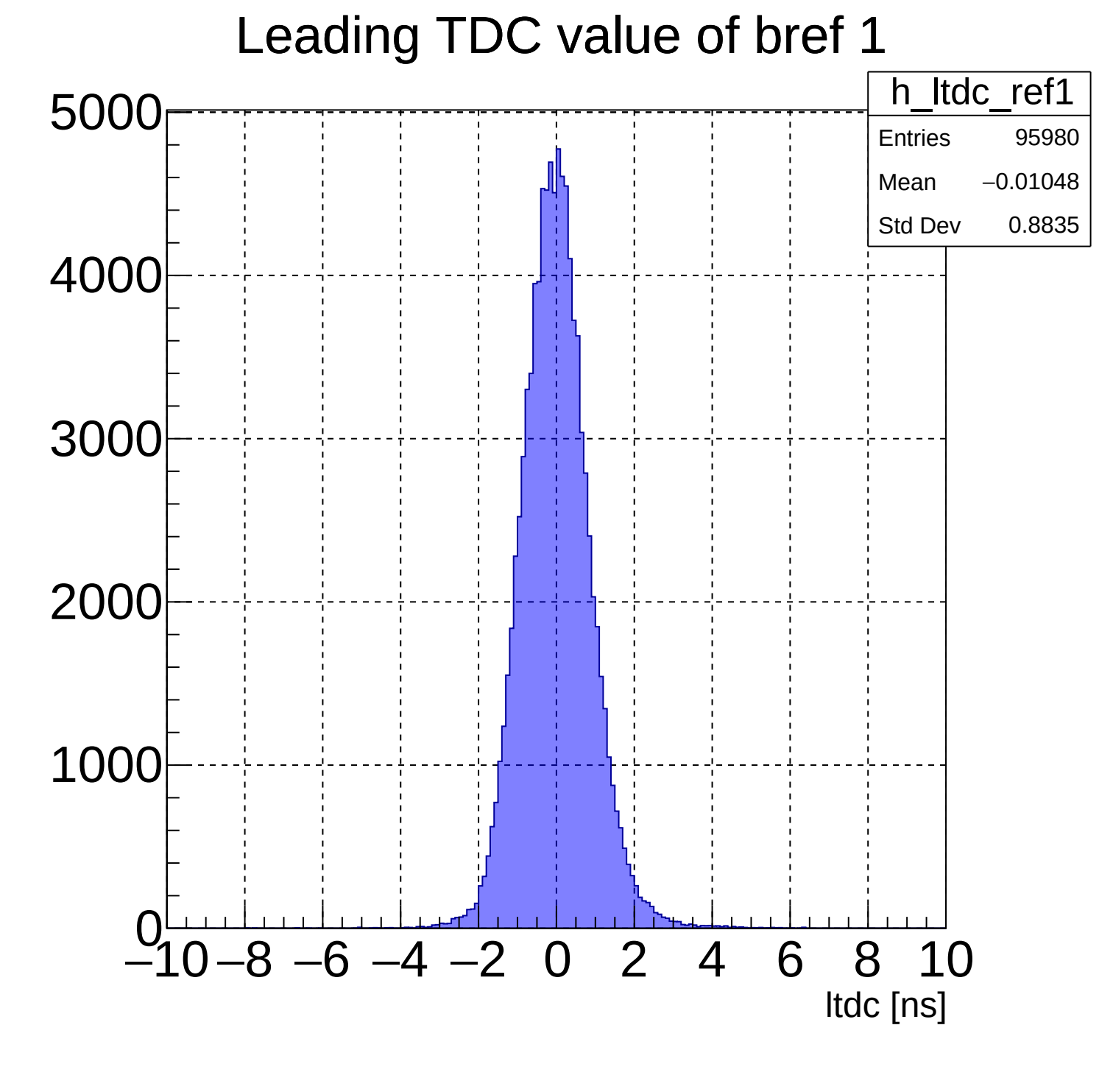

residual of layer 2 (with u0v0 cut)
h_res_uv_cut2
Entries 73870
Mean 0.01279
Std Dev 0.1306
600
500
400
300
200
100
0
−0.5 −0.4 −0.3 −0.2 −0.1 0 0.1 0.2 0.3 0.4 0.5
residual [mm]

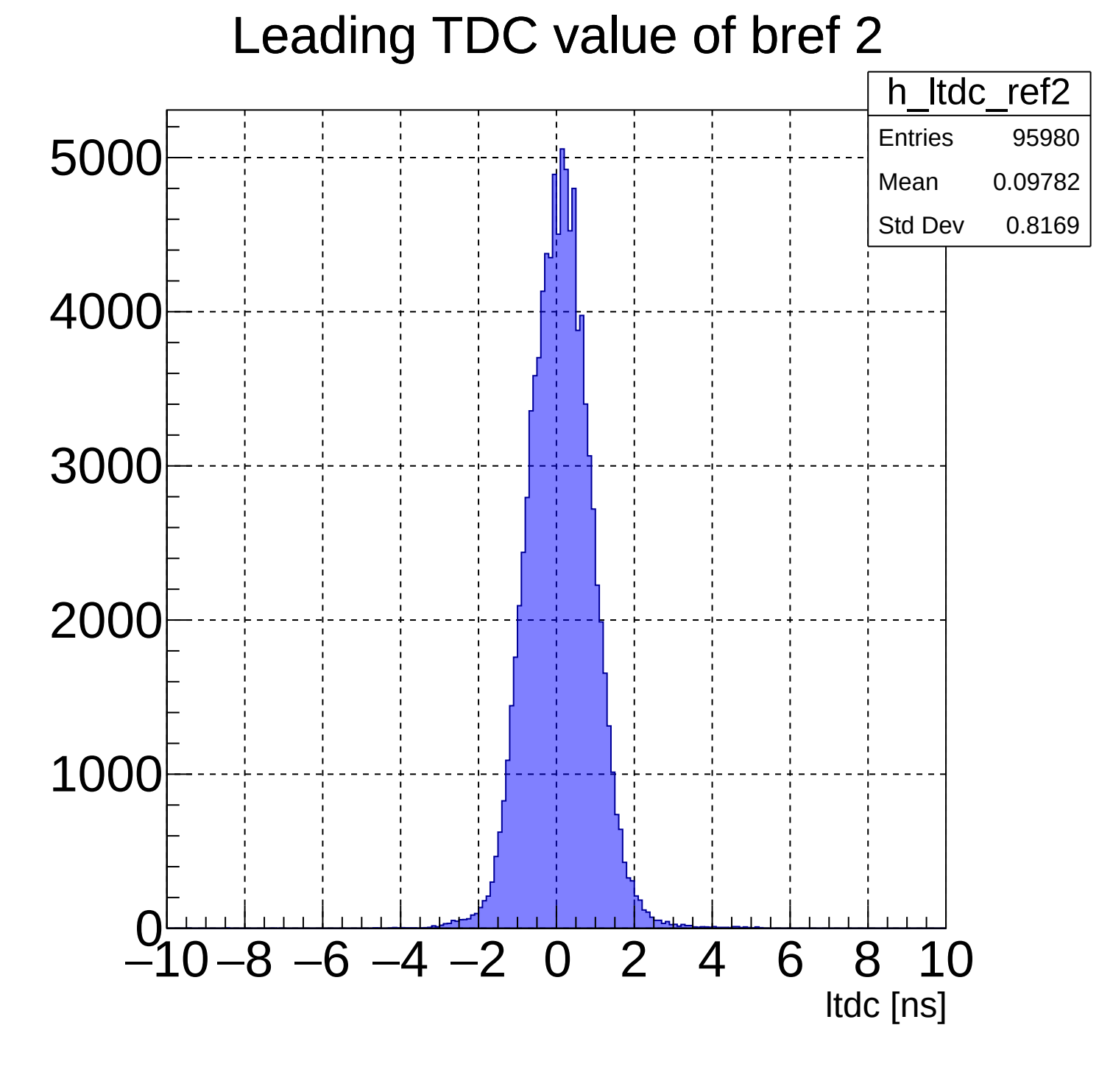

residual of layer 3 (with u0v0 cut)
h_res_uv_cut3
Entries 73870
Mean 0.01308
Std Dev 0.1331
600
500
400
300
200
100
0
−0.5 −0.4 −0.3 −0.2 −0.1 0 0.1 0.2 0.3 0.4 0.5
residual [mm]

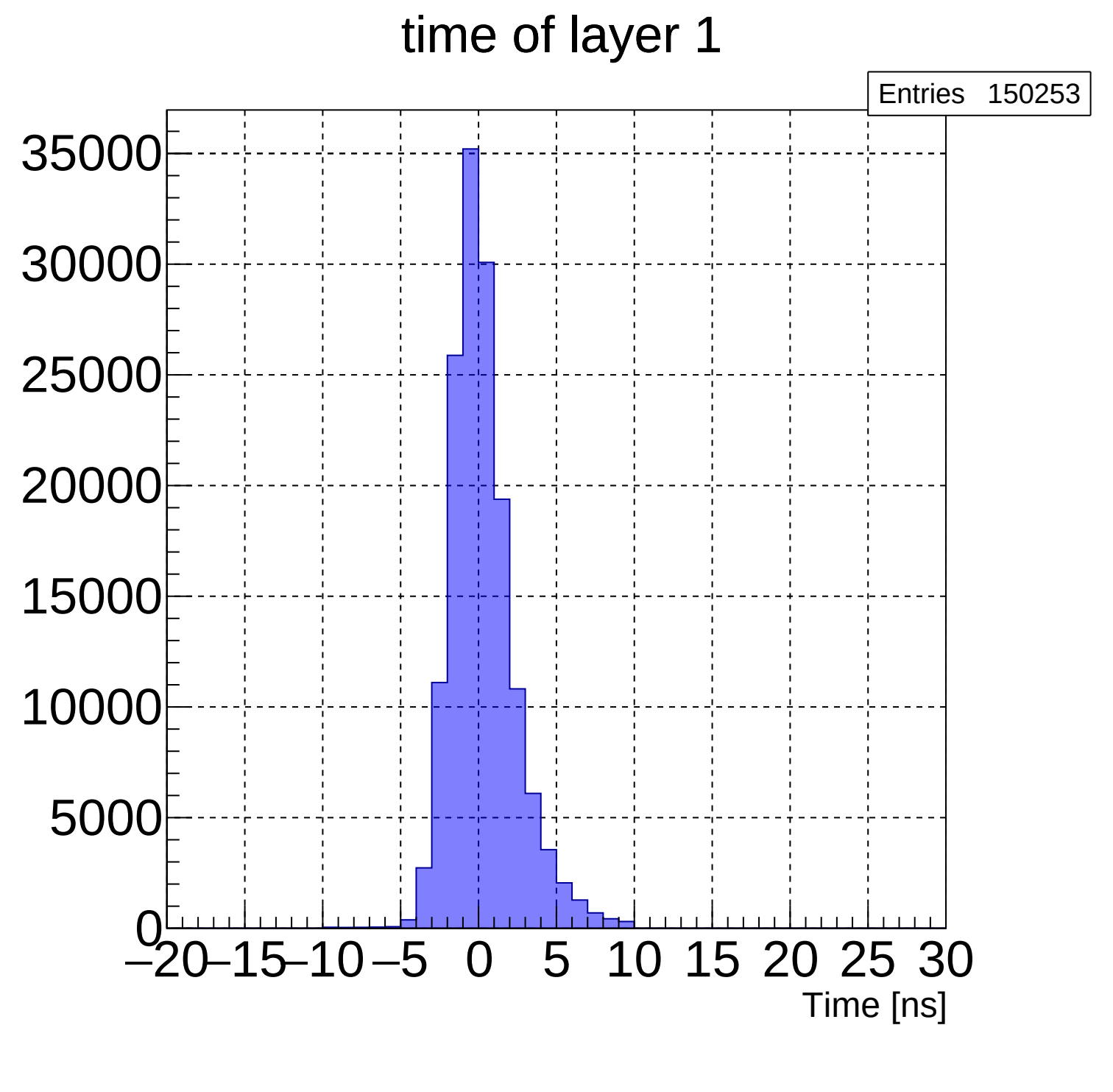

residual of layer 4 (with u0v0 cut)
h_res_uv_cut4
Entries 73870
Mean −0.0008358
Std Dev 0.2064
350
300
250
200
150
100
50
−0.5 −0.4 −0.3 −0.2 −0.1 0 0.1 0.2 0.3 0.4 0.5
residual [mm]

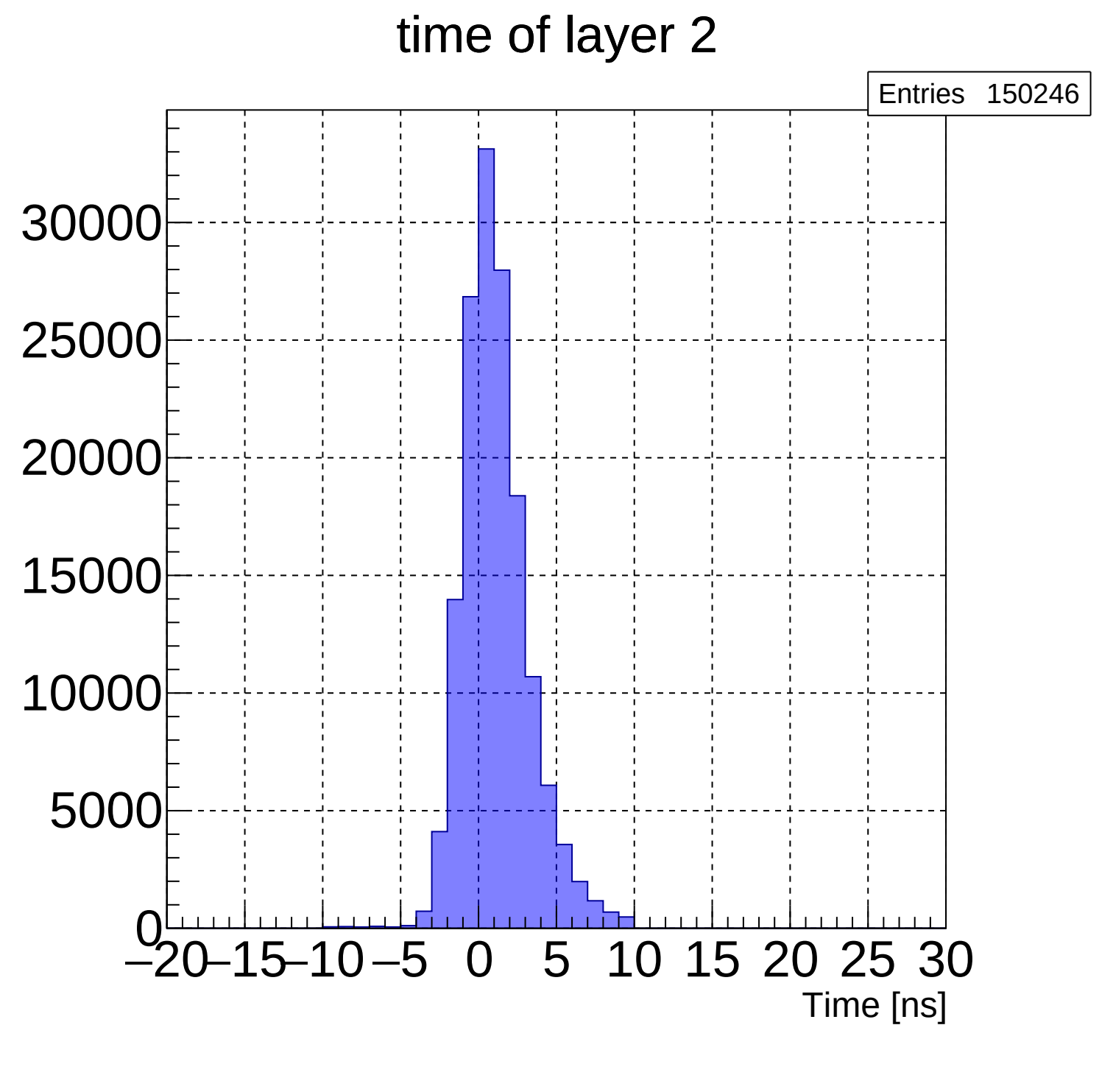

residual of layer 5 (with u0v0 cut)
h_res_uv_cut5
Entries 73870
Mean 0.002173
Std Dev 0.1271
700
600
500
400
300
200
100
0
−0.5 −0.4 −0.3 −0.2 −0.1 0 0.1 0.2 0.3 0.4 0.5
residual [mm]

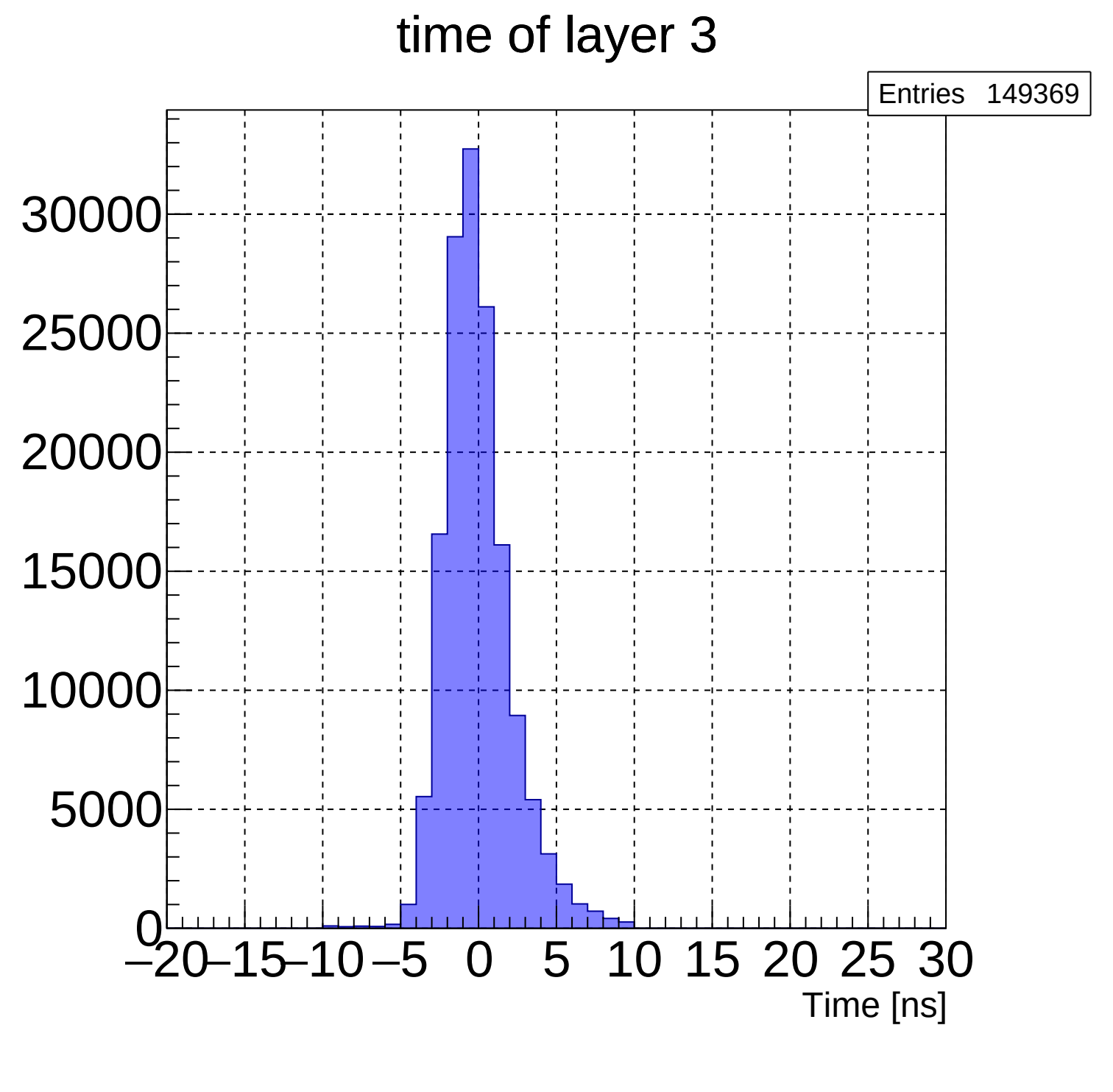

residual of layer 6 (with u0v0 cut)
h_res_uv_cut6
Entries 73870
Mean 0.00187
Std Dev 0.1247
600
500
400
300
200
100
0
−0.5 −0.4 −0.3 −0.2 −0.1 0 0.1 0.2 0.3 0.4 0.5
residual [mm]

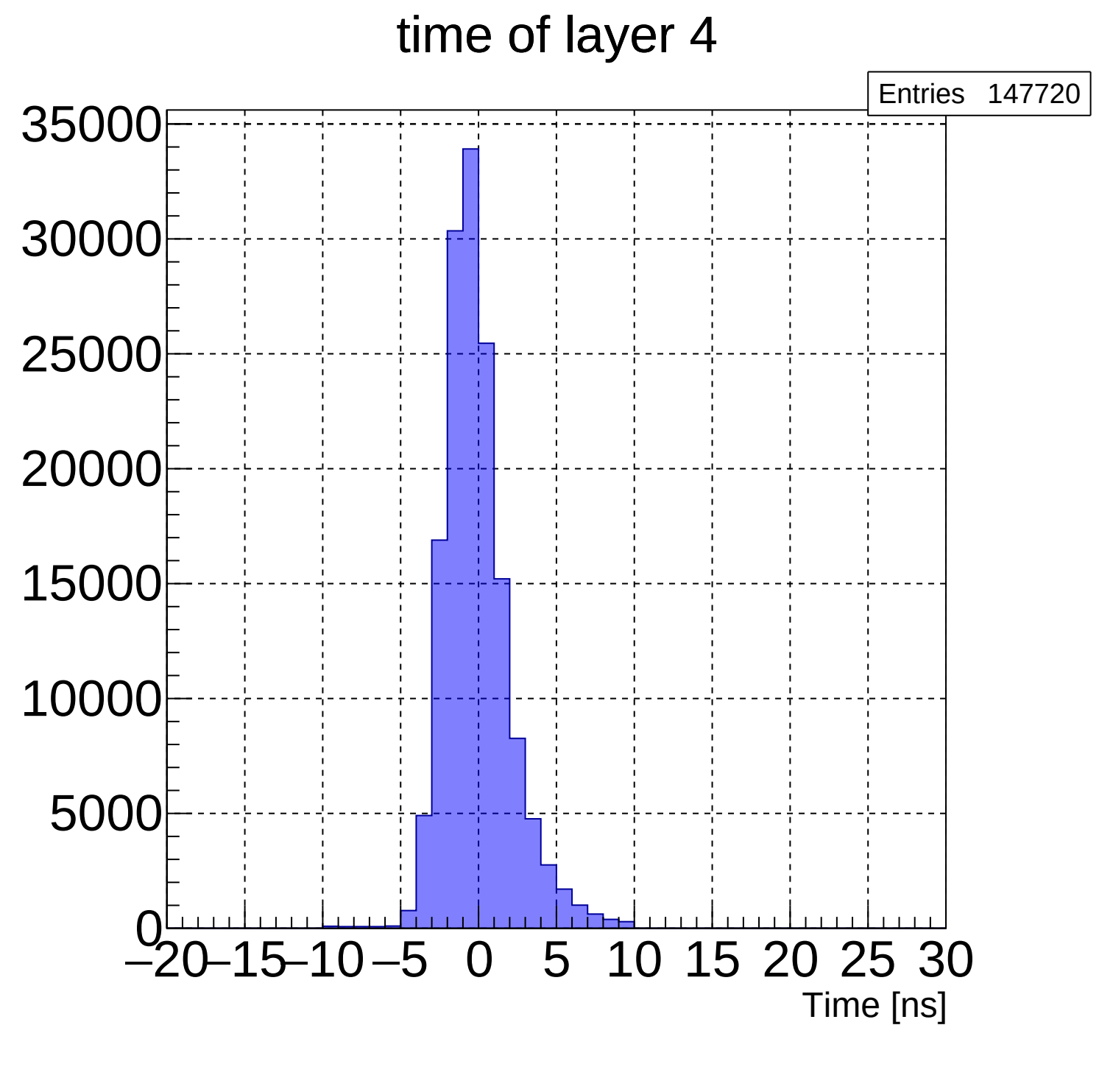

Leading TDC value of bref 1
h_ltdc_ref1
Entries 95980
Mean –0.01048
Std Dev 0.8835
5000
4000
3000
2000
1000
0
–10 –8 –6 –4 –2 0 2 4 6 8 10
ltdc [ns]


Leading TDC value of bref 2
h_ltdc_ref2
Entries 95980
Mean 0.09782
Std Dev 0.8169
5000
4000
3000
2000
1000
0
–10 –8 –6 –4 –2 0 2 4 6 8 10
ltdc [ns]


time of layer 1
Entries 150253
35000
30000
25000
20000
15000
10000
5000
0
–20
–15
–10
–5
0
5
10
15
20
25
30
Time [ns]


time of layer 2
Entries 150246
30000
25000
20000
15000
10000
5000
0
–20
–15
–10
–5
0
5
10
15
20
25
30
Time [ns]


time of layer 3
Entries 149369
30000
25000
20000
15000
10000
5000
0
–20
–15
–10
–5
0
5
10
15
20
25
30
Time [ns]


time of layer 4
Entries 147720
35000
30000
25000
20000
15000
10000
5000
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–5
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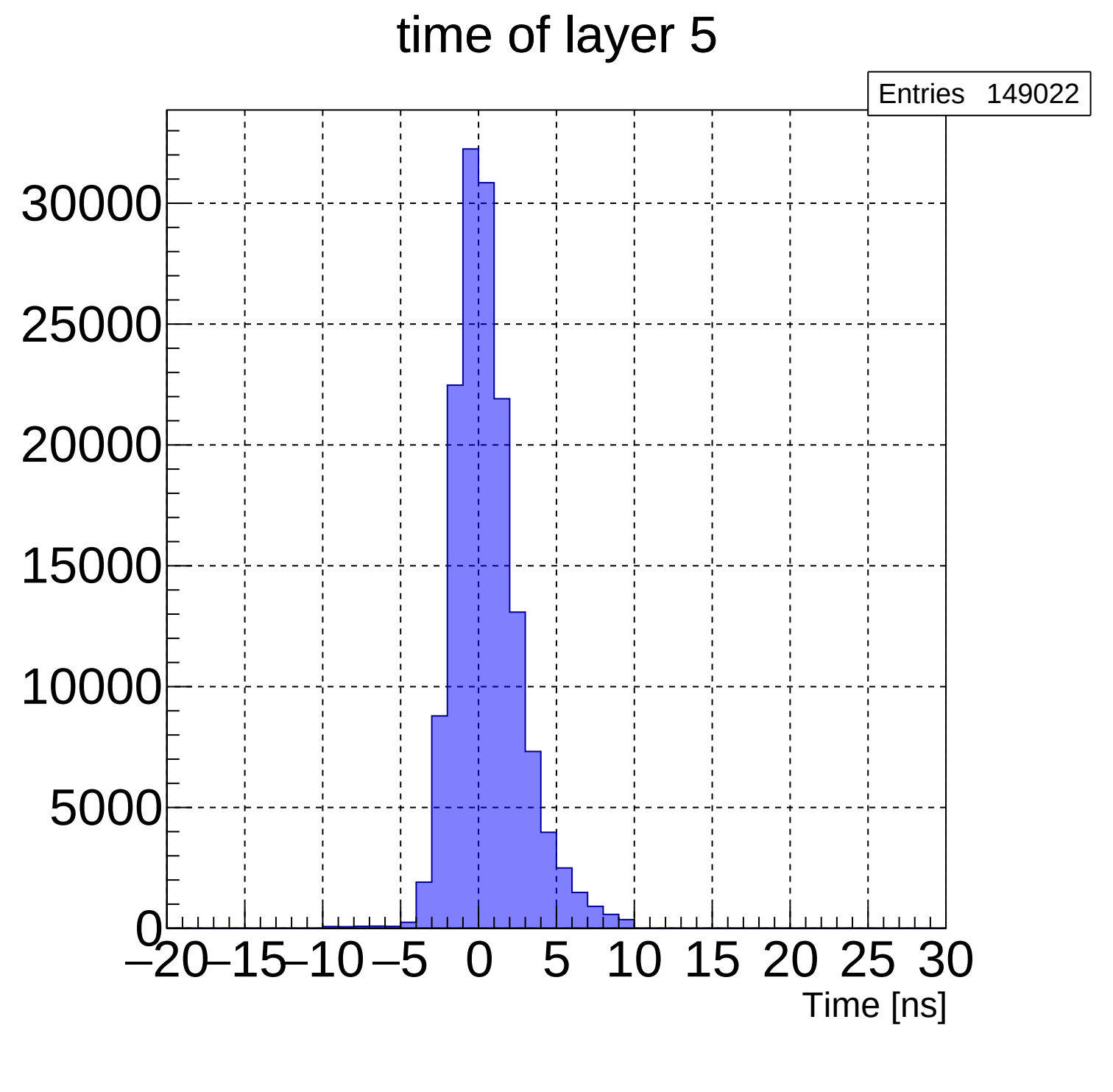
5
10
15
20
25
30
Time [ns]


time of layer 5
Entries 149022
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20000
15000
10000
5000
0
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–10
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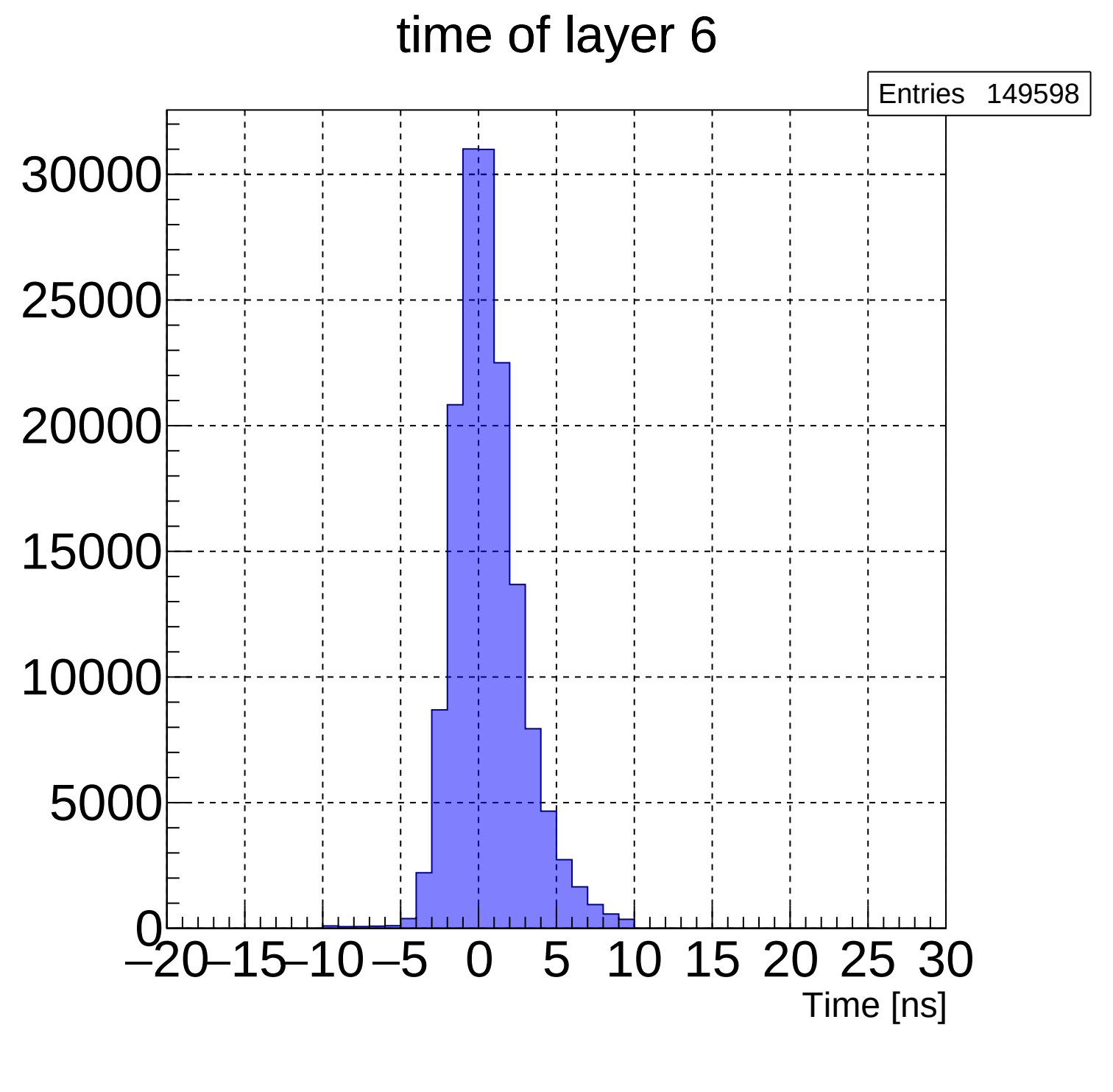
0
5
10
15
20
25
30
Time [ns]


time of layer 6
Entries 149598
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10000
5000
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0
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25
30
Time [ns]