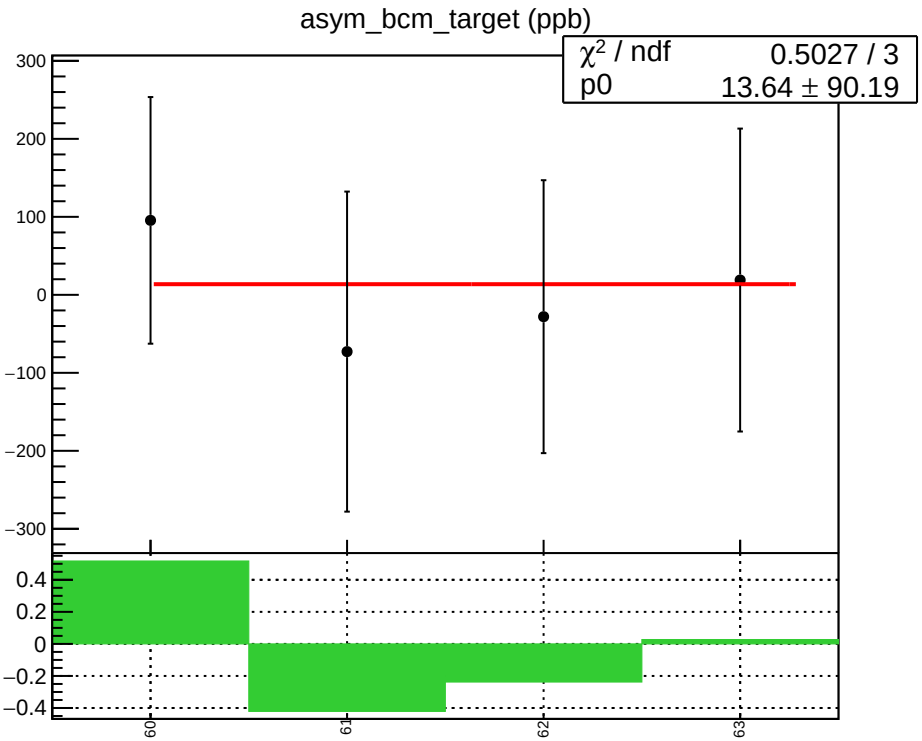
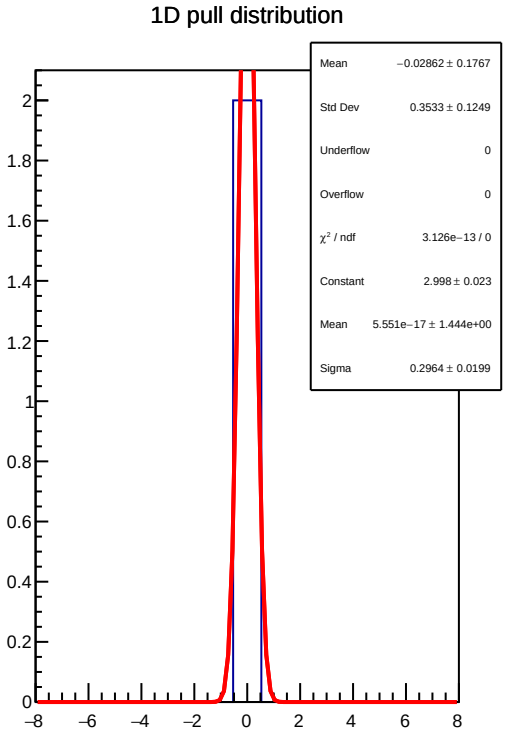
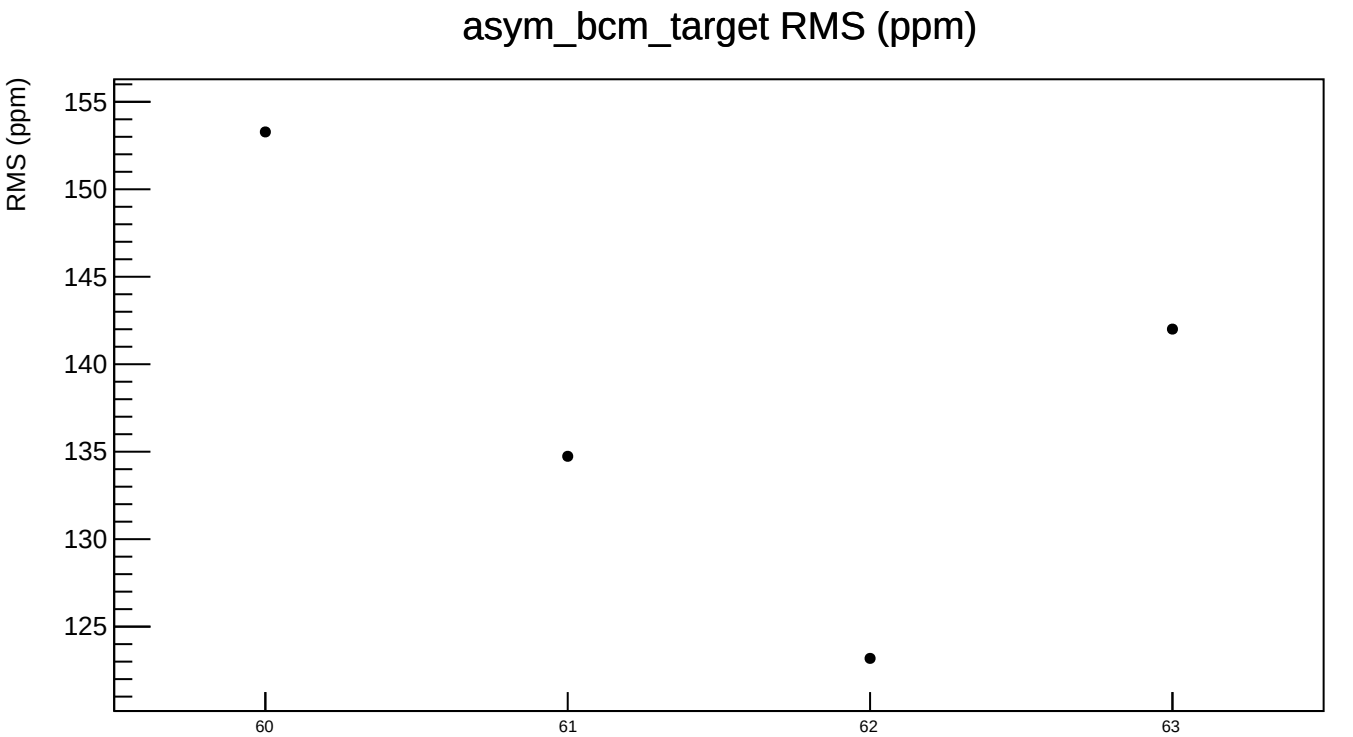
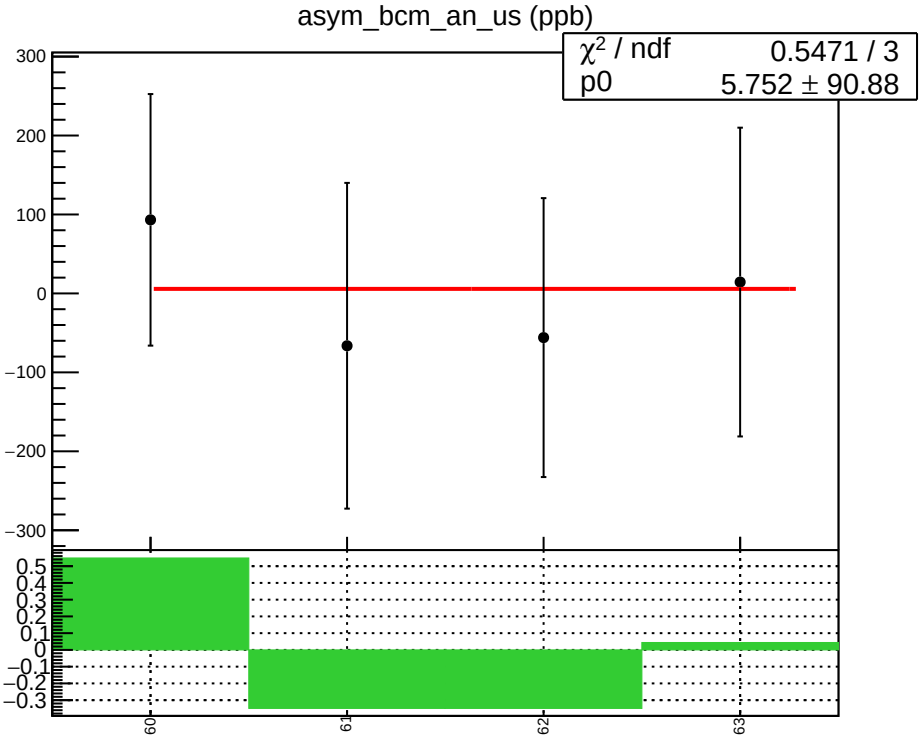
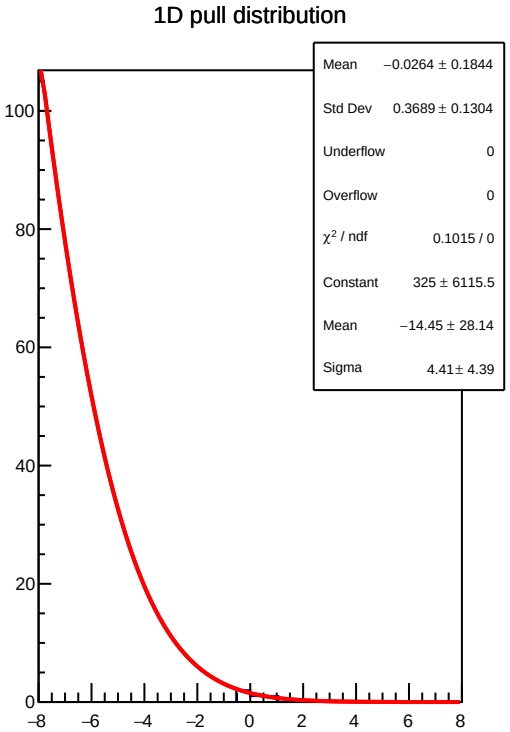
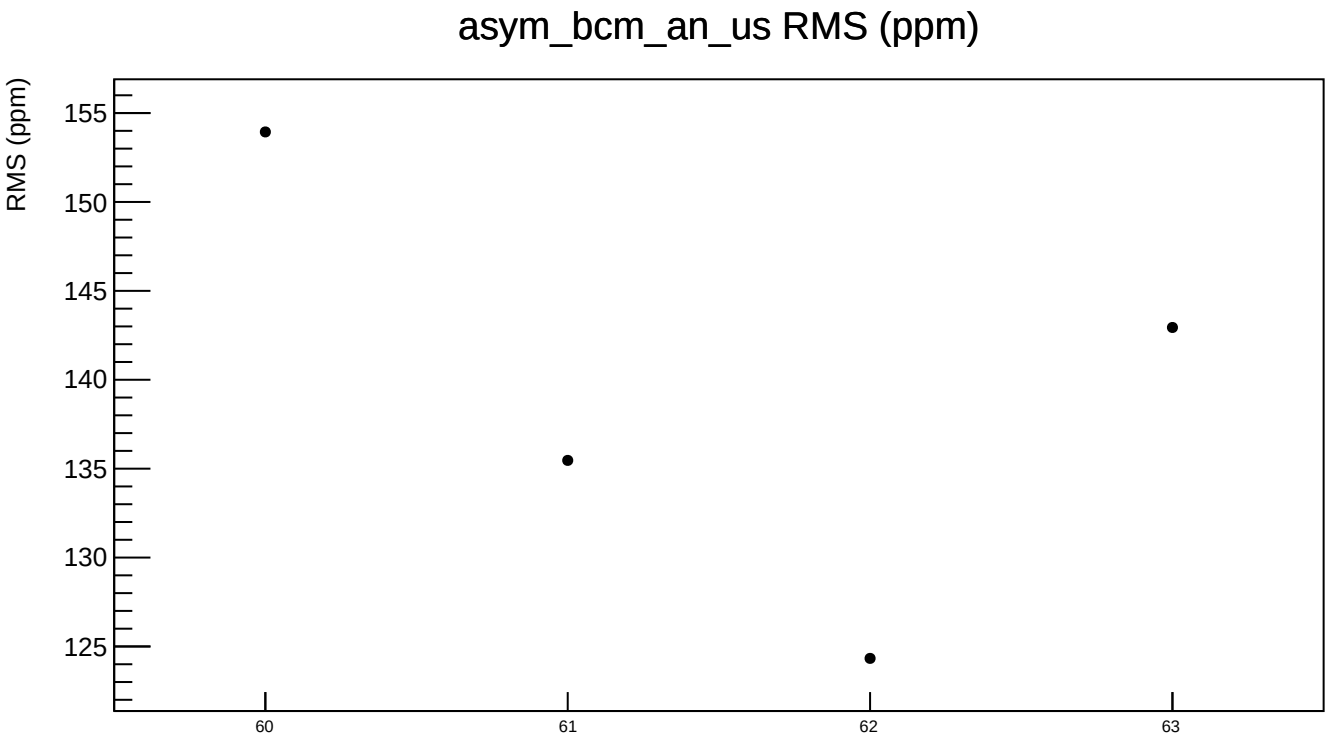

asym_bcm_target (ppb)
χ² / ndf 0.5027 / 3
p0 13.64 ± 90.19
300
200
100
0
−100
−200
−300
0.4
0.2
0
−0.2
−0.4
60
61
62
63

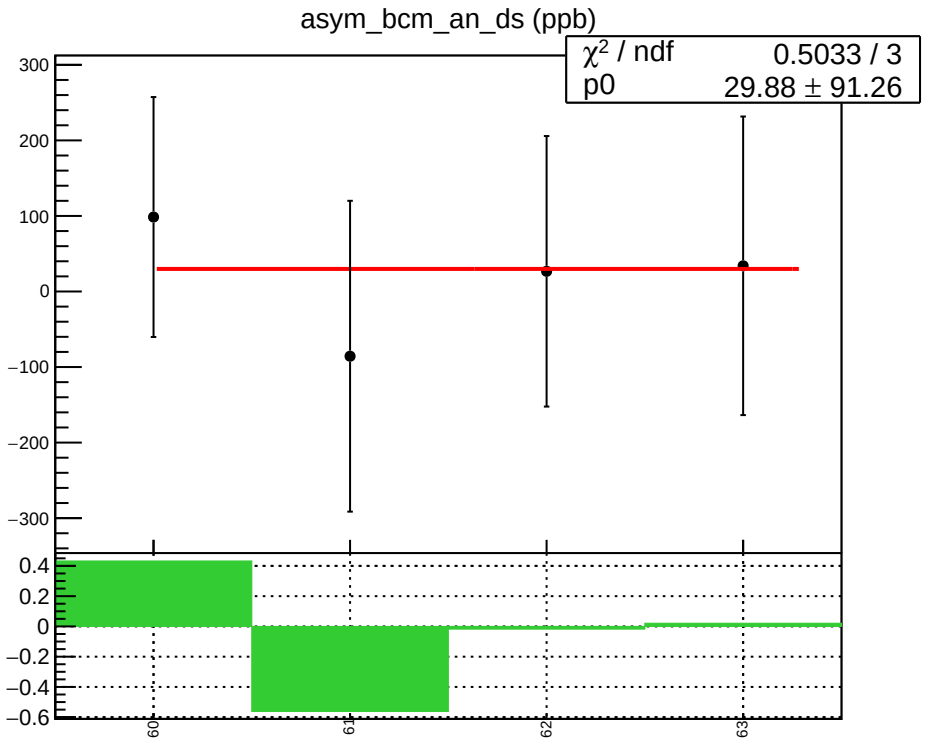

1D pull distribution
Mean −0.02862 ± 0.1767
Std Dev 0.3533 ± 0.1249
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

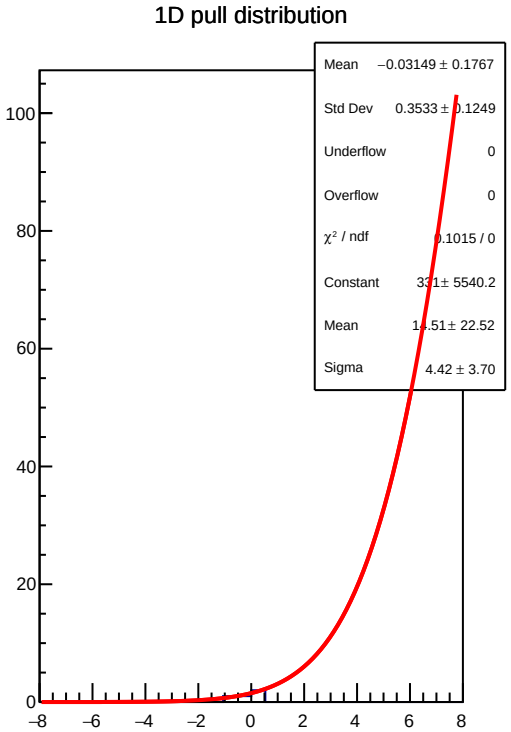

asym_bcm_target RMS (ppm)
RMS (ppm)
155
150
145
140
135
130
125
60
61
62
63

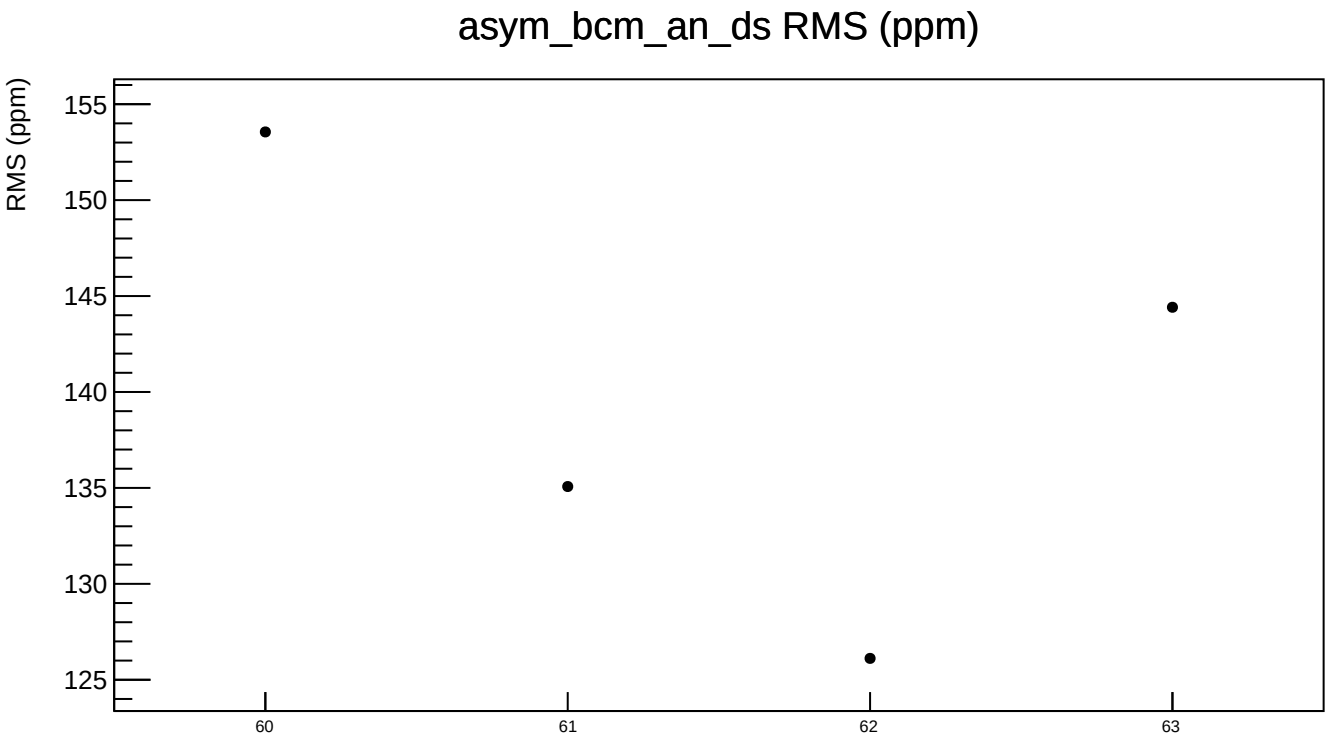

asym_bcm_an_us (ppb)
χ² / ndf 0.5471 / 3
p0 5.752 ± 90.88
300
200
100
0
−100
−200
−300
0.5
0.4
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
60
61
62
63

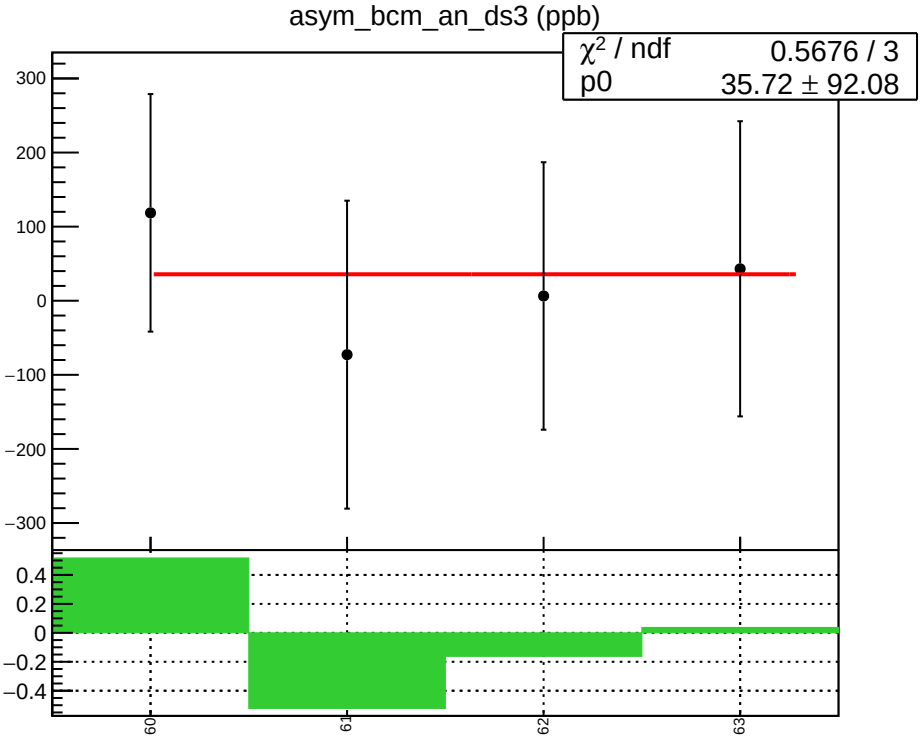

1D pull distribution
Mean −0.0264 ± 0.1844
Std Dev 0.3689 ± 0.1304
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 325 ± 6115.5
Mean −14.45 ± 28.14
Sigma 4.41± 4.39
100
80
60
40
20
0
−8
−6
−4
−2
0
2
4
6
8

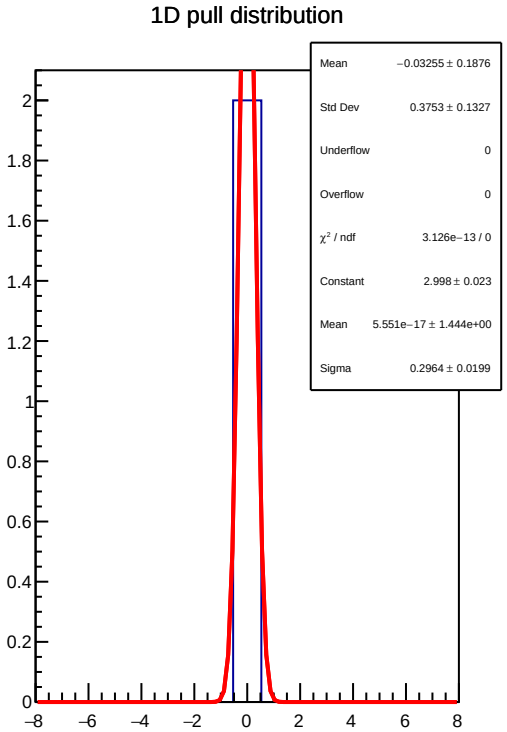

asym_bcm_an_us RMS (ppm)
RMS (ppm)
155
150
145
140
135
130
125
60
61
62
63


asym_bcm_an_ds (ppb)
χ² / ndf 0.5033 / 3
p0 29.88 ± 91.26
300
200
100
0
−100
−200
−300
0.4
0.2
0
−0.2
−0.4
−0.6
60
61
62
63

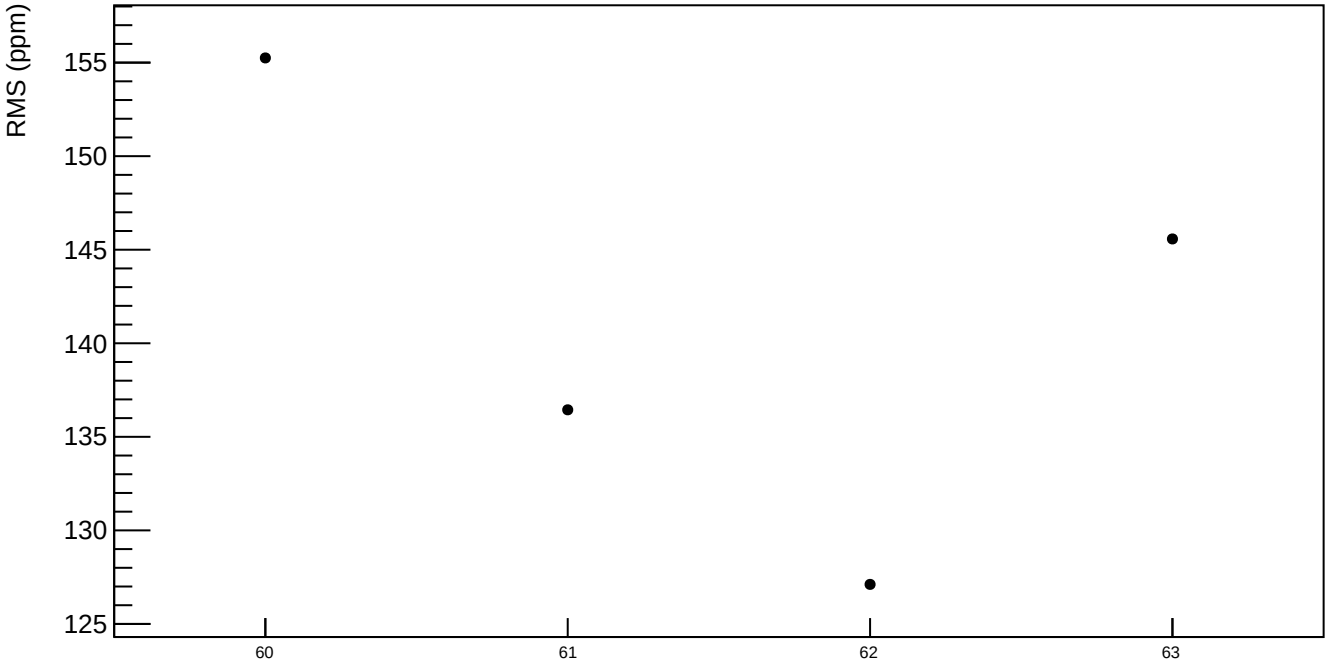

1D pull distribution
Mean −0.03149 ± 0.1767
Std Dev 0.3533 ± 0.1249
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 331± 5540.2
Mean 1.51± 22.52
Sigma 4.42 ± 3.70
100
80
60
40
20
0
−8
−6
−4
−2
0
2
4
6
8

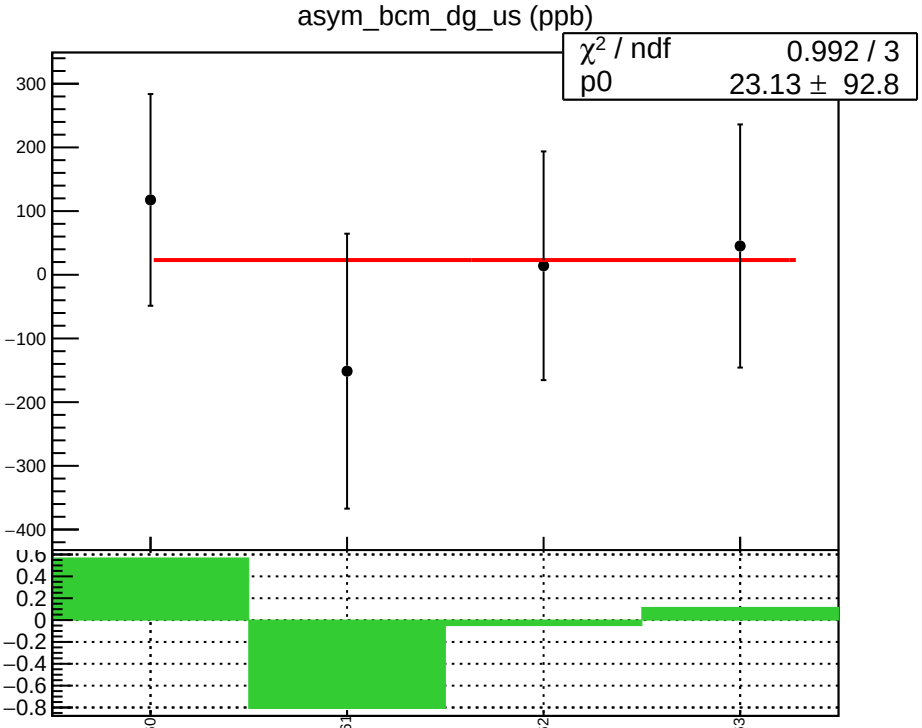

asym_bcm_an_ds RMS (ppm)
RMS (ppm)
155
150
145
140
135
130
125
60
61
62
63

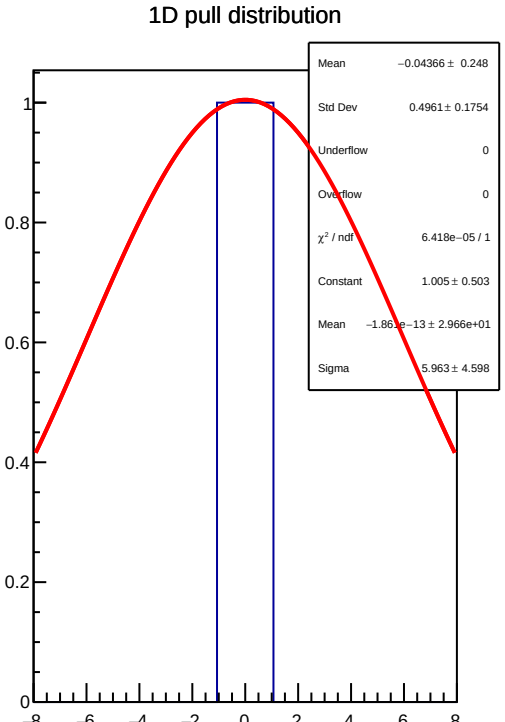

asym_bcm_an_ds3 (ppb)
χ² / ndf 0.5676 / 3
p0 35.72 ± 92.08
300
200
100
0
−100
−200
−300
0.4
0.2
0
−0.2
−0.4
60
61
62
63

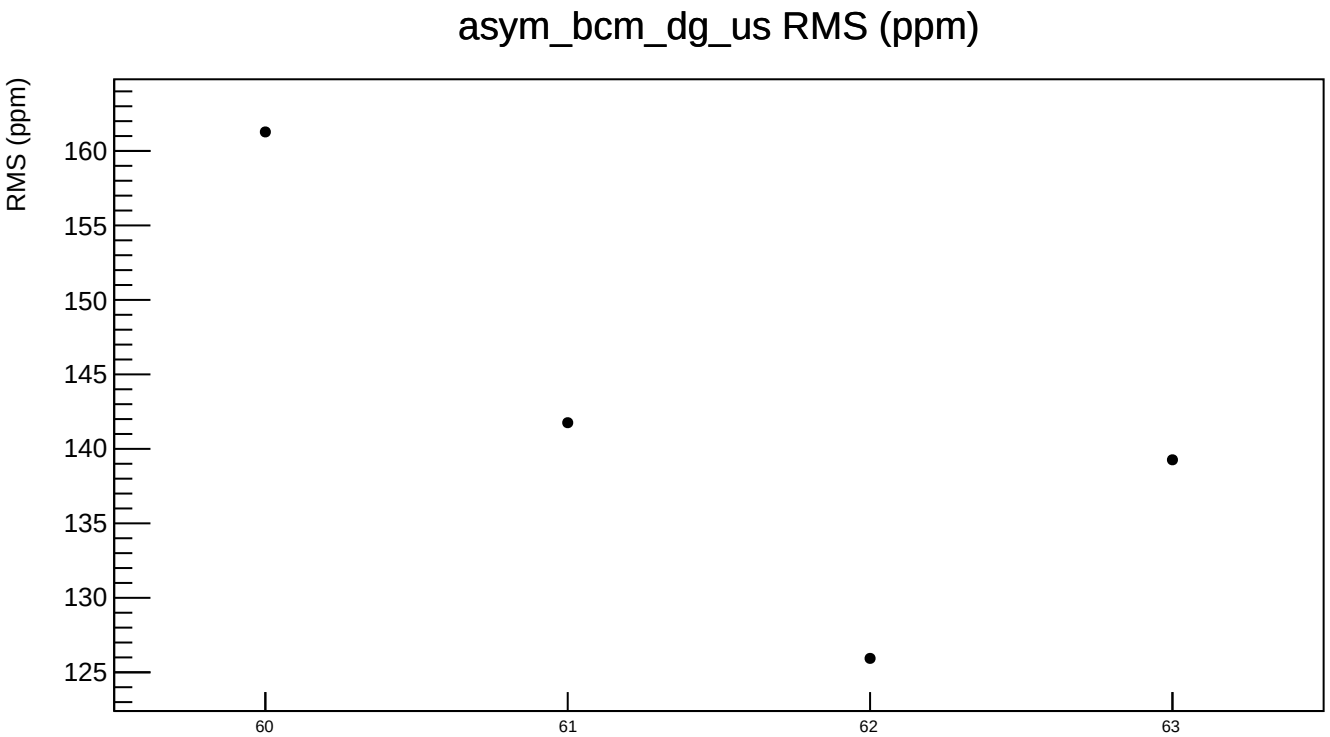

1D pull distribution
Mean −0.03255 ± 0.1876
Std Dev 0.3753 ± 0.1327
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

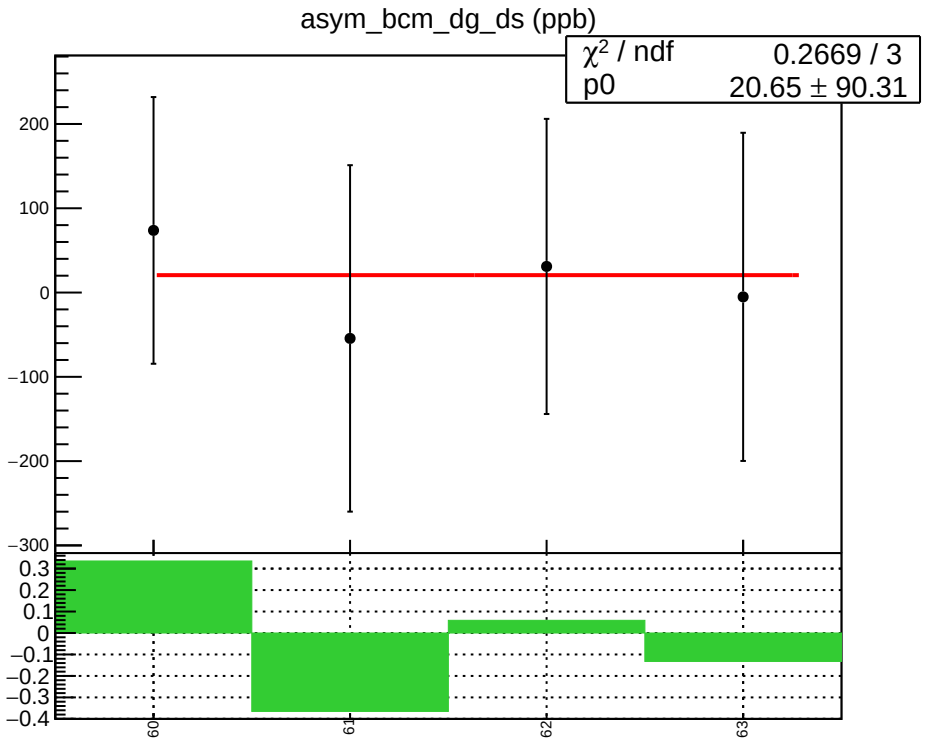
asym_bcm_an_ds3 RMS (ppm)

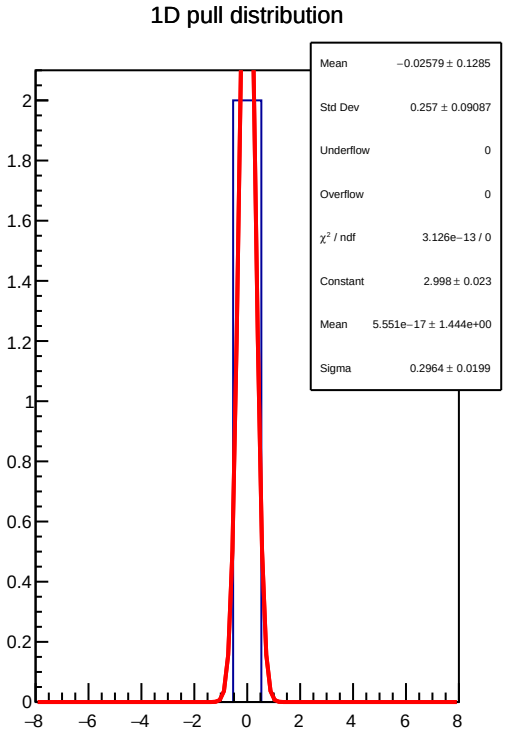


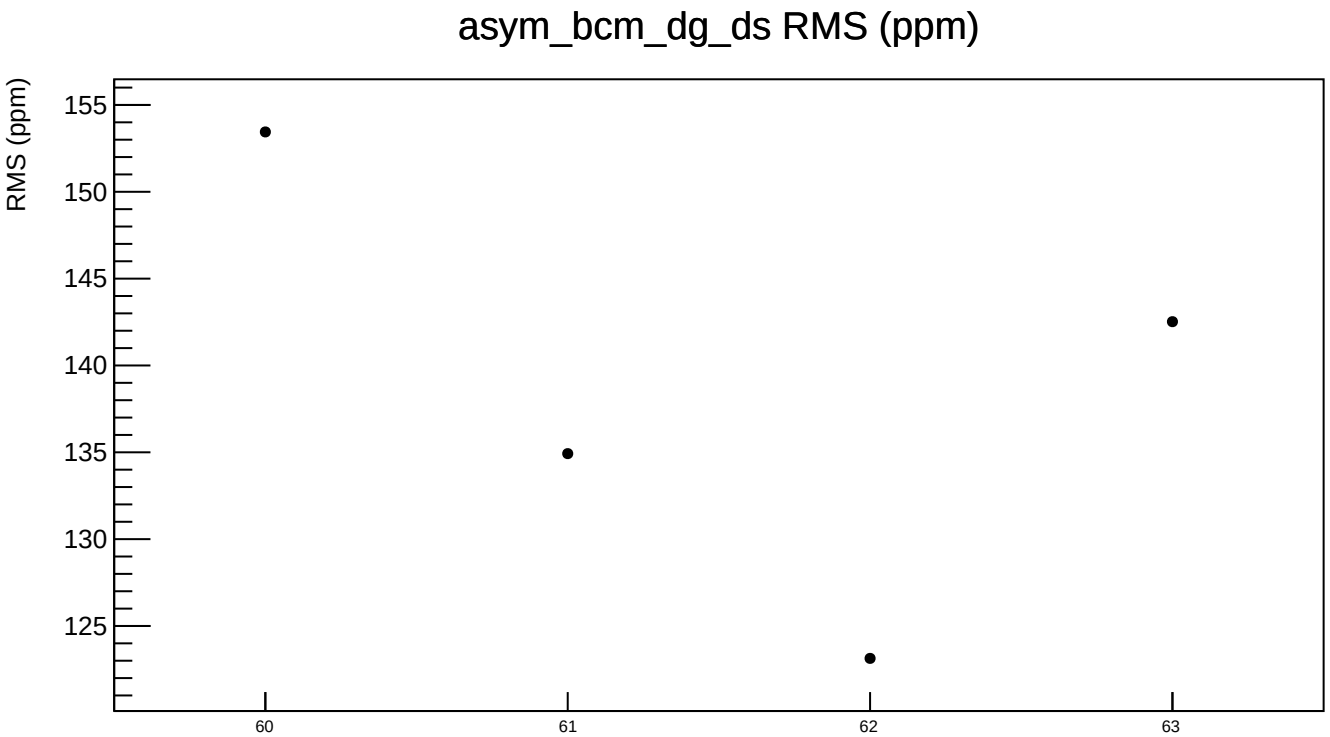

asym_bcm_dg_us (ppb)
χ² / ndf 0.992 / 3
p0 23.13 ± 92.8
300
200
100
0
−100
−200
−300
−400
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
60
61
62
63

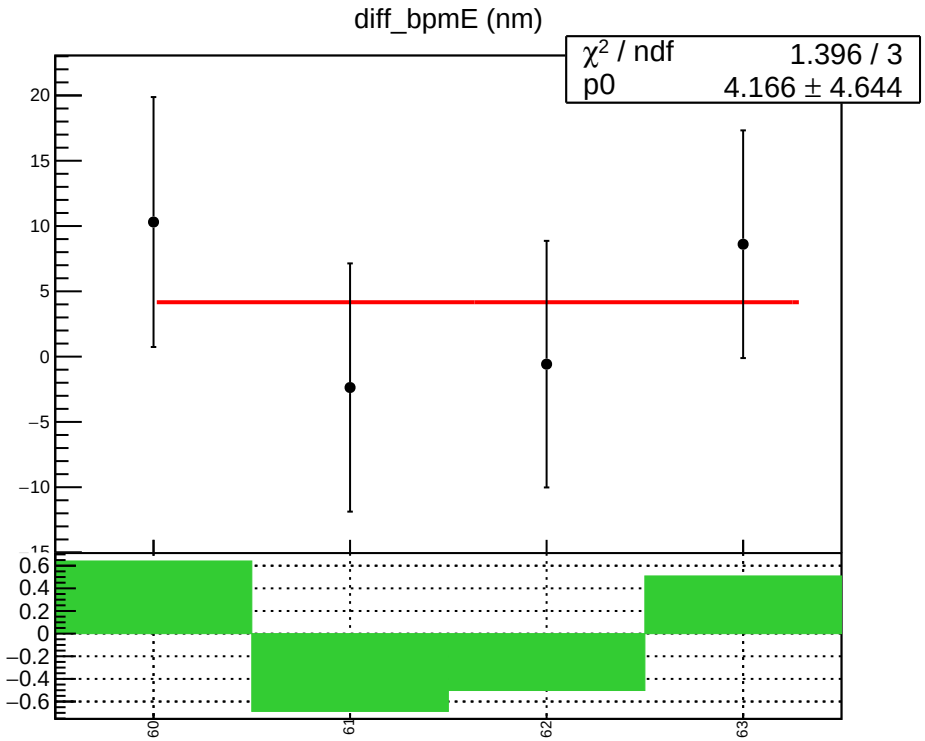

1D pull distribution
Mean −0.04366 ± 0.248
Std Dev 0.4961 ± 0.1754
Underflow 0
Overflow 0
χ² / ndf 6.418e−05 / 1
Constant 1.005 ± 0.503
Mean −1.861e−13 ± 2.966e+01
Sigma 5.963 ± 4.598
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

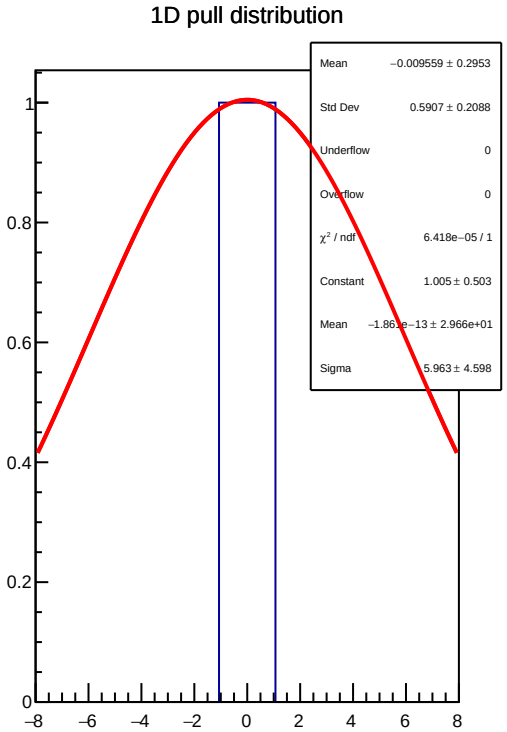

asym_bcm_dg_us RMS (ppm)
RMS (ppm)
160
155
150
145
140
135
130
125
60
61
62
63

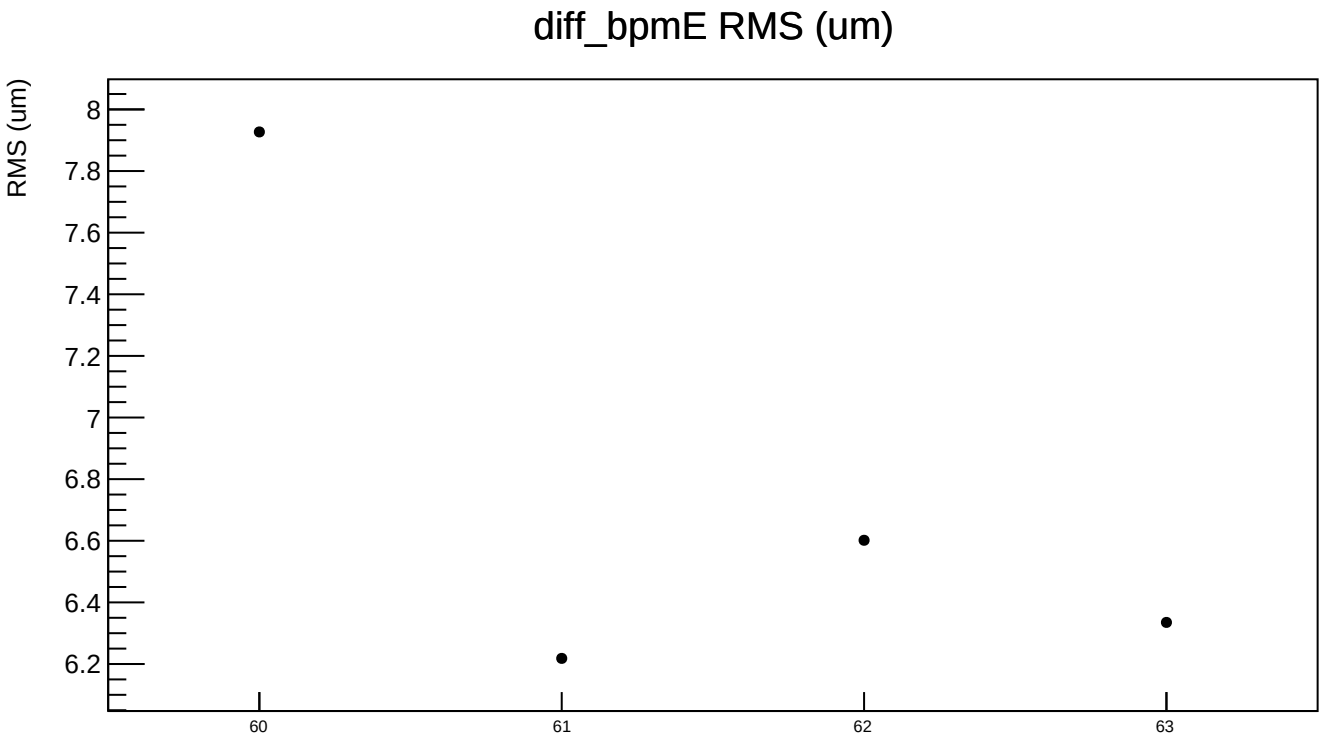

asym_bcm_dg_ds (ppb)
χ² / ndf 0.2669 / 3
p0 20.65 ± 90.31
200
100
0
−100
−200
−300
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
60
61
62
63

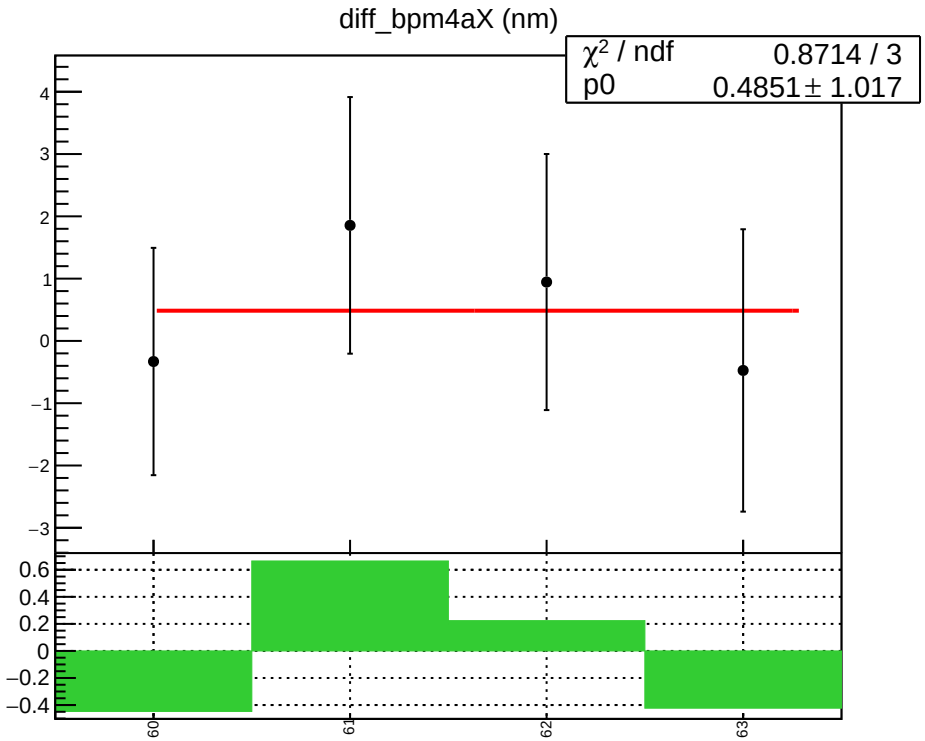

1D pull distribution
Mean −0.02579 ± 0.1285
Std Dev 0.257 ± 0.09087
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

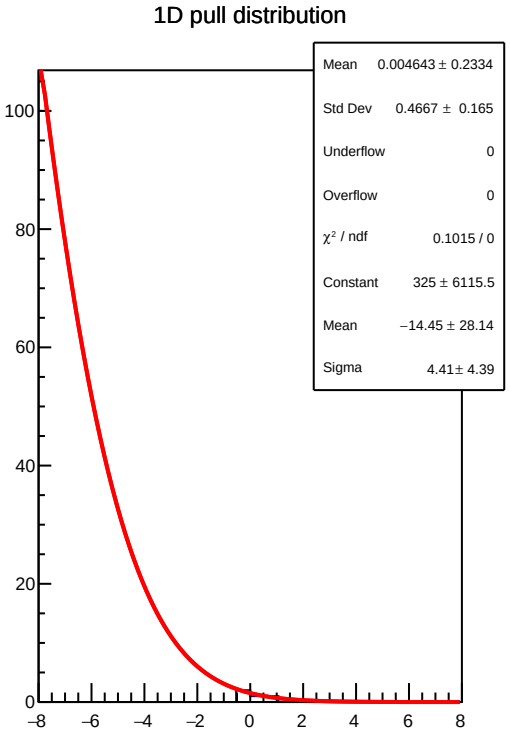

asym_bcm_dg_ds RMS (ppm)
RMS (ppm)
155
150
145
140
135
130
125
60
61
62
63

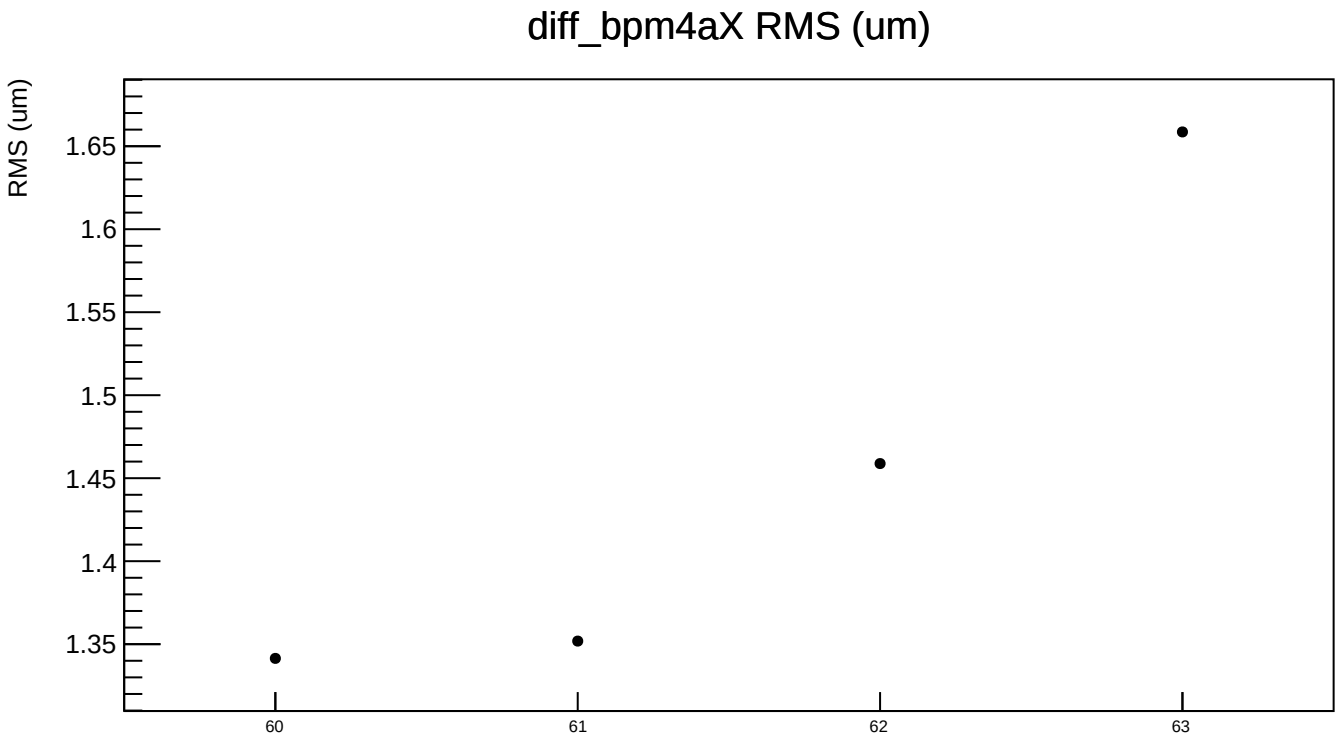

diff_bpmE (nm)
χ² / ndf 1.396 / 3
p0 4.166 ± 4.644
20
15
10
5
0
−5
−10
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
60
61
62
63

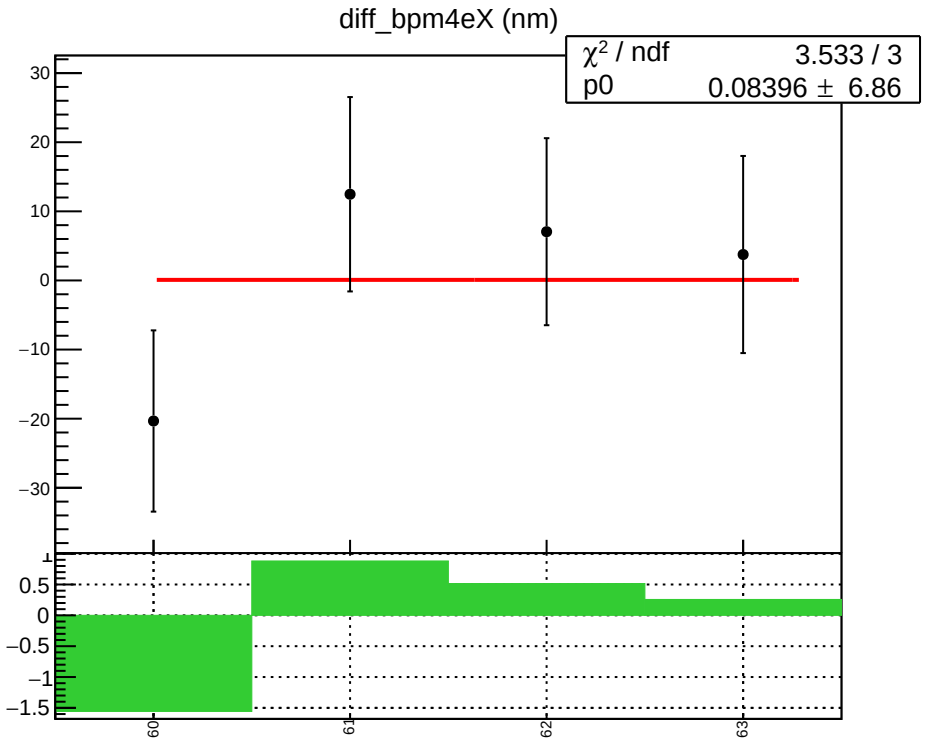

1D pull distribution
Mean −0.009559 ± 0.2953
Std Dev 0.5907 ± 0.2088
Underflow 0
Overflow 0
χ² / ndf 6.418e−05 / 1
Constant 1.005 ± 0.503
Mean −1.861e−13 ± 2.966e+01
Sigma 5.963 ± 4.598
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

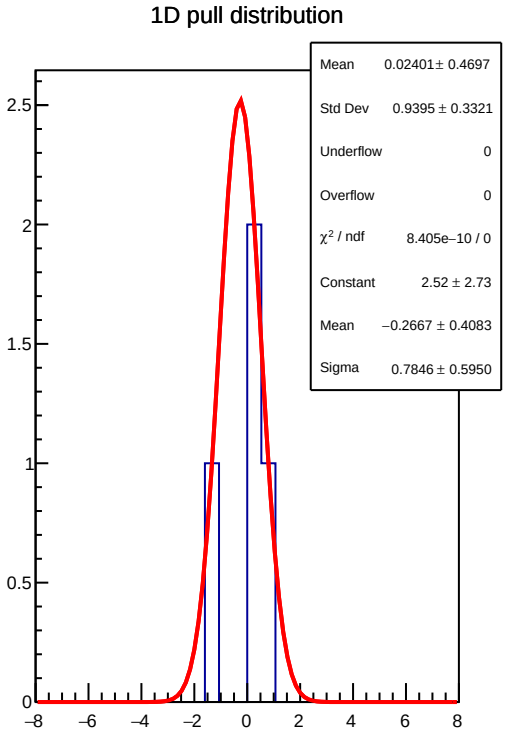

diff_bpmE RMS (um)
RMS (um)
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
60
61
62
63


diff_bpm4aX (nm)
χ² / ndf 0.8714 / 3
p0 0.4851 ± 1.017
4
3
2
1
0
−1
−2
−3
0.6
0.4
0.2
0
−0.2
−0.4
60
61
62
63

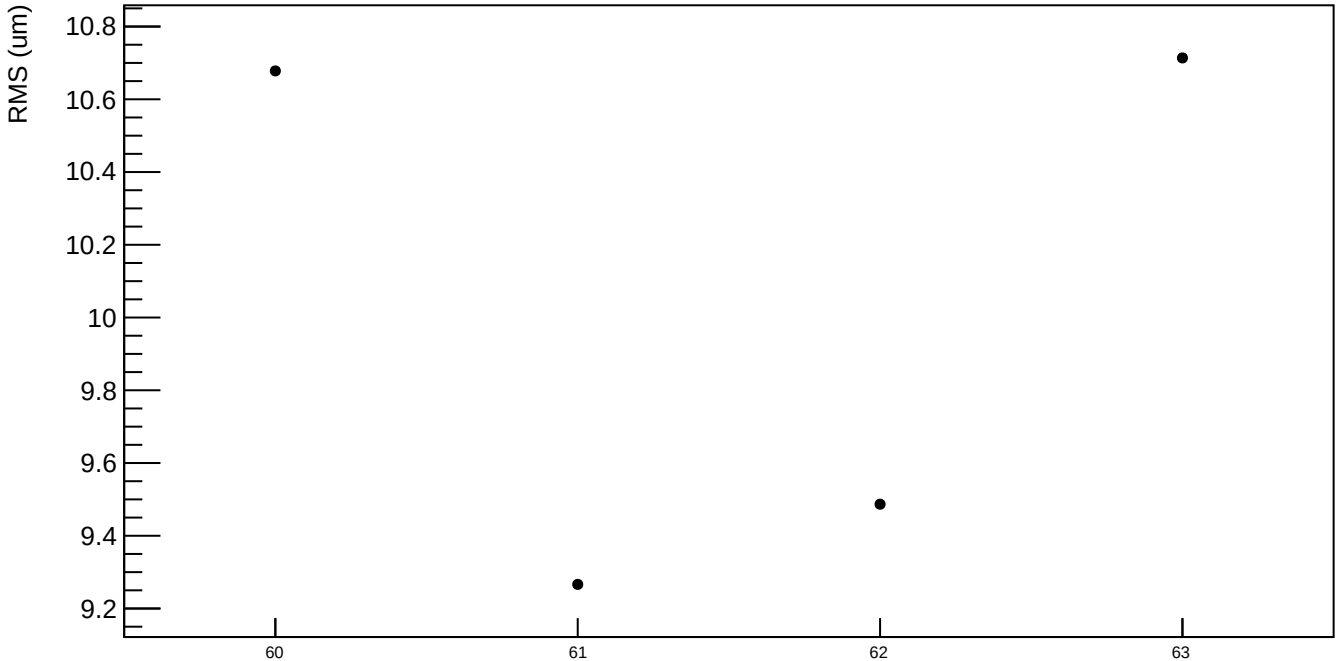

1D pull distribution
Mean 0.004643 ± 0.2334
Std Dev 0.4667 ± 0.165
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 325 ± 6115.5
Mean −14.45 ± 28.14
Sigma 4.41 ± 4.39
100
80
60
40
20
0
−8
−6
−4
−2
0
2
4
6
8

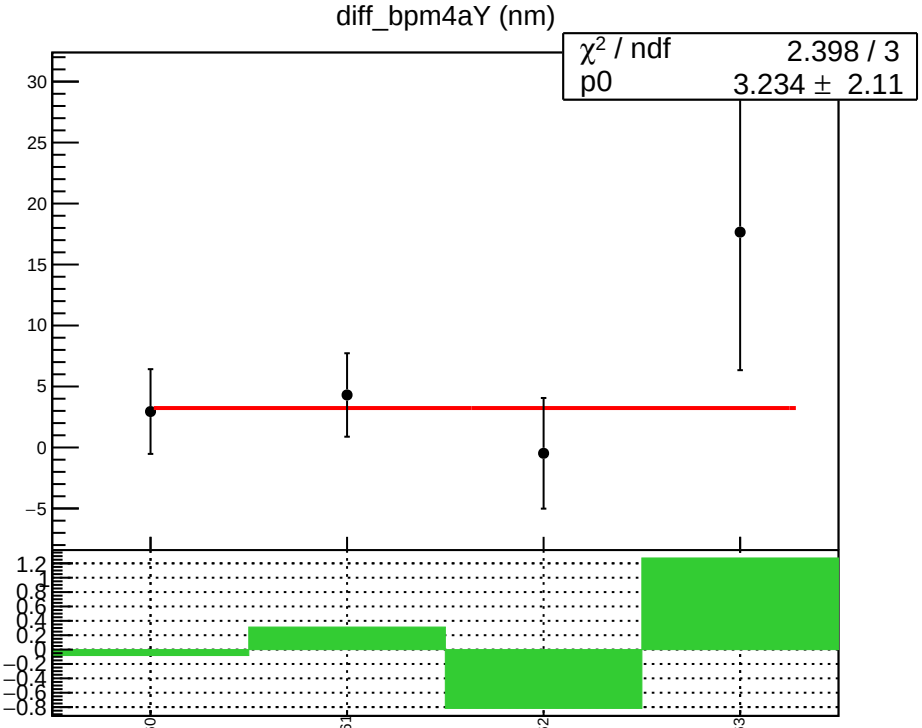

diff_bpm4aX RMS (um)
RMS (um)
1.65
1.6
1.55
1.5
1.45
1.4
1.35
60
61
62
63

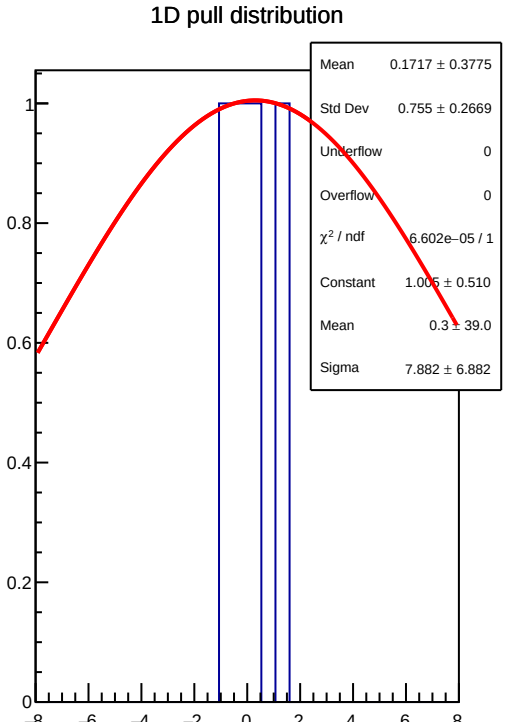

diff_bpm4eX (nm)
χ² / ndf 3.533 / 3
p0 0.08396 ± 6.86
30
20
10
0
−10
−20
−30
0.5
0
−0.5
−1
−1.5
60
61
62
63

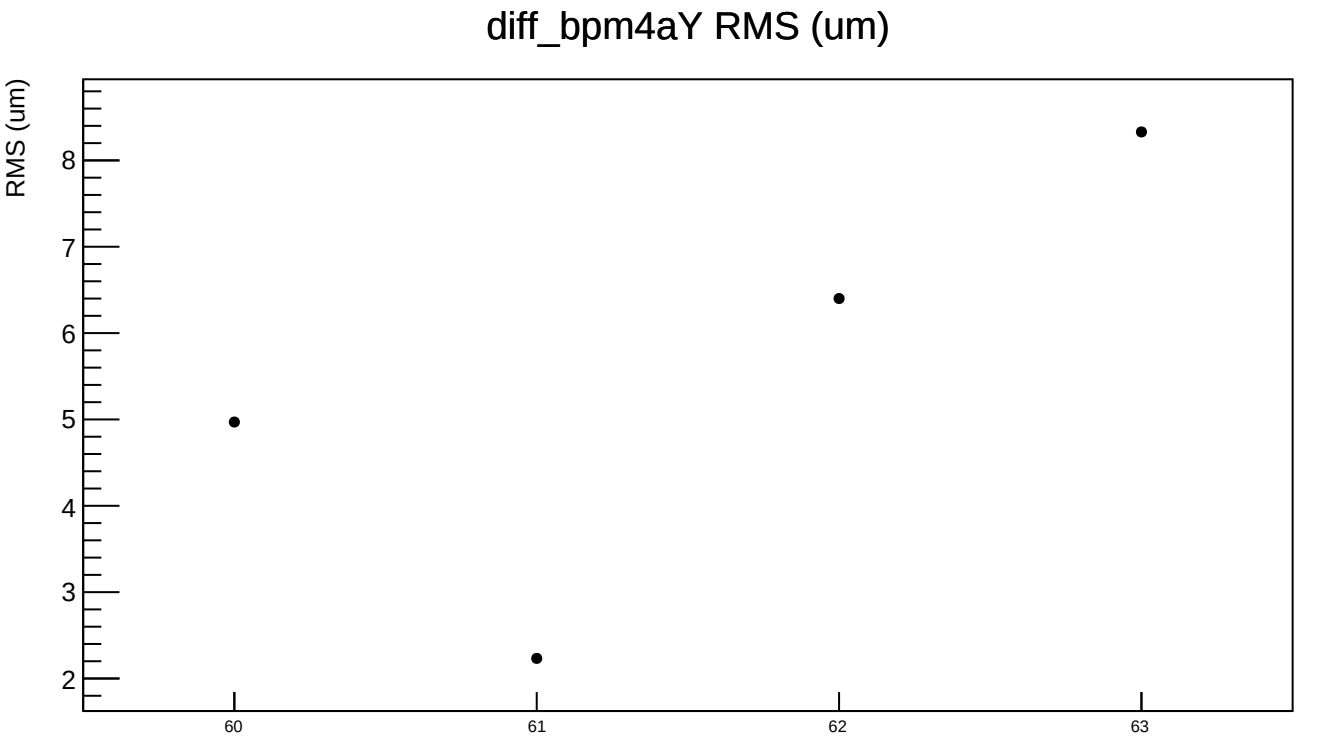

1D pull distribution
Mean 0.02401 ± 0.4697
Std Dev 0.9395 ± 0.3321
Underflow 0
Overflow 0
χ² / ndf 8.405e−10 / 0
Constant 2.52 ± 2.73
Mean −0.2667 ± 0.4083
Sigma 0.7846 ± 0.5950
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

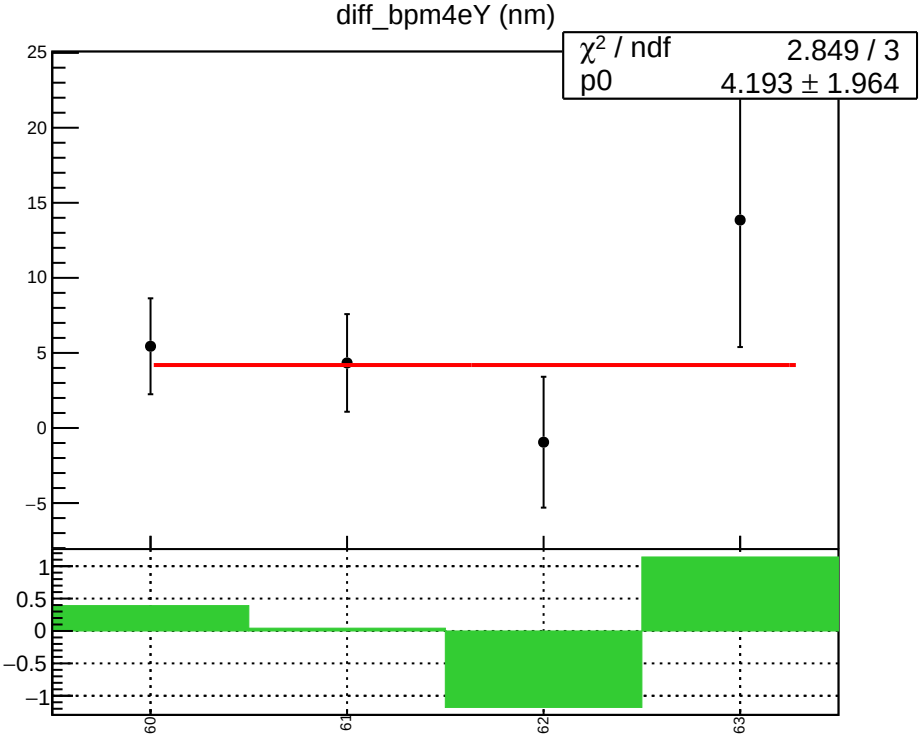
diff_bpm4eX RMS (um)

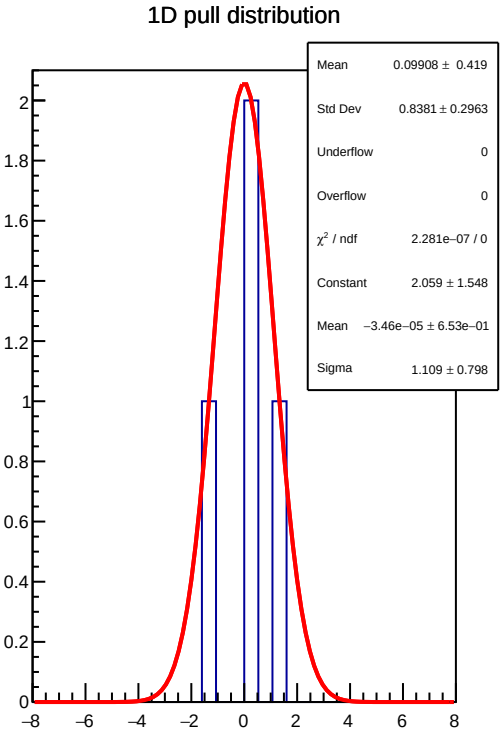



diff_bpm4aY (nm)
χ² / ndf 2.398 / 3
p0 3.234 ± 2.11
30
25
20
15
10
5
0
−5
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
60
61
62
63

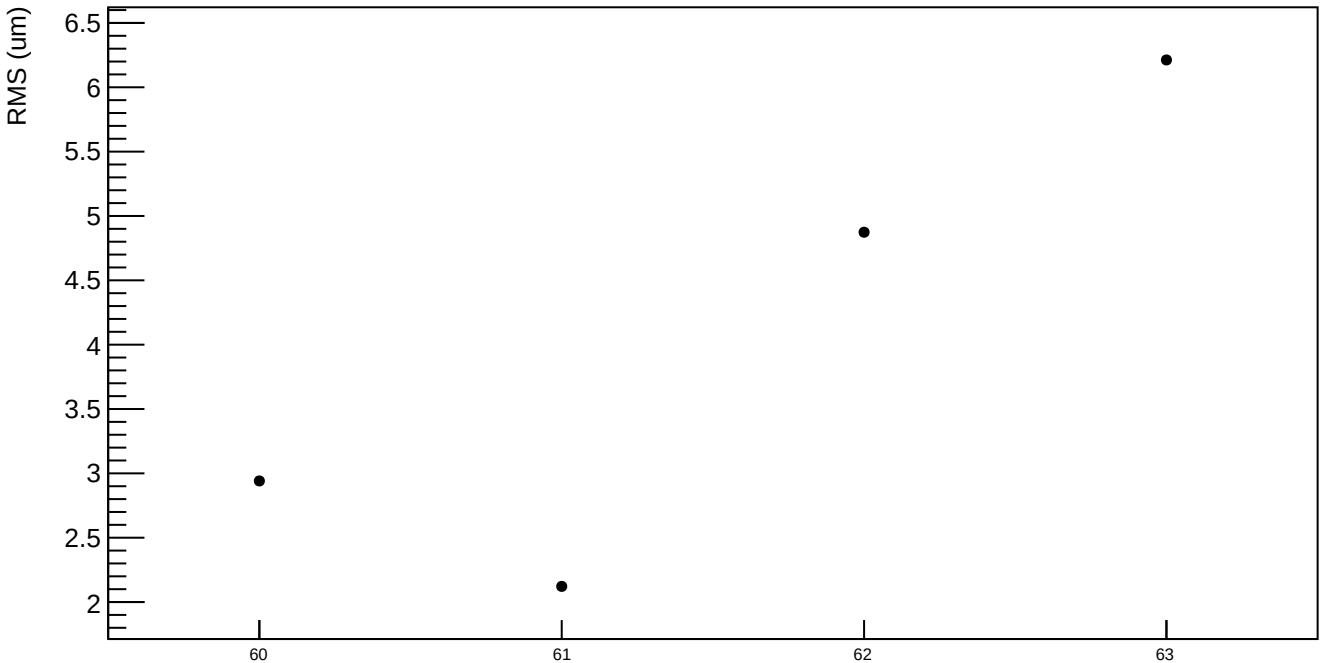

1D pull distribution
Mean 0.1717 ± 0.3775
Std Dev 0.755 ± 0.2669
Underflow 0
Overflow 0
χ² / ndf 6.602e−05 / 1
Constant 1.005 ± 0.510
Mean 0.3 ± 39.0
Sigma 7.882 ± 6.882
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

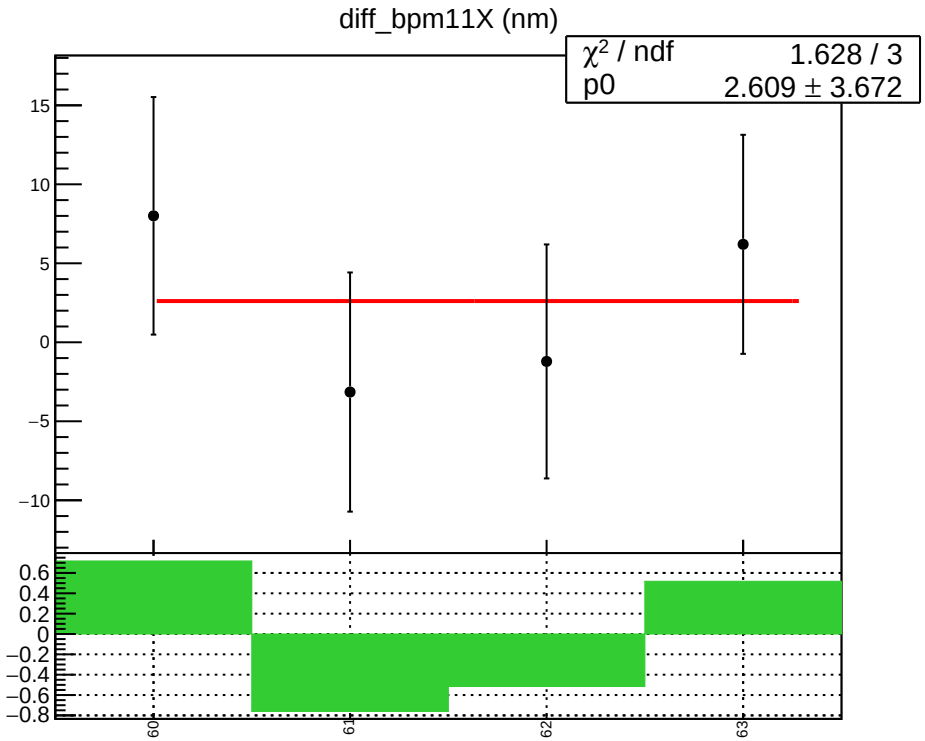

diff_bpm4aY RMS (um)
RMS (um)
8
7
6
5
4
3
2
60
61
62
63

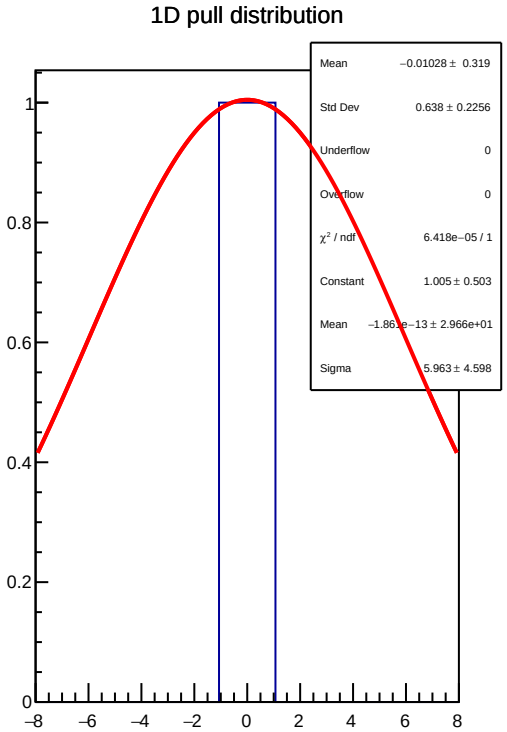

diff_bpm4eY (nm)
χ² / ndf 2.849 / 3
p0 4.193 ± 1.964
25
20
15
10
5
0
−5
1
0.5
0
−0.5
−1
60
61
62
63


1D pull distribution
Mean 0.09908 ± 0.419
Std Dev 0.8381 ± 0.2963
Underflow 0
Overflow 0
χ² / ndf 2.281e−07 / 0
Constant 2.059 ± 1.548
Mean −3.46e−05 ± 6.53e−01
Sigma 1.109 ± 0.798
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

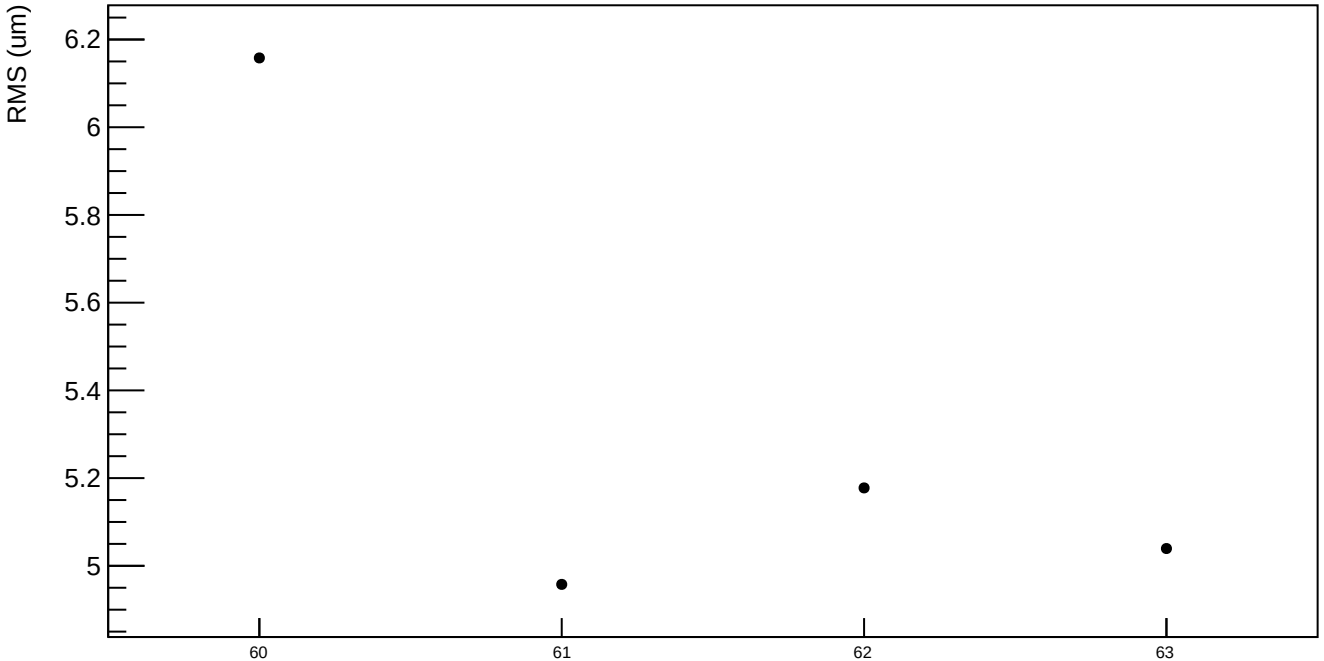
diff_bpm4eY RMS (um)

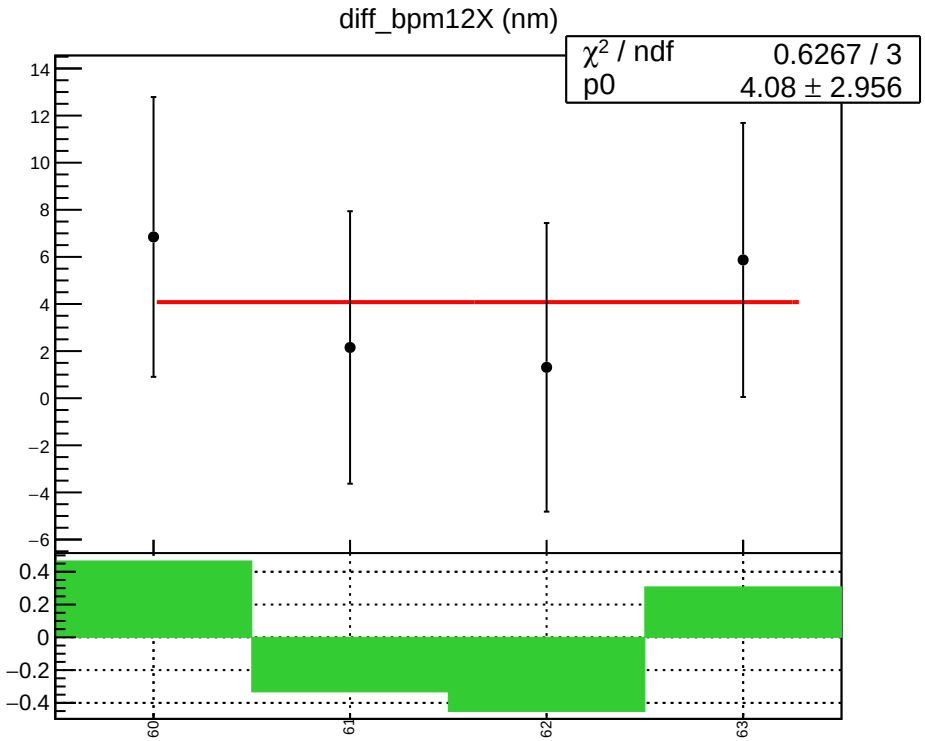


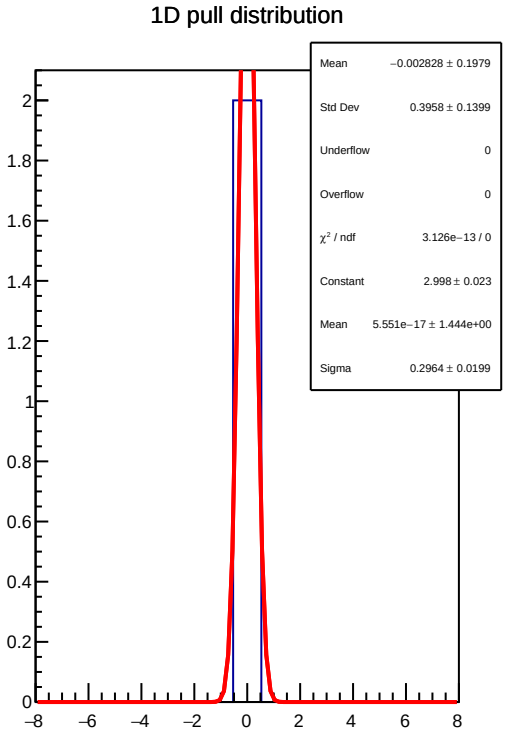

diff_bpm11X (nm)
χ² / ndf 1.628 / 3
p0 2.609 ± 3.672
15
10
5
0
−5
−10
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
60
61
62
63

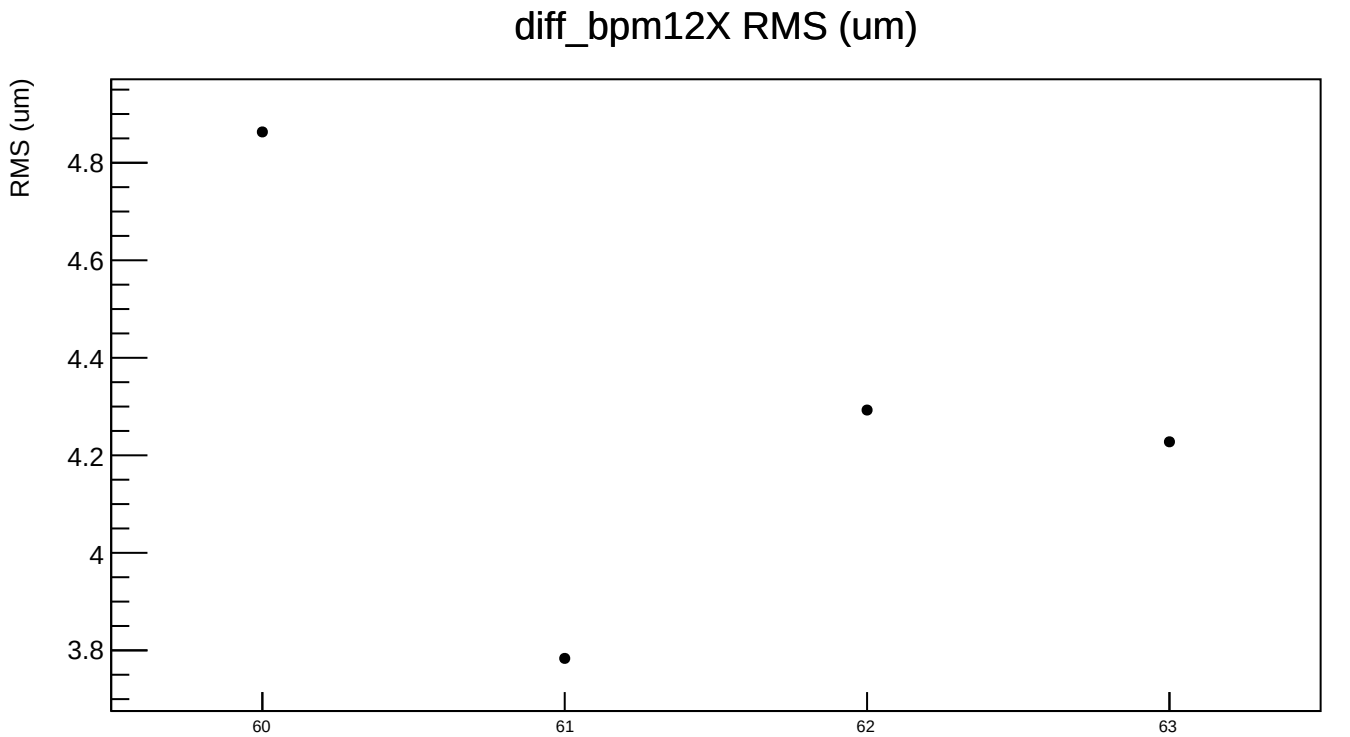

1D pull distribution
Mean −0.01028 ± 0.319
Std Dev 0.638 ± 0.2256
Underflow 0
Overflow 0
χ² / ndf 6.418e−05 / 1
Constant 1.005 ± 0.503
Mean −1.861e−13 ± 2.966e+01
Sigma 5.963 ± 4.598
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

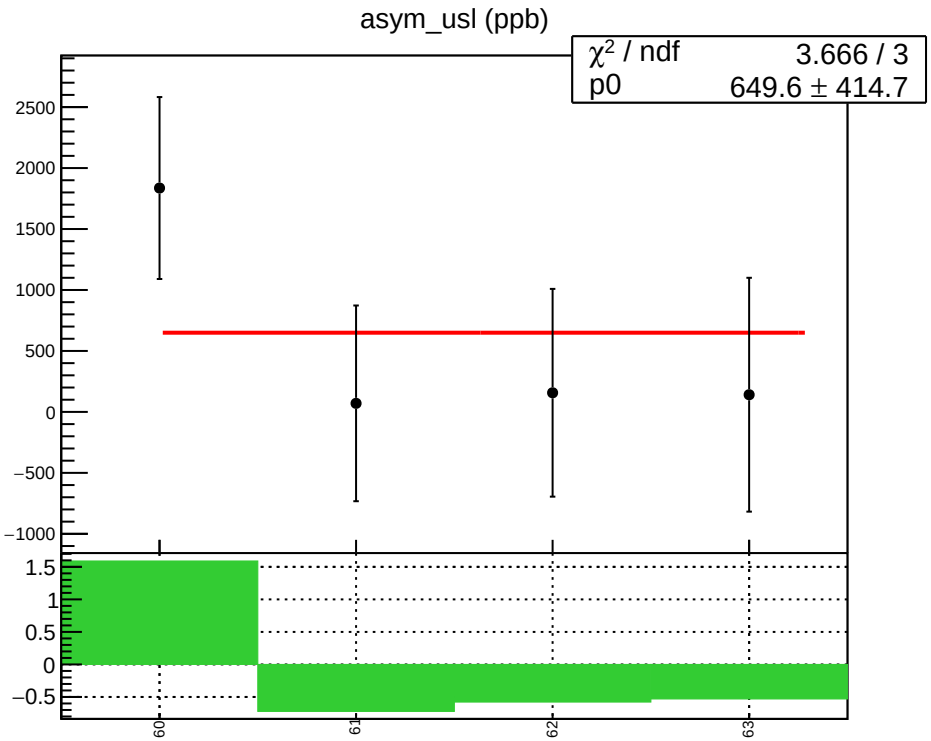
diff_bpm11X RMS (um)

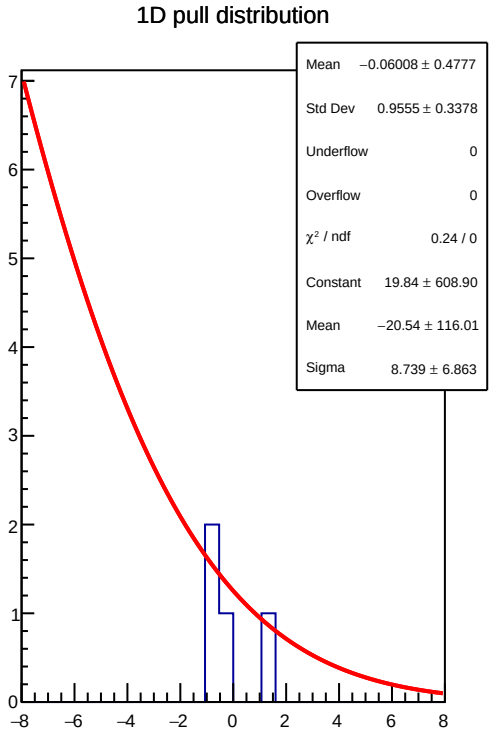


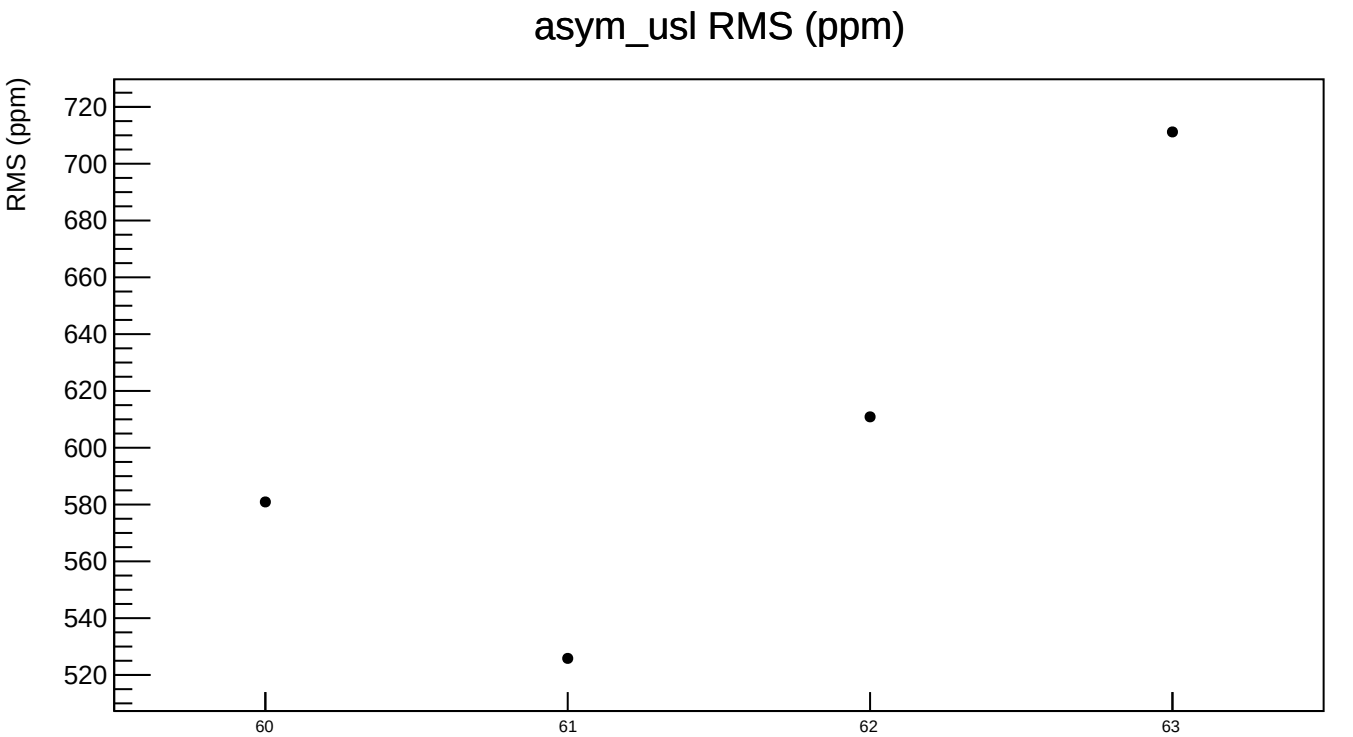

diff_bpm12X (nm)
χ² / ndf 0.6267 / 3
p0 4.08 ± 2.956
14
12
10
8
6
4
2
0
−2
−4
−6
0.4
0.2
0
−0.2
−0.4
60
61
62
63

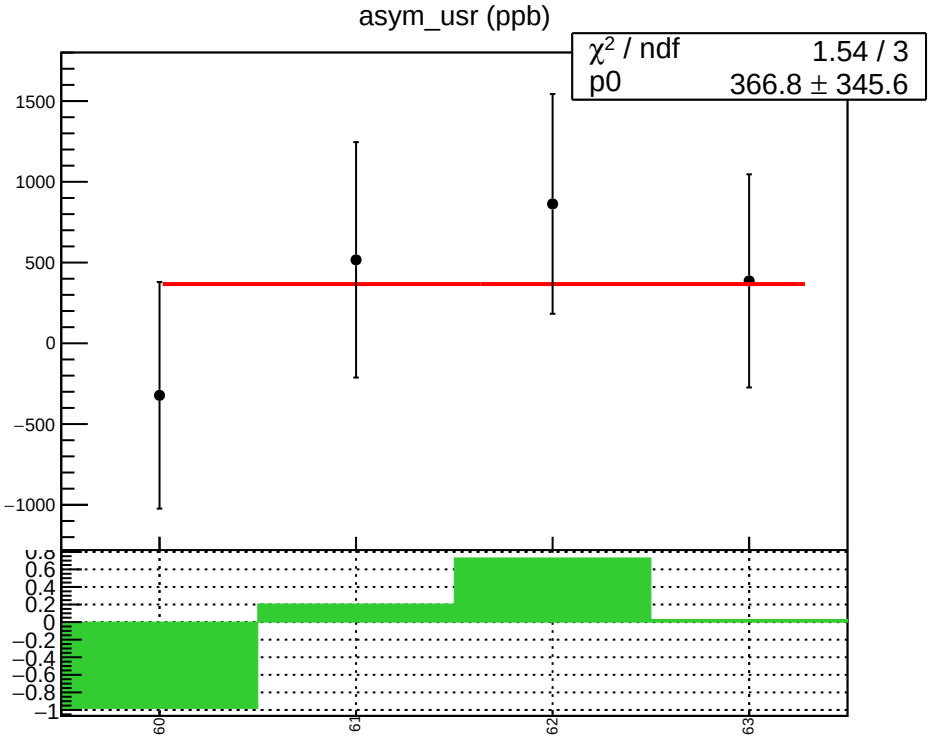

1D pull distribution
Mean −0.002828 ± 0.1979
Std Dev 0.3958 ± 0.1399
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

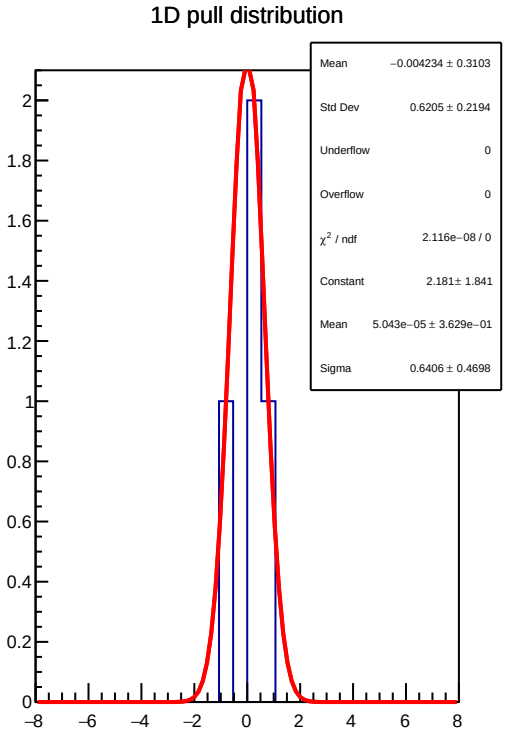

diff_bpm12X RMS (um)
RMS (um)
4.8
4.6
4.4
4.2
4
3.8
60
61
62
63


asym_usl (ppb)
χ² / ndf 3.666 / 3
p0 649.6 ± 414.7
2500
2000
1500
1000
500
0
−500
−1000
1.5
1
0.5
0
−0.5
60
61
62
63

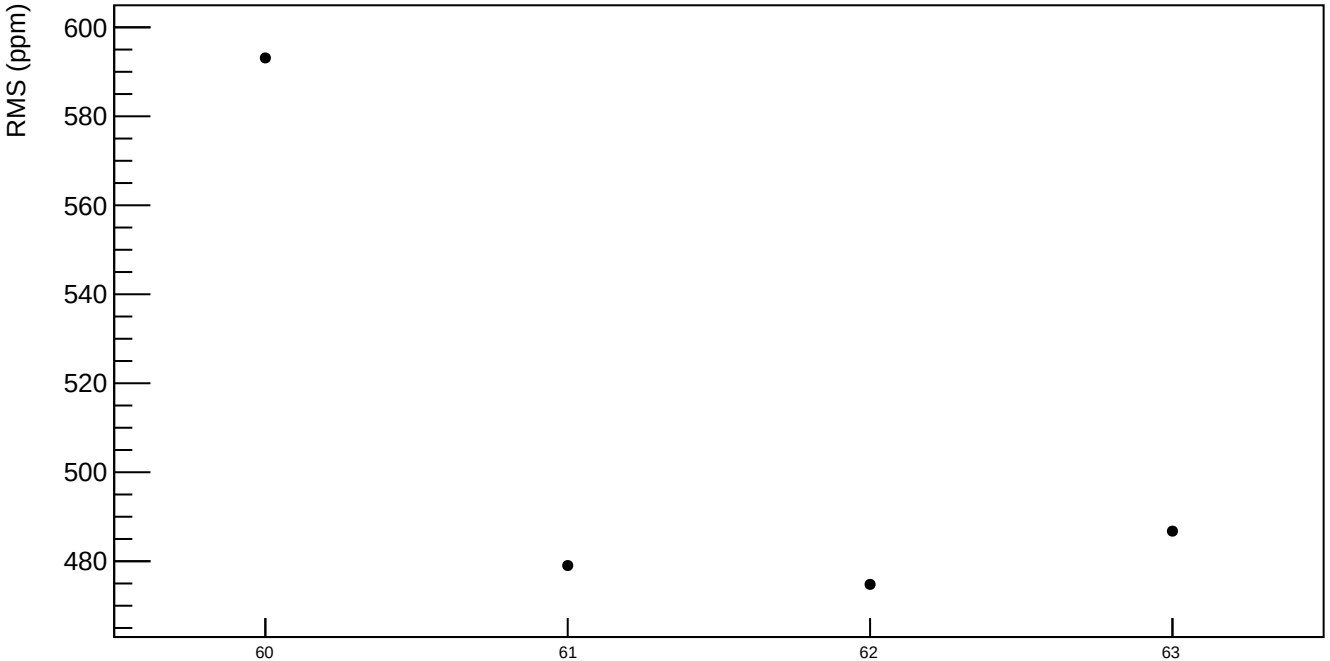

1D pull distribution
Mean −0.06008 ± 0.4777
Std Dev 0.9555 ± 0.3378
Underflow 0
Overflow 0
χ² / ndf 0.24 / 0
Constant 19.84 ± 608.90
Mean −20.54 ± 116.01
Sigma 8.739 ± 6.863
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

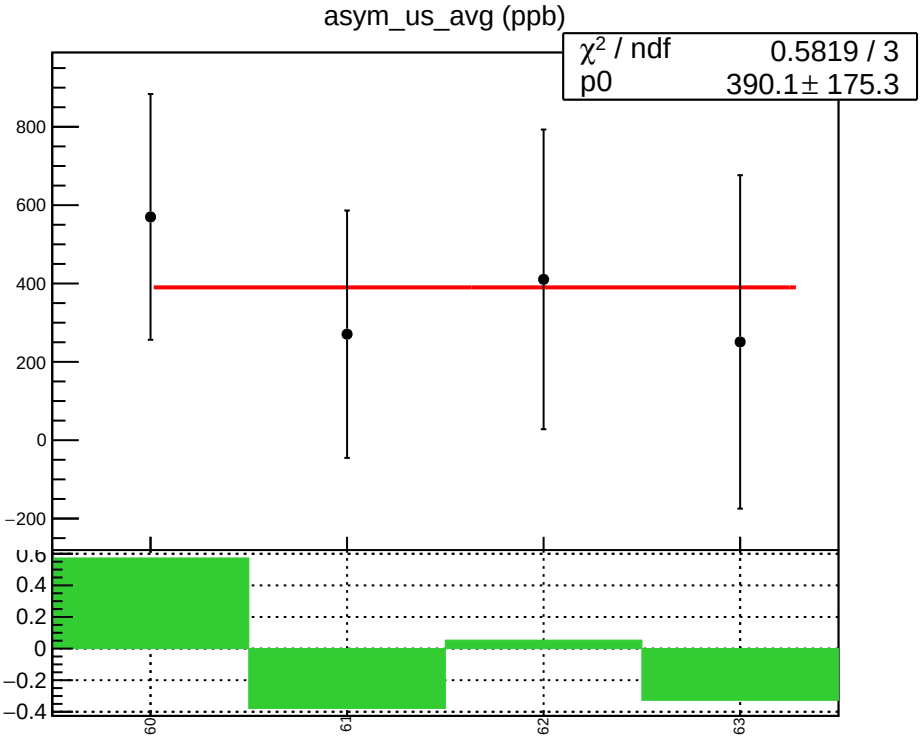

asym_usl RMS (ppm)
RMS (ppm)
720
700
680
660
640
620
600
580
560
540
520
60
61
62
63

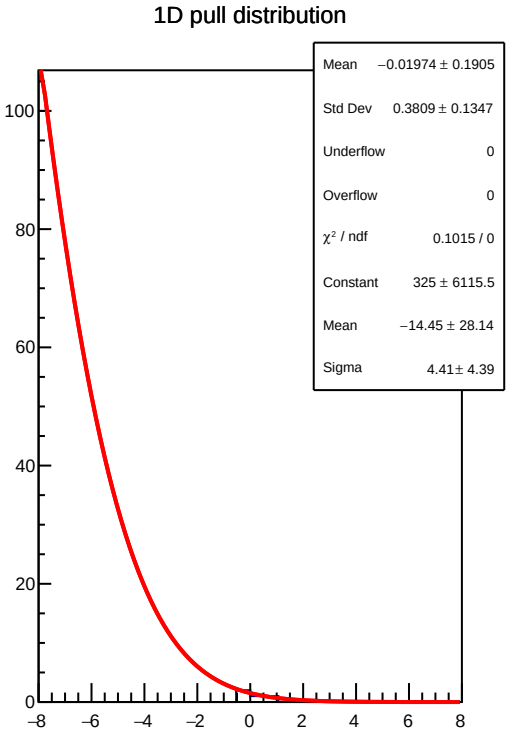

asym_usr (ppb)
χ² / ndf 1.54 / 3
p0 366.8 ± 345.6
1500
1000
500
0
−500
−1000
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
60
61
62
63

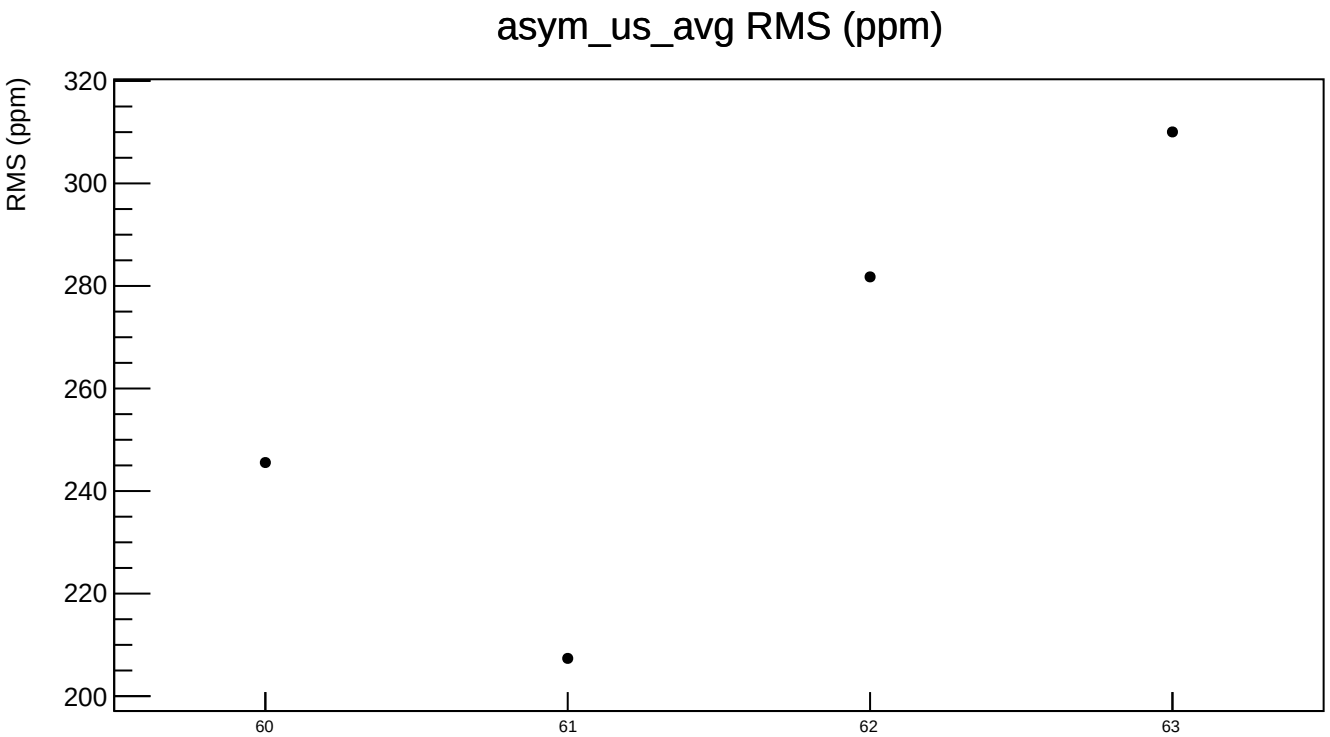

1D pull distribution
Mean −0.004234 ± 0.3103
Std Dev 0.6205 ± 0.2194
Underflow 0
Overflow 0
χ² / ndf 2.116e−08 / 0
Constant 2.181± 1.841
Mean 5.043e−05 ± 3.629e−01
Sigma 0.6406 ± 0.4698
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

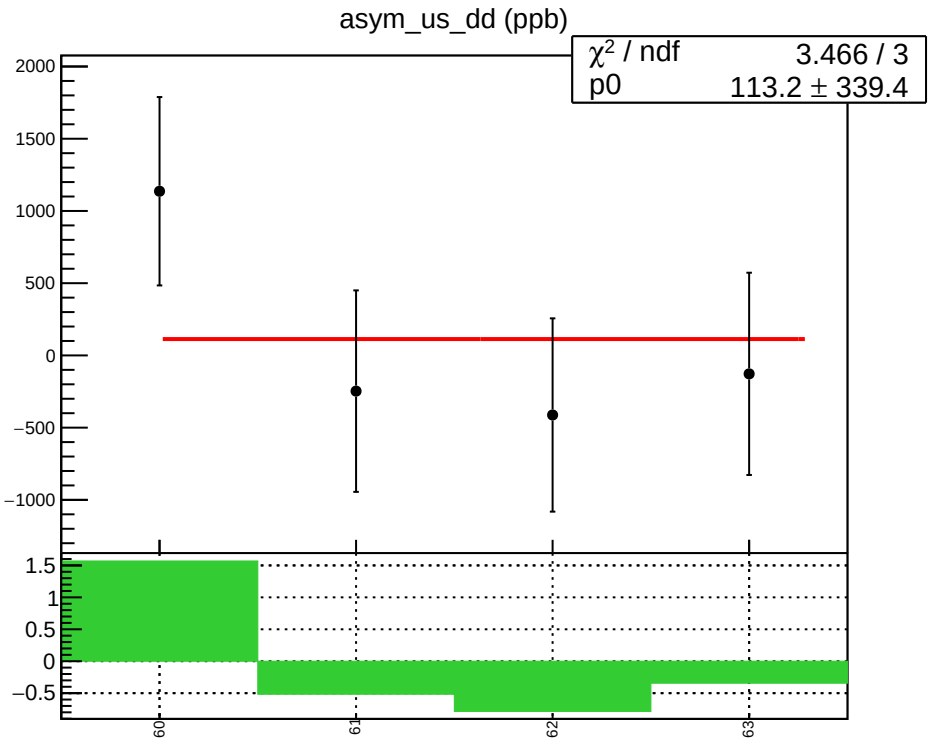
asym_usr RMS (ppm)

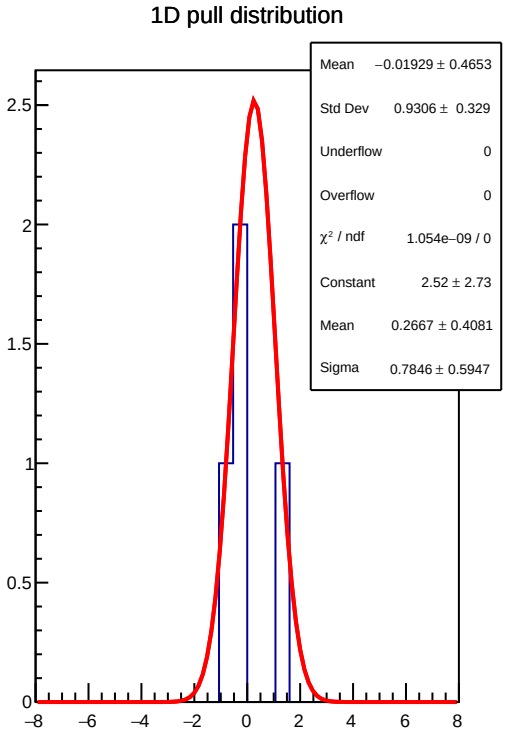



asym_us_avg (ppb)
χ² / ndf 0.5819 / 3
p0 390.1 ± 175.3
800
600
400
200
0
−200
0.6
0.4
0.2
0
−0.2
−0.4
60
61
62
63

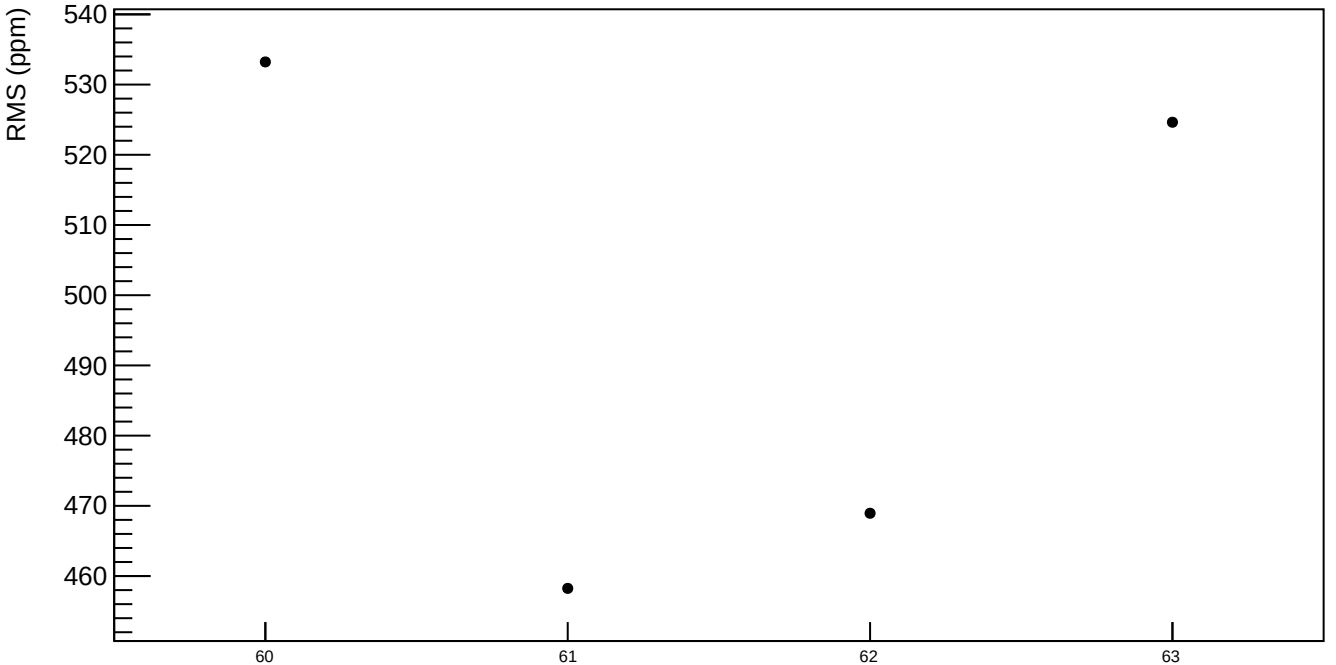

1D pull distribution
Mean −0.01974 ± 0.1905
Std Dev 0.3809 ± 0.1347
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 325 ± 6115.5
Mean −14.45 ± 28.14
Sigma 4.41 ± 4.39
100
80
60
40
20
0
−8
−6
−4
−2
0
2
4
6
8

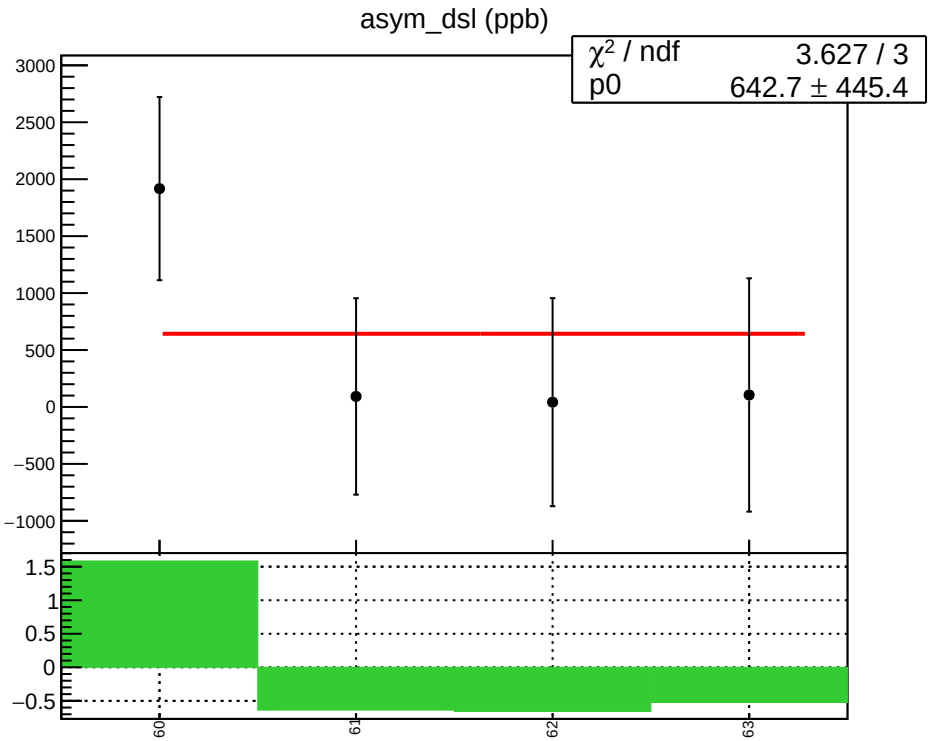

asym_us_avg RMS (ppm)
RMS (ppm)
320
300
280
260
240
220
200
60
61
62
63

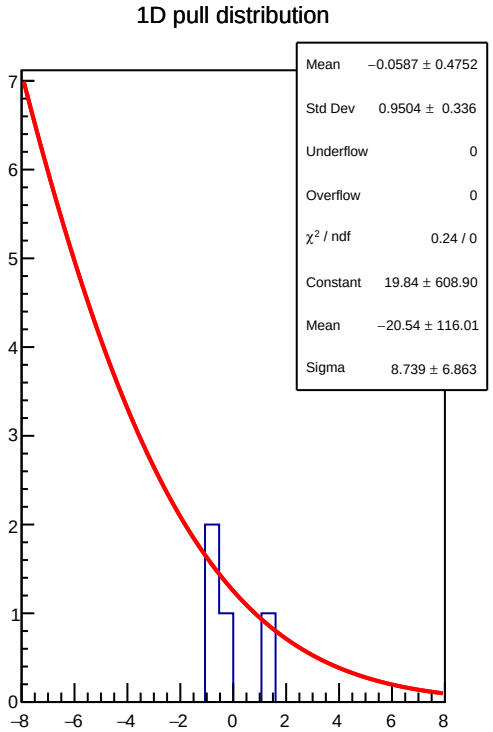

asym_us_dd (ppb)
χ² / ndf 3.466 / 3
p0 113.2 ± 339.4
2000
1500
1000
500
0
−500
−1000
1.5
1
0.5
0
−0.5
60
61
62
63

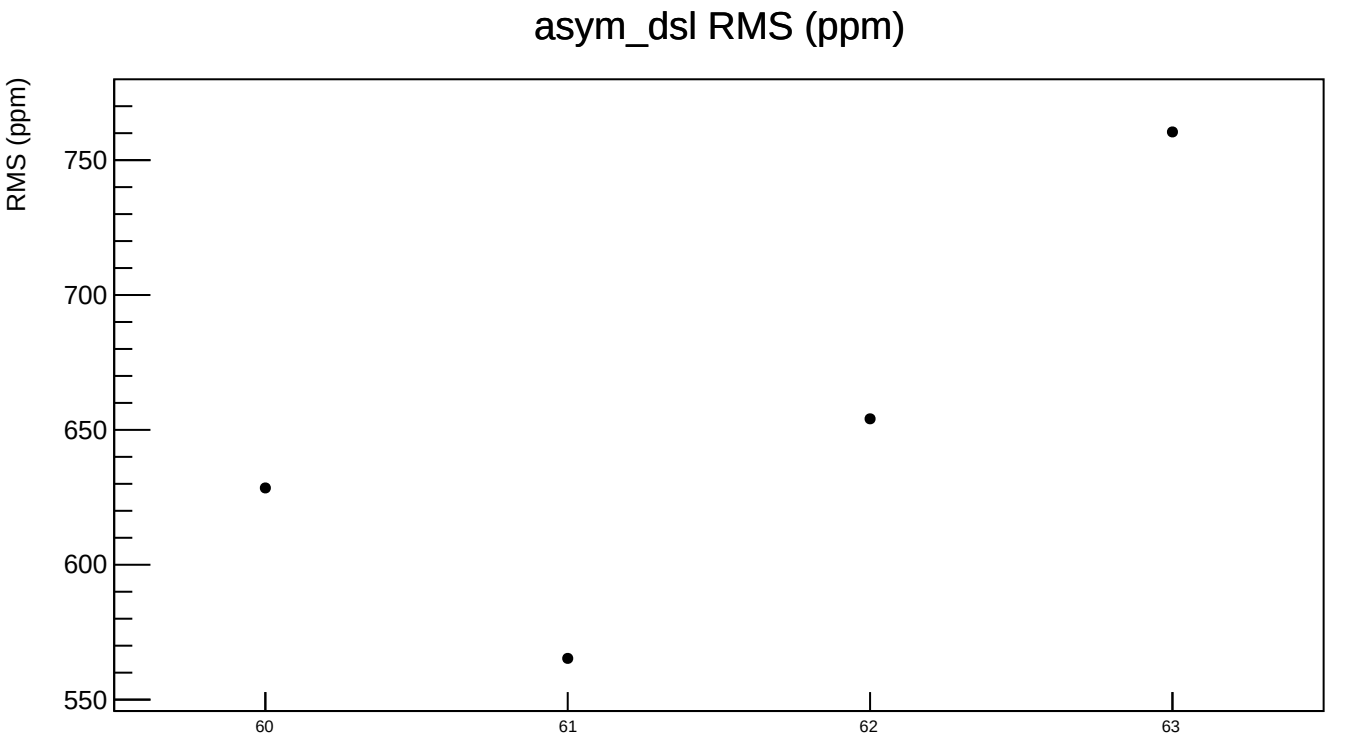

1D pull distribution
Mean −0.01929 ± 0.4653
Std Dev 0.9306 ± 0.329
Underflow 0
Overflow 0
χ² / ndf 1.054e−09 / 0
Constant 2.52 ± 2.73
Mean 0.2667 ± 0.4081
Sigma 0.7846 ± 0.5947
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

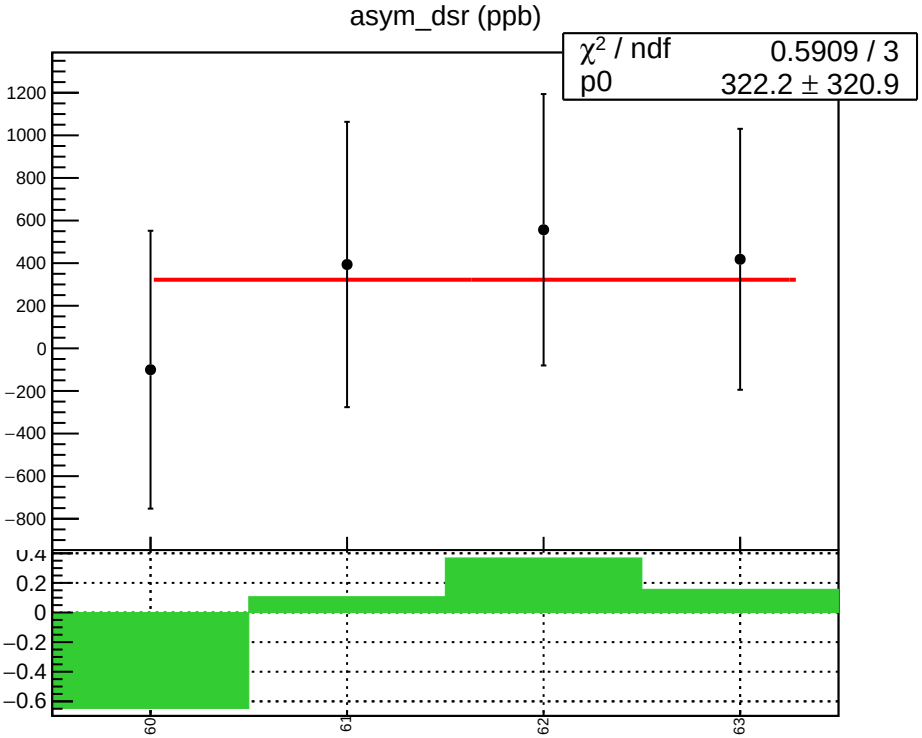
asym_us_dd RMS (ppm)

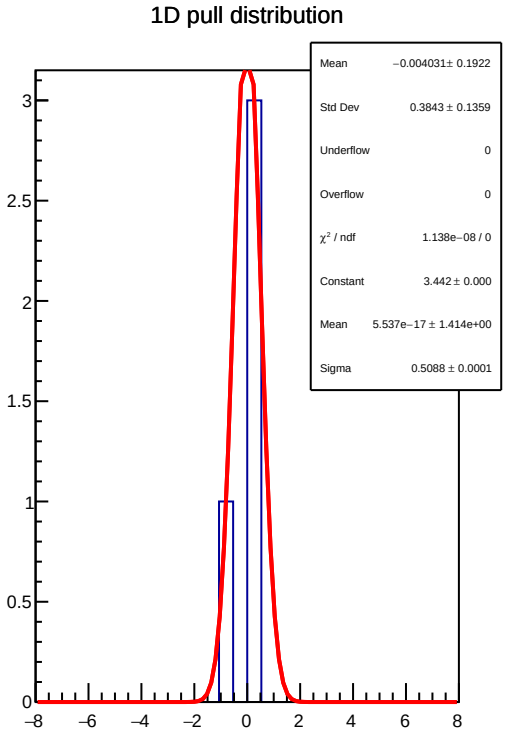



asym_dsl (ppb)
χ² / ndf 3.627 / 3
p0 642.7 ± 445.4
3000
2500
2000
1500
1000
500
0
−500
−1000
1.5
1
0.5
0
−0.5
60
61
62
63

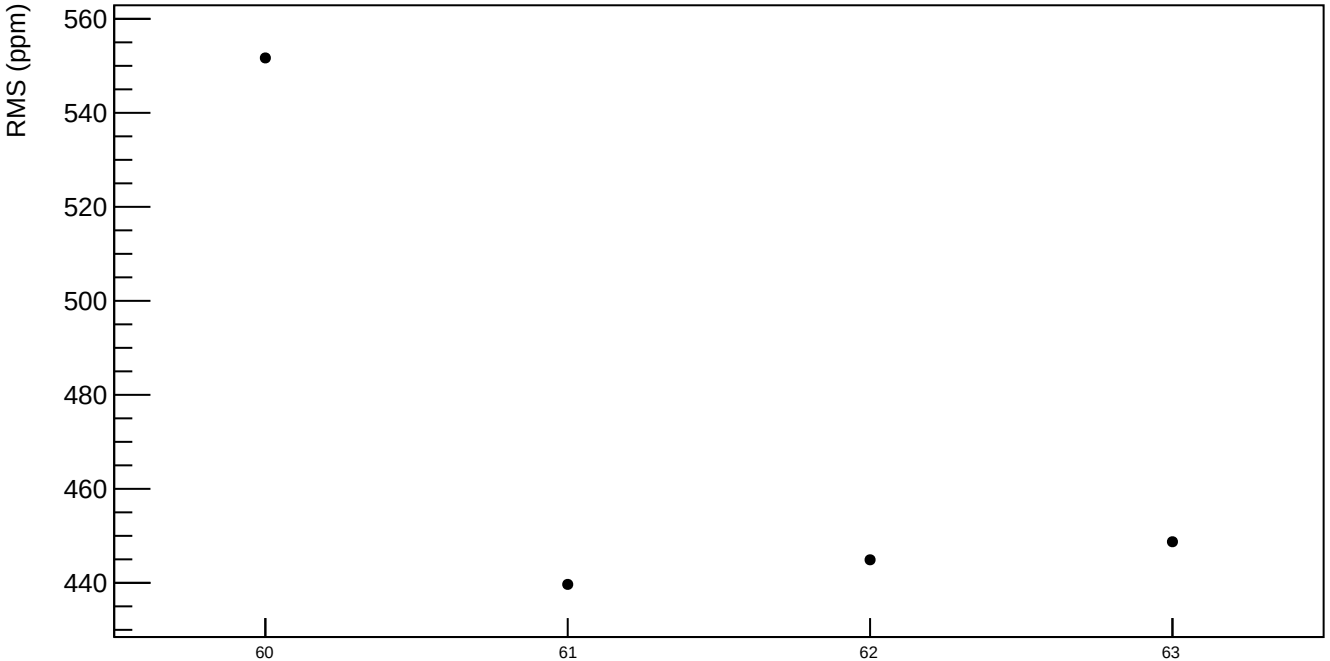

1D pull distribution
Mean −0.0587 ± 0.4752
Std Dev 0.9504 ± 0.336
Underflow 0
Overflow 0
χ² / ndf 0.24 / 0
Constant 19.84 ± 608.90
Mean −20.54 ± 116.01
Sigma 8.739 ± 6.863
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

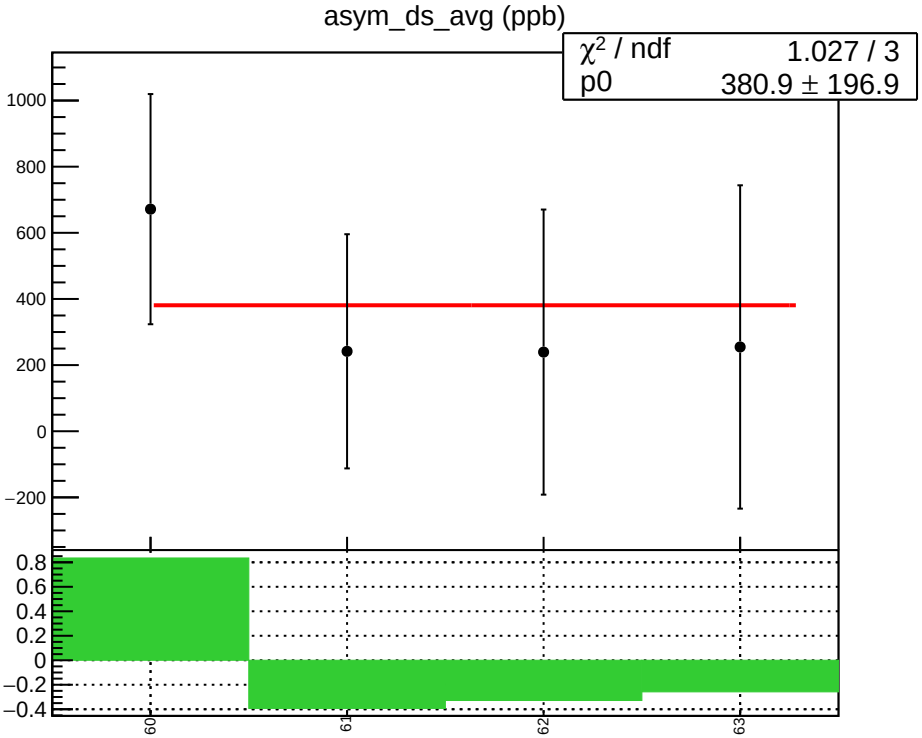

asym_dsl RMS (ppm)
RMS (ppm)
750
700
650
600
550
60
61
62
63

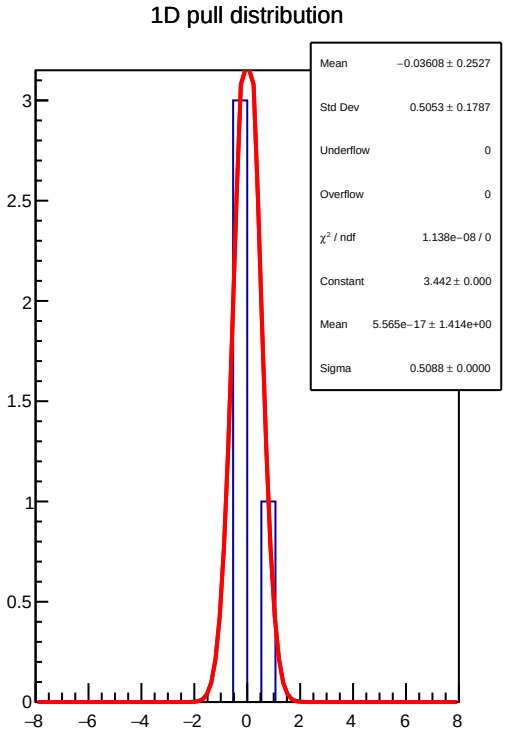

asym_dsr (ppb)
χ² / ndf 0.5909 / 3
p0 322.2 ± 320.9
1200
1000
800
600
400
200
0
−200
−400
−600
−800
0.4
0.2
0
−0.2
−0.4
−0.6
60
61
62
63

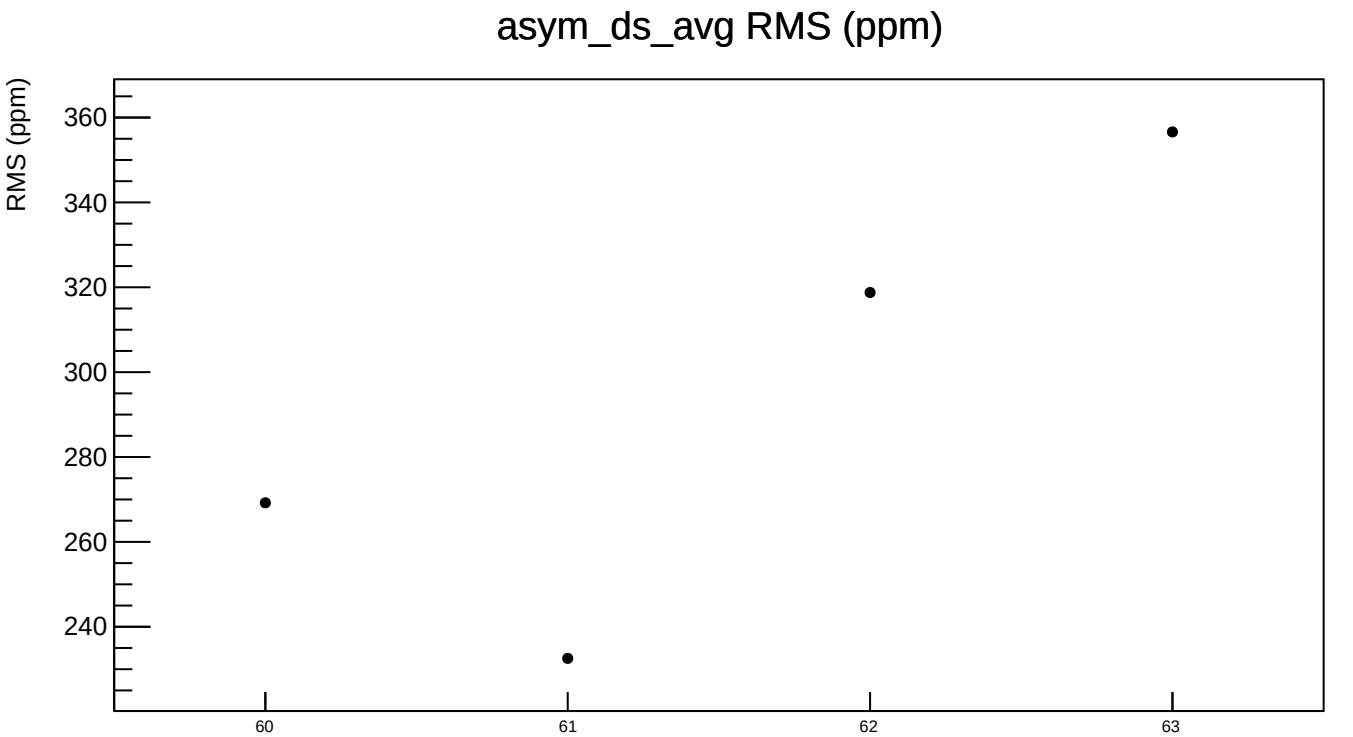

1D pull distribution
Mean −0.004031 ± 0.1922
Std Dev 0.3843 ± 0.1359
Underflow 0
Overflow 0
χ² / ndf 1.138e−08 / 0
Constant 3.442 ± 0.000
Mean 5.537e−17 ± 1.414e+00
Sigma 0.5088 ± 0.0001
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

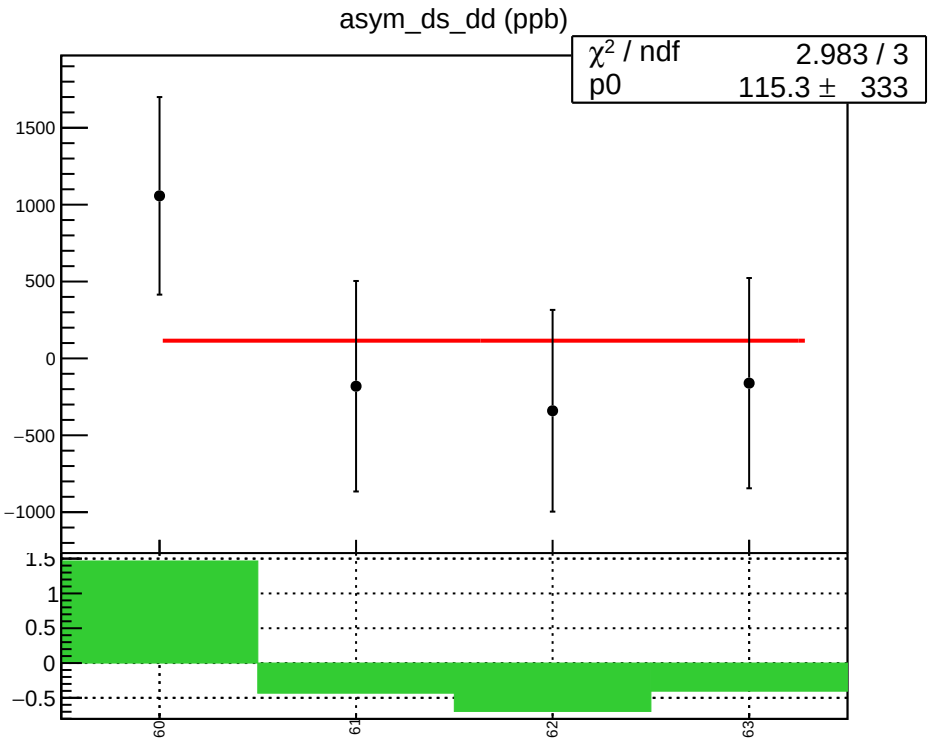
asym_dsr RMS (ppm)

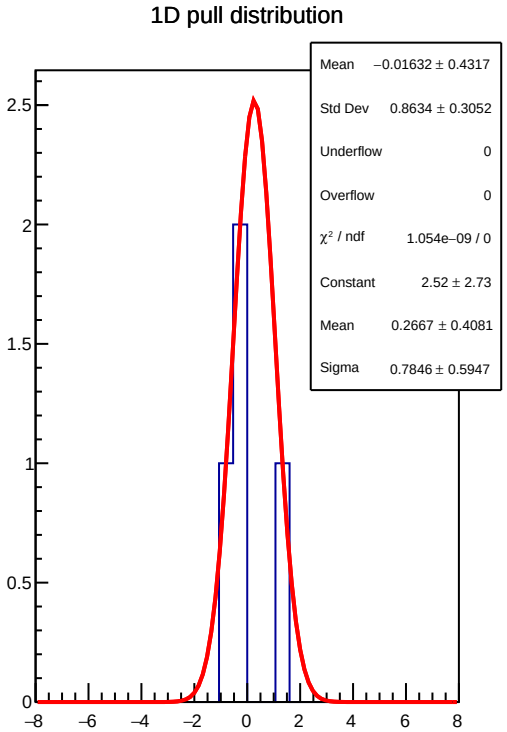



asym_ds_avg (ppb)
χ² / ndf 1.027 / 3
p0 380.9 ± 196.9
1000
800
600
400
200
0
−200
0.8
0.6
0.4
0.2
0
−0.2
−0.4
60
61
62
63

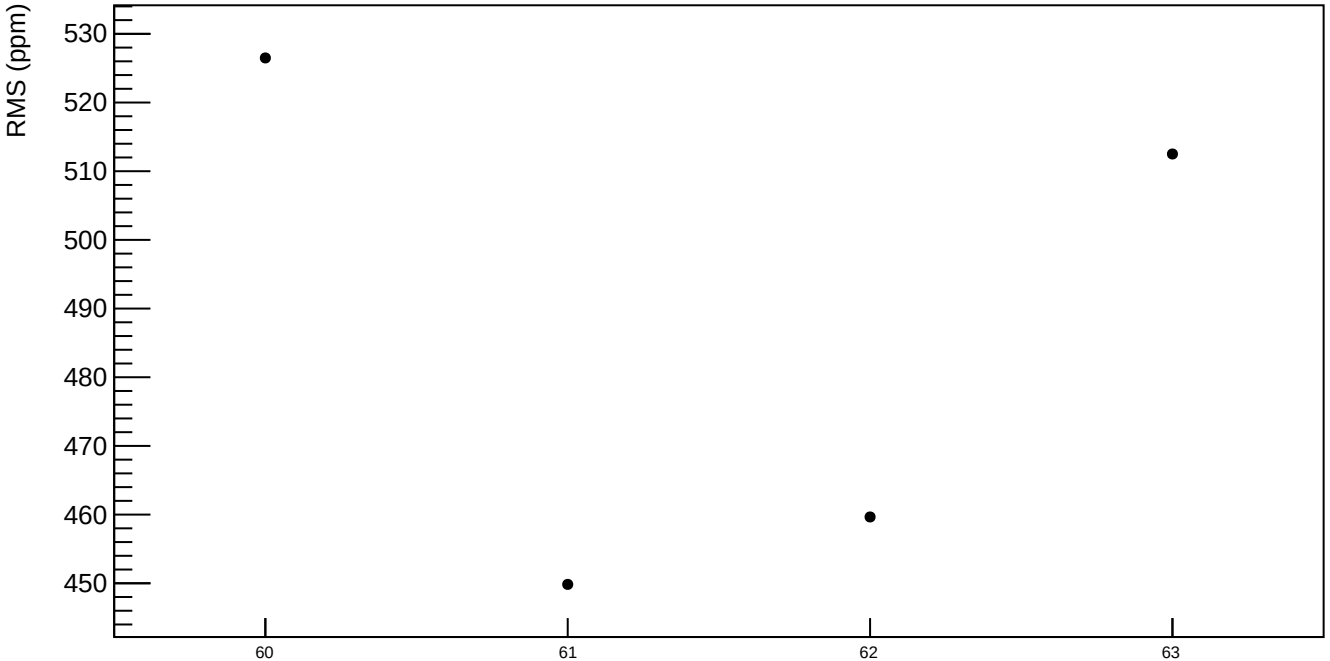

1D pull distribution
Mean −0.03608 ± 0.2527
Std Dev 0.5053 ± 0.1787
Underflow 0
Overflow 0
χ² / ndf 1.138e−08 / 0
Constant 3.442 ± 0.000
Mean 5.565e−17 ± 1.414e+00
Sigma 0.5088 ± 0.0000
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

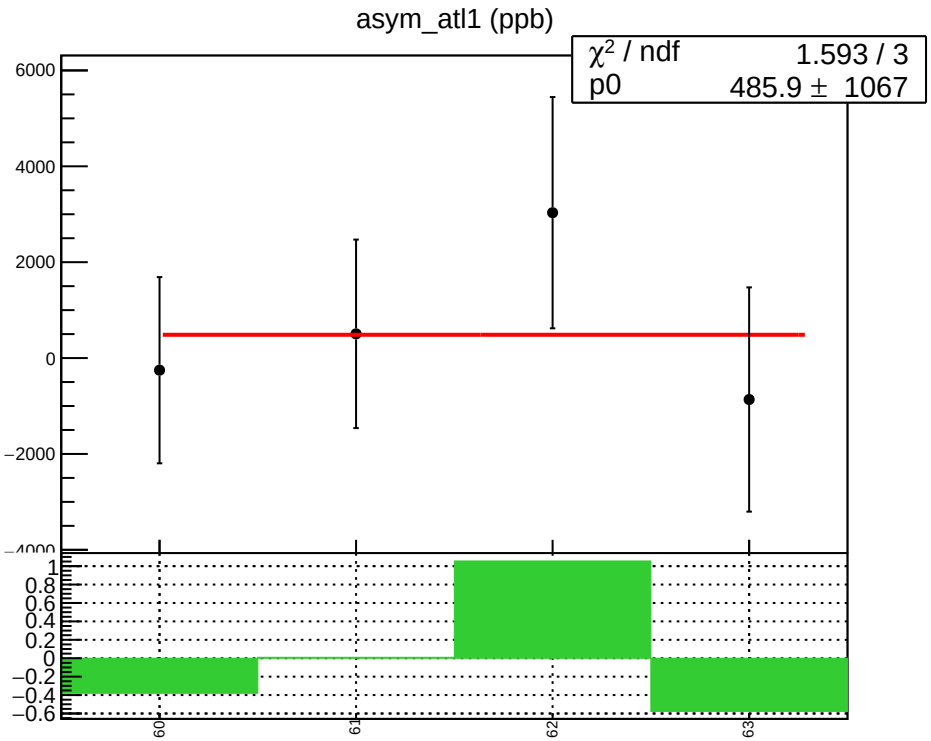

asym_ds_avg RMS (ppm)
RMS (ppm)
360
340
320
300
280
260
240
60
61
62
63

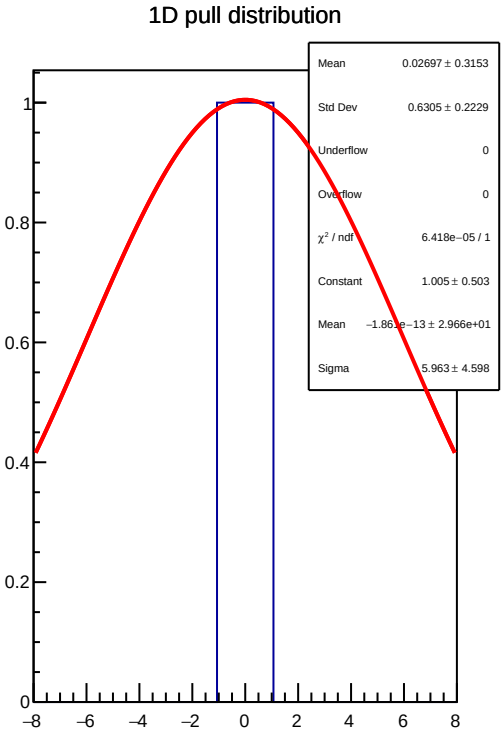

asym_ds_dd (ppb)
χ² / ndf 2.983 / 3
p0 115.3 ± 333
1500
1000
500
0
−500
−1000
1.5
1
0.5
0
−0.5
60
61
62
63

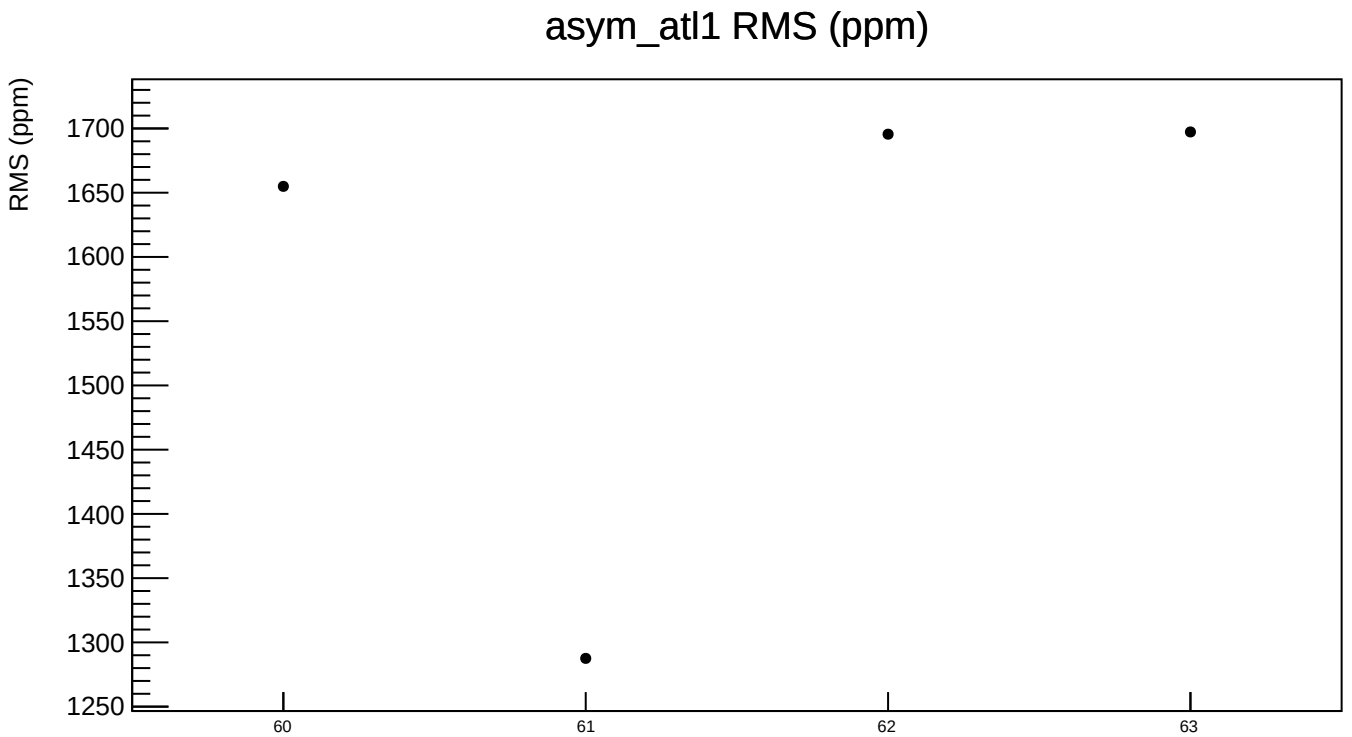

1D pull distribution
Mean −0.01632 ± 0.4317
Std Dev 0.8634 ± 0.3052
Underflow 0
Overflow 0
χ² / ndf 1.054e−09 / 0
Constant 2.52 ± 2.73
Mean 0.2667 ± 0.4081
Sigma 0.7846 ± 0.5947
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

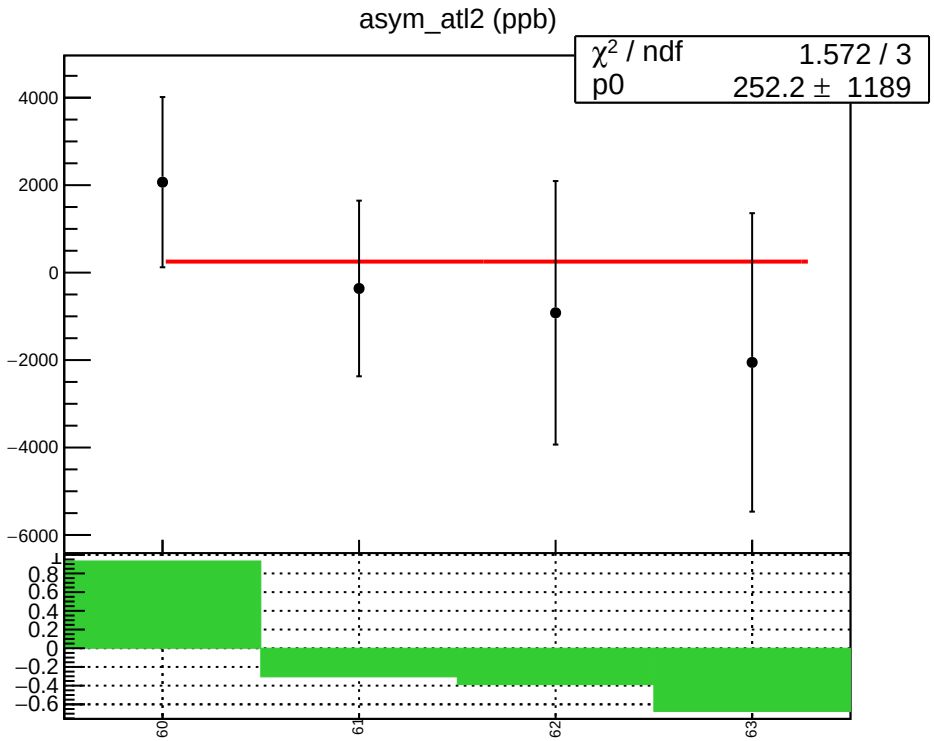
asym_ds_dd RMS (ppm)

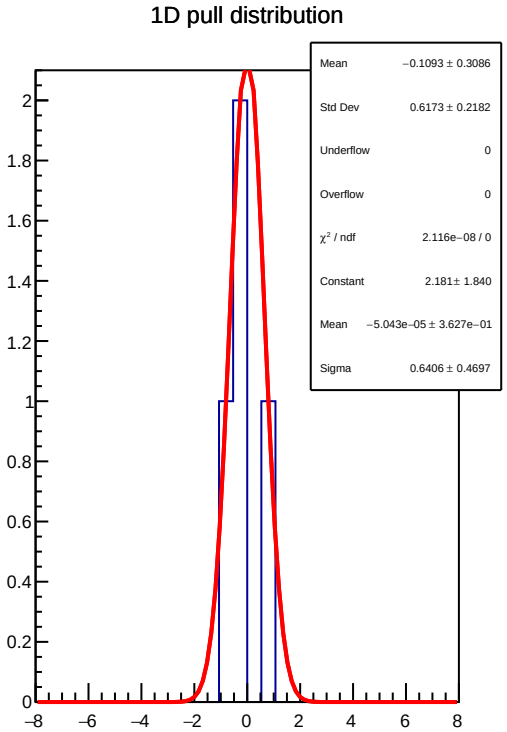


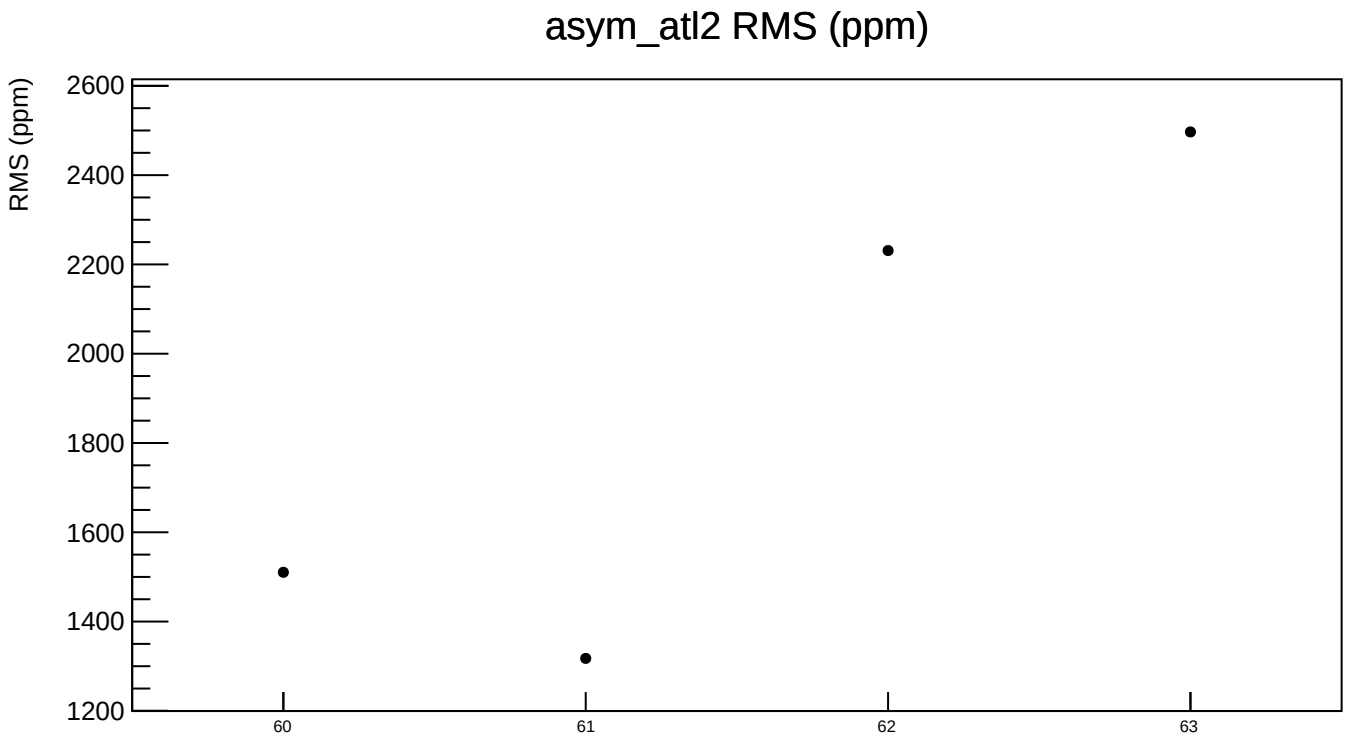

asym_atl1 (ppb)
χ² / ndf 1.593 / 3
p0 485.9 ± 1067
6000
4000
2000
0
−2000
−4000
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
60
61
62
63

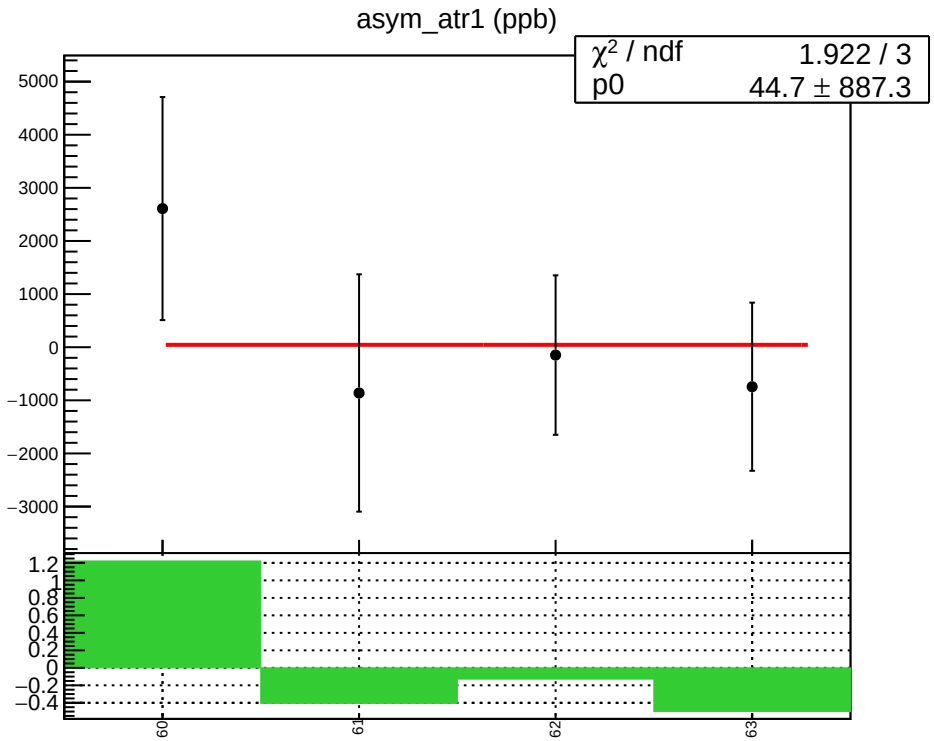

1D pull distribution
Mean 0.02697 ± 0.3153
Std Dev 0.6305 ± 0.2229
Underflow 0
Overflow 0
χ² / ndf 6.418e−05 / 1
Constant 1.005 ± 0.503
Mean −1.861e−13 ± 2.966e+01
Sigma 5.963 ± 4.598
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

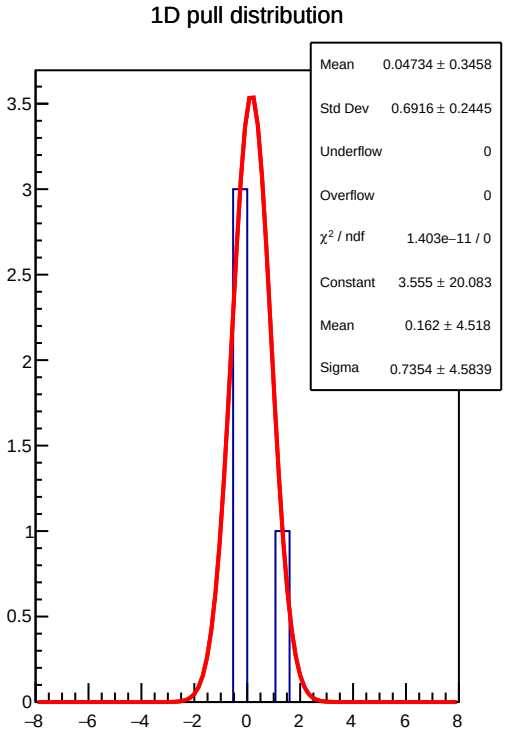

asym_atl1 RMS (ppm)
RMS (ppm)
1700
1650
1600
1550
1500
1450
1400
1350
1300
1250
60
61
62
63

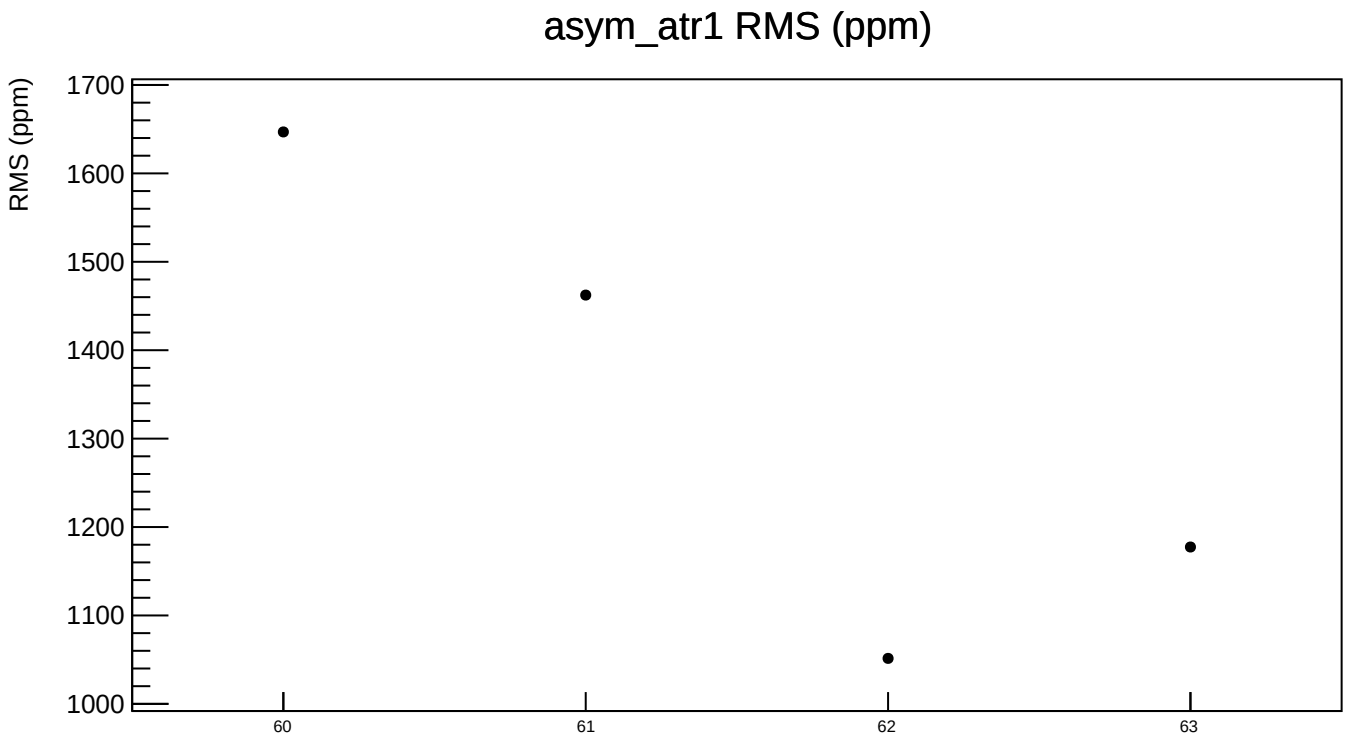

asym_atl2 (ppb)
χ² / ndf 1.572 / 3
p0 252.2 ± 1189
4000
2000
0
−2000
−4000
−6000
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
60
61
62
63

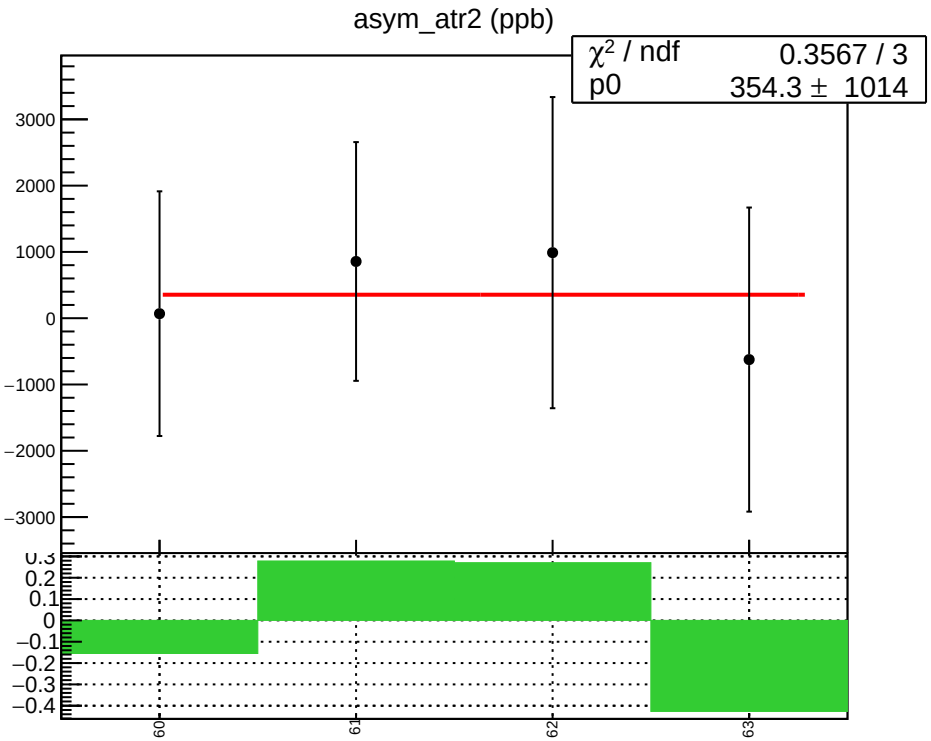

1D pull distribution
Mean −0.1093 ± 0.3086
Std Dev 0.6173 ± 0.2182
Underflow 0
Overflow 0
χ² / ndf 2.116e−08 / 0
Constant 2.181± 1.840
Mean −5.043e−05 ± 3.627e−01
Sigma 0.6406 ± 0.4697
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

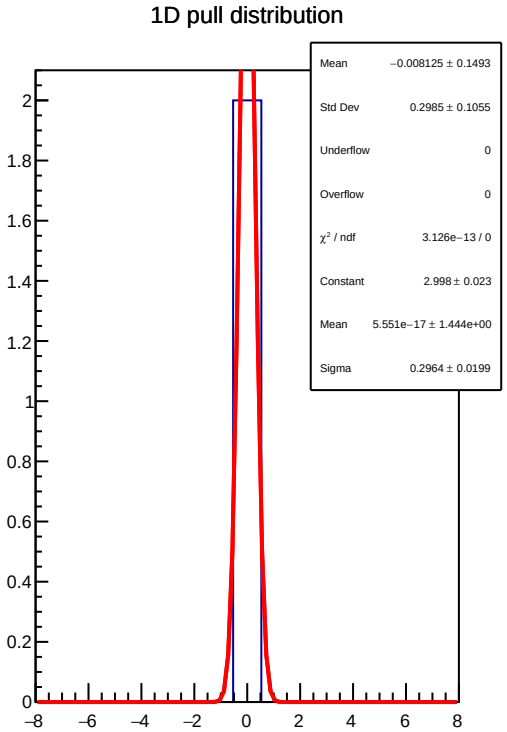
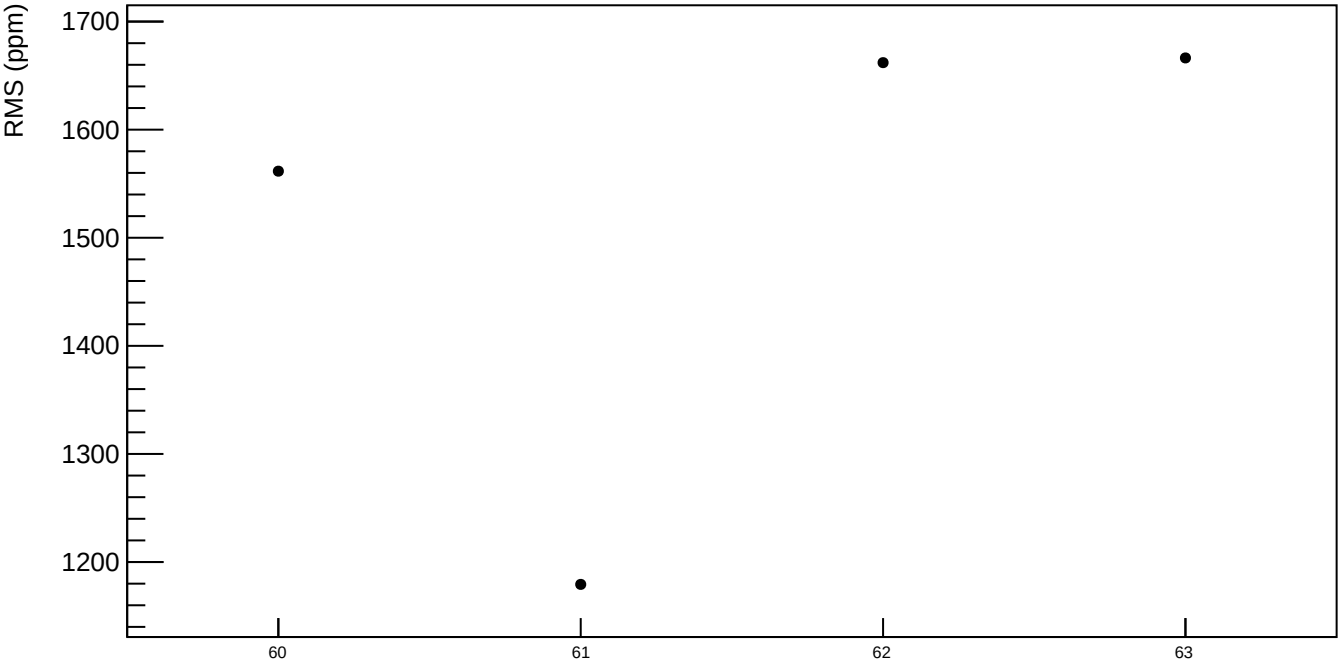

asym_atl2 RMS (ppm)
RMS (ppm)
2600
2400
2200
2000
1800
1600
1400
1200
60
61
62
63


asym_atr1 (ppb)
χ² / ndf 1.922 / 3
p0 44.7 ± 887.3
5000
4000
3000
2000
1000
0
−1000
−2000
−3000
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
60
61
62
63


1D pull distribution
Mean 0.04734 ± 0.3458
Std Dev 0.6916 ± 0.2445
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean 0.162 ± 4.518
Sigma 0.7354 ± 4.5839
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8


asym_atr1 RMS (ppm)
RMS (ppm)
1700
1600
1500
1400
1300
1200
1100
1000
60
61
62
63


asym_atr2 (ppb)
χ² / ndf 0.3567 / 3
p0 354.3 ± 1014
3000
2000
1000
0
−1000
−2000
−3000
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
60
61
62
63


1D pull distribution
Mean −0.008125 ± 0.1493
Std Dev 0.2985 ± 0.1055
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

asym_atr2 RMS (ppm)