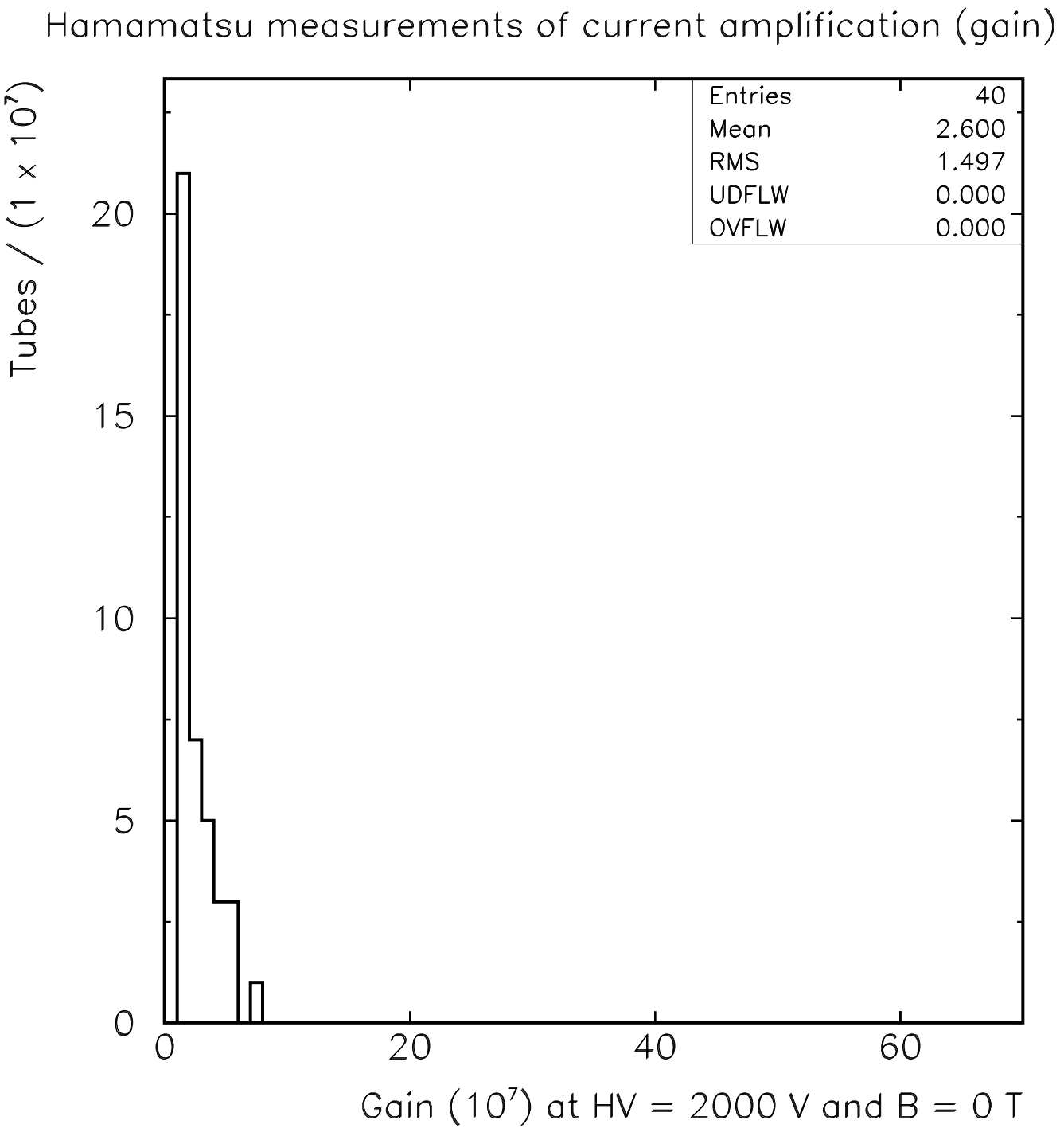
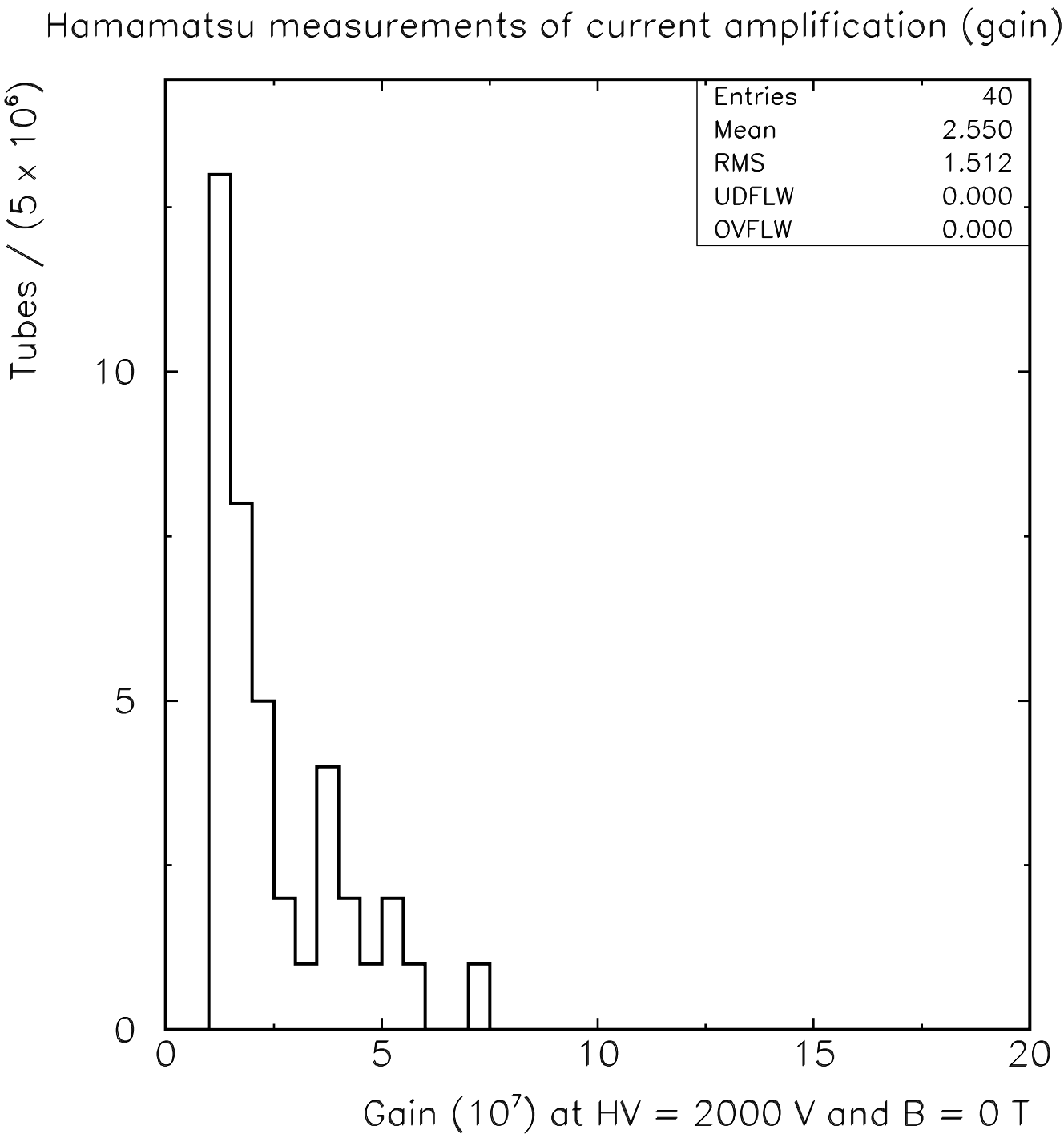
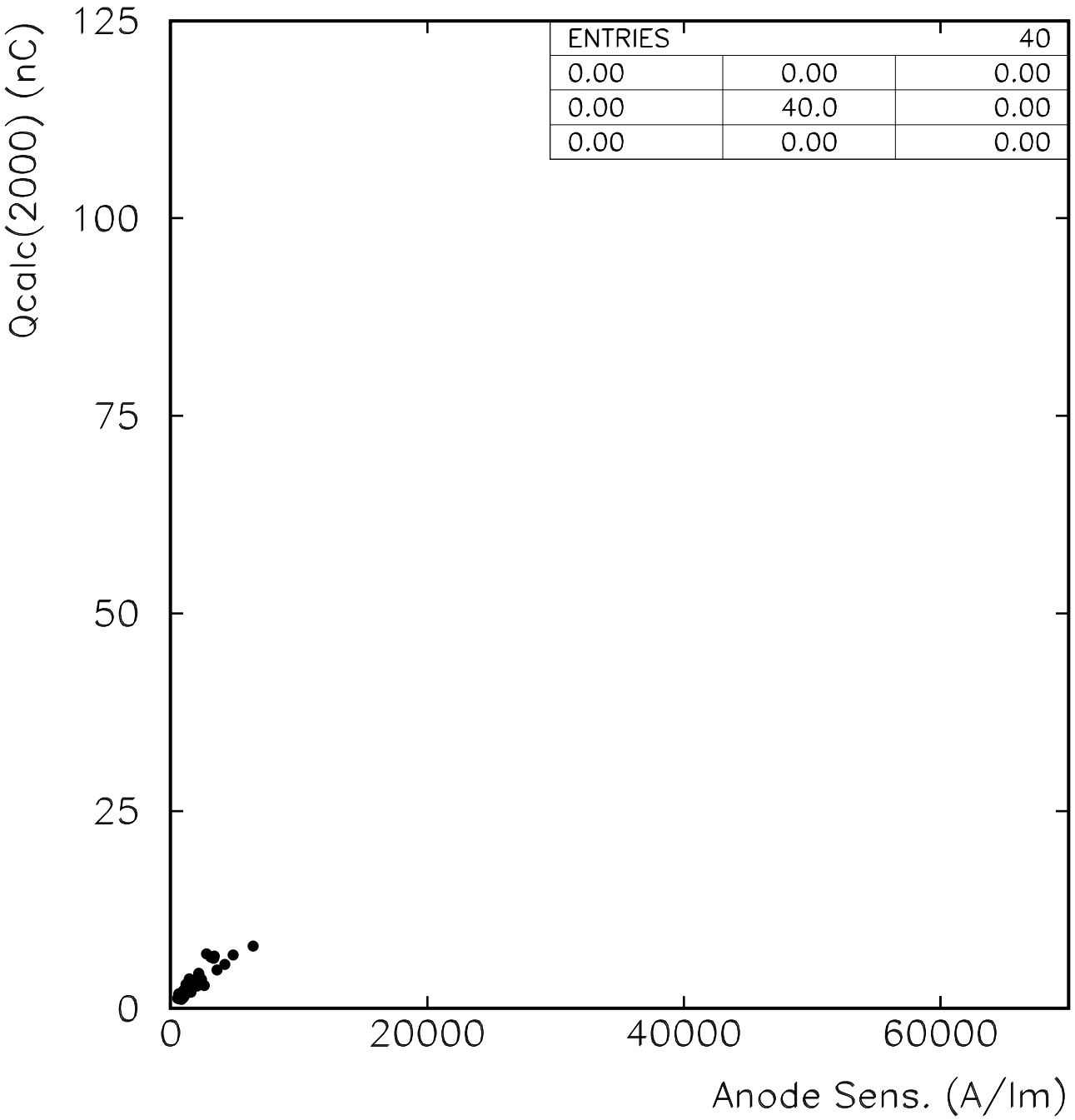
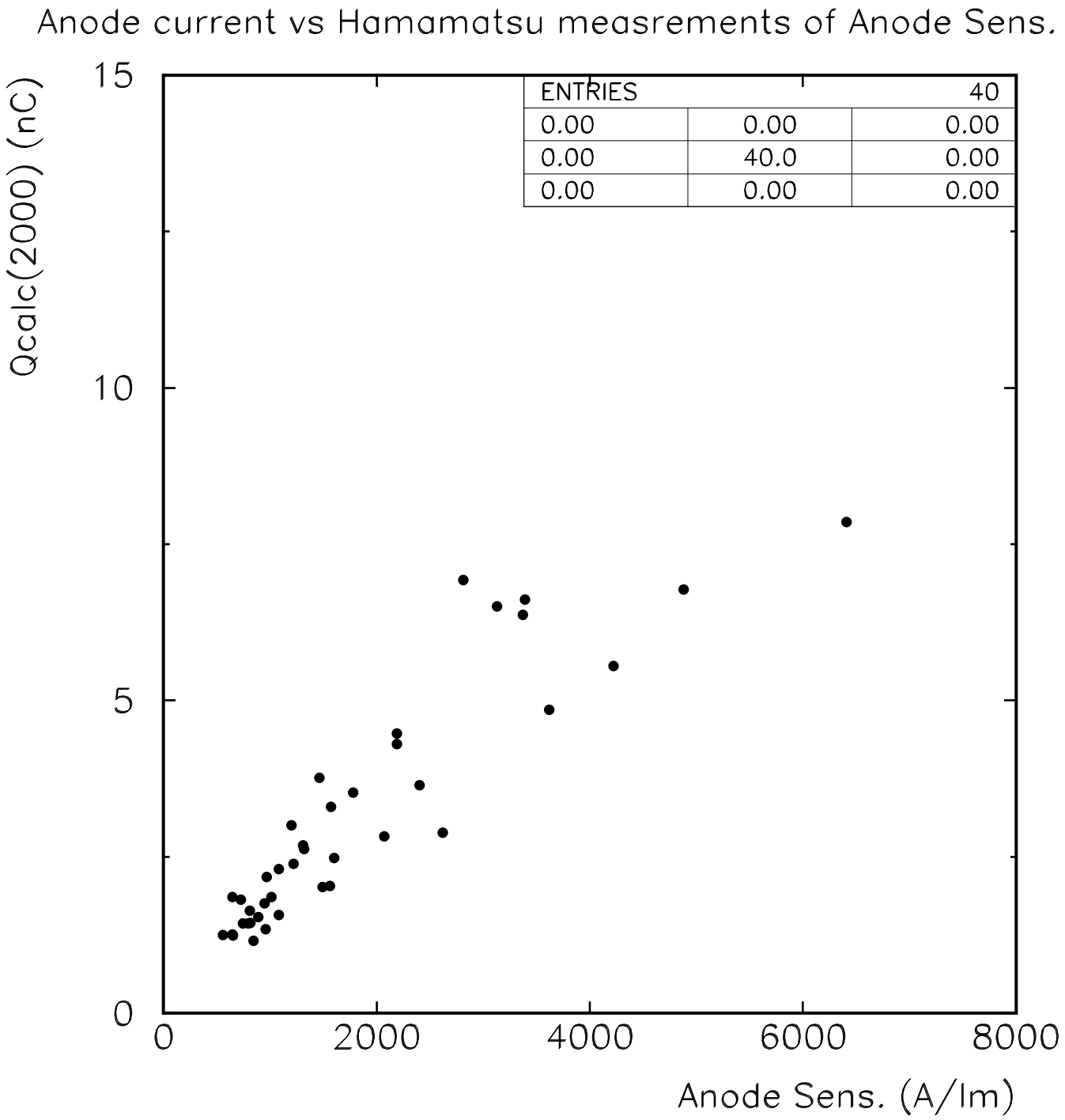
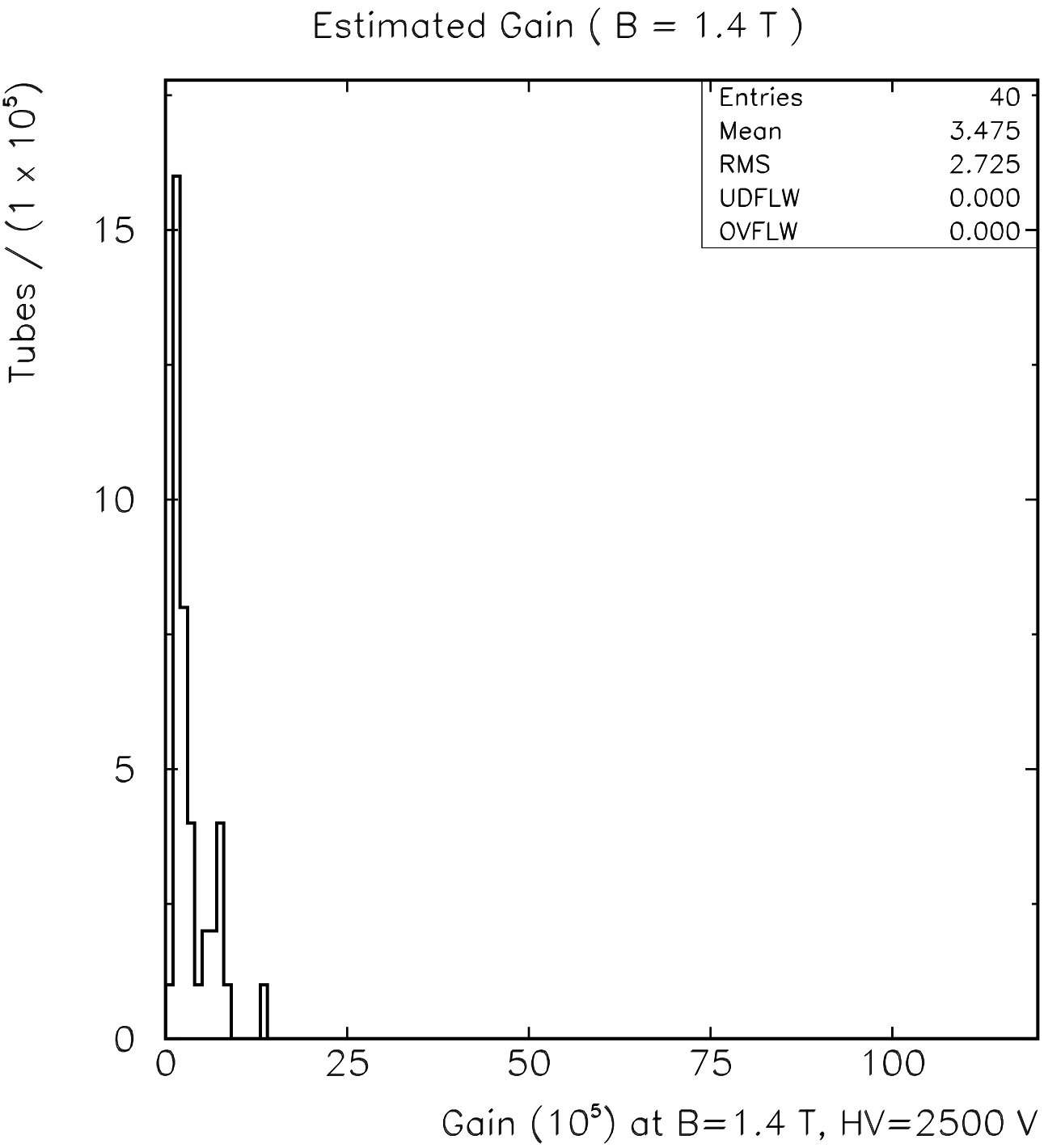

Hamamatsu measurements of current amplification (gain)
Entries 40
Mean 2.600
RMS 1.497
UDFLW 0.000
OVFLW 0.000
Tubes / (1 x 10^7)
0
5
10
15
20
0
20
40
60
Gain (10^7) at HV = 2000 V and B = 0 T

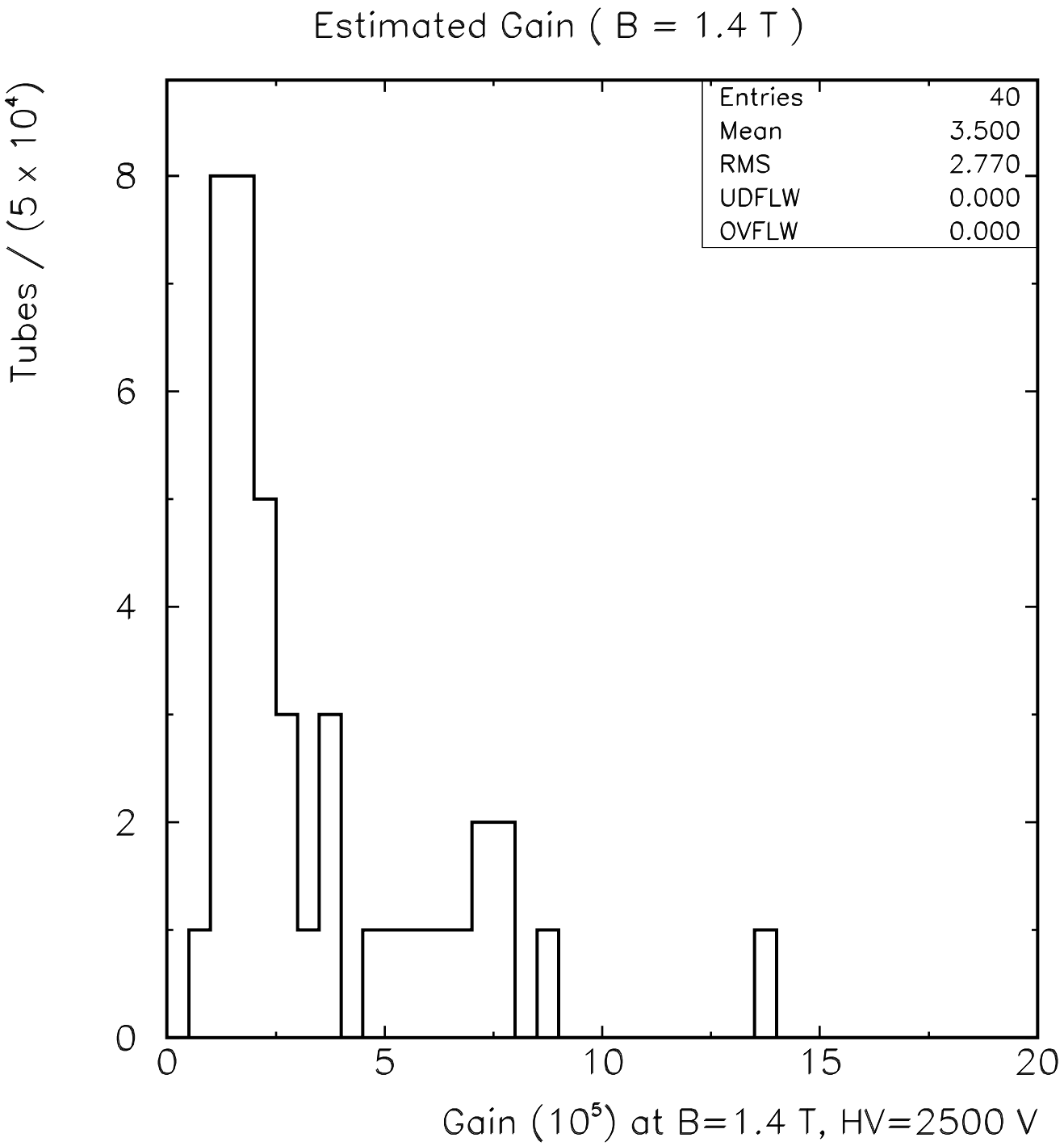

Hamamatsu measurements of current amplification (gain)
Entries 40
Mean 2.550
RMS 1.512
UDFLW 0.000
OVFLW 0.000
Tubes / (5 x 10^6)
0
5
10
0
5
10
15
20
Gain (10^7) at HV = 2000 V and B = 0 T

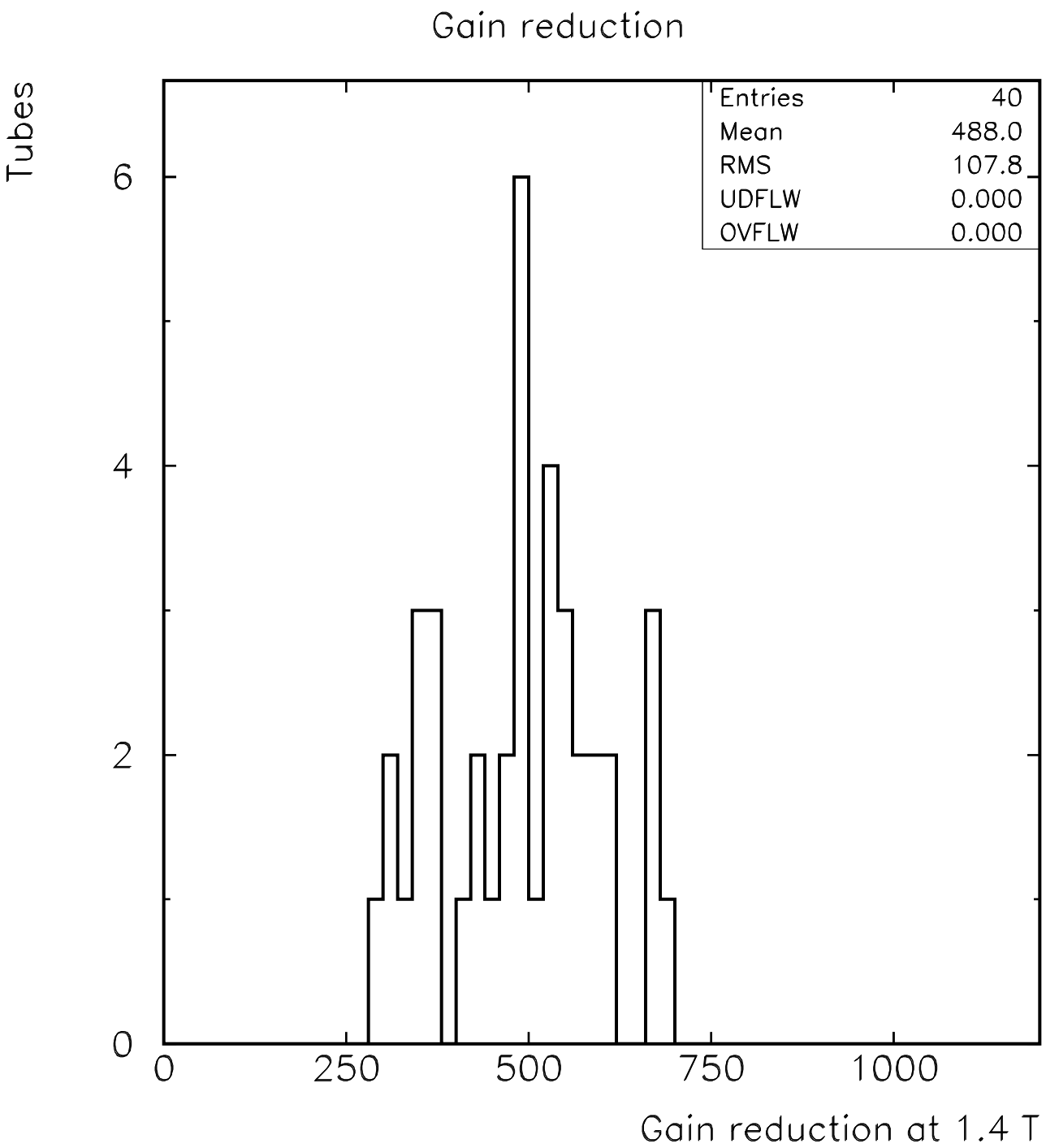
Anode current vs Hamamatsu measrements of Anode Sens.

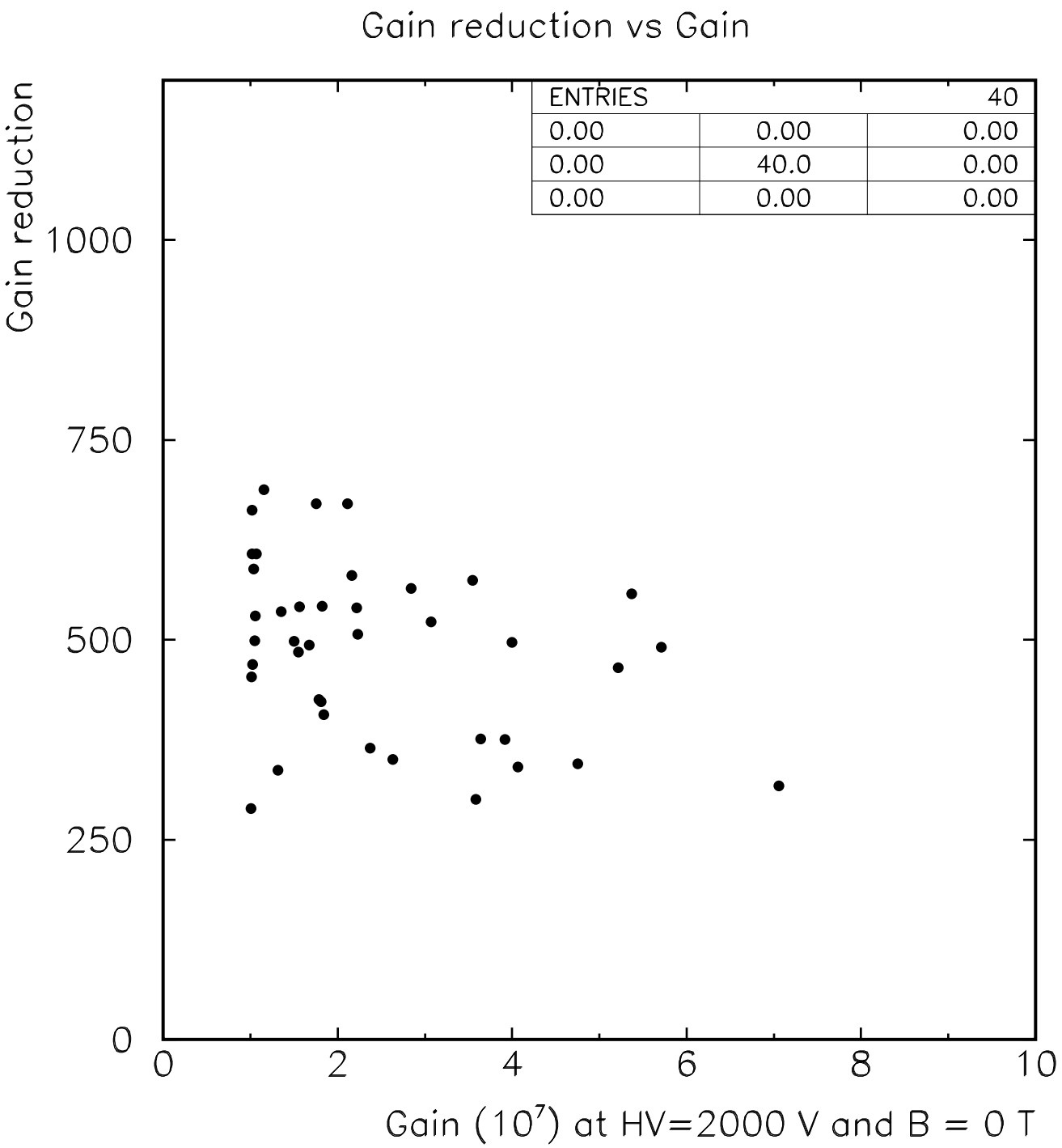


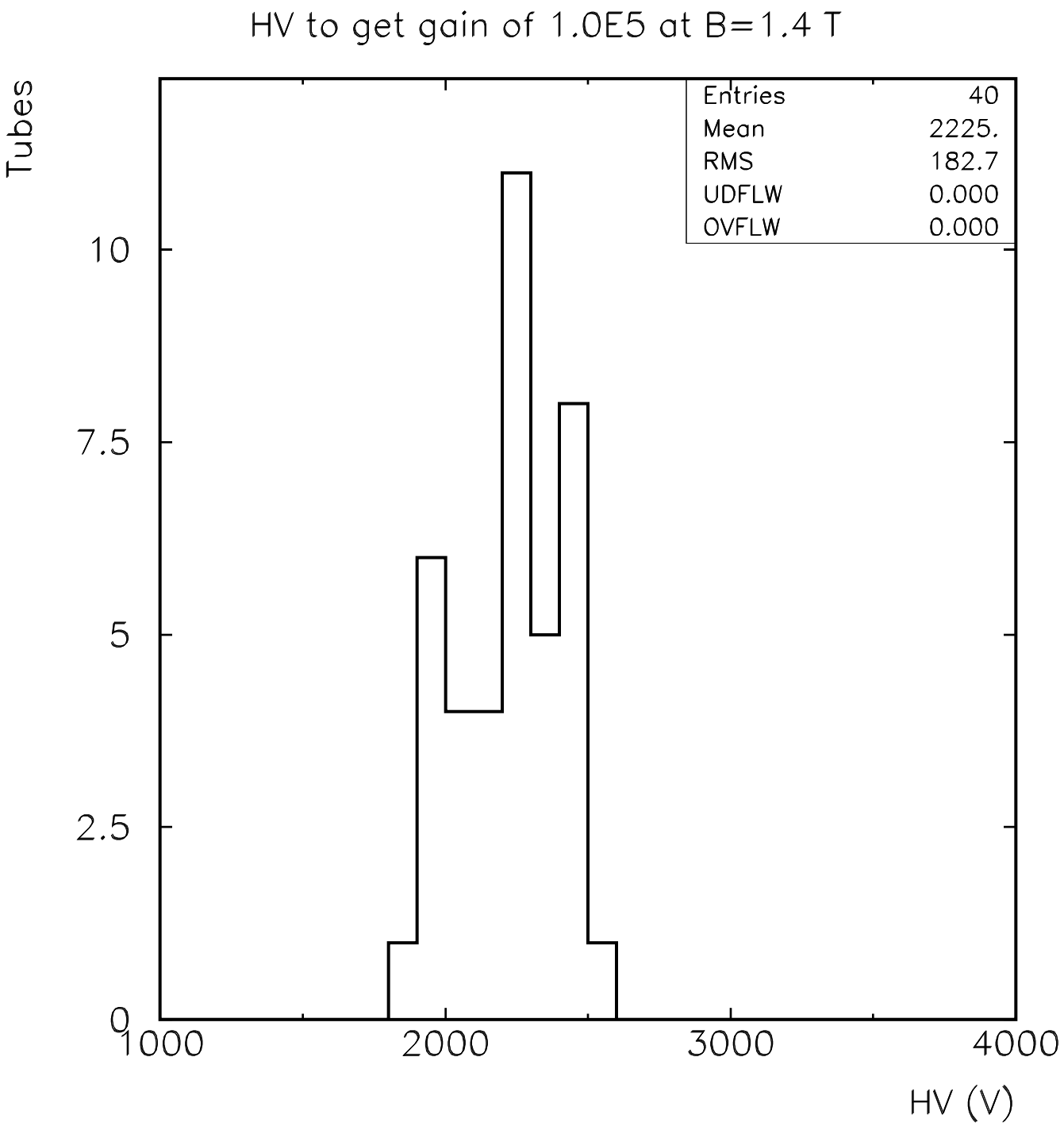

Anode current vs Hamamatsu measrements of Anode Sens.
ENTRIES 40
0.00 0.00 0.00
0.00 40.0 0.00
0.00 0.00 0.00
Qcalc(2000) (nC)
15
10
5
0
0
2000
4000
6000
8000
Anode Sens. (A/lm)

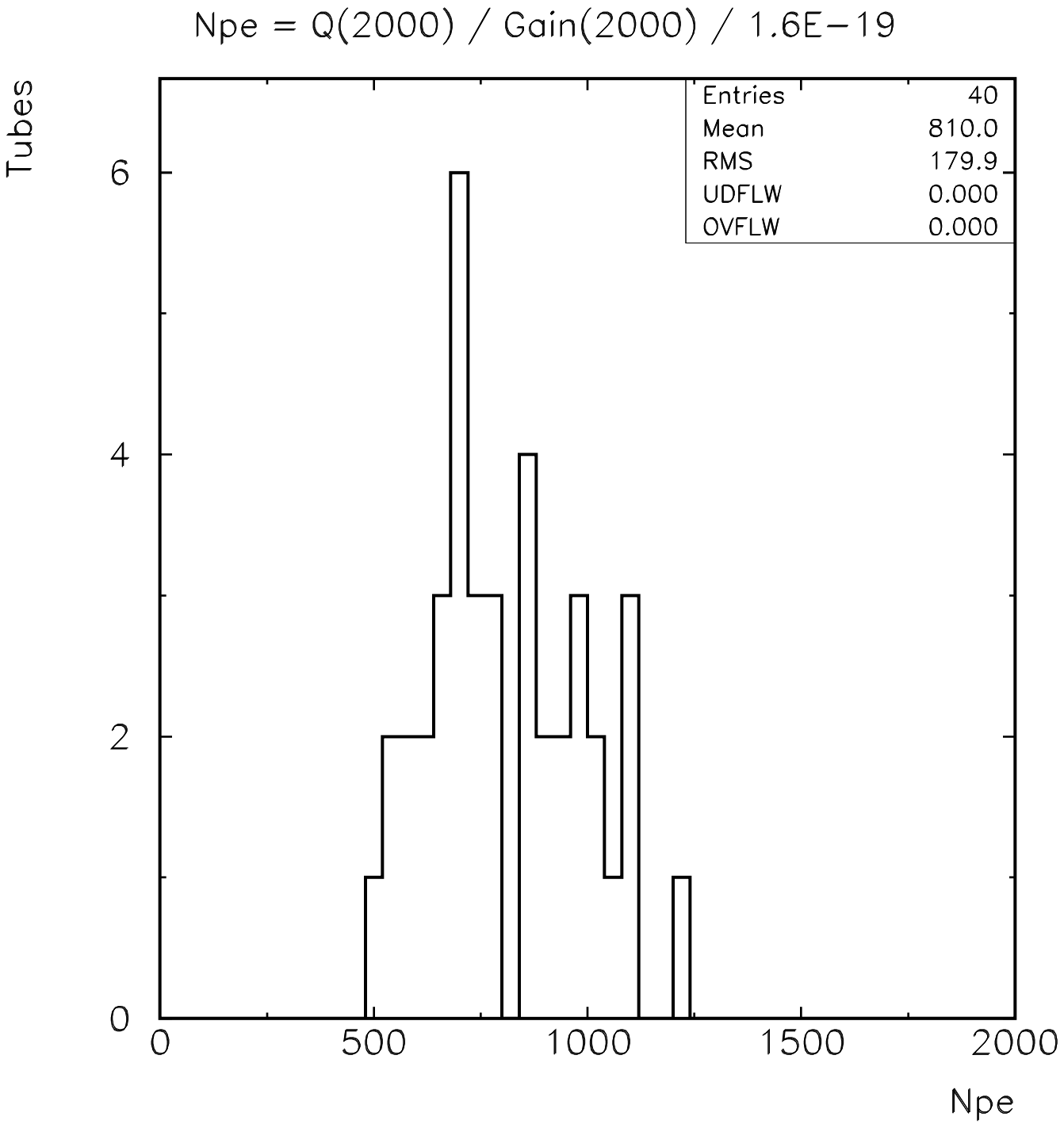

Estimated Gain (B = 1.4 T)
Entries 40
Mean 3.475
RMS 2.725
UDFLW 0.000
OVFLW 0.000
Tubes / (1 x 10^5)
0
5
10
15
0
25
50
75
100
Gain (10^5) at B=1.4 T, HV=2500 V

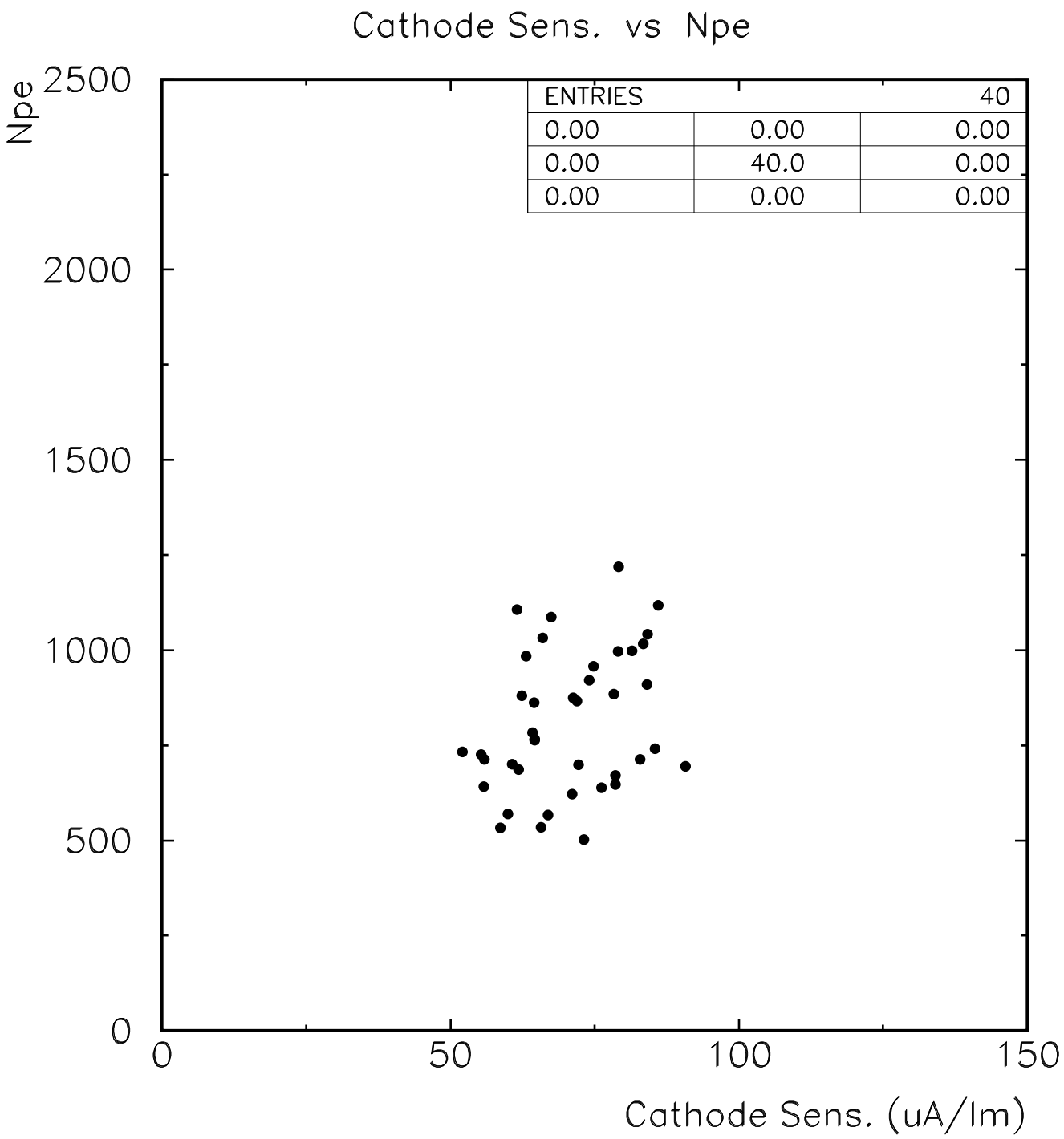

Estimated Gain (B = 1.4 T)
Entries 40
Mean 3.500
RMS 2.770
UDFLW 0.000
OVFLW 0.000
Tubes / (5 x 10⁴)
0
2
4
6
8
0
5
10
15
20
Gain (10⁵) at B=1.4 T, HV=2500 V

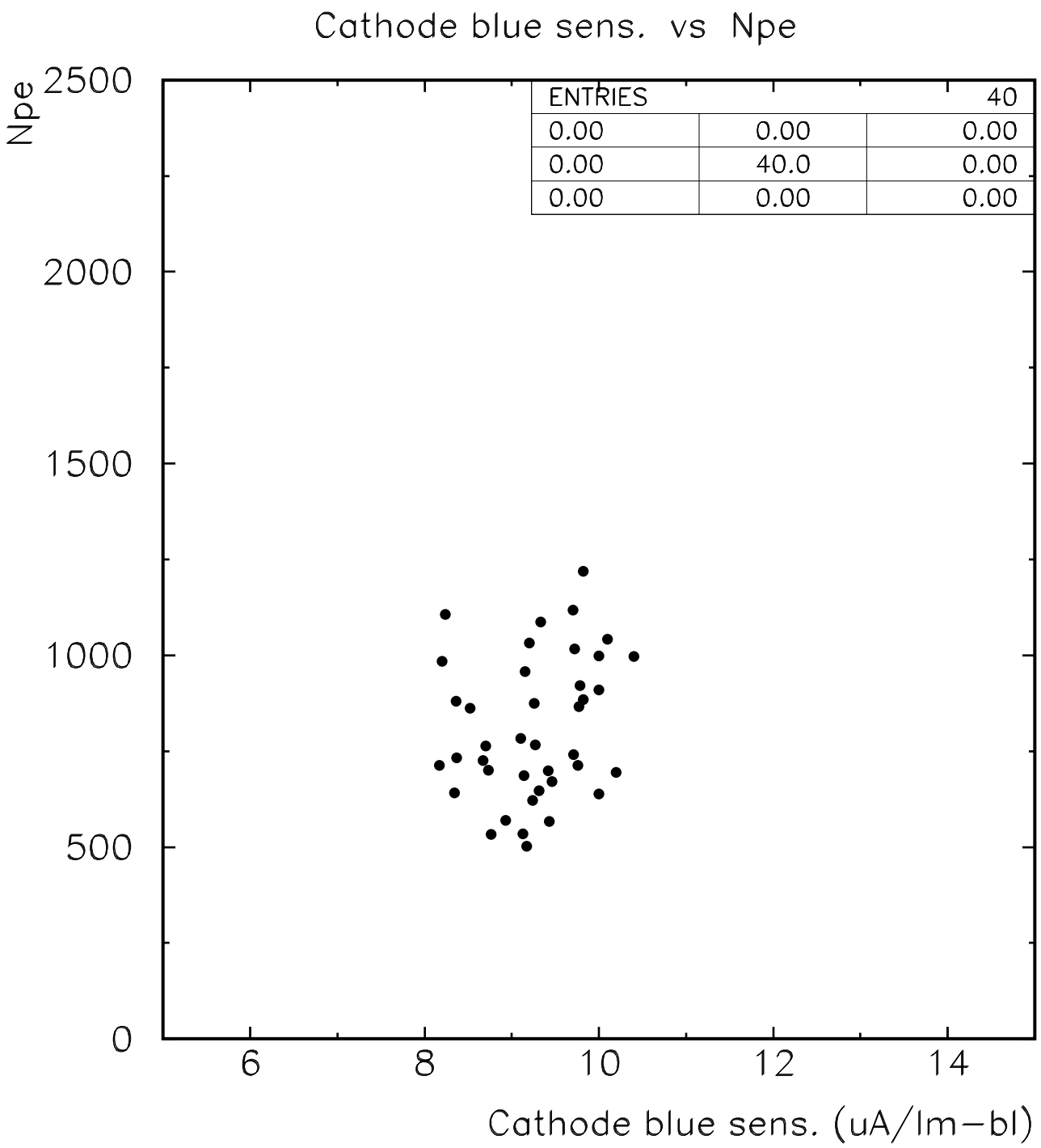

Gain reduction
Tubes
Entries 40
Mean 488.0
RMS 107.8
UDFLW 0.000
OVFLW 0.000
0
2
4
6
0
250
500
750
1000
Gain reduction at 1.4 T

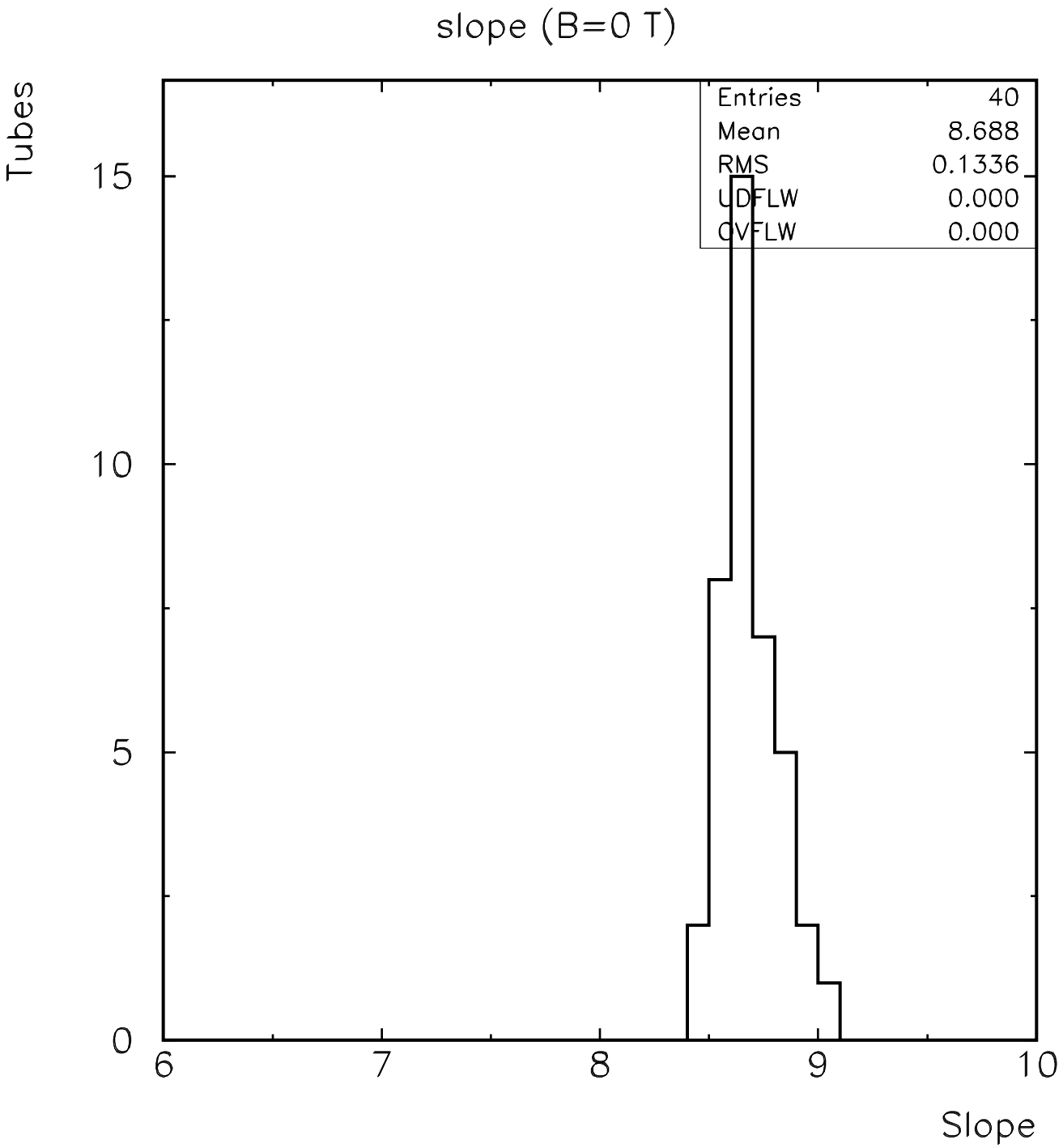

Gain reduction vs Gain
ENTRIES 40
0.00 0.00 0.00
0.00 40.0 0.00
0.00 0.00 0.00
Gain reduction
1000
750
500
250
0
0
2
4
6
8
10
Gain (10^7) at HV=2000 V and B = 0 T

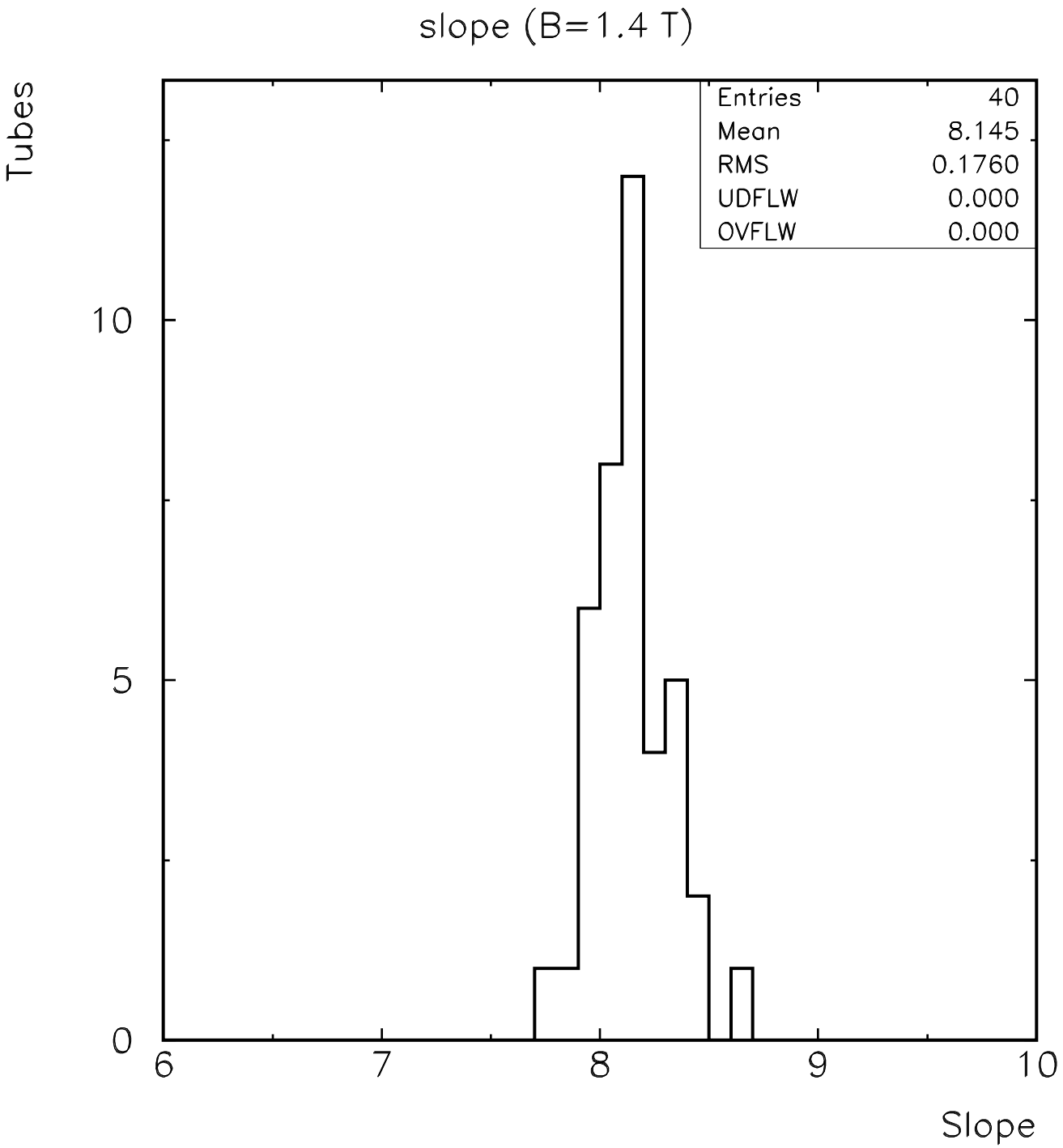

HV to get gain of 1.0E5 at B=1.4 T
Tubes
Entries 40
Mean 2225.
RMS 182.7
UDFLW 0.000
OVFLW 0.000
10
7.5
5
2.5
0
1000
2000
3000
4000
HV (V)

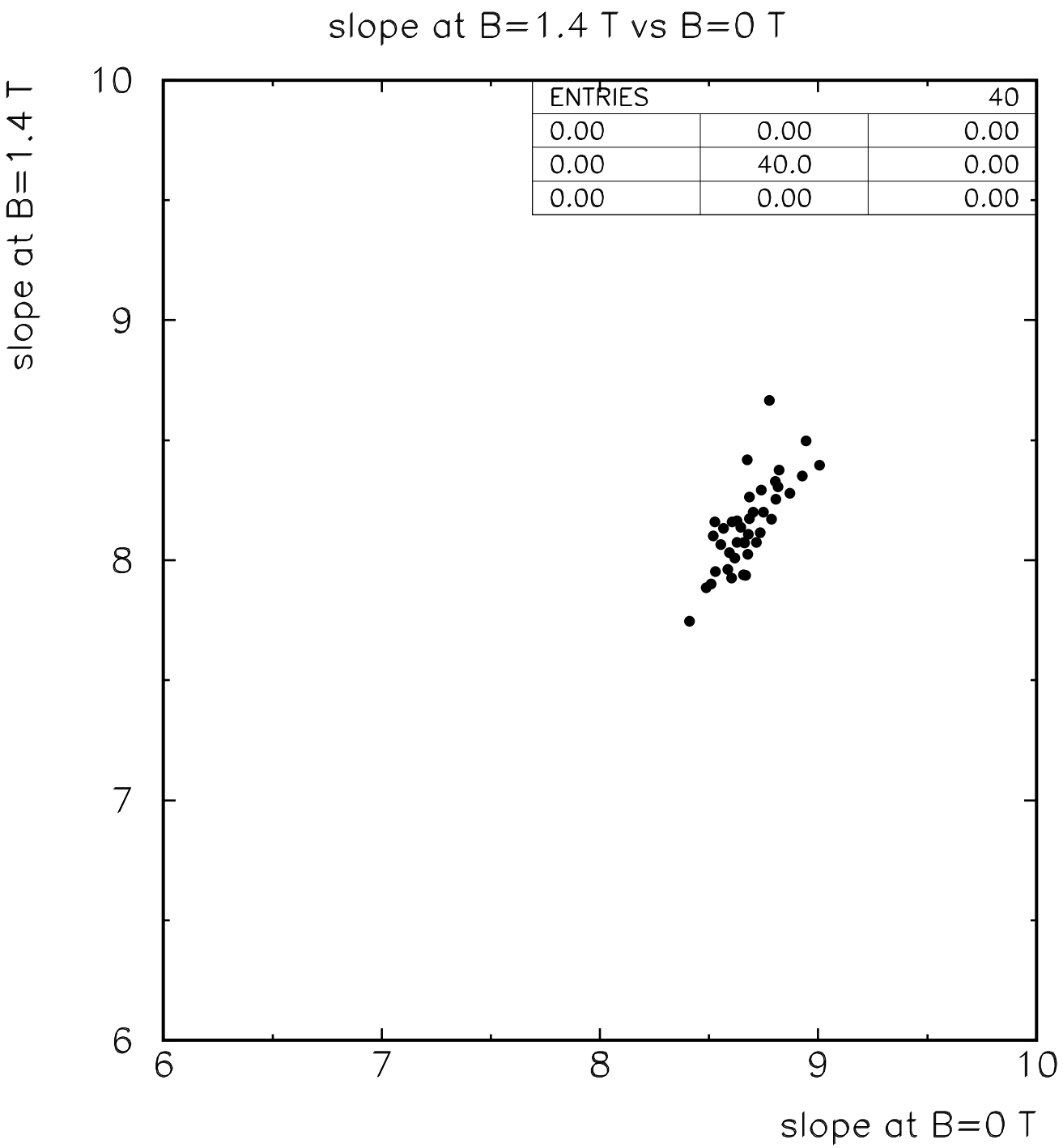

Npe = Q(2000) / Gain(2000) / 1.6E−19
Tubes
Entries 40
Mean 810.0
RMS 179.9
UDFLW 0.000
OVFLW 0.000
0
2
4
6
0
500
1000
1500
2000
Npe

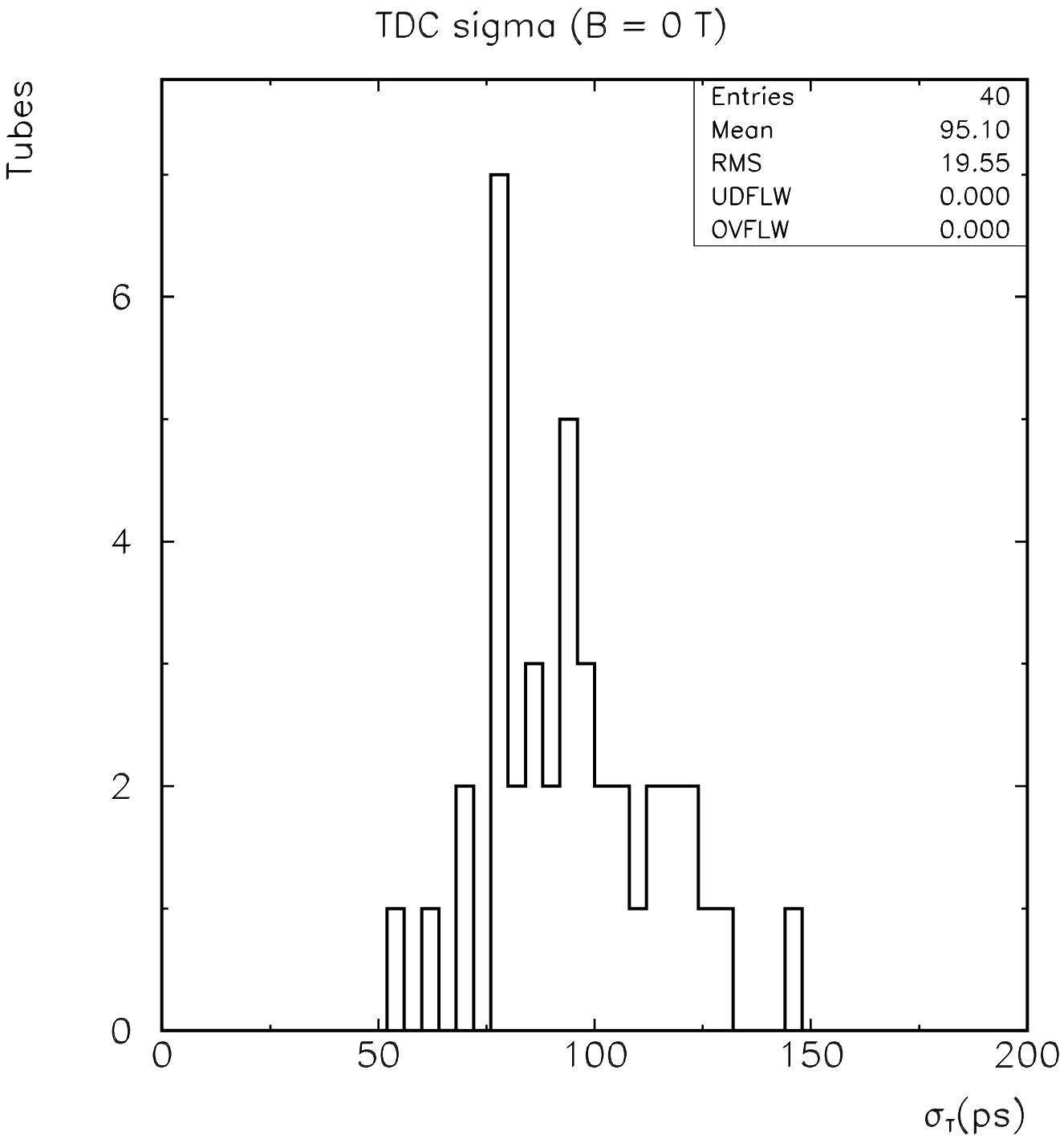

Cathode Sens. vs Npe
ENTRIES 40
0.00 0.00 0.00
0.00 40.0 0.00
0.00 0.00 0.00
Npe
2500
2000
1500
1000
500
0
0
50
100
150
Cathode Sens. (uA/lm)

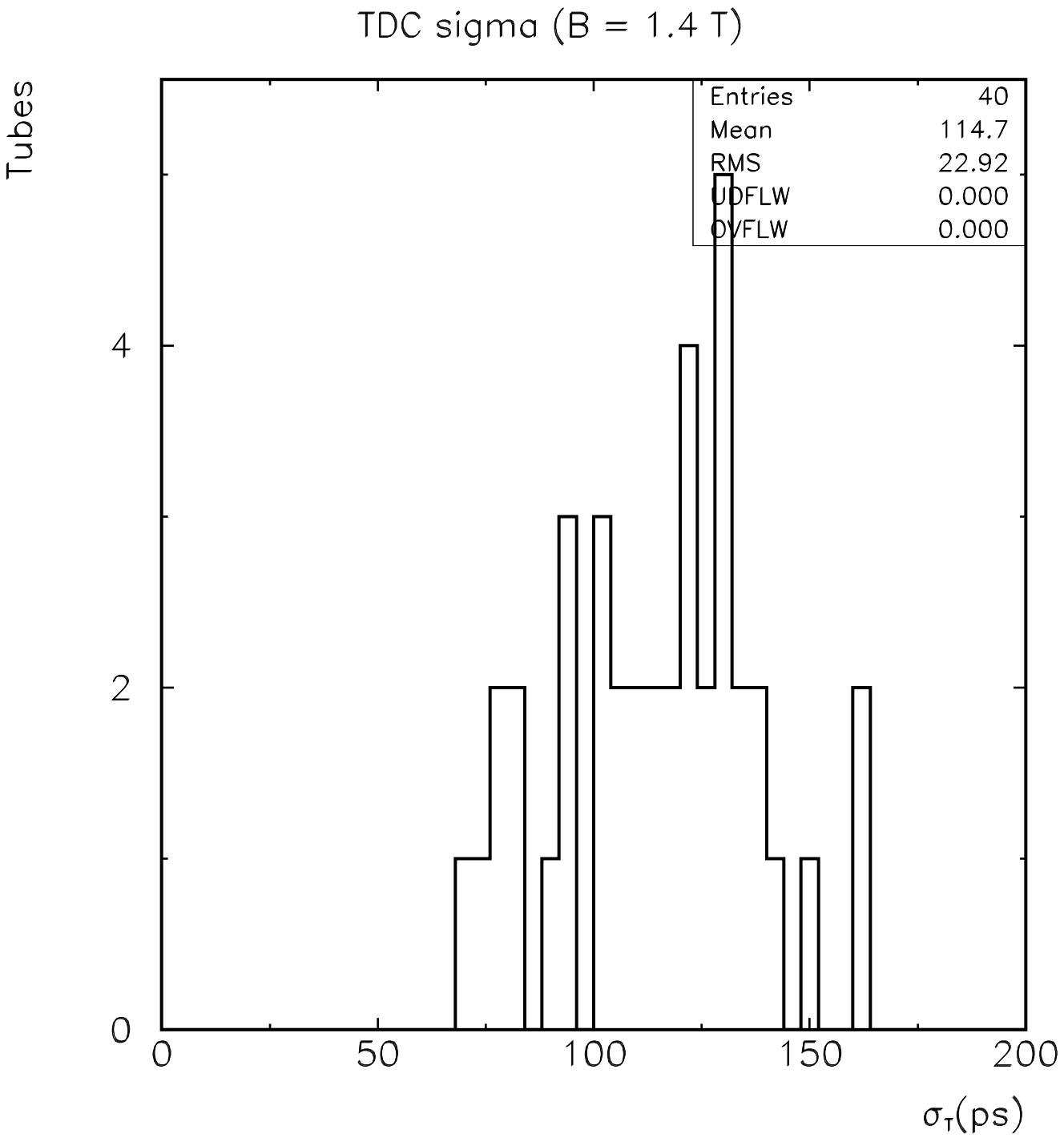

Cathode blue sens. vs Npe
Npe
2500
2000
1500
1000
500
0
6
8
10
12
14
Cathode blue sens. (uA/lm−bl)
ENTRIES 40
0.00 0.00 0.00
0.00 40.0 0.00
0.00 0.00 0.00

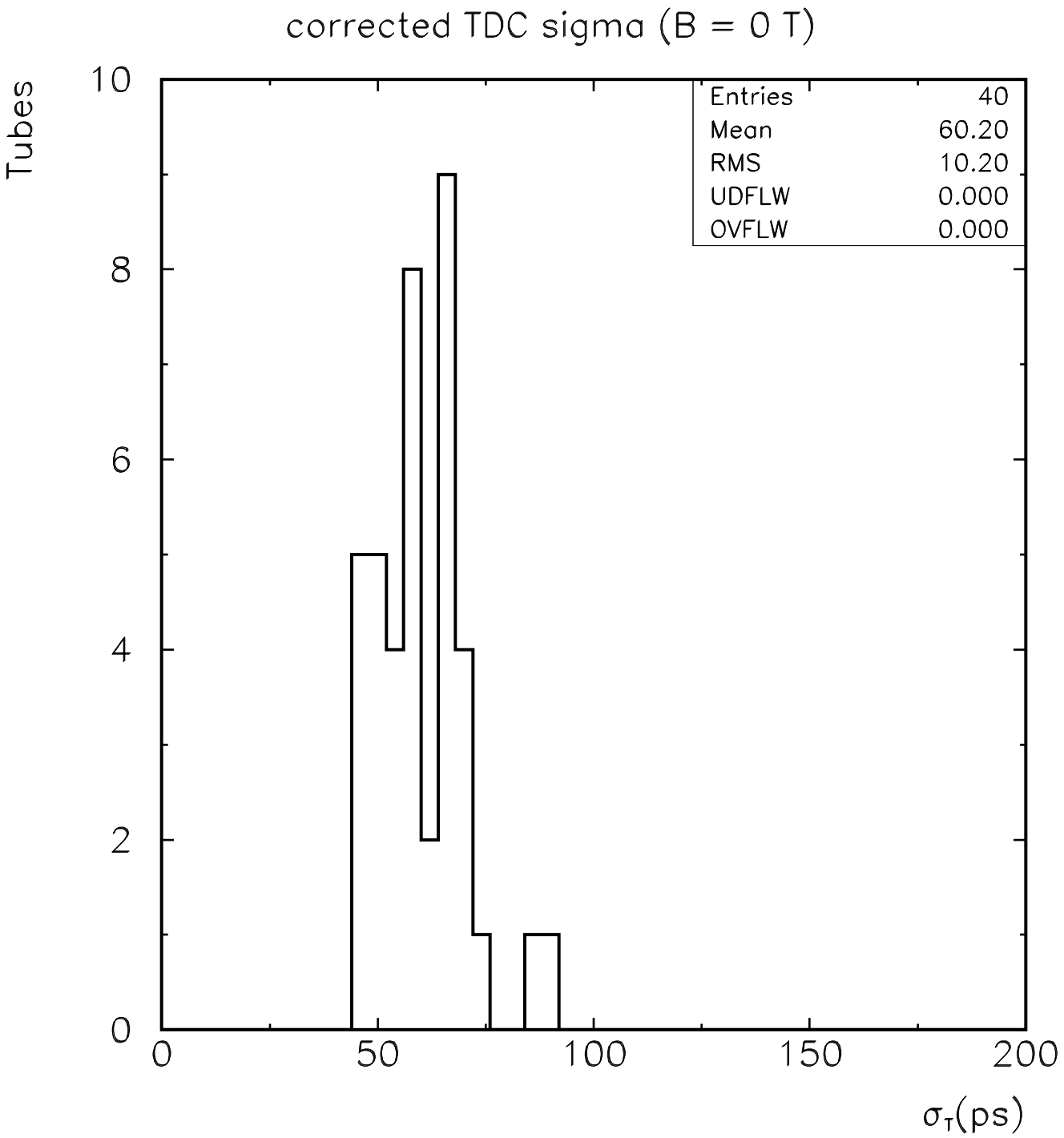

slope (B=0 T)
Tubes
15
10
5
0
6
7
8
9
10
Slope
Entries 40
Mean 8.688
RMS 0.1336
UDFLW 0.000
OVFLW 0.000

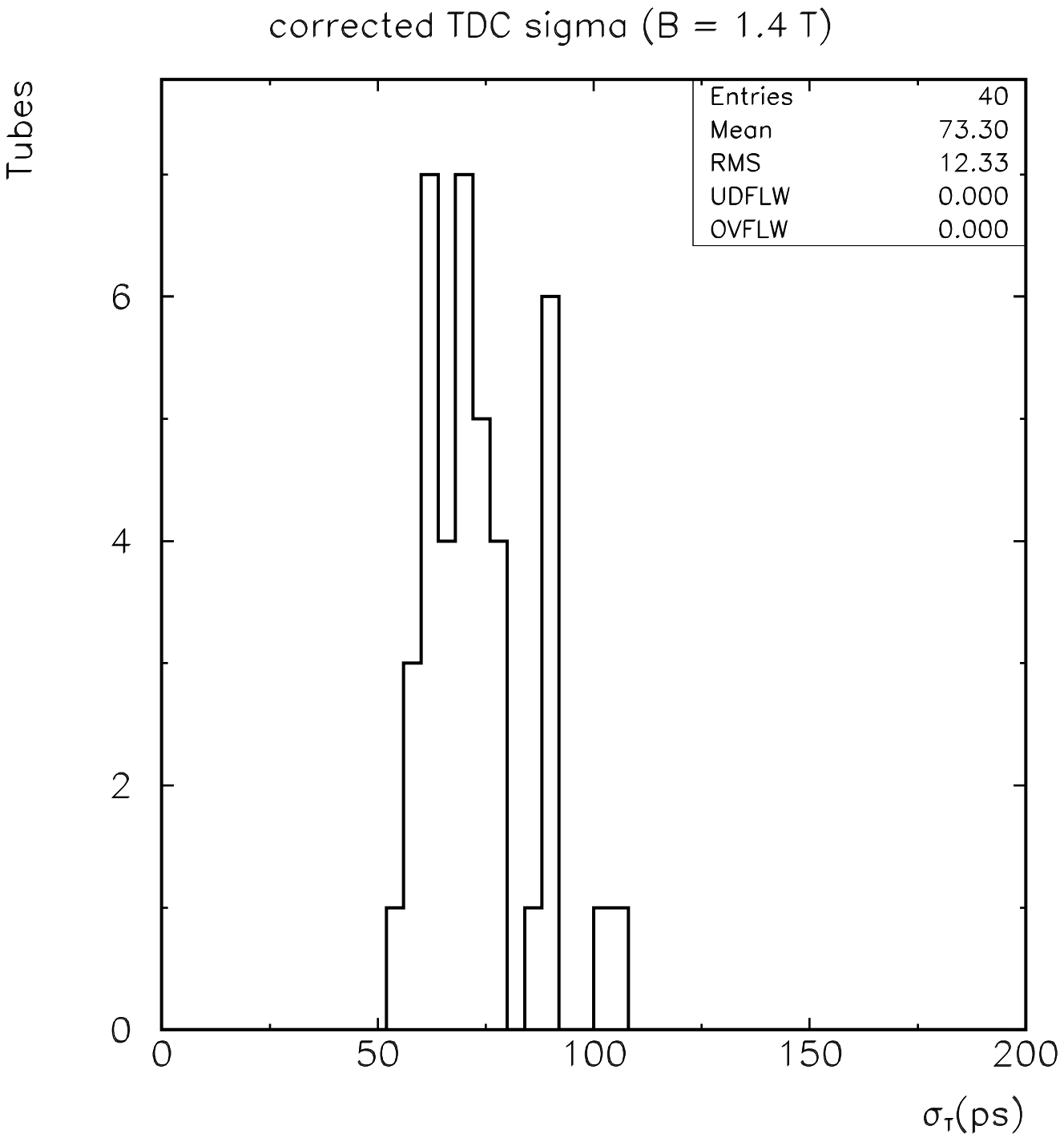

slope (B=1.4 T)
Tubes
Entries 40
Mean 8.145
RMS 0.1760
UDFLW 0.000
OVFLW 0.000
10
5
0
6
7
8
9
10
Slope

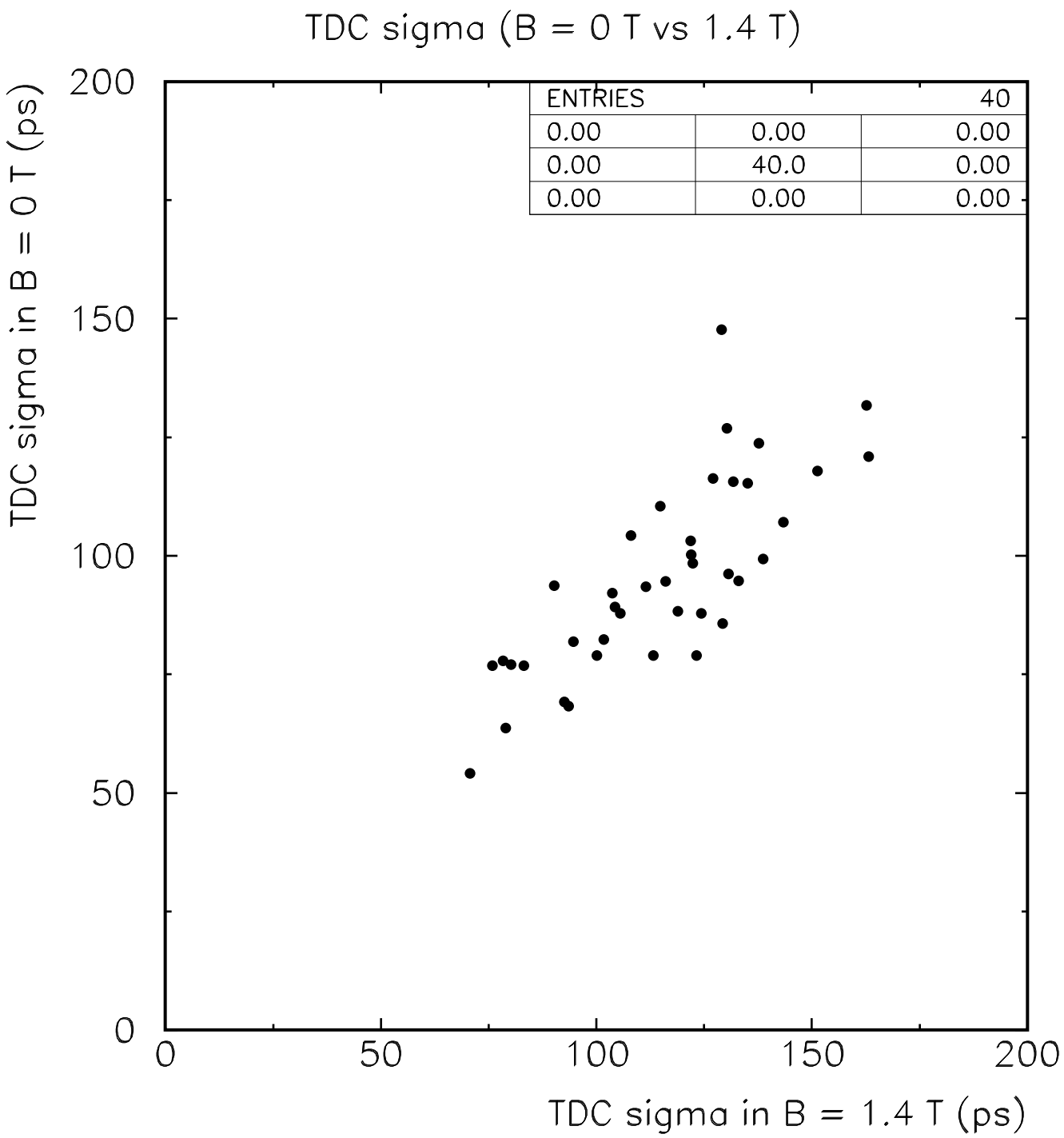

slope at B=1.4 T vs B=0 T
ENTRIES 40
0.00 0.00 0.00
0.00 40.0 0.00
0.00 0.00 0.00
slope at B=1.4 T
slope at B=0 T
10
9
8
7
6
6
7
8
9
10

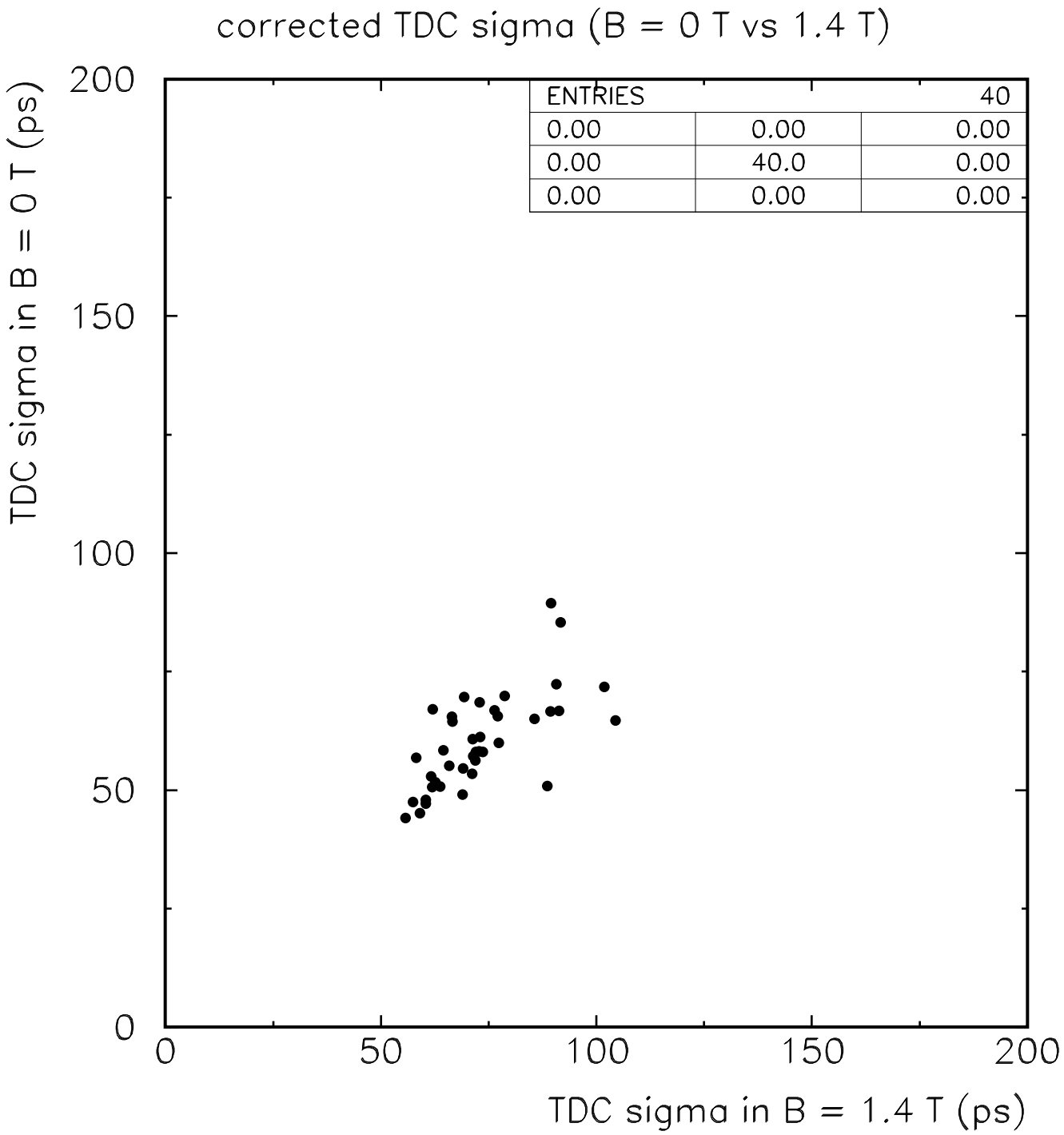

TDC sigma (B = 0 T)
Tubes
Entries 40
Mean 95.10
RMS 19.55
UDFLW 0.000
OVFLW 0.000
0
2
4
6
0
50
100
150
200
σT(ps)


TDC sigma (B = 1.4 T)
Tubes
Entries 40
Mean 114.7
RMS 22.92
UDFLW 0.000
OVFLW 0.000
0
2
4
0
50
100
150
200
σT(ps)


corrected TDC sigma (B = 0 T)
Tubes
Entries 40
Mean 60.20
RMS 10.20
UDFLW 0.000
OVFLW 0.000
0
2
4
6
8
10
0
50
100
150
200
σT(ps)


corrected TDC sigma (B = 1.4 T)
Tubes
Entries 40
Mean 73.30
RMS 12.33
UDFLW 0.000
OVFLW 0.000
0
2
4
6
0
50
100
150
200
σT(ps)


TDC sigma (B = 0 T vs 1.4 T)
ENTRIES 40
0.00 0.00 0.00
0.00 40.0 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 40
0.00 0.00 0.00
0.00 40.0 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