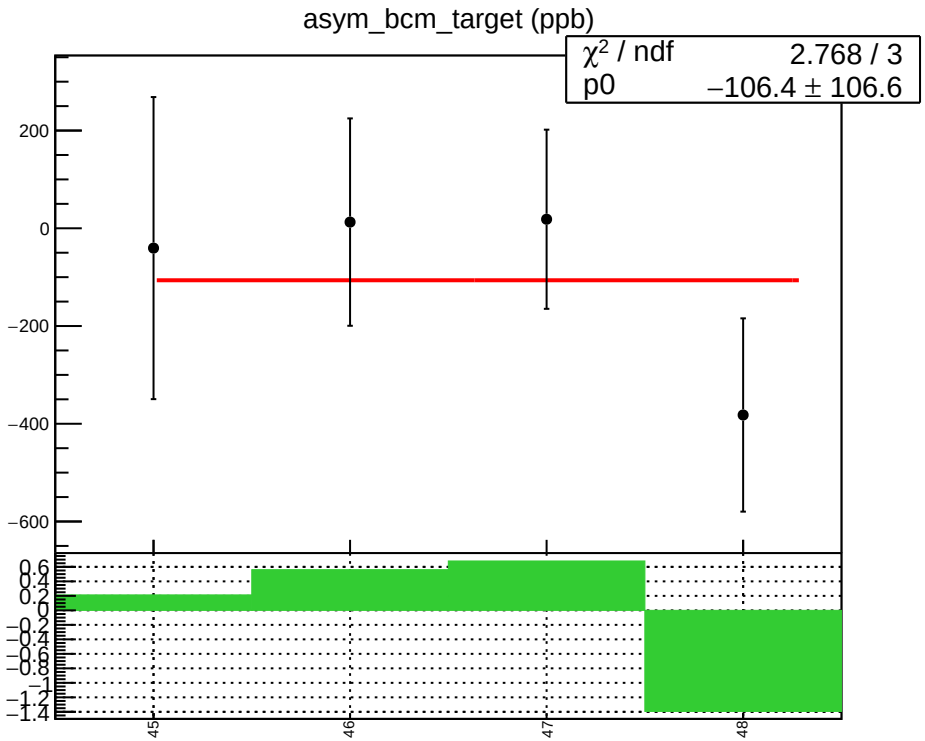
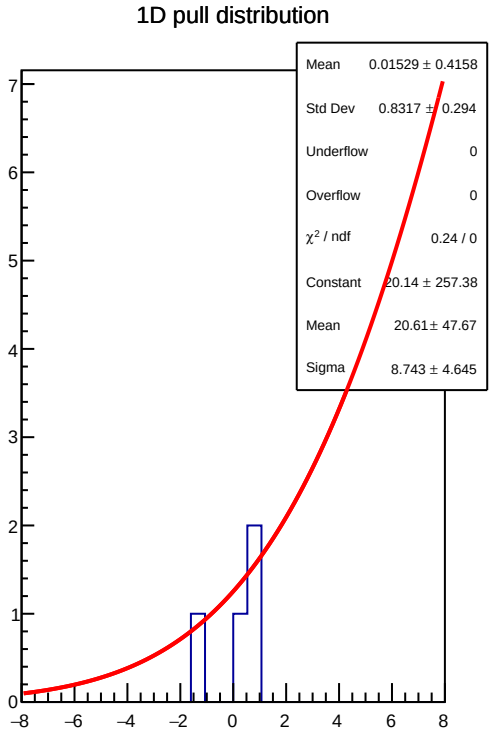
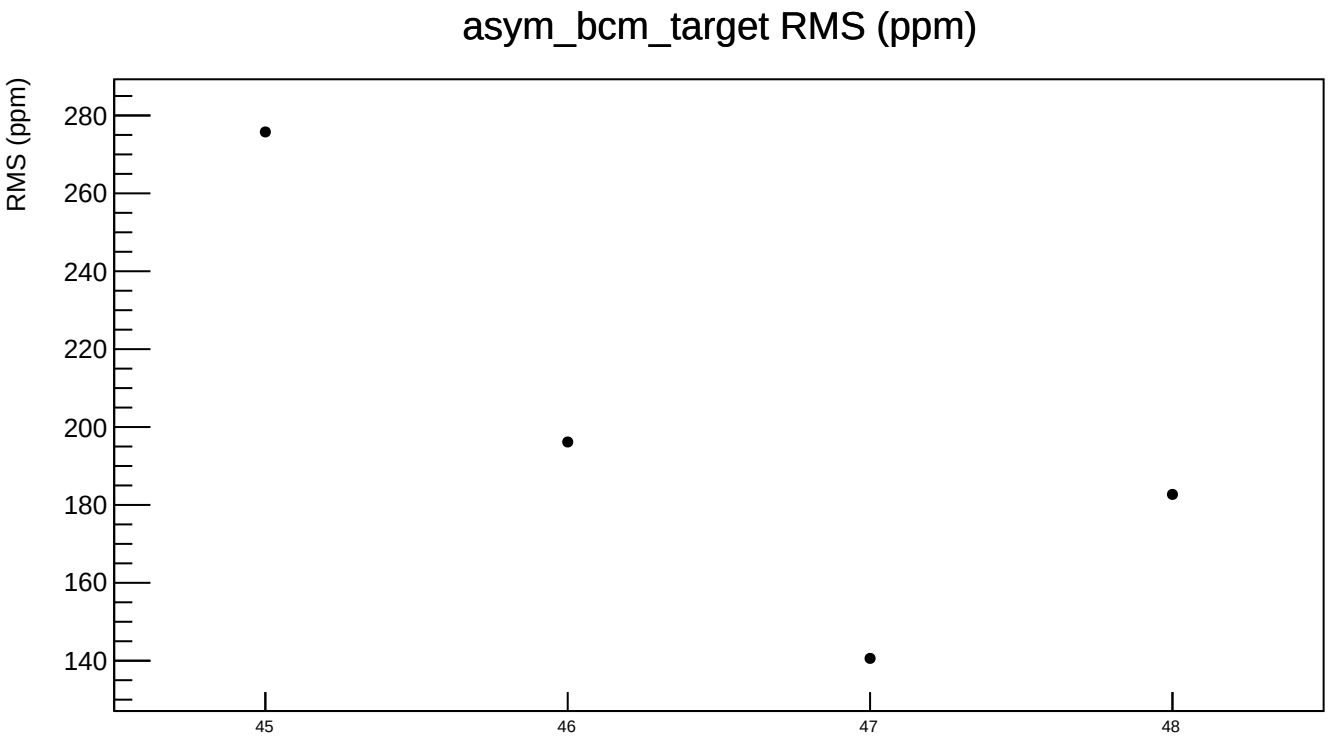
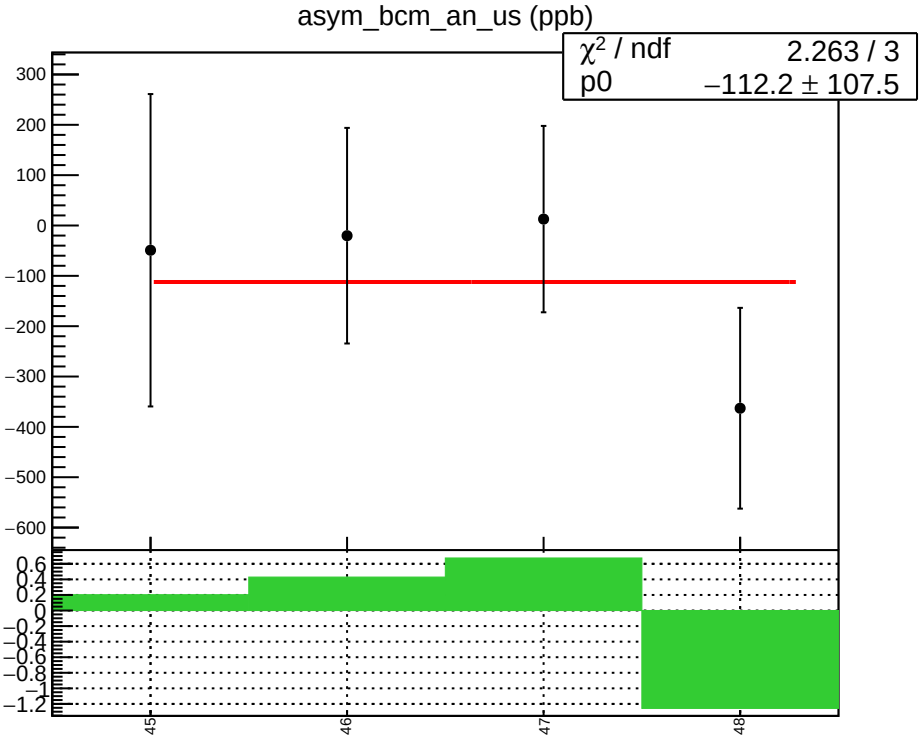
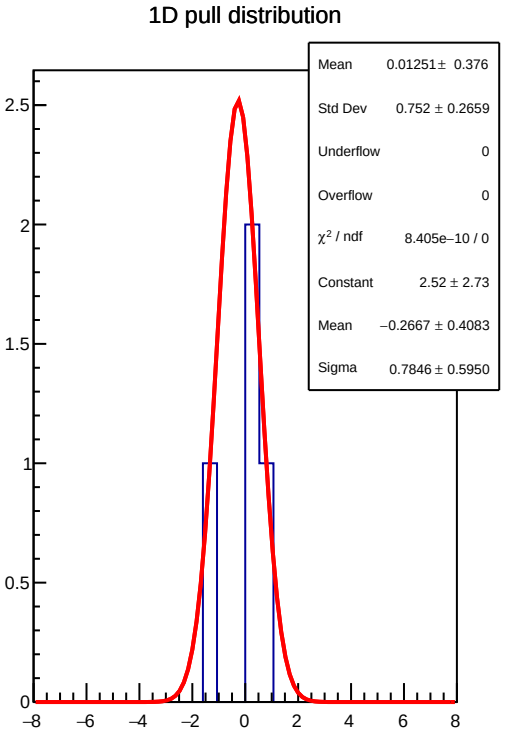
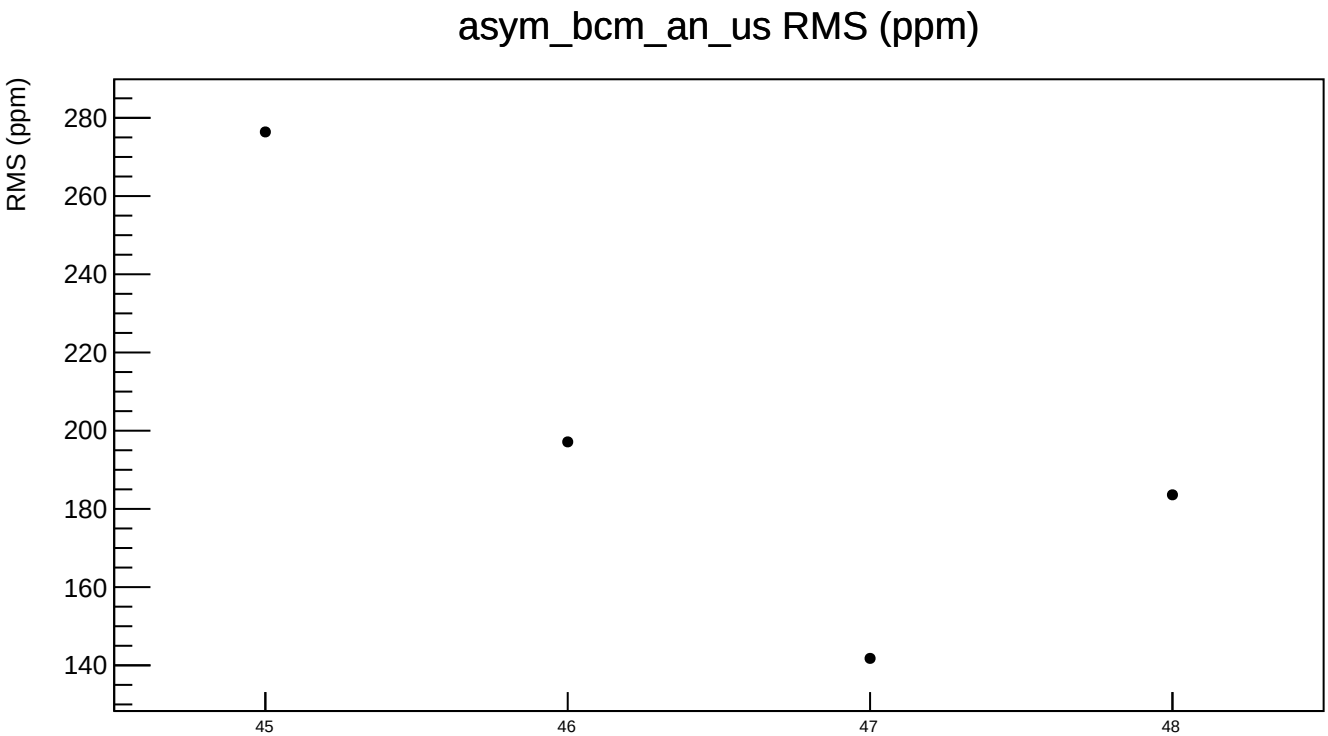

asym_bcm_target (ppb)
χ² / ndf 2.768 / 3
p0 −106.4 ± 106.6
200
0
−200
−400
−600
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1.2
−1.4
45
46
47
48

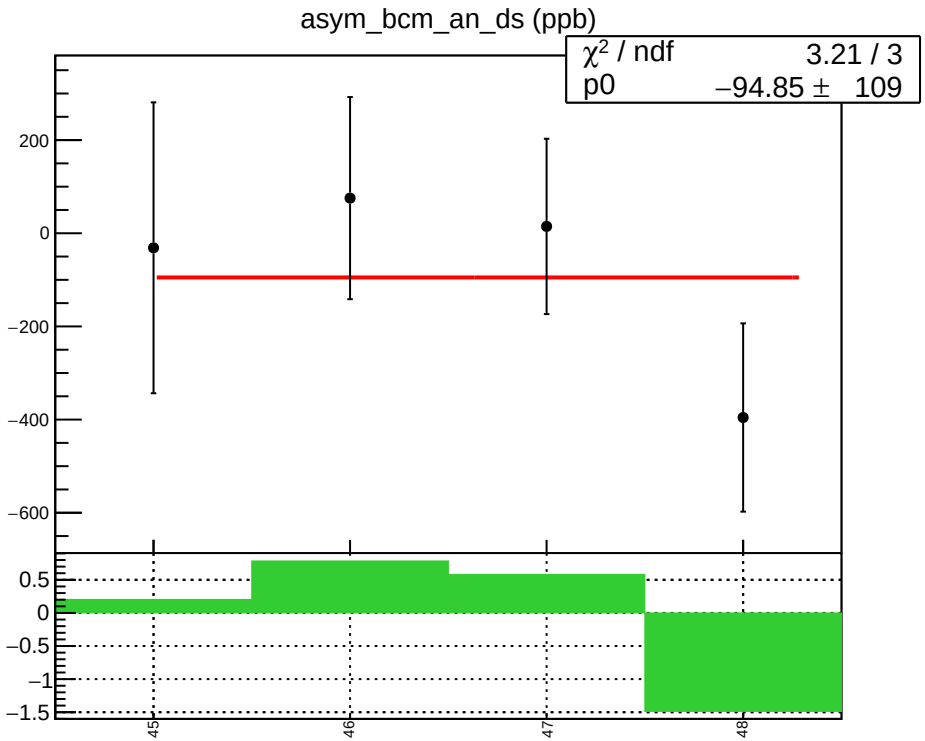

1D pull distribution
Mean 0.01529 ± 0.4158
Std Dev 0.8317 ± 0.294
Underflow 0
Overflow 0
χ² / ndf 0.24 / 0
Constant 20.14 ± 257.38
Mean 20.61 ± 47.67
Sigma 8.743 ± 4.645
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

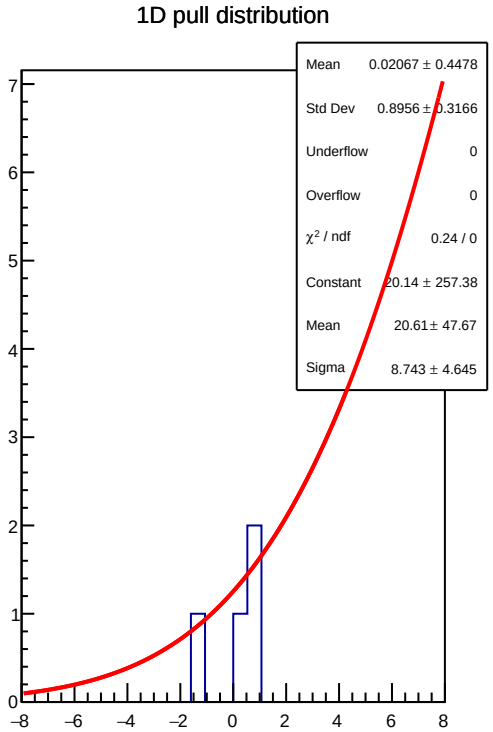

asym_bcm_target RMS (ppm)
RMS (ppm)
280
260
240
220
200
180
160
140
45
46
47
48

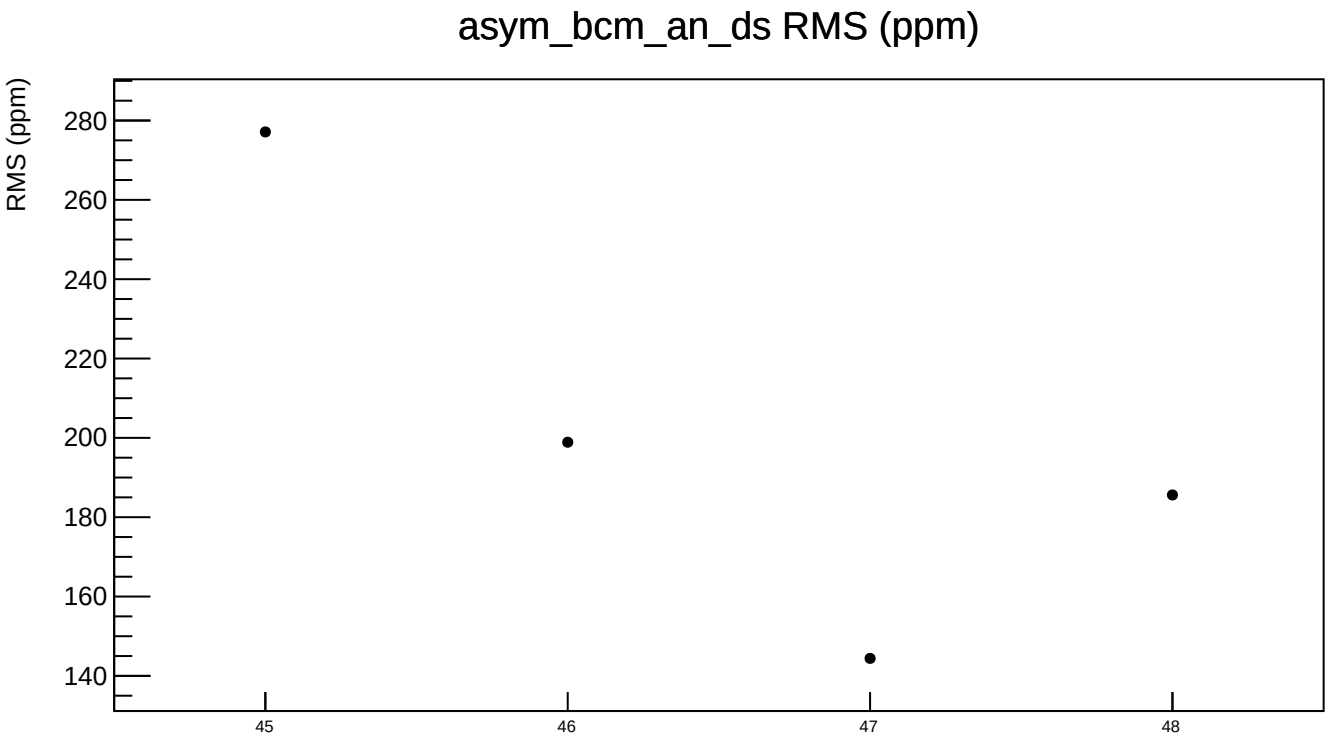

asym_bcm_an_us (ppb)
χ² / ndf 2.263 / 3
p0 −112.2 ± 107.5
300
200
100
0
−100
−200
−300
−400
−500
−600
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1.2
45
46
47
48

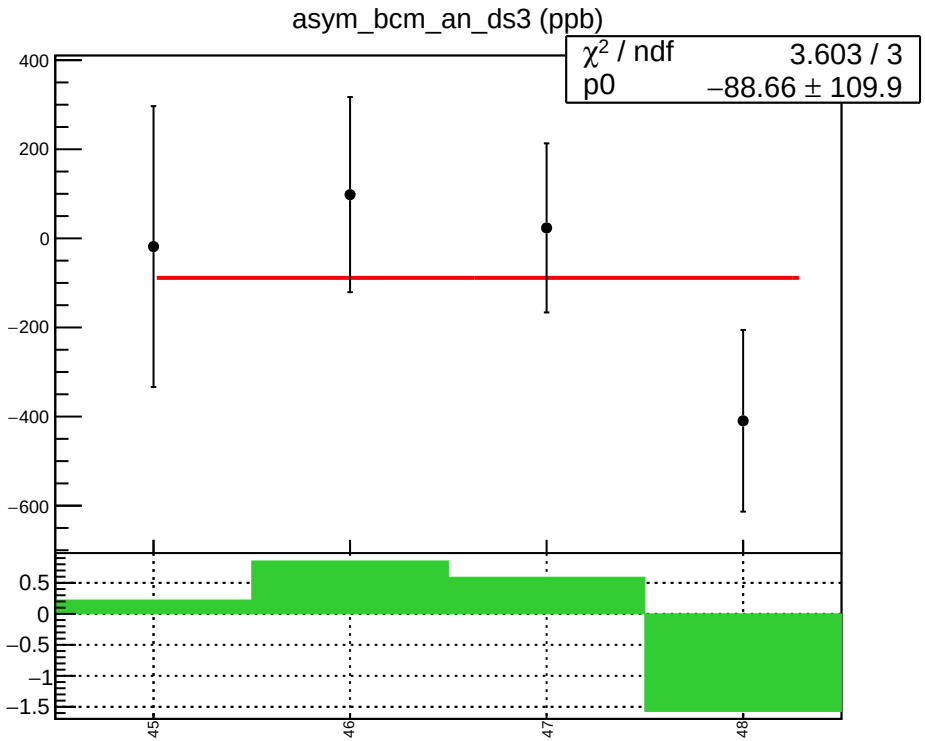

1D pull distribution
Mean 0.01251 ± 0.376
Std Dev 0.752 ± 0.2659
Underflow 0
Overflow 0
χ² / ndf 8.405e−10 / 0
Constant 2.52 ± 2.73
Mean −0.2667 ± 0.4083
Sigma 0.7846 ± 0.5950
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

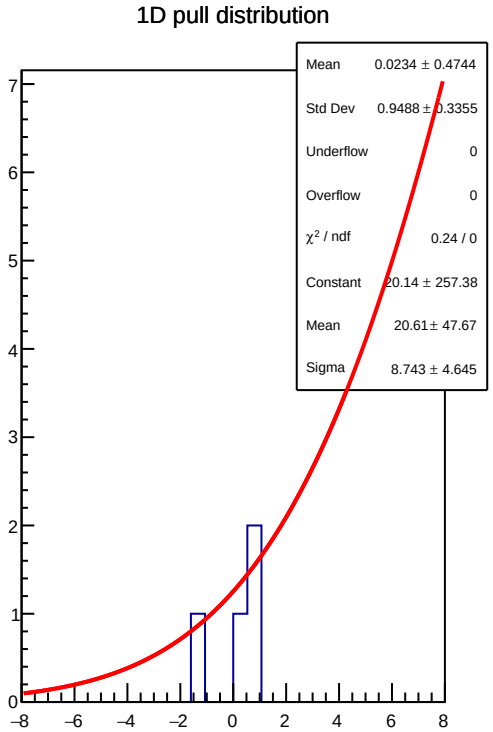

asym_bcm_an_us RMS (ppm)
RMS (ppm)
280
260
240
220
200
180
160
140
45
46
47
48

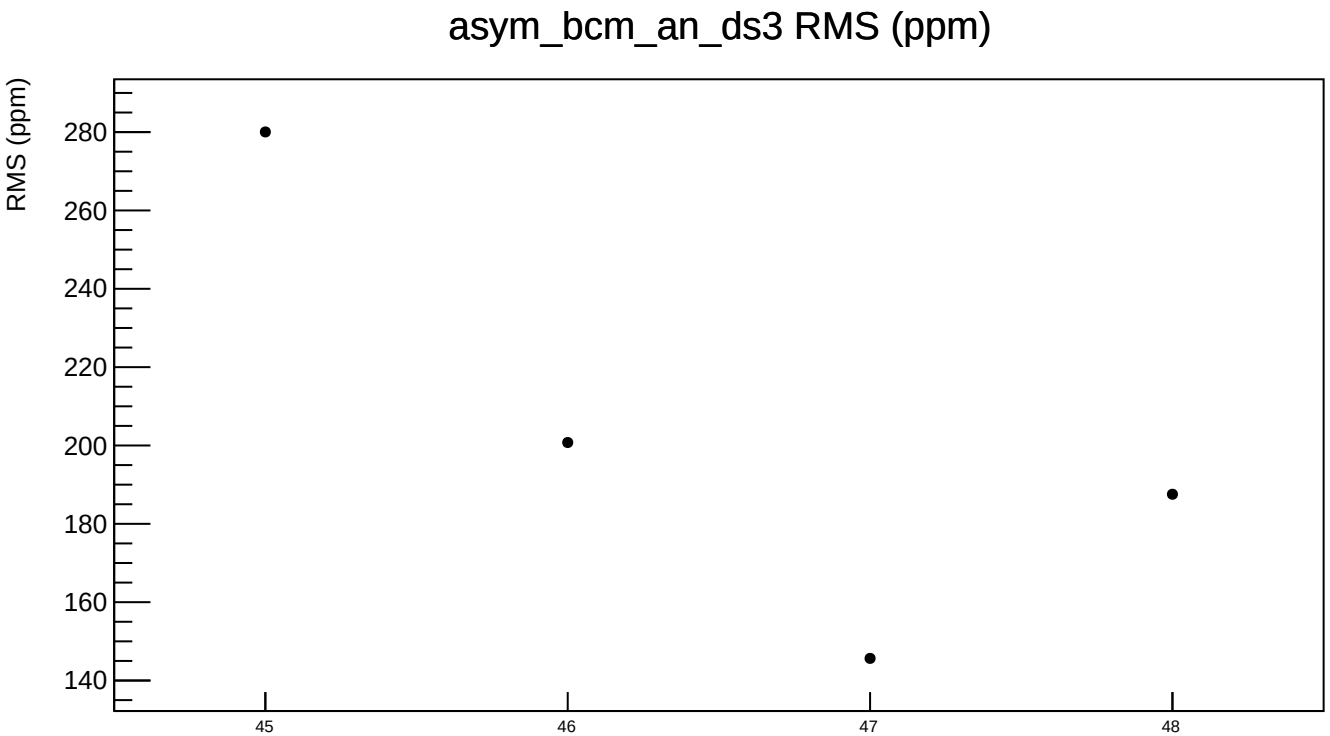

asym_bcm_an_ds (ppb)
χ² / ndf 3.21 / 3
p0 −94.85 ± 109
200
0
−200
−400
−600
0.5
0
−0.5
−1
−1.5
45
46
47
48

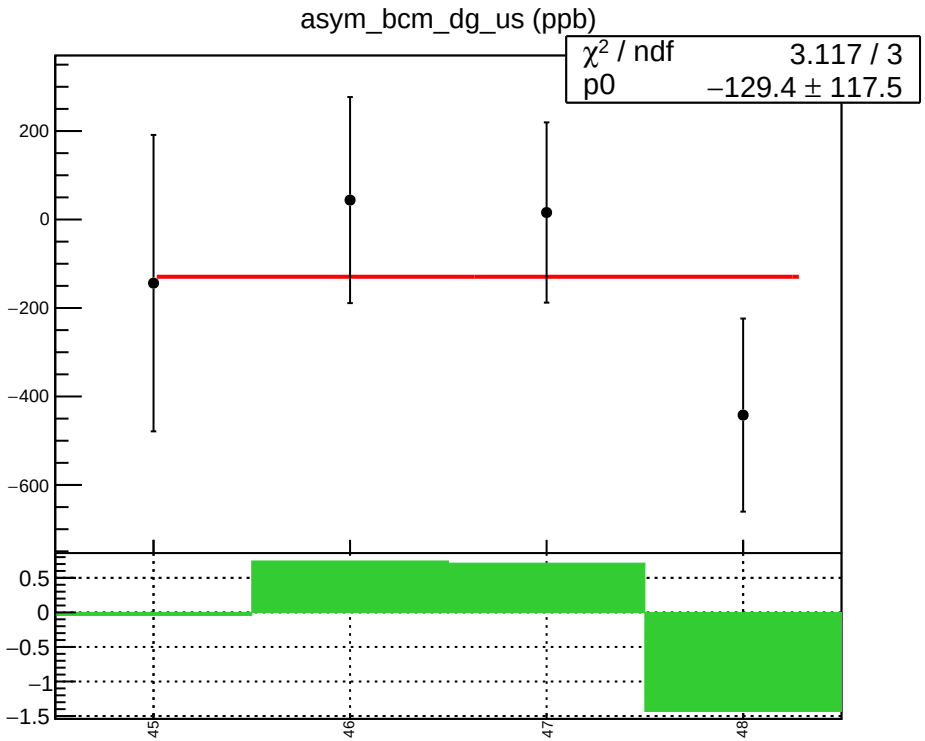

1D pull distribution
Mean 0.02067 ± 0.4478
Std Dev 0.8956 ± 0.3166
Underflow 0
Overflow 0
χ² / ndf 0.24 / 0
Constant 20.14 ± 257.38
Mean 20.61 ± 47.67
Sigma 8.743 ± 4.645
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

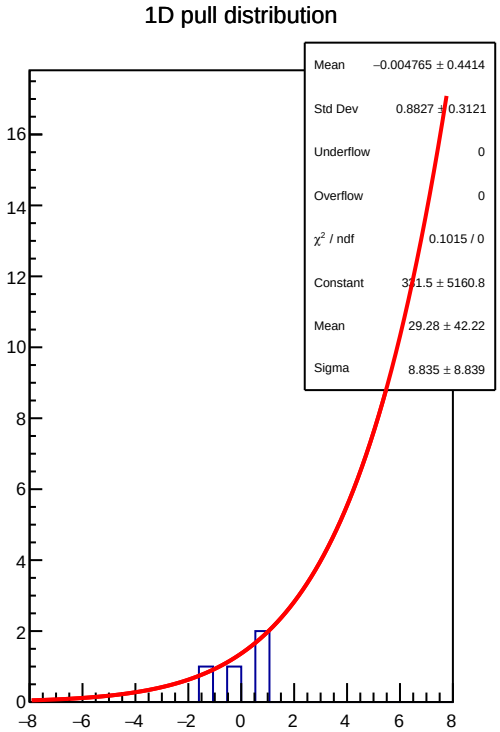

asym_bcm_an_ds RMS (ppm)
RMS (ppm)
280
260
240
220
200
180
160
140
45
46
47
48

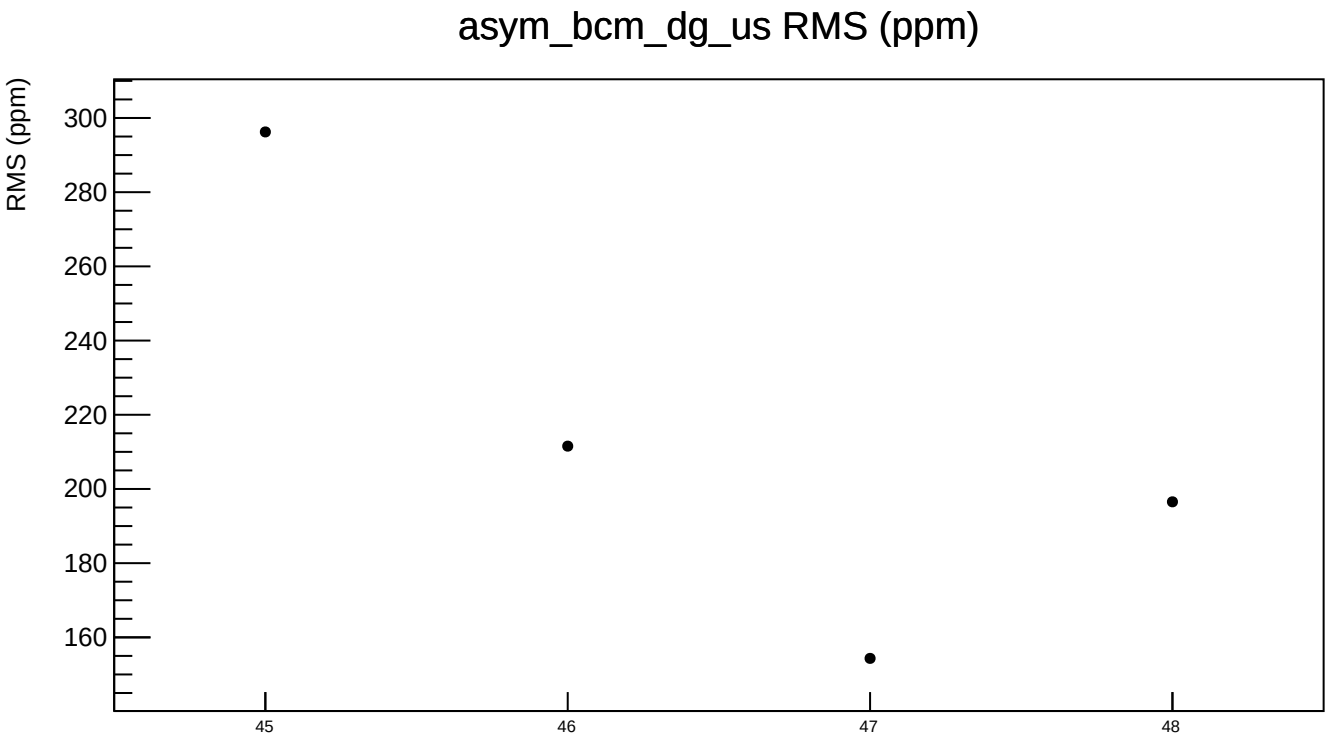

asym_bcm_an_ds3 (ppb)
χ² / ndf 3.603 / 3
p0 −88.66 ± 109.9
400
200
0
−200
−400
−600
0.5
0
−0.5
−1
−1.5
45
46
47
48

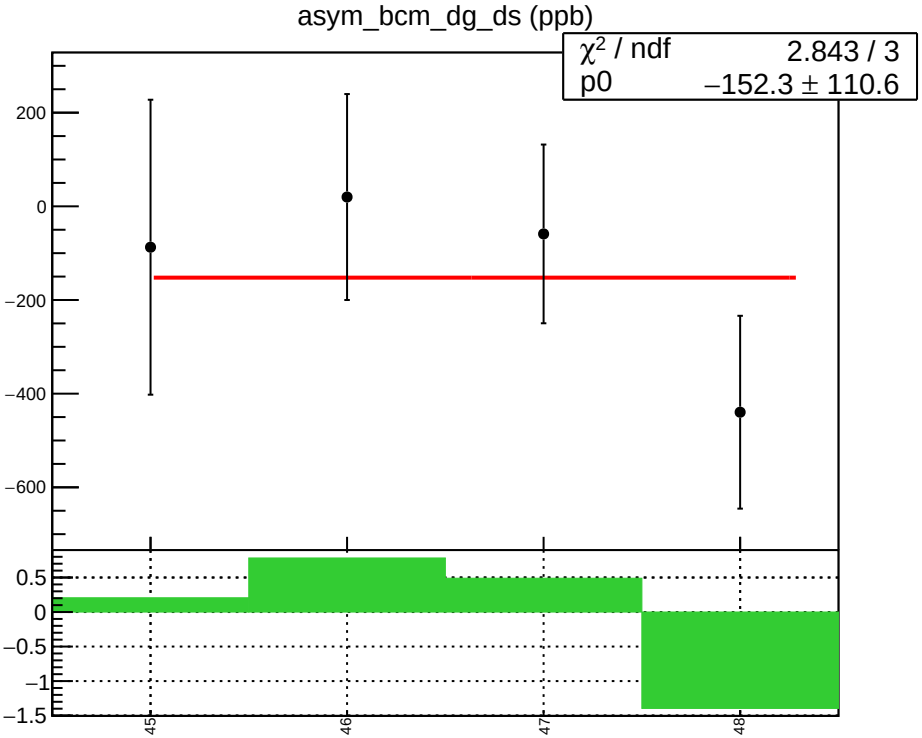

1D pull distribution
Mean 0.0234 ± 0.4744
Std Dev 0.9488 ± 0.3355
Underflow 0
Overflow 0
χ² / ndf 0.24 / 0
Constant 20.14 ± 257.38
Mean 20.61 ± 47.67
Sigma 8.743 ± 4.645
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

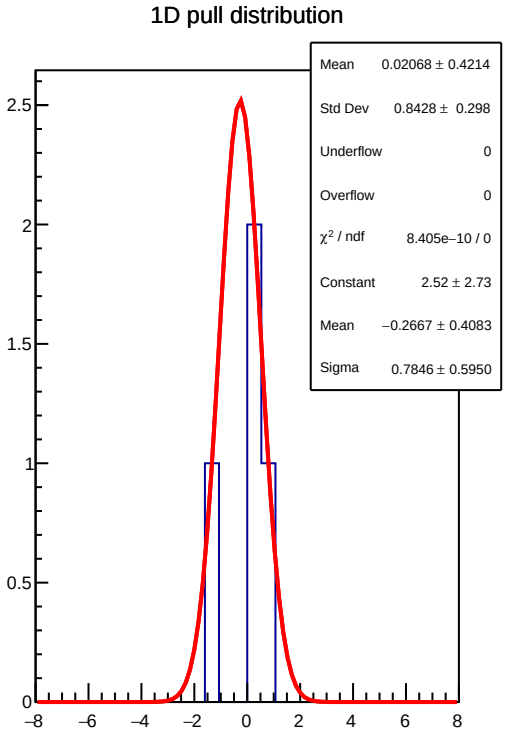

asym_bcm_an_ds3 RMS (ppm)
RMS (ppm)
280
260
240
220
200
180
160
140
45
46
47
48

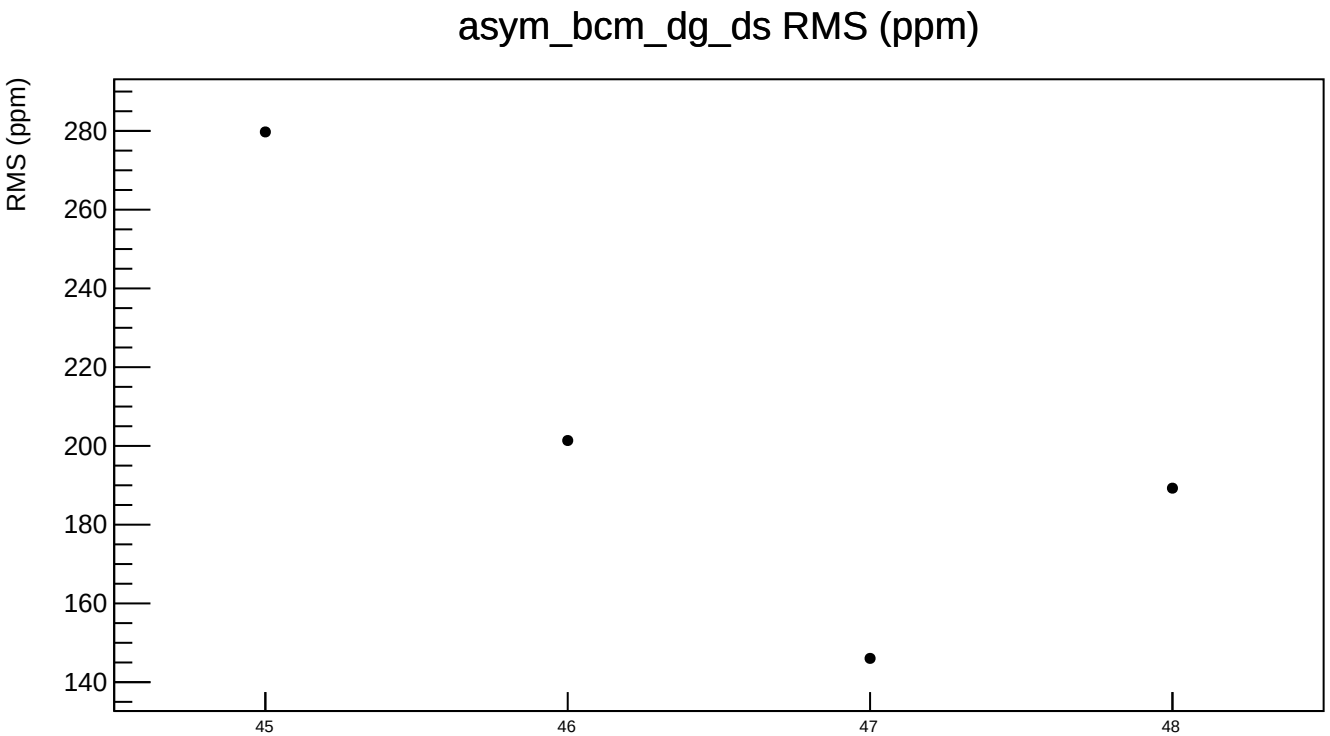

asym_bcm_dg_us (ppb)
χ² / ndf 3.117 / 3
p0 −129.4 ± 117.5
200
0
−200
−400
−600
0.5
0
−0.5
−1
−1.5
45
46
47
48

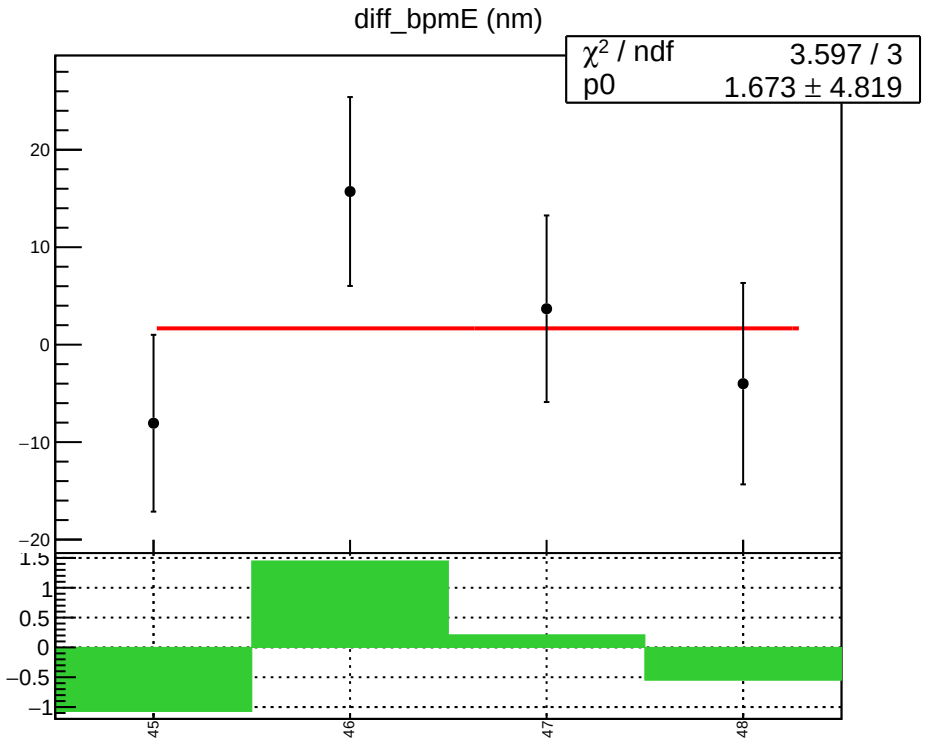

1D pull distribution
Mean −0.004765 ± 0.4414
Std Dev 0.8827 ± 0.3121
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 331.5 ± 5160.8
Mean 29.28 ± 42.22
Sigma 8.835 ± 8.839
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

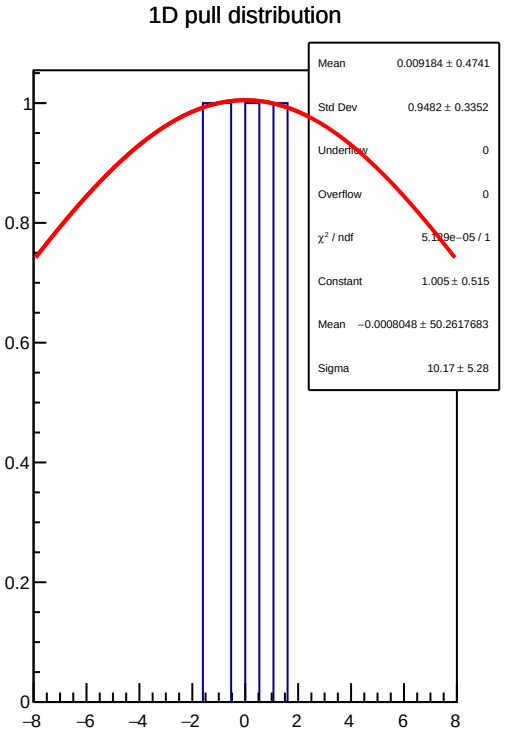

asym_bcm_dg_us RMS (ppm)
RMS (ppm)
300
280
260
240
220
200
180
160
45
46
47
48

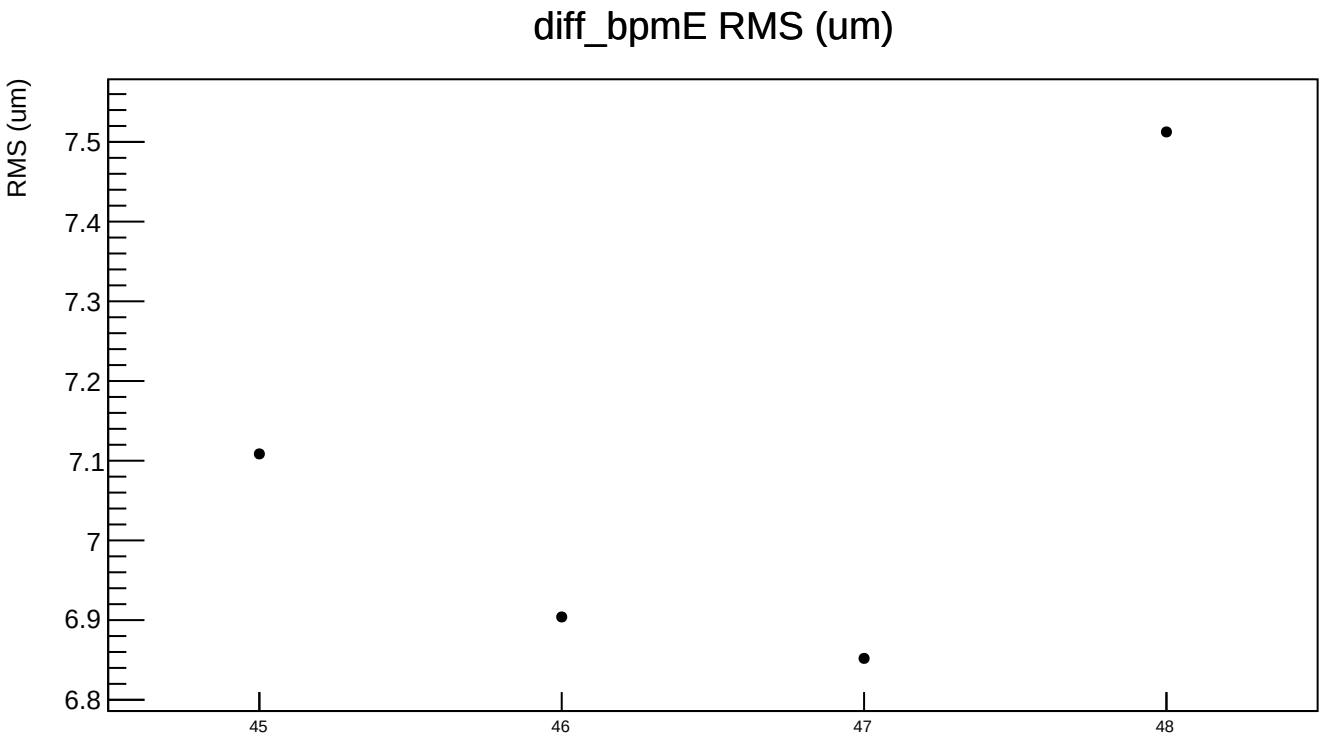

asym_bcm_dg_ds (ppb)
χ² / ndf 2.843 / 3
p0 −152.3 ± 110.6
200
0
−200
−400
−600
0.5
0
−0.5
−1
−1.5
45
46
47
48

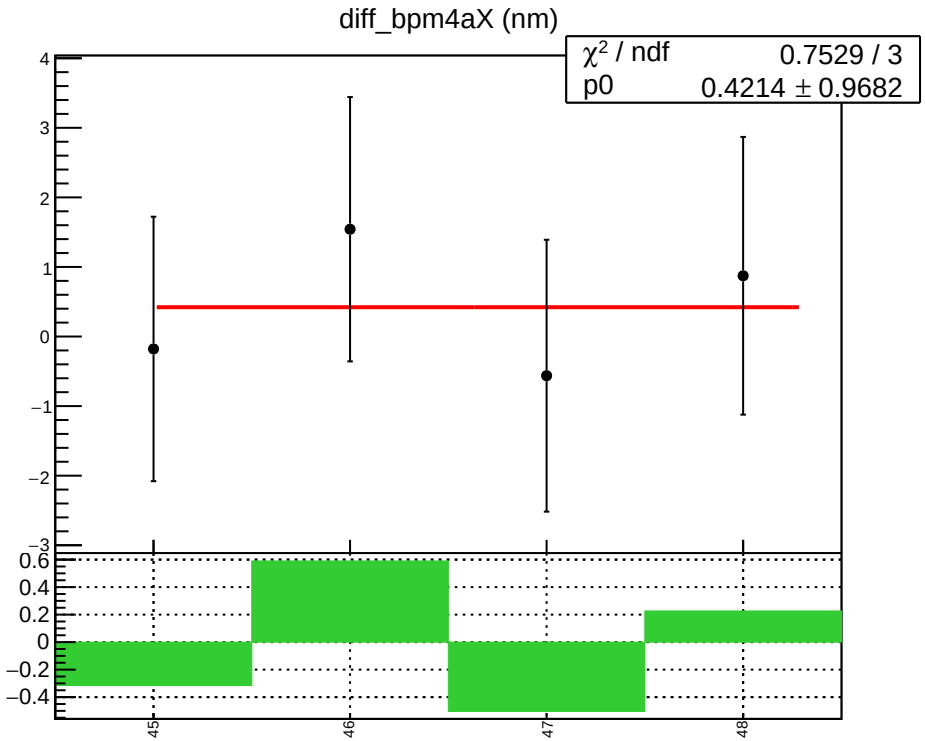

1D pull distribution
Mean 0.02068 ± 0.4214
Std Dev 0.8428 ± 0.298
Underflow 0
Overflow 0
χ² / ndf 8.405e−10 / 0
Constant 2.52 ± 2.73
Mean −0.2667 ± 0.4083
Sigma 0.7846 ± 0.5950
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

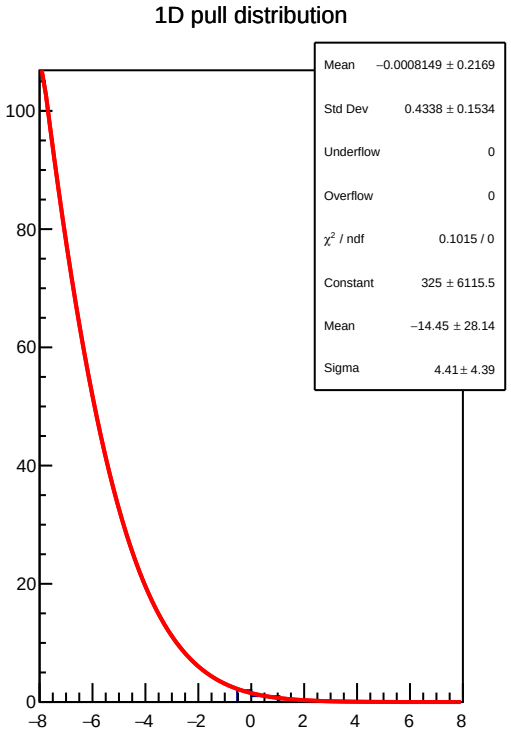

asym_bcm_dg_ds RMS (ppm)
RMS (ppm)
280
260
240
220
200
180
160
140
45
46
47
48


diff_bpmE (nm)
χ² / ndf 3.597 / 3
p0 1.673 ± 4.819
20
10
0
−10
−20
1.5
1
0.5
0
−0.5
−1
45
46
47
48

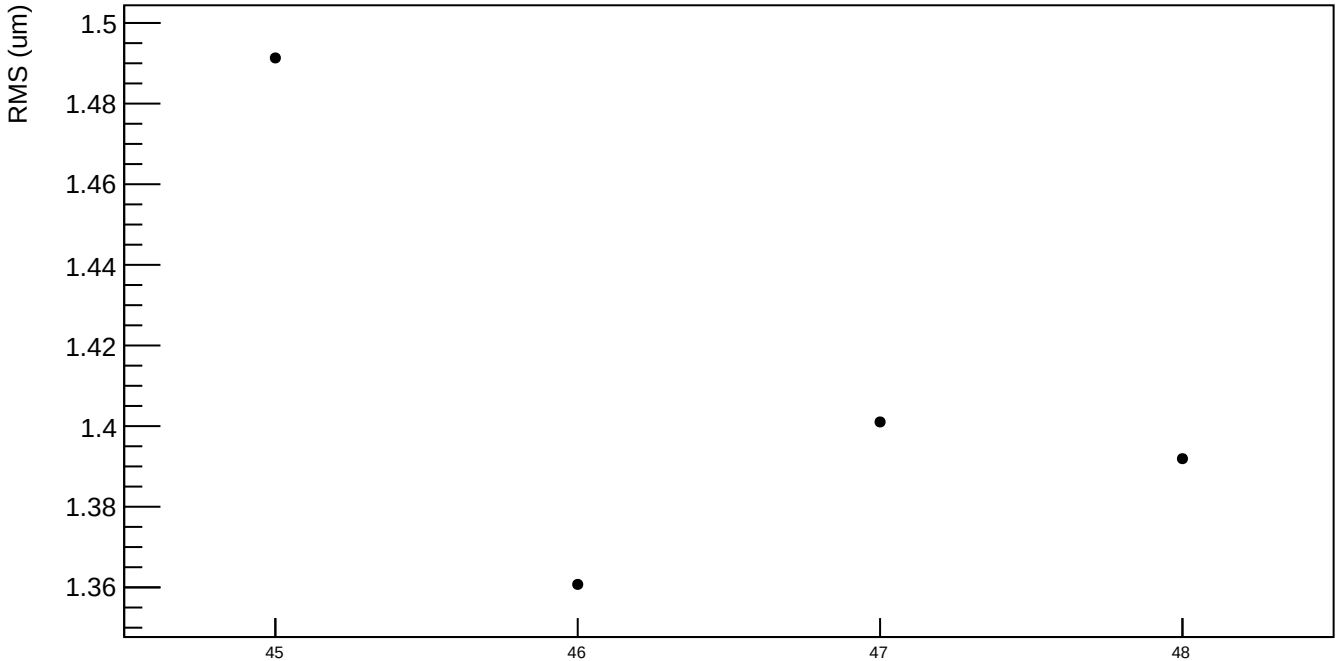

1D pull distribution
Mean 0.009184 ± 0.4741
Std Dev 0.9482 ± 0.3352
Underflow 0
Overflow 0
χ² / ndf 5.179e−05 / 1
Constant 1.005 ± 0.515
Mean −0.0008048 ± 50.2617683
Sigma 10.17 ± 5.28
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

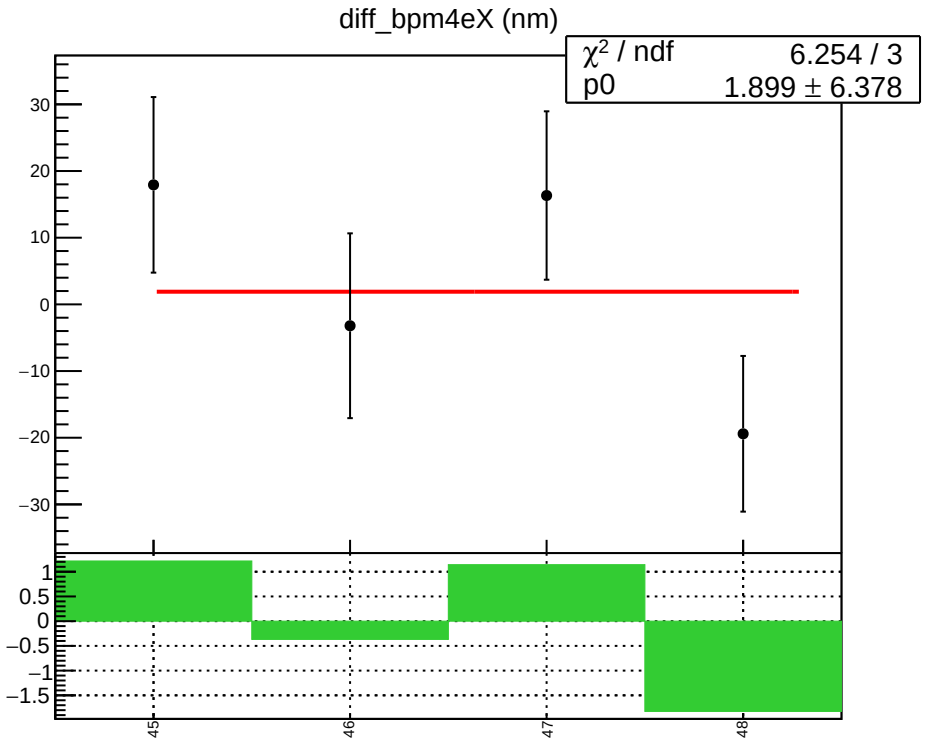

diff_bpmE RMS (um)
RMS (um)
7.5
7.4
7.3
7.2
7.1
7
6.9
6.8
45
46
47
48

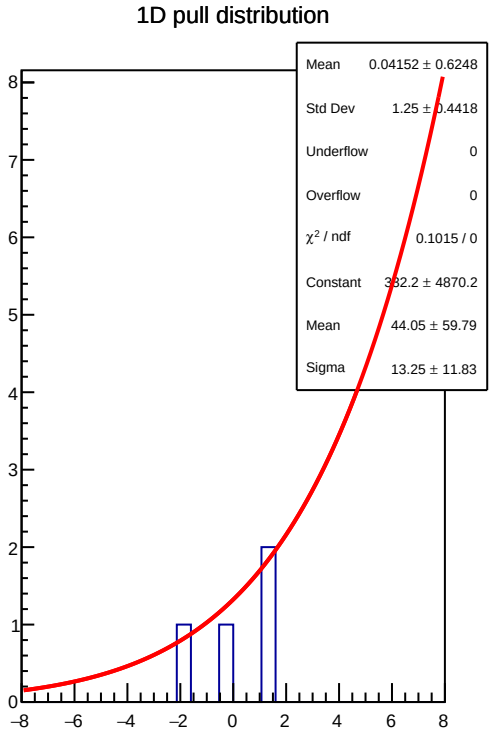

diff_bpm4aX (nm)
χ² / ndf 0.7529 / 3
p0 0.4214 ± 0.9682
4
3
2
1
0
−1
−2
−3
0.6
0.4
0.2
0
−0.2
−0.4
45
46
47
48


1D pull distribution
Mean −0.0008149 ± 0.2169
Std Dev 0.4338 ± 0.1534
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

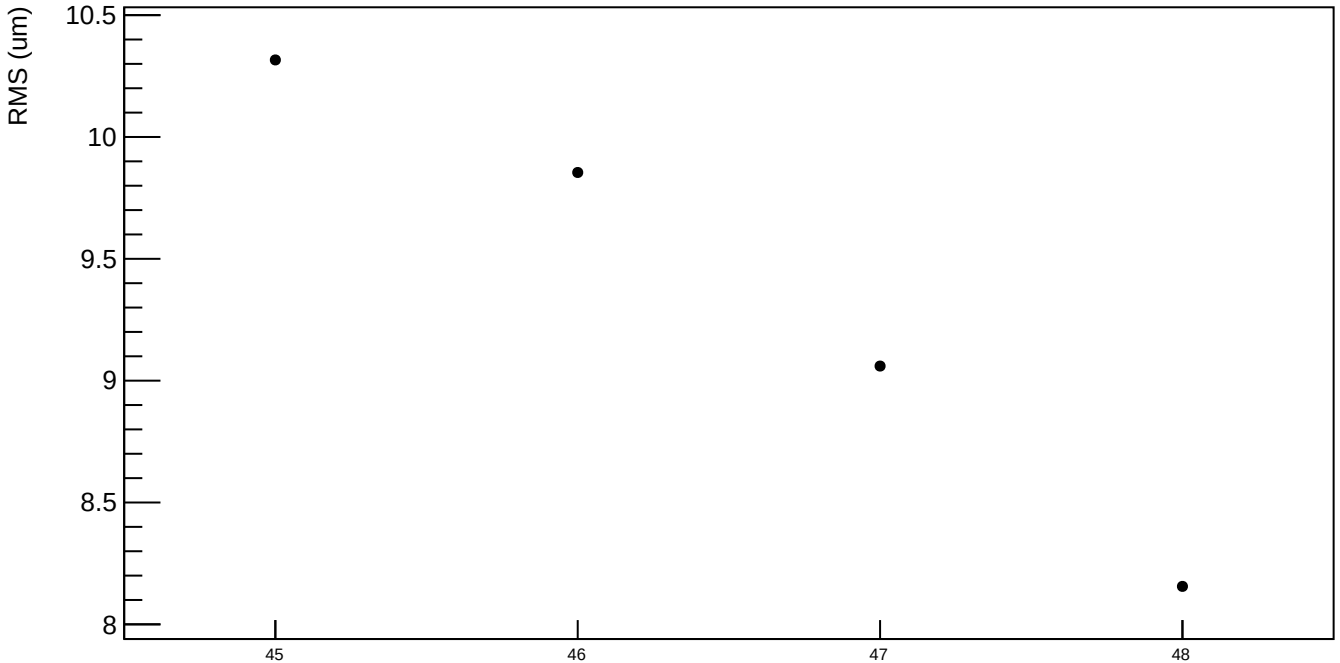
diff_bpm4aX RMS (um)

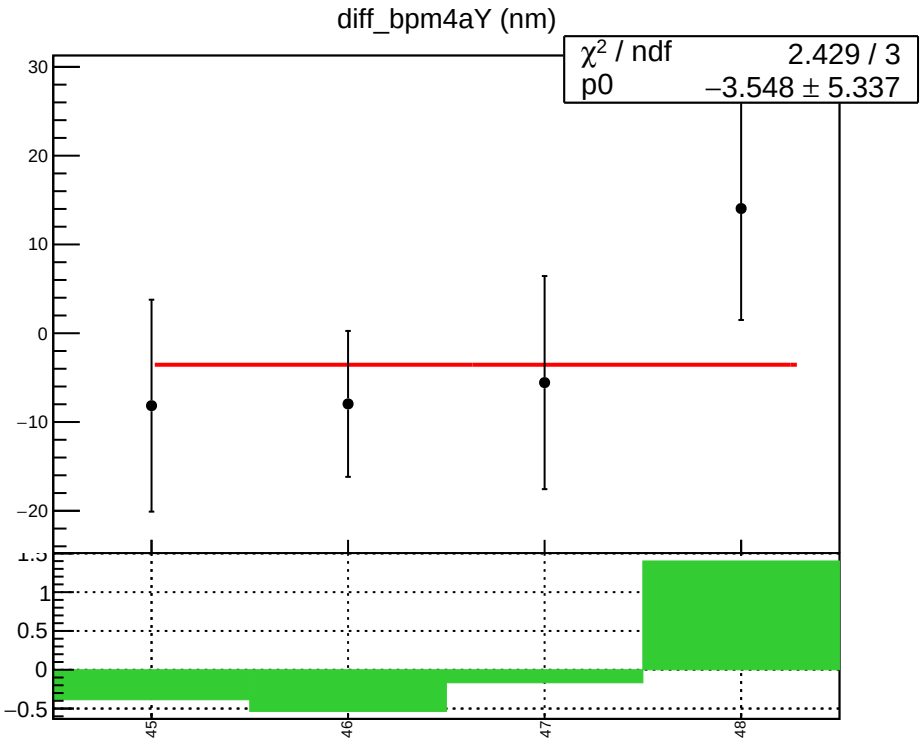


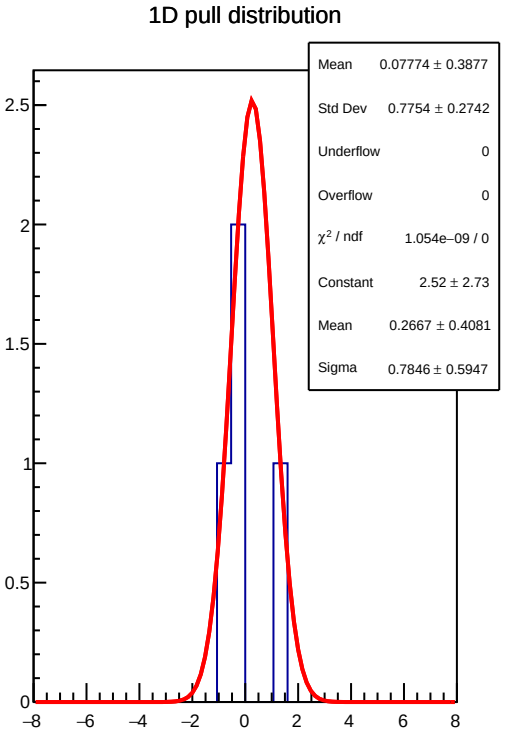

diff_bpm4eX (nm)
χ² / ndf 6.254 / 3
p0 1.899 ± 6.378
30
20
10
0
−10
−20
−30
1
0.5
0
−0.5
−1
−1.5
45
46
47
48

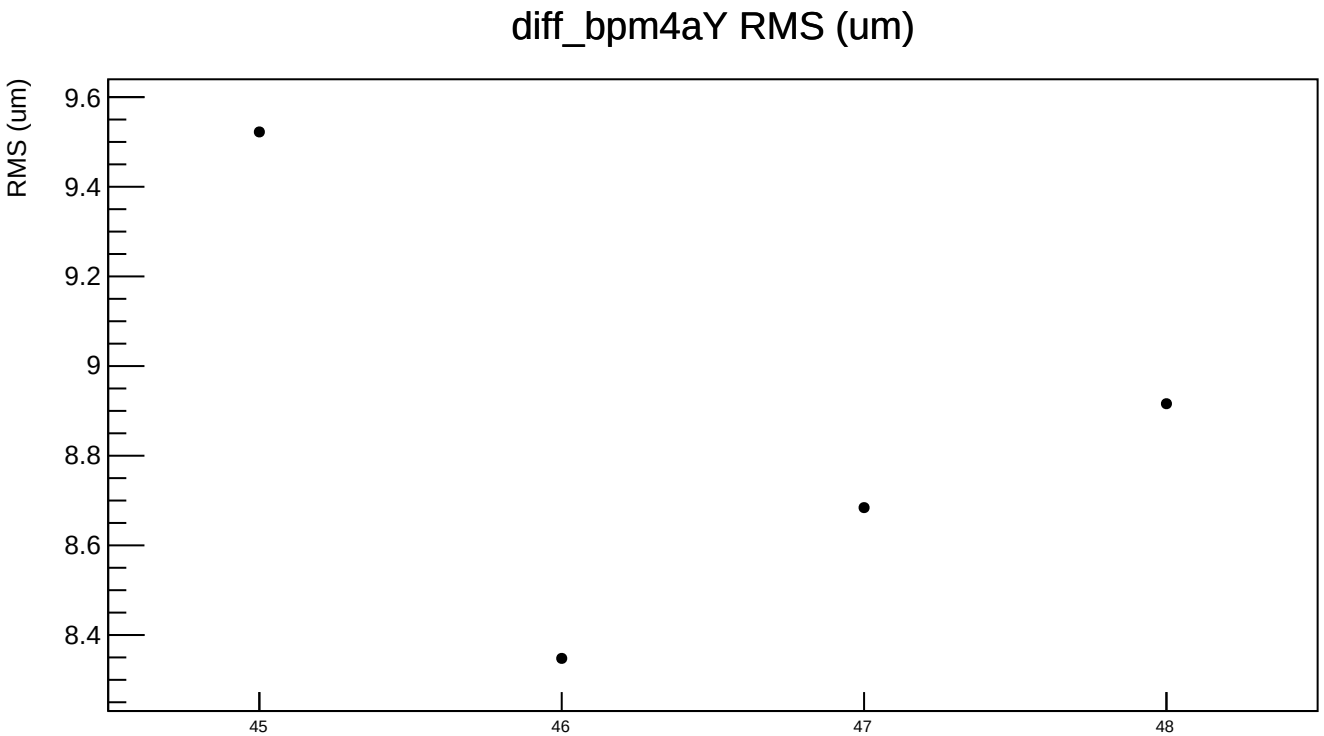

1D pull distribution
Mean 0.04152 ± 0.6248
Std Dev 1.25 ± 0.4418
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 332.2 ± 4870.2
Mean 44.05 ± 59.79
Sigma 13.25 ± 11.83
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

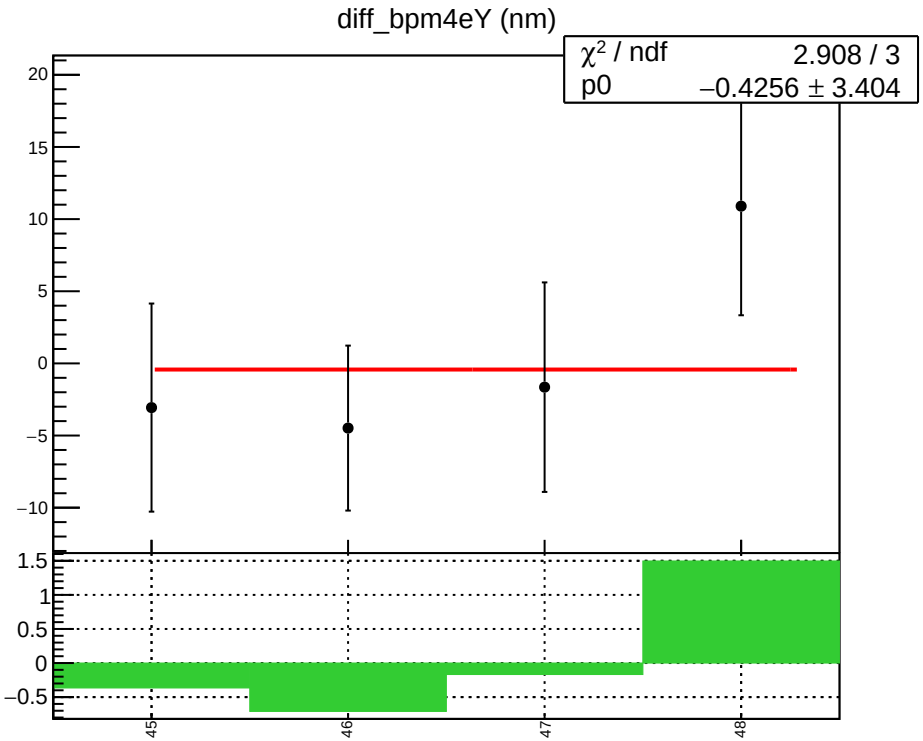
diff_bpm4eX RMS (um)

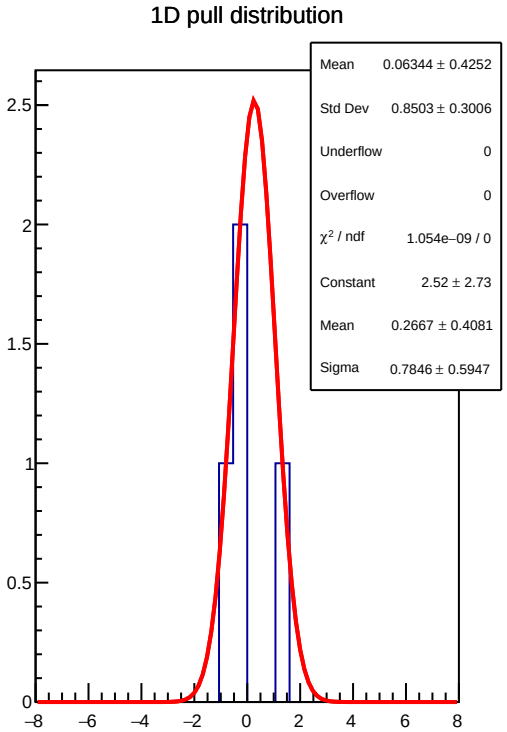


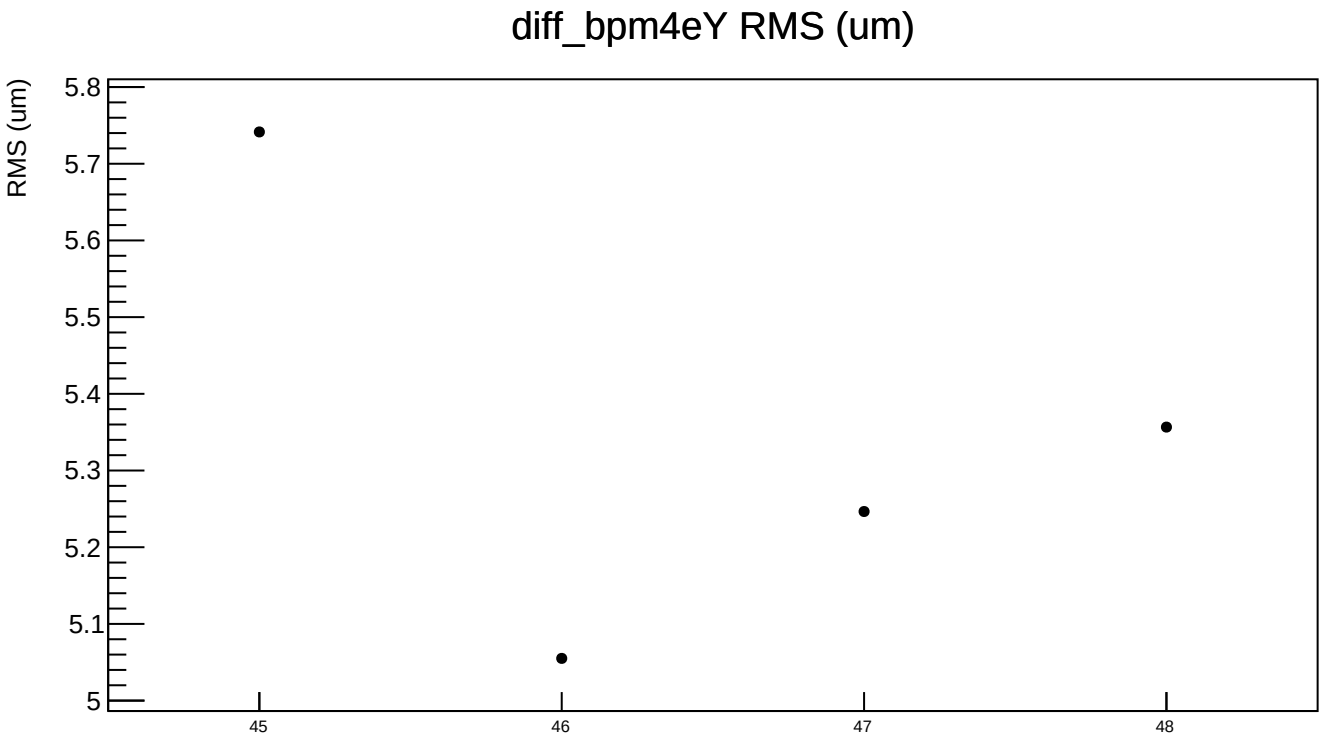

diff_bpm4aY (nm)
χ² / ndf 2.429 / 3
p0 −3.548 ± 5.337
30
20
10
0
−10
−20
1.5
1
0.5
0
−0.5
45
46
47
48

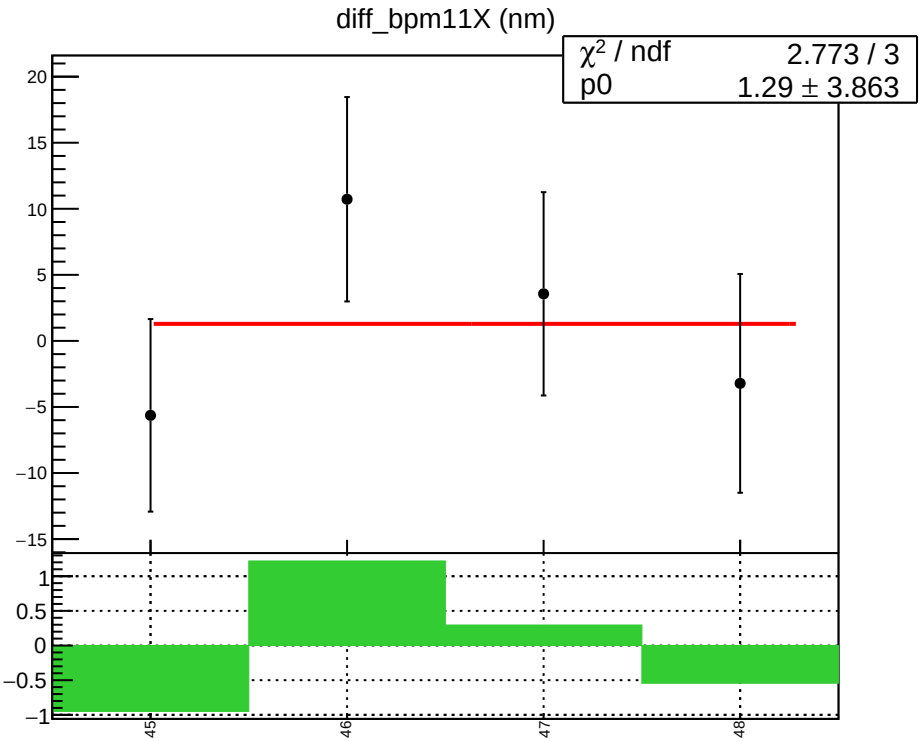

1D pull distribution
Mean 0.07774 ± 0.3877
Std Dev 0.7754 ± 0.2742
Underflow 0
Overflow 0
χ² / ndf 1.054e−09 / 0
Constant 2.52 ± 2.73
Mean 0.2667 ± 0.4081
Sigma 0.7846 ± 0.5947
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

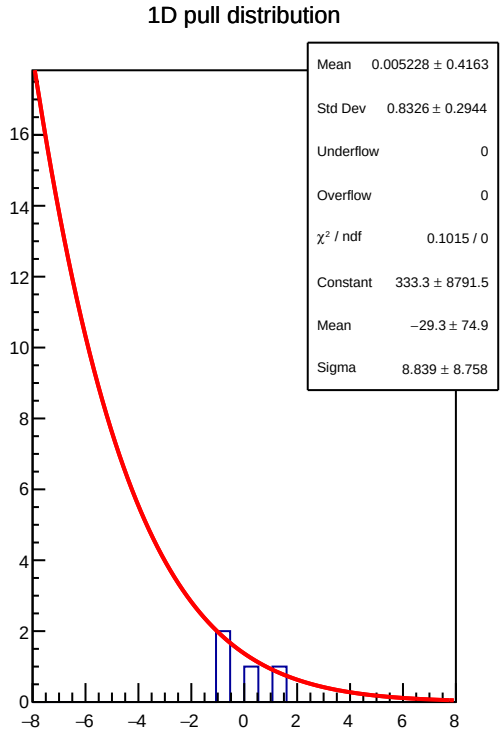

diff_bpm4aY RMS (um)
RMS (um)
9.6
9.4
9.2
9
8.8
8.6
8.4
45
46
47
48


diff_bpm4eY (nm)
χ² / ndf 2.908 / 3
p0 −0.4256 ± 3.404
20
15
10
5
0
−5
−10
1.5
1
0.5
0
−0.5
45
46
47
48

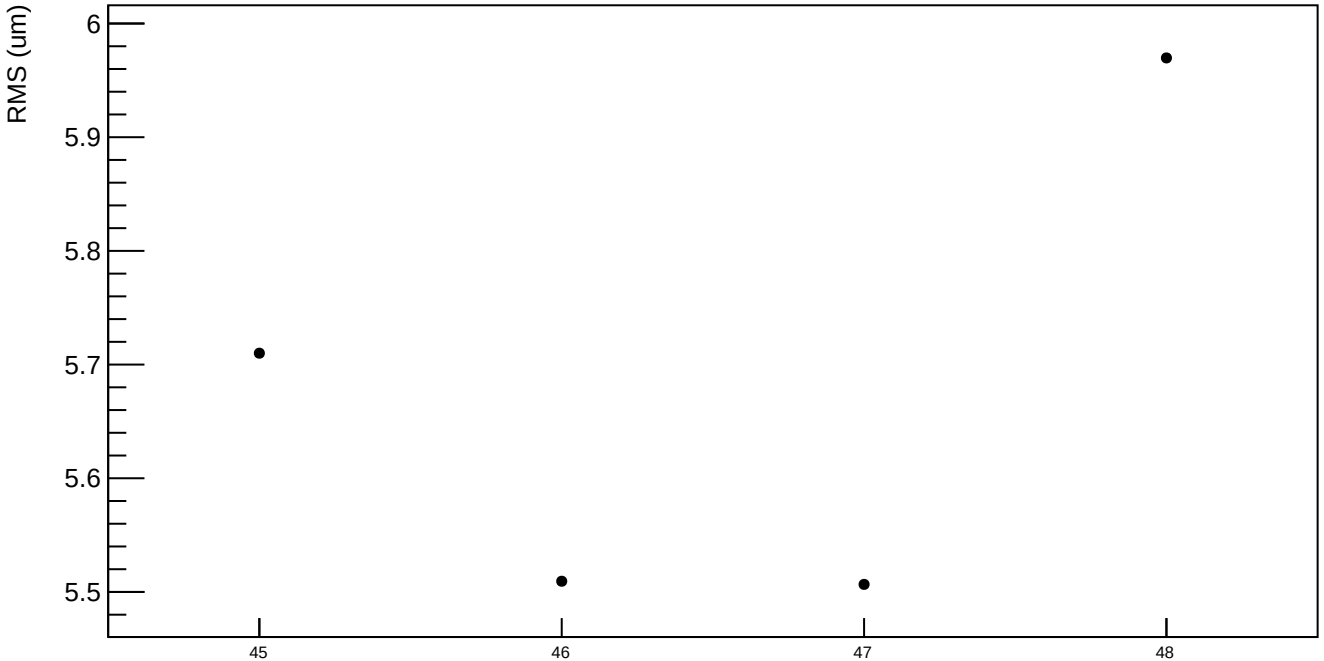

1D pull distribution
Mean 0.06344 ± 0.4252
Std Dev 0.8503 ± 0.3006
Underflow 0
Overflow 0
χ² / ndf 1.054e−09 / 0
Constant 2.52 ± 2.73
Mean 0.2667 ± 0.4081
Sigma 0.7846 ± 0.5947
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

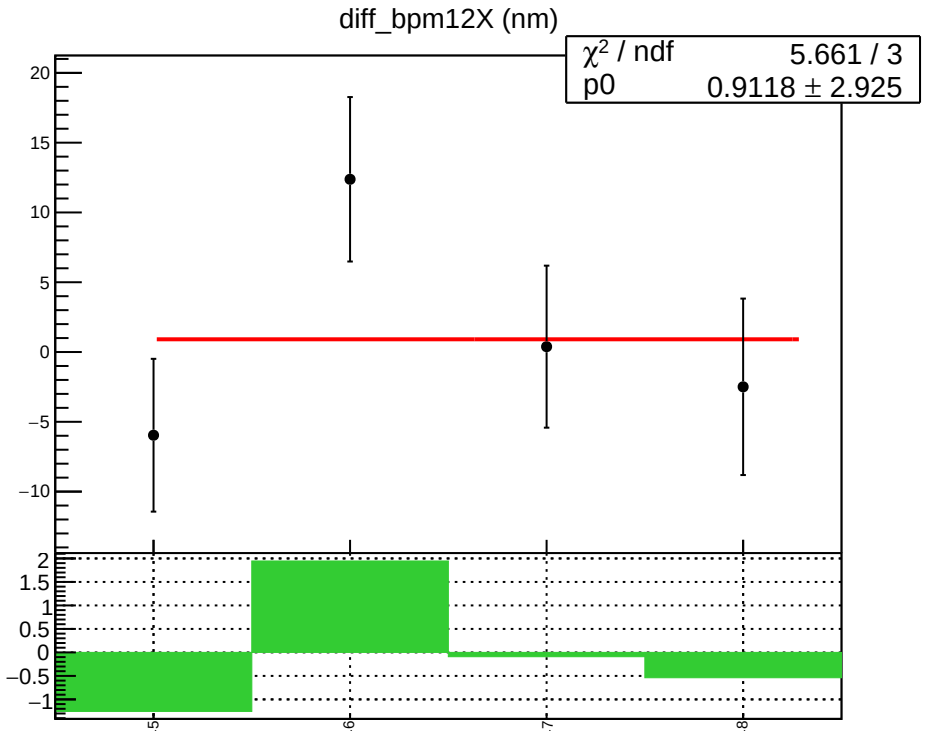

diff_bpm4eY RMS (um)
RMS (um)
5.8
5.7
5.6
5.5
5.4
5.3
5.2
5.1
5
45
46
47
48

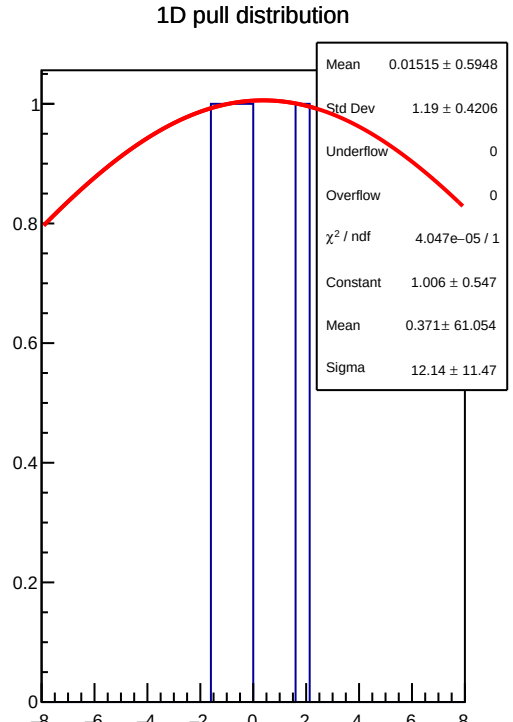

diff_bpm11X (nm)
χ² / ndf 2.773 / 3
p0 1.29 ± 3.863
20
15
10
5
0
−5
−10
−15
1
0.5
0
−0.5
−1
45
46
47
48


1D pull distribution
Mean 0.005228 ± 0.4163
Std Dev 0.8326 ± 0.2944
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 333.3 ± 8791.5
Mean −29.3 ± 74.9
Sigma 8.839 ± 8.758
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

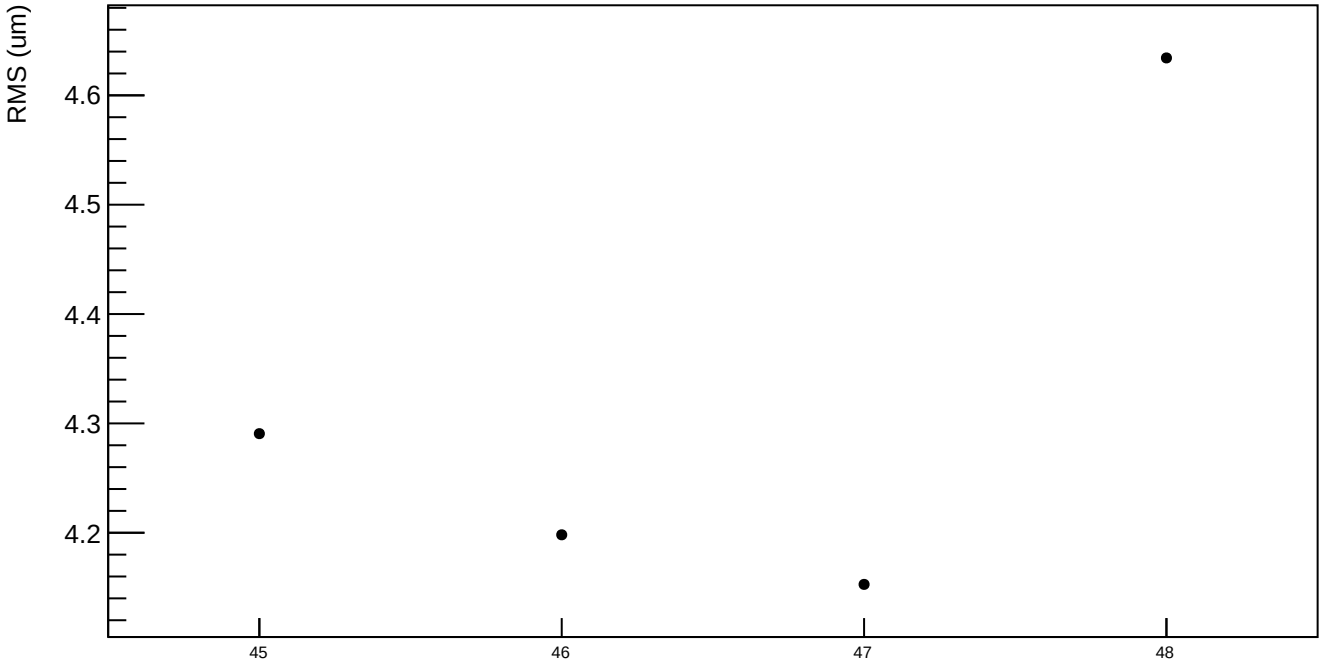
diff_bpm11X RMS (um)

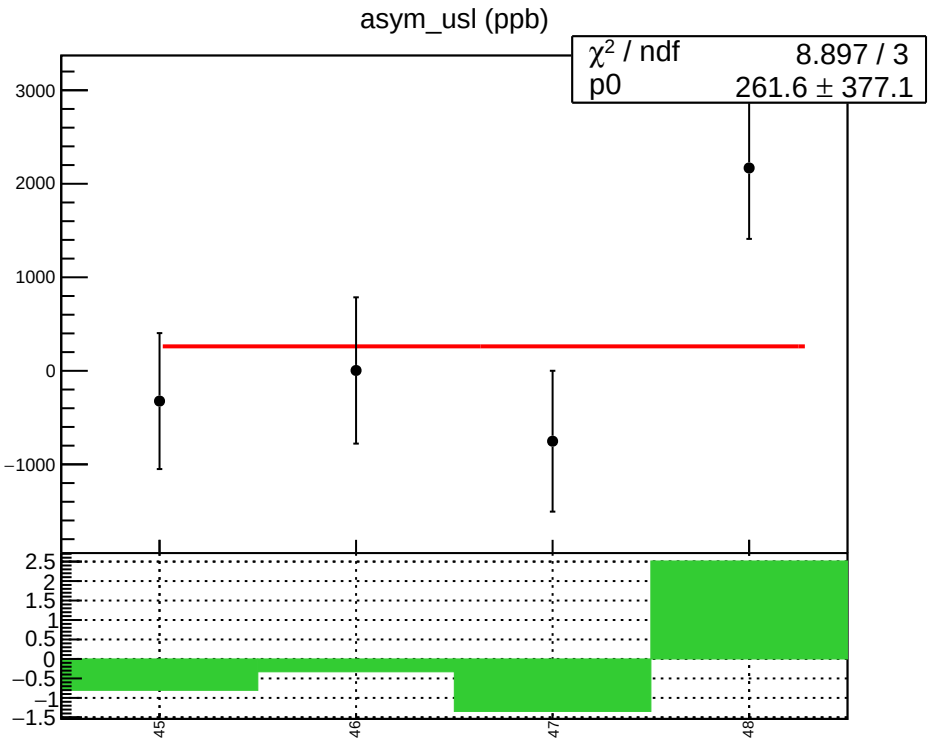


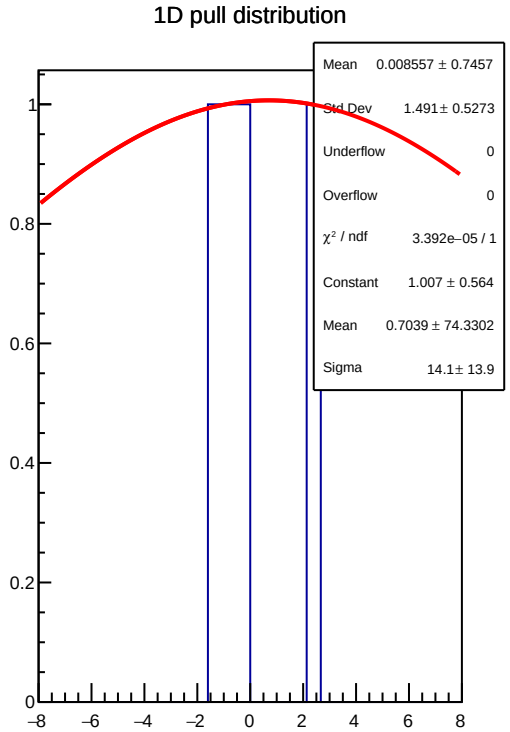

diff_bpm12X (nm)
χ² / ndf 5.661 / 3
p0 0.9118 ± 2.925
20
15
10
5
0
−5
−10
2
1.5
1
0.5
0
−0.5
−1
45
46
47
48

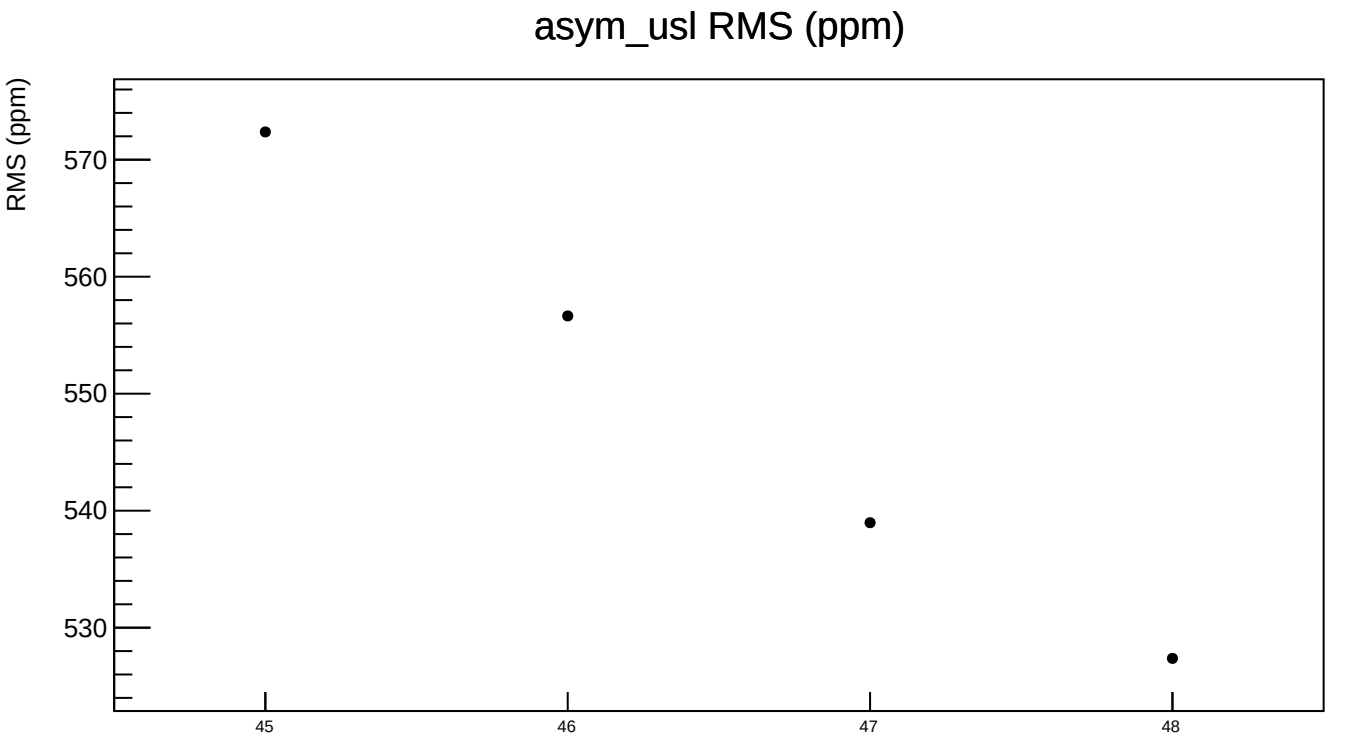

1D pull distribution
Mean 0.01515 ± 0.5948
Std Dev 1.19 ± 0.4206
Underflow 0
Overflow 0
χ² / ndf 4.047e−05 / 1
Constant 1.006 ± 0.547
Mean 0.371± 61.054
Sigma 12.14 ± 11.47
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

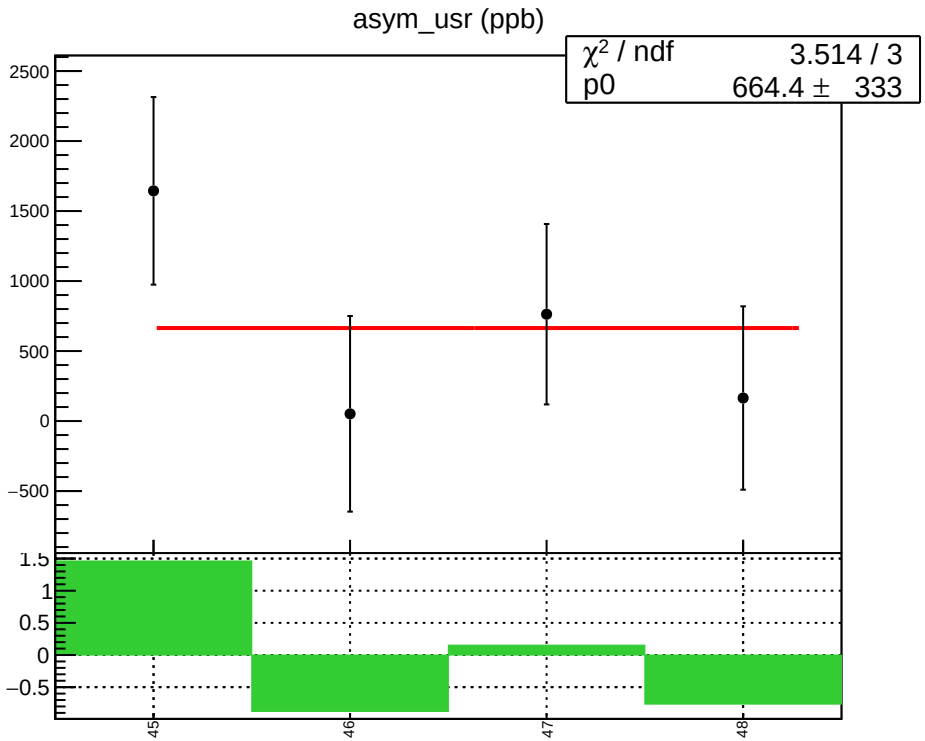
diff_bpm12X RMS (um)

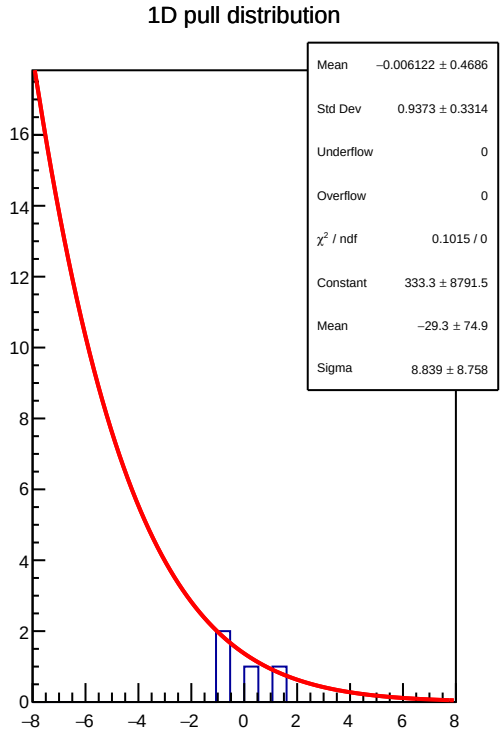


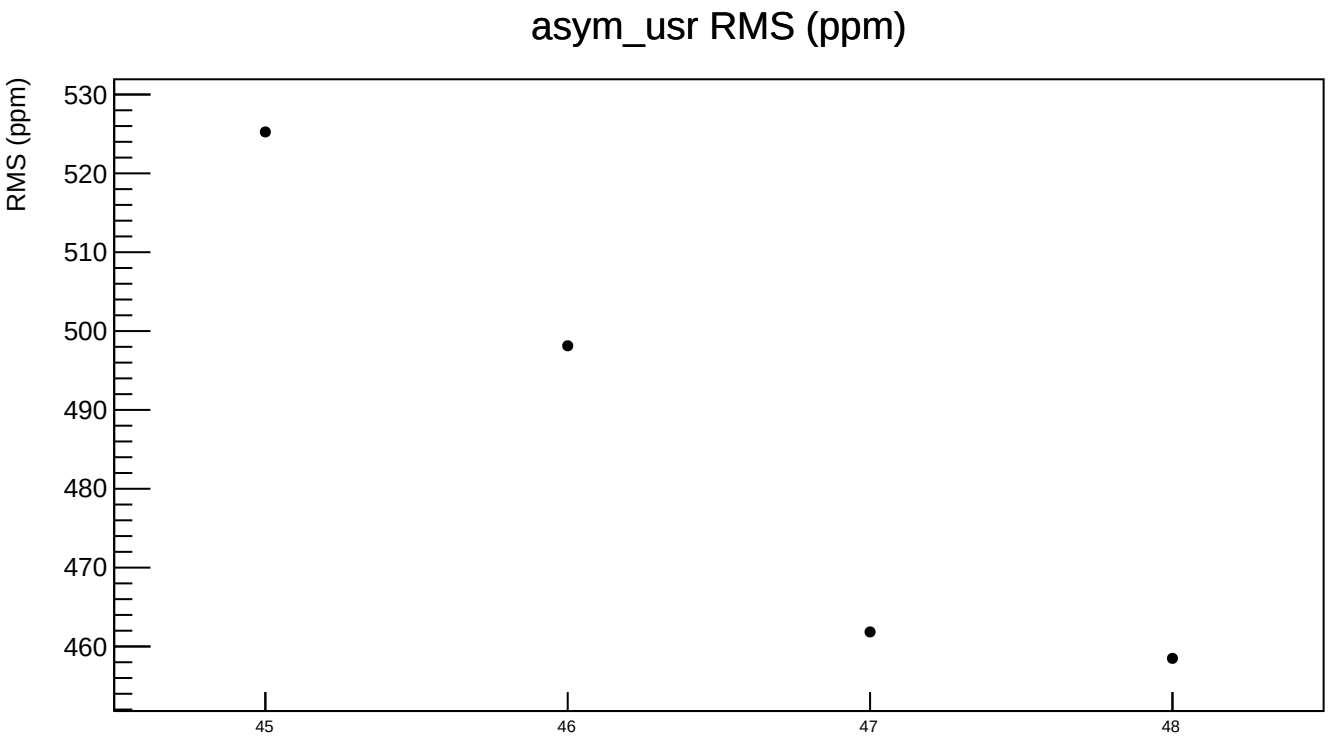

asym_usl (ppb)
χ² / ndf 8.897 / 3
p0 261.6 ± 377.1
3000
2000
1000
0
−1000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48

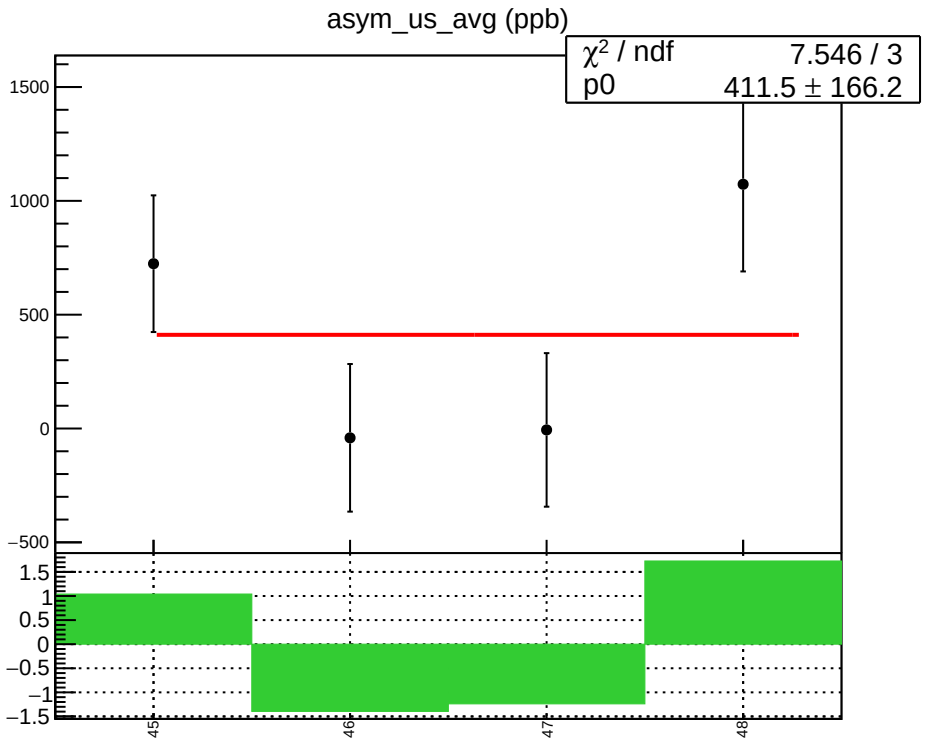

1D pull distribution
Mean 0.008557 ± 0.7457
Std Dev 1.491± 0.5273
Underflow 0
Overflow 0
χ² / ndf 3.392e−05 / 1
Constant 1.007 ± 0.564
Mean 0.7039 ± 74.3302
Sigma 14.1± 13.9
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

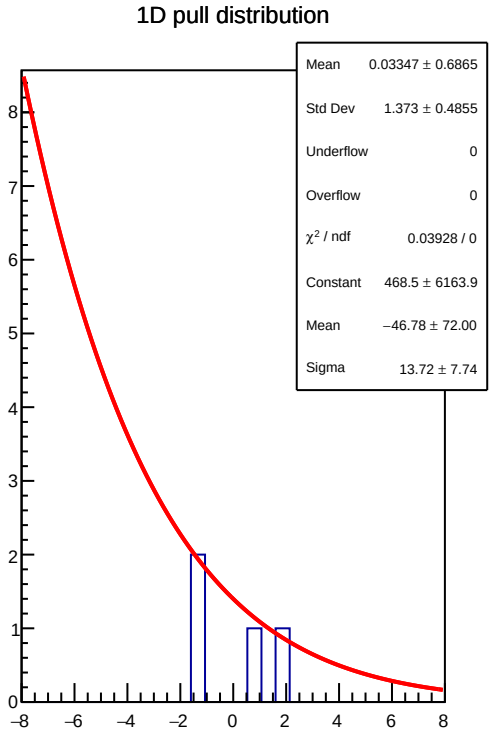

asym_usl RMS (ppm)
RMS (ppm)
570
560
550
540
530
45
46
47
48

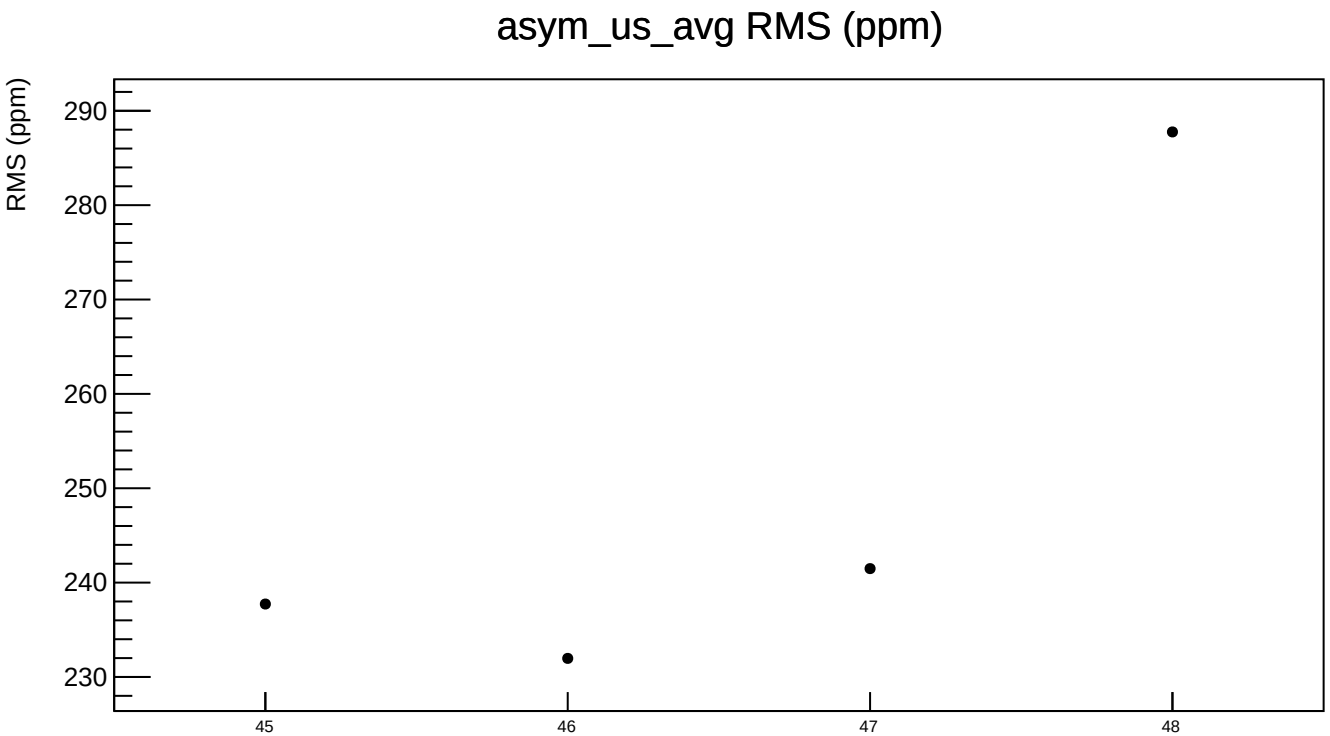

asym_usr (ppb)
χ² / ndf 3.514 / 3
p0 664.4 ± 333
2500
2000
1500
1000
500
0
−500
1.5
1
0.5
0
−0.5
45
46
47
48

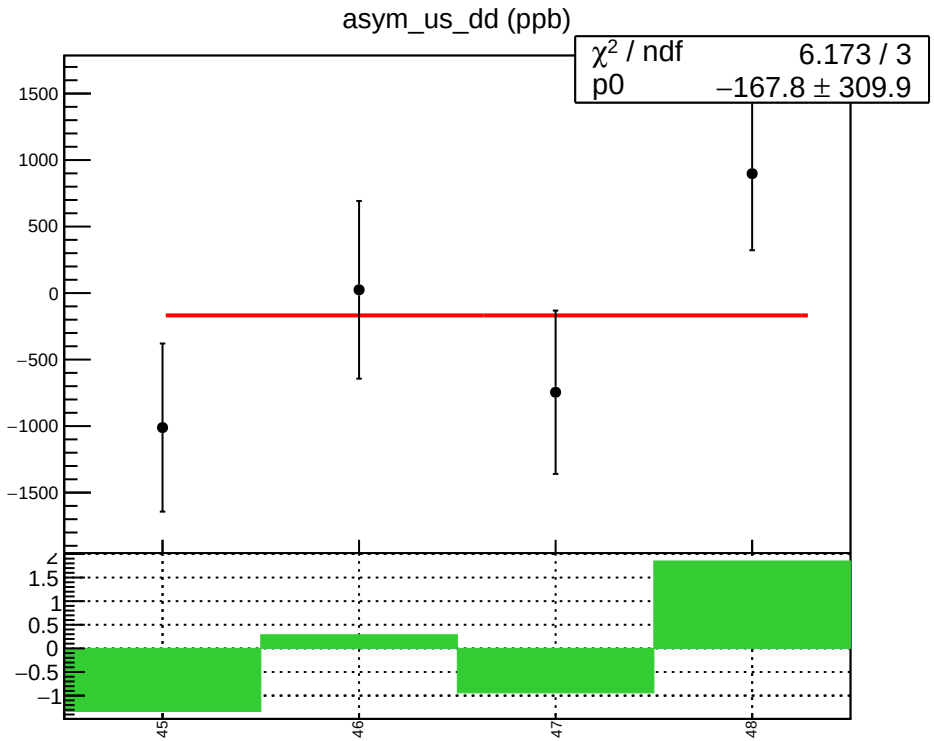

1D pull distribution
Mean −0.006122 ± 0.4686
Std Dev 0.9373 ± 0.3314
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 333.3 ± 8791.5
Mean −29.3 ± 74.9
Sigma 8.839 ± 8.758
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

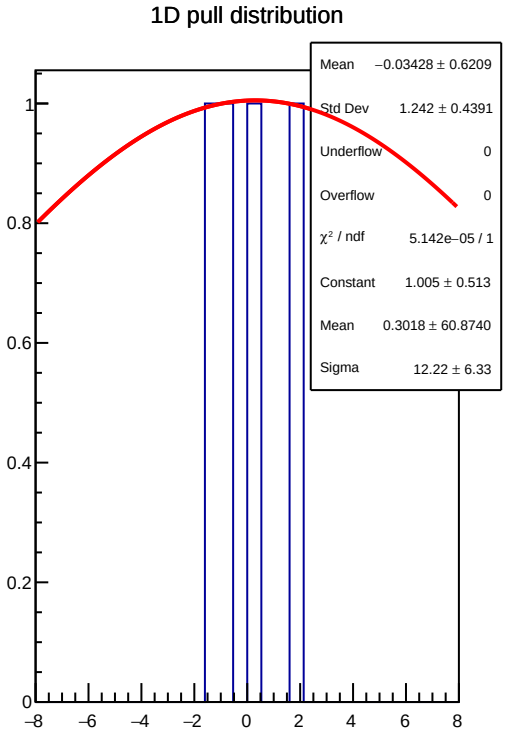

asym_usr RMS (ppm)
RMS (ppm)
530
520
510
500
490
480
470
460
45
46
47
48

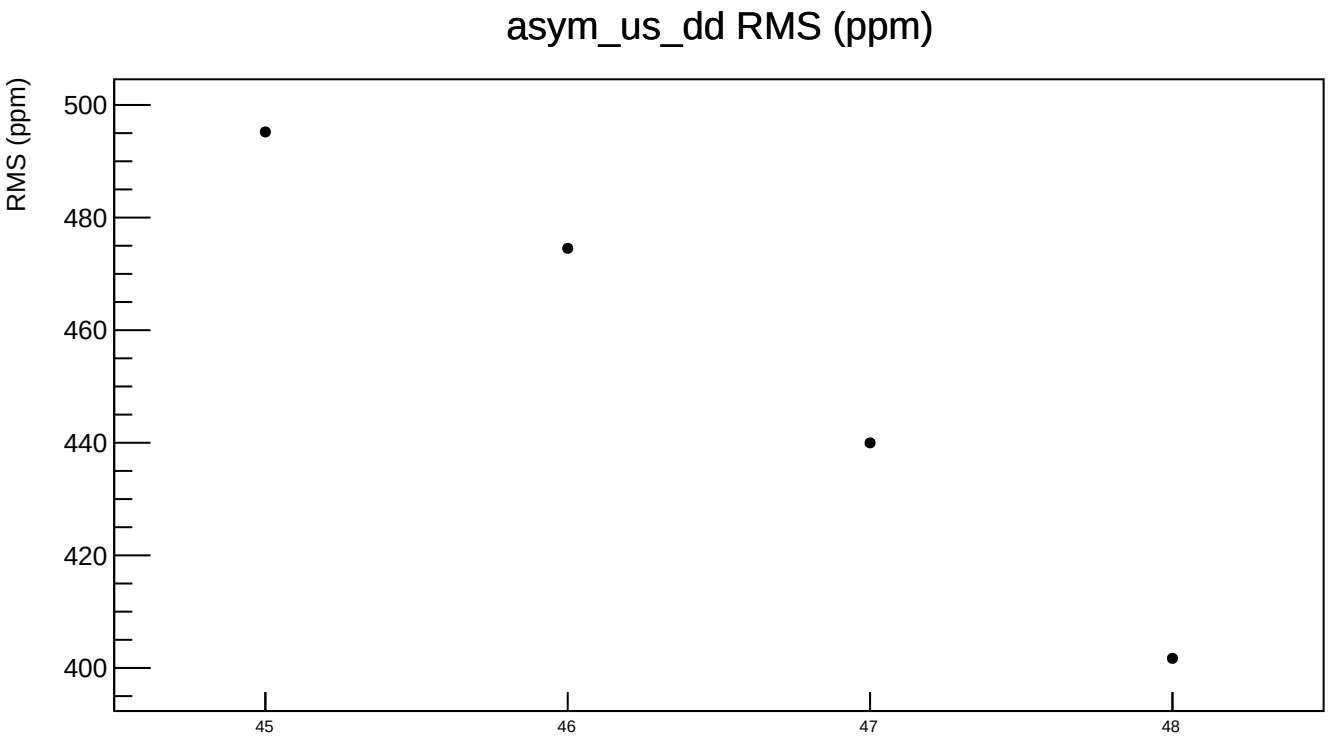

asym_us_avg (ppb)
χ² / ndf 7.546 / 3
p0 411.5 ± 166.2
1500
1000
500
0
−500
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48

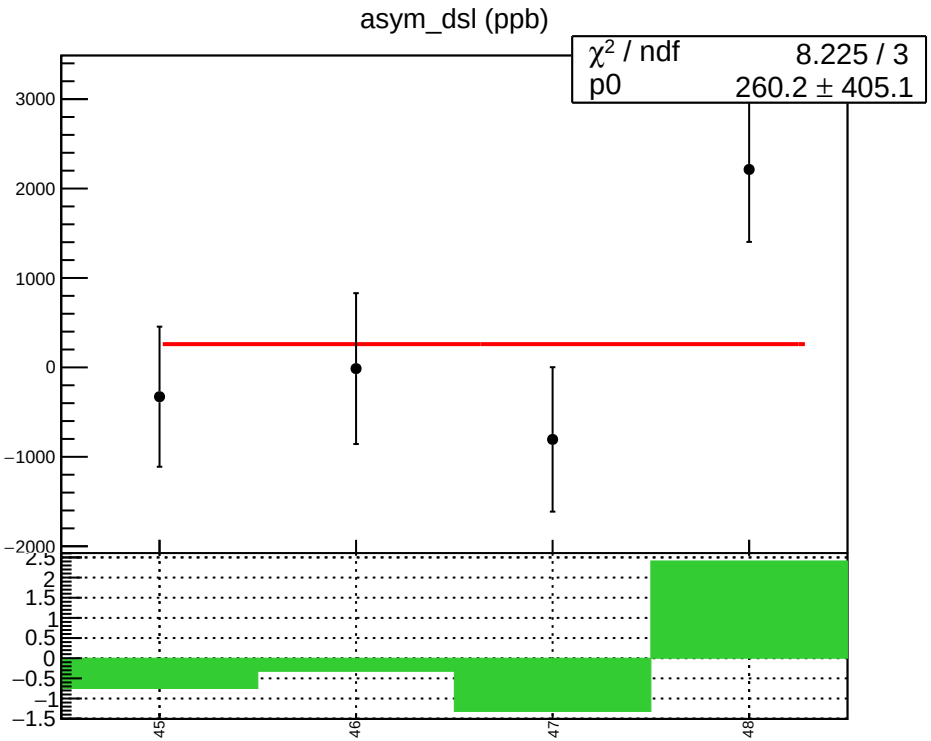

1D pull distribution
Mean 0.03347 ± 0.6865
Std Dev 1.373 ± 0.4855
Underflow 0
Overflow 0
χ² / ndf 0.03928 / 0
Constant 468.5 ± 6163.9
Mean −46.78 ± 72.00
Sigma 13.72 ± 7.74
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

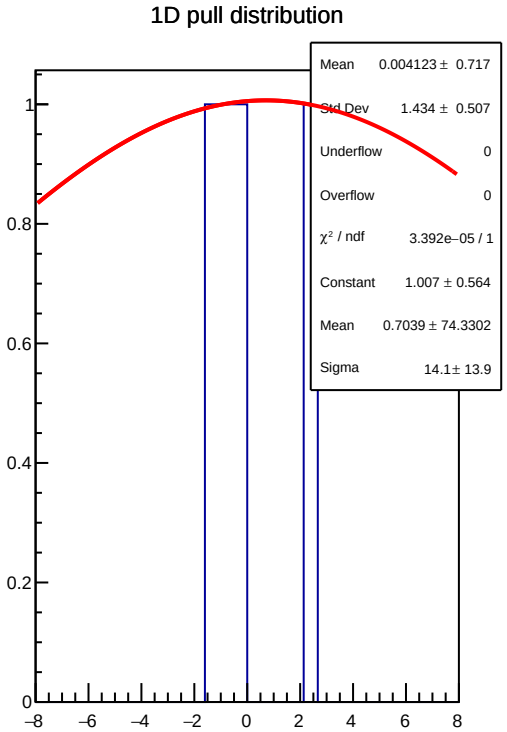

asym_us_avg RMS (ppm)
RMS (ppm)
290
280
270
260
250
240
230
45
46
47
48

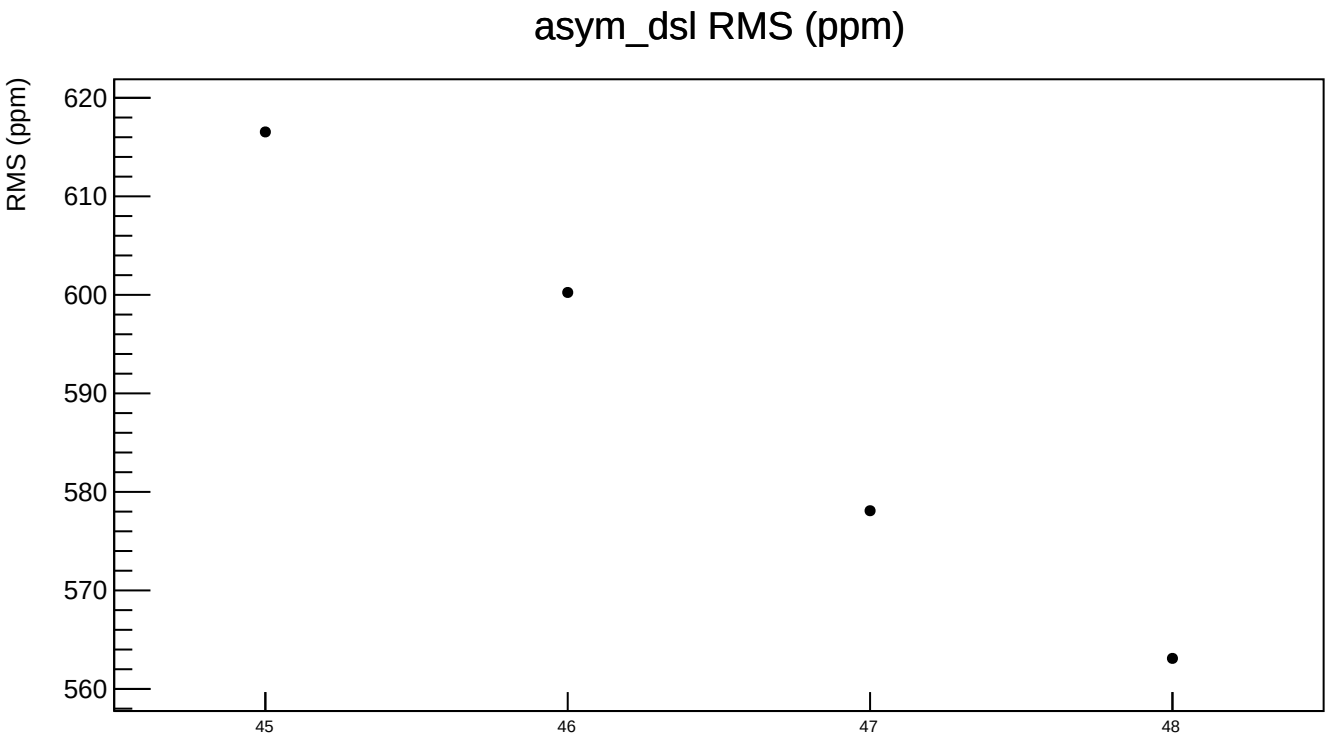

asym_us_dd (ppb)
χ² / ndf 6.173 / 3
p0 −167.8 ± 309.9
1500
1000
500
0
−500
−1000
−1500
2
1.5
1
0.5
0
−0.5
−1
45
46
47
48

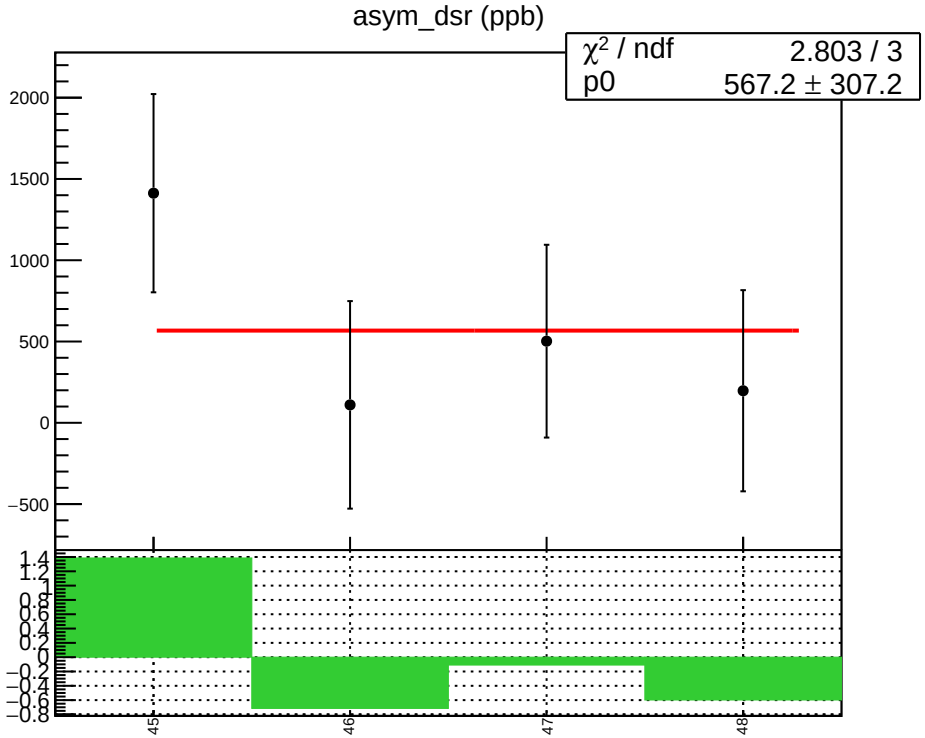

1D pull distribution
Mean −0.03428 ± 0.6209
Std Dev 1.242 ± 0.4391
Underflow 0
Overflow 0
χ² / ndf 5.142e−05 / 1
Constant 1.005 ± 0.513
Mean 0.3018 ± 60.8740
Sigma 12.22 ± 6.33
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

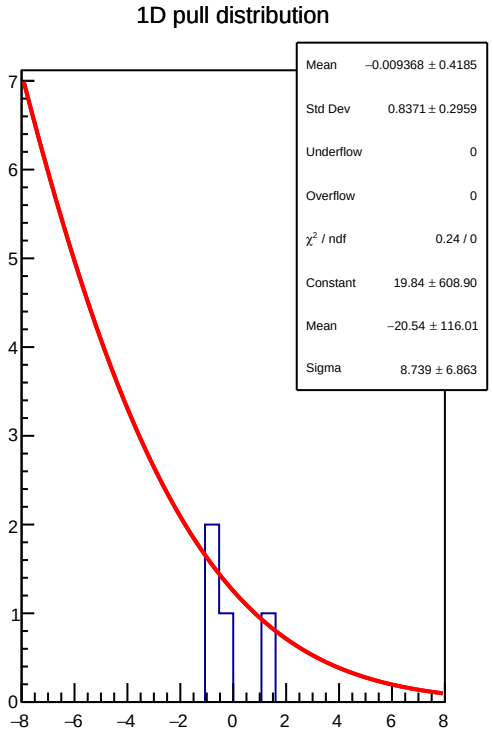

asym_us_dd RMS (ppm)
RMS (ppm)
500
480
460
440
420
400
45
46
47
48


asym_dsl (ppb)
χ² / ndf 8.225 / 3
p0 260.2 ± 405.1
3000
2000
1000
0
−1000
−2000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48

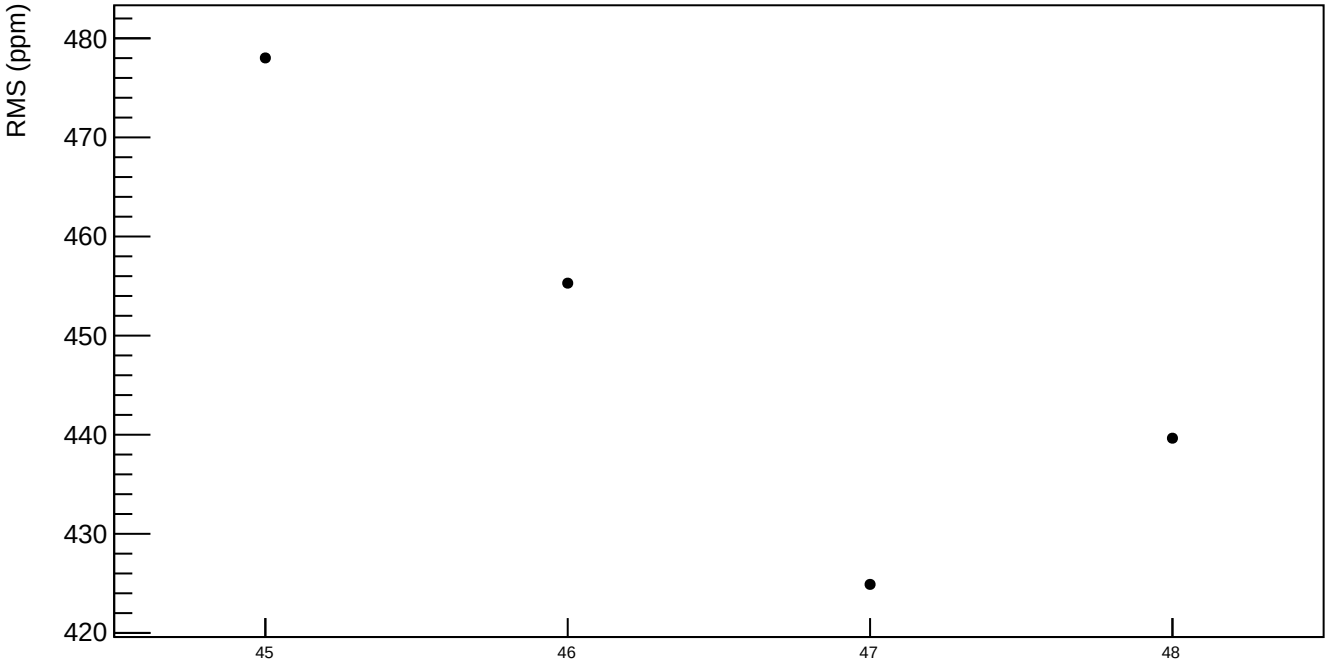

1D pull distribution
Mean 0.004123 ± 0.717
Std Dev 1.434 ± 0.507
Underflow 0
Overflow 0
χ² / ndf 3.392e−05 / 1
Constant 1.007 ± 0.564
Mean 0.7039 ± 74.3302
Sigma 14.1± 13.9
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

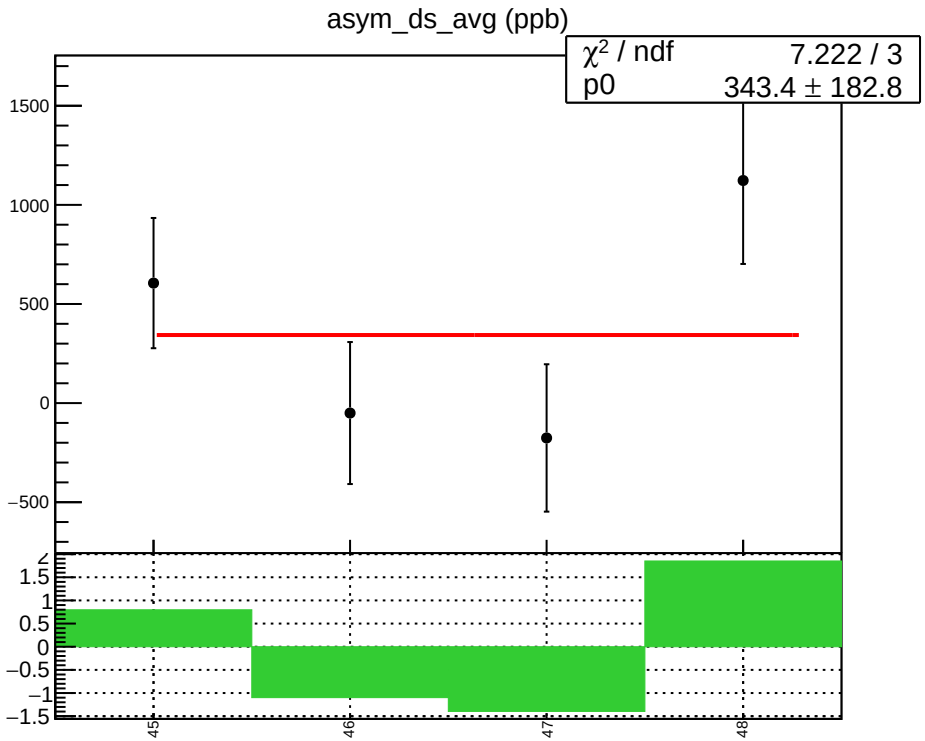

asym_dsl RMS (ppm)
RMS (ppm)
620
610
600
590
580
570
560
45
46
47
48

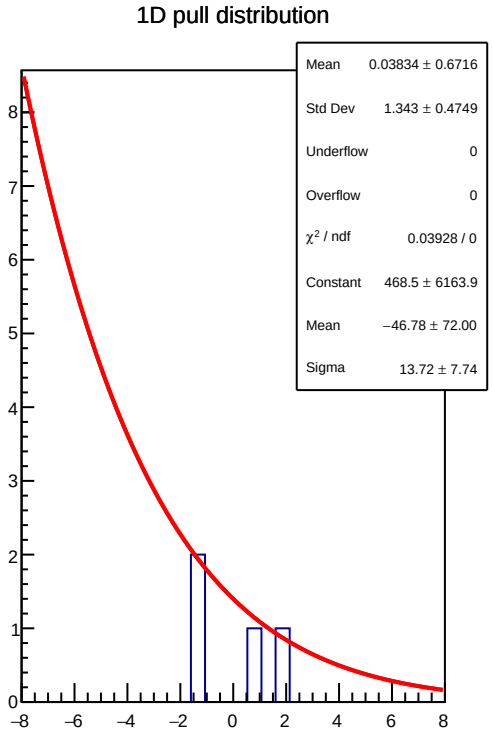

asym_dsr (ppb)
χ² / ndf 2.803 / 3
p0 567.2 ± 307.2
2000
1500
1000
500
0
−500
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
45
46
47
48

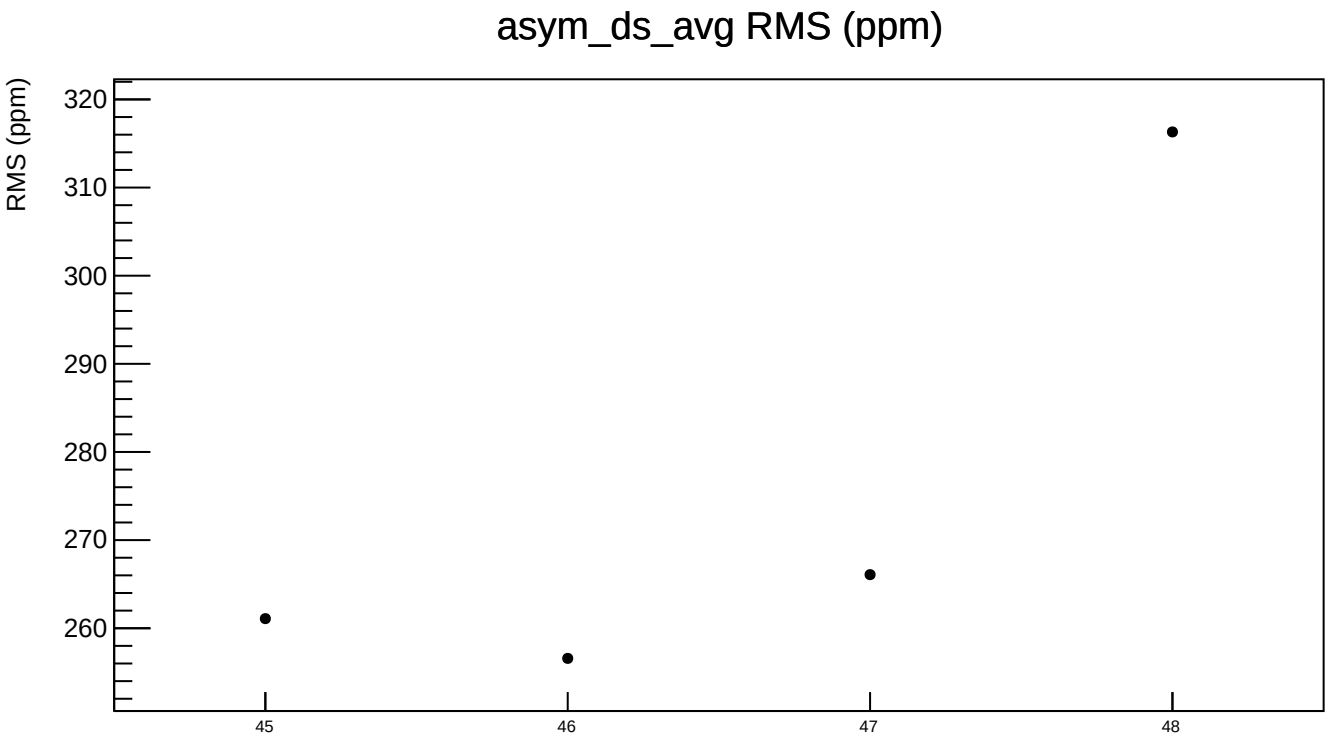

1D pull distribution
Mean −0.009368 ± 0.4185
Std Dev 0.8371 ± 0.2959
Underflow 0
Overflow 0
χ² / ndf 0.24 / 0
Constant 19.84 ± 608.90
Mean −20.54 ± 116.01
Sigma 8.739 ± 6.863
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

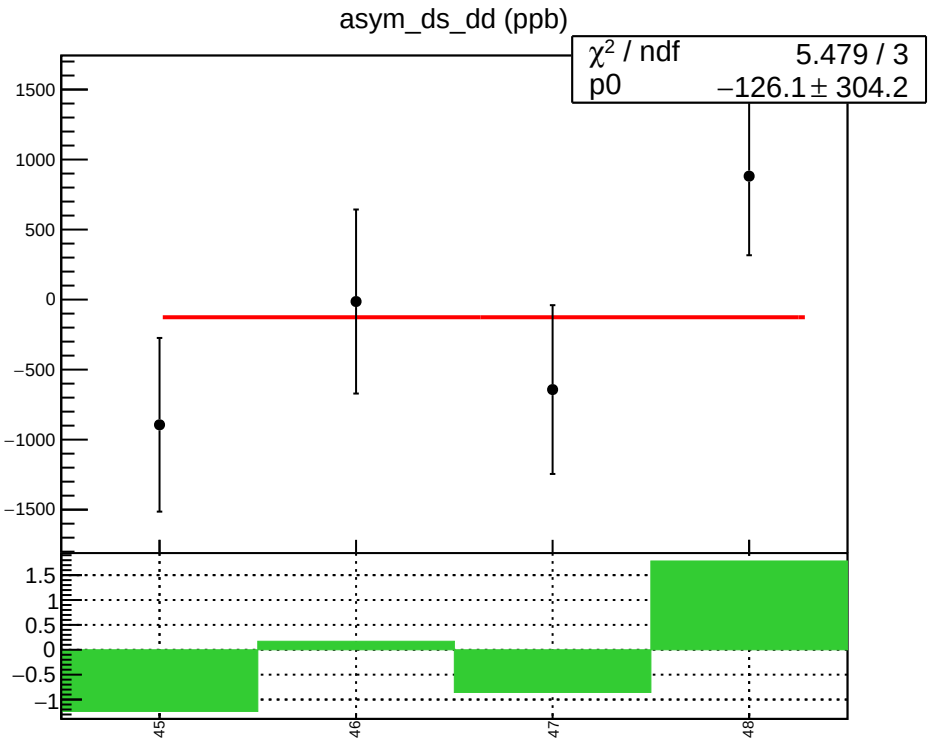
asym_dsr RMS (ppm)

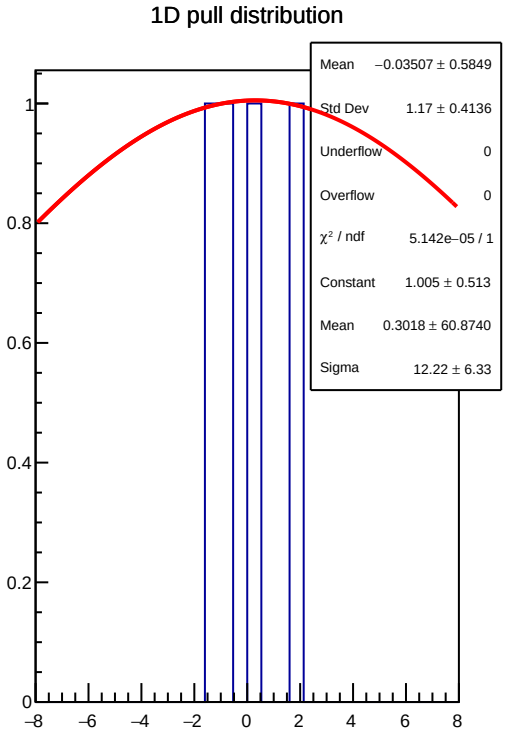


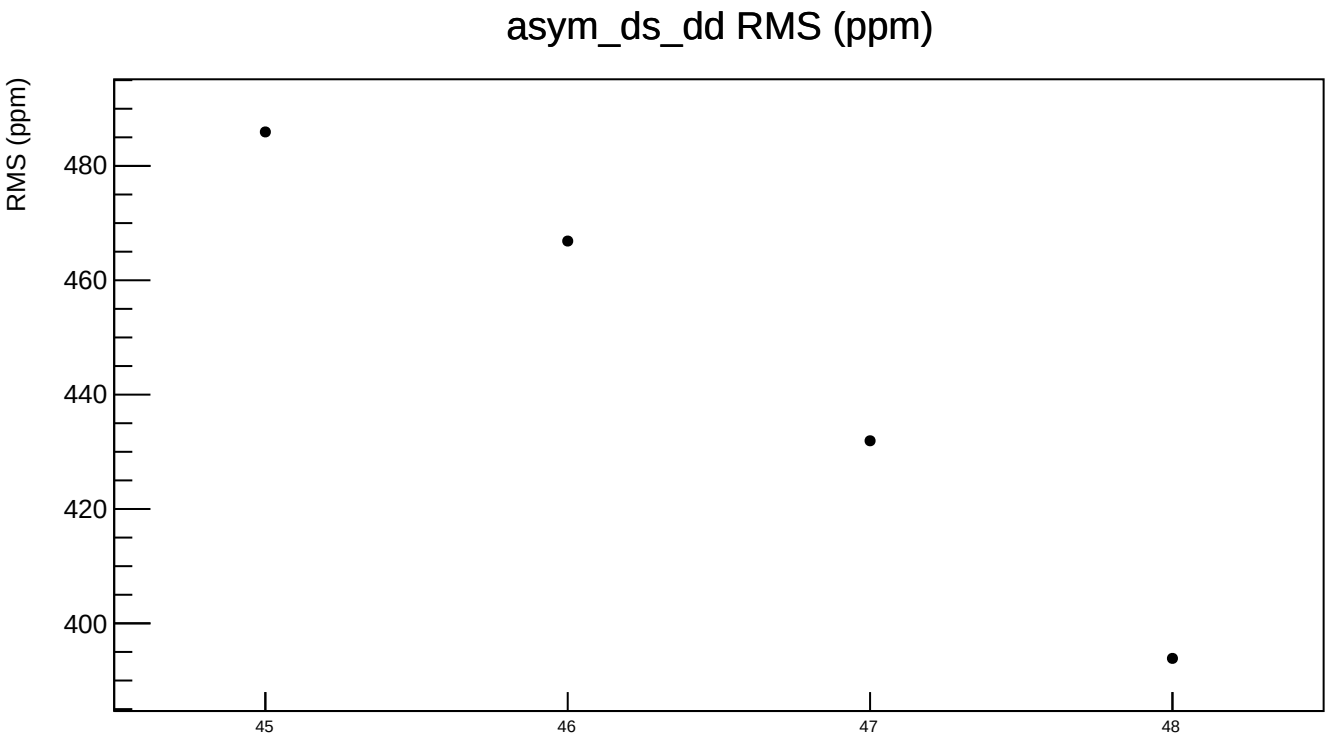

asym_ds_avg (ppb)
χ² / ndf 7.222 / 3
p0 343.4 ± 182.8
1500
1000
500
0
−500
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48

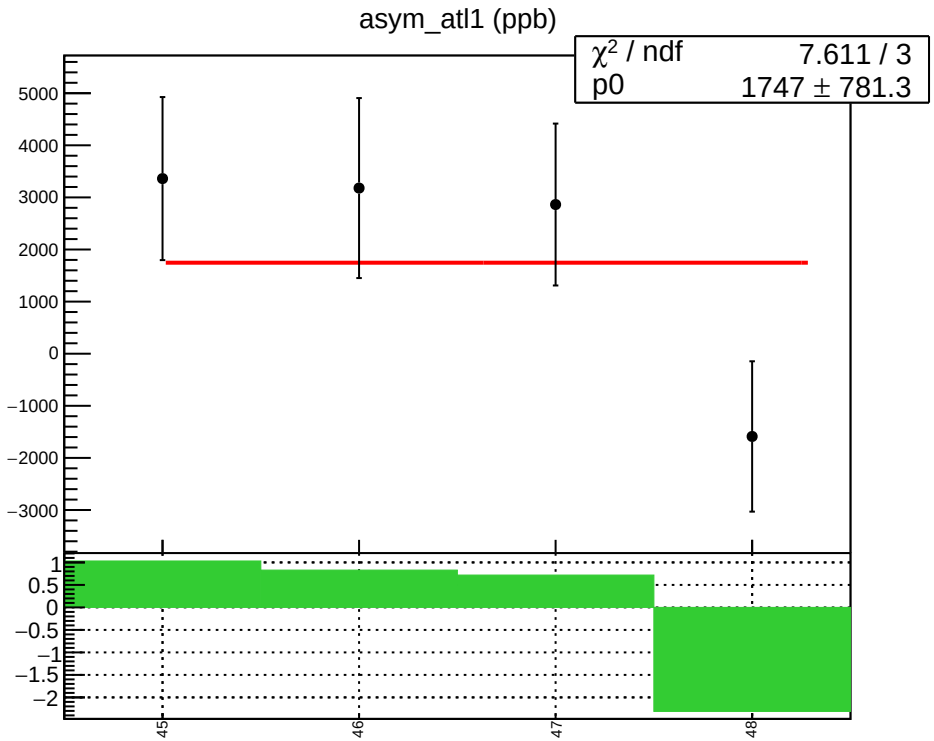

1D pull distribution
Mean 0.03834 ± 0.6716
Std Dev 1.343 ± 0.4749
Underflow 0
Overflow 0
χ² / ndf 0.03928 / 0
Constant 468.5 ± 6163.9
Mean −46.78 ± 72.00
Sigma 13.72 ± 7.74
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

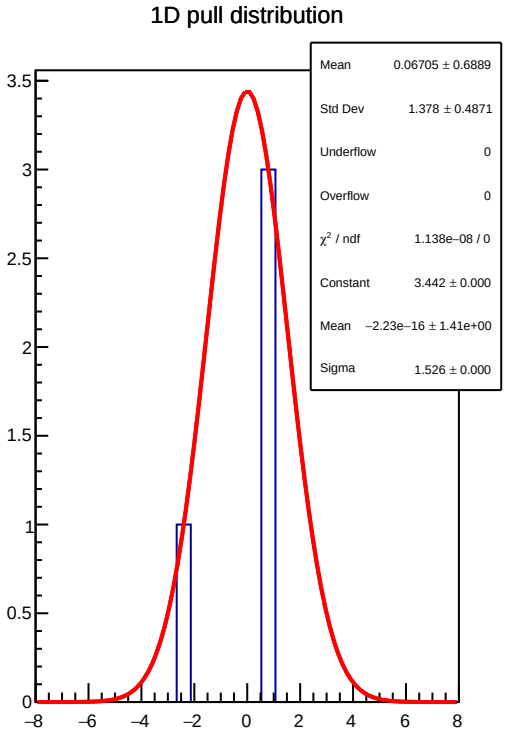

asym_ds_avg RMS (ppm)
RMS (ppm)
320
310
300
290
280
270
260
45
46
47
48

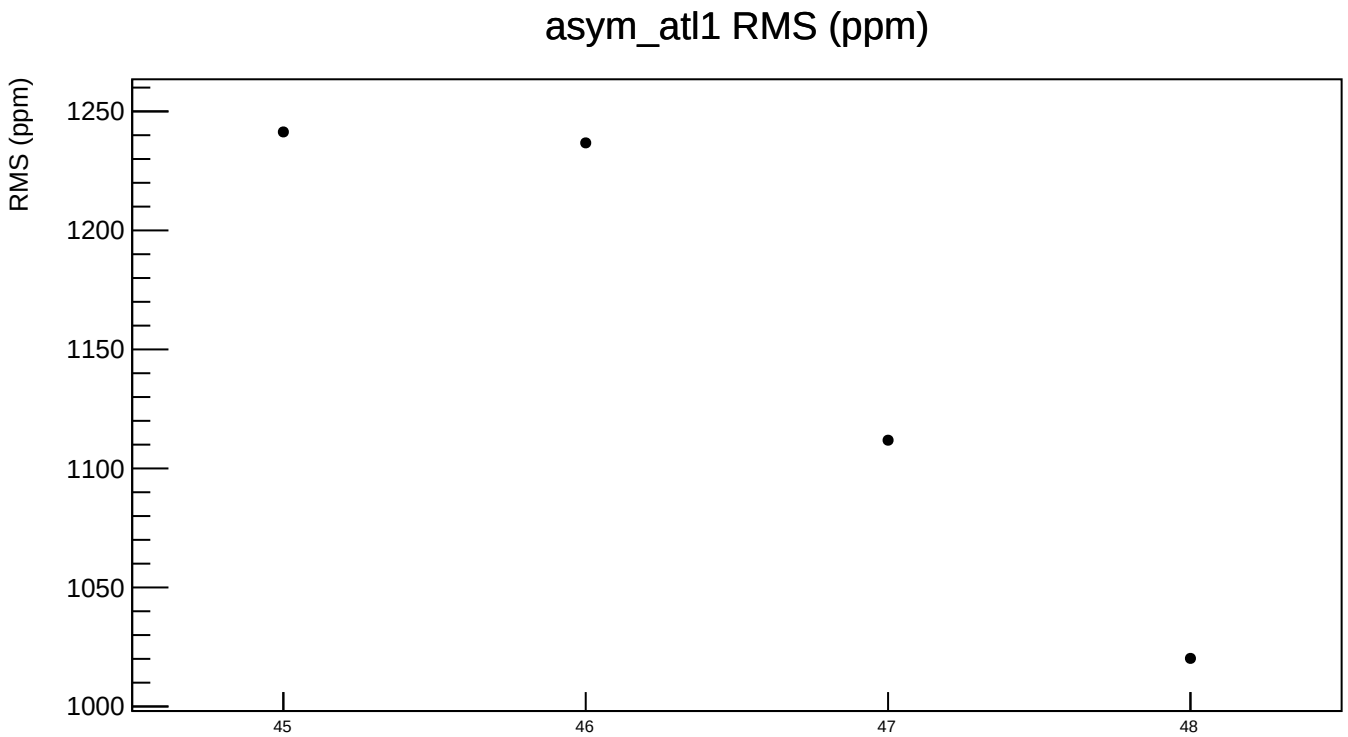

asym_ds_dd (ppb)
χ² / ndf 5.479 / 3
p0 −126.1 ± 304.2
1500
1000
500
0
−500
−1000
−1500
1.5
1
0.5
0
−0.5
−1
45
46
47
48

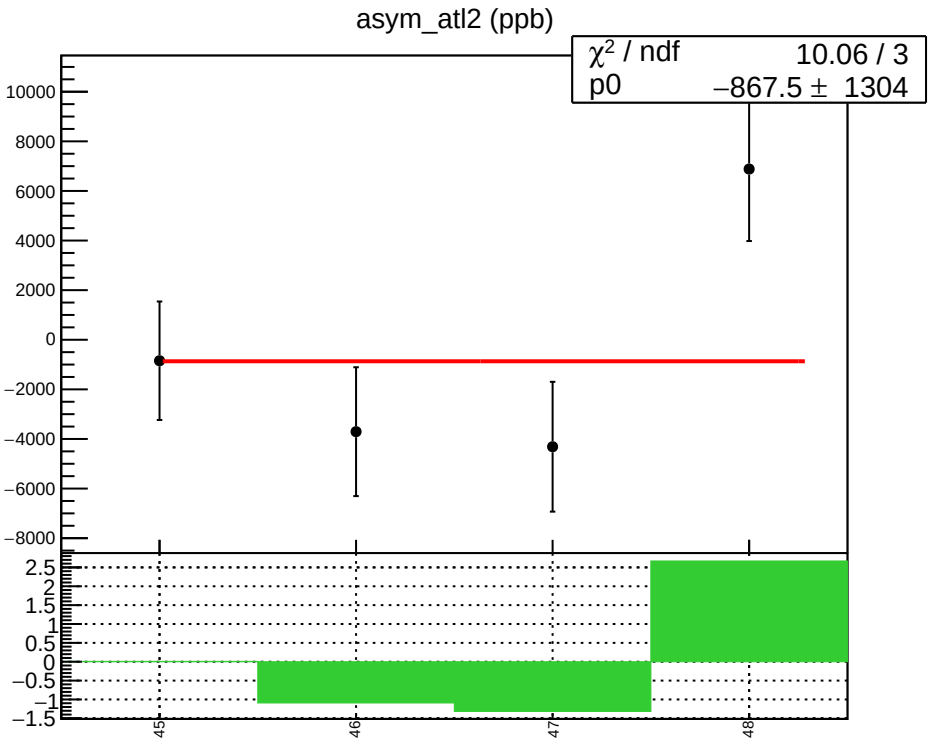

1D pull distribution
Mean −0.03507 ± 0.5849
Std Dev 1.17 ± 0.4136
Underflow 0
Overflow 0
χ² / ndf 5.142e−05 / 1
Constant 1.005 ± 0.513
Mean 0.3018 ± 60.8740
Sigma 12.22 ± 6.33
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

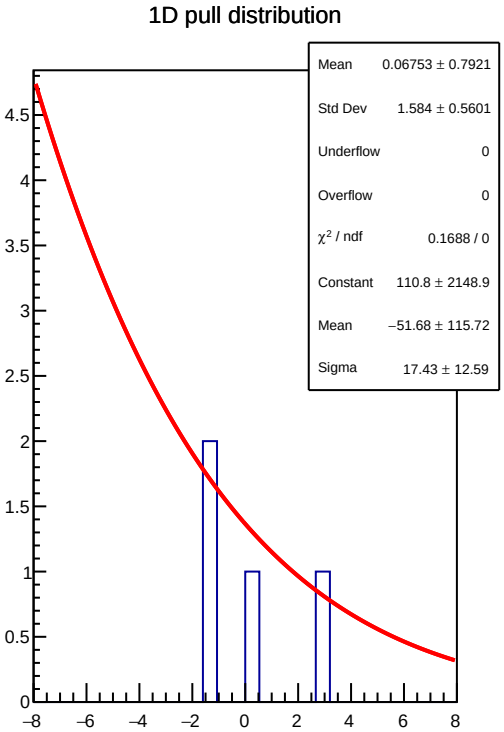

asym_ds_dd RMS (ppm)
RMS (ppm)
480
460
440
420
400
45
46
47
48

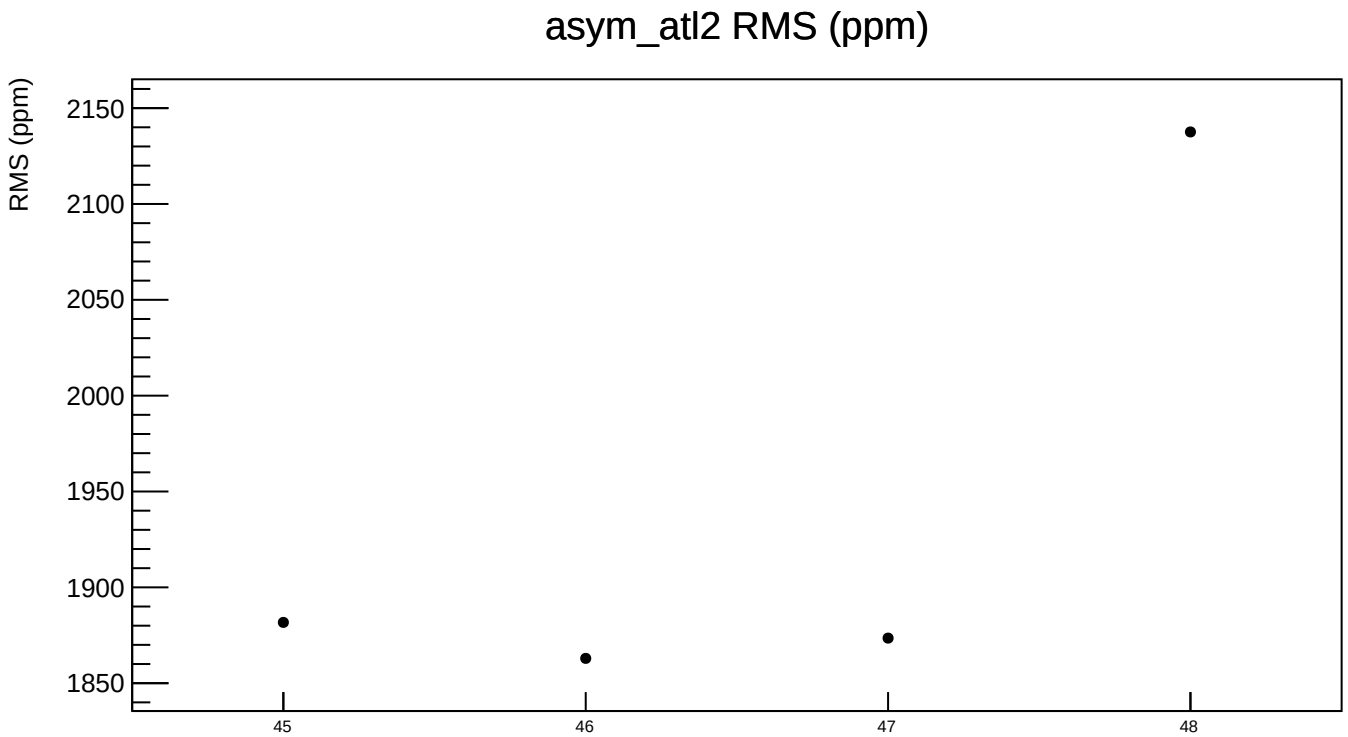

asym_atl1 (ppb)
χ² / ndf 7.611 / 3
p0 1747 ± 781.3
5000
4000
3000
2000
1000
0
−1000
−2000
−3000
1
0.5
0
−0.5
−1
−1.5
−2
45
46
47
48

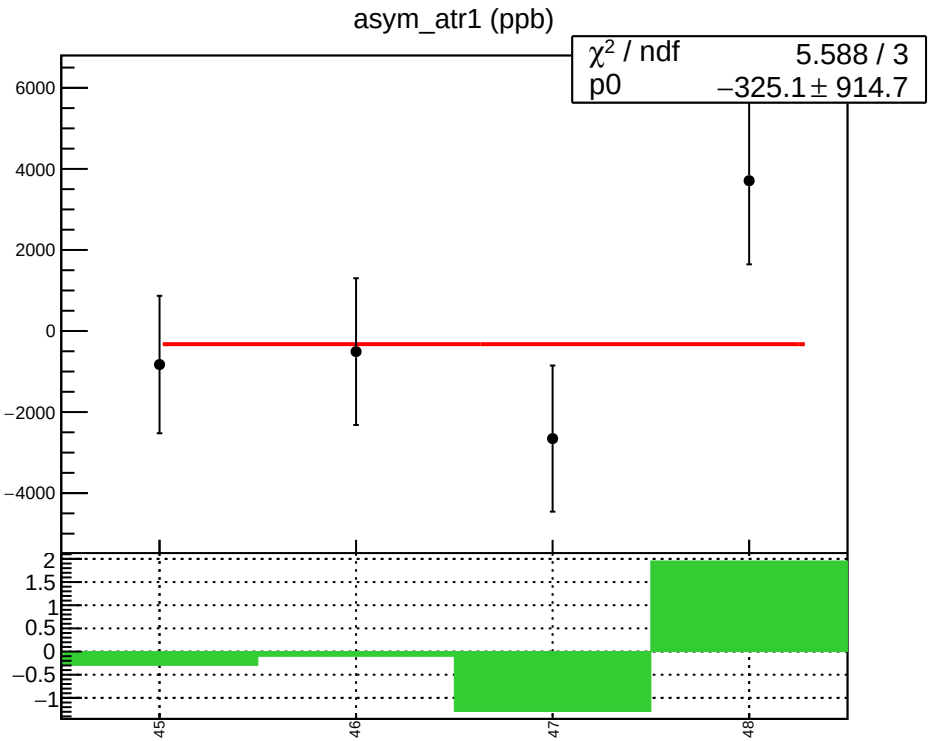

1D pull distribution
Mean 0.06705 ± 0.6889
Std Dev 1.378 ± 0.4871
Underflow 0
Overflow 0
χ² / ndf 1.138e−08 / 0
Constant 3.442 ± 0.000
Mean −2.23e−16 ± 1.41e+00
Sigma 1.526 ± 0.000
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

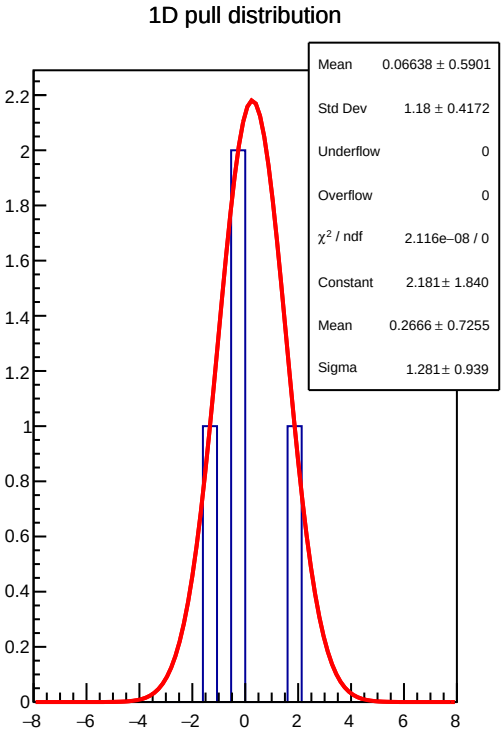

asym_atl1 RMS (ppm)
RMS (ppm)
1250
1200
1150
1100
1050
1000
45
46
47
48

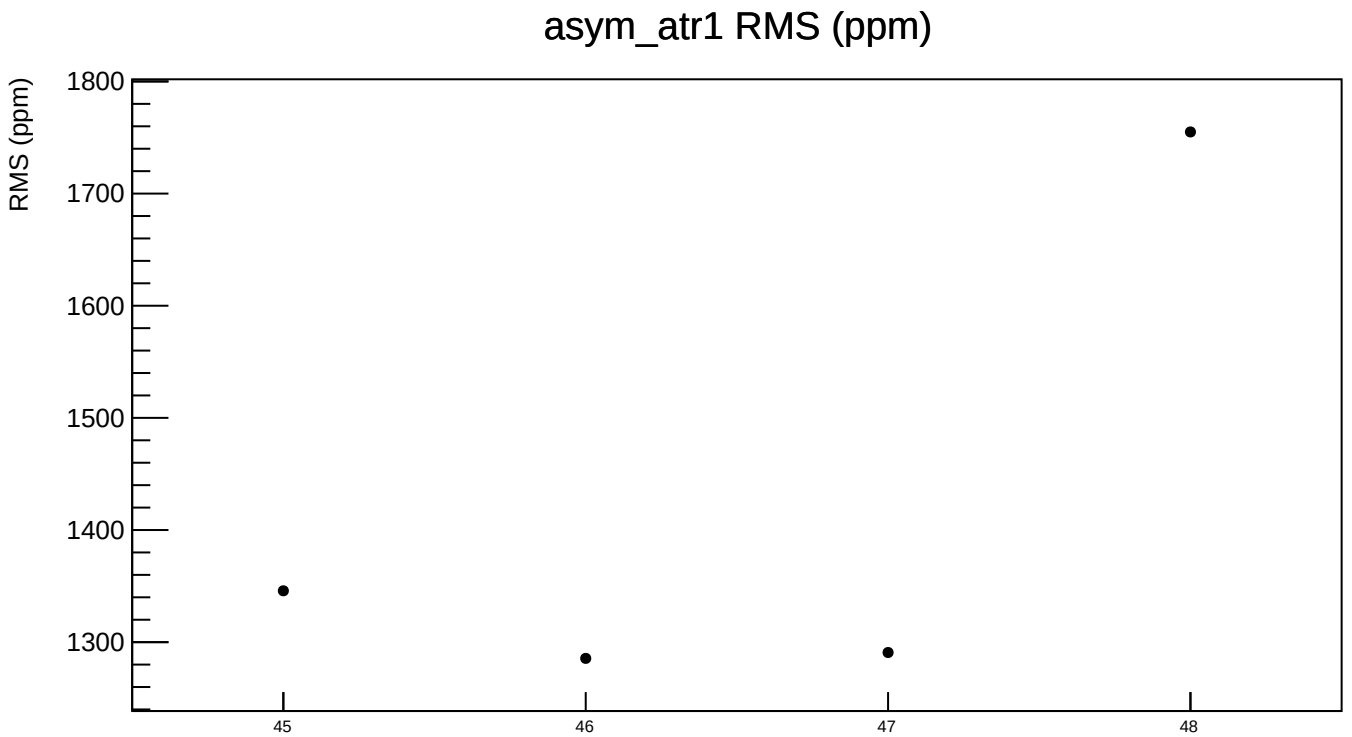

asym_atl2 (ppb)
χ² / ndf 10.06 / 3
p0 −867.5 ± 1304
10000
8000
6000
4000
2000
0
−2000
−4000
−6000
−8000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48

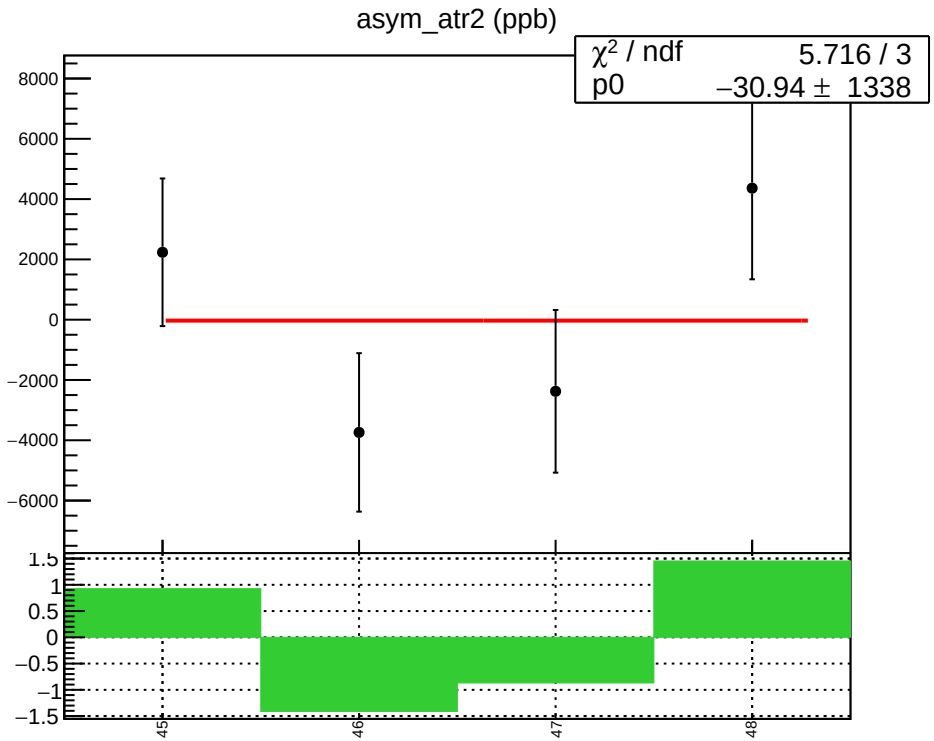

1D pull distribution
Mean 0.06753 ± 0.7921
Std Dev 1.584 ± 0.5601
Underflow 0
Overflow 0
χ² / ndf 0.1688 / 0
Constant 110.8 ± 2148.9
Mean −51.68 ± 115.72
Sigma 17.43 ± 12.59
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

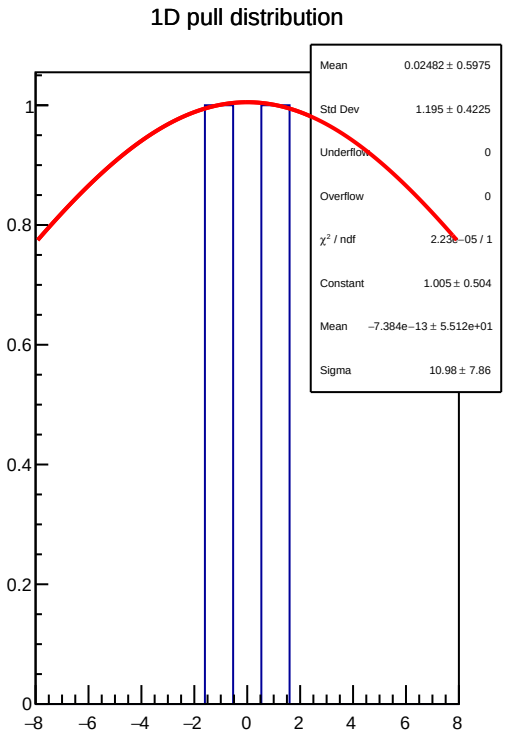

asym_atl2 RMS (ppm)
RMS (ppm)
2150
2100
2050
2000
1950
1900
1850
45
46
47
48

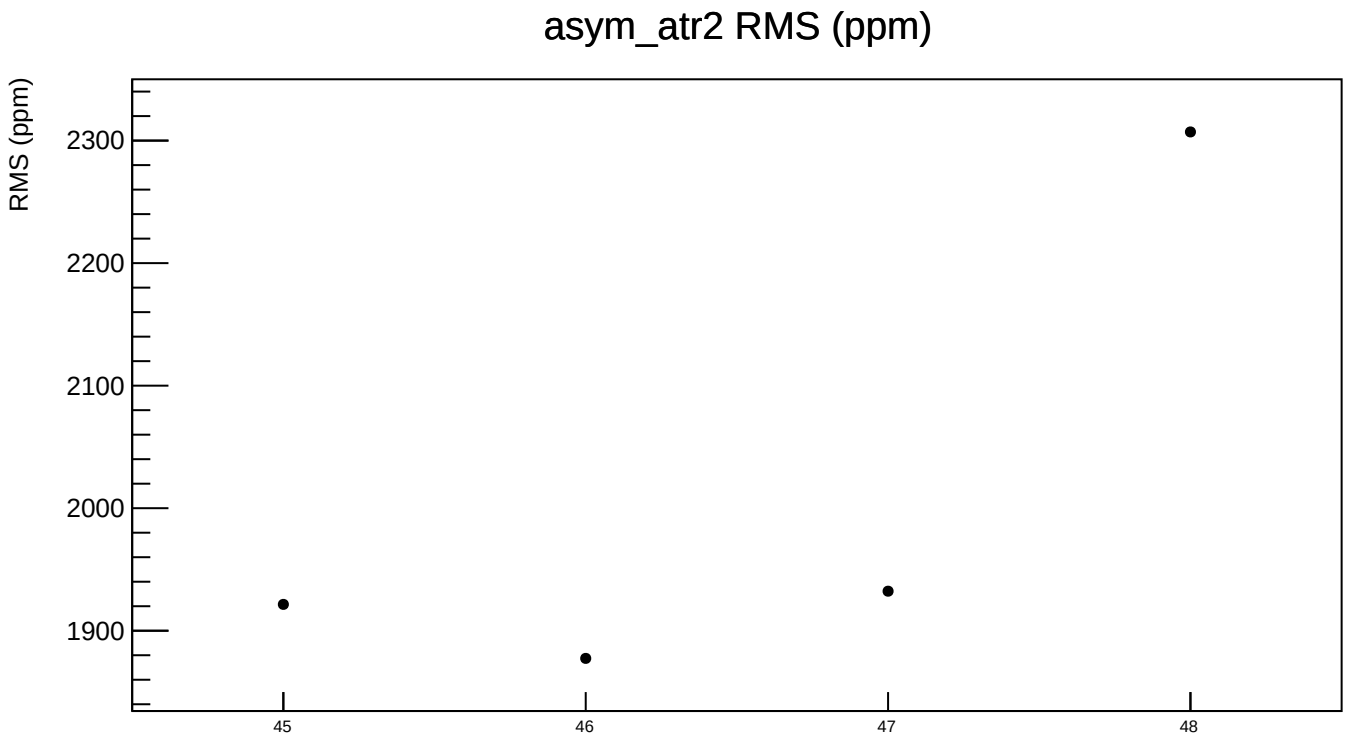

asym_atr1 (ppb)
χ² / ndf 5.588 / 3
p0 −325.1 ± 914.7
6000
4000
2000
0
−2000
−4000
2
1.5
1
0.5
0
−0.5
−1
45
46
47
48


1D pull distribution
Mean 0.06638 ± 0.5901
Std Dev 1.18 ± 0.4172
Underflow 0
Overflow 0
χ² / ndf 2.116e−08 / 0
Constant 2.181 ± 1.840
Mean 0.2666 ± 0.7255
Sigma 1.281 ± 0.939
2.2
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_atr1 RMS (ppm)
RMS (ppm)
1800
1700
1600
1500
1400
1300
45
46
47
48


asym_atr2 (ppb)
χ² / ndf 5.716 / 3
p0 −30.94 ± 1338
8000
6000
4000
2000
0
−2000
−4000
−6000
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48


1D pull distribution
Mean 0.02482 ± 0.5975
Std Dev 1.195 ± 0.4225
Underflow 0
Overflow 0
χ² / ndf 2.23e−05 / 1
Constant 1.005 ± 0.504
Mean −7.384e−13 ± 5.512e+01
Sigma 10.98 ± 7.86
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)
2300
2200
2100
2000
1900
45
46
47
48