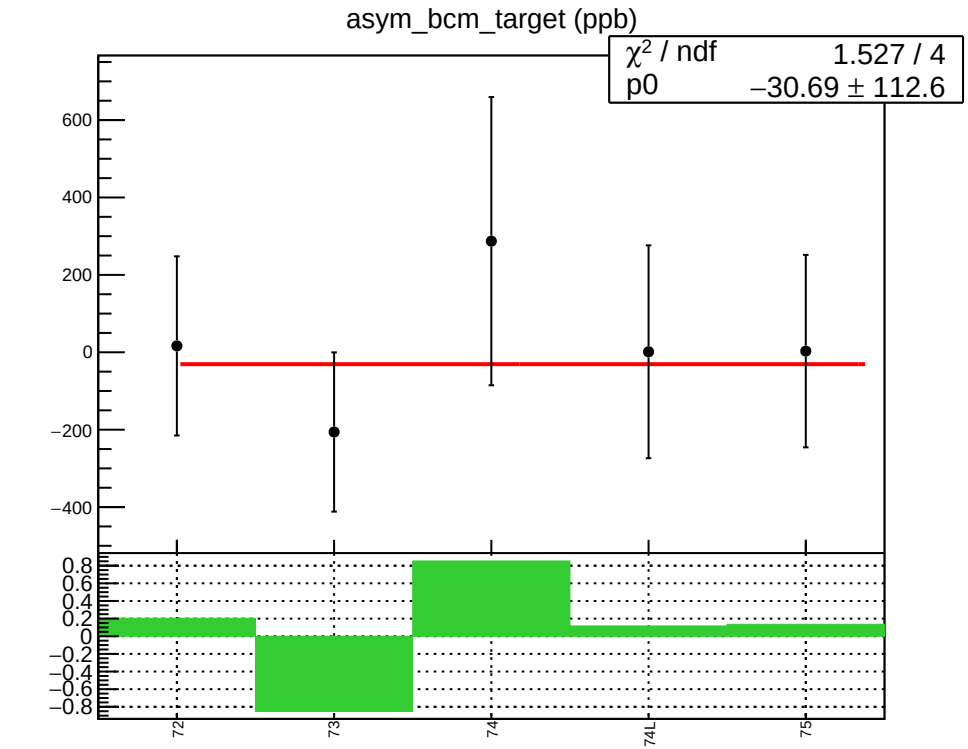
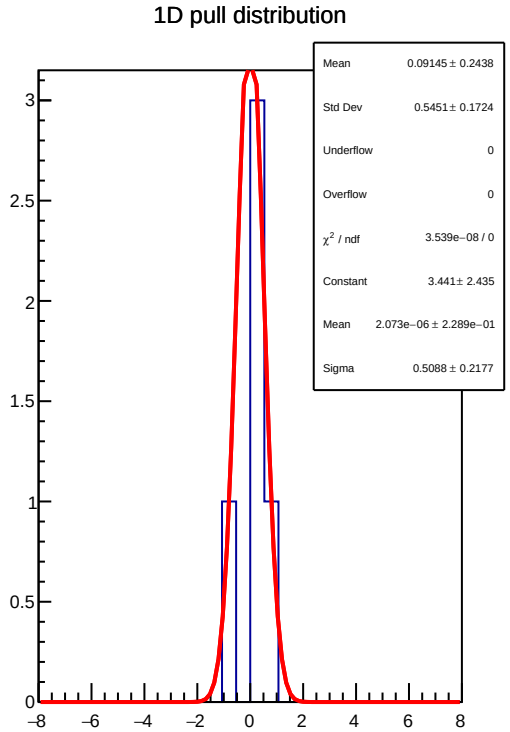
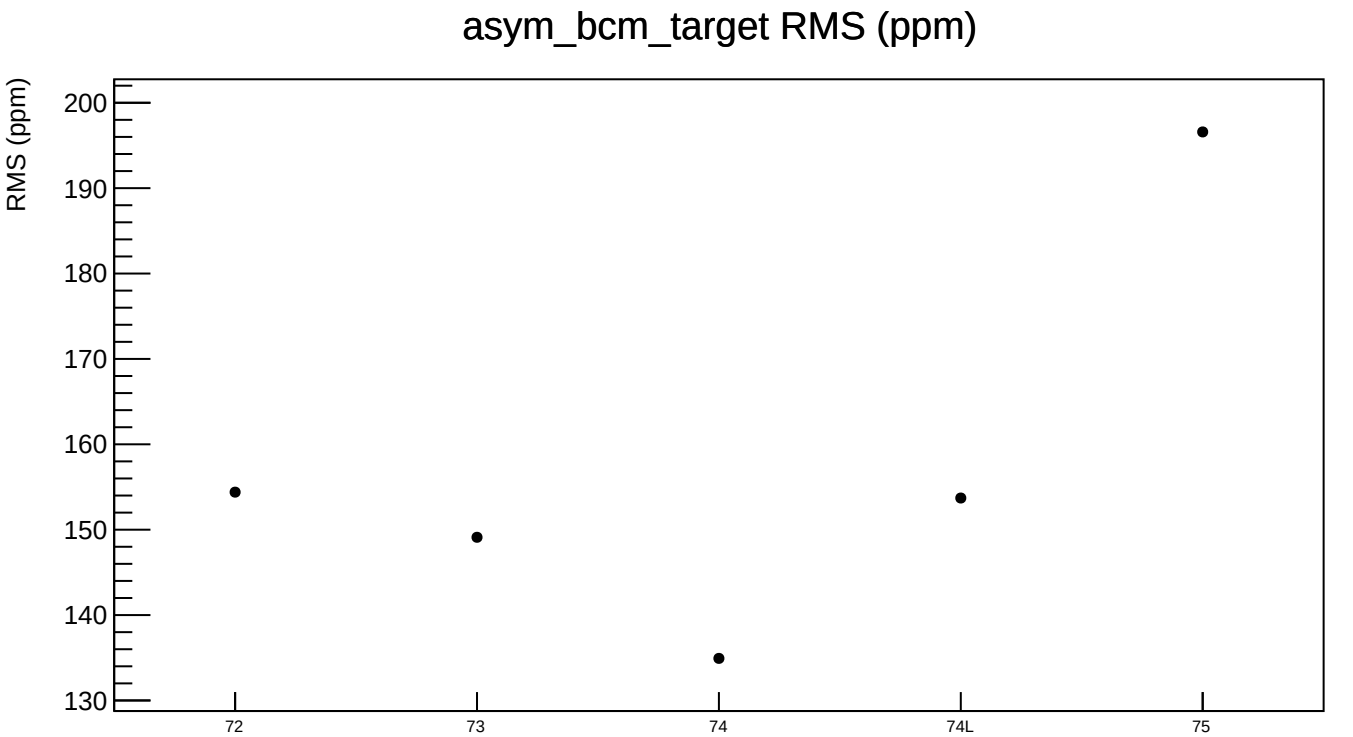
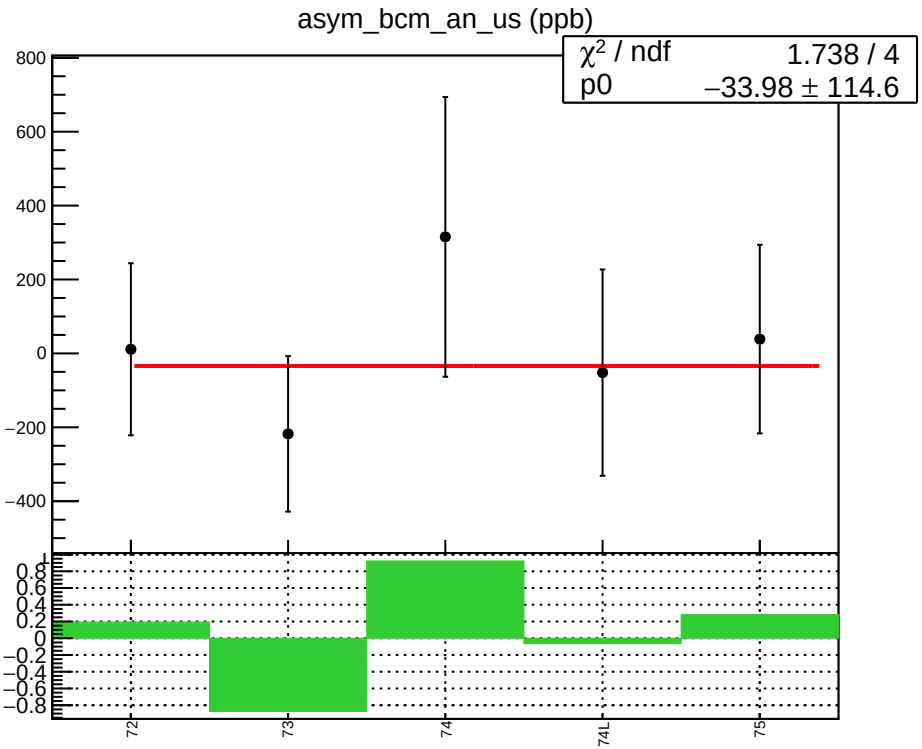
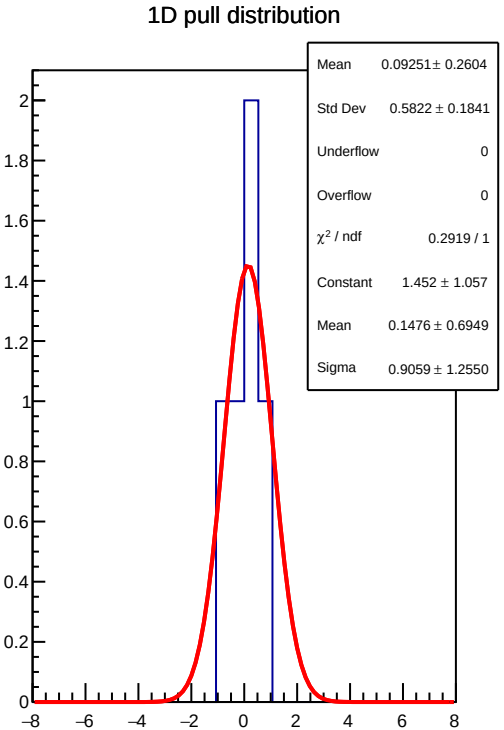

asym_bcm_target (ppb)
χ² / ndf 1.527 / 4
p0 −30.69 ± 112.6
600
400
200
0
−200
−400
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
72
73
74
74L
75

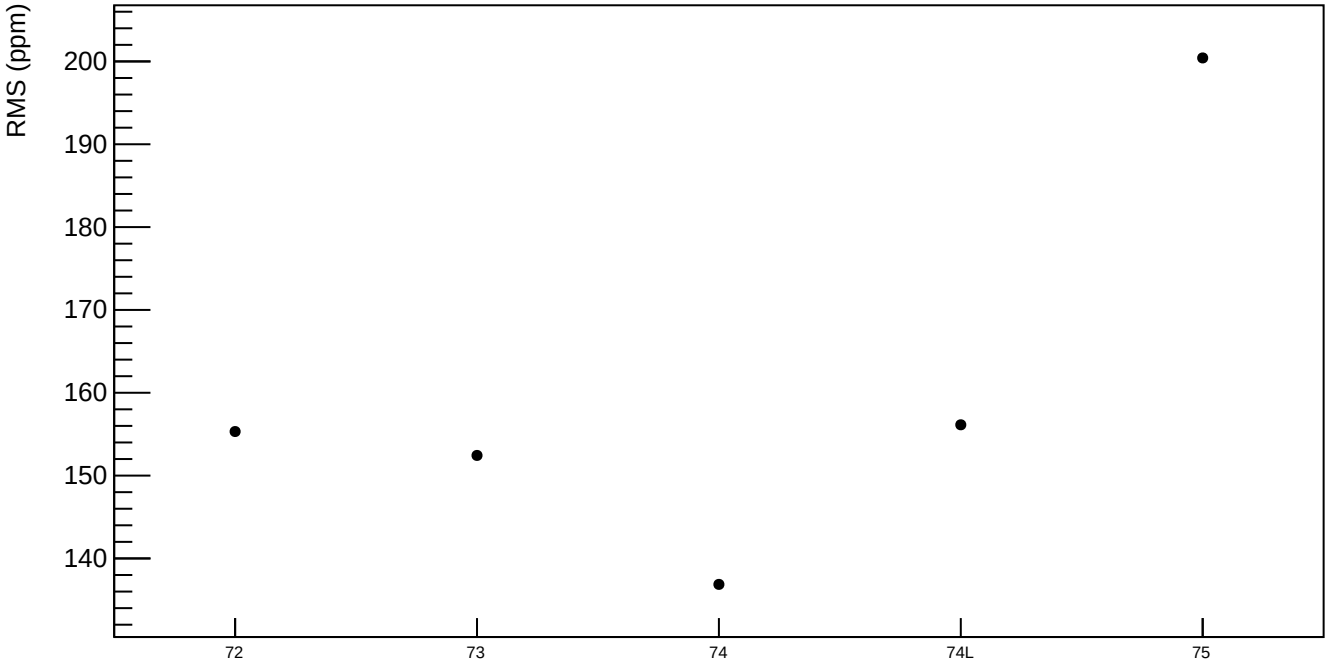

1D pull distribution
Mean 0.09145 ± 0.2438
Std Dev 0.5451 ± 0.1724
Underflow 0
Overflow 0
χ² / ndf 3.539e−08 / 0
Constant 3.441 ± 2.435
Mean 2.073e−06 ± 2.289e−01
Sigma 0.5088 ± 0.2177
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

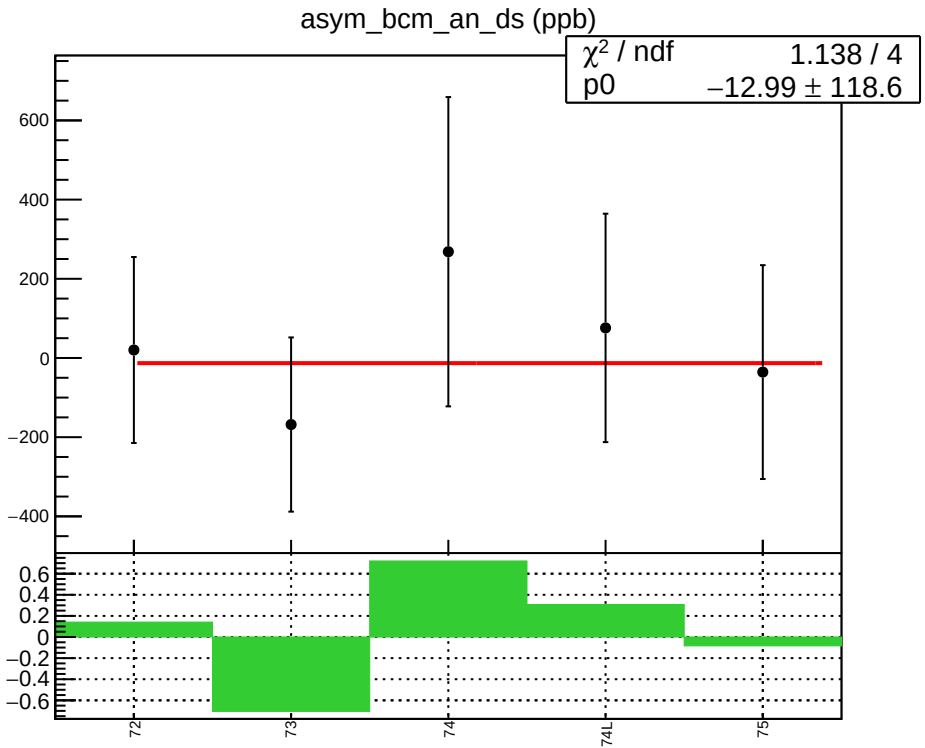

asym_bcm_target RMS (ppm)
RMS (ppm)
200
190
180
170
160
150
140
130
72
73
74
74L
75

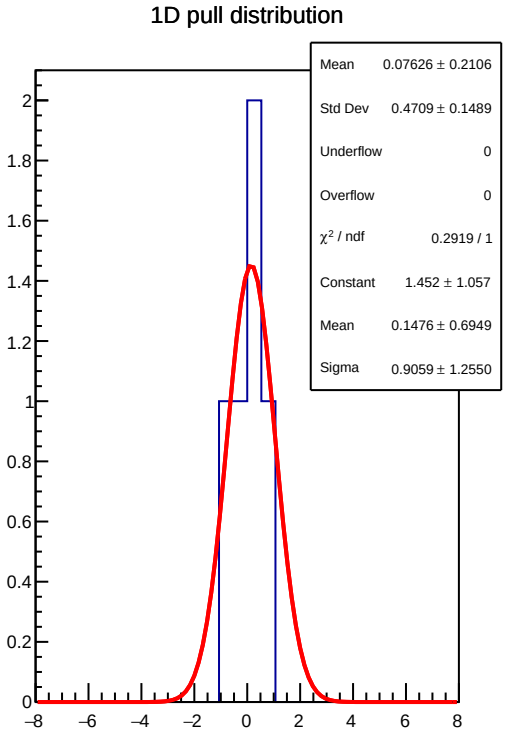

asym_bcm_an_us (ppb)
χ² / ndf 1.738 / 4
p0 −33.98 ± 114.6
800
600
400
200
0
−200
−400
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
72
73
74
74L
75

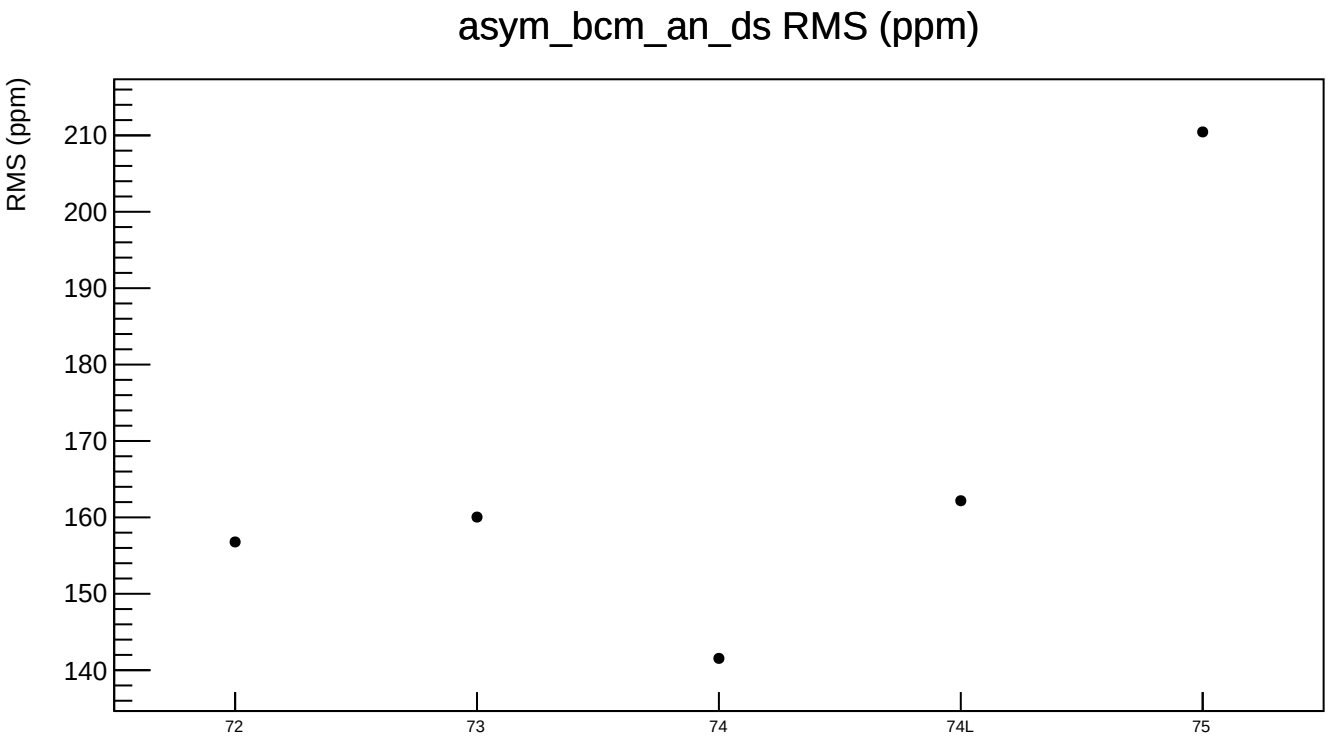

1D pull distribution
Mean 0.09251 ± 0.2604
Std Dev 0.5822 ± 0.1841
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean 0.1476 ± 0.6949
Sigma 0.9059 ± 1.2550
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

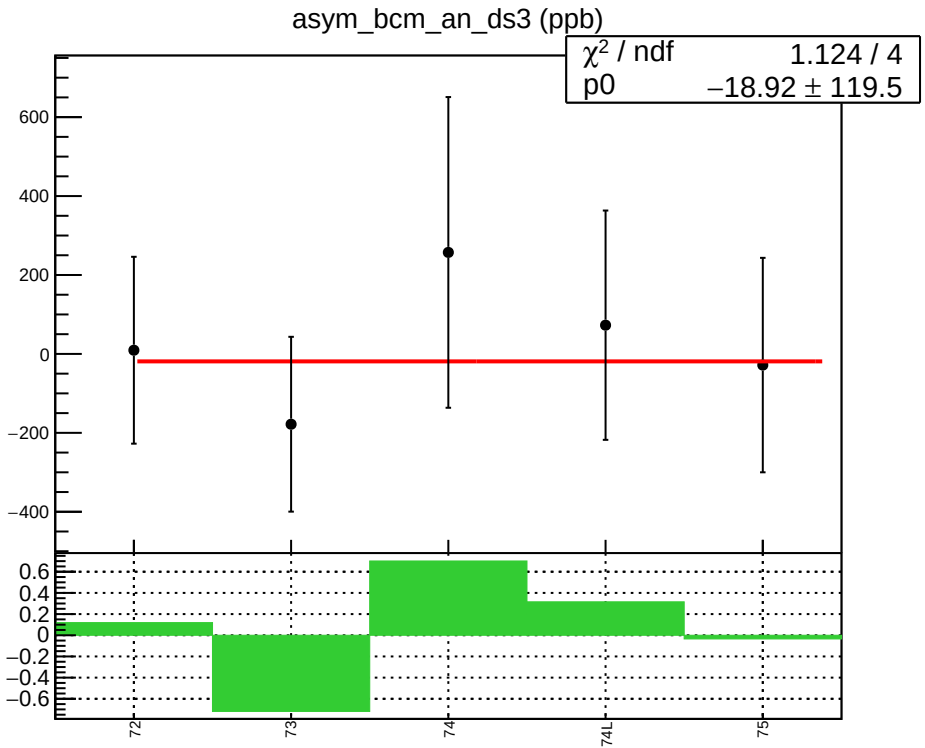
asym_bcm_an_us RMS (ppm)

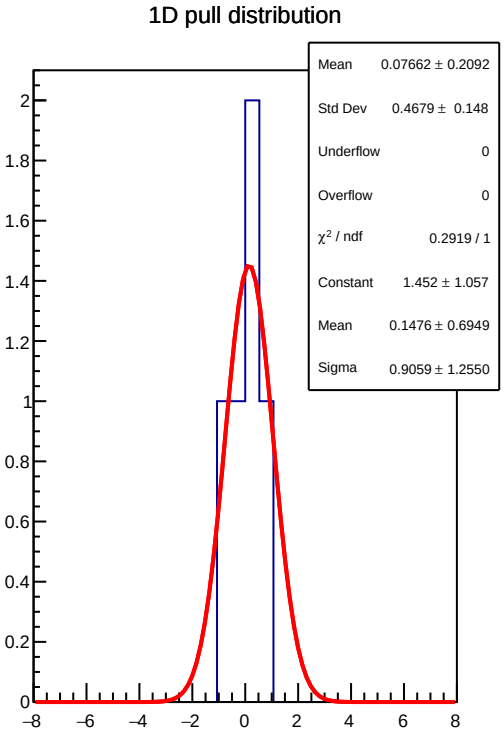


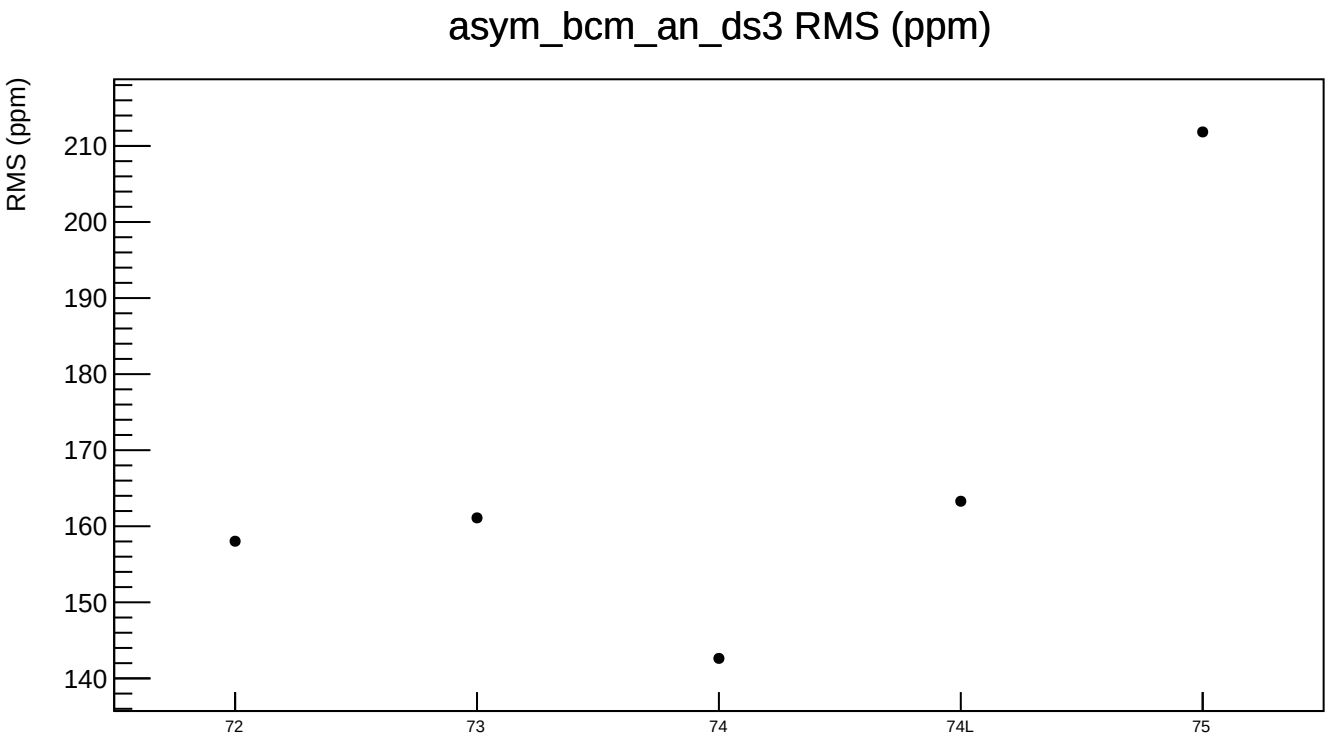

asym_bcm_an_ds (ppb)
χ² / ndf 1.138 / 4
p0 −12.99 ± 118.6
600
400
200
0
−200
−400
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
72
73
74
74L
75

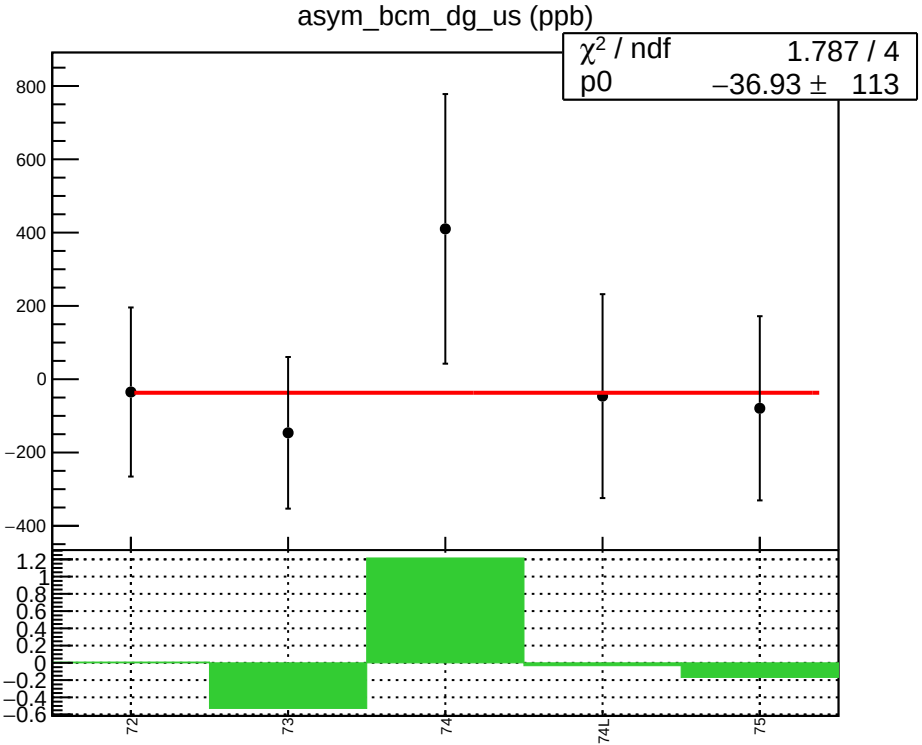

1D pull distribution
Mean 0.07626 ± 0.2106
Std Dev 0.4709 ± 0.1489
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean 0.1476 ± 0.6949
Sigma 0.9059 ± 1.2550
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

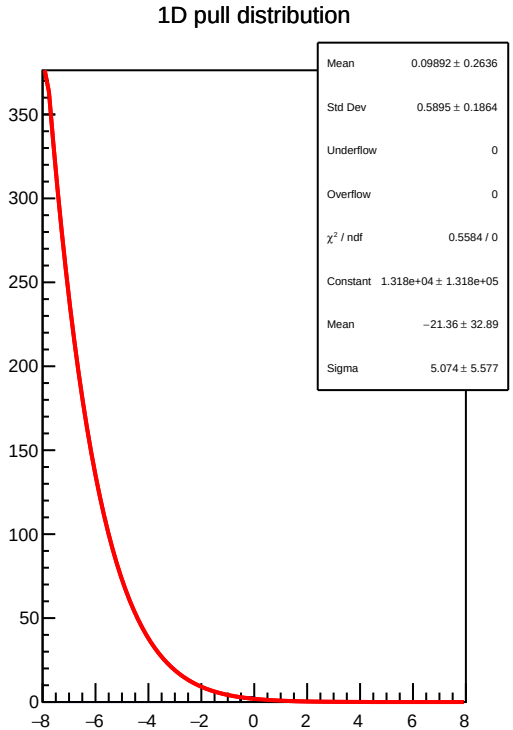

asym_bcm_an_ds RMS (ppm)
RMS (ppm)
210
200
190
180
170
160
150
140
72
73
74
74L
75

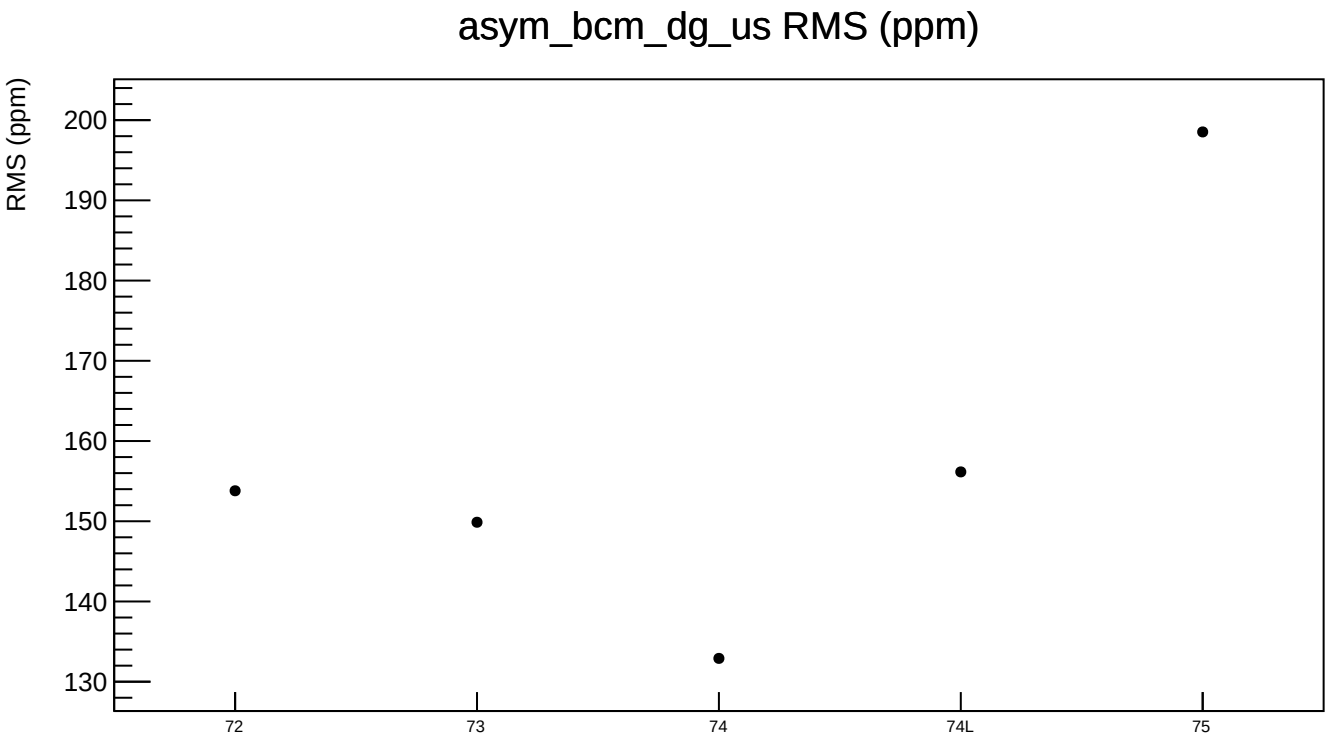

asym_bcm_an_ds3 (ppb)
χ² / ndf 1.124 / 4
p0 −18.92 ± 119.5
600
400
200
0
−200
−400
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
72
73
74
74L
75

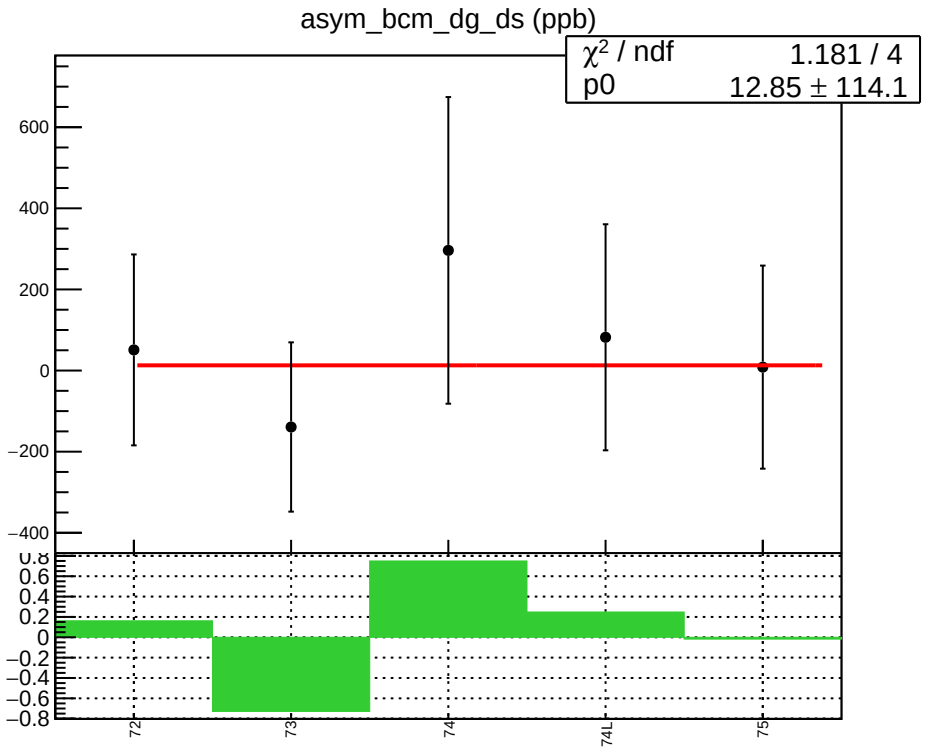

1D pull distribution
Mean 0.07662 ± 0.2092
Std Dev 0.4679 ± 0.148
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean 0.1476 ± 0.6949
Sigma 0.9059 ± 1.2550
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

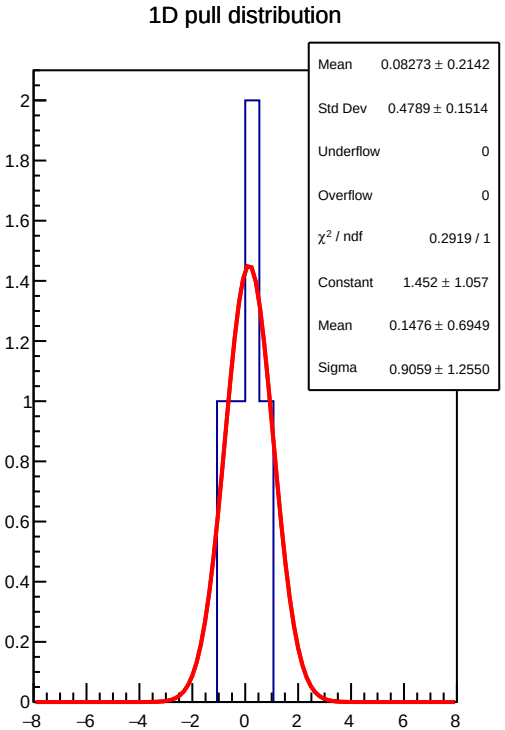

asym_bcm_an_ds3 RMS (ppm)
RMS (ppm)
210
200
190
180
170
160
150
140
72
73
74
74L
75

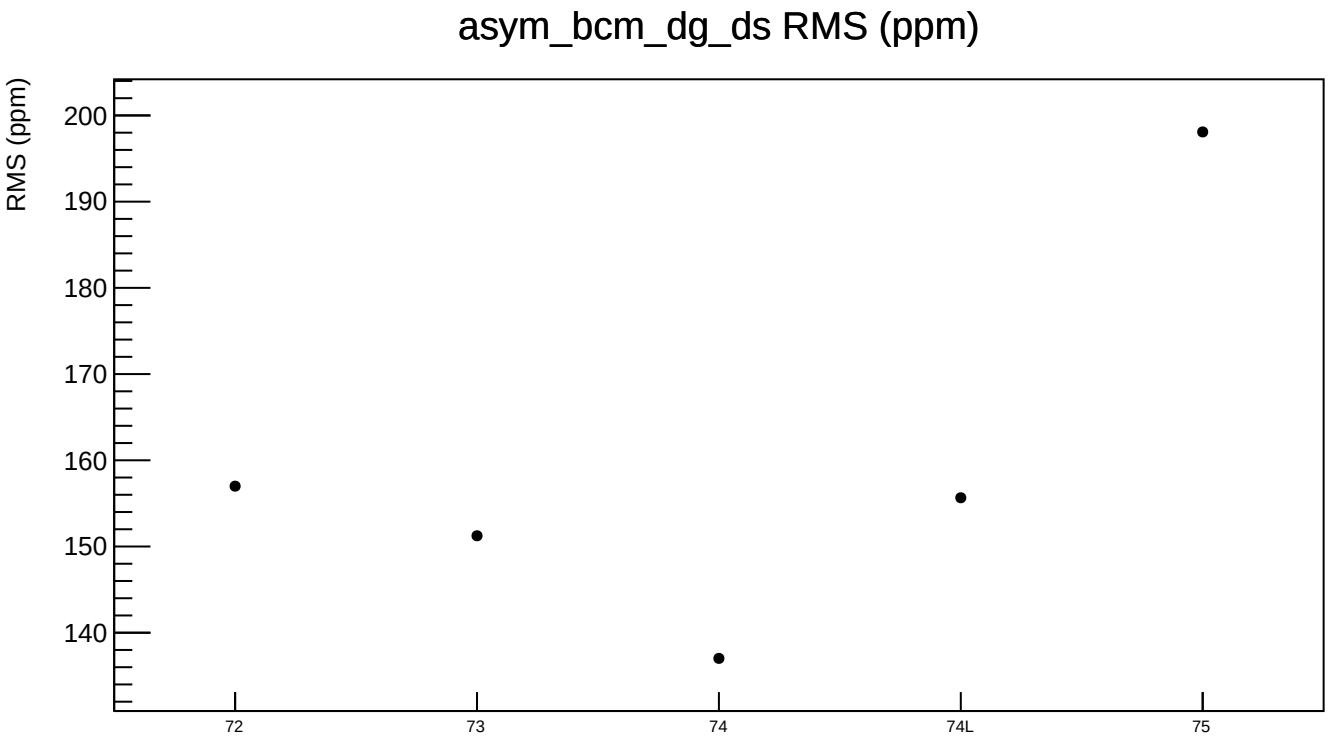

asym_bcm_dg_us (ppb)
χ² / ndf 1.787 / 4
p0 −36.93 ± 113
800
600
400
200
0
−200
−400
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
72
73
74
74L
75

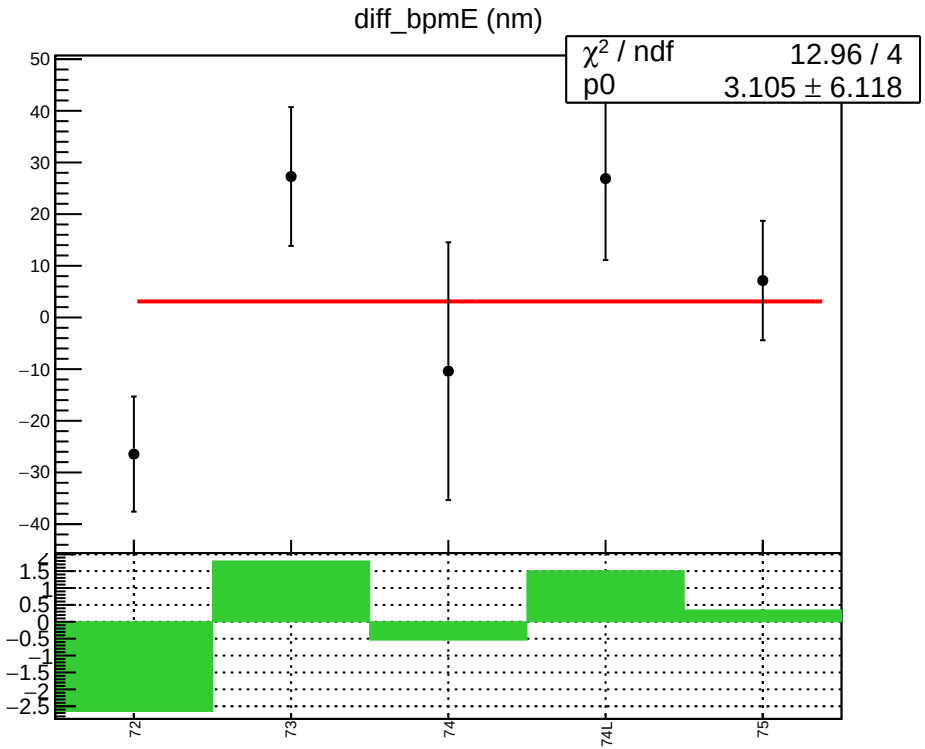

1D pull distribution
Mean 0.09892 ± 0.2636
Std Dev 0.5895 ± 0.1864
Underflow 0
Overflow 0
χ² / ndf 0.5584 / 0
Constant 1.318e+04 ± 1.318e+05
Mean −21.36 ± 32.89
Sigma 5.074 ± 5.577
350
300
250
200
150
100
50
0
−8
−6
−4
−2
0
2
4
6
8

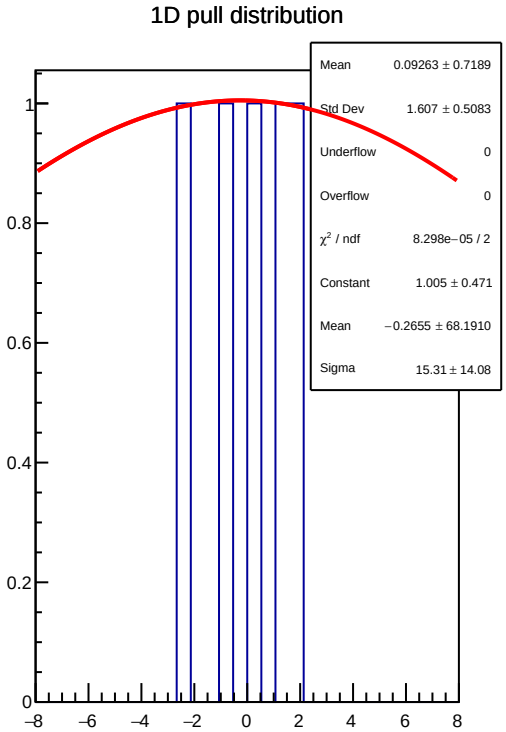

asym_bcm_dg_us RMS (ppm)
RMS (ppm)
200
190
180
170
160
150
140
130
72
73
74
74L
75


asym_bcm_dg_ds (ppb)
χ² / ndf 1.181 / 4
p0 12.85 ± 114.1
600
400
200
0
−200
−400
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
72
73
74
74L
75

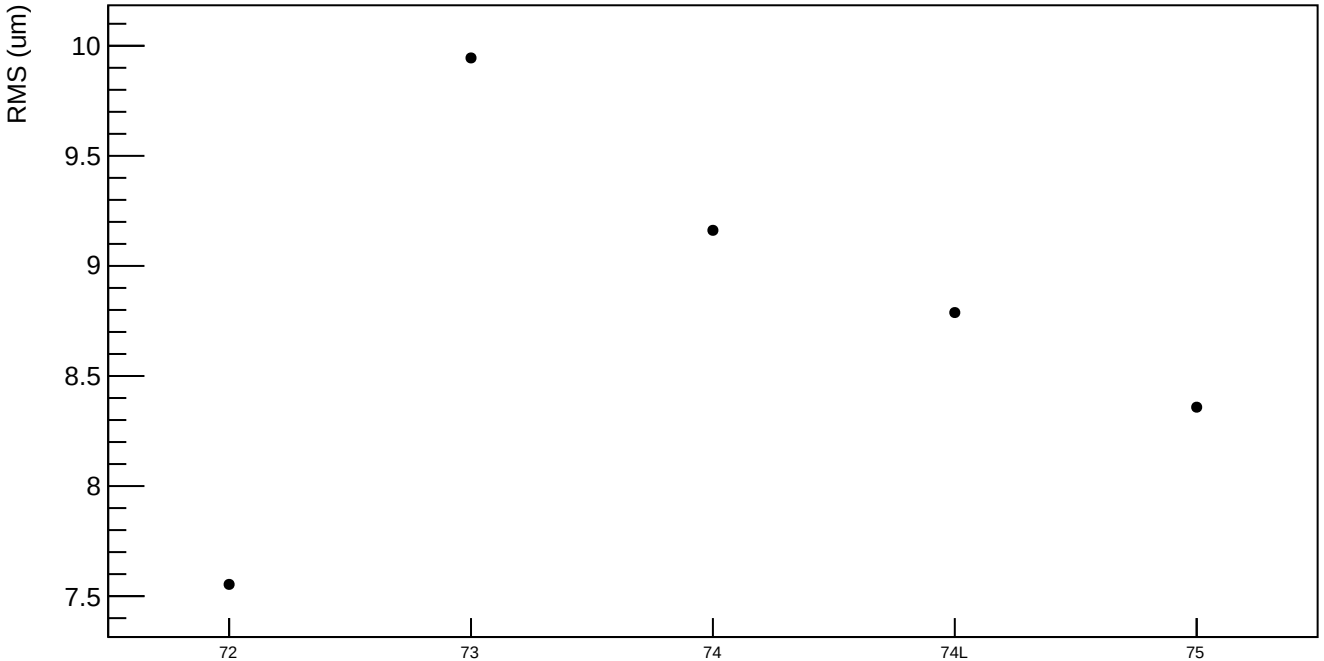

1D pull distribution
Mean 0.08273 ± 0.2142
Std Dev 0.4789 ± 0.1514
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean 0.1476 ± 0.6949
Sigma 0.9059 ± 1.2550
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

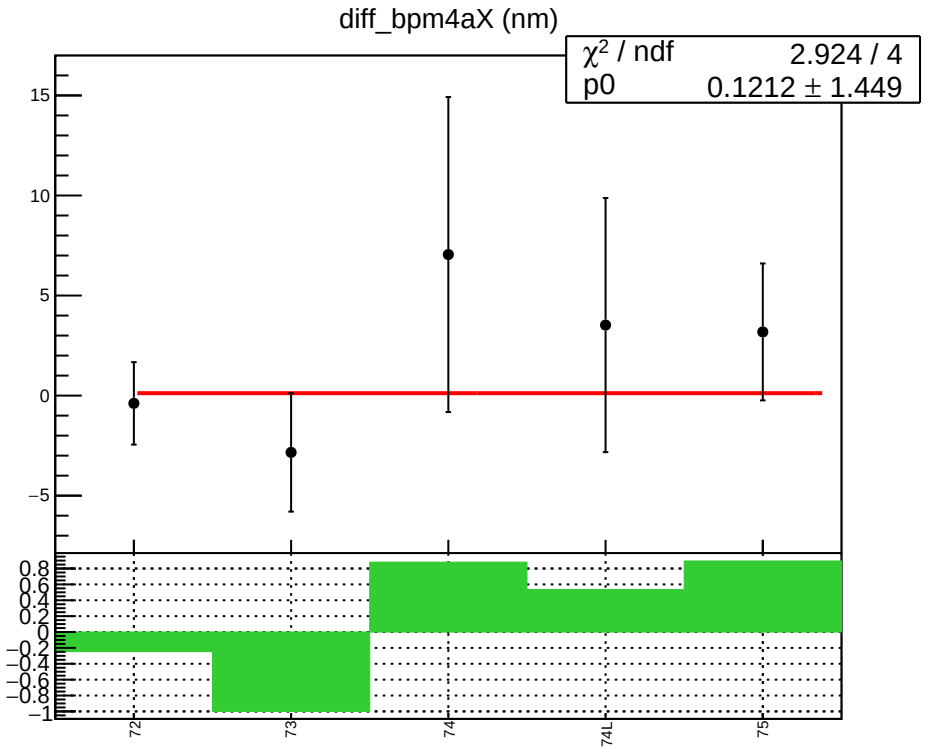

asym_bcm_dg_ds RMS (ppm)
RMS (ppm)
200
190
180
170
160
150
140
72
73
74
74L
75

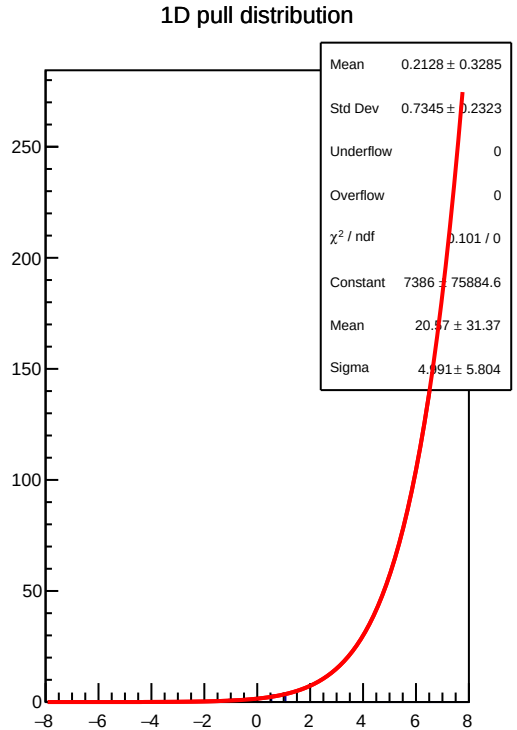

diff_bpmE (nm)
χ² / ndf 12.96 / 4
p0 3.105 ± 6.118
50
40
30
20
10
0
−10
−20
−30
−40
1.5
0.5
0
−0.5
−1
−1.5
−2
−2.5
72
73
74
74L
75

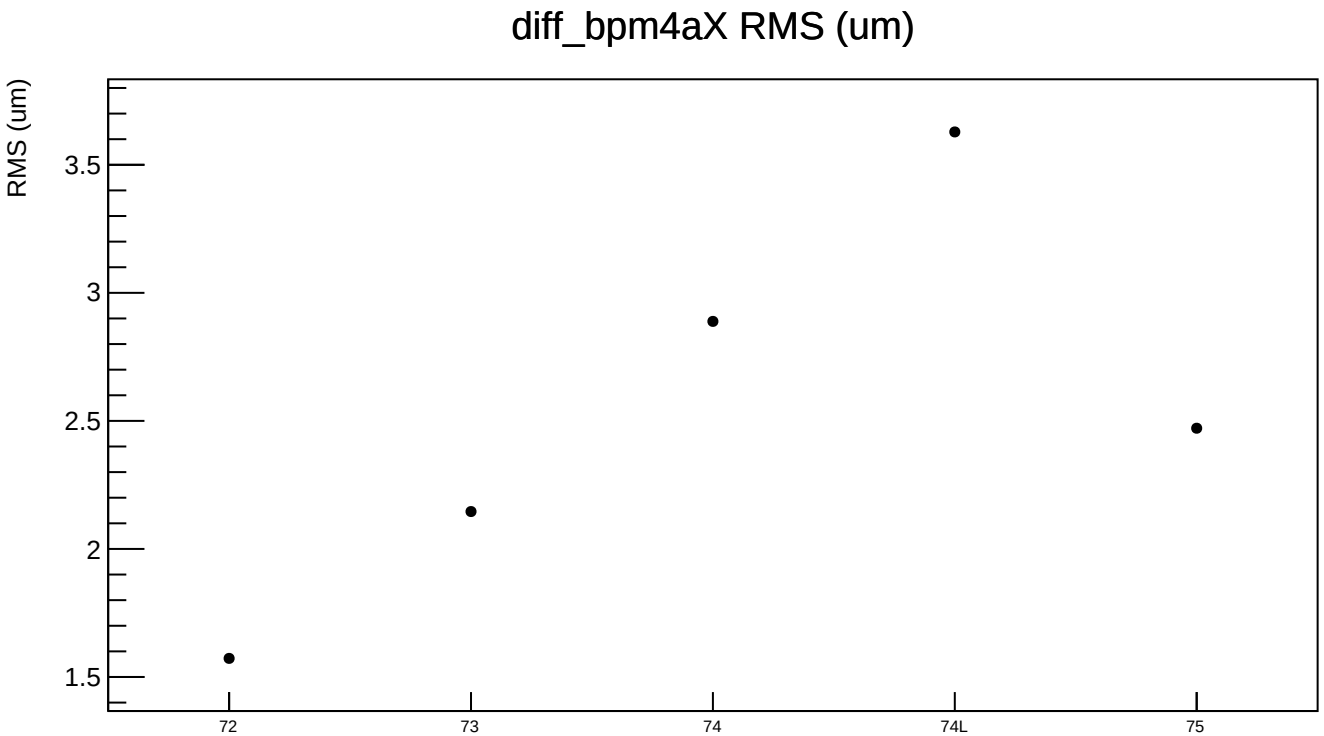

1D pull distribution
Mean 0.09263 ± 0.7189
Std Dev 1.607 ± 0.5083
Underflow 0
Overflow 0
χ² / ndf 8.298e−05 / 2
Constant 1.005 ± 0.471
Mean −0.2655 ± 68.1910
Sigma 15.31 ± 14.08
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

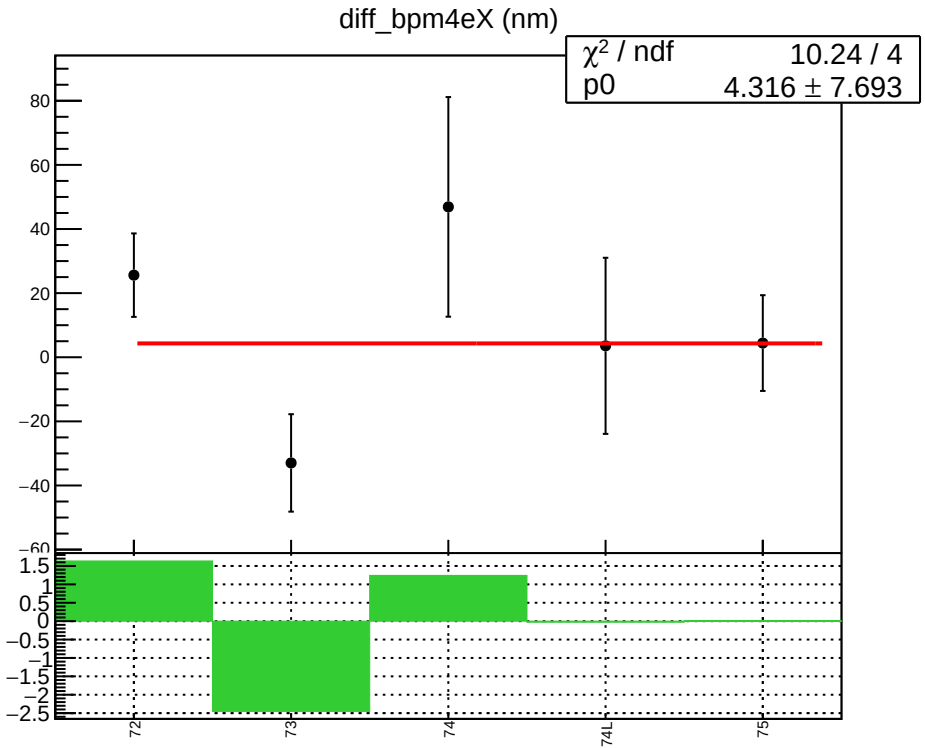
diff_bpmE RMS (um)

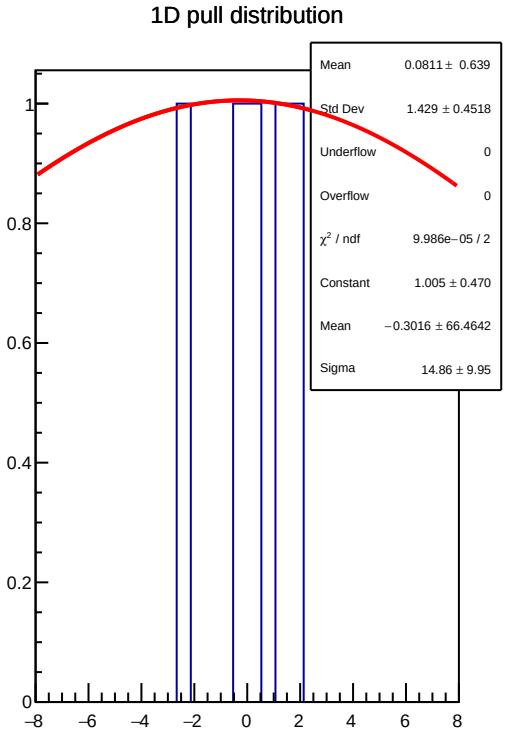


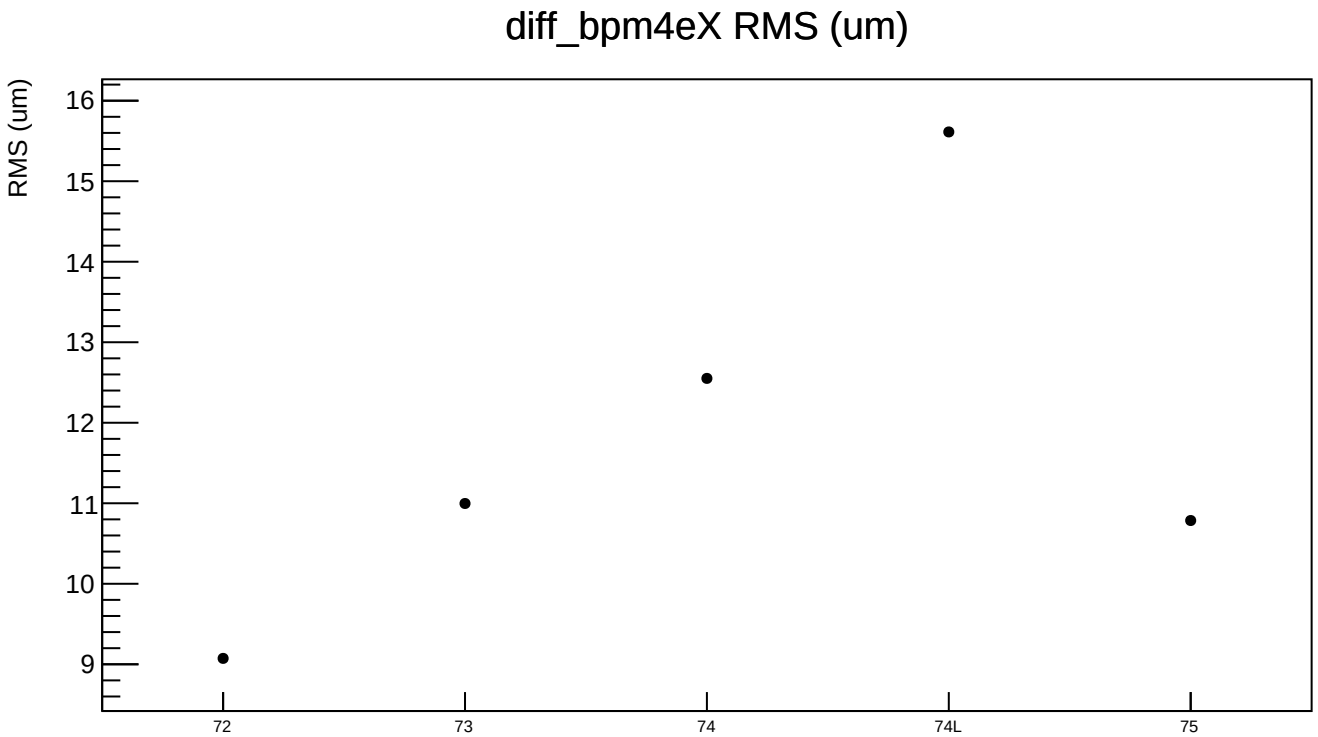

diff_bpm4aX (nm)
χ² / ndf 2.924 / 4
p0 0.1212 ± 1.449
15
10
5
0
−5
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
72
73
74
74L
75

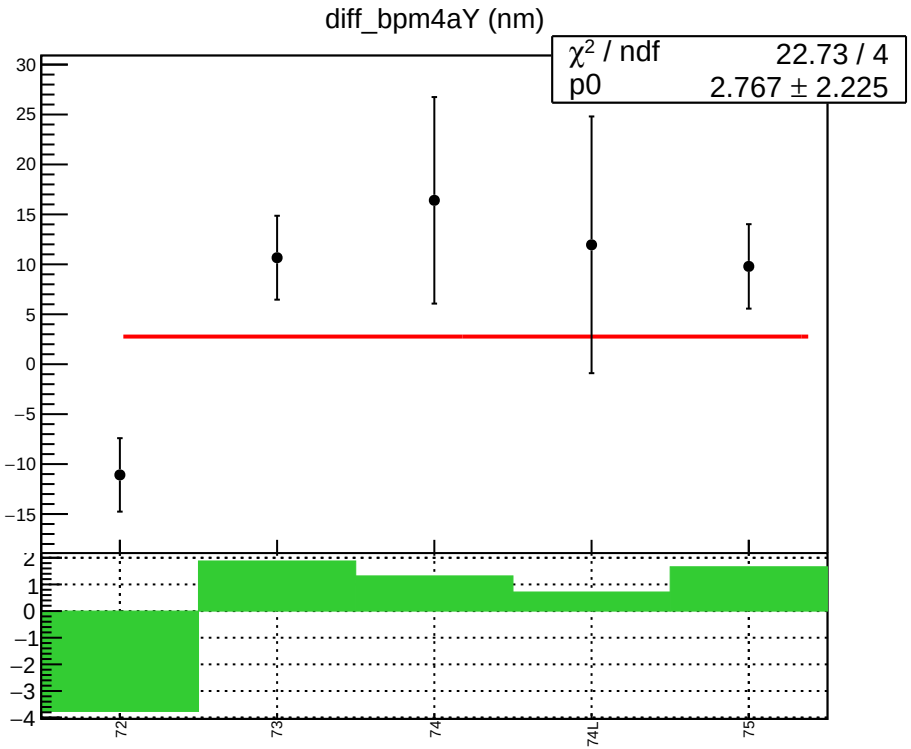

1D pull distribution
Mean 0.2128 ± 0.3285
Std Dev 0.7345 ± 0.2323
Underflow 0
Overflow 0
χ² / ndf 0.101 / 0
Constant 7386 ± 75884.6
Mean 20.57 ± 31.37
Sigma 4.991 ± 5.804
250
200
150
100
50
0
−8
−6
−4
−2
0
2
4
6
8

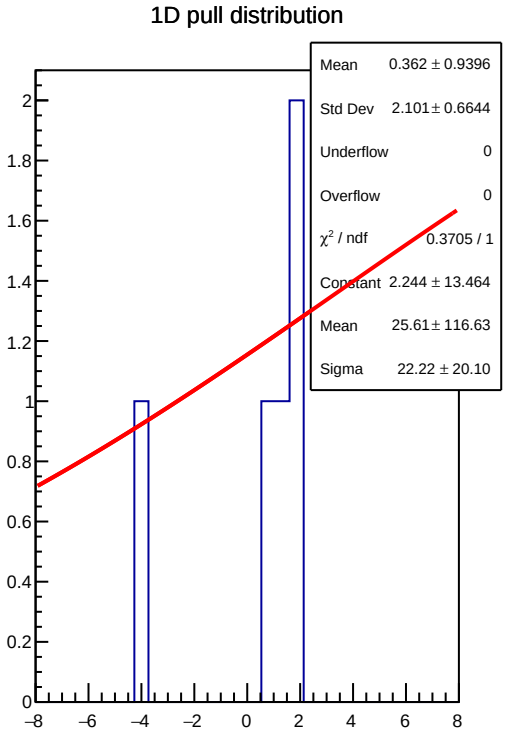

diff_bpm4aX RMS (um)
RMS (um)
3.5
3
2.5
2
1.5
72
73
74
74L
75

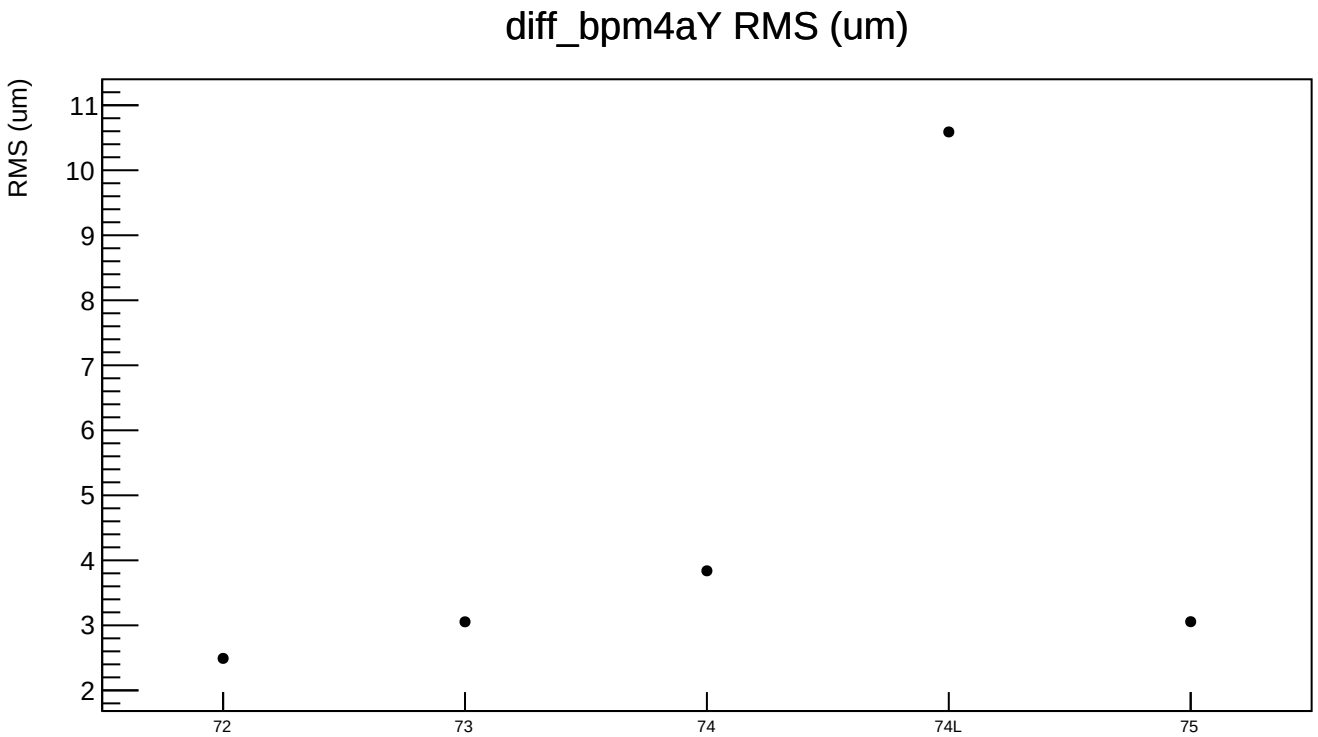

diff_bpm4eX (nm)
χ² / ndf 10.24 / 4
p0 4.316 ± 7.693
80
60
40
20
0
−20
−40
−60
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
72
73
74
74L
75

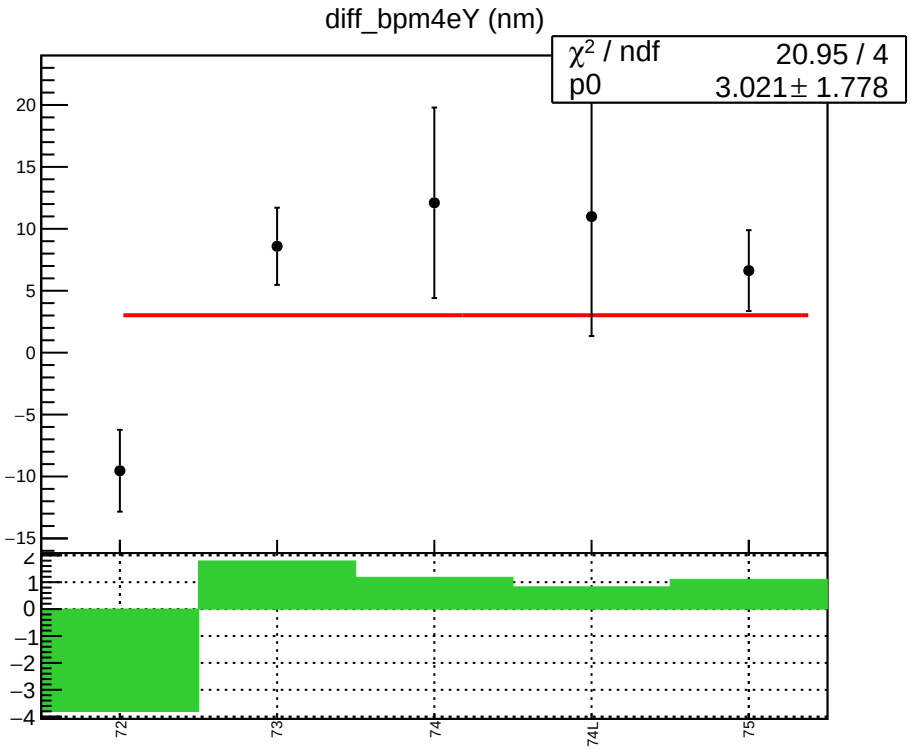

1D pull distribution
Mean 0.0811 ± 0.639
Std Dev 1.429 ± 0.4518
Underflow 0
Overflow 0
χ² / ndf 9.986e−05 / 2
Constant 1.005 ± 0.470
Mean −0.3016 ± 66.4642
Sigma 14.86 ± 9.95
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

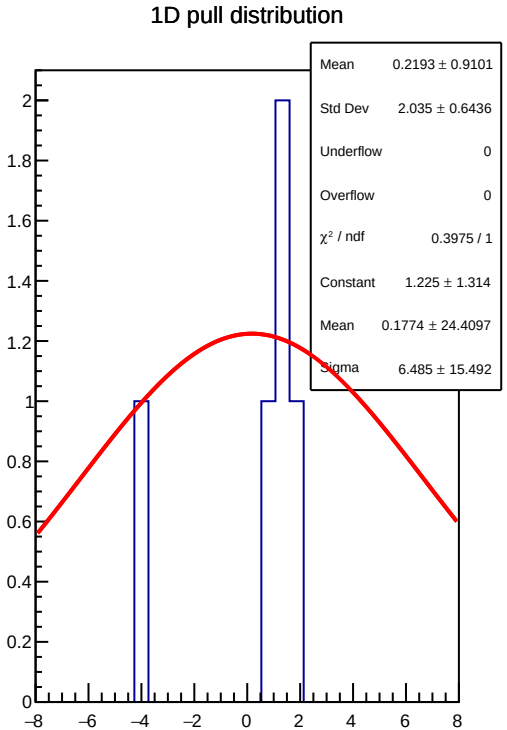

diff_bpm4eX RMS (um)
RMS (um)
16
15
14
13
12
11
10
9
72
73
74
74L
75


diff_bpm4aY (nm)
χ² / ndf 22.73 / 4
p0 2.767 ± 2.225
72
73
74
74L
75

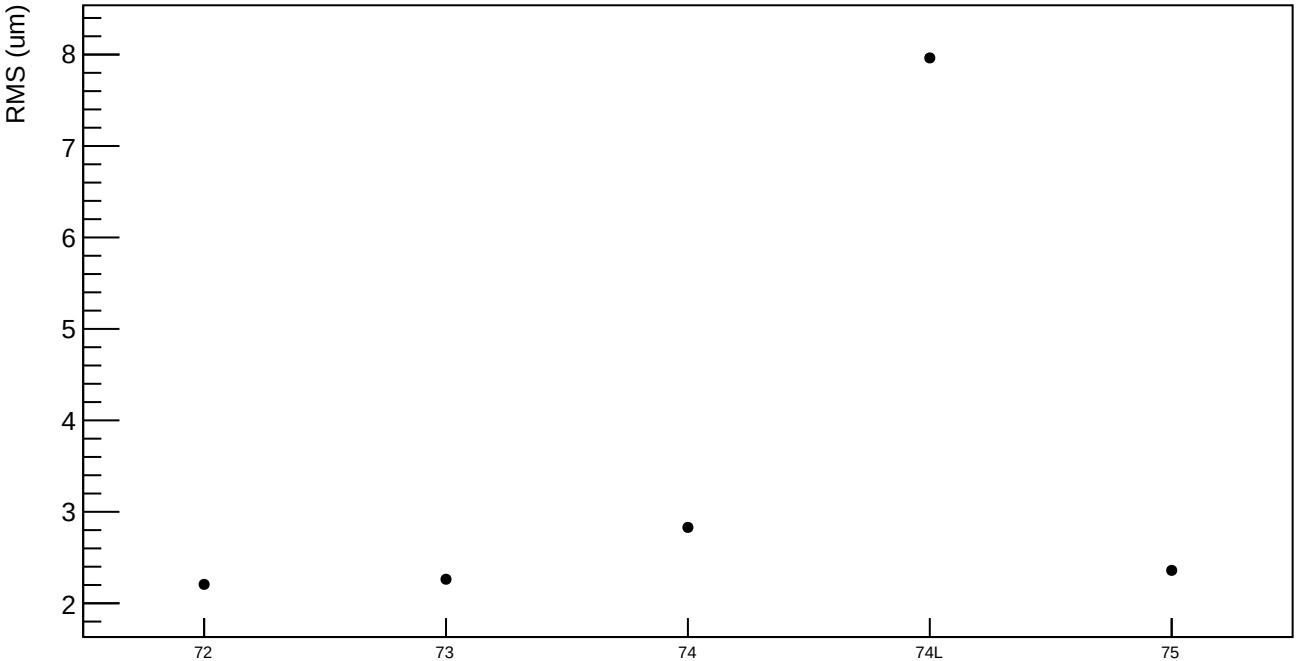

1D pull distribution
Mean 0.362 ± 0.9396
Std Dev 2.101 ± 0.6644
Underflow 0
Overflow 0
χ² / ndf 0.3705 / 1
Constant 2.244 ± 13.464
Mean 25.61 ± 116.63
Sigma 22.22 ± 20.10

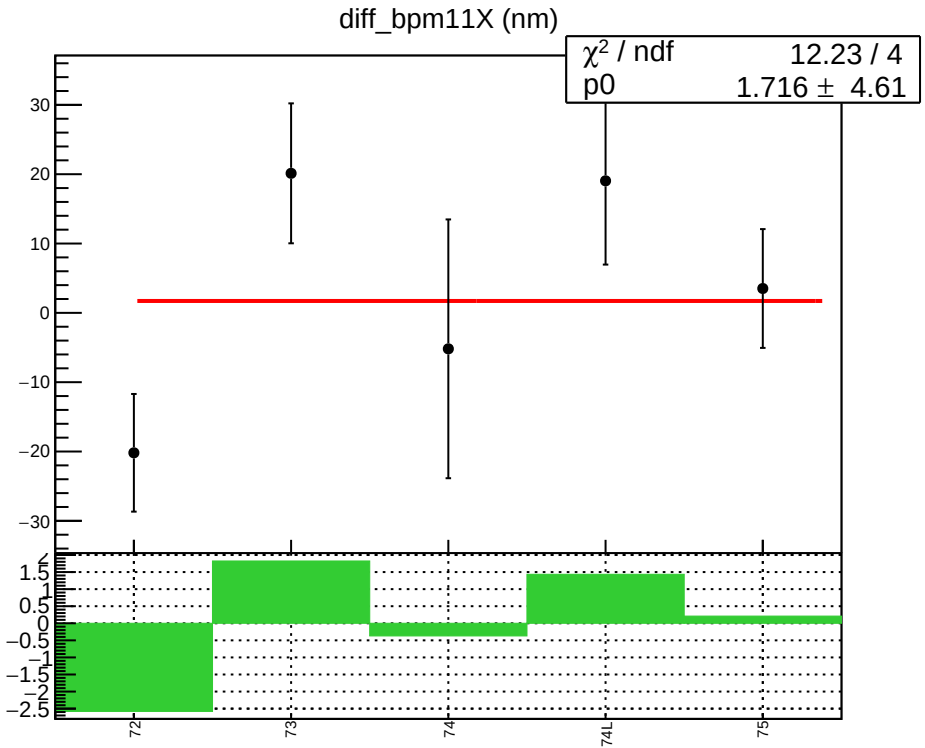

diff_bpm4aY RMS (um)
RMS (um)
11
10
9
8
7
6
5
4
3
2
72
73
74
74L
75

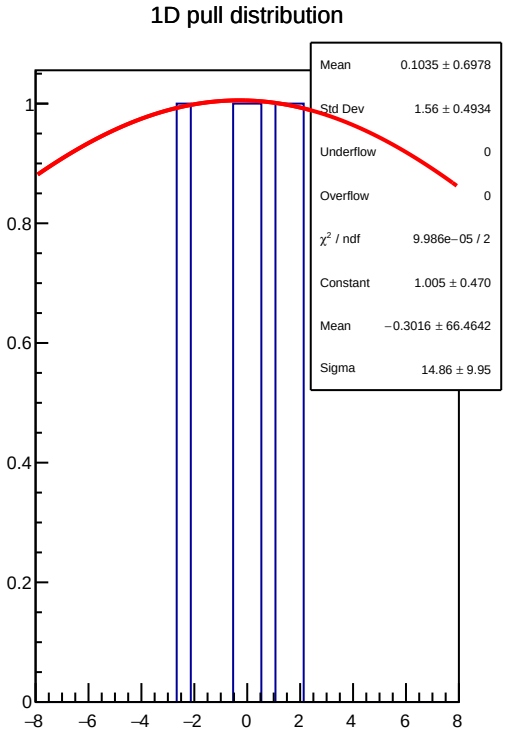

diff_bpm4eY (nm)
χ² / ndf 20.95 / 4
p0 3.021 ± 1.778
72
73
74
74L
75

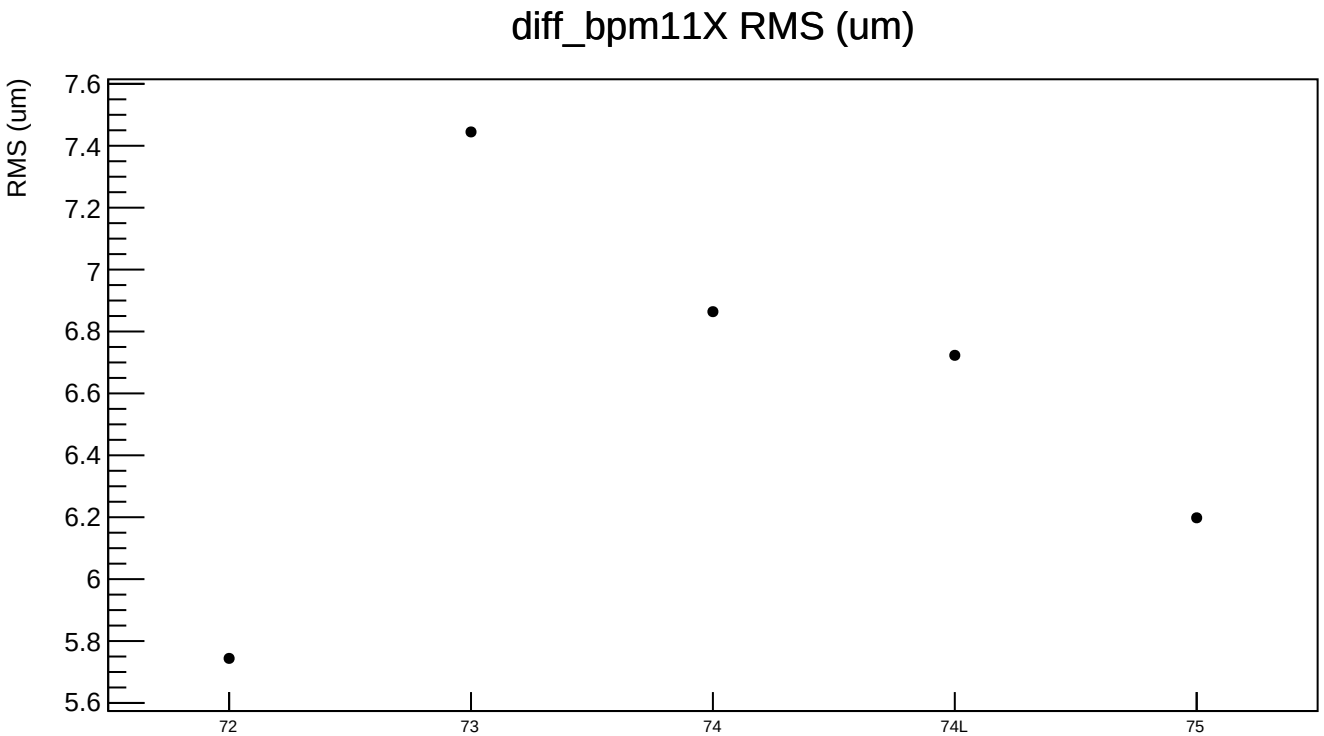

1D pull distribution
Mean 0.2193 ± 0.9101
Std Dev 2.035 ± 0.6436
Underflow 0
Overflow 0
χ² / ndf 0.3975 / 1
Constant 1.225 ± 1.314
Mean 0.1774 ± 24.4097
Sigma 6.485 ± 15.492

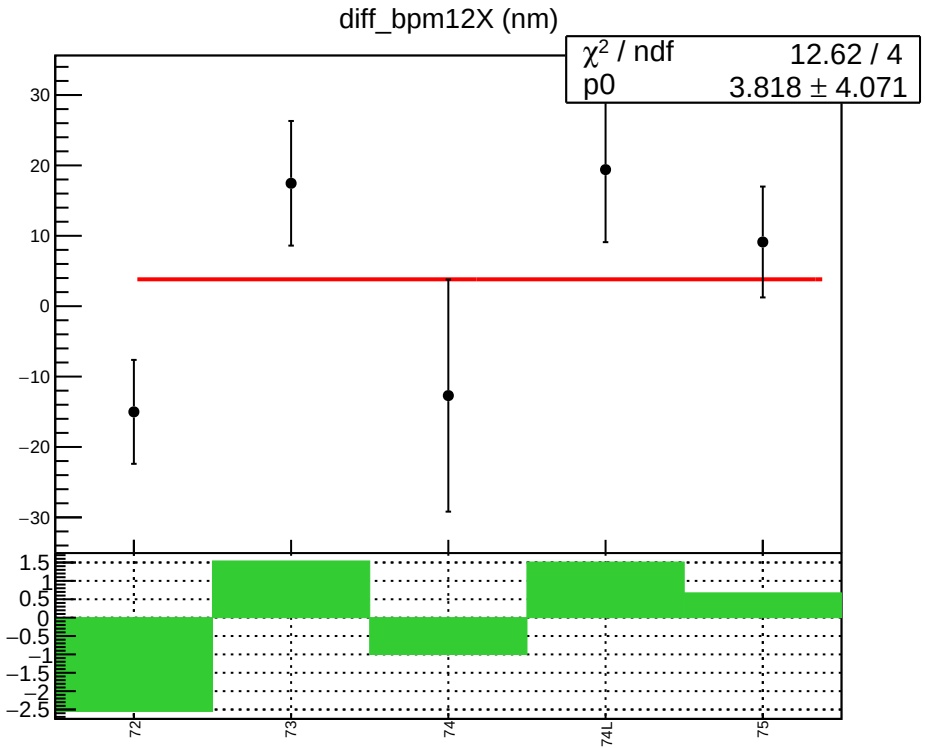
diff_bpm4eY RMS (um)

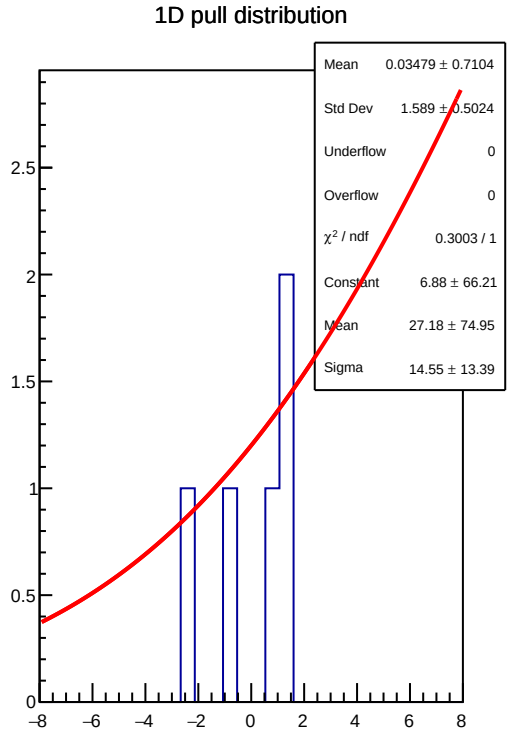


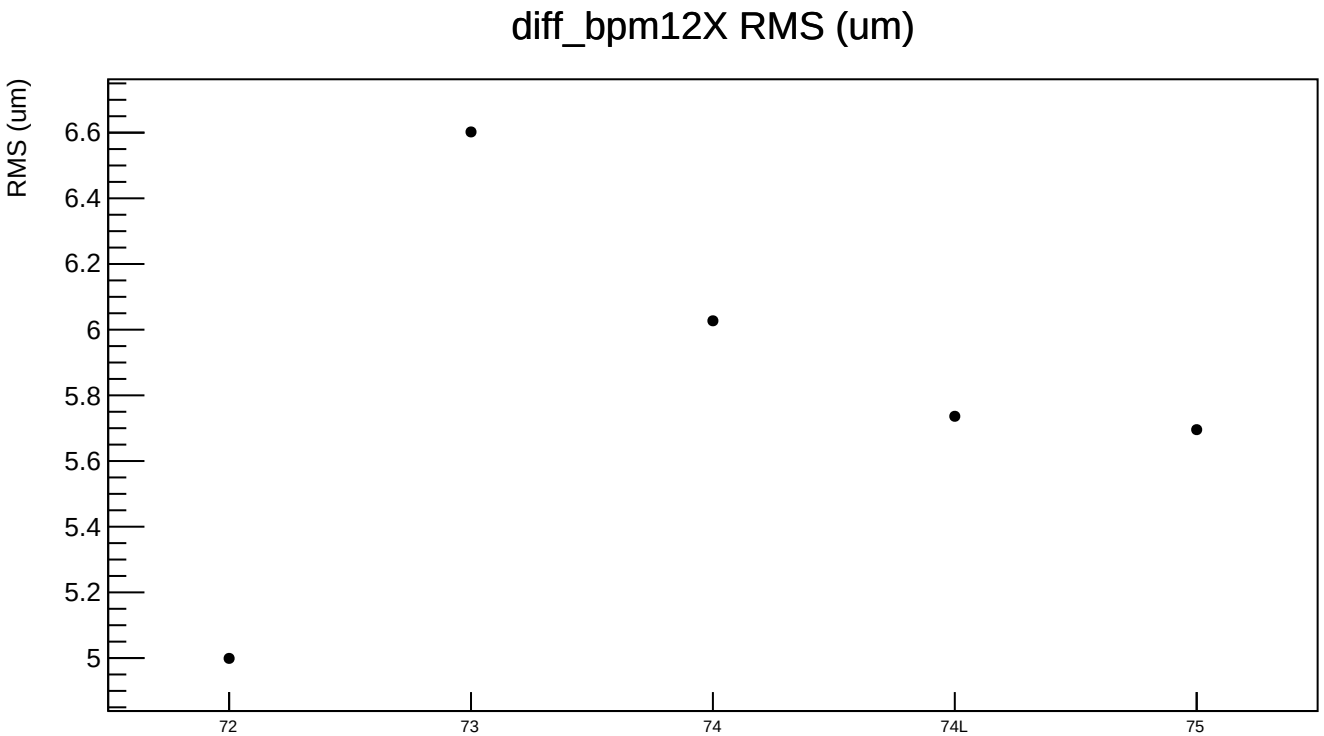

diff_bpm11X (nm)
χ² / ndf 12.23 / 4
p0 1.716 ± 4.61
72
73
74
74L
75

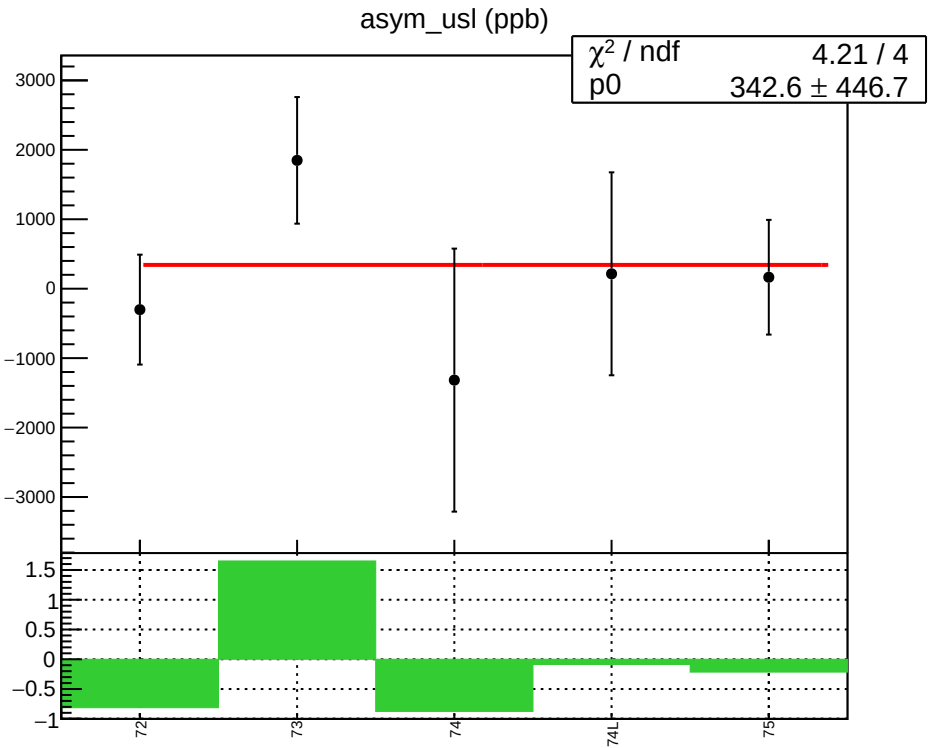

1D pull distribution
Mean 0.1035 ± 0.6978
Std Dev 1.56 ± 0.4934
Underflow 0
Overflow 0
χ² / ndf 9.986e−05 / 2
Constant 1.005 ± 0.470
Mean −0.3016 ± 66.4642
Sigma 14.86 ± 9.95

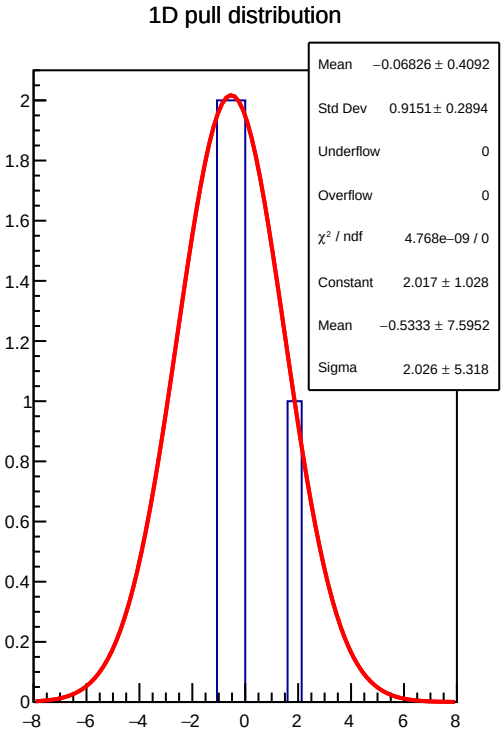

diff_bpm11X RMS (um)
RMS (um)
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
5.8
5.6
72
73
74
74L
75

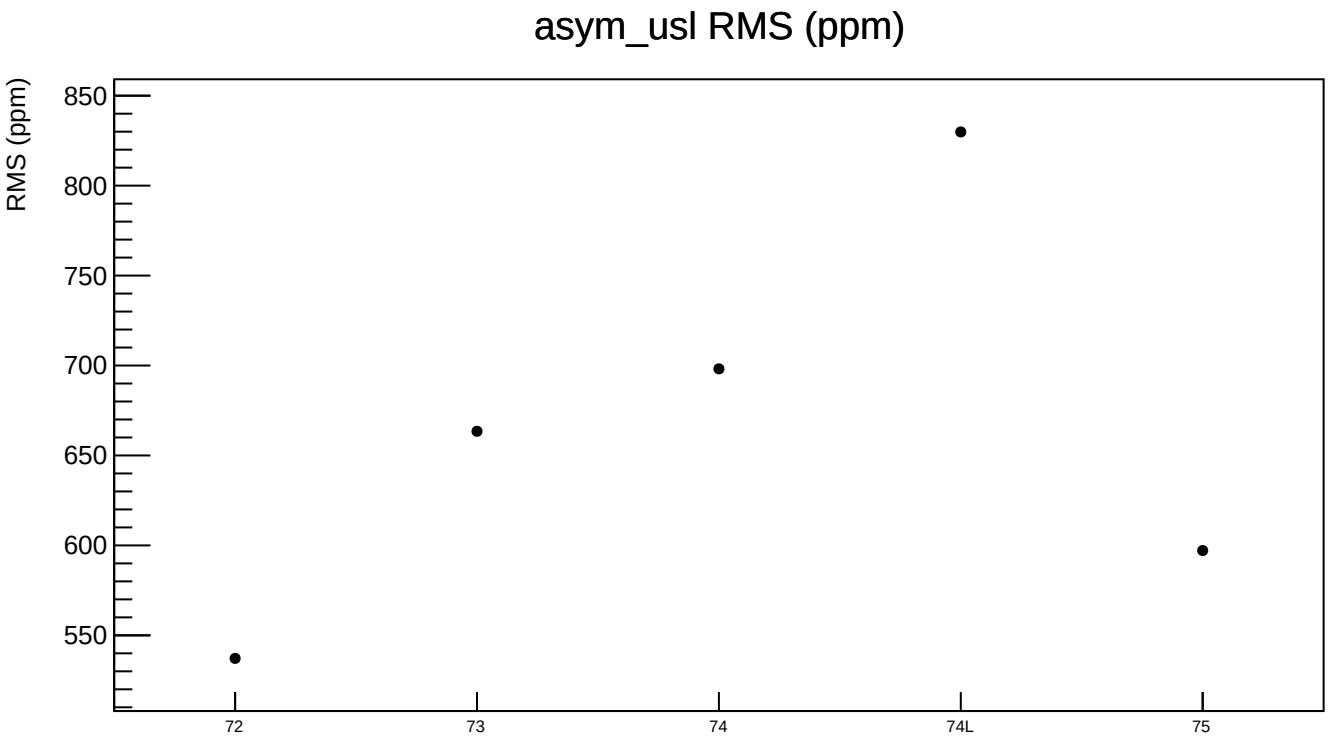

diff_bpm12X (nm)
χ² / ndf 12.62 / 4
p0 3.818 ± 4.071
30
20
10
0
−10
−20
−30
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
72
73
74
74L
75

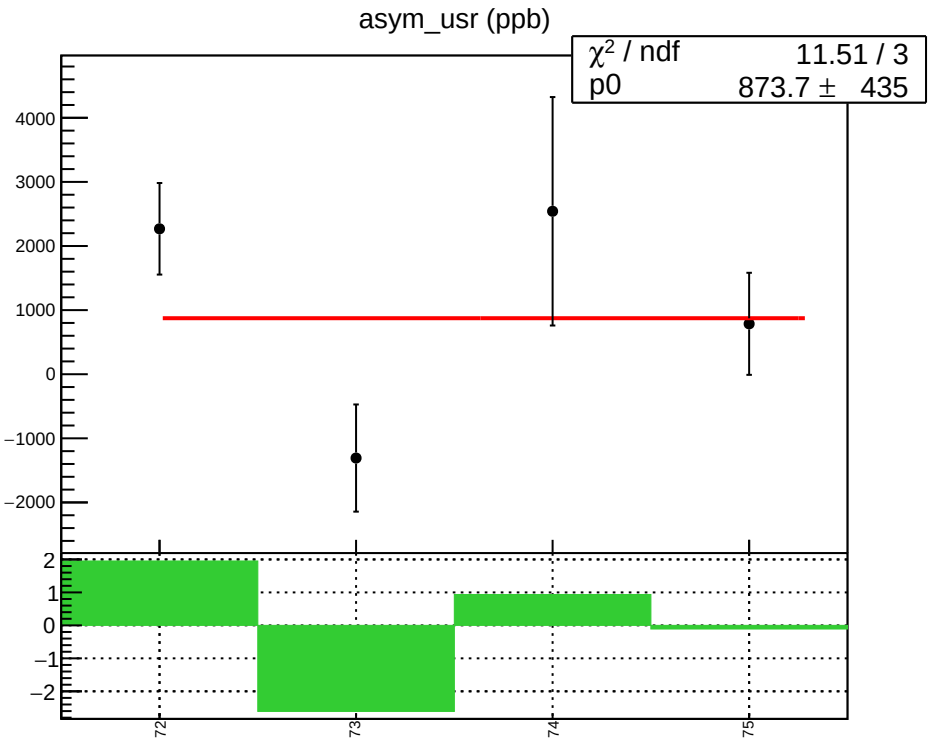

1D pull distribution
Mean 0.03479 ± 0.7104
Std Dev 1.589 ± 0.5024
Underflow 0
Overflow 0
χ² / ndf 0.3003 / 1
Constant 6.88 ± 66.21
Mean 27.18 ± 74.95
Sigma 14.55 ± 13.39
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

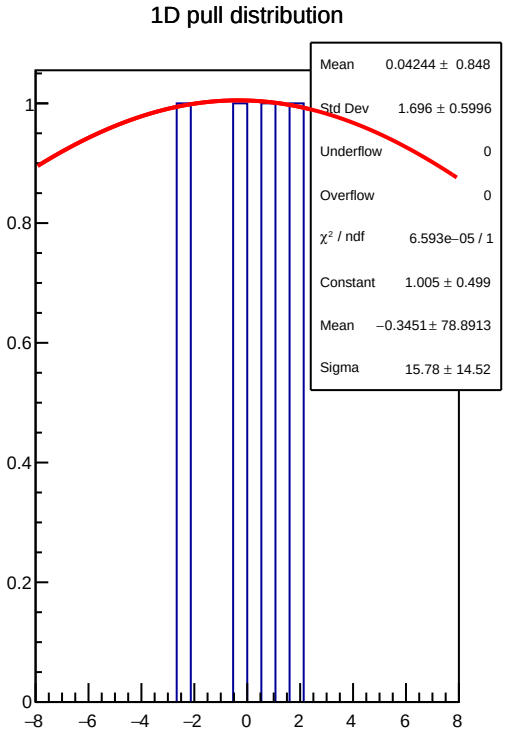

diff_bpm12X RMS (um)
RMS (um)
6.6
6.4
6.2
6
5.8
5.6
5.4
5.2
5
72
73
74
74L
75

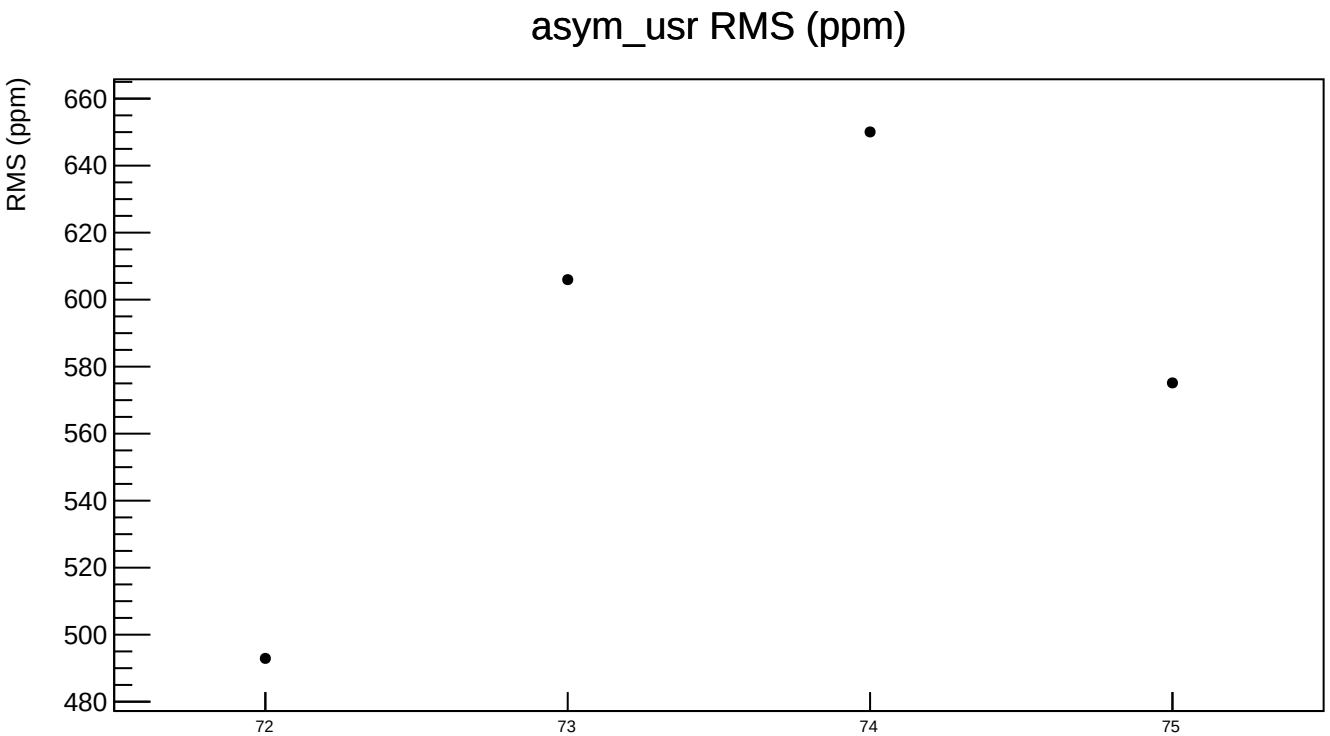

asym_usl (ppb)
χ² / ndf 4.21 / 4
p0 342.6 ± 446.7
3000
2000
1000
0
−1000
−2000
−3000
1.5
1
0.5
0
−0.5
−1
72
73
74
74L
75

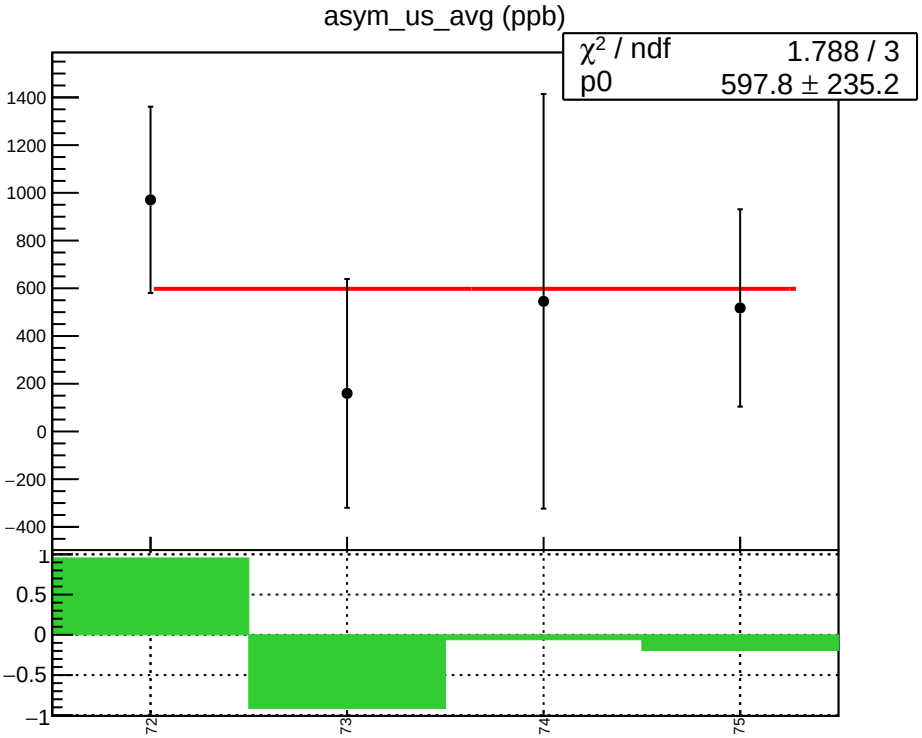

1D pull distribution
Mean −0.06826 ± 0.4092
Std Dev 0.9151 ± 0.2894
Underflow 0
Overflow 0
χ² / ndf 4.768e−09 / 0
Constant 2.017 ± 1.028
Mean −0.5333 ± 7.5952
Sigma 2.026 ± 5.318
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

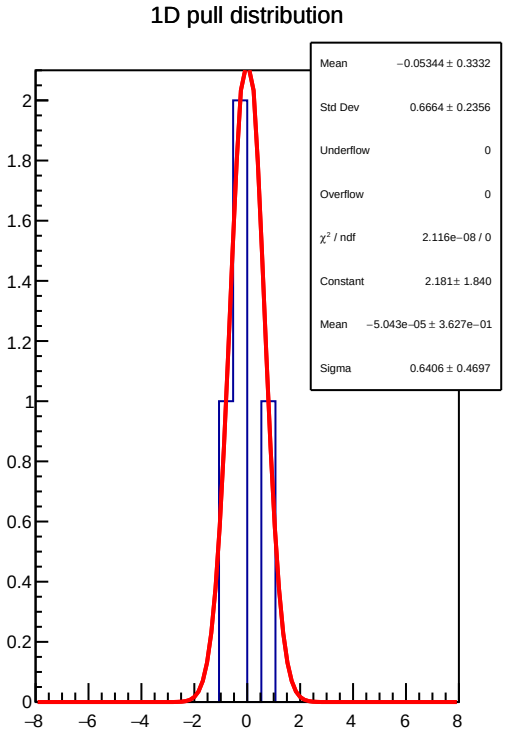

asym_usl RMS (ppm)
RMS (ppm)
850
800
750
700
650
600
550
72
73
74
74L
75

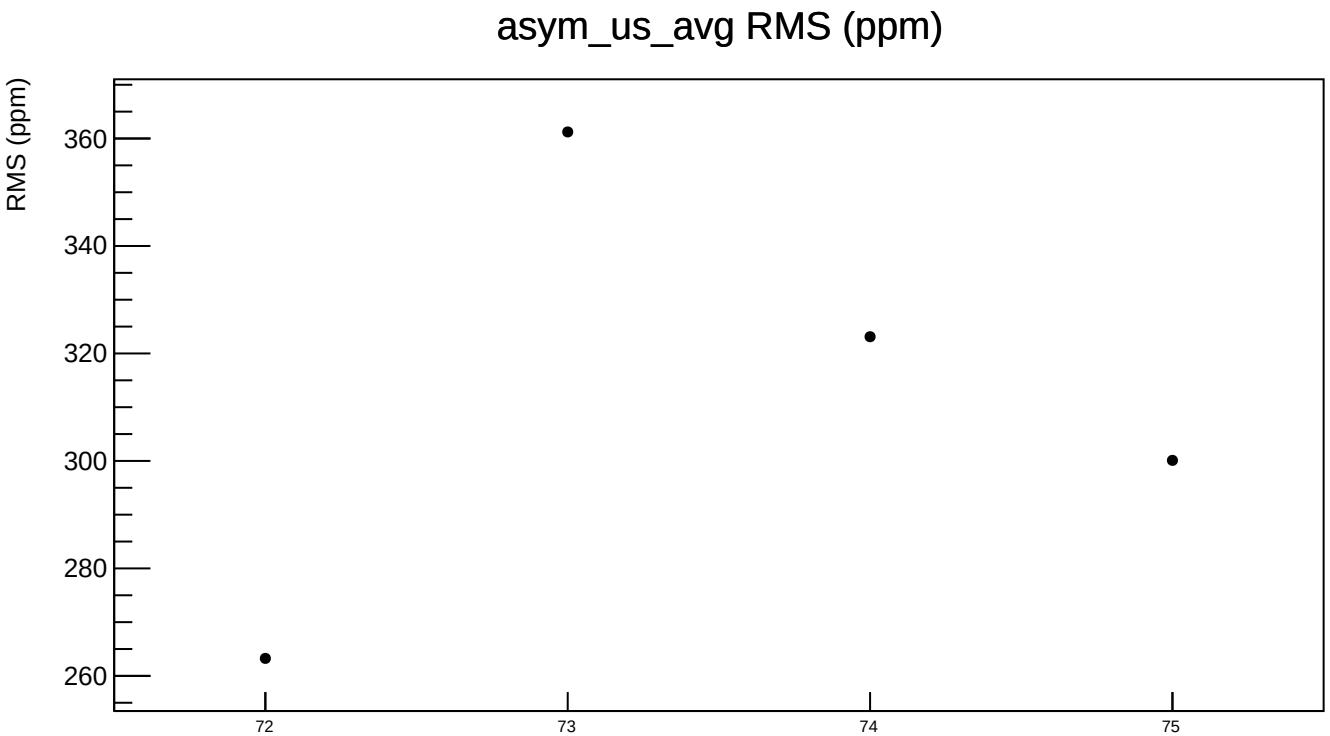

asym_usr (ppb)
χ² / ndf 11.51 / 3
p0 873.7 ± 435
4000
3000
2000
1000
0
−1000
−2000
2
1
0
−1
−2
72
73
74
75

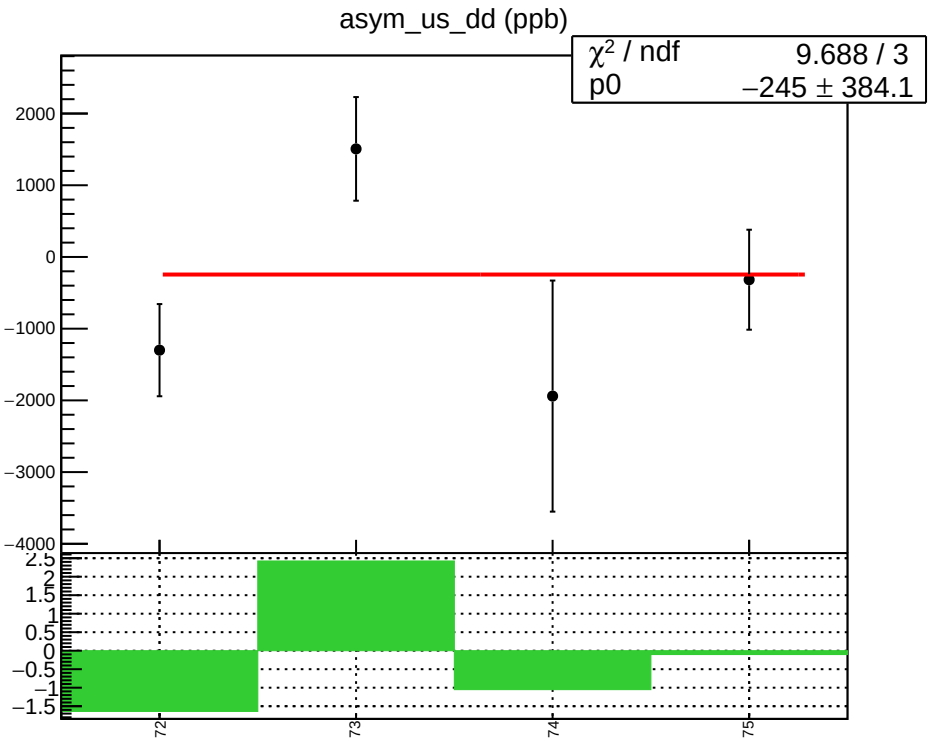

1D pull distribution
Mean 0.04244 ± 0.848
Std Dev 1.696 ± 0.5996
Underflow 0
Overflow 0
χ² / ndf 6.593e−05 / 1
Constant 1.005 ± 0.499
Mean −0.3451 ± 78.8913
Sigma 15.78 ± 14.52
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

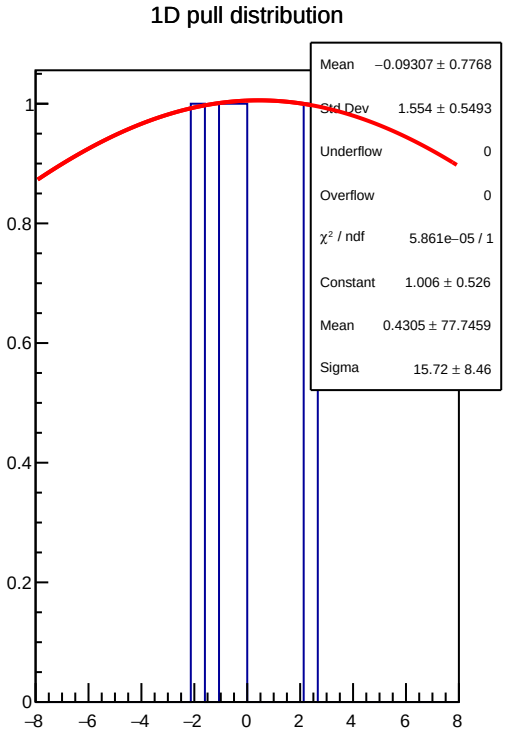

asym_usr RMS (ppm)
RMS (ppm)
660
640
620
600
580
560
540
520
500
480
72
73
74
75


asym_us_avg (ppb)
χ² / ndf 1.788 / 3
p0 597.8 ± 235.2
1400
1200
1000
800
600
400
200
0
−200
−400
1
0.5
0
−0.5
−1
72
73
74
75

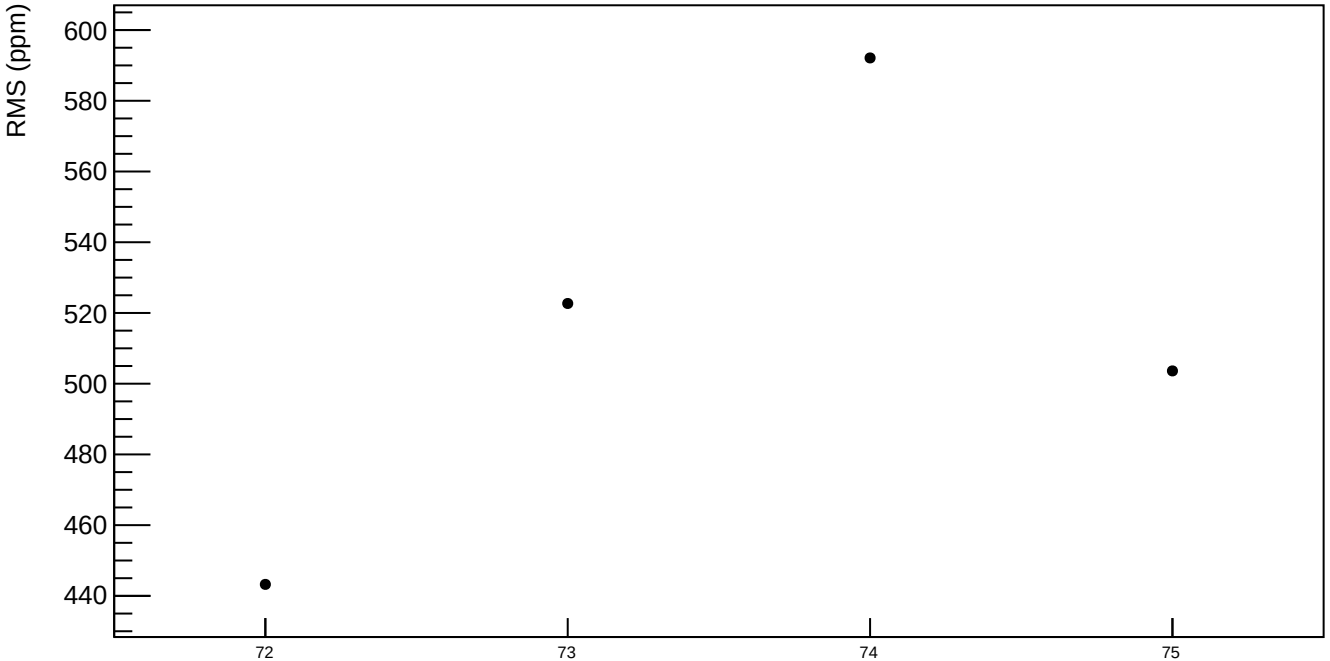

1D pull distribution
Mean −0.05344 ± 0.3332
Std Dev 0.6664 ± 0.2356
Underflow 0
Overflow 0
χ² / ndf 2.116e−08 / 0
Constant 2.181 ± 1.840
Mean −5.043e−05 ± 3.627e−01
Sigma 0.6406 ± 0.4697
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

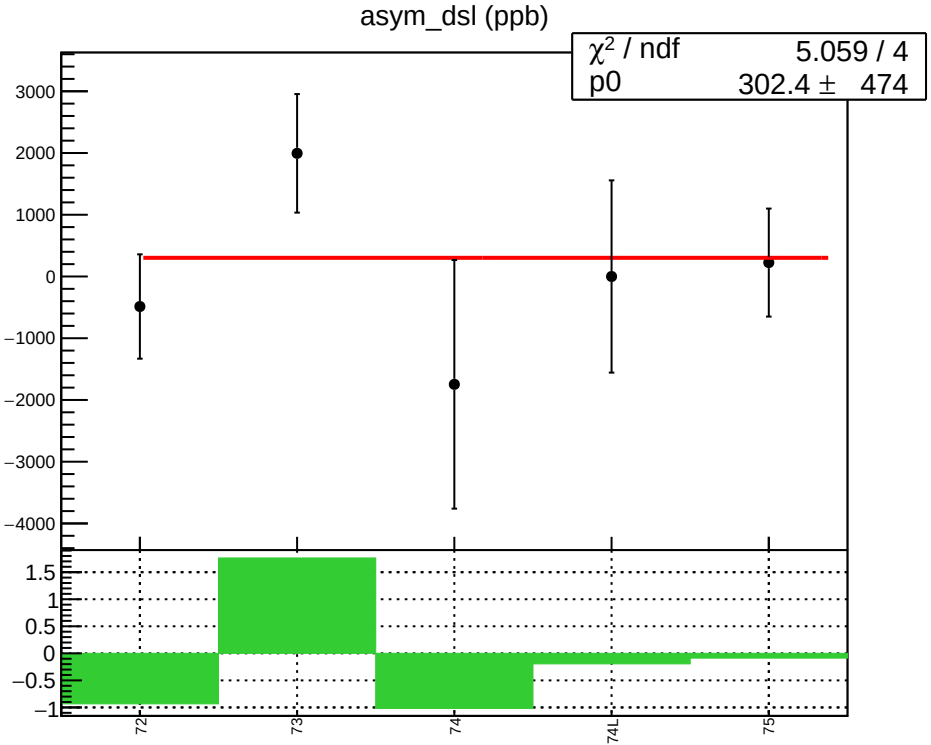

asym_us_avg RMS (ppm)
RMS (ppm)
360
340
320
300
280
260
72
73
74
75

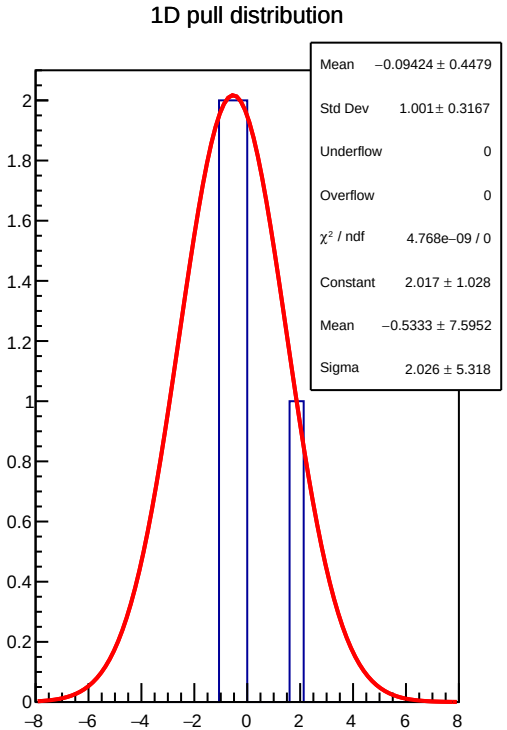

asym_us_dd (ppb)
χ² / ndf 9.688 / 3
p0 −245 ± 384.1
2000
1000
0
−1000
−2000
−3000
−4000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
72
73
74
75


1D pull distribution
Mean −0.09307 ± 0.7768
Std Dev 1.554 ± 0.5493
Underflow 0
Overflow 0
χ² / ndf 5.861e−05 / 1
Constant 1.006 ± 0.526
Mean 0.4305 ± 77.7459
Sigma 15.72 ± 8.46
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

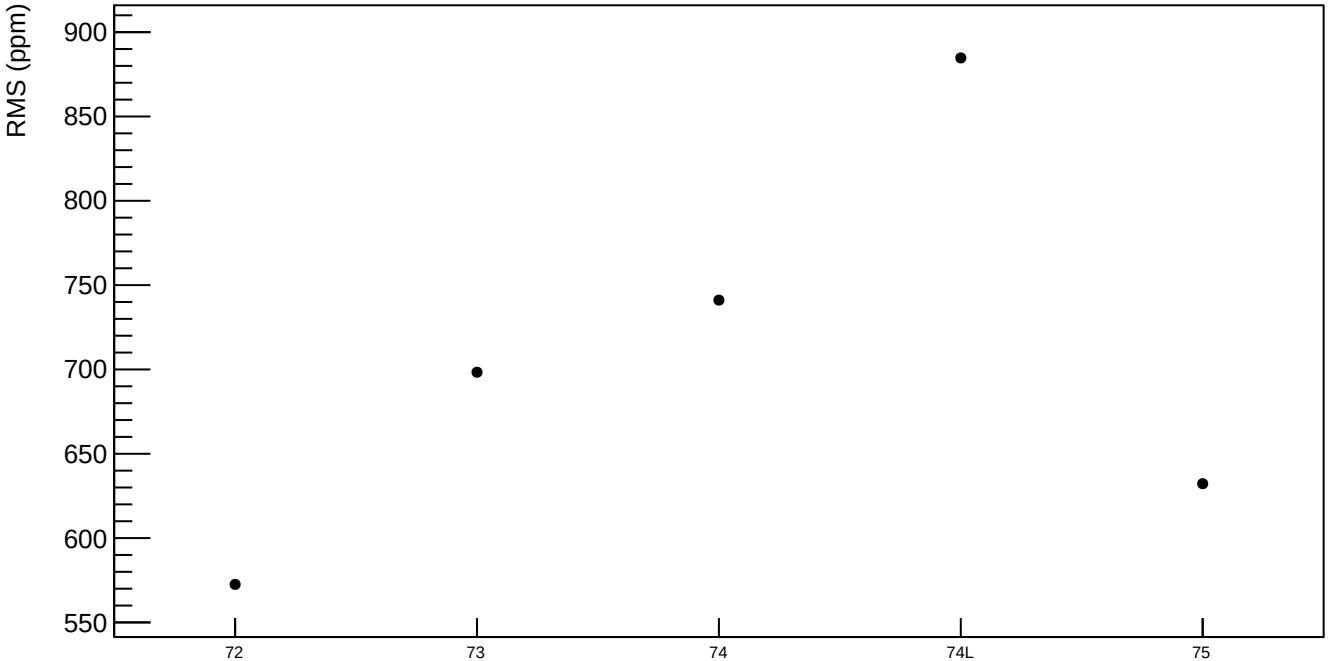
asym_us_dd RMS (ppm)

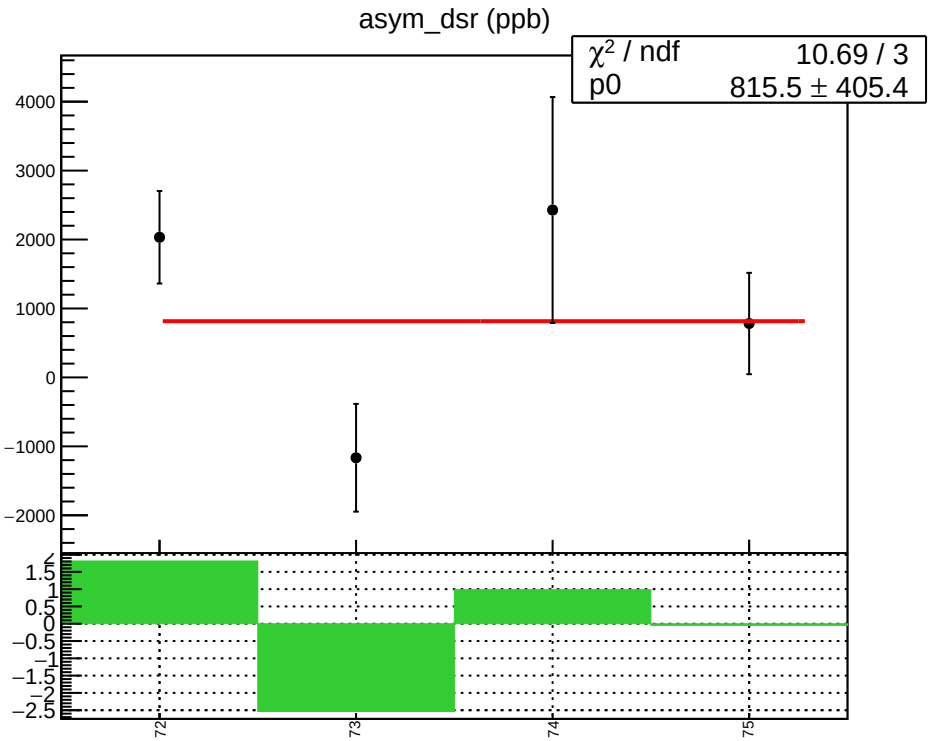


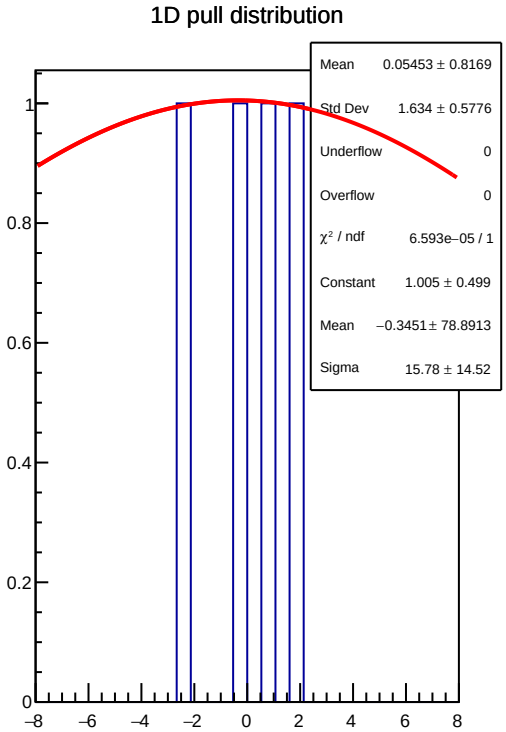

asym_dsl (ppb)
χ² / ndf 5.059 / 4
p0 302.4 ± 474
3000
2000
1000
0
−1000
−2000
−3000
−4000
1.5
1
0.5
0
−0.5
−1
72
73
74
74L
75

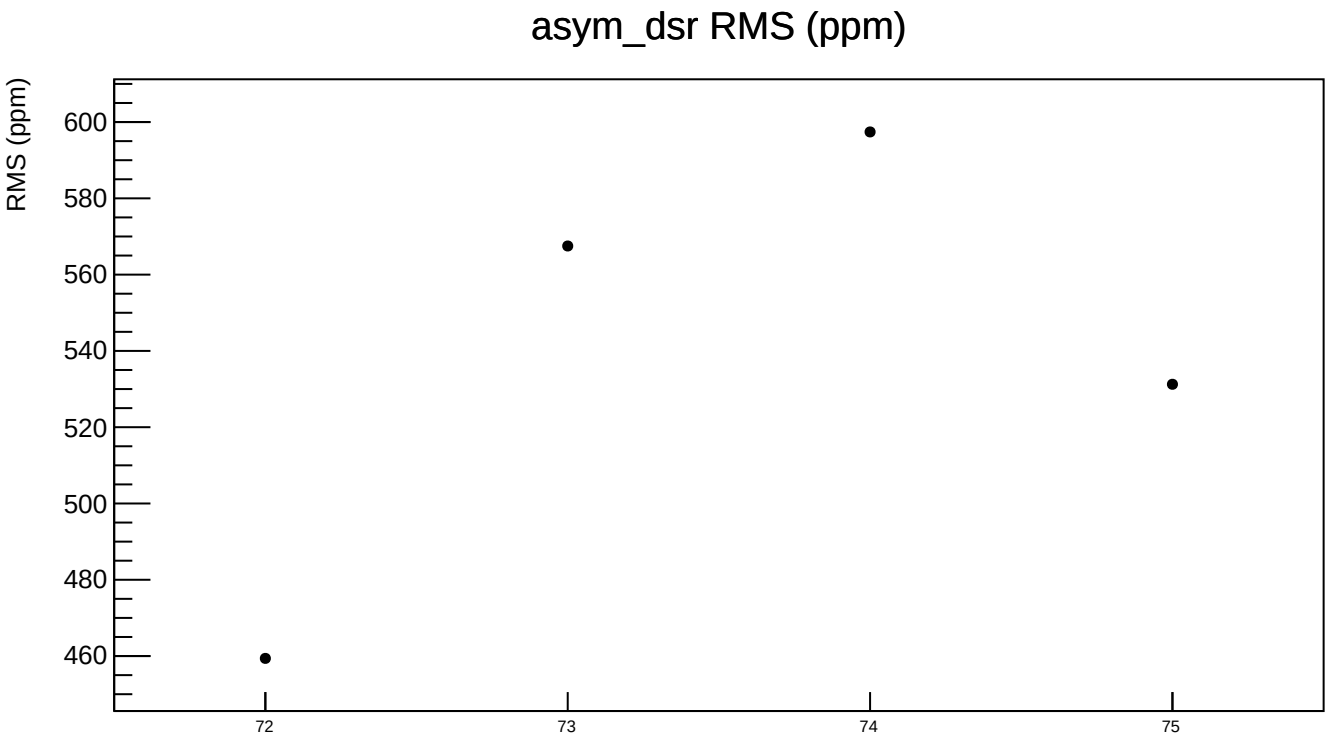

1D pull distribution
Mean −0.09424 ± 0.4479
Std Dev 1.001 ± 0.3167
Underflow 0
Overflow 0
χ² / ndf 4.768e−09 / 0
Constant 2.017 ± 1.028
Mean −0.5333 ± 7.5952
Sigma 2.026 ± 5.318
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

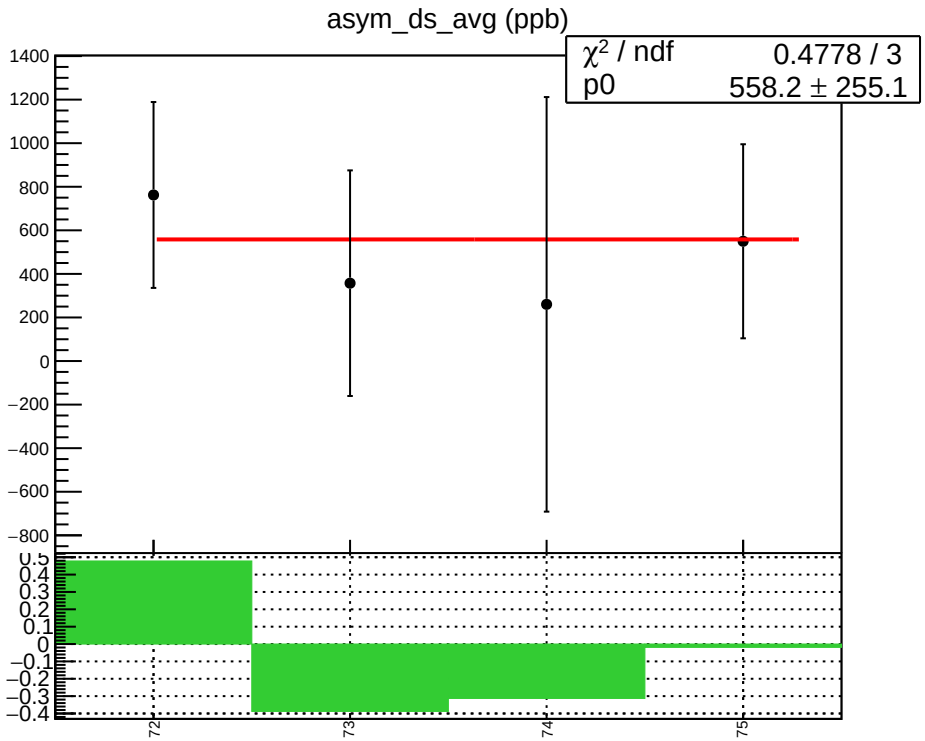
asym_dsl RMS (ppm)

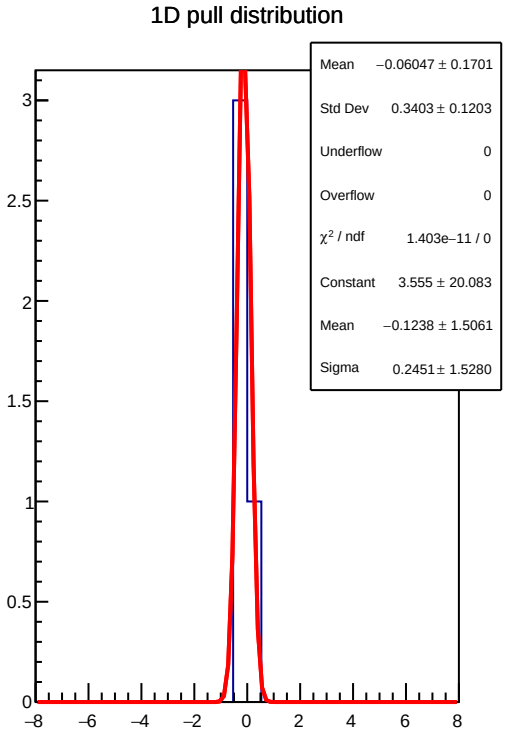


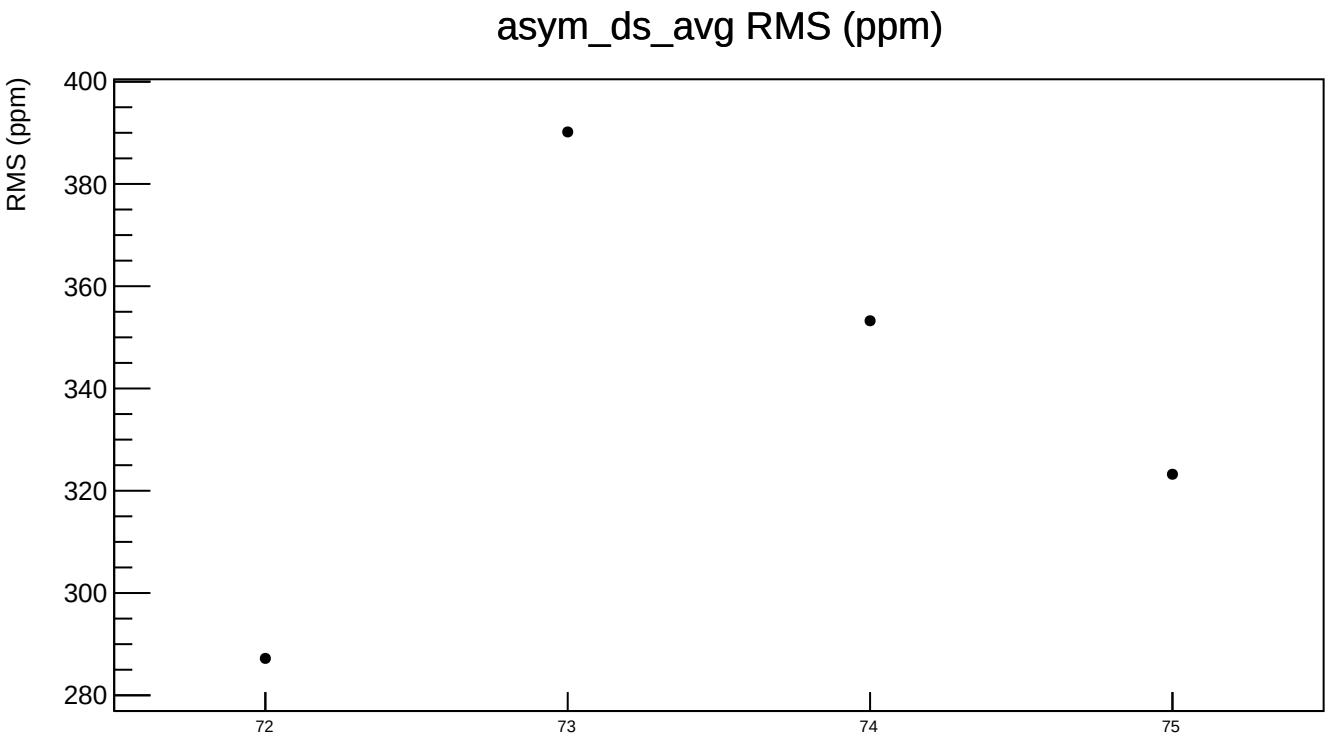

asym_dsr (ppb)
χ² / ndf 10.69 / 3
p0 815.5 ± 405.4
4000
3000
2000
1000
0
−1000
−2000
1.5
0.5
−0.5
−1.5
−2.5
72
73
74
75

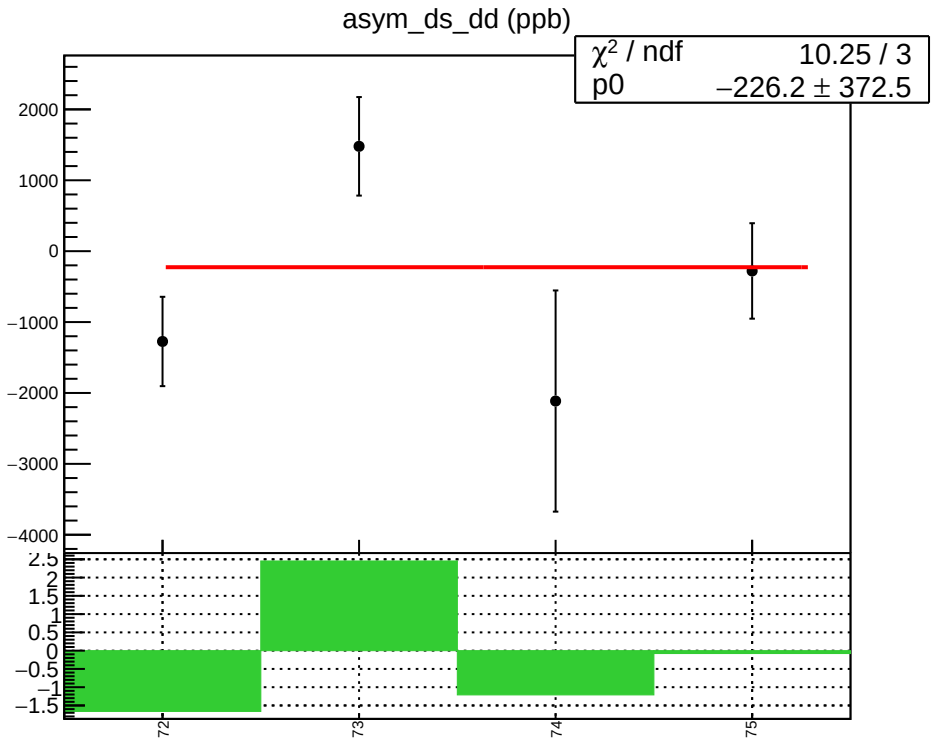

1D pull distribution
Mean 0.05453 ± 0.8169
Std Dev 1.634 ± 0.5776
Underflow 0
Overflow 0
χ² / ndf 6.593e−05 / 1
Constant 1.005 ± 0.499
Mean −0.3451 ± 78.8913
Sigma 15.78 ± 14.52
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

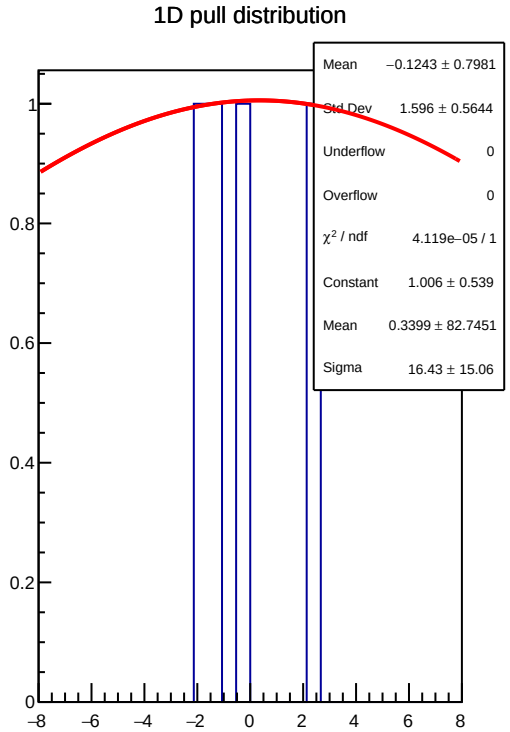

asym_dsr RMS (ppm)
RMS (ppm)
600
580
560
540
520
500
480
460
72
73
74
75

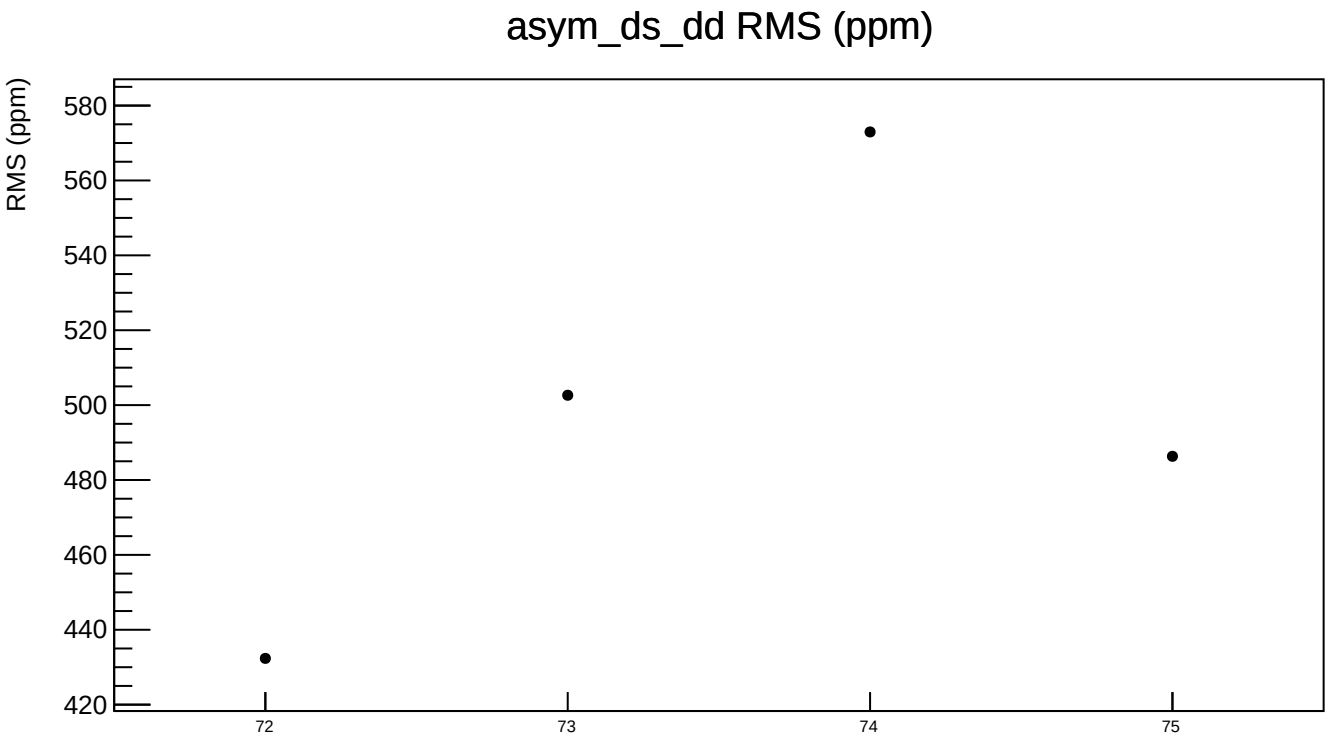

asym_ds_avg (ppb)
χ² / ndf 0.4778 / 3
p0 558.2 ± 255.1
1400
1200
1000
800
600
400
200
0
−200
−400
−600
−800
0.5
0.4
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
72
73
74
75

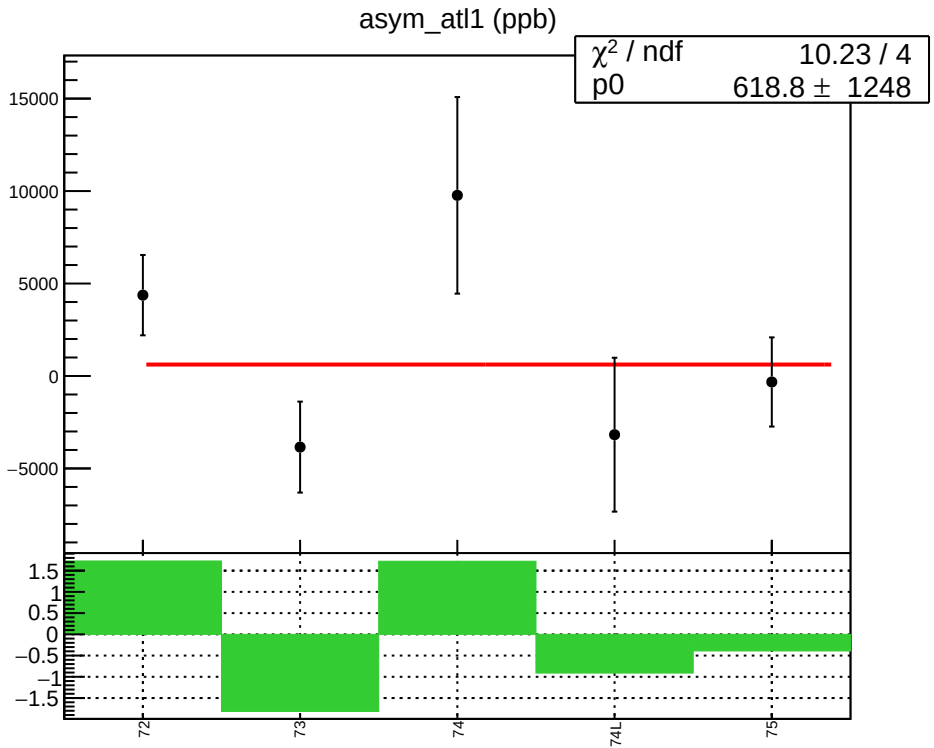

1D pull distribution
Mean −0.06047 ± 0.1701
Std Dev 0.3403 ± 0.1203
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean −0.1238 ± 1.5061
Sigma 0.2451 ± 1.5280
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

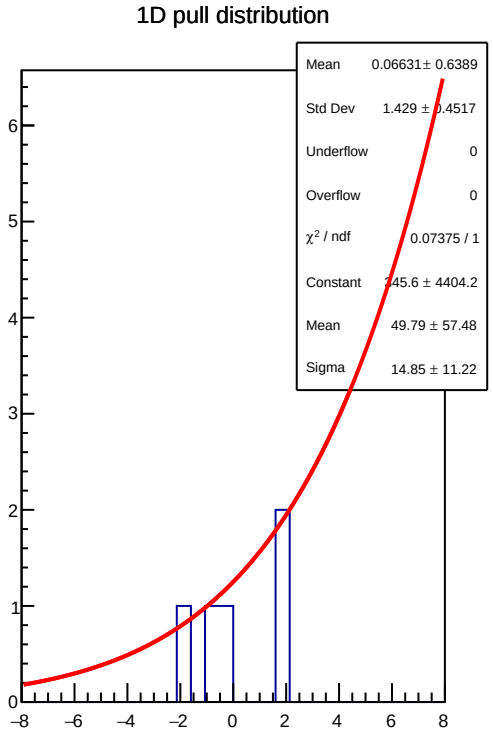

asym_ds_avg RMS (ppm)
RMS (ppm)
400
380
360
340
320
300
280
72
73
74
75

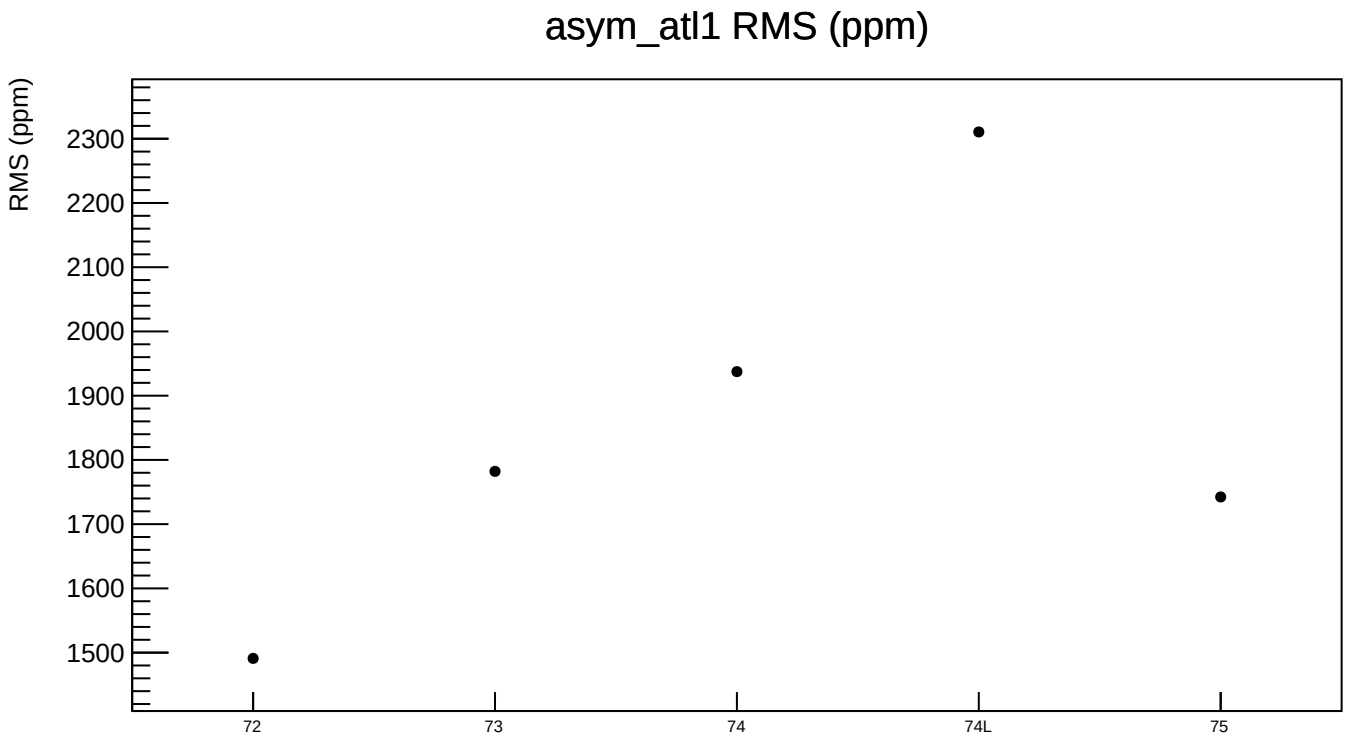

asym_ds_dd (ppb)
χ² / ndf 10.25 / 3
p0 −226.2 ± 372.5
2000
1000
0
−1000
−2000
−3000
−4000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
72
73
74
75

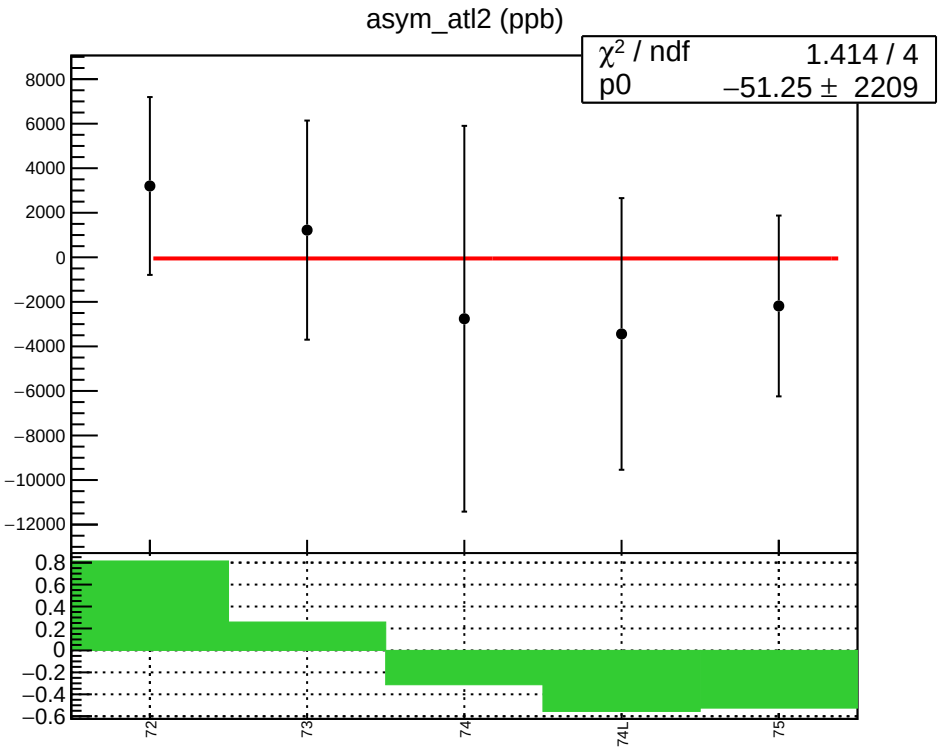

1D pull distribution
Mean −0.1243 ± 0.7981
Std Dev 1.596 ± 0.5644
Underflow 0
Overflow 0
χ² / ndf 4.119e−05 / 1
Constant 1.006 ± 0.539
Mean 0.3399 ± 82.7451
Sigma 16.43 ± 15.06
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

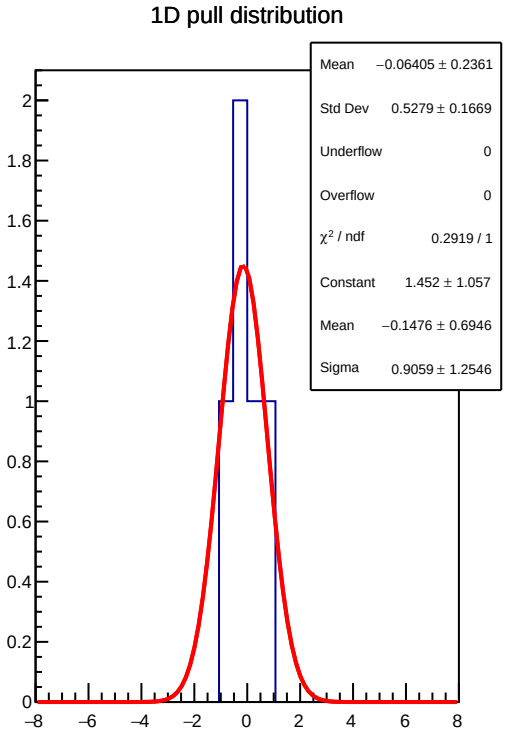

asym_ds_dd RMS (ppm)
RMS (ppm)
580
560
540
520
500
480
460
440
420
72
73
74
75

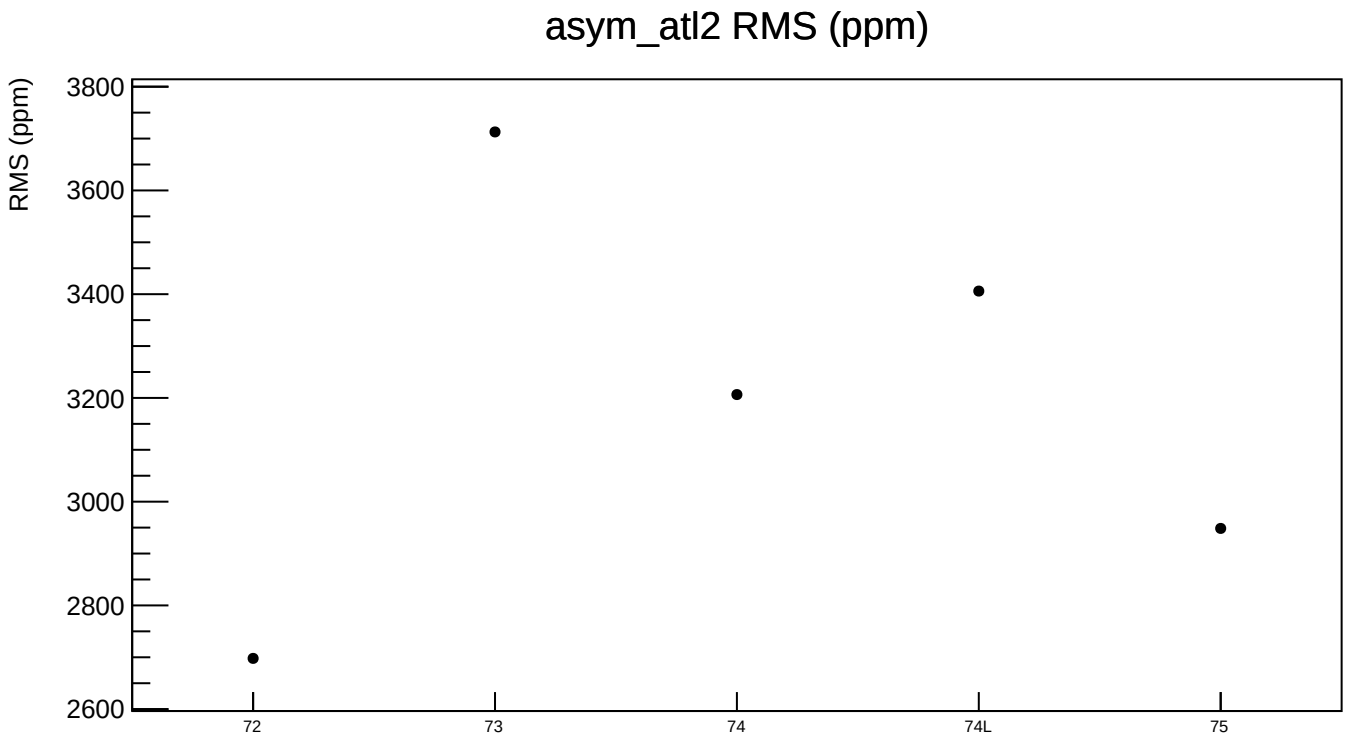

asym_atl1 (ppb)
χ² / ndf 10.23 / 4
p0 618.8 ± 1248
15000
10000
5000
0
−5000
1.5
1
0.5
0
−0.5
−1
−1.5
72
73
74
74L
75

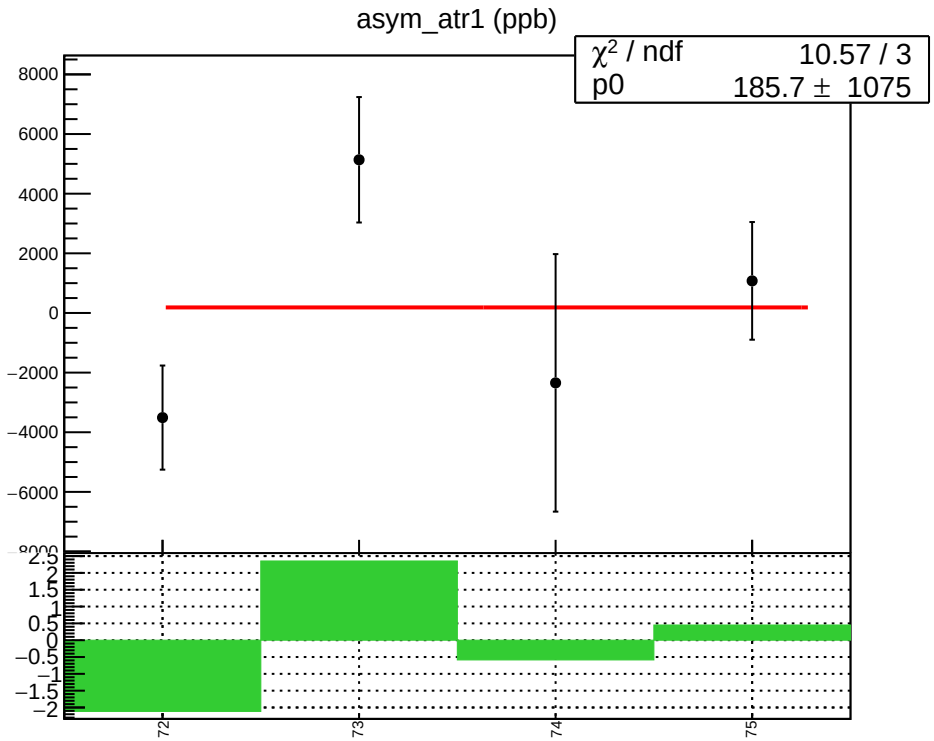

1D pull distribution
Mean 0.06631± 0.6389
Std Dev 1.429 ± 0.4517
Underflow 0
Overflow 0
χ² / ndf 0.07375 / 1
Constant 145.6 ± 4404.2
Mean 49.79 ± 57.48
Sigma 14.85 ± 11.22
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

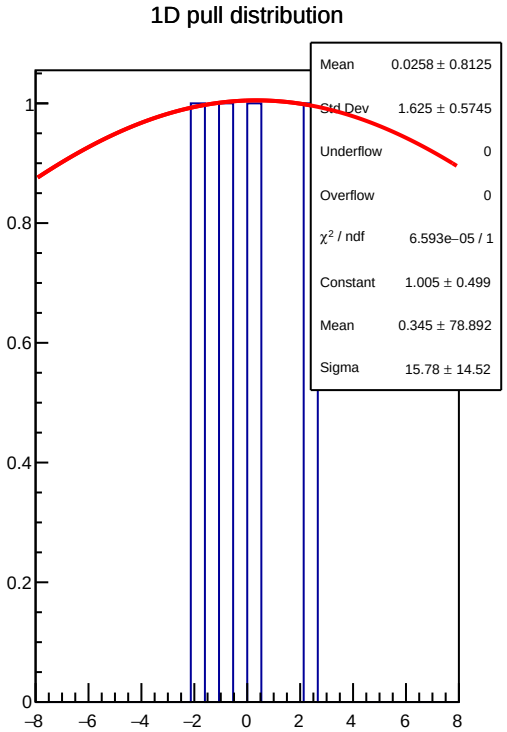

asym_atl1 RMS (ppm)
RMS (ppm)
2300
2200
2100
2000
1900
1800
1700
1600
1500
72
73
74
74L
75

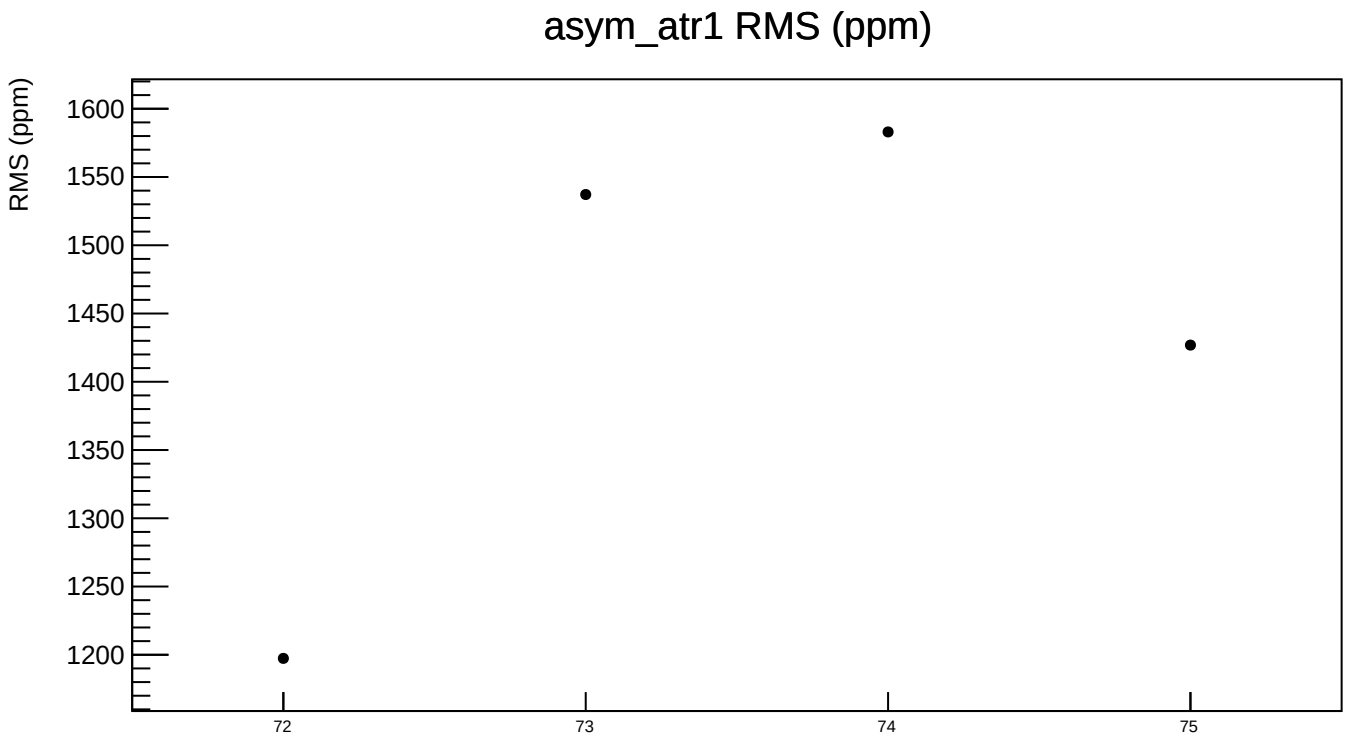

asym_atl2 (ppb)
χ² / ndf 1.414 / 4
p0 −51.25 ± 2209
8000
6000
4000
2000
0
−2000
−4000
−6000
−8000
−10000
−12000
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
72
73
74
74L
75

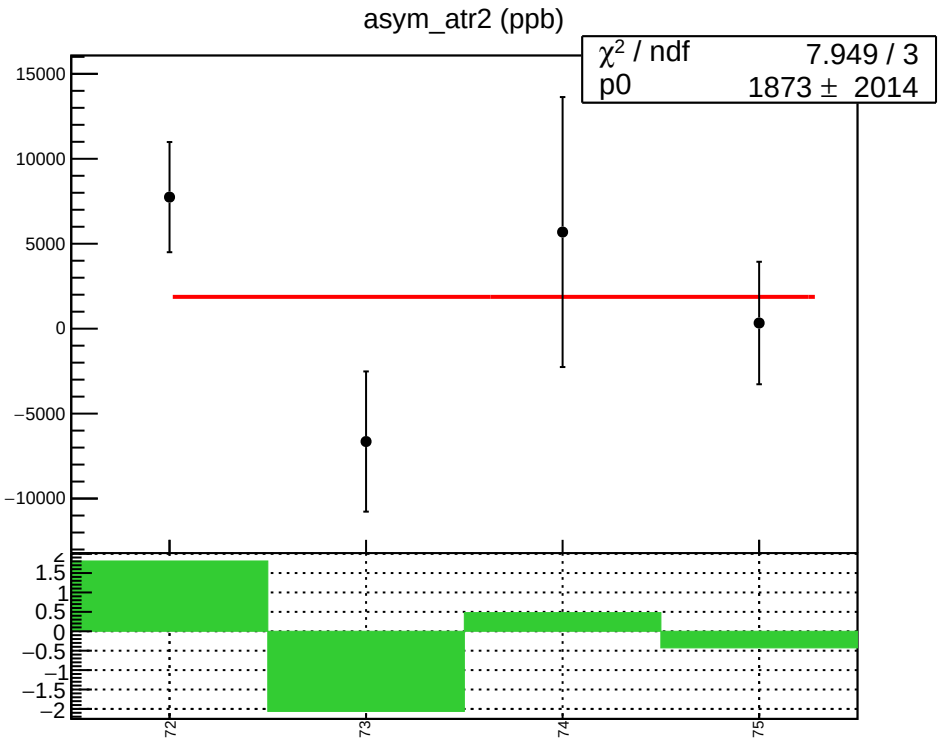

1D pull distribution
Mean −0.06405 ± 0.2361
Std Dev 0.5279 ± 0.1669
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean −0.1476 ± 0.6946
Sigma 0.9059 ± 1.2546
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

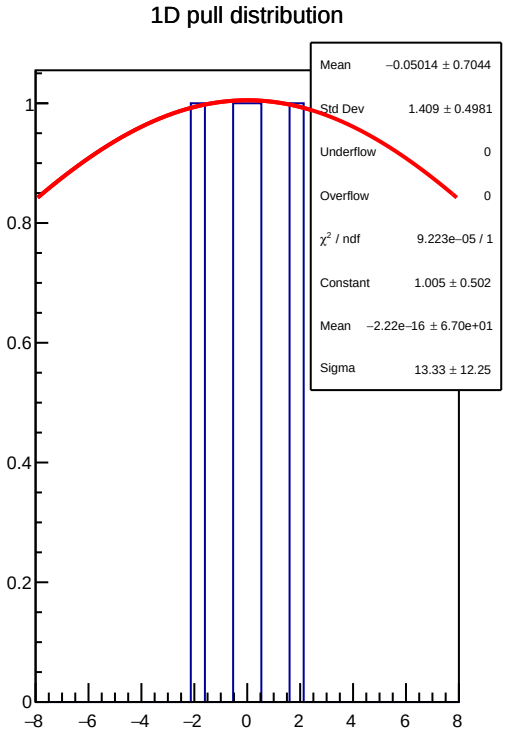

asym_atl2 RMS (ppm)
RMS (ppm)
3800
3600
3400
3200
3000
2800
2600
72
73
74
74L
75

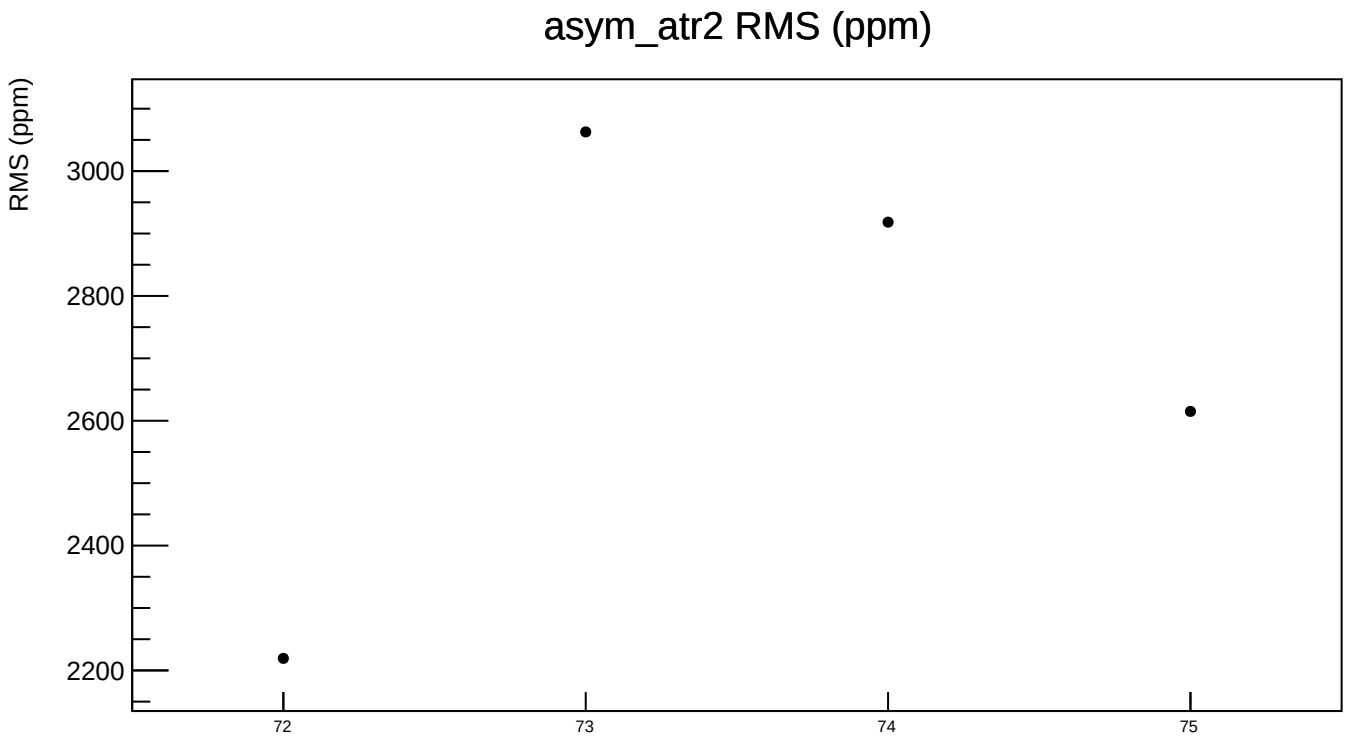

asym_atr1 (ppb)
χ² / ndf 10.57 / 3
p0 185.7 ± 1075
8000
6000
4000
2000
0
−2000
−4000
−6000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
72
73
74
75


1D pull distribution
Mean 0.0258 ± 0.8125
Std Dev 1.625 ± 0.5745
Underflow 0
Overflow 0
χ² / ndf 6.593e−05 / 1
Constant 1.005 ± 0.499
Mean 0.345 ± 78.892
Sigma 15.78 ± 14.52
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)
1600
1550
1500
1450
1400
1350
1300
1250
1200
72
73
74
75


asym_atr2 (ppb)
χ² / ndf 7.949 / 3
p0 1873 ± 2014
15000
10000
5000
0
−5000
−10000
1.5
1
0.5
0
−0.5
−1
−1.5
−2
72
73
74
75


1D pull distribution
Mean −0.05014 ± 0.7044
Std Dev 1.409 ± 0.4981
Underflow 0
Overflow 0
χ² / ndf 9.223e−05 / 1
Constant 1.005 ± 0.502
Mean −2.22e−16 ± 6.70e+01
Sigma 13.33 ± 12.25
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)
3000
2800
2600
2400
2200
72
73
74
75