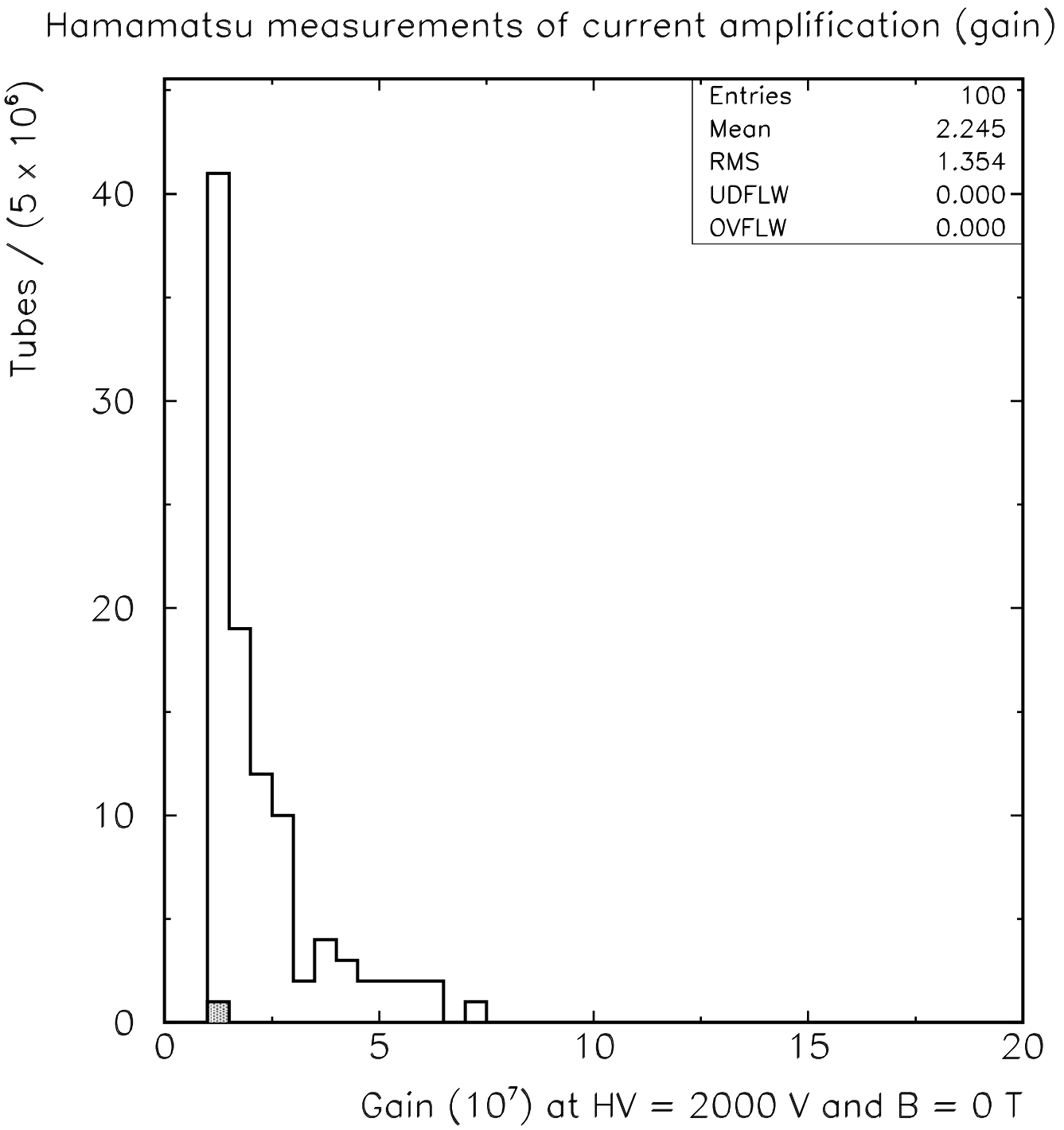
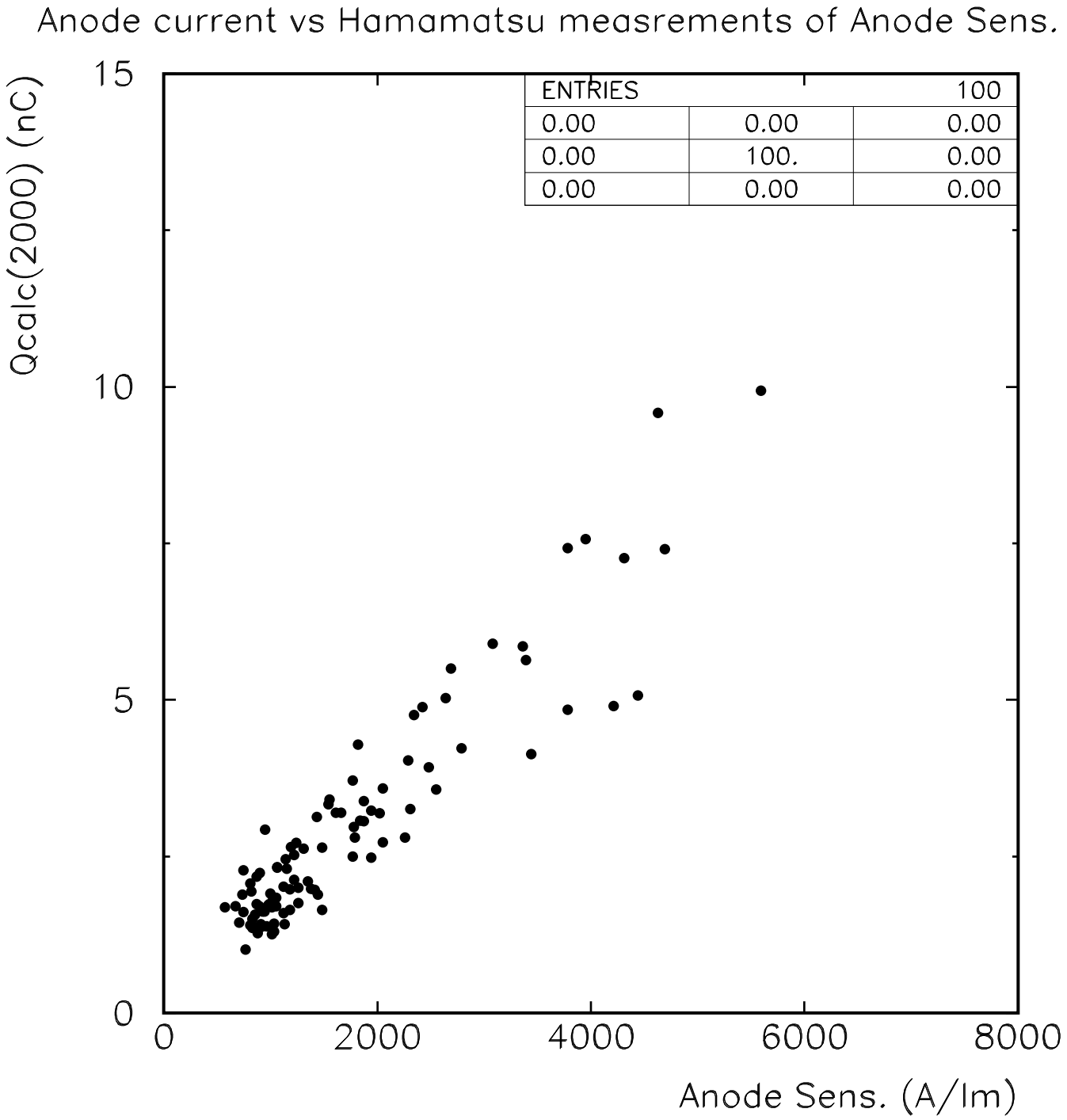
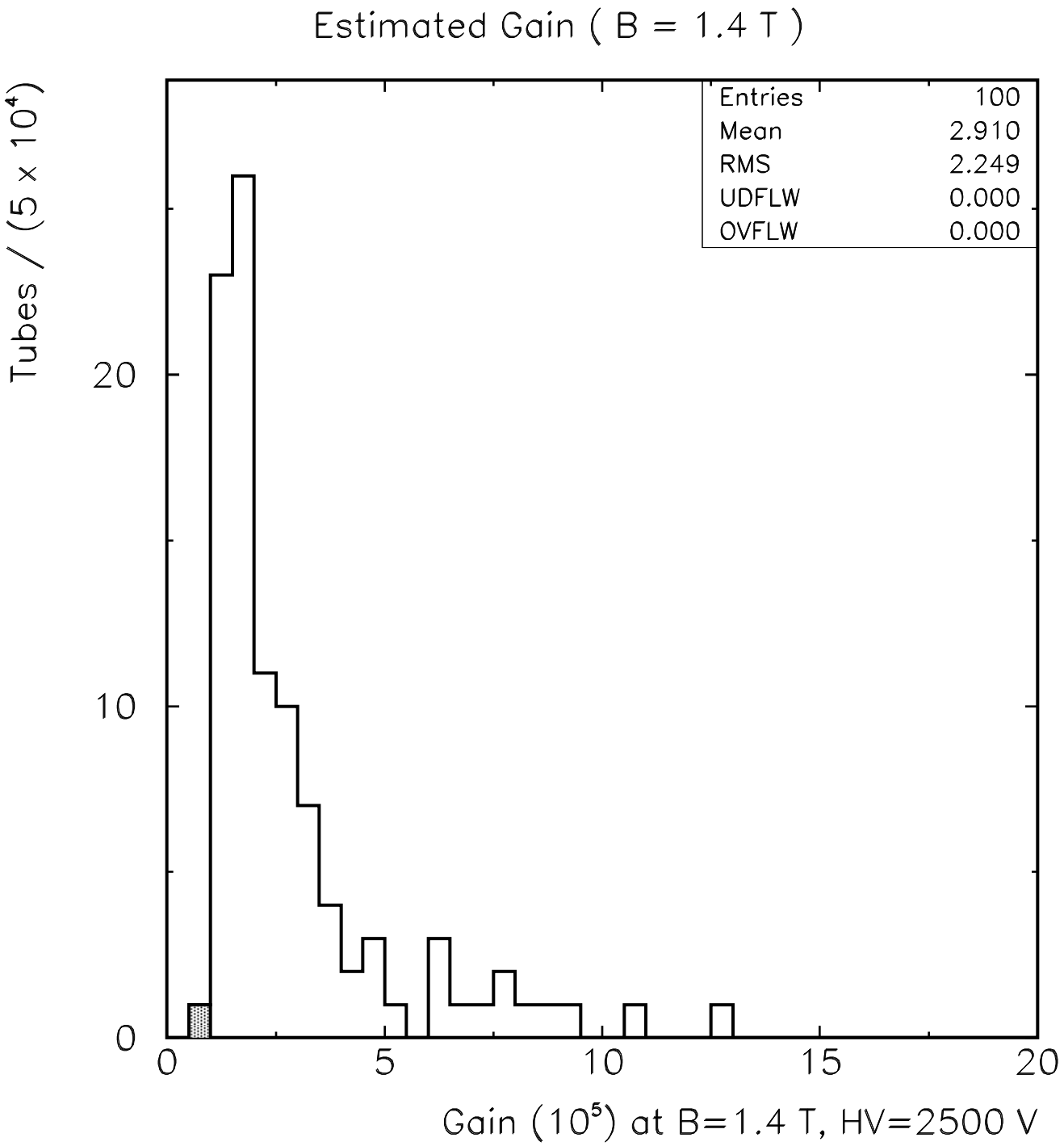
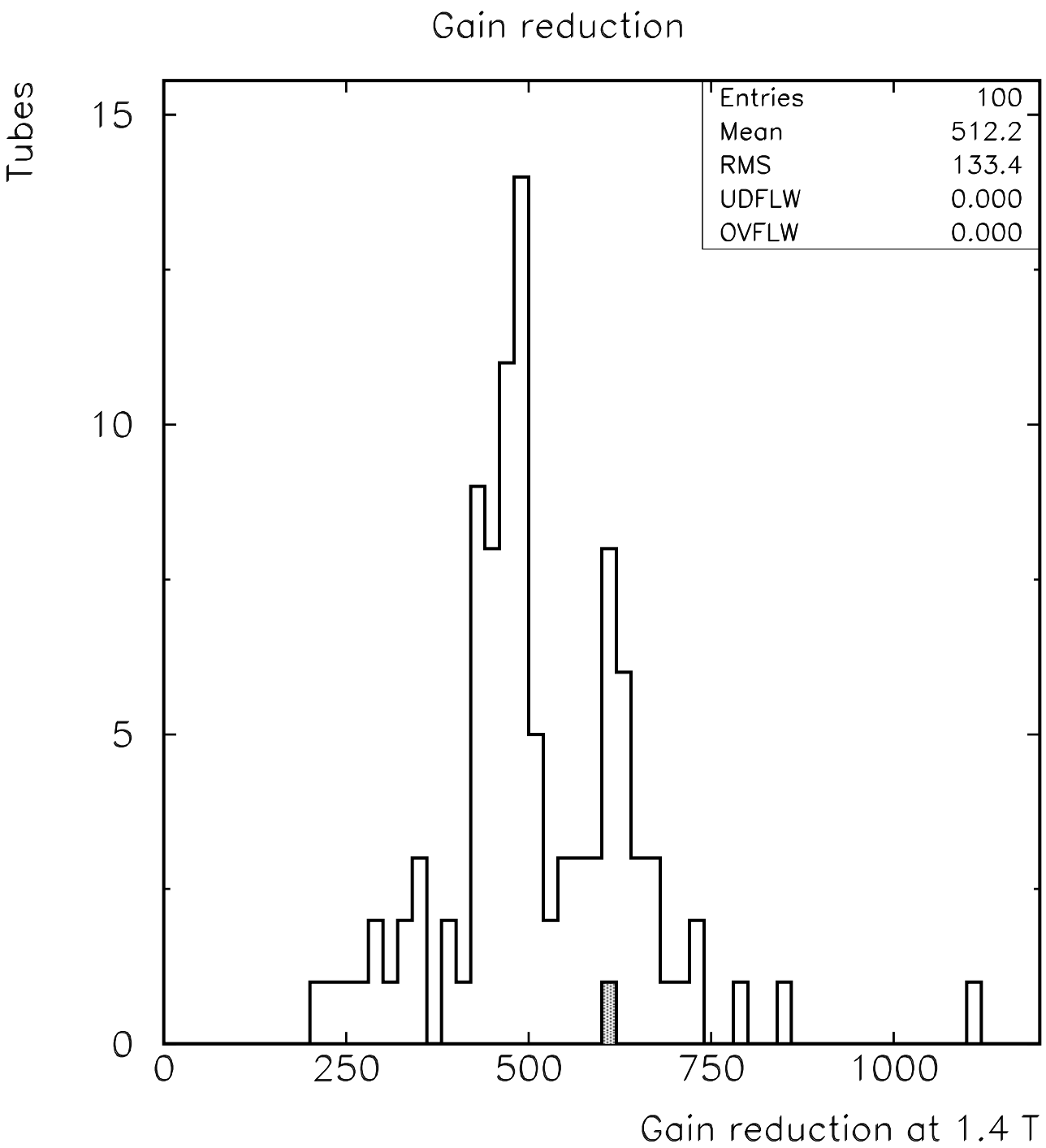
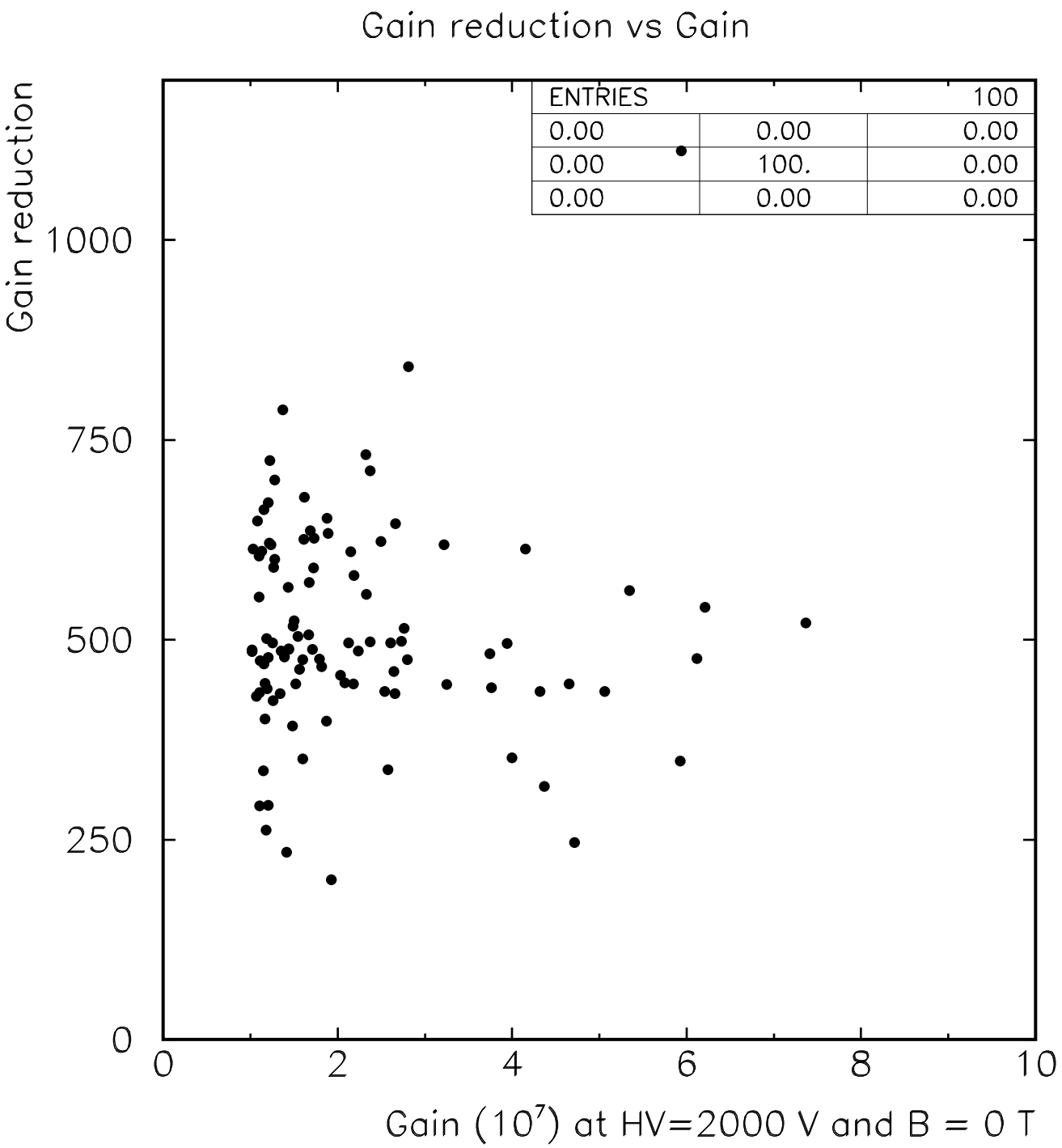
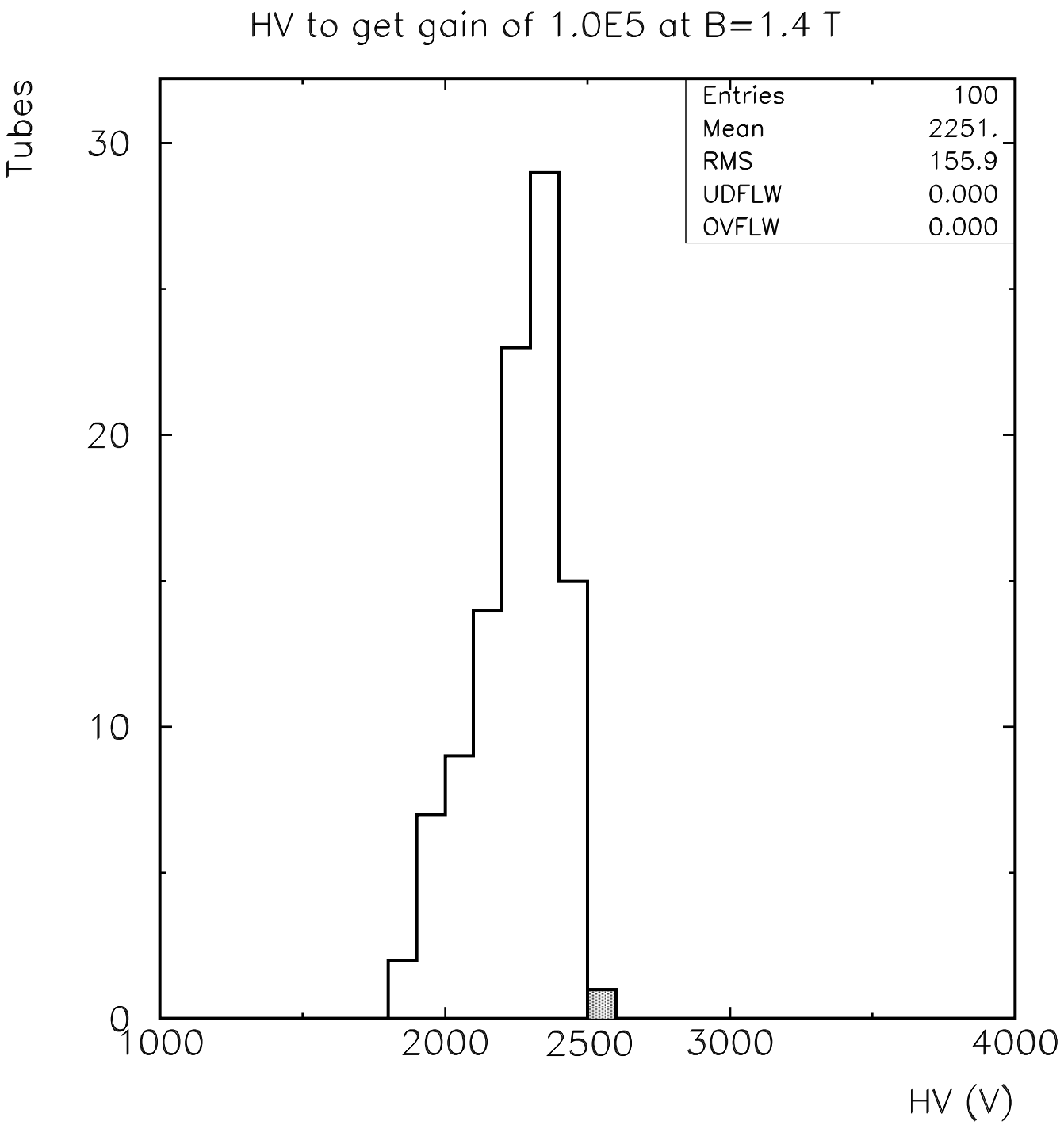

Hamamatsu measurements of current amplification (gain)
Entries 100
Mean 2.245
RMS 1.354
UDFLW 0.000
OVFLW 0.000
Tubes / (5 x 10^6)
0
10
20
30
40
0
5
10
15
20
Gain (10^7) at HV = 2000 V and B = 0 T

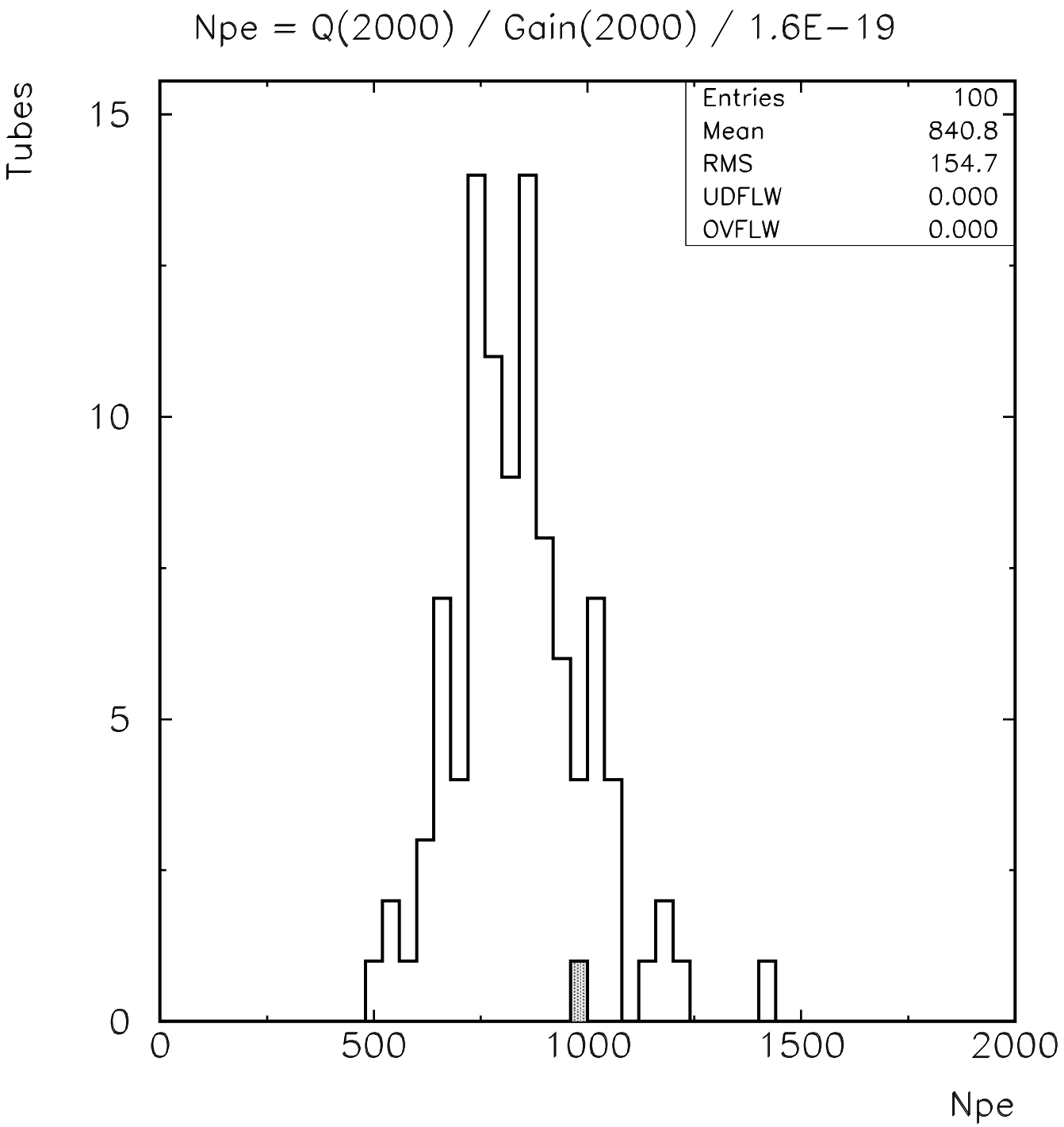

Anode current vs Hamamatsu measrements of Anode Sens.
ENTRIES 100
0.00 0.00 0.00
0.00 100. 0.00
0.00 0.00 0.00
Qcalc(2000) (nC)
15
10
5
0
0
2000
4000
6000
8000
Anode Sens. (A/lm)

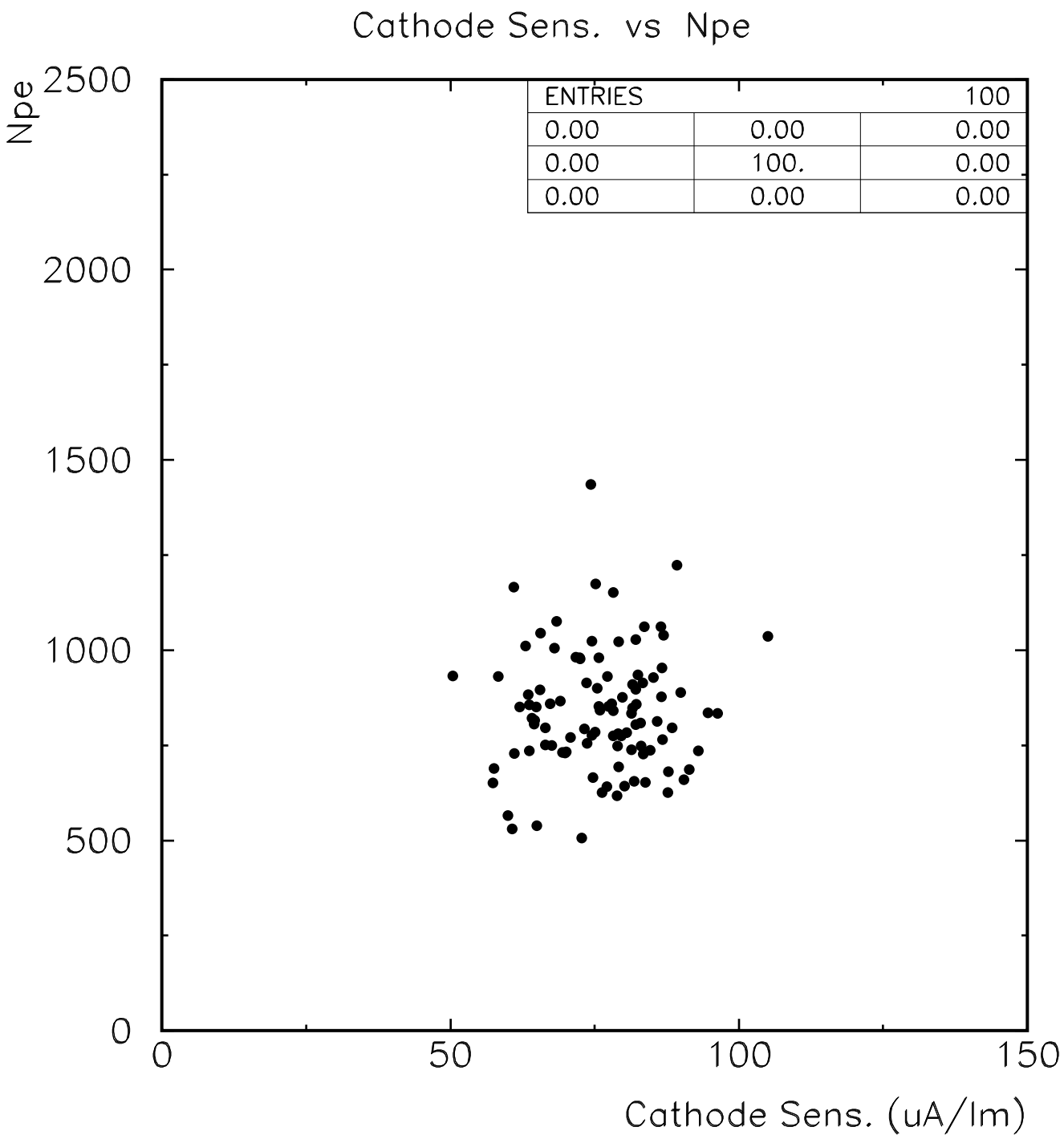

Estimated Gain (B = 1.4 T)
Entries 100
Mean 2.910
RMS 2.249
UDFLW 0.000
OVFLW 0.000
Tubes / (5 x 10⁴)
0
10
20
0
5
10
15
20
Gain (10⁵) at B=1.4 T, HV=2500 V

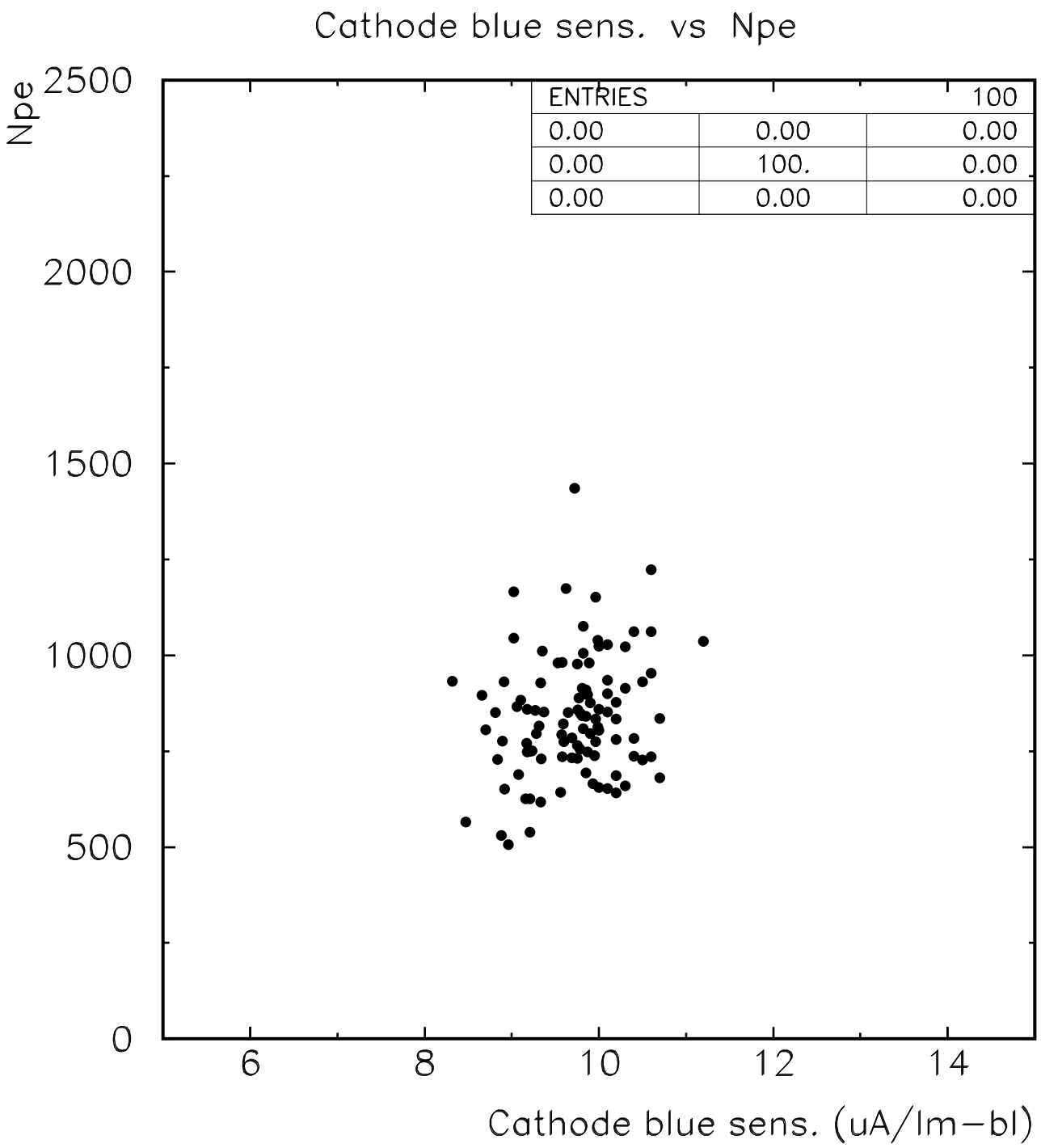

Gain reduction
Tubes
15
10
5
0
0
250
500
750
1000
Gain reduction at 1.4 T
Entries 100
Mean 512.2
RMS 133.4
UDFLW 0.000
OVFLW 0.000

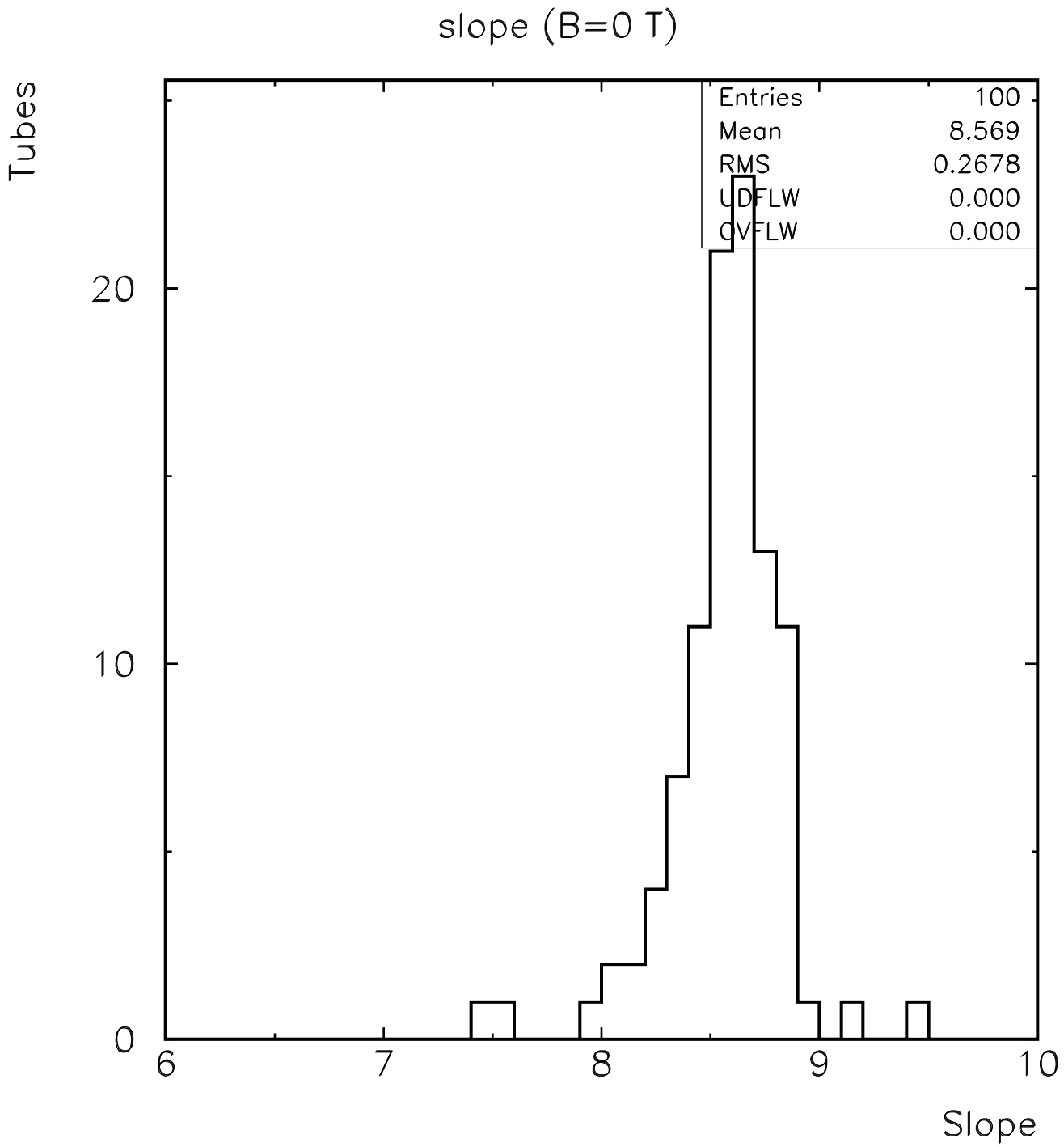

Gain reduction vs Gain
ENTRIES 100
0.00 0.00 0.00
0.00 100. 0.00
0.00 0.00 0.00
Gain reduction
1000
750
500
250
0
0
2
4
6
8
10
Gain (10^7) at HV=2000 V and B = 0 T

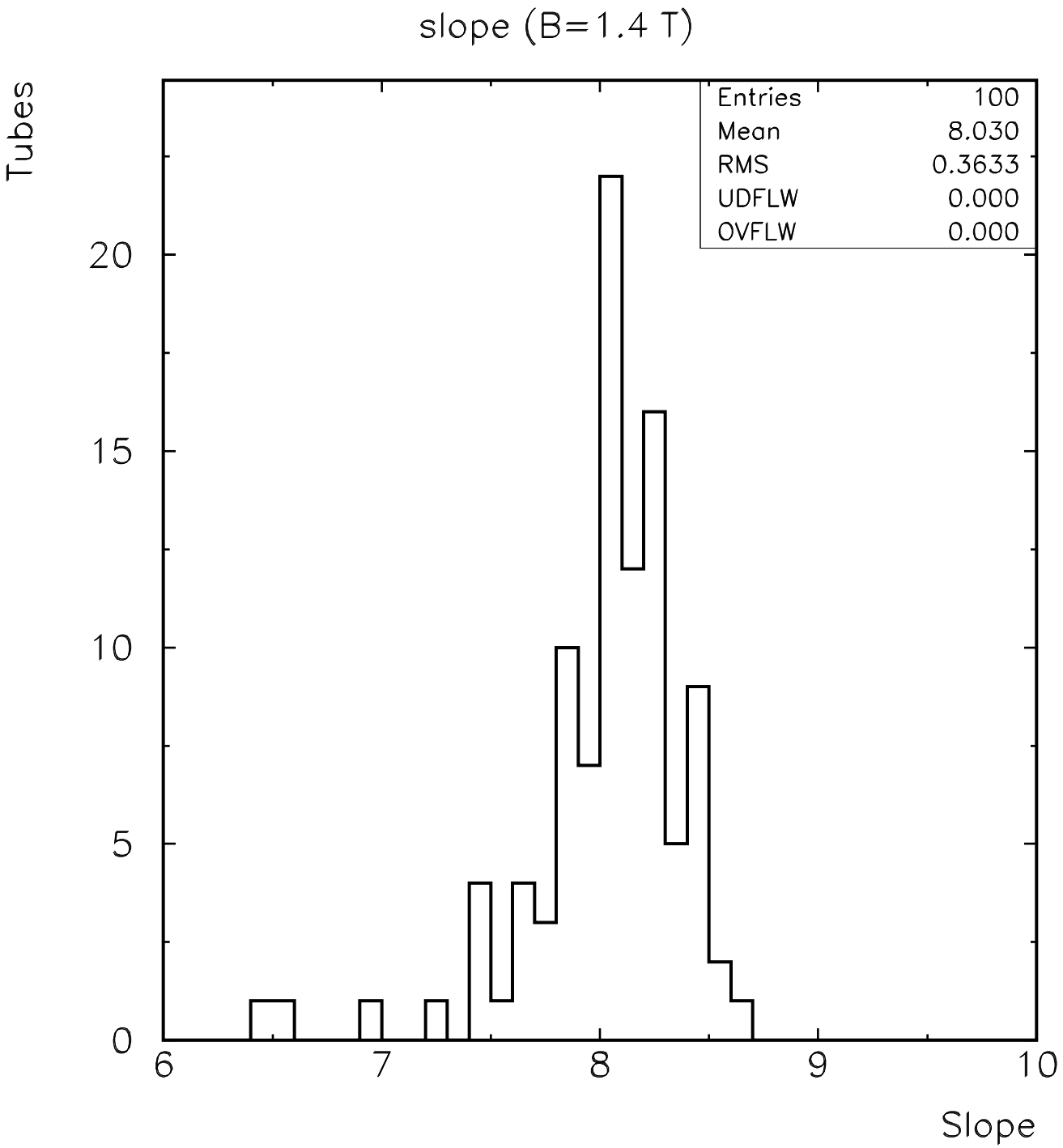

HV to get gain of 1.0E5 at B=1.4 T
Tubes
Entries 100
Mean 2251.
RMS 155.9
UDFLW 0.000
OVFLW 0.000
30
20
10
0
1000
2000
2500
3000
4000
HV (V)

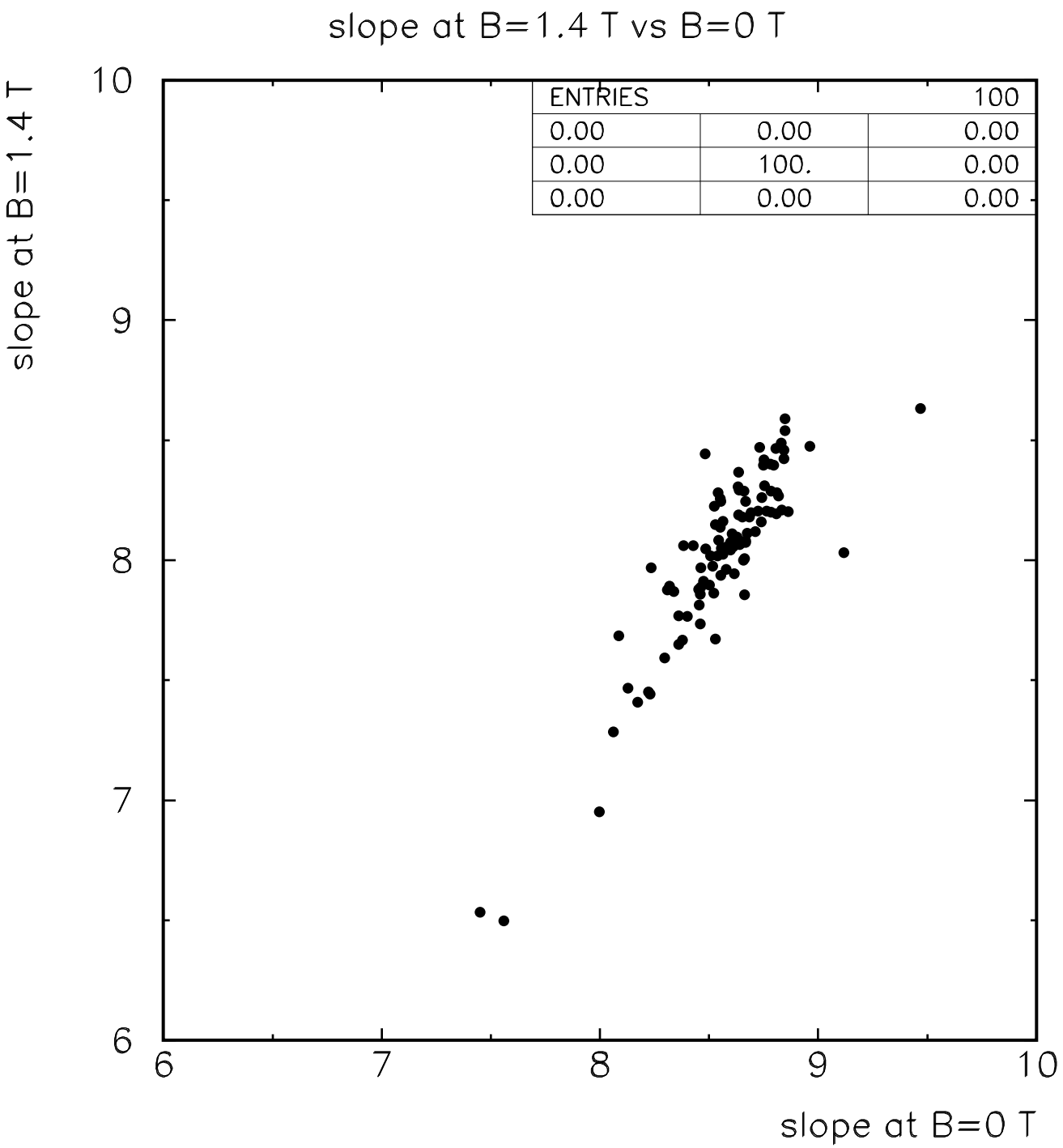

Npe = Q(2000) / Gain(2000) / 1.6E−19
Tubes
15
10
5
0
0
500
1000
1500
2000
Npe
Entries 100
Mean 840.8
RMS 154.7
UDFLW 0.000
OVFLW 0.000

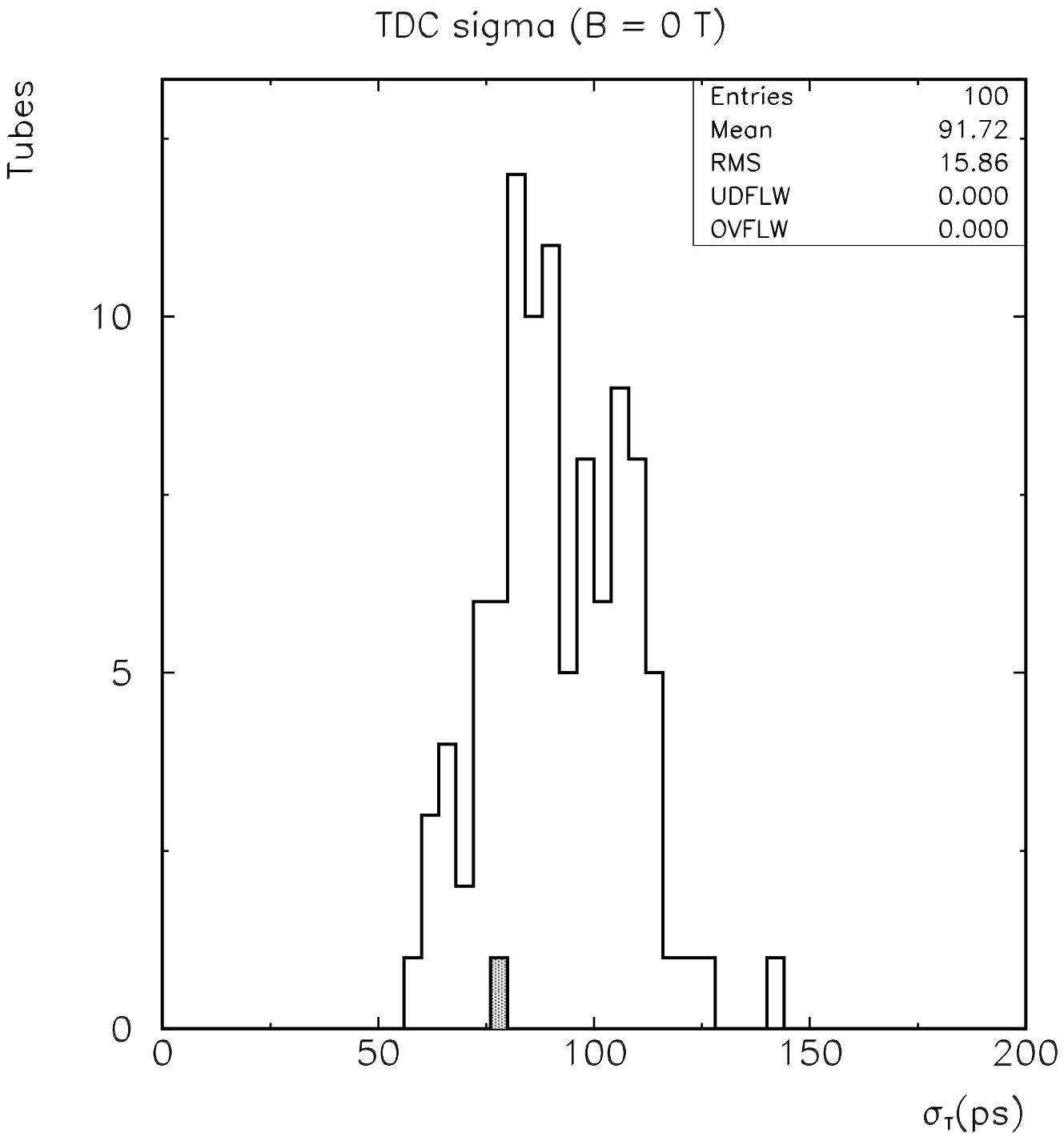

Cathode Sens. vs Npe
ENTRIES 100
0.00 0.00 0.00
0.00 100. 0.00
0.00 0.00 0.00
Npe
2500
2000
1500
1000
500
0
0
50
100
150
Cathode Sens. (uA/lm)

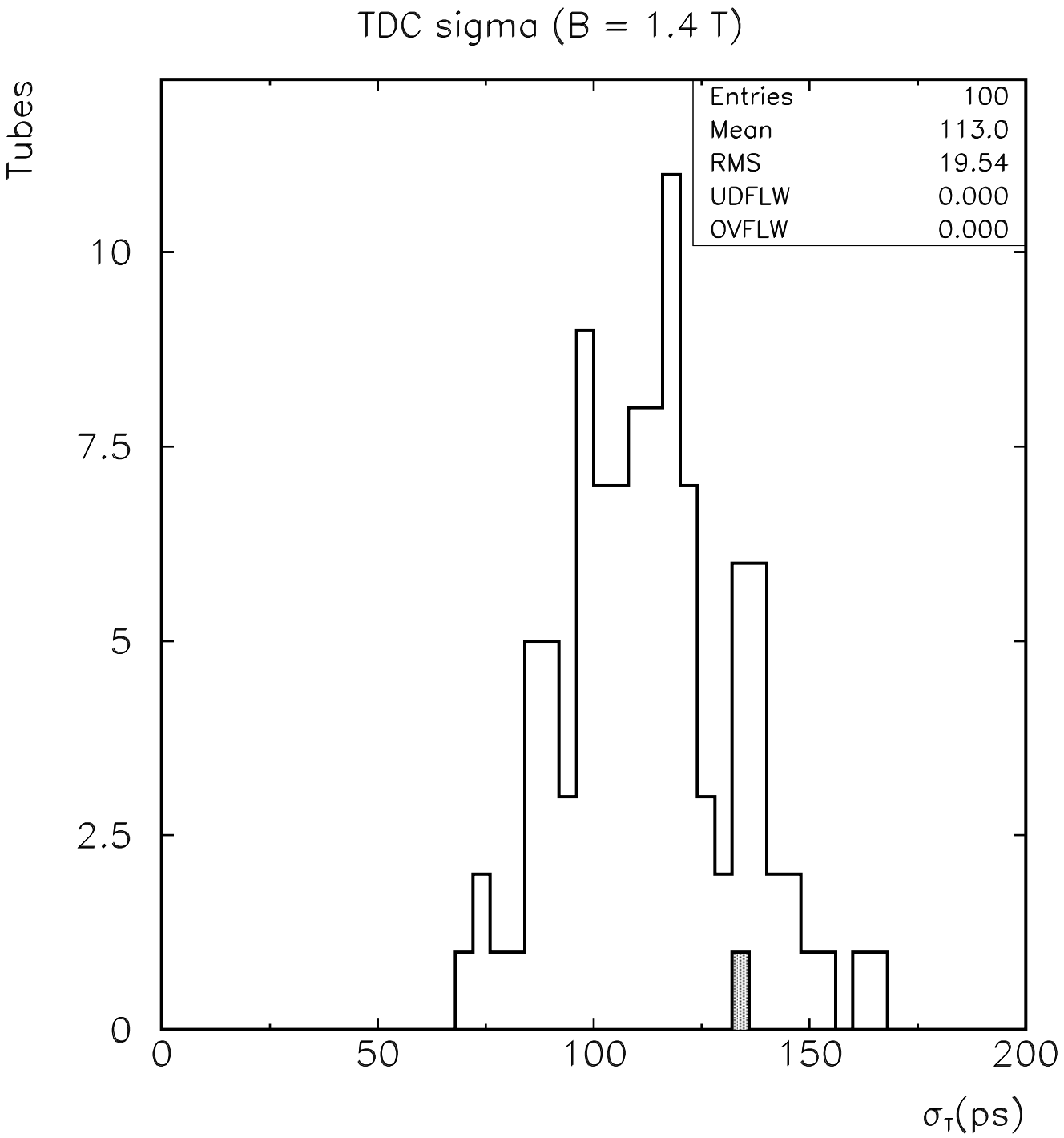

Cathode blue sens. vs Npe
Npe
2500
2000
1500
1000
500
0
6
8
10
12
14
Cathode blue sens. (uA/lm−bl)
ENTRIES 100
0.00 0.00 0.00
0.00 100. 0.00
0.00 0.00 0.00

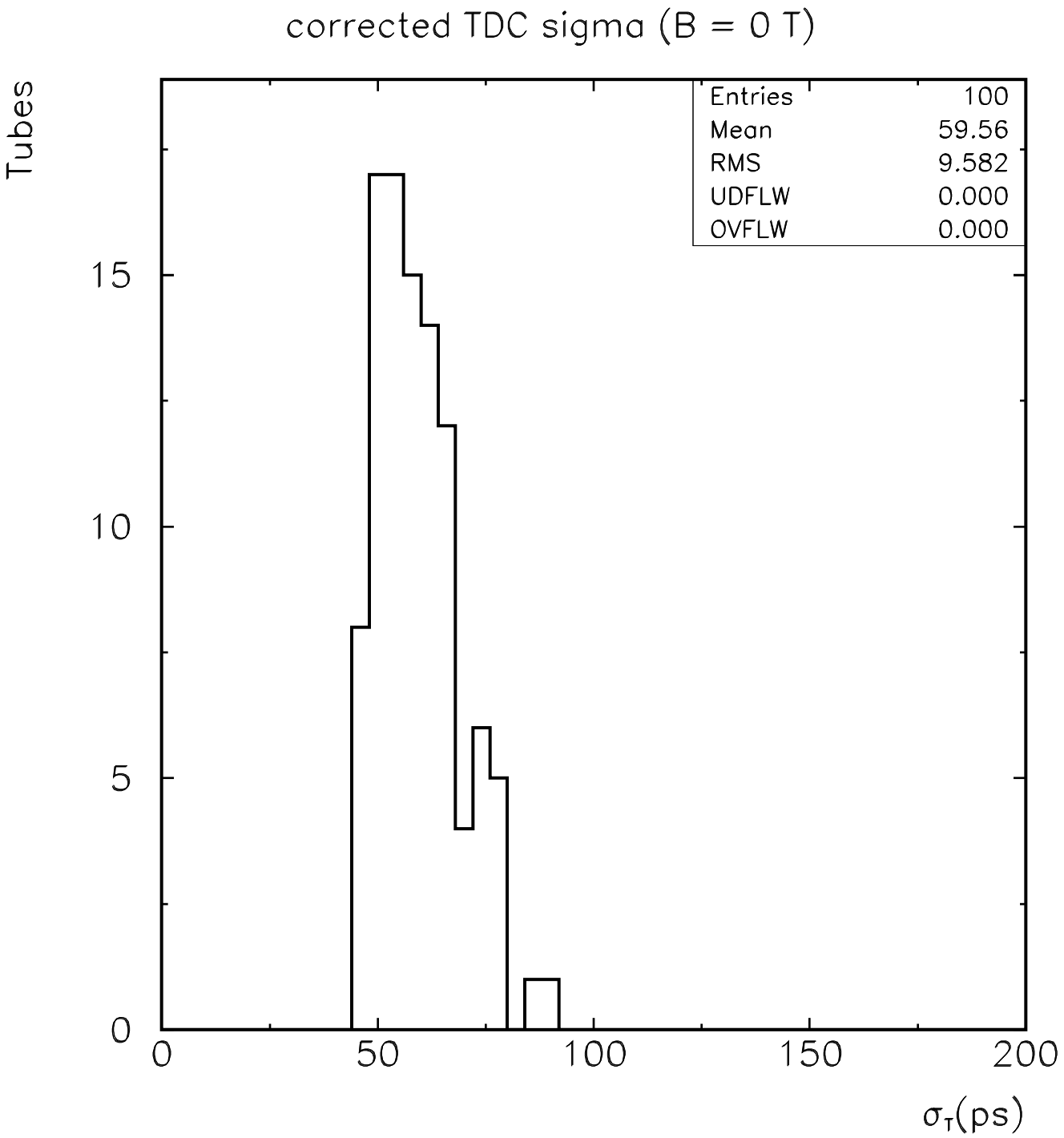

slope (B=0 T)
Tubes
Entries 100
Mean 8.569
RMS 0.2678
UDFLW 0.000
OVFLW 0.000
0
10
20
6
7
8
9
10
Slope

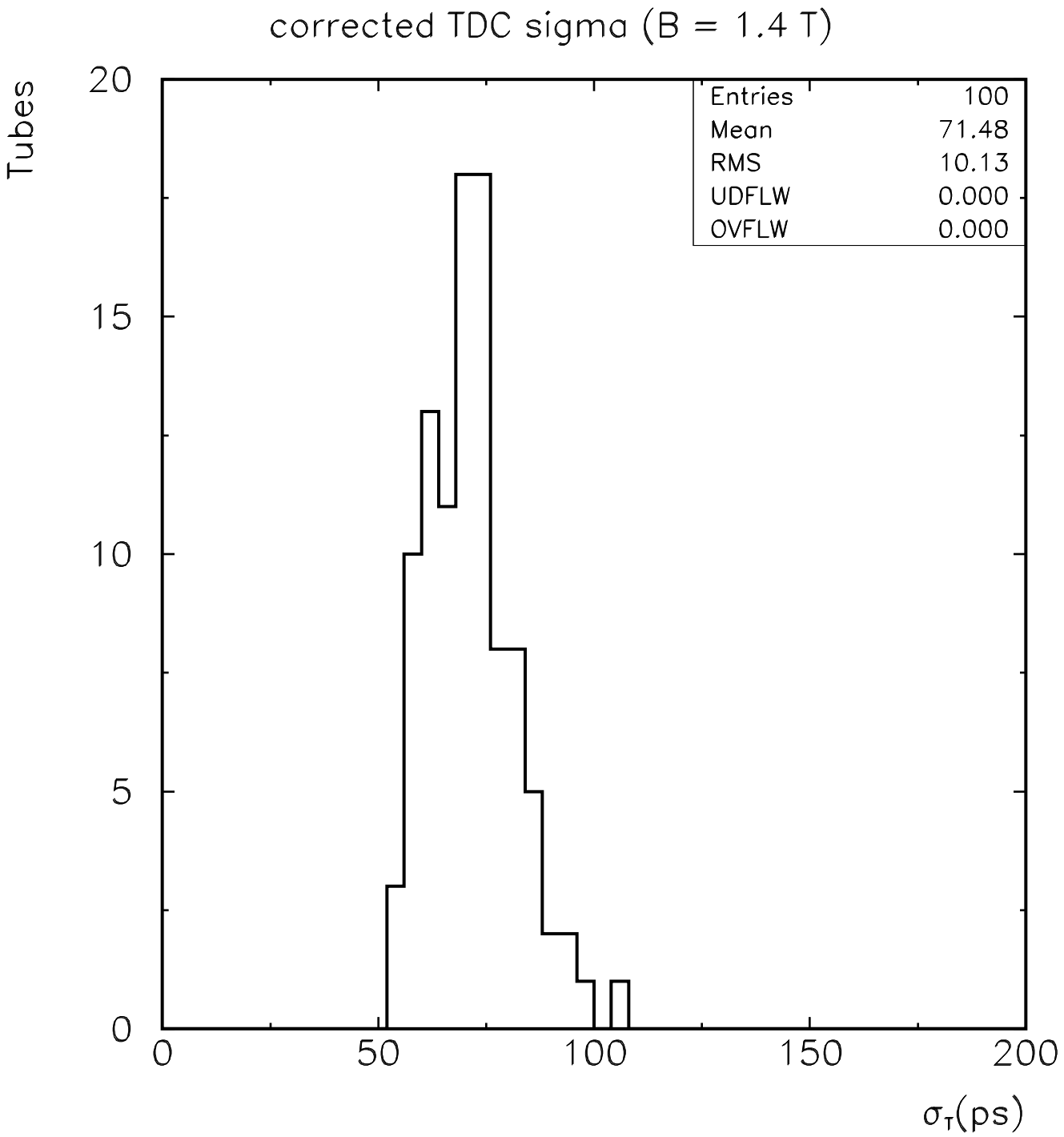

slope (B=1.4 T)
Tubes
Entries 100
Mean 8.030
RMS 0.3633
UDFLW 0.000
OVFLW 0.000
0
5
10
15
20
6
7
8
9
10
Slope

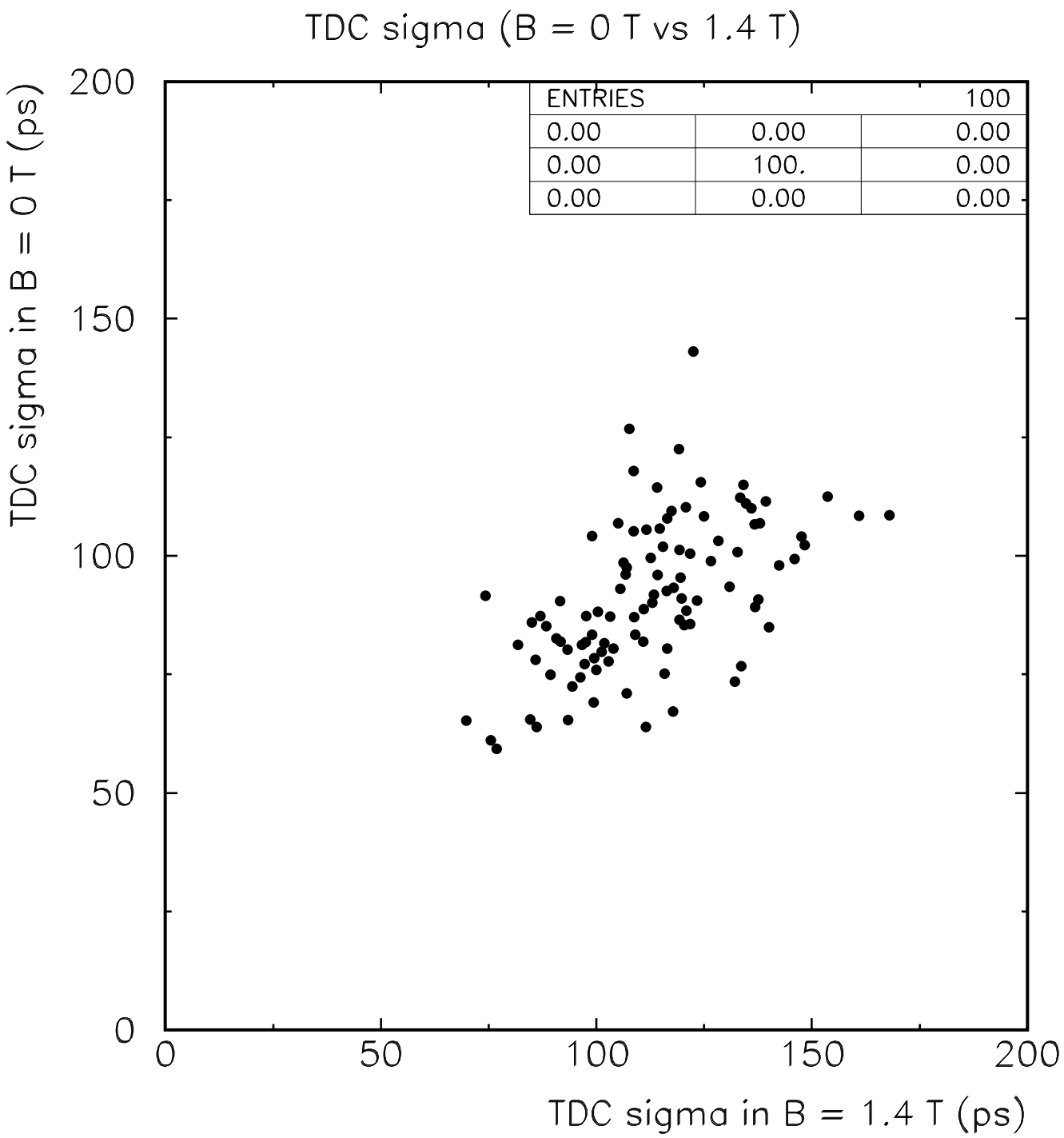

slope at B=1.4 T vs B=0 T
ENTRIES 100
0.00 0.00 0.00
0.00 100. 0.00
0.00 0.00 0.00
slope at B=1.4 T
slope at B=0 T
10
9
8
7
6
6
7
8
9
10

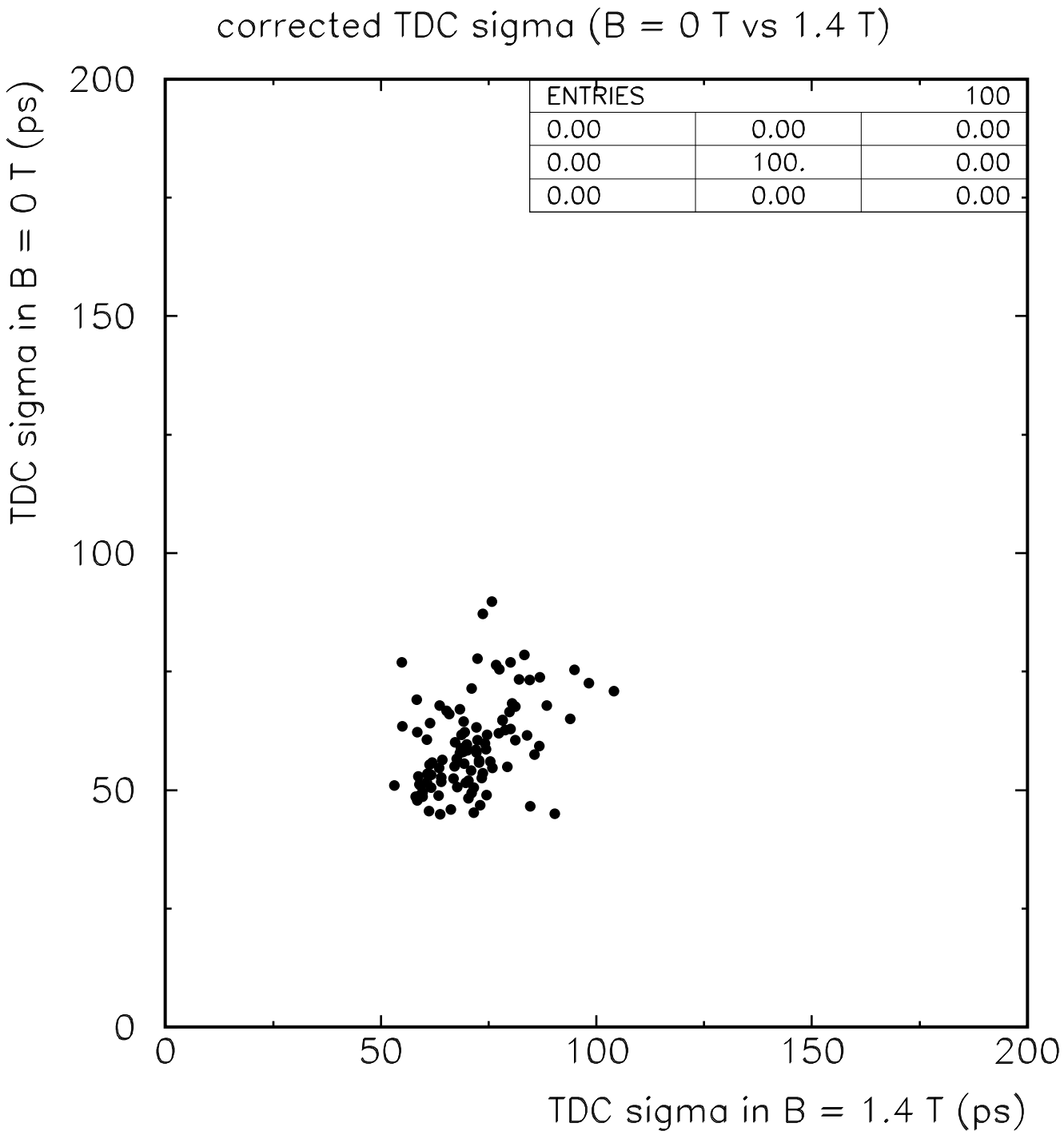

TDC sigma (B = 0 T)
Tubes
Entries 100
Mean 91.72
RMS 15.86
UDFLW 0.000
OVFLW 0.000
0
5
10
0
50
100
150
200
σT(ps)


TDC sigma (B = 1.4 T)
Tubes
Entries 100
Mean 113.0
RMS 19.54
UDFLW 0.000
OVFLW 0.000
10
7.5
5
2.5
0
0
50
100
150
200
σT(ps)


corrected TDC sigma (B = 0 T)
Entries 100
Mean 59.56
RMS 9.582
UDFLW 0.000
OVFLW 0.000
Tubes
0
5
10
15
0
50
100
150
200
σT(ps)


corrected TDC sigma (B = 1.4 T)
Tubes
Entries 100
Mean 71.48
RMS 10.13
UDFLW 0.000
OVFLW 0.000
0
5
10
15
20
0
50
100
150
200
σT(ps)


TDC sigma (B = 0 T vs 1.4 T)
ENTRIES 100
0.00 0.00 0.00
0.00 100. 0.00
0.00 0.00 0.00
TDC sigma in B = 0 T (ps)
TDC sigma in B = 1.4 T (ps)
0
50
100
150
200


corrected TDC sigma (B = 0 T vs 1.4 T)
ENTRIES 100
0.00 0.00 0.00
0.00 100. 0.00
0.00 0.00 0.00
TDC sigma in B = 0 T (ps)
TDC sigma in B = 1.4 T (ps)
0
50
100
150
200