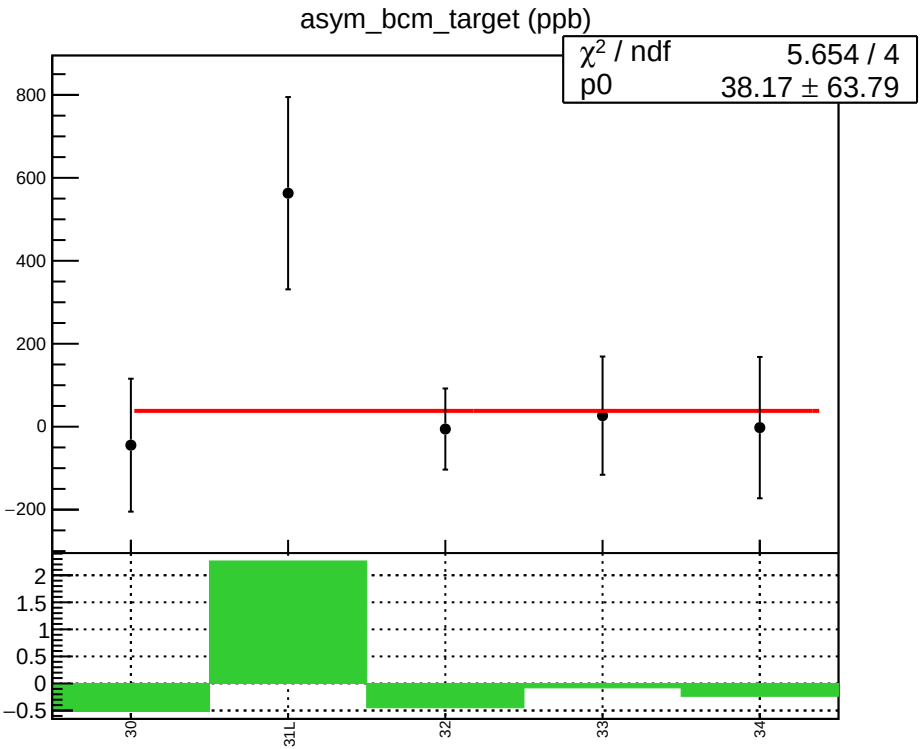
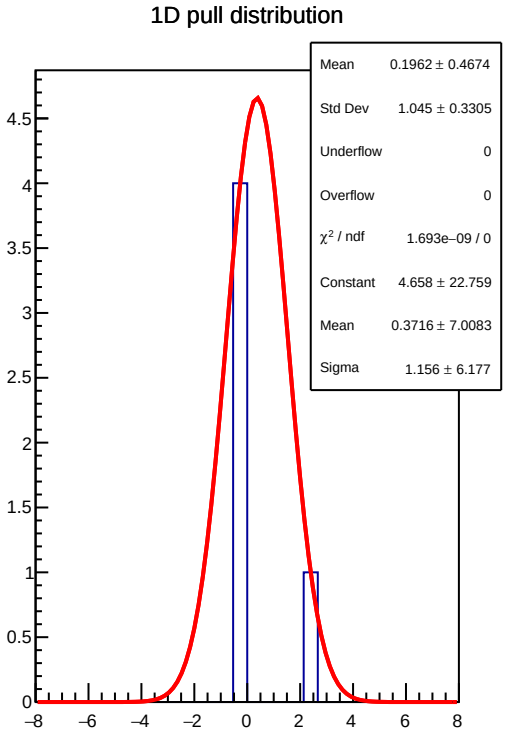
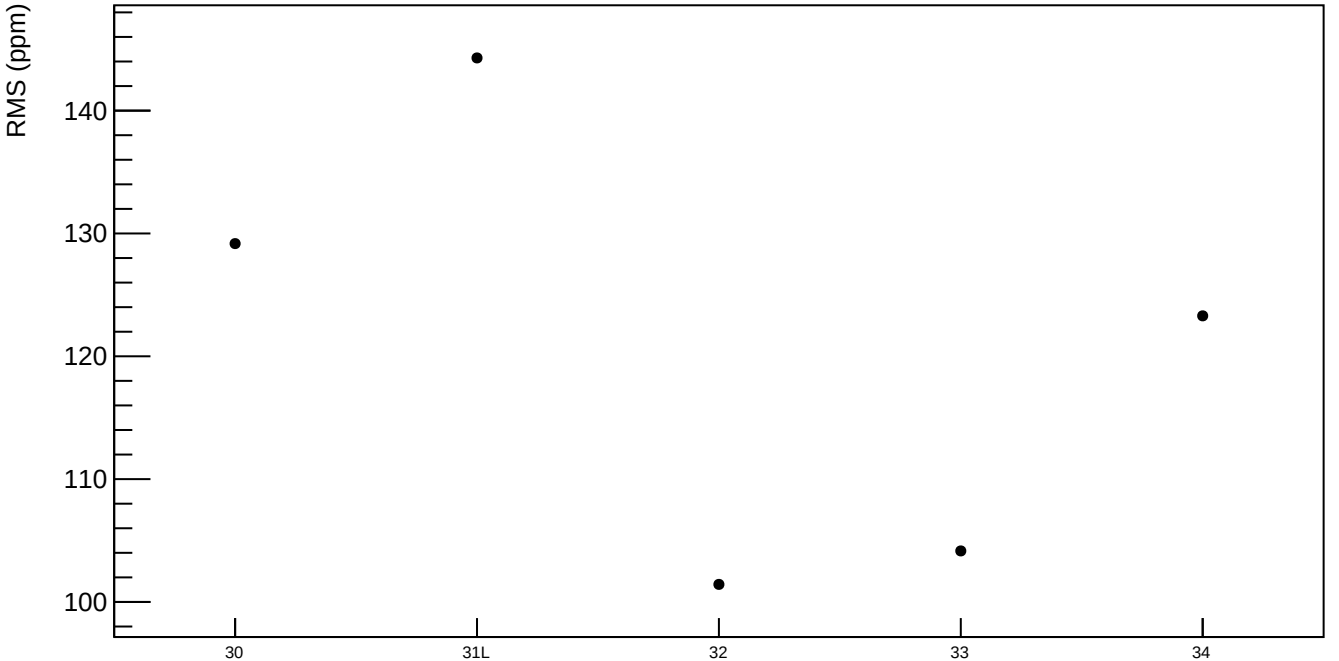
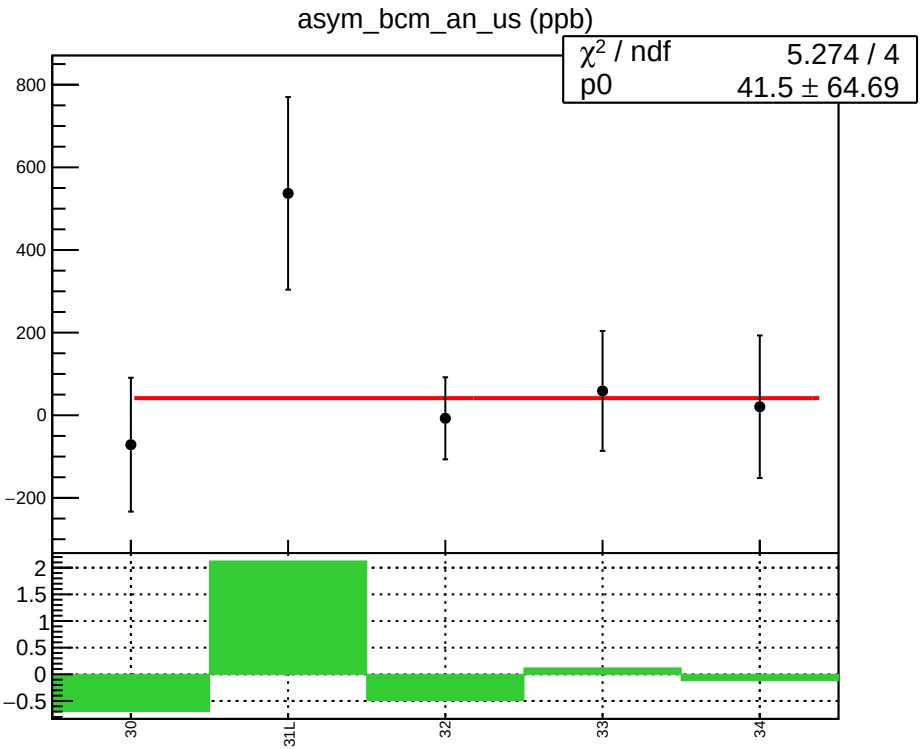
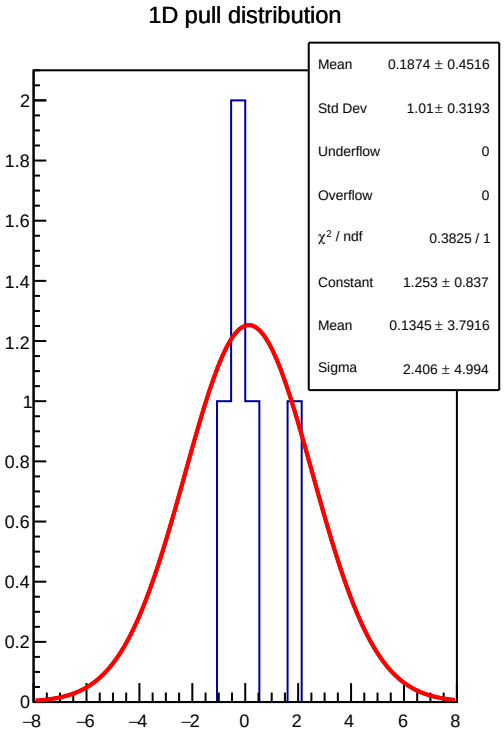

asym_bcm_target (ppb)
χ² / ndf 5.654 / 4
p0 38.17 ± 63.79
800
600
400
200
0
−200
2
1.5
1
0.5
0
−0.5
30
31L
32
33
34

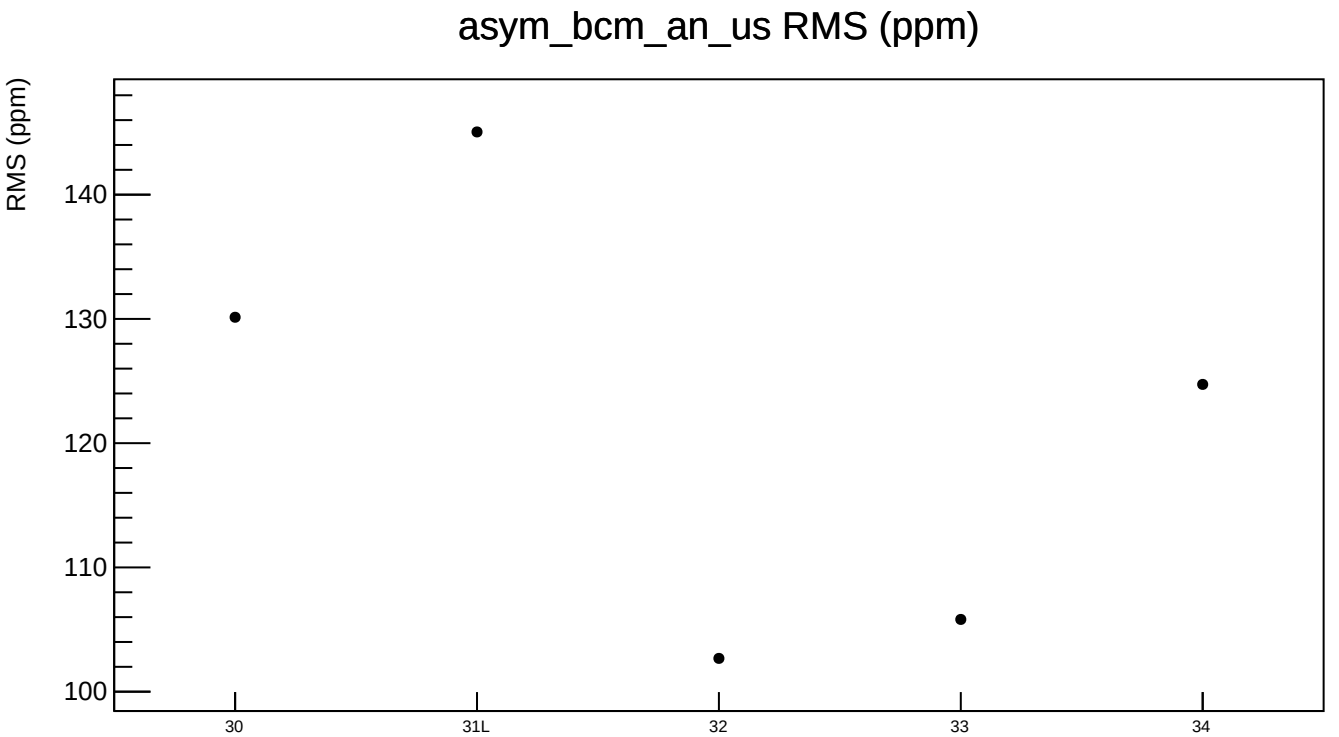

1D pull distribution
Mean 0.1962 ± 0.4674
Std Dev 1.045 ± 0.3305
Underflow 0
Overflow 0
χ² / ndf 1.693e−09 / 0
Constant 4.658 ± 22.759
Mean 0.3716 ± 7.0083
Sigma 1.156 ± 6.177
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

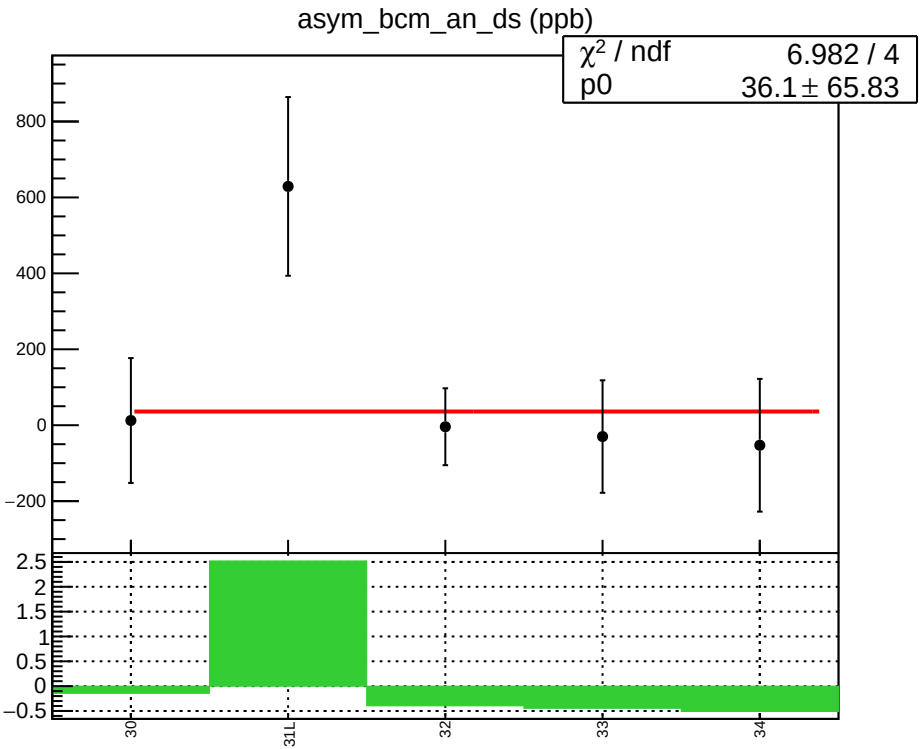
asym_bcm_target RMS (ppm)

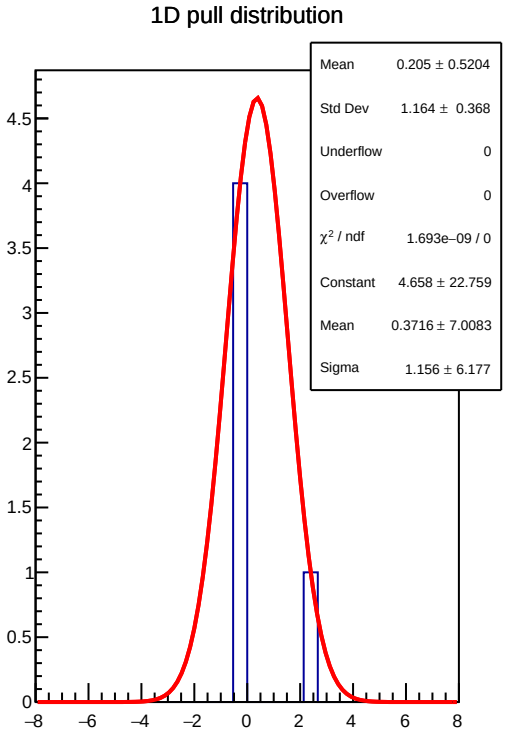



asym_bcm_an_us (ppb)
χ^2 / ndf 5.274 / 4
p0 41.5 ± 64.69
800
600
400
200
0
−200
2
1.5
1
0.5
0
−0.5
30
31L
32
33
34

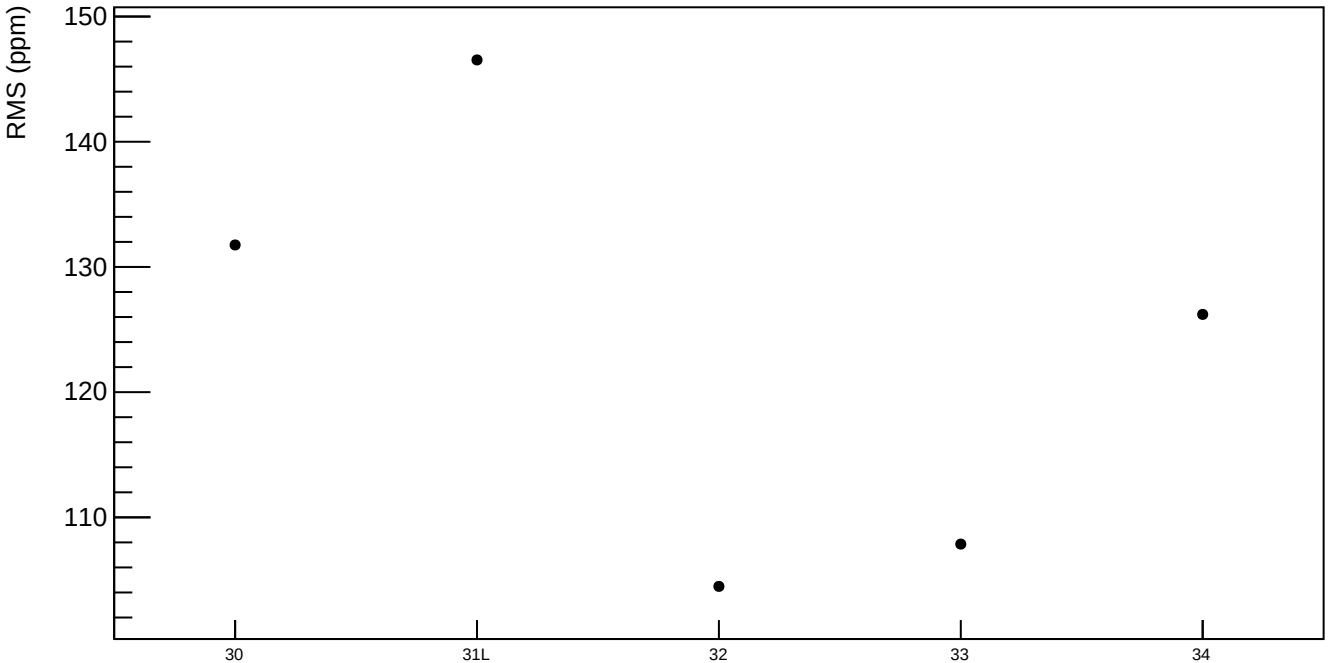

1D pull distribution
Mean 0.1874 ± 0.4516
Std Dev 1.01± 0.3193
Underflow 0
Overflow 0
χ^2 / ndf 0.3825 / 1
Constant 1.253 ± 0.837
Mean 0.1345 ± 3.7916
Sigma 2.406 ± 4.994
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

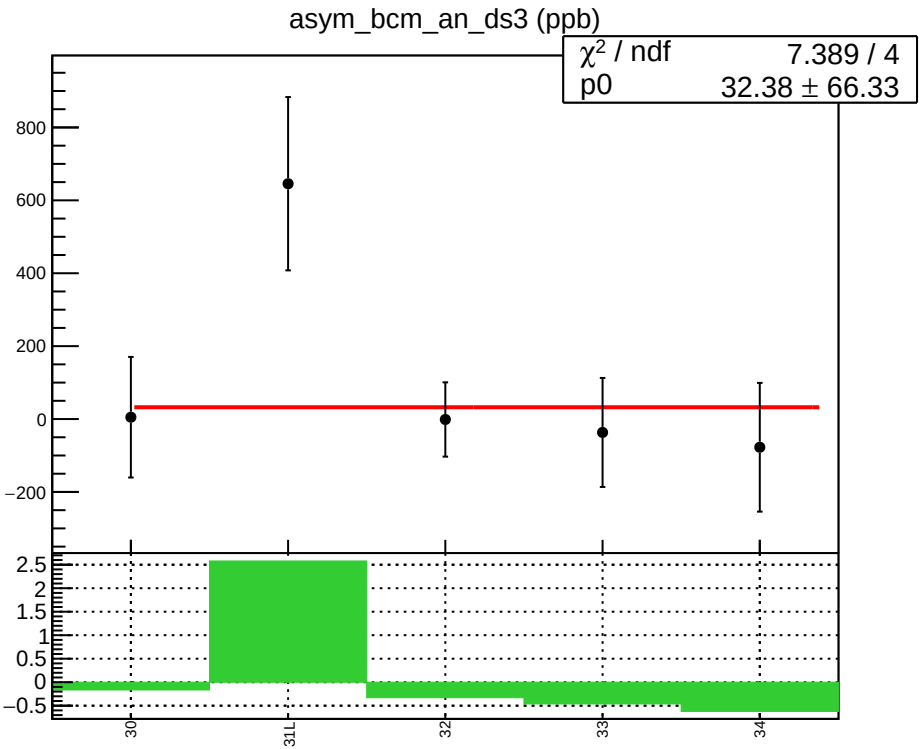

asym_bcm_an_us RMS (ppm)
RMS (ppm)
140
130
120
110
100
30
31L
32
33
34

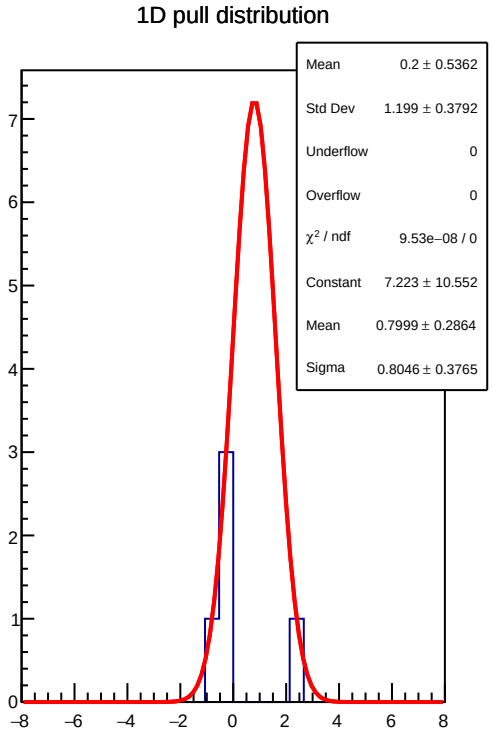

asym_bcm_an_ds (ppb)
χ² / ndf 6.982 / 4
p0 36.1 ± 65.83
800
600
400
200
0
−200
2.5
2
1.5
1
0.5
0
−0.5
30
31L
32
33
34


1D pull distribution
Mean 0.205 ± 0.5204
Std Dev 1.164 ± 0.368
Underflow 0
Overflow 0
χ² / ndf 1.693e−09 / 0
Constant 4.658 ± 22.759
Mean 0.3716 ± 7.0083
Sigma 1.156 ± 6.177
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

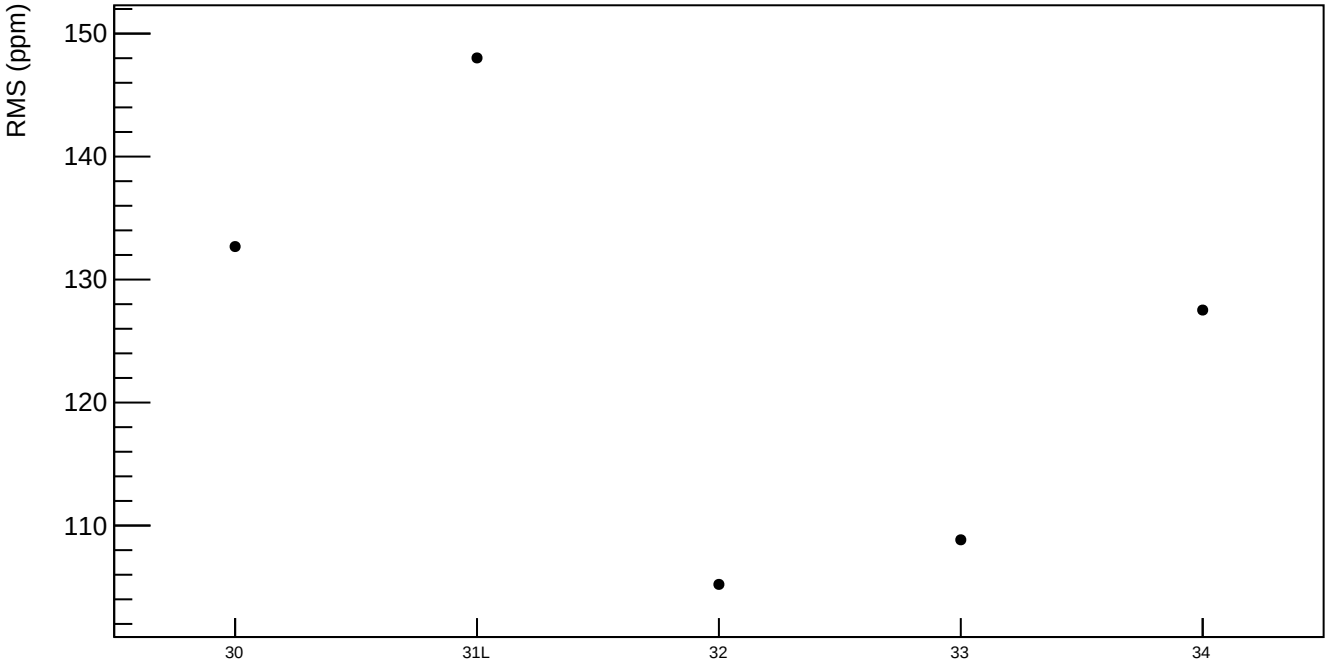
asym_bcm_an_ds RMS (ppm)

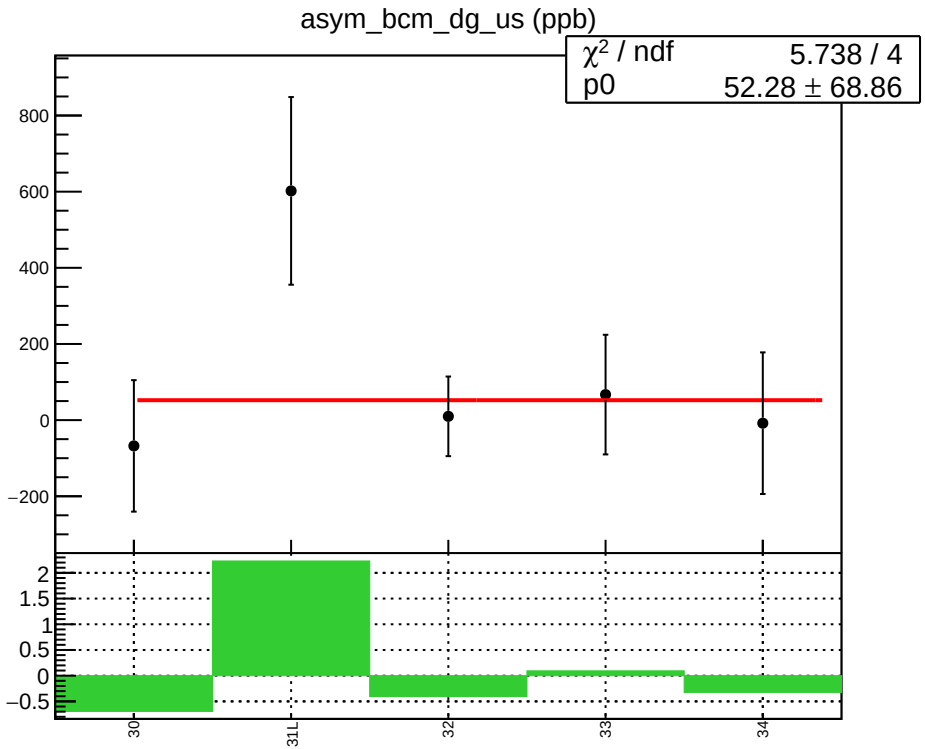


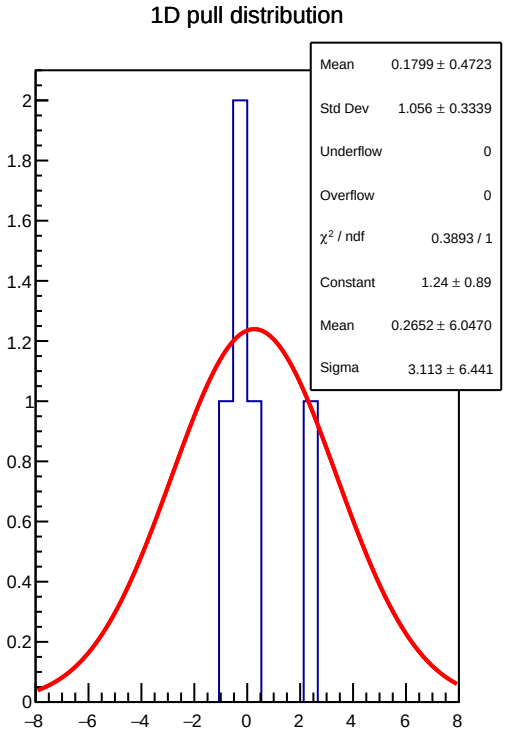

asym_bcm_an_ds3 (ppb)
χ² / ndf 7.389 / 4
p0 32.38 ± 66.33
800
600
400
200
0
−200
2.5
2
1.5
1
0.5
0
−0.5
30
31L
32
33
34


1D pull distribution
Mean 0.2 ± 0.5362
Std Dev 1.199 ± 0.3792
Underflow 0
Overflow 0
χ² / ndf 9.53e−08 / 0
Constant 7.223 ± 10.552
Mean 0.7999 ± 0.2864
Sigma 0.8046 ± 0.3765
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

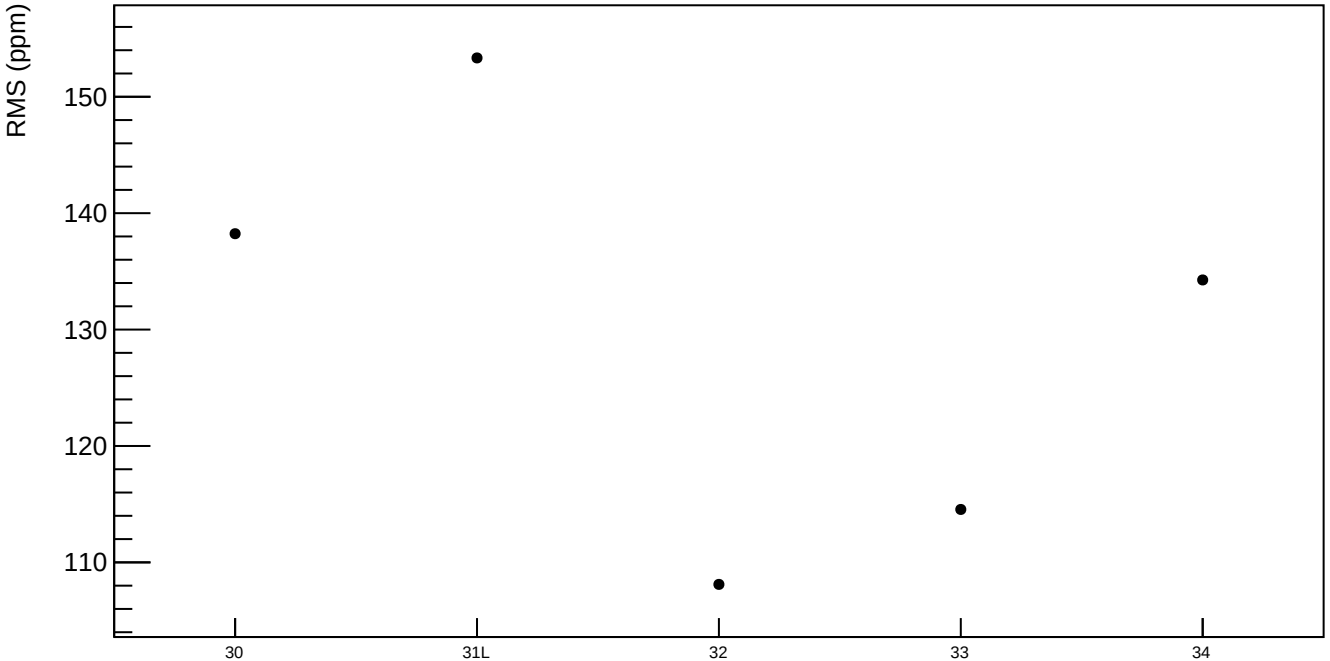
asym_bcm_an_ds3 RMS (ppm)

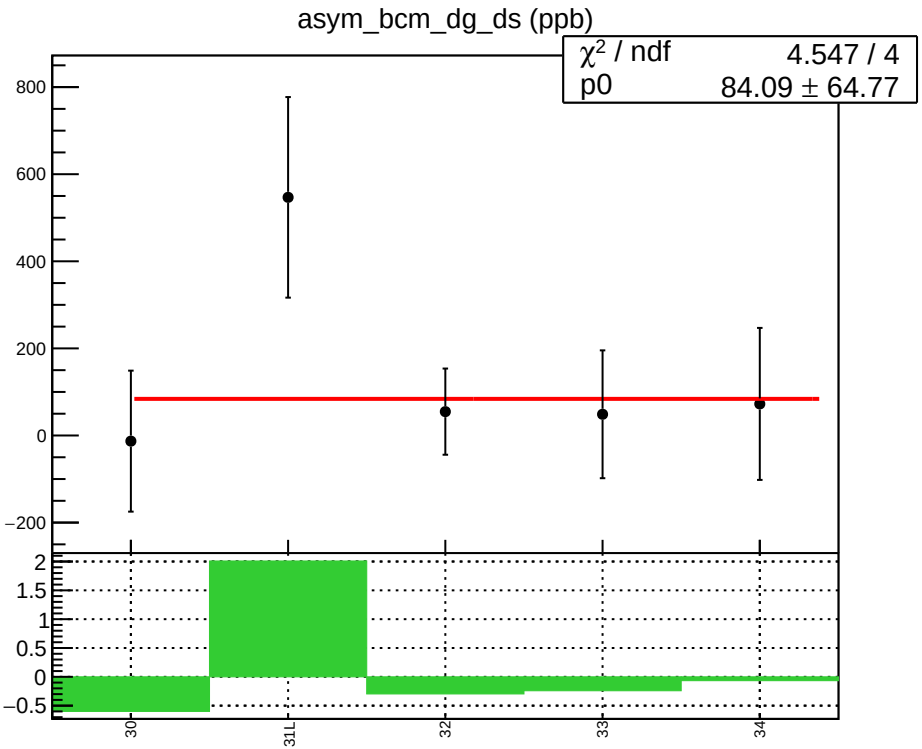


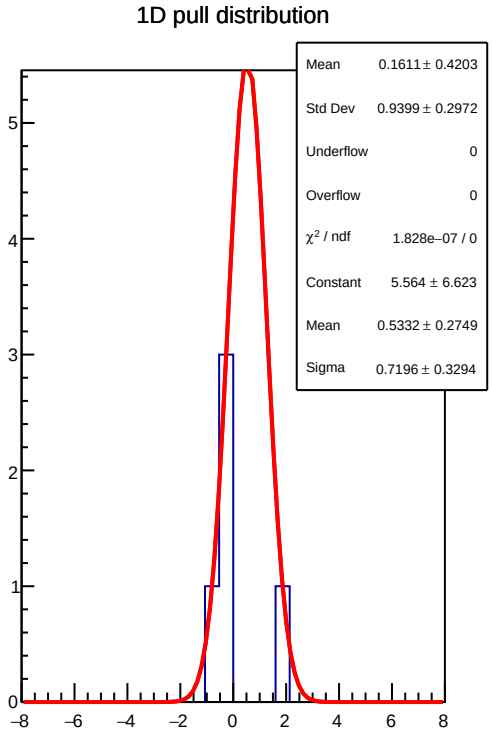

asym_bcm_dg_us (ppb)
χ² / ndf 5.738 / 4
p0 52.28 ± 68.86
800
600
400
200
0
−200
2
1.5
1
0.5
0
−0.5
30
31L
32
33
34


1D pull distribution
Mean 0.1799 ± 0.4723
Std Dev 1.056 ± 0.3339
Underflow 0
Overflow 0
χ² / ndf 0.3893 / 1
Constant 1.24 ± 0.89
Mean 0.2652 ± 6.0470
Sigma 3.113 ± 6.441
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

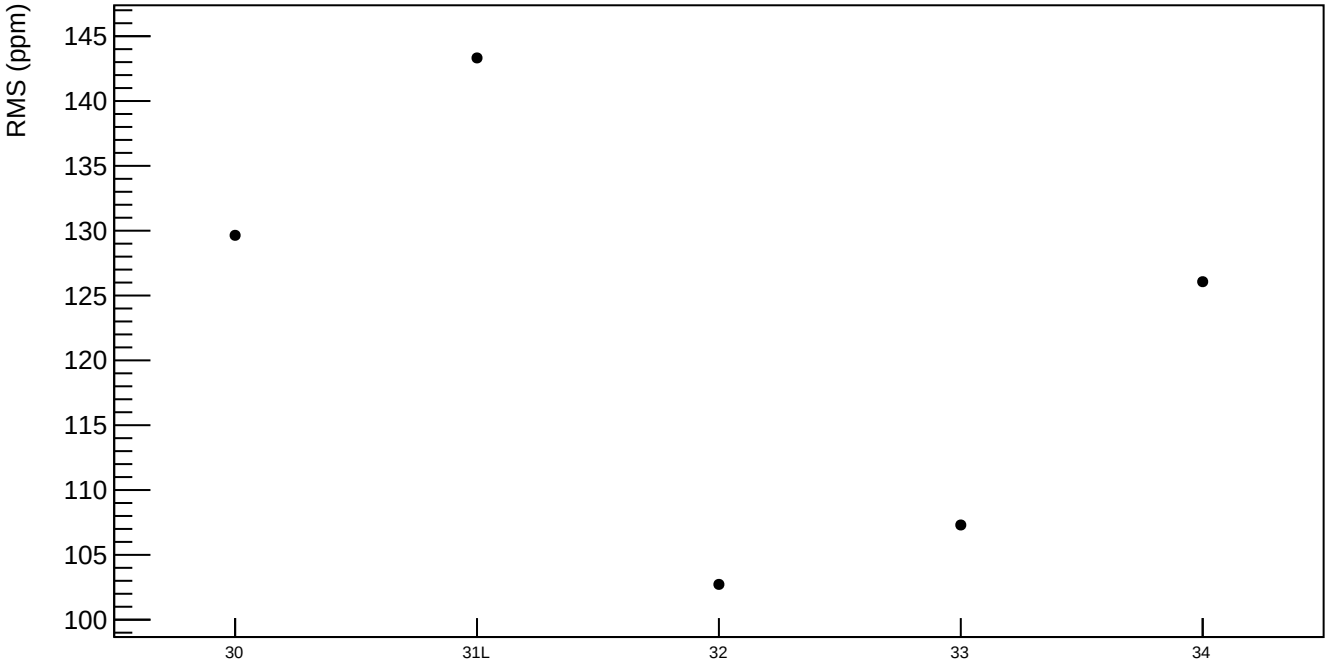
asym_bcm_dg_us RMS (ppm)

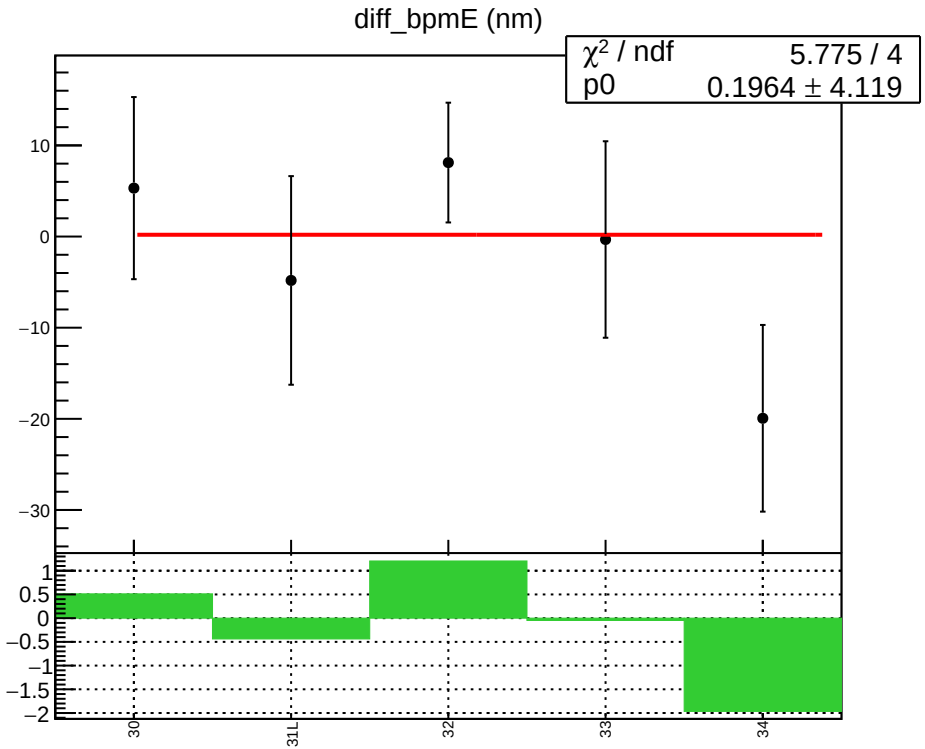


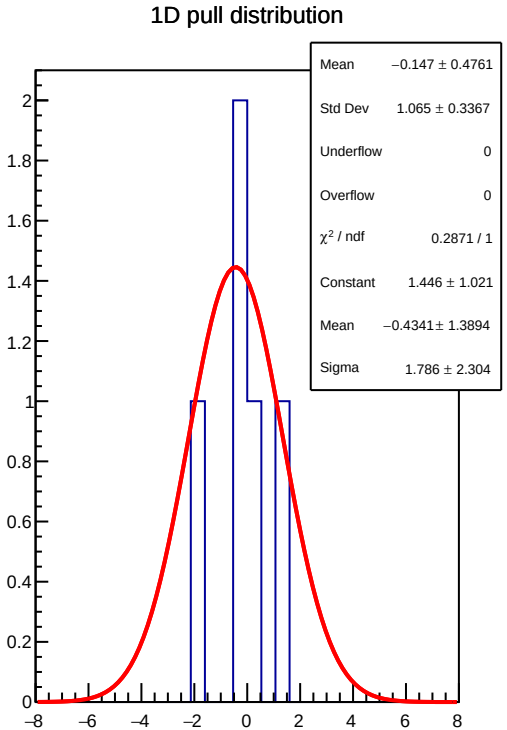

asym_bcm_dg_ds (ppb)
χ² / ndf 4.547 / 4
p0 84.09 ± 64.77
800
600
400
200
0
−200
2
1.5
1
0.5
0
−0.5
30
31L
32
33
34

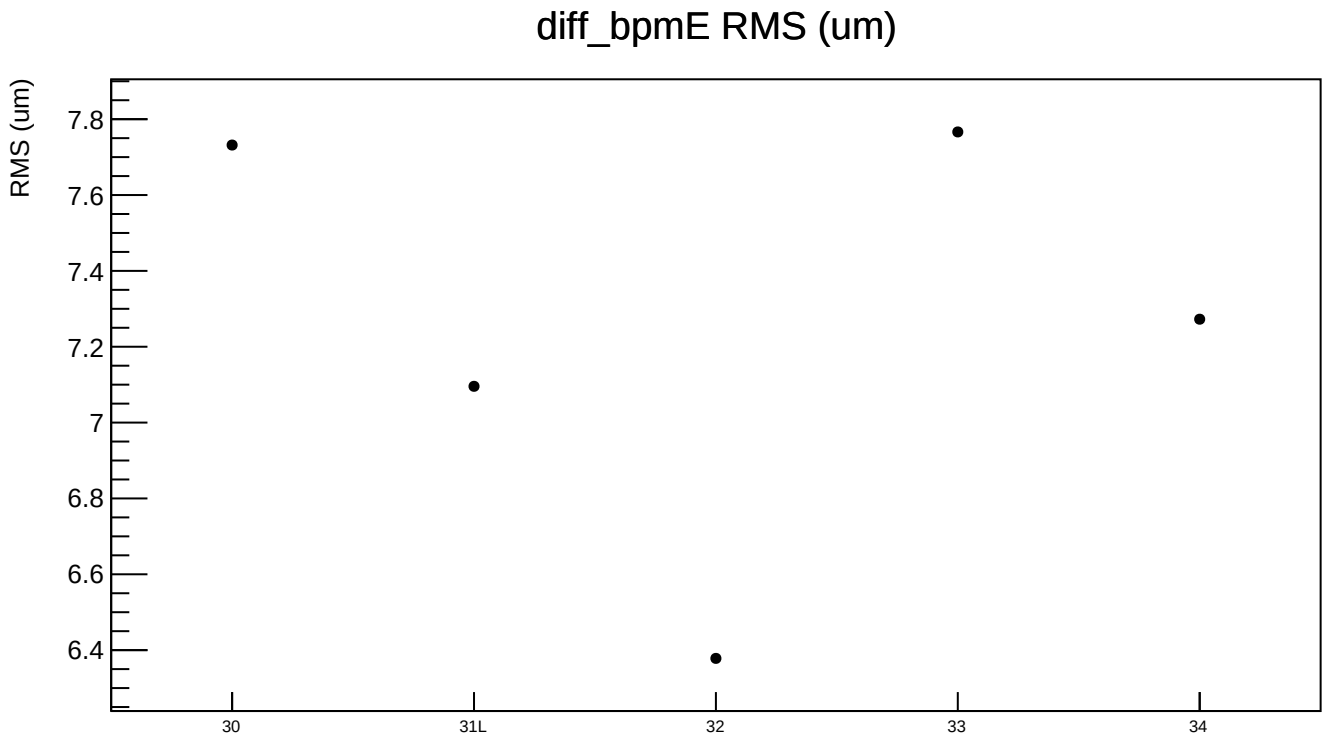

1D pull distribution
Mean 0.1611 ± 0.4203
Std Dev 0.9399 ± 0.2972
Underflow 0
Overflow 0
χ² / ndf 1.828e−07 / 0
Constant 5.564 ± 6.623
Mean 0.5332 ± 0.2749
Sigma 0.7196 ± 0.3294
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

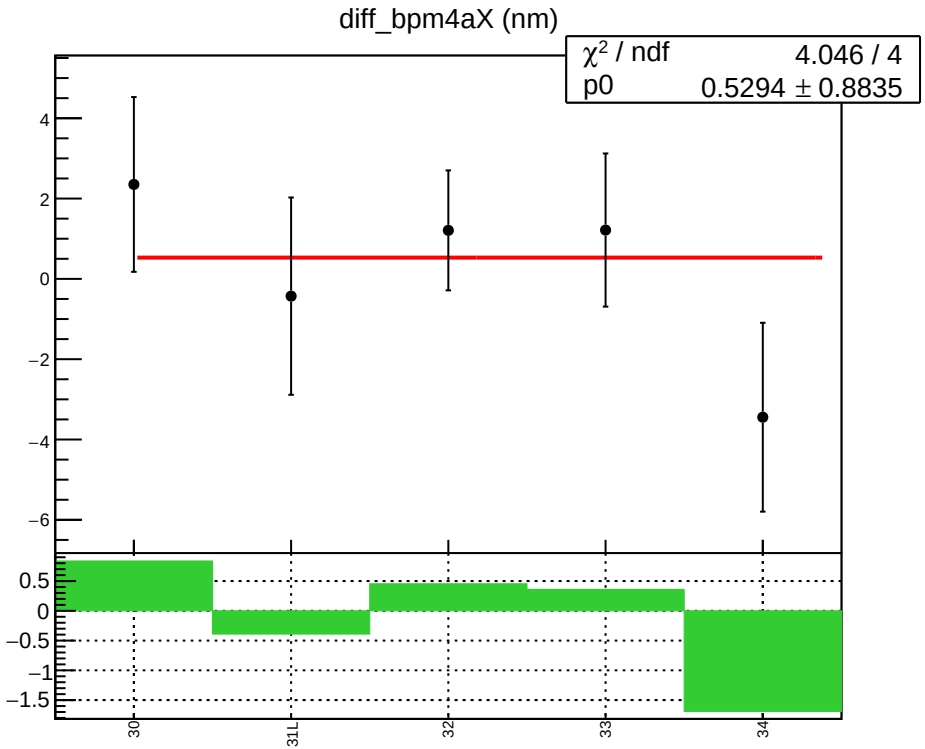
asym_bcm_dg_ds RMS (ppm)

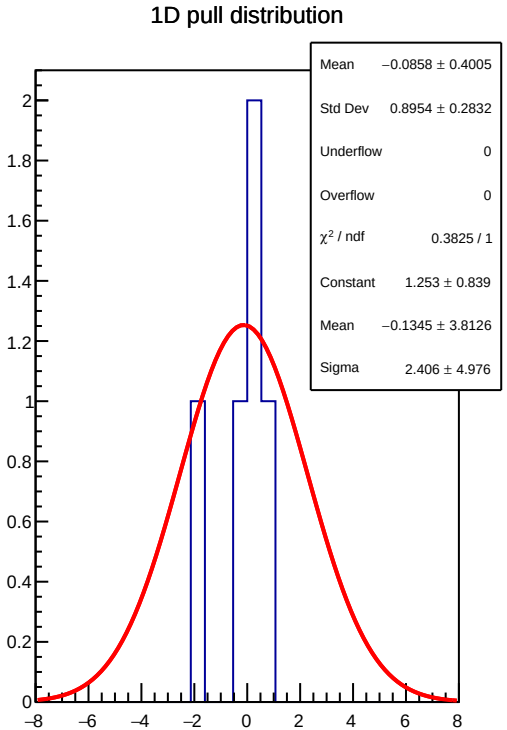



diff_bpmE (nm)
χ² / ndf 5.775 / 4
p0 0.1964 ± 4.119
10
0
−10
−20
−30
1
0.5
0
−0.5
−1
−1.5
−2
30
31L
32
33
34

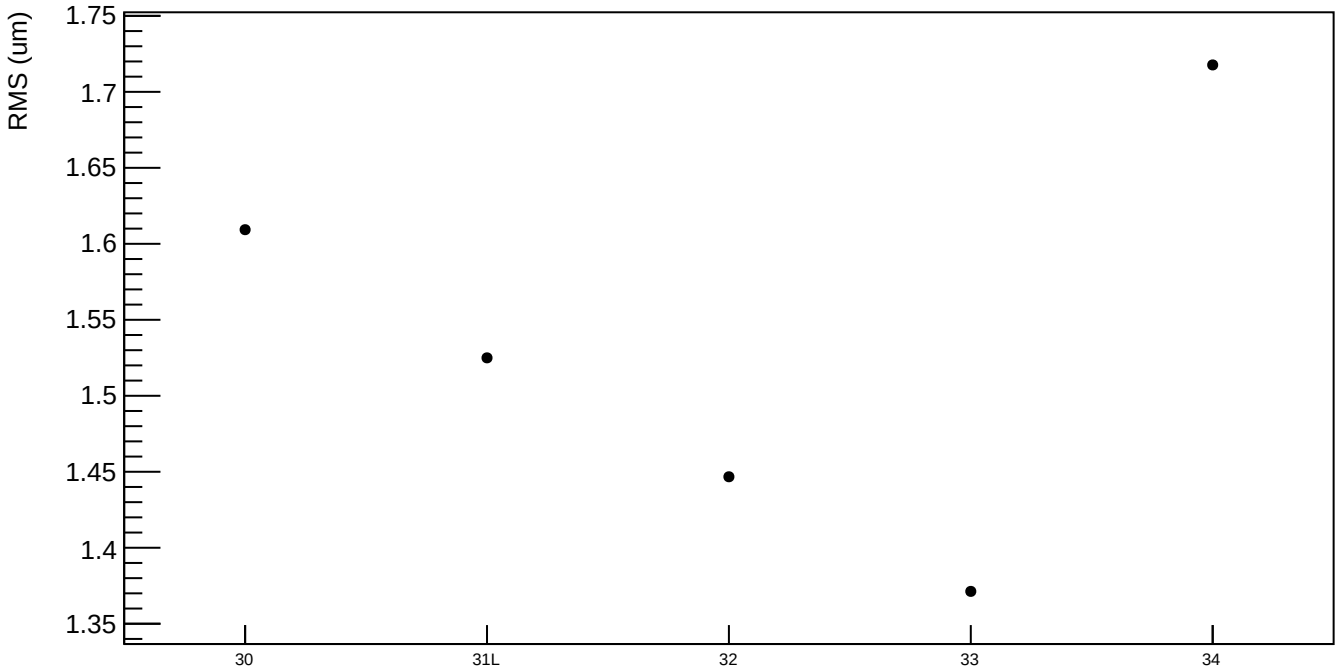

1D pull distribution
Mean −0.147 ± 0.4761
Std Dev 1.065 ± 0.3367
Underflow 0
Overflow 0
χ² / ndf 0.2871 / 1
Constant 1.446 ± 1.021
Mean −0.4341± 1.3894
Sigma 1.786 ± 2.304
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

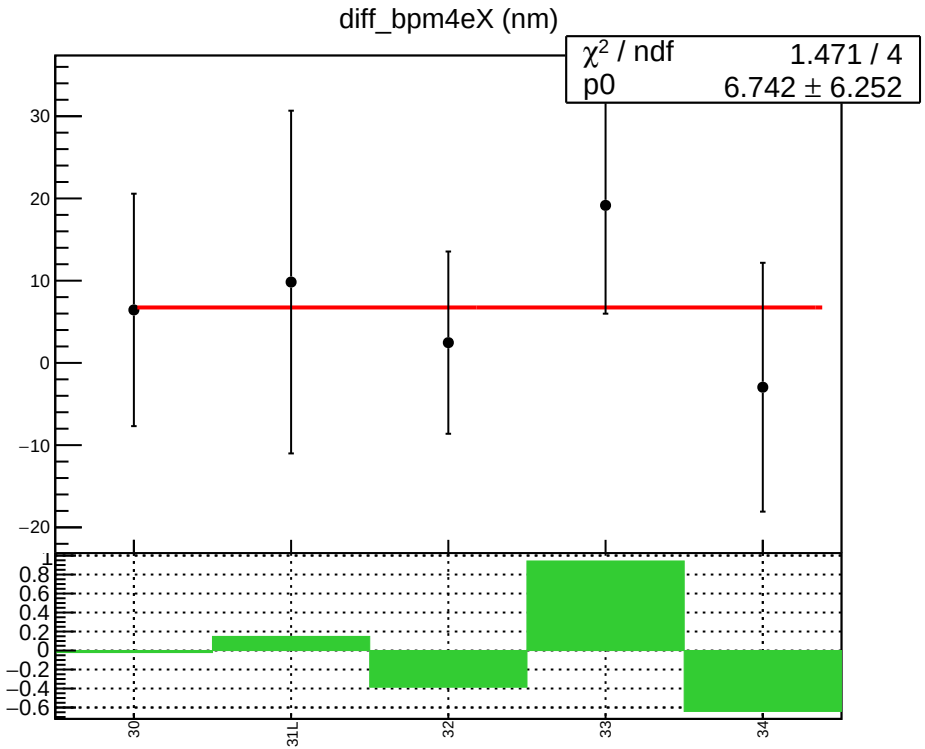

diff_bpmE RMS (um)
RMS (um)
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
30
31L
32
33
34

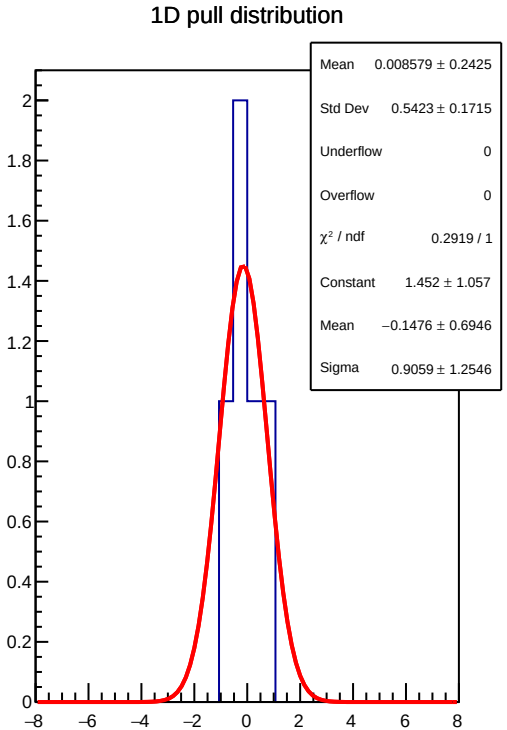

diff_bpm4aX (nm)
χ² / ndf 4.046 / 4
p0 0.5294 ± 0.8835
4
2
0
−2
−4
−6
0.5
0
−0.5
−1
−1.5
30
31L
32
33
34


1D pull distribution
Mean −0.0858 ± 0.4005
Std Dev 0.8954 ± 0.2832
Underflow 0
Overflow 0
χ² / ndf 0.3825 / 1
Constant 1.253 ± 0.839
Mean −0.1345 ± 3.8126
Sigma 2.406 ± 4.976
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

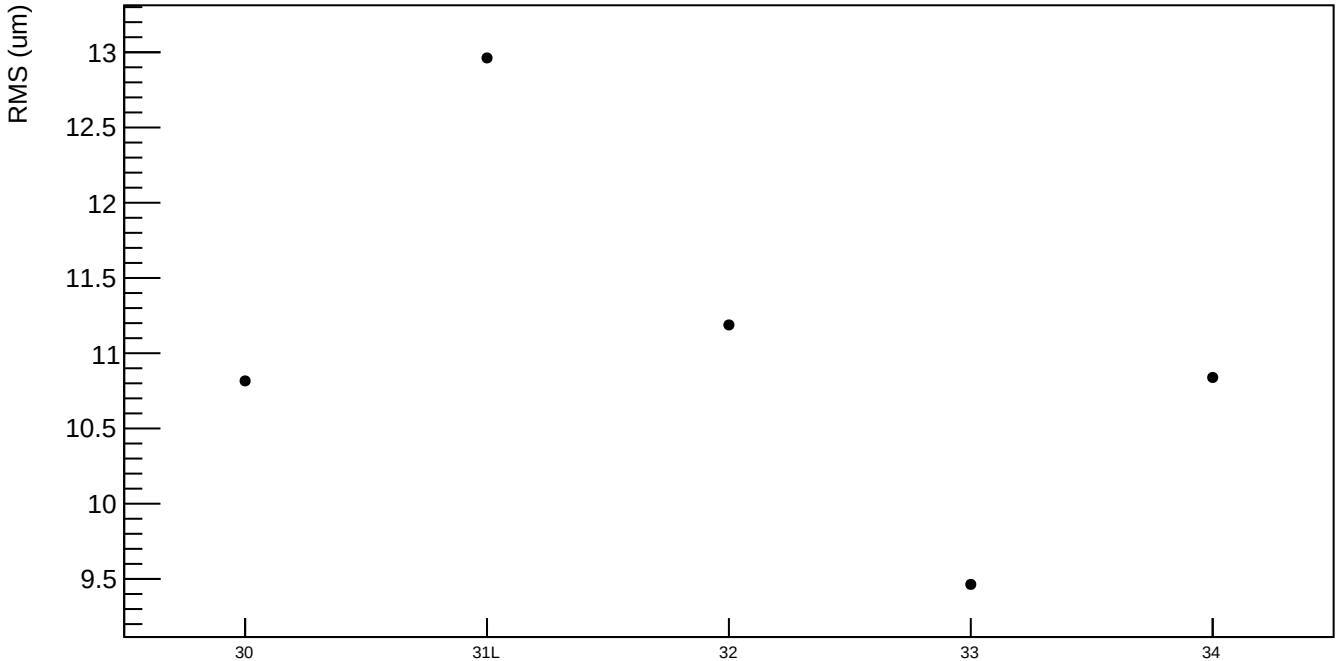
diff_bpm4aX RMS (um)

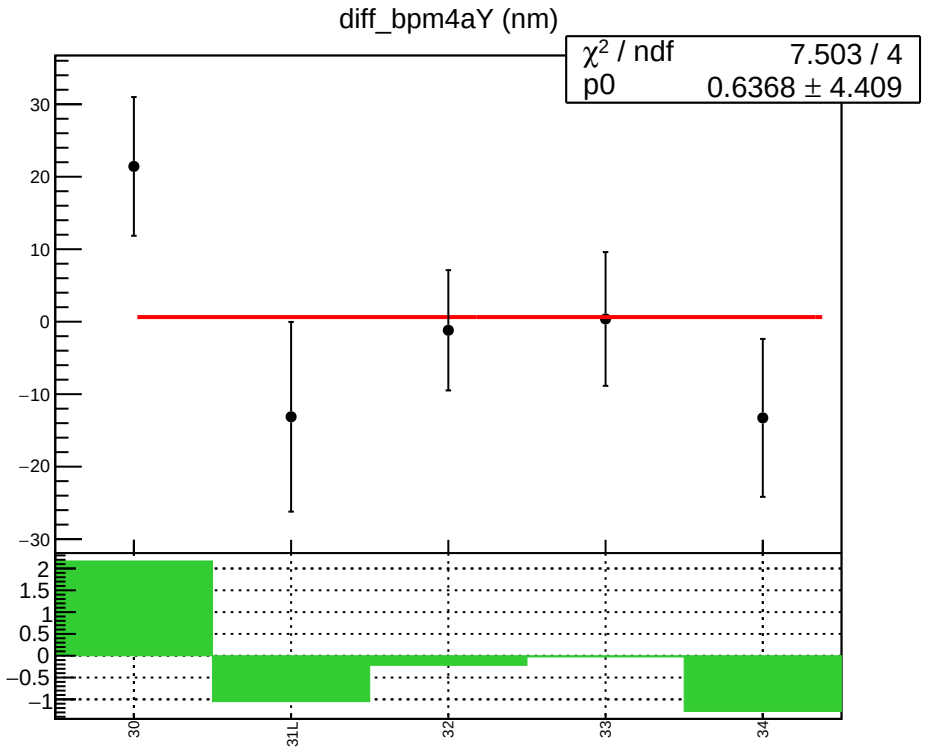


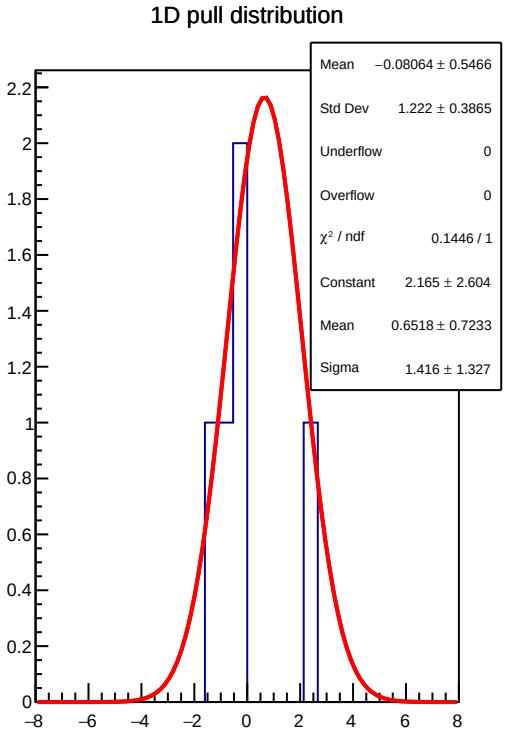

diff_bpm4eX (nm)
χ² / ndf 1.471 / 4
p0 6.742 ± 6.252
30
31L
32
33
34

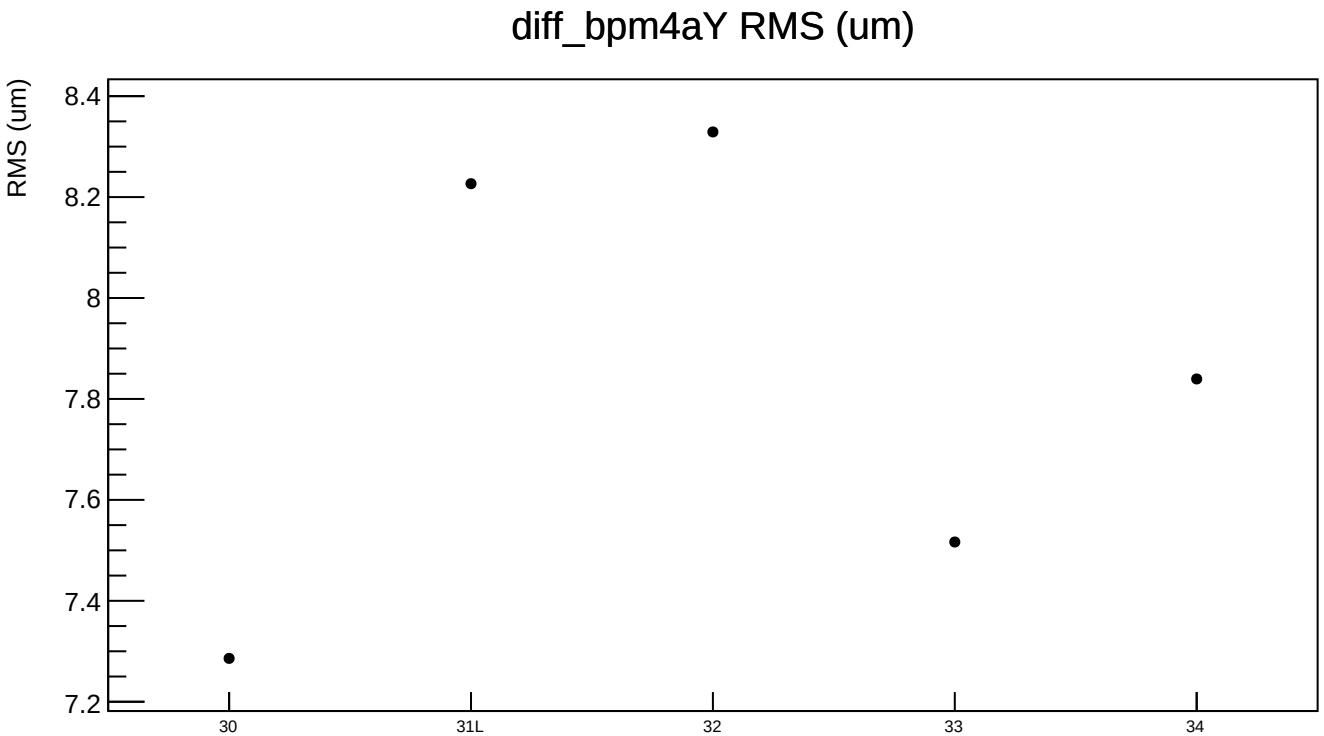

1D pull distribution
Mean 0.008579 ± 0.2425
Std Dev 0.5423 ± 0.1715
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean −0.1476 ± 0.6946
Sigma 0.9059 ± 1.2546

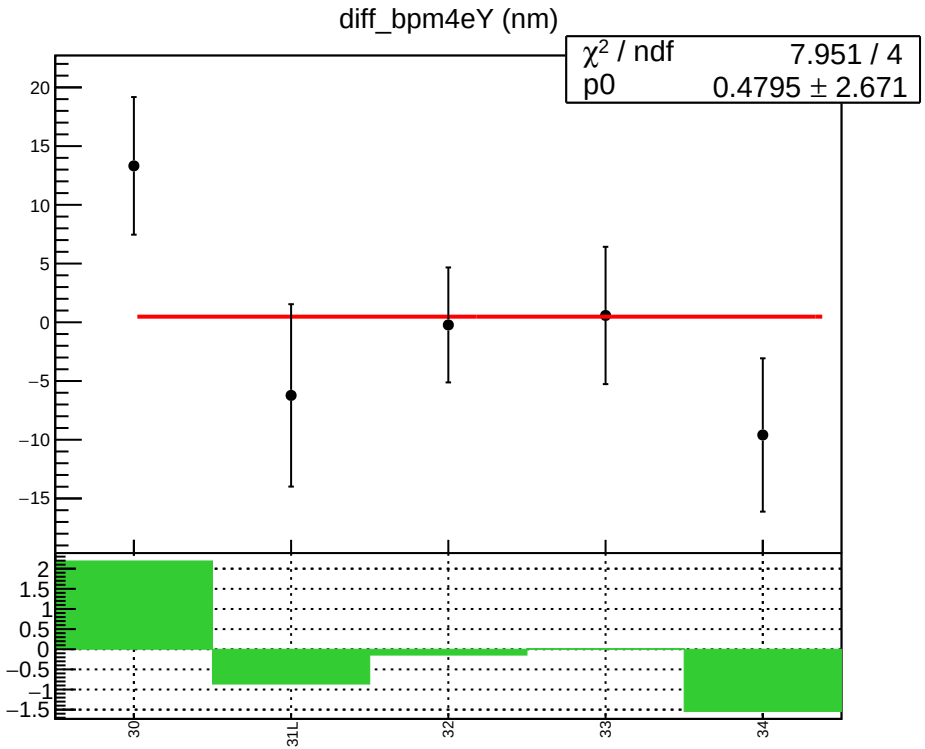
diff_bpm4eX RMS (um)

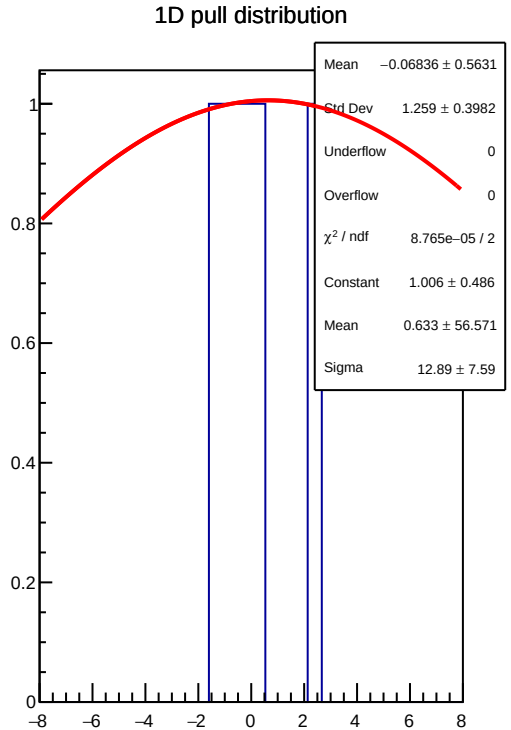


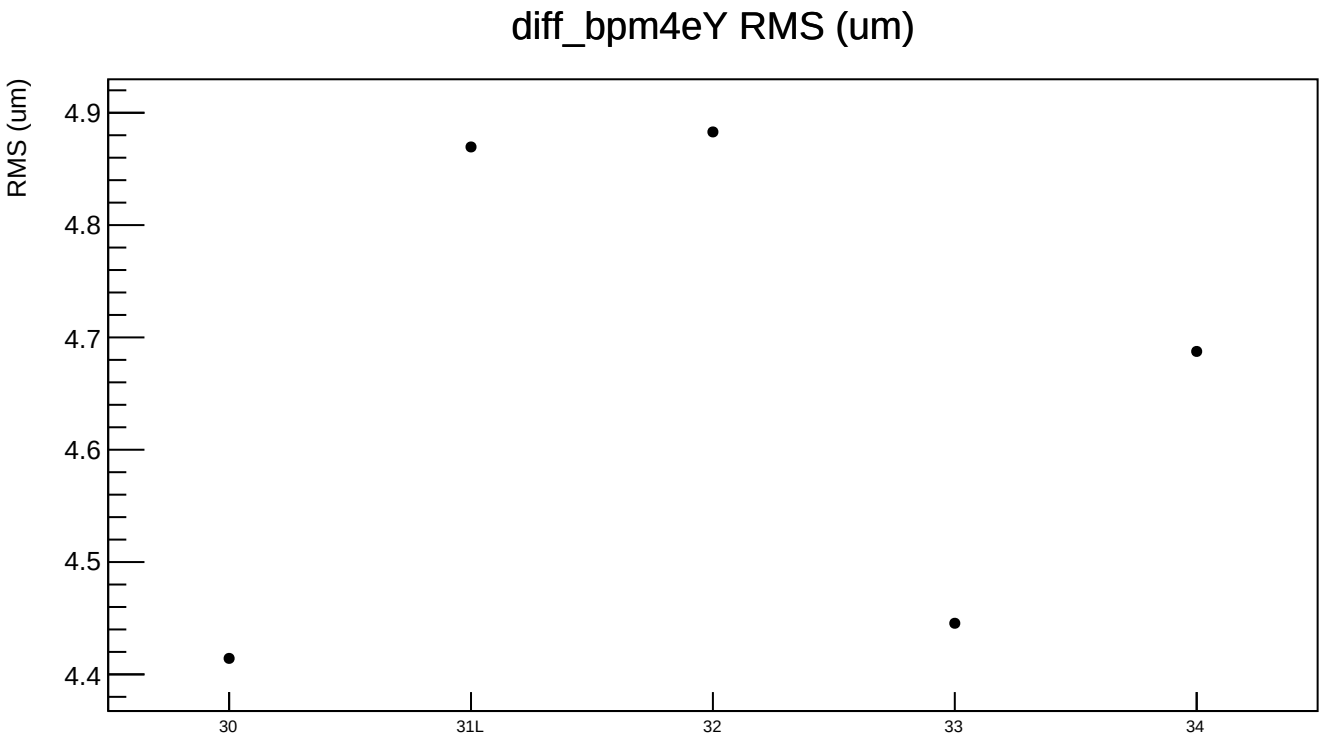

diff_bpm4aY (nm)
χ² / ndf 7.503 / 4
p0 0.6368 ± 4.409
30
31L
32
33
34

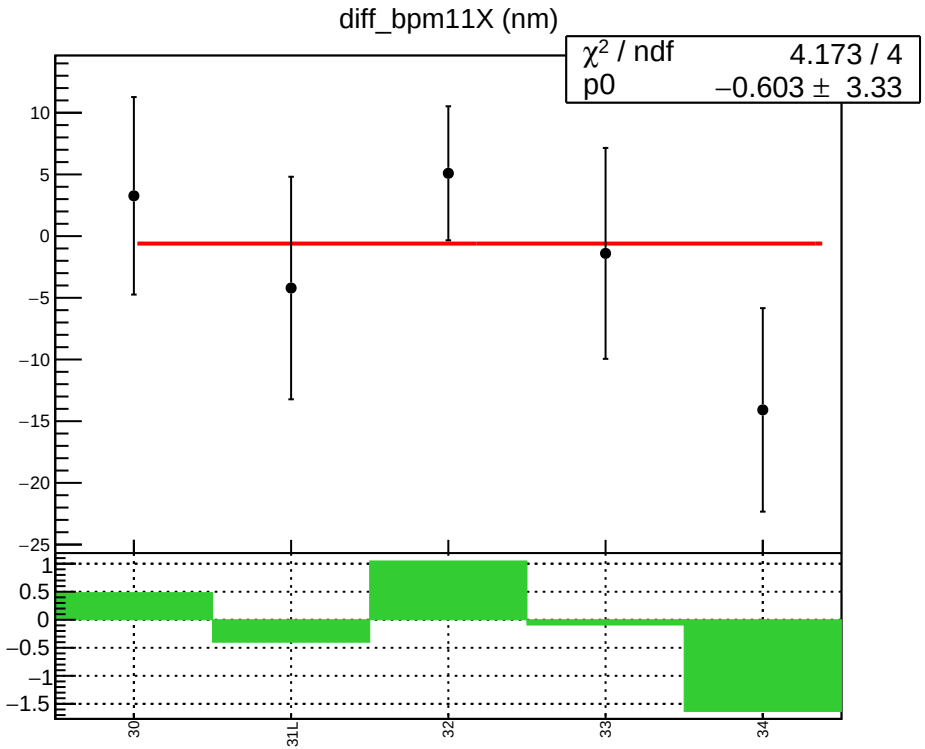

1D pull distribution
Mean −0.08064 ± 0.5466
Std Dev 1.222 ± 0.3865
Underflow 0
Overflow 0
χ² / ndf 0.1446 / 1
Constant 2.165 ± 2.604
Mean 0.6518 ± 0.7233
Sigma 1.416 ± 1.327

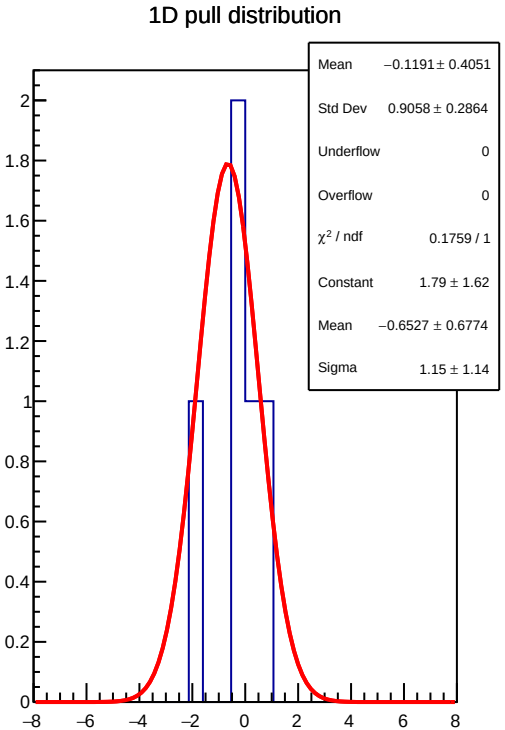

diff_bpm4aY RMS (um)
RMS (um)
8.4
8.2
8
7.8
7.6
7.4
7.2
30
31L
32
33
34


diff_bpm4eY (nm)
χ² / ndf 7.951 / 4
p0 0.4795 ± 2.671
20
15
10
5
0
−5
−10
−15
2
1.5
1
0.5
0
−0.5
−1
−1.5
30
31L
32
33
34

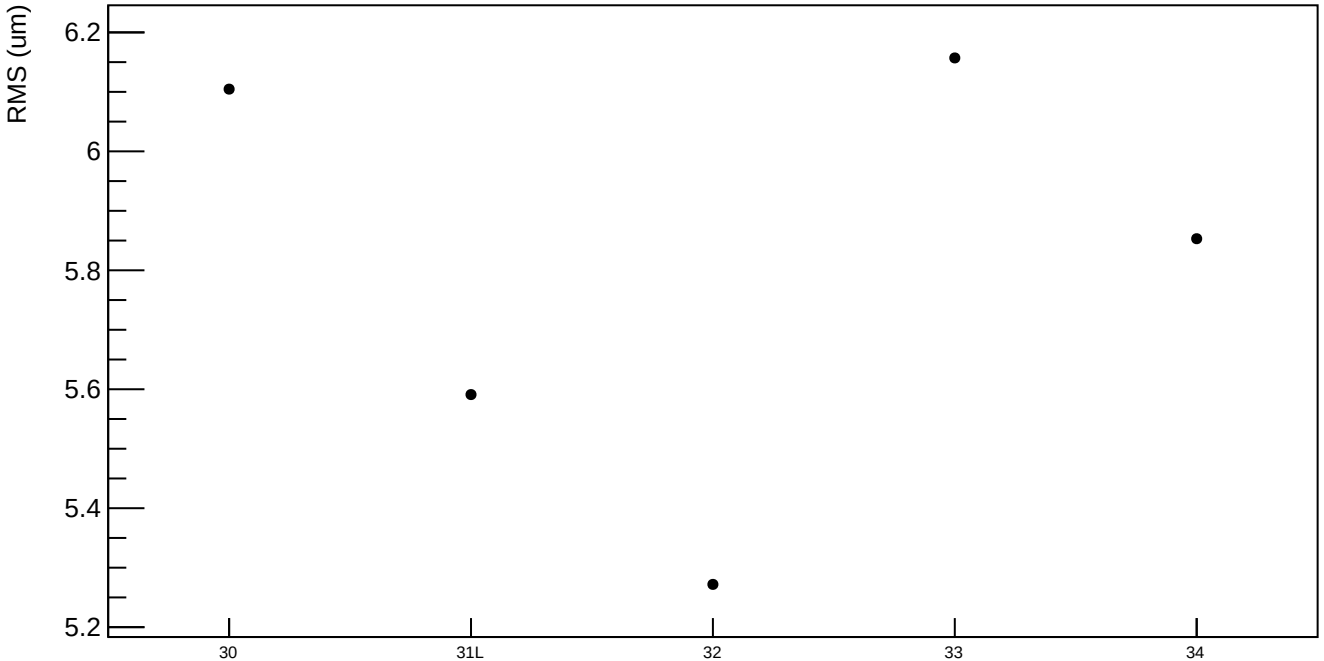

1D pull distribution
Mean −0.06836 ± 0.5631
Std Dev 1.259 ± 0.3982
Underflow 0
Overflow 0
χ² / ndf 8.765e−05 / 2
Constant 1.006 ± 0.486
Mean 0.633 ± 56.571
Sigma 12.89 ± 7.59
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

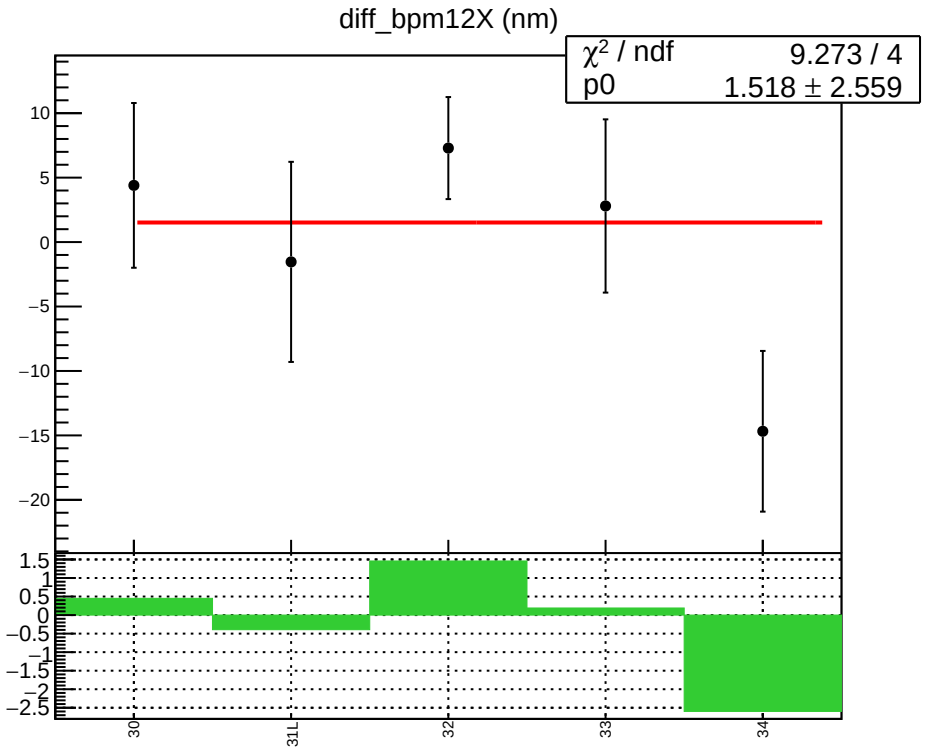

diff_bpm4eY RMS (um)
RMS (um)
4.9
4.8
4.7
4.6
4.5
4.4
30
31L
32
33
34

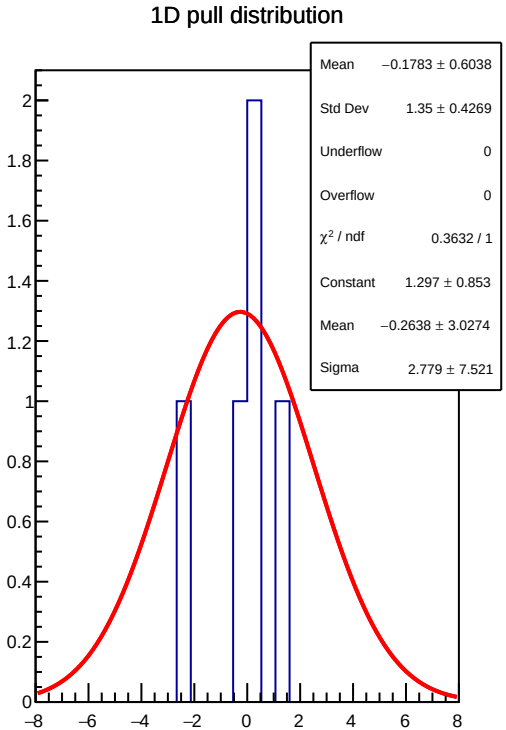

diff_bpm11X (nm)
χ² / ndf 4.173 / 4
p0 −0.603 ± 3.33
10
5
0
−5
−10
−15
−20
−25
1
0.5
0
−0.5
−1
−1.5
30
31L
32
33
34


1D pull distribution
Mean −0.1191 ± 0.4051
Std Dev 0.9058 ± 0.2864
Underflow 0
Overflow 0
χ² / ndf 0.1759 / 1
Constant 1.79 ± 1.62
Mean −0.6527 ± 0.6774
Sigma 1.15 ± 1.14
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

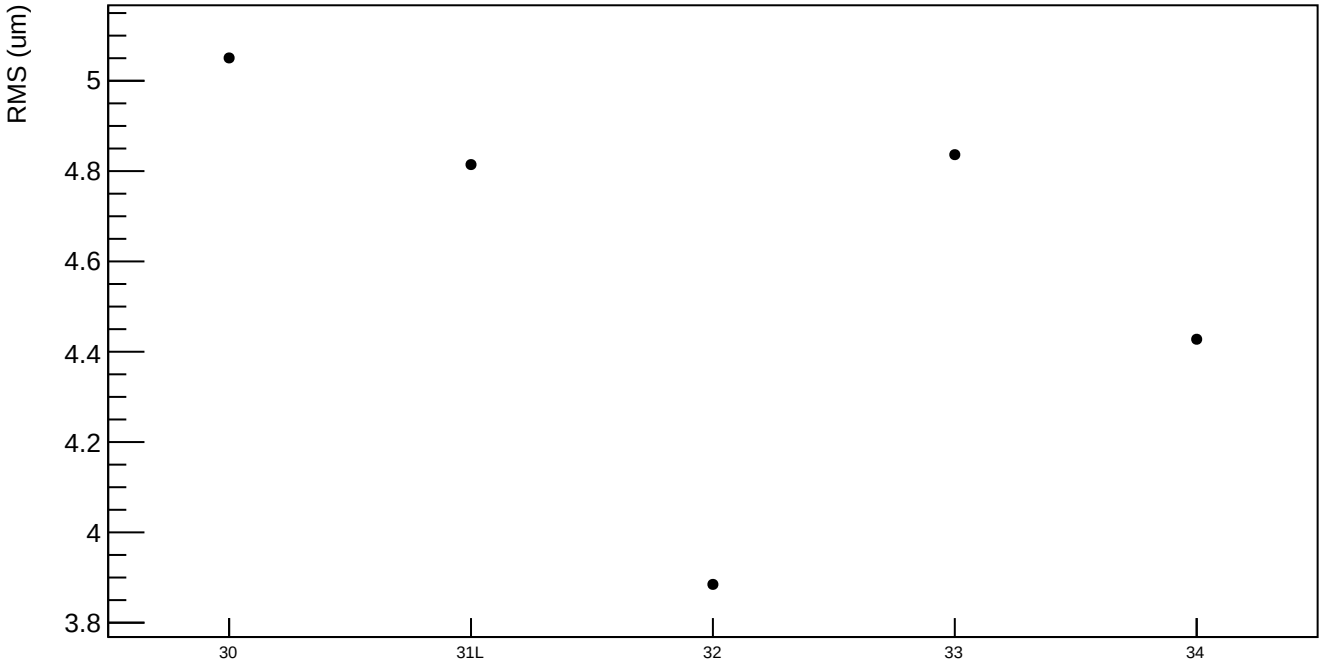
diff_bpm11X RMS (um)

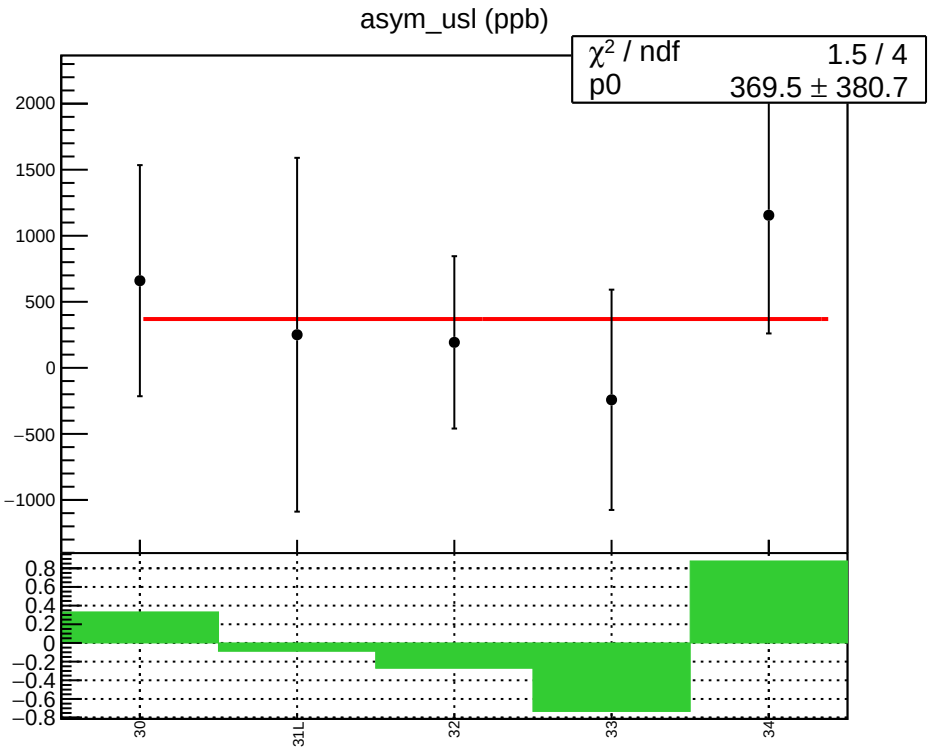


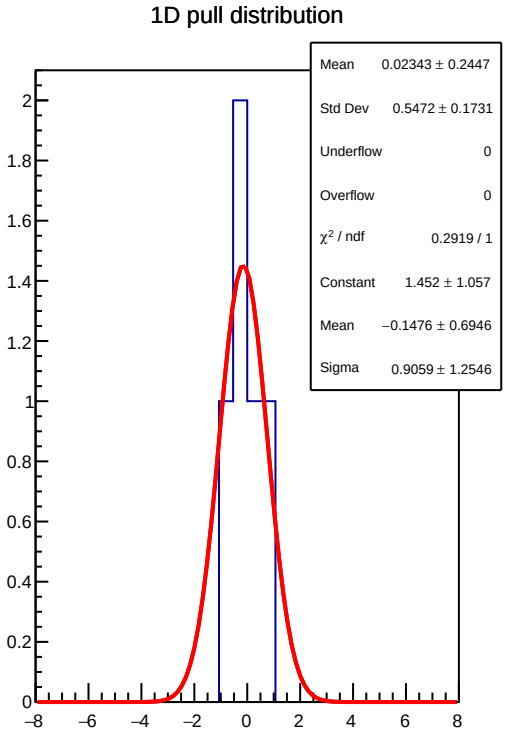

diff_bpm12X (nm)
χ² / ndf 9.273 / 4
p0 1.518 ± 2.559
10
5
0
−5
−10
−15
−20
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
30
31L
32
33
34


1D pull distribution
Mean −0.1783 ± 0.6038
Std Dev 1.35 ± 0.4269
Underflow 0
Overflow 0
χ² / ndf 0.3632 / 1
Constant 1.297 ± 0.853
Mean −0.2638 ± 3.0274
Sigma 2.779 ± 7.521
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

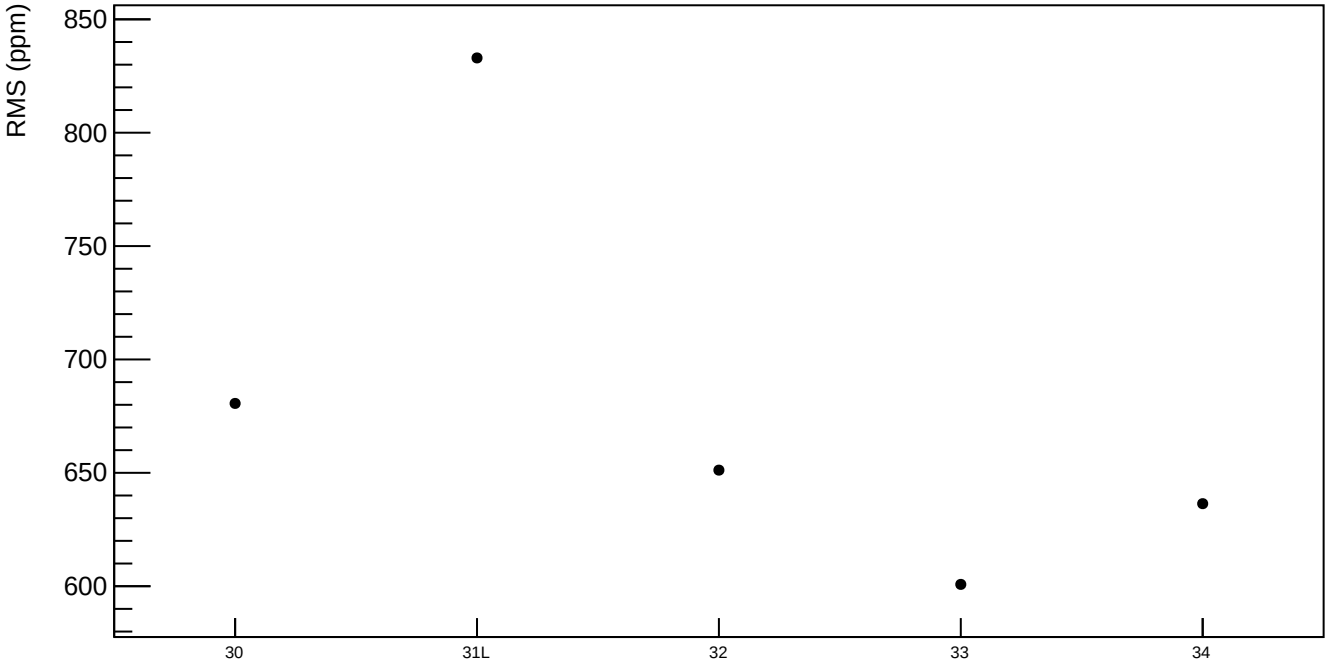
diff_bpm12X RMS (um)

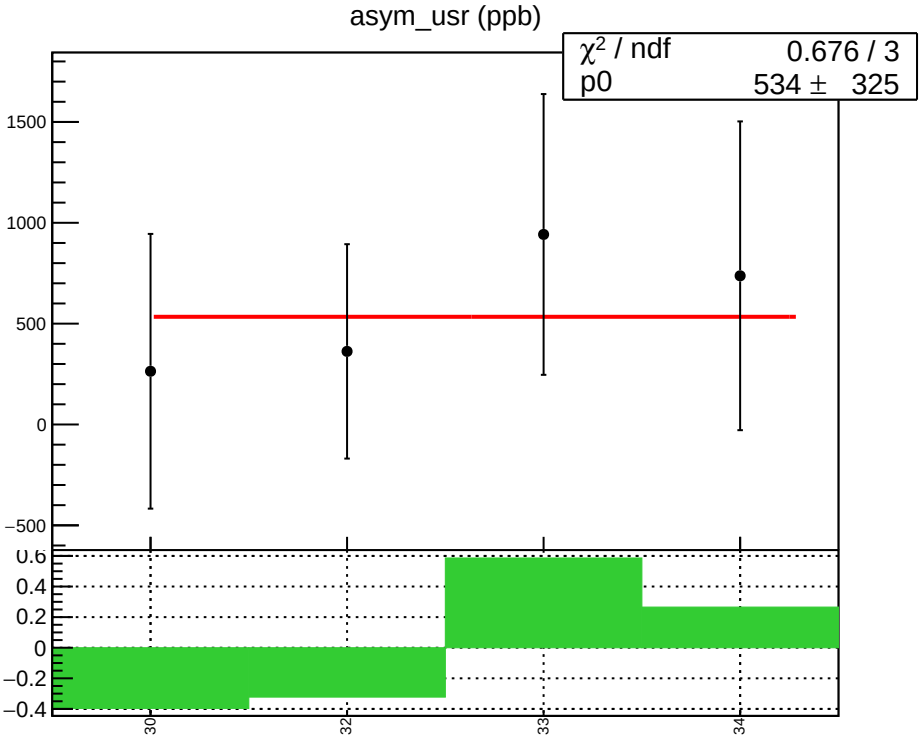


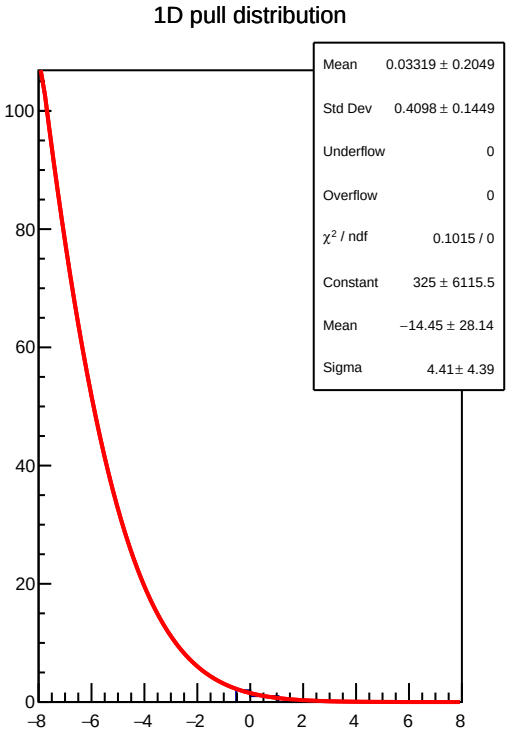

asym_usl (ppb)
χ² / ndf 1.5 / 4
p0 369.5 ± 380.7
2000
1500
1000
500
0
−500
−1000
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
30
31L
32
33
34


1D pull distribution
Mean 0.02343 ± 0.2447
Std Dev 0.5472 ± 0.1731
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean −0.1476 ± 0.6946
Sigma 0.9059 ± 1.2546
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

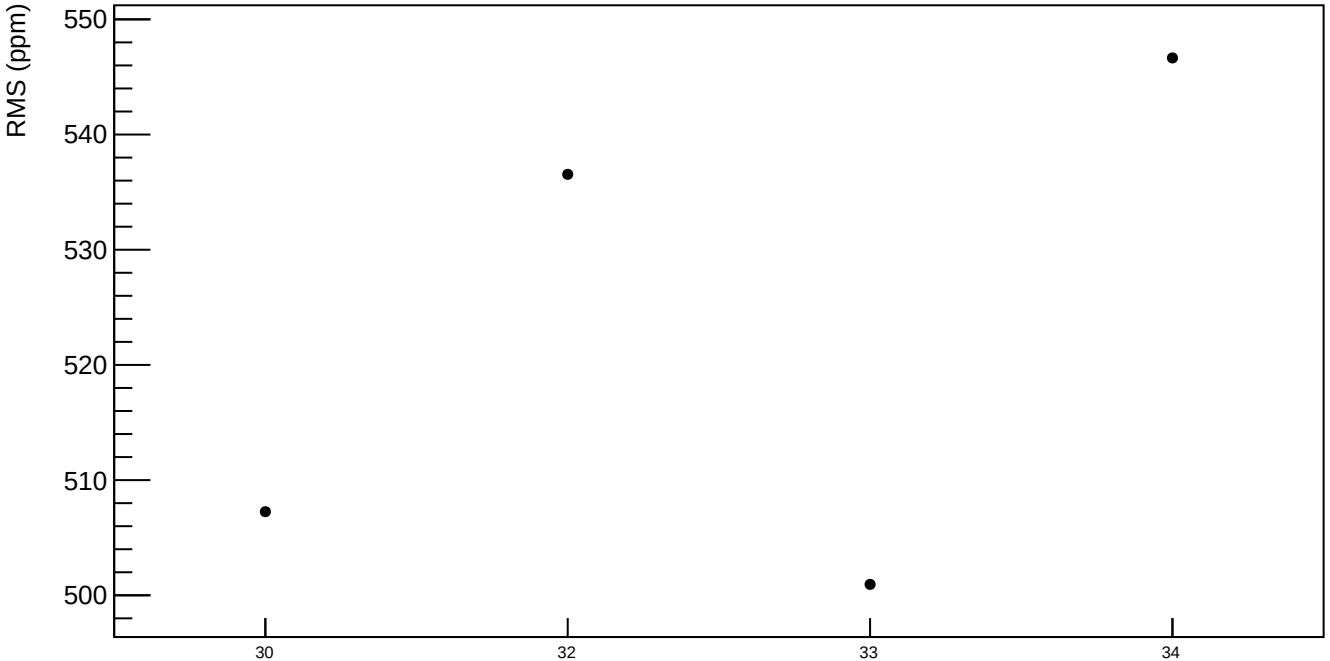
asym_usl RMS (ppm)

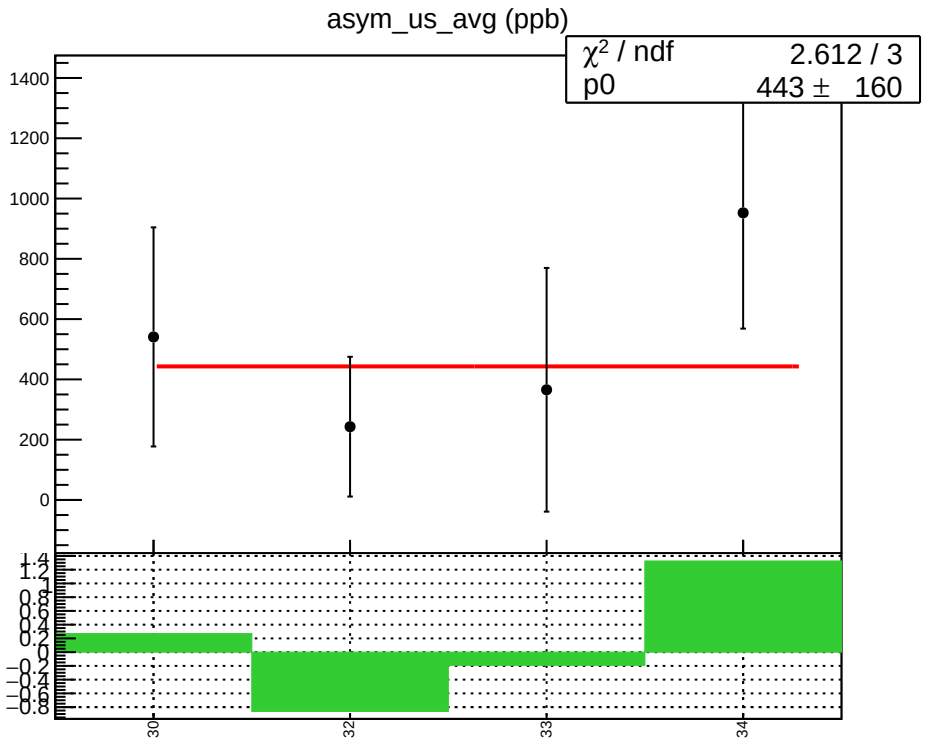


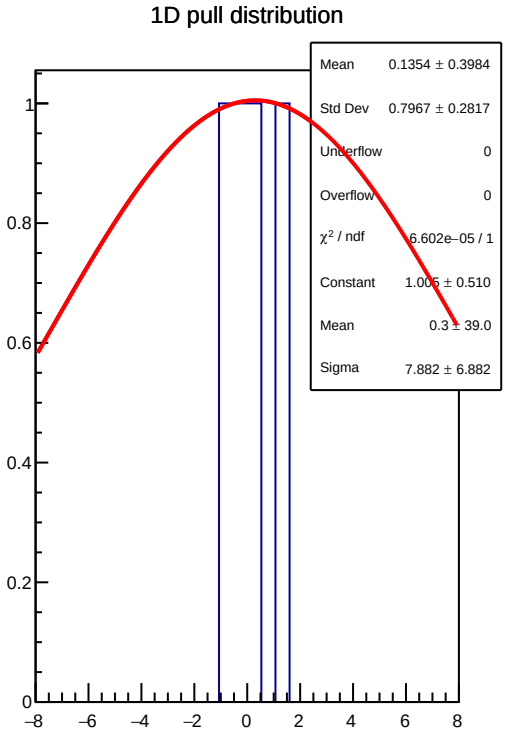

asym_usr (ppb)
χ² / ndf 0.676 / 3
p0 534 ± 325
1500
1000
500
0
−500
0.6
0.4
0.2
0
−0.2
−0.4
30
32
33
34

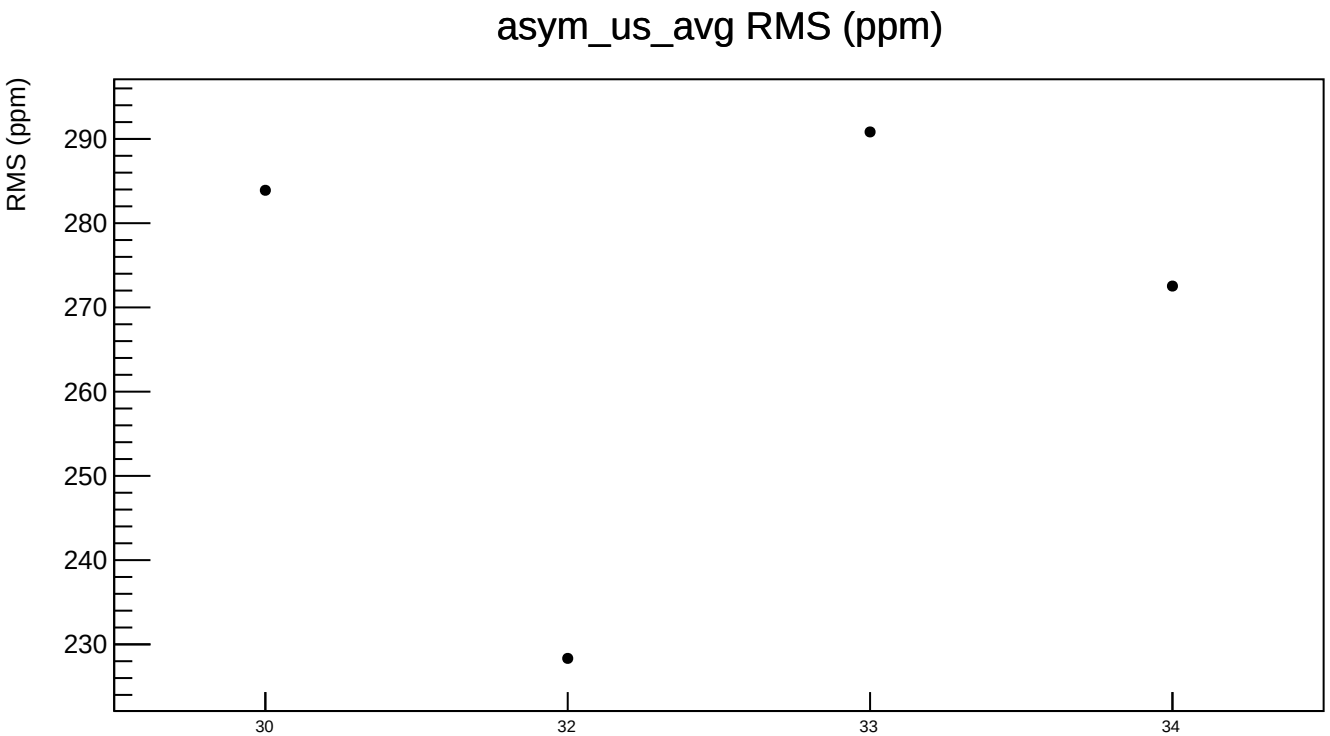

1D pull distribution
Mean 0.03319 ± 0.2049
Std Dev 0.4098 ± 0.1449
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 325 ± 6115.5
Mean −14.45 ± 28.14
Sigma 4.41± 4.39
100
80
60
40
20
0
−8
−6
−4
−2
0
2
4
6
8

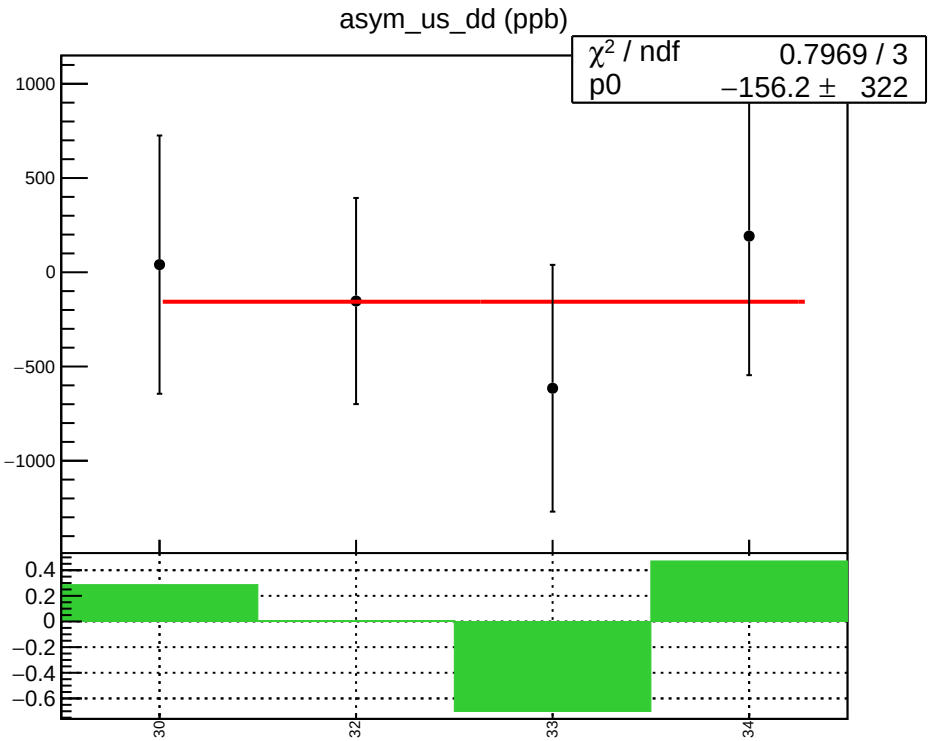
asym_usr RMS (ppm)

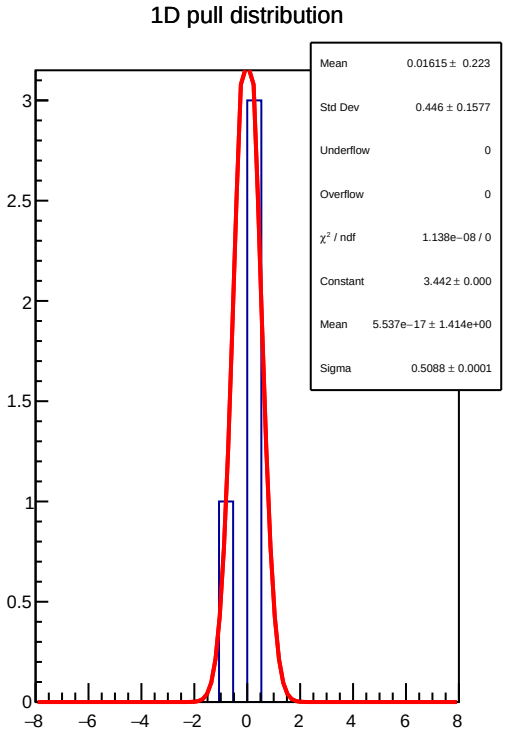


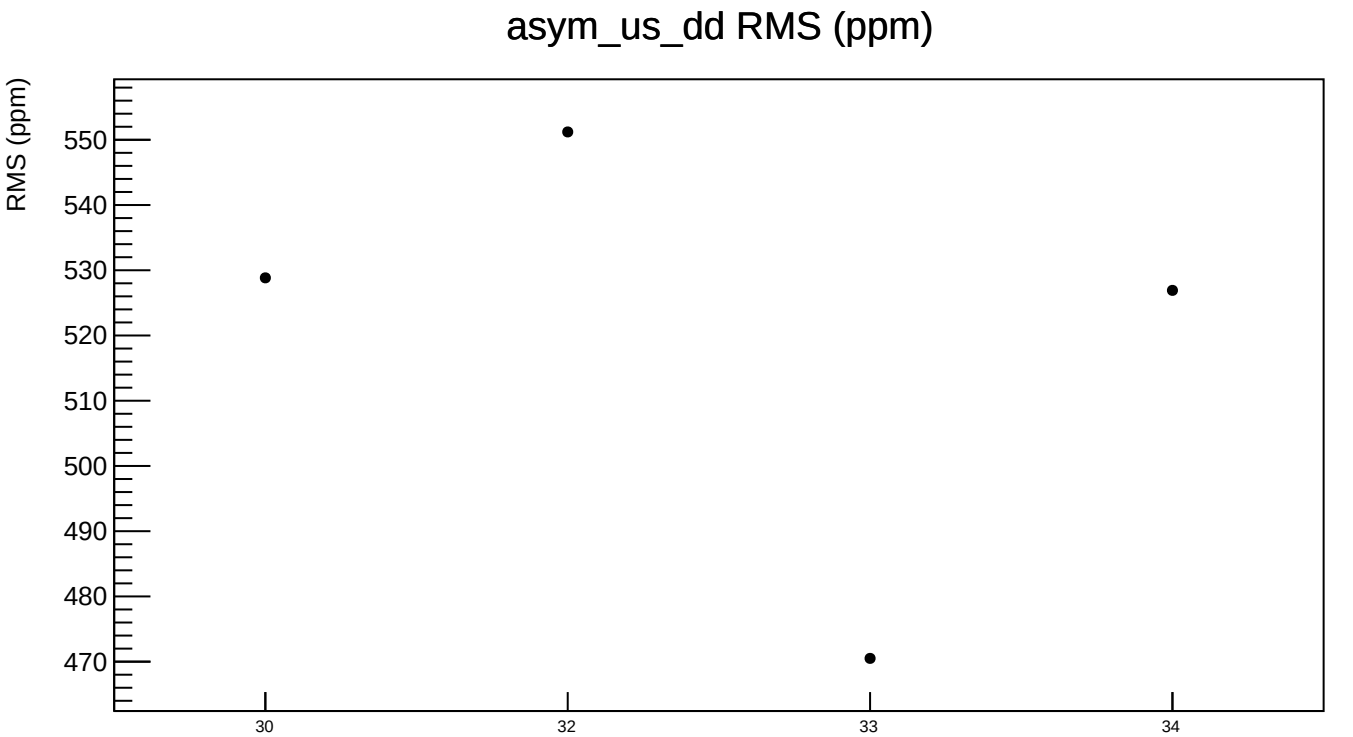

asym_us_avg (ppb)
χ² / ndf 2.612 / 3
p0 443 ± 160
1400
1200
1000
800
600
400
200
0
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
30
32
33
34

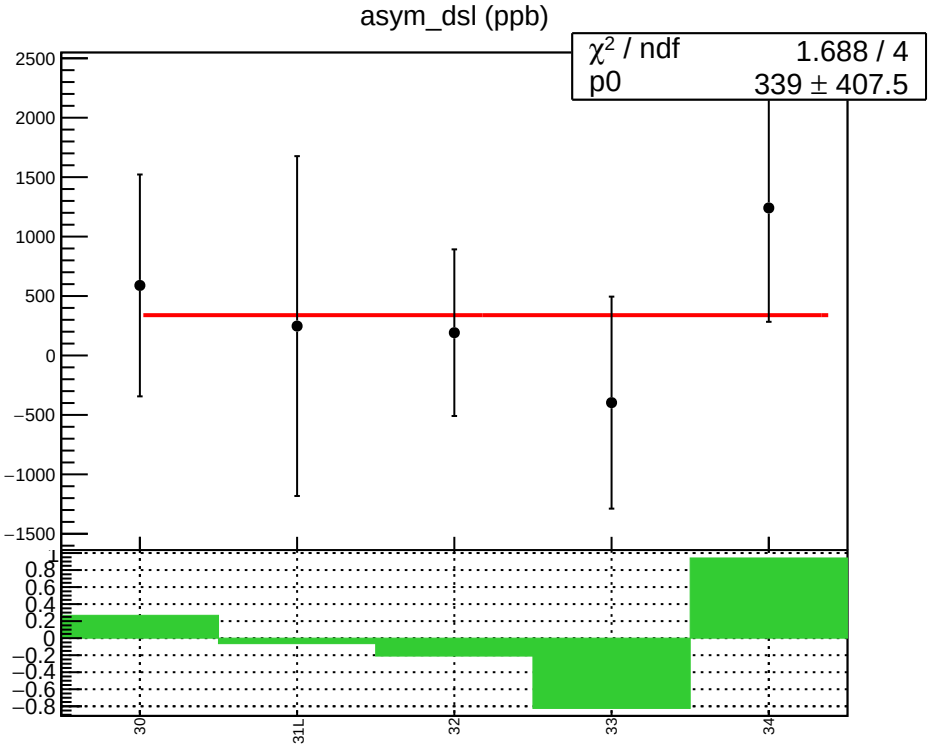

1D pull distribution
Mean 0.1354 ± 0.3984
Std Dev 0.7967 ± 0.2817
Underflow 0
Overflow 0
χ² / ndf 6.602e−05 / 1
Constant 1.005 ± 0.510
Mean 0.3 ± 39.0
Sigma 7.882 ± 6.882
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

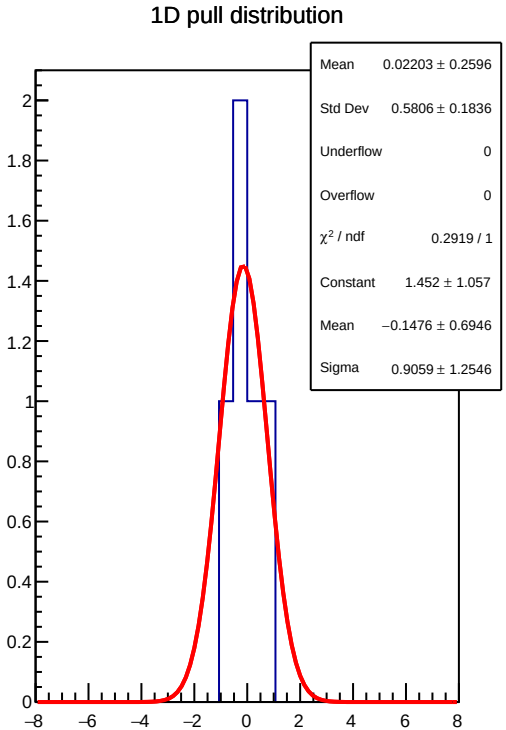

asym_us_avg RMS (ppm)
RMS (ppm)
290
280
270
260
250
240
230
30
32
33
34


asym_us_dd (ppb)
χ² / ndf 0.7969 / 3
p0 −156.2 ± 322
1000
500
0
−500
−1000
0.4
0.2
0
−0.2
−0.4
−0.6
30
32
33
34

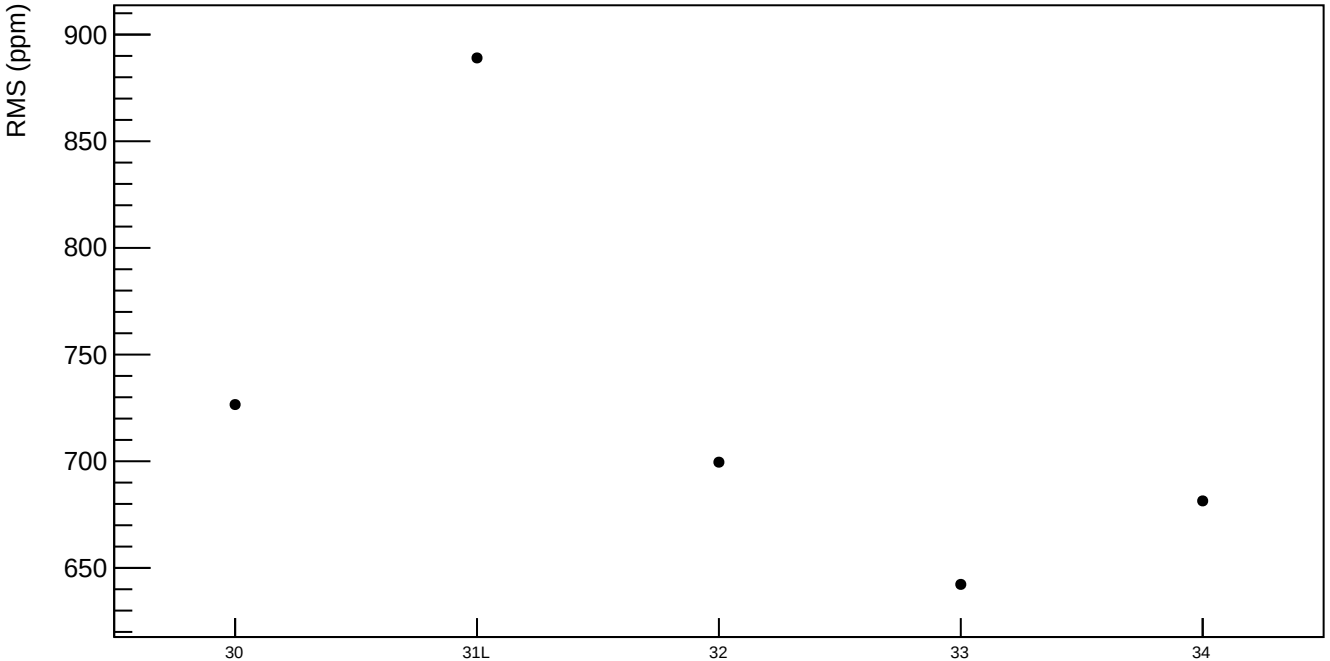

1D pull distribution
Mean 0.01615 ± 0.223
Std Dev 0.446 ± 0.1577
Underflow 0
Overflow 0
χ² / ndf 1.138e−08 / 0
Constant 3.442 ± 0.000
Mean 5.537e−17 ± 1.414e+00
Sigma 0.5088 ± 0.0001
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

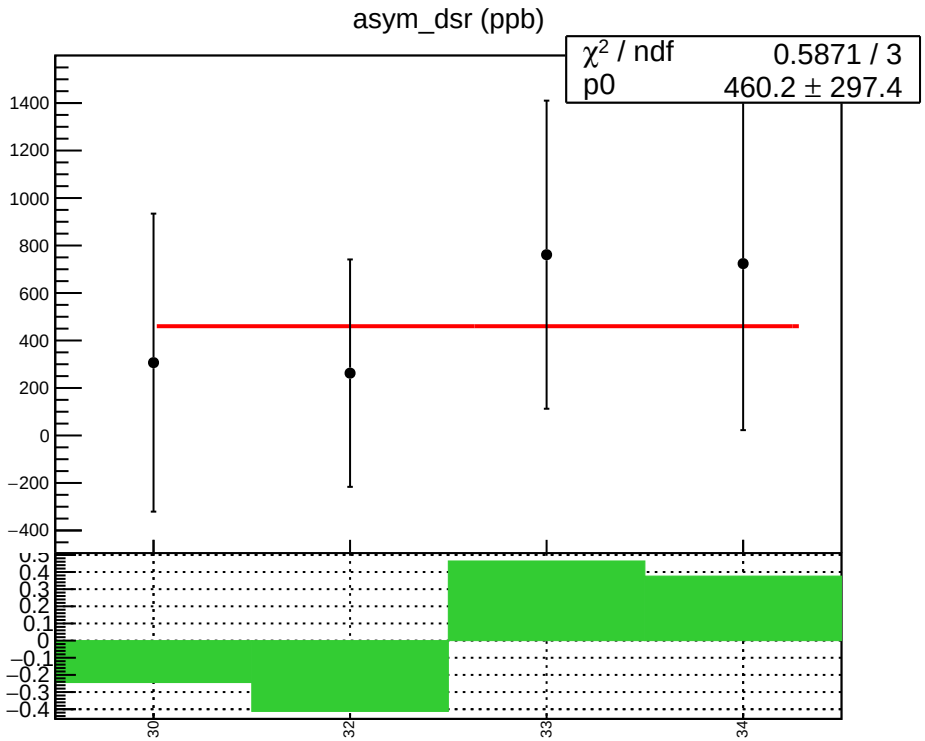

asym_us_dd RMS (ppm)
RMS (ppm)
550
540
530
520
510
500
490
480
470
30
32
33
34

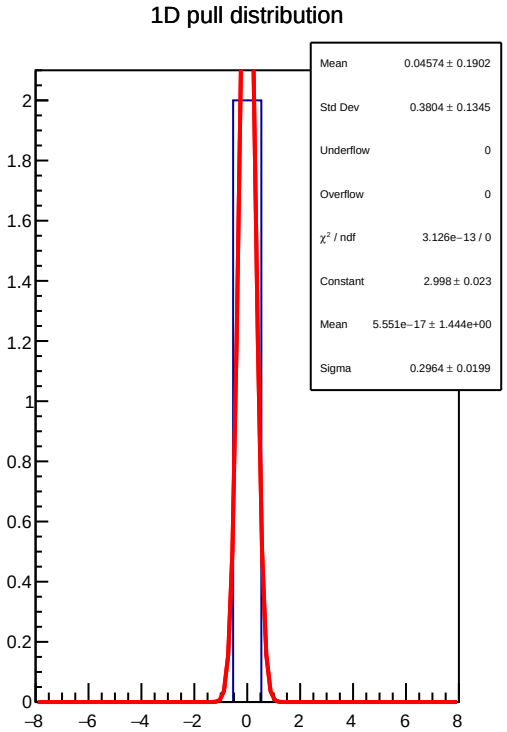

asym_dsl (ppb)
χ² / ndf 1.688 / 4
p0 339 ± 407.5
2500
2000
1500
1000
500
0
−500
−1000
−1500
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
30
31L
32
33
34

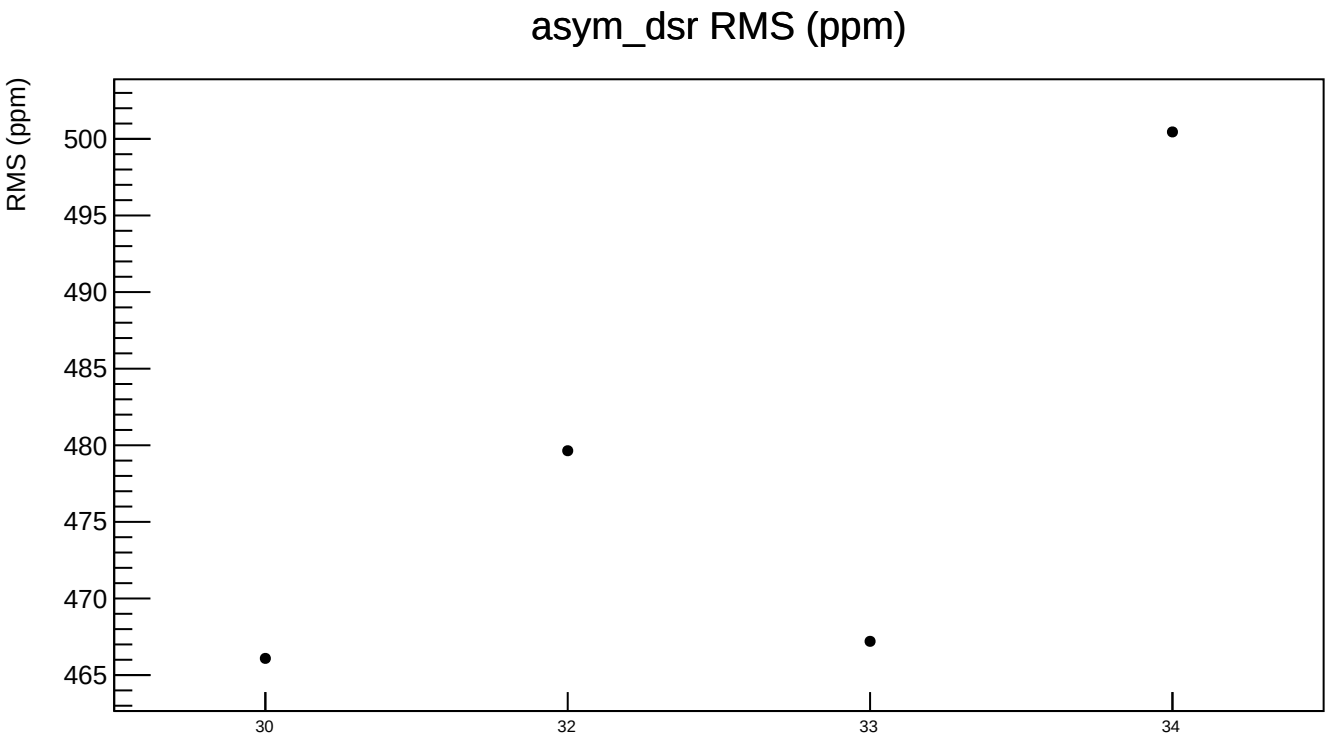

1D pull distribution
Mean 0.02203 ± 0.2596
Std Dev 0.5806 ± 0.1836
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean −0.1476 ± 0.6946
Sigma 0.9059 ± 1.2546
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

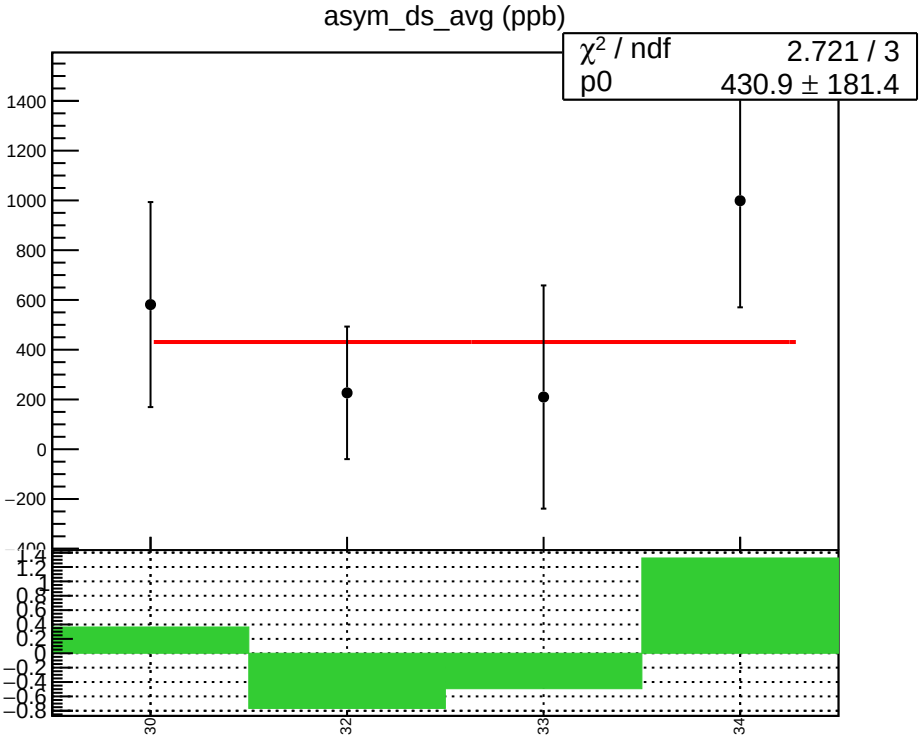
asym_dsl RMS (ppm)

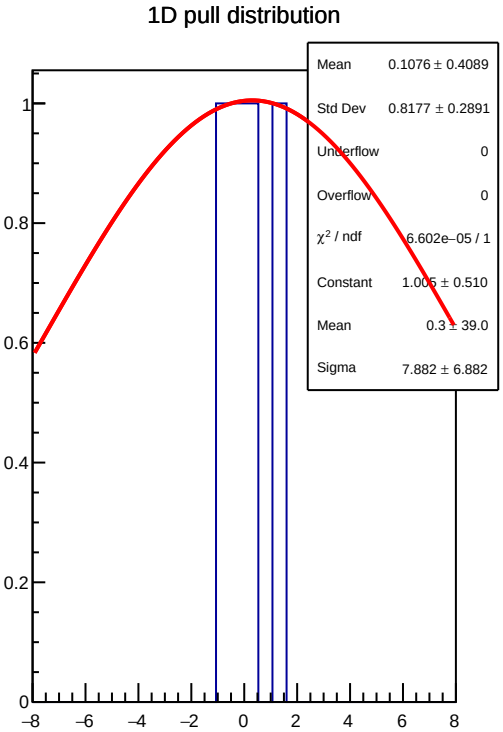


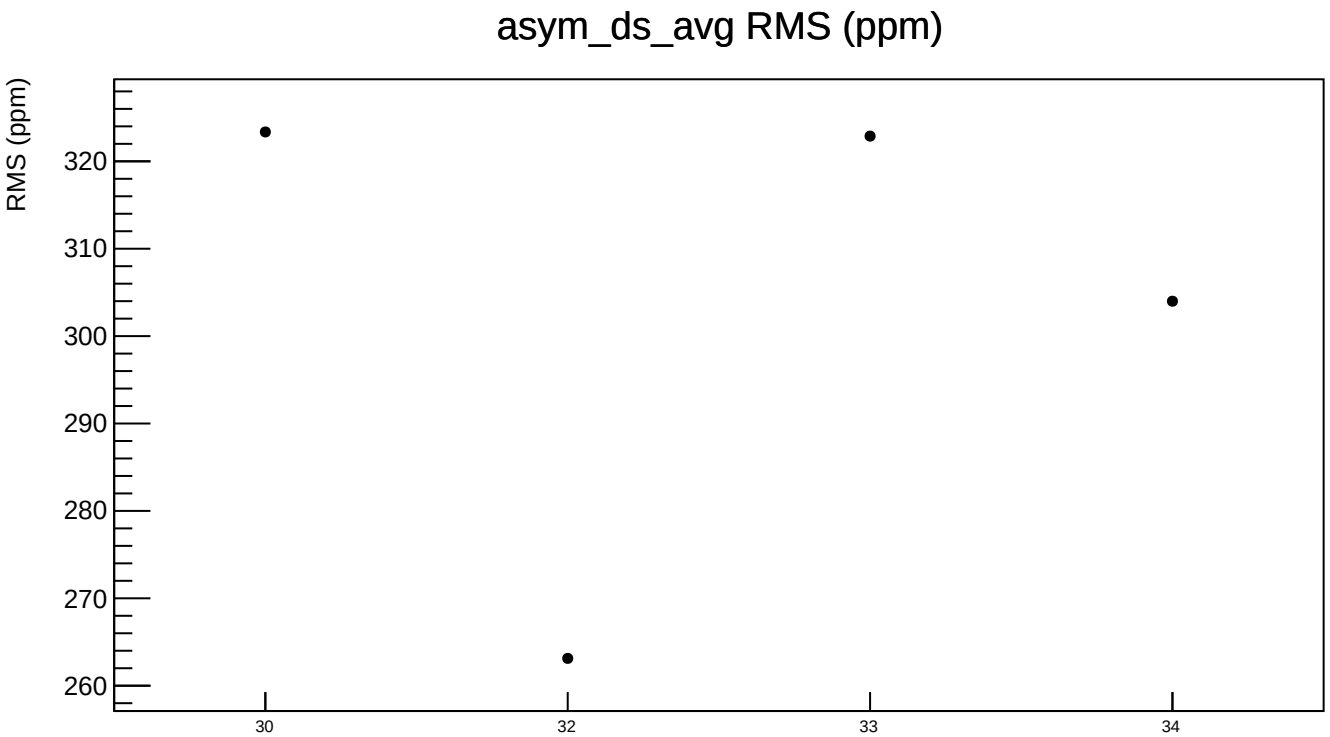

asym_dsr (ppb)
χ² / ndf 0.5871 / 3
p0 460.2 ± 297.4
1400
1200
1000
800
600
400
200
0
−200
−400
0.5
0.4
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
30
32
33
34

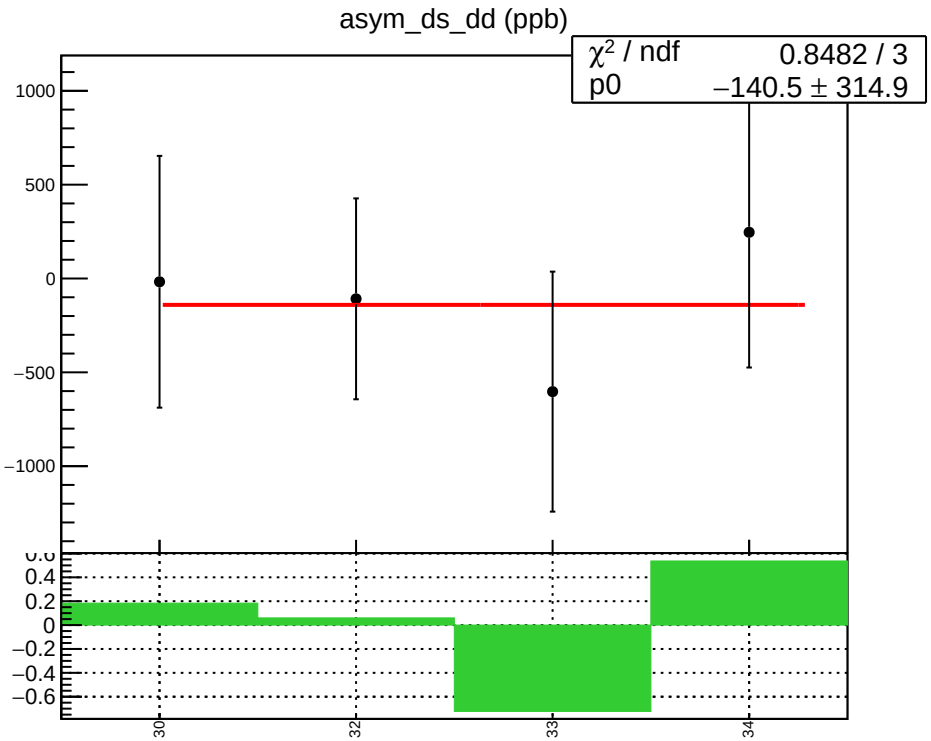

1D pull distribution
Mean 0.04574 ± 0.1902
Std Dev 0.3804 ± 0.1345
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

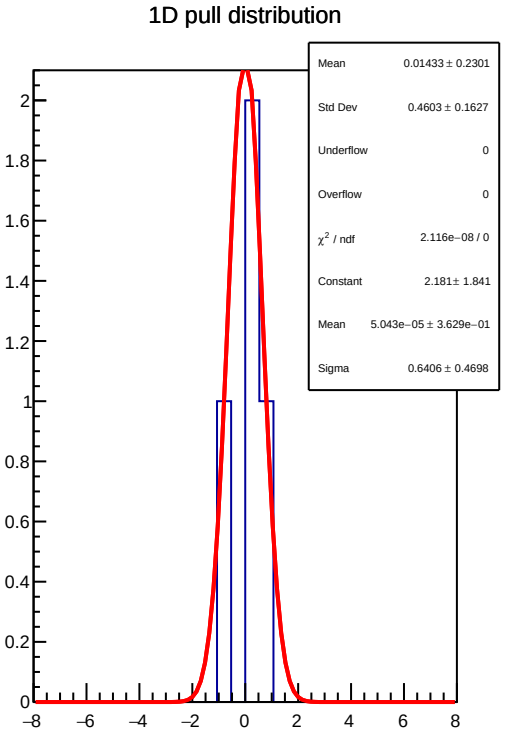

asym_dsr RMS (ppm)
RMS (ppm)
500
495
490
485
480
475
470
465
30
32
33
34

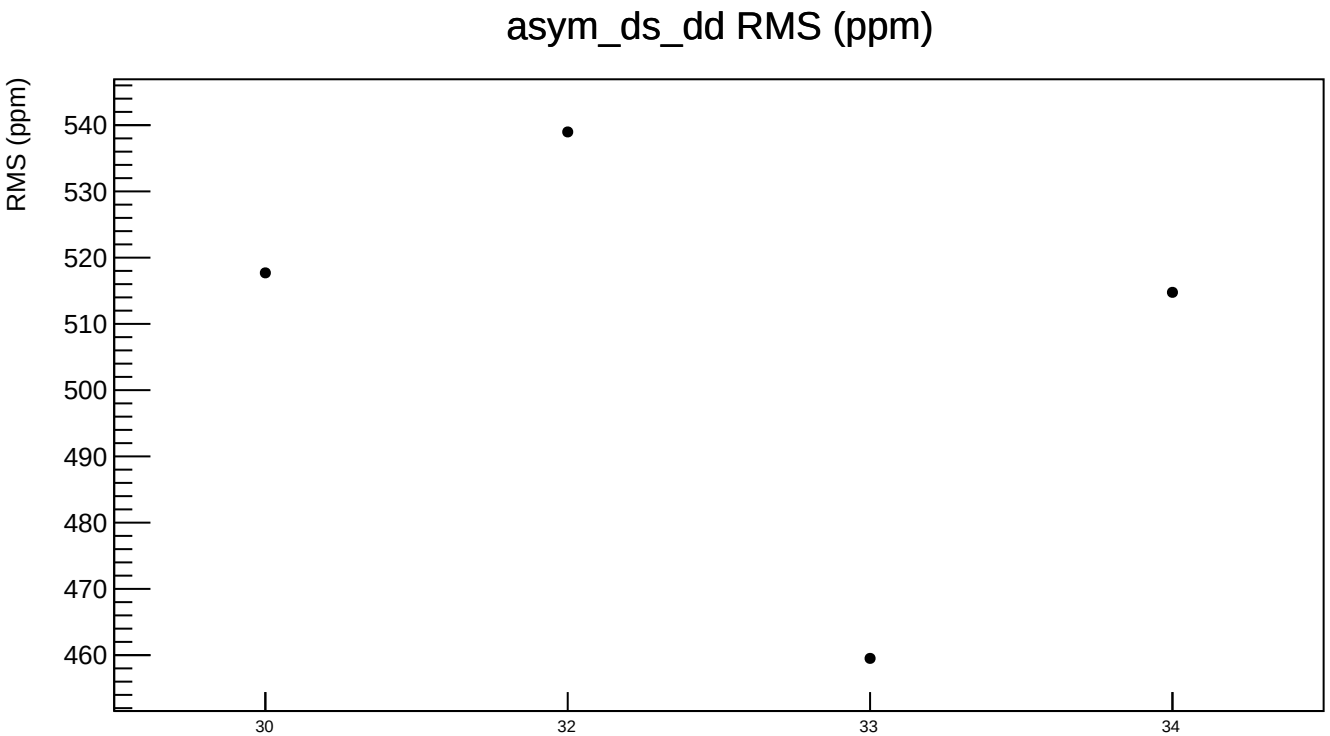

asym_ds_avg (ppb)
χ² / ndf 2.721 / 3
p0 430.9 ± 181.4
1400
1200
1000
800
600
400
200
0
−200
−400
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
30
32
33
34

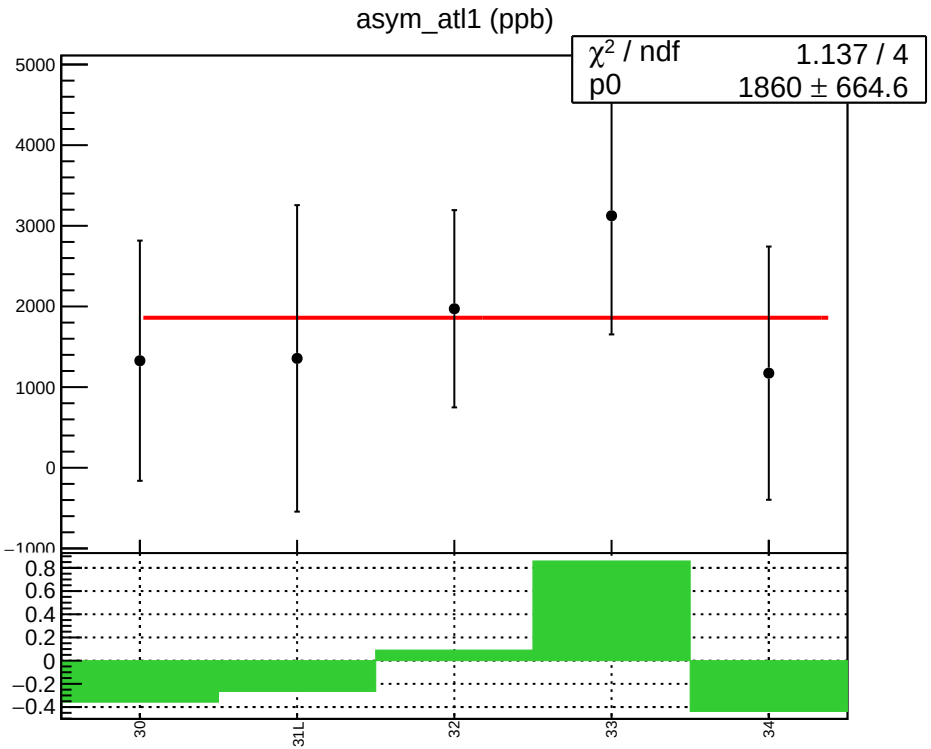

1D pull distribution
Mean 0.1076 ± 0.4089
Std Dev 0.8177 ± 0.2891
Underflow 0
Overflow 0
χ² / ndf 6.602e−05 / 1
Constant 1.005 ± 0.510
Mean 0.3 ± 39.0
Sigma 7.882 ± 6.882
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

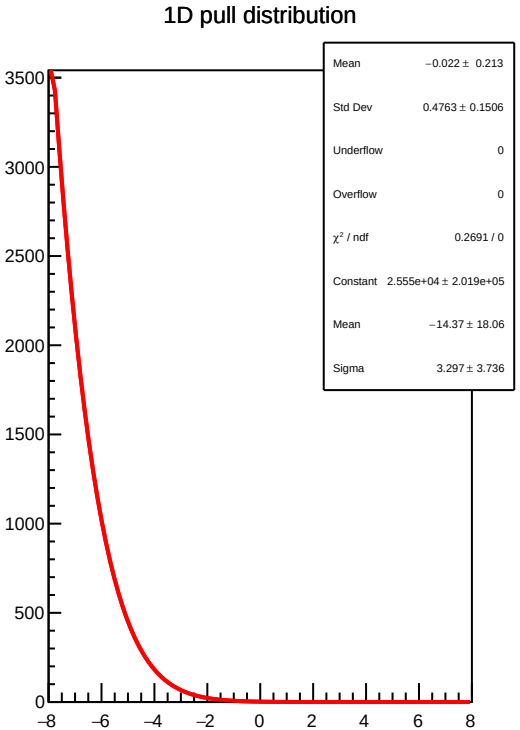

asym_ds_avg RMS (ppm)
RMS (ppm)
320
310
300
290
280
270
260
30
32
33
34

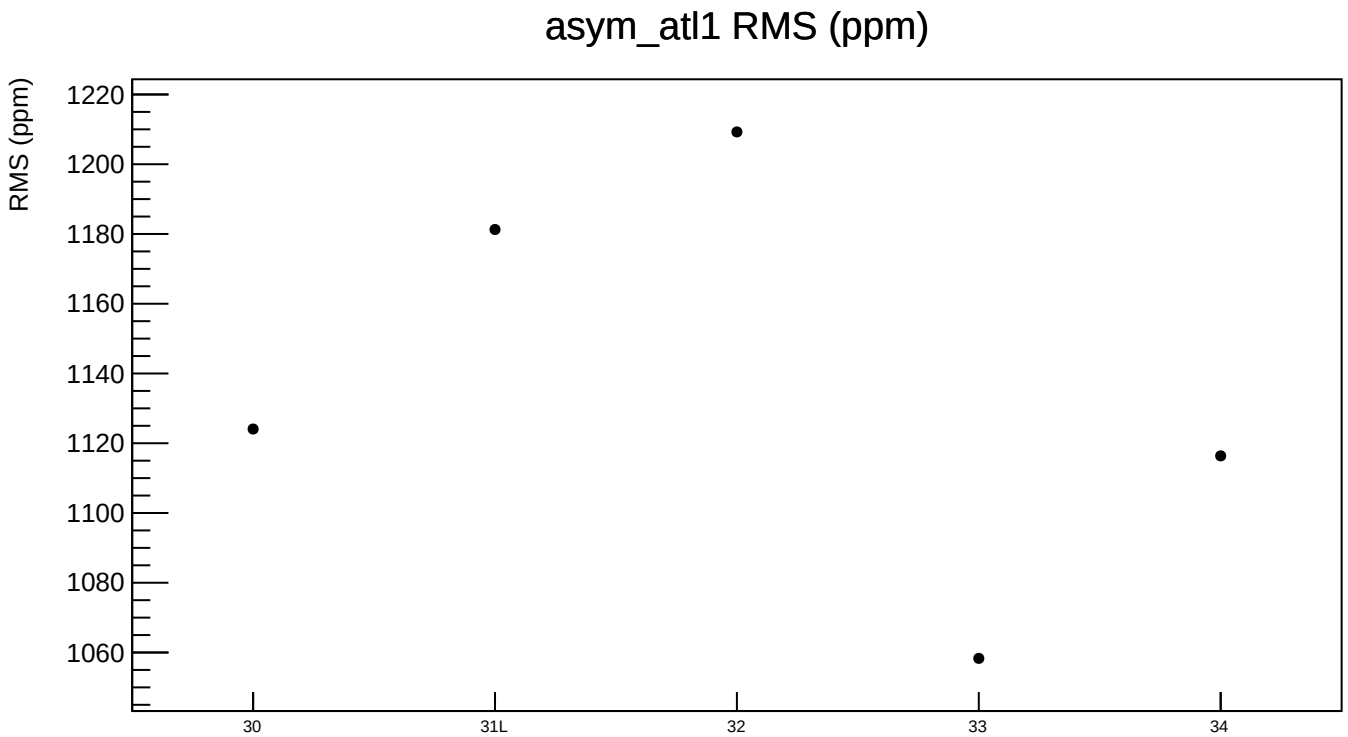

asym_ds_dd (ppb)
χ² / ndf 0.8482 / 3
p0 −140.5 ± 314.9
1000
500
0
−500
−1000
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
30
32
33
34

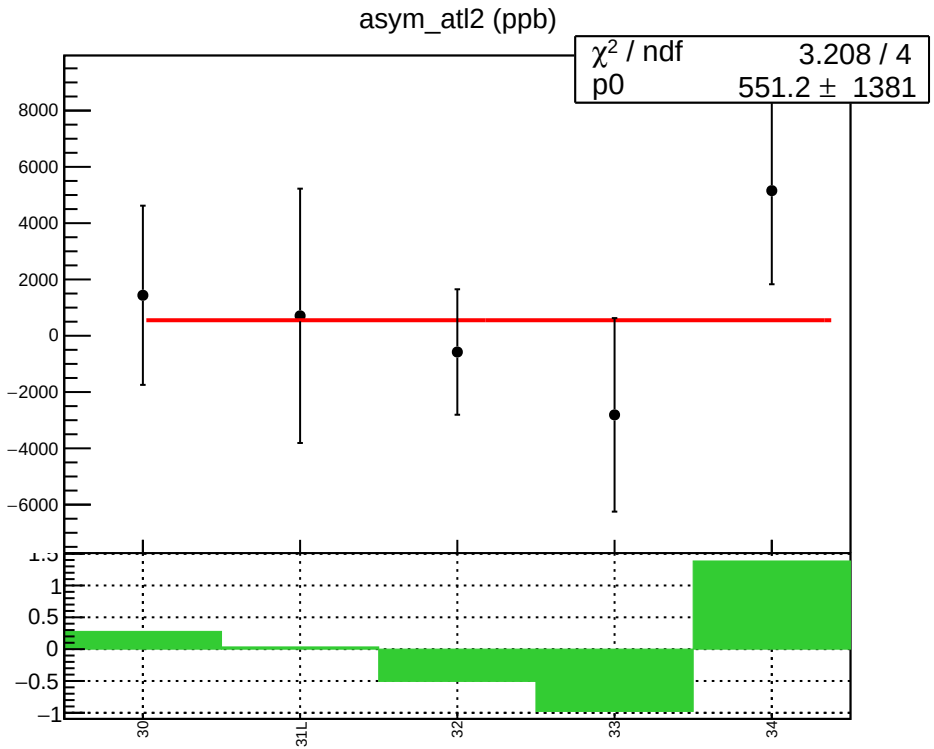

1D pull distribution
Mean 0.01433 ± 0.2301
Std Dev 0.4603 ± 0.1627
Underflow 0
Overflow 0
χ² / ndf 2.116e−08 / 0
Constant 2.181 ± 1.841
Mean 5.043e−05 ± 3.629e−01
Sigma 0.6406 ± 0.4698
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

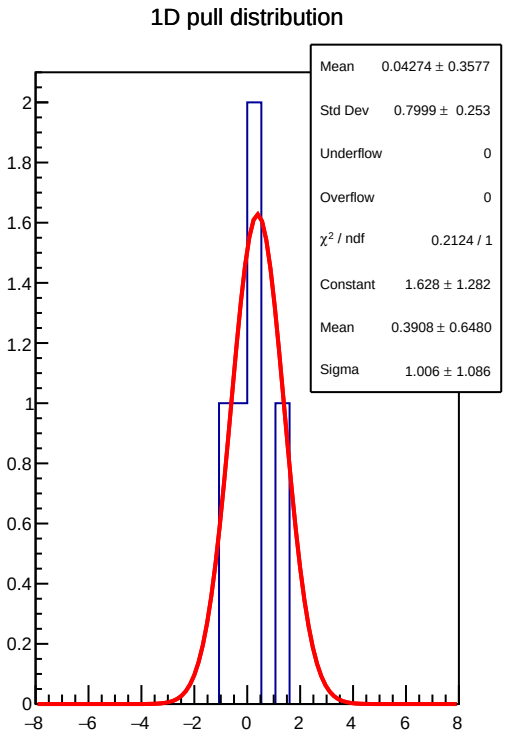

asym_ds_dd RMS (ppm)
RMS (ppm)
540
530
520
510
500
490
480
470
460
30
32
33
34

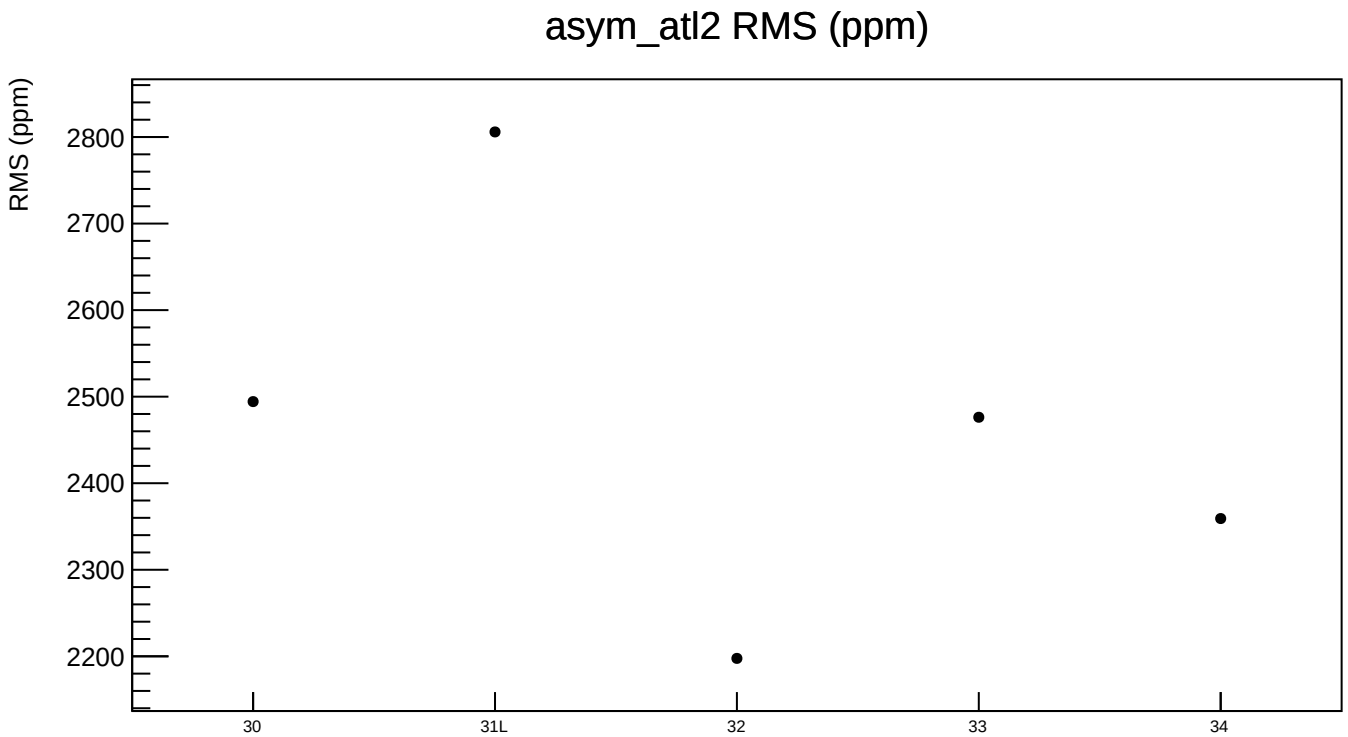

asym_atl1 (ppb)
χ² / ndf 1.137 / 4
p0 1860 ± 664.6
5000
4000
3000
2000
1000
0
−1000
0.8
0.6
0.4
0.2
0
−0.2
−0.4
30
31L
32
33
34

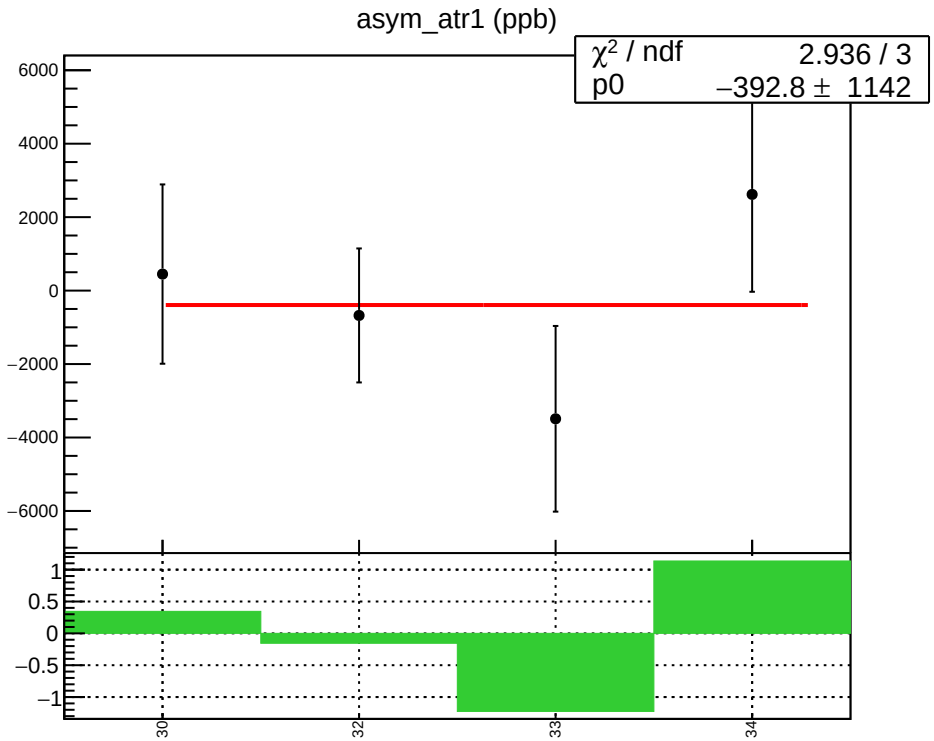

1D pull distribution
Mean −0.022 ± 0.213
Std Dev 0.4763 ± 0.1506
Underflow 0
Overflow 0
χ² / ndf 0.2691 / 0
Constant 2.555e+04 ± 2.019e+05
Mean −14.37 ± 18.06
Sigma 3.297 ± 3.736
3500
3000
2500
2000
1500
1000
500
0
−8
−6
−4
−2
0
2
4
6
8

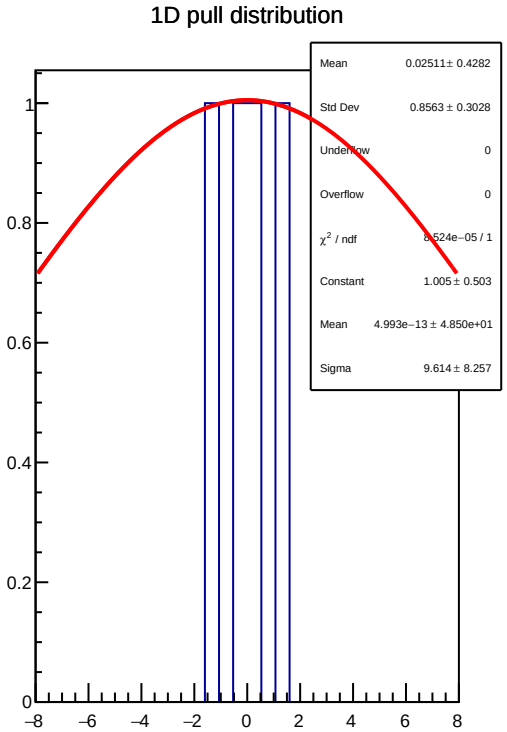

asym_atl1 RMS (ppm)
RMS (ppm)
1220
1200
1180
1160
1140
1120
1100
1080
1060
30
31L
32
33
34

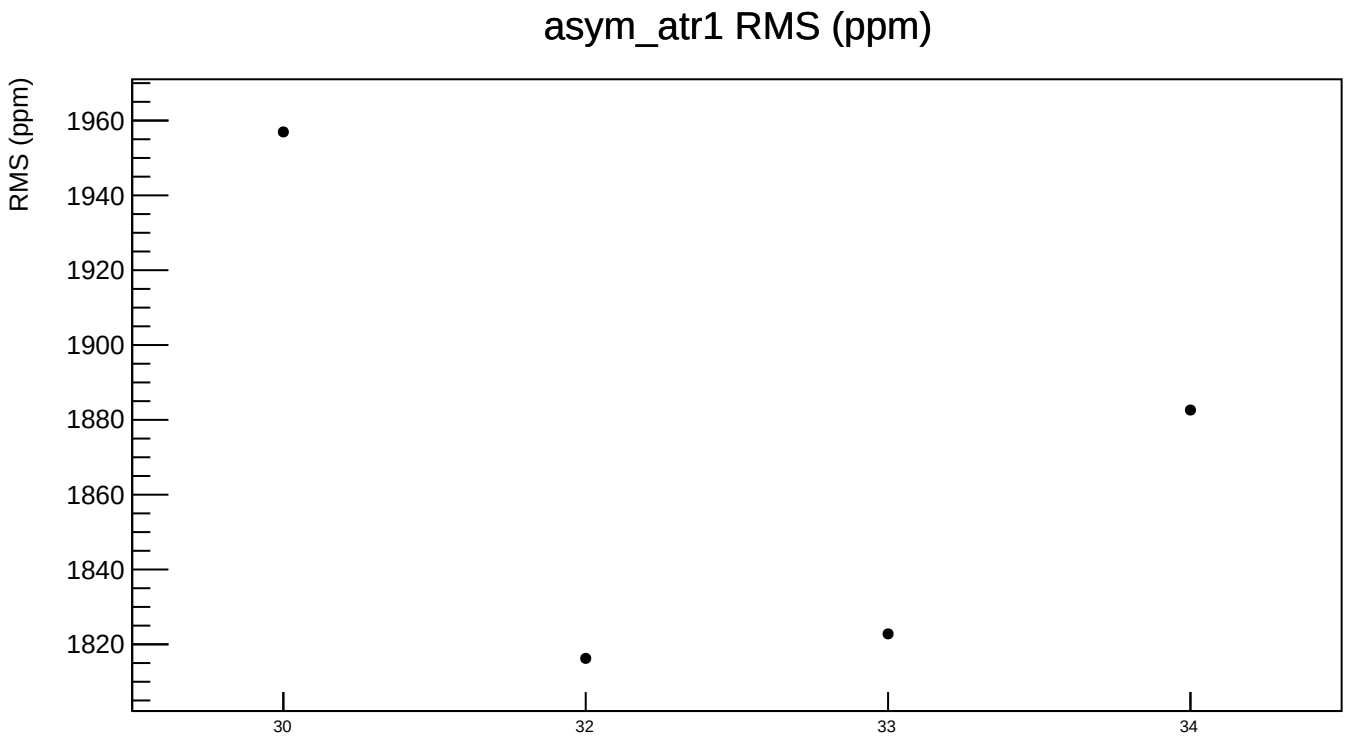

asym_atl2 (ppb)
χ² / ndf 3.208 / 4
p0 551.2 ± 1381
8000
6000
4000
2000
0
−2000
−4000
−6000
1
0.5
0
−0.5
−1
30
31L
32
33
34

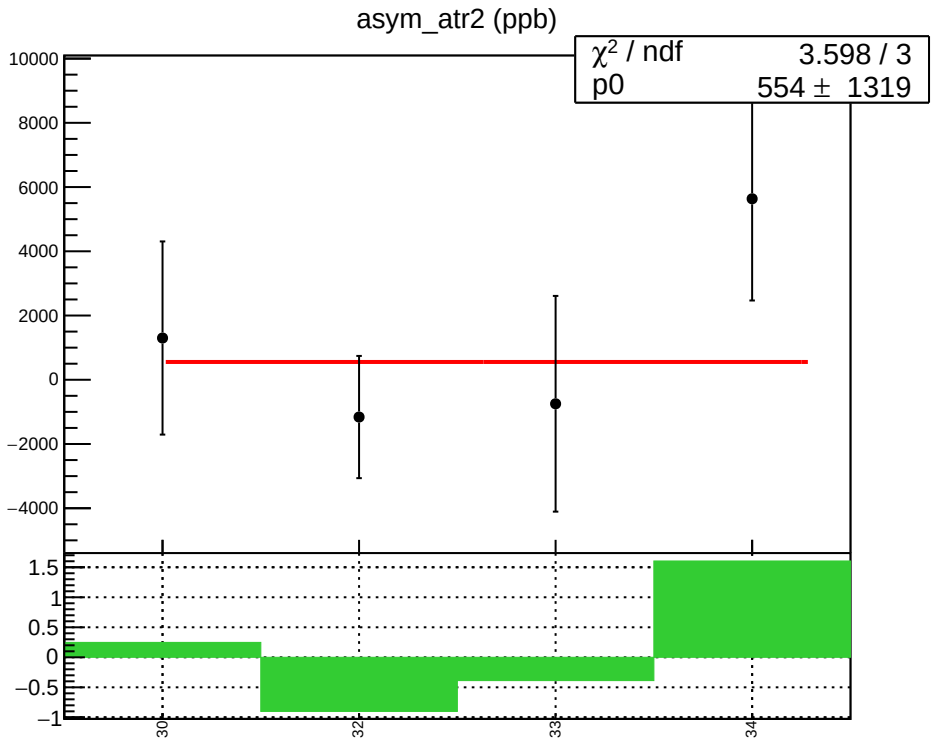

1D pull distribution
Mean 0.04274 ± 0.3577
Std Dev 0.7999 ± 0.253
Underflow 0
Overflow 0
χ² / ndf 0.2124 / 1
Constant 1.628 ± 1.282
Mean 0.3908 ± 0.6480
Sigma 1.006 ± 1.086
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

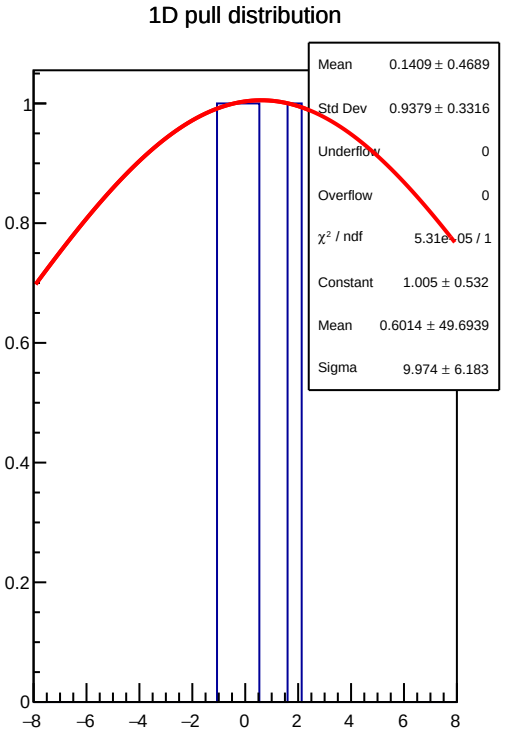

asym_atl2 RMS (ppm)
RMS (ppm)
2800
2700
2600
2500
2400
2300
2200
30
31L
32
33
34

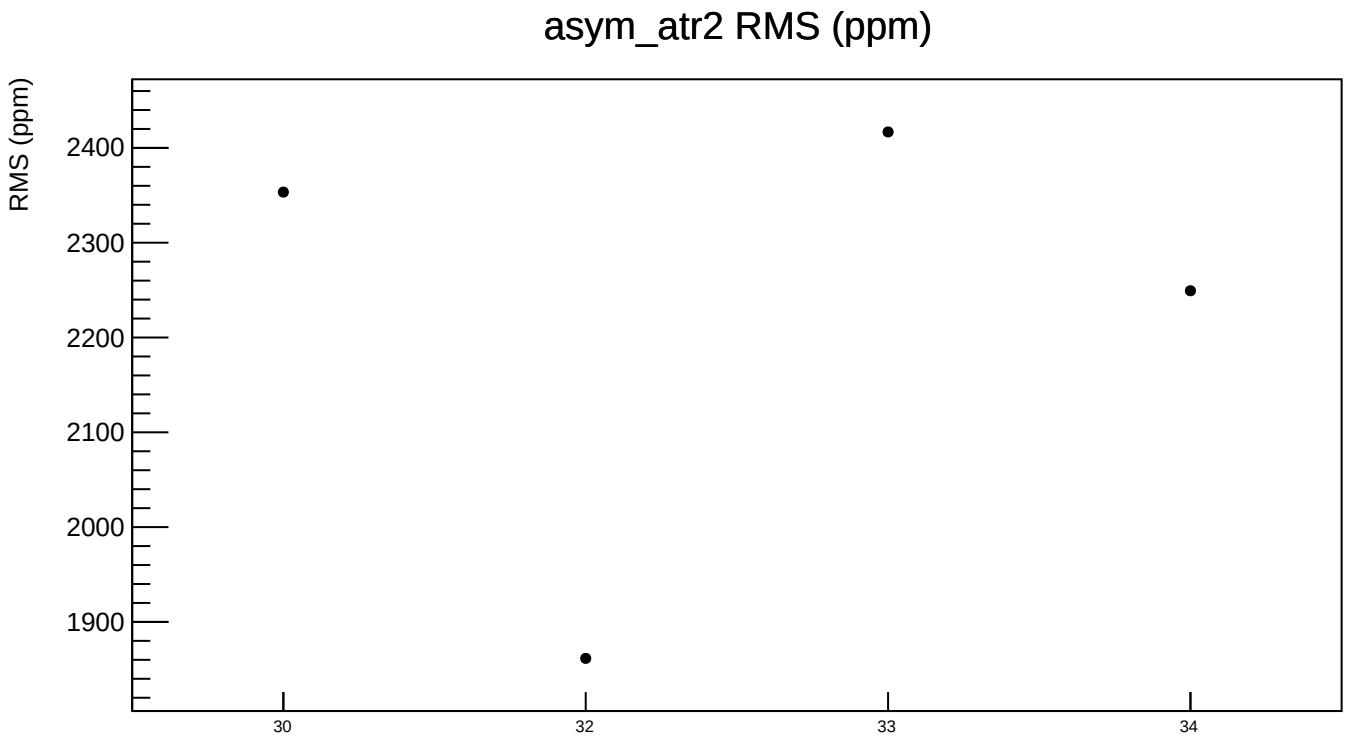

asym_atr1 (ppb)
χ² / ndf 2.936 / 3
p0 −392.8 ± 1142
6000
4000
2000
0
−2000
−4000
−6000
1
0.5
0
−0.5
−1
30
32
33
34


1D pull distribution
Mean 0.02511 ± 0.4282
Std Dev 0.8563 ± 0.3028
Underflow 0
Overflow 0
χ² / ndf 8.524e−05 / 1
Constant 1.005 ± 0.503
Mean 4.993e−13 ± 4.850e+01
Sigma 9.614 ± 8.257
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8


asym_atr1 RMS (ppm)
RMS (ppm)
1960
1940
1920
1900
1880
1860
1840
1820
30
32
33
34


asym_atr2 (ppb)
χ² / ndf 3.598 / 3
p0 554 ± 1319
10000
8000
6000
4000
2000
0
−2000
−4000
1.5
1
0.5
0
−0.5
−1
30
32
33
34


1D pull distribution
Mean 0.1409 ± 0.4689
Std Dev 0.9379 ± 0.3316
Underflow 0
Overflow 0
χ² / ndf 5.31e-05 / 1
Constant 1.005 ± 0.532
Mean 0.6014 ± 49.6939
Sigma 9.974 ± 6.183
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8


asym_atr2 RMS (ppm)
RMS (ppm)
2400
2300
2200
2100
2000
1900
30
32
33
34