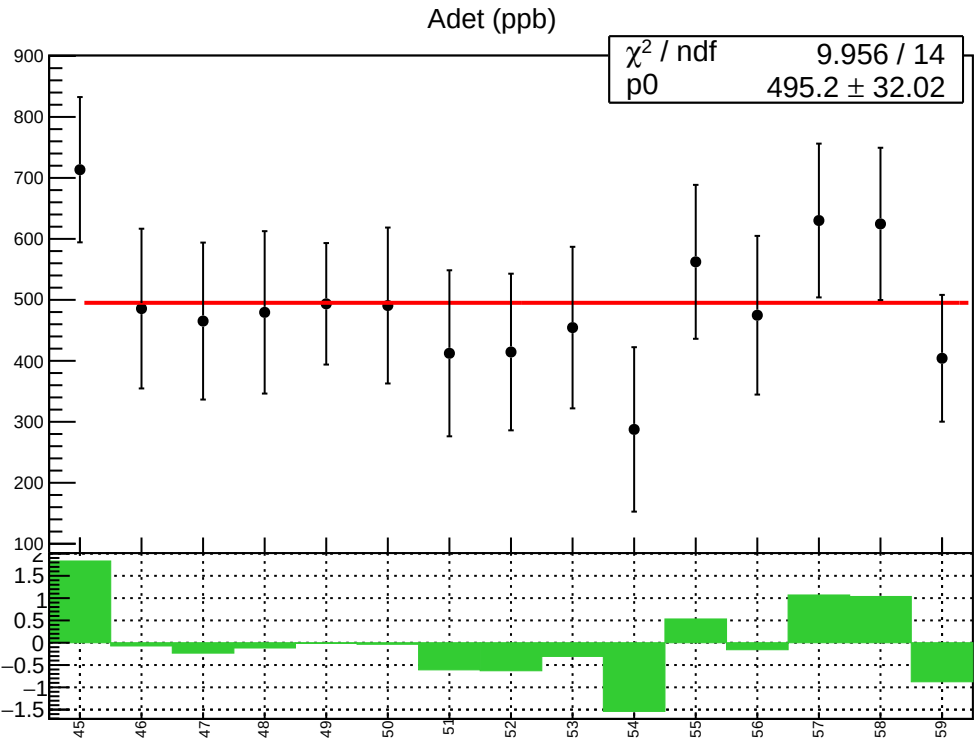
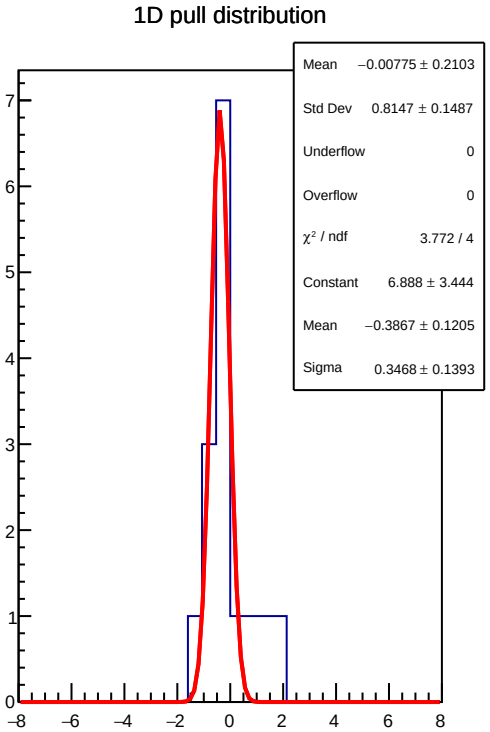
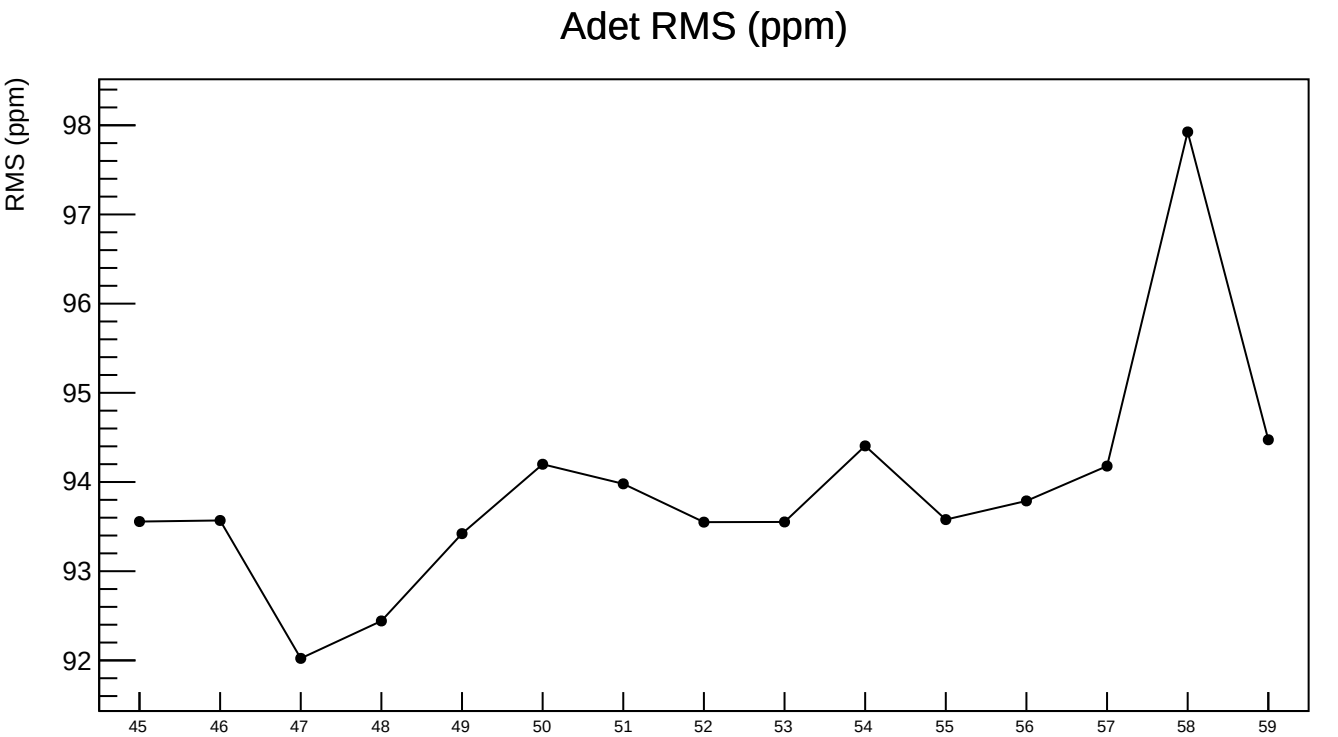
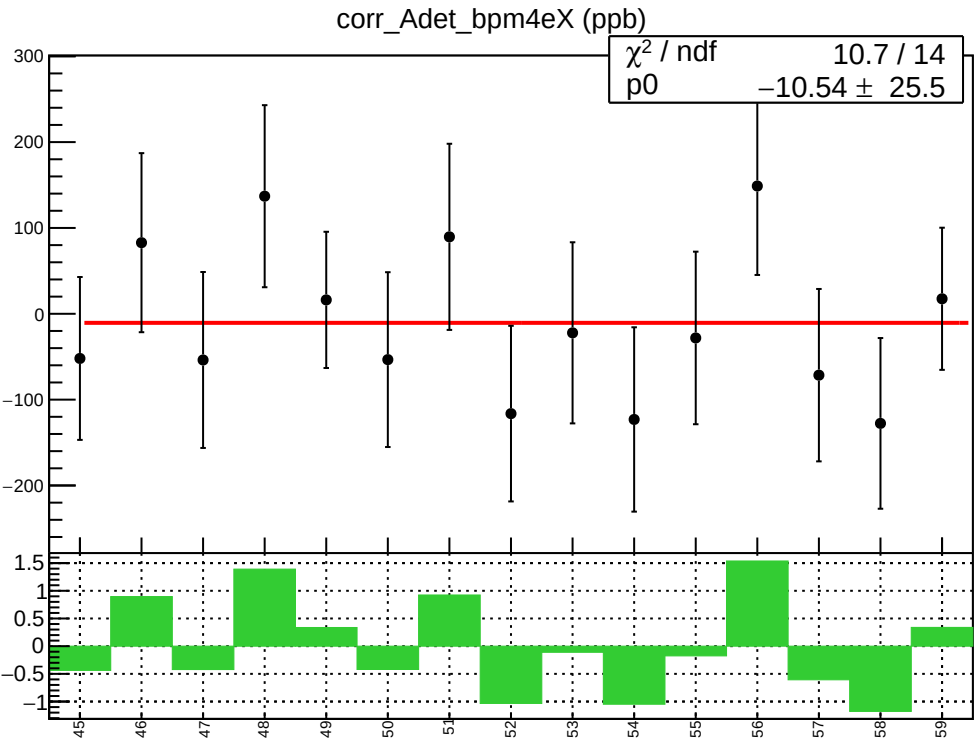
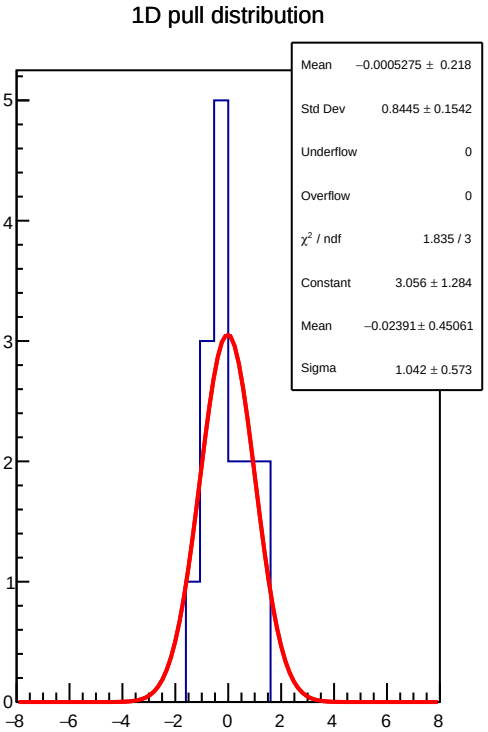
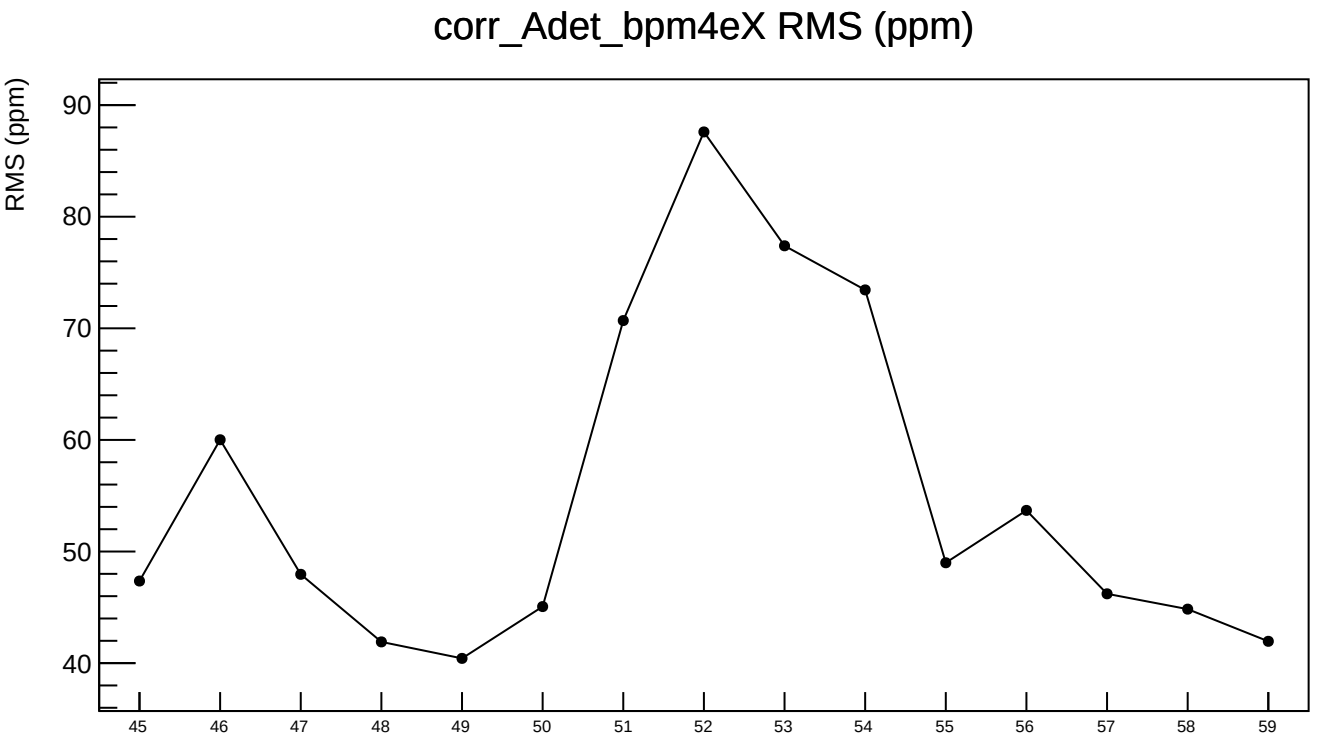

Adet (ppb)
χ² / ndf 9.956 / 14
p0 495.2 ± 32.02
900
800
700
600
500
400
300
200
100
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

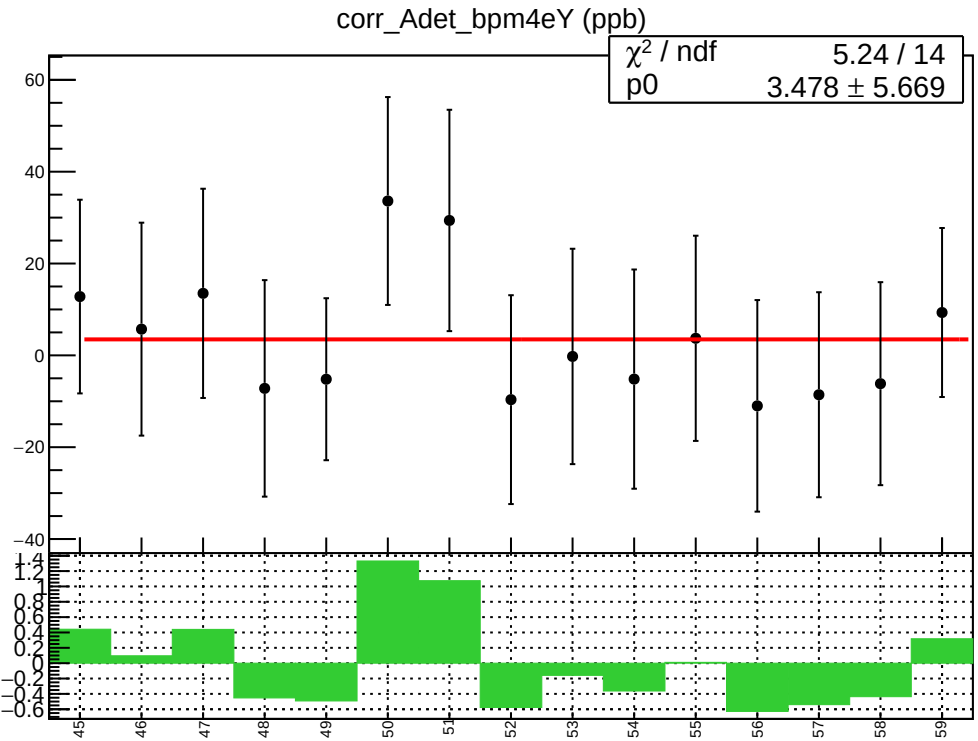

1D pull distribution
Mean −0.00775 ± 0.2103
Std Dev 0.8147 ± 0.1487
Underflow 0
Overflow 0
χ² / ndf 3.772 / 4
Constant 6.888 ± 3.444
Mean −0.3867 ± 0.1205
Sigma 0.3468 ± 0.1393
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

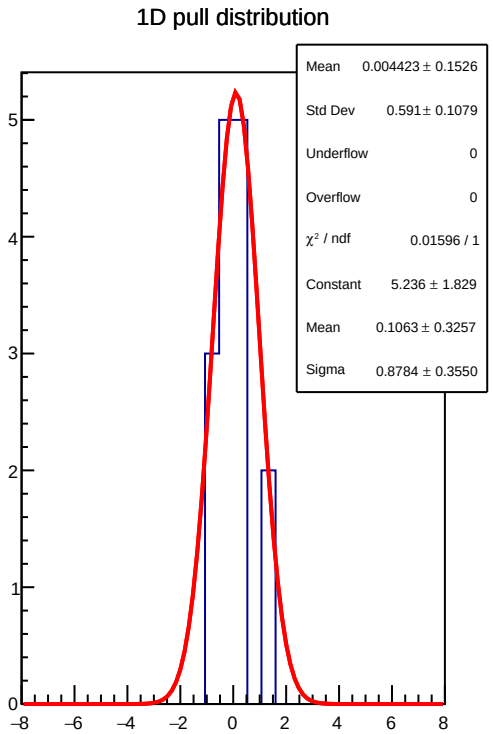

Adet RMS (ppm)
RMS (ppm)
98
97
96
95
94
93
92
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

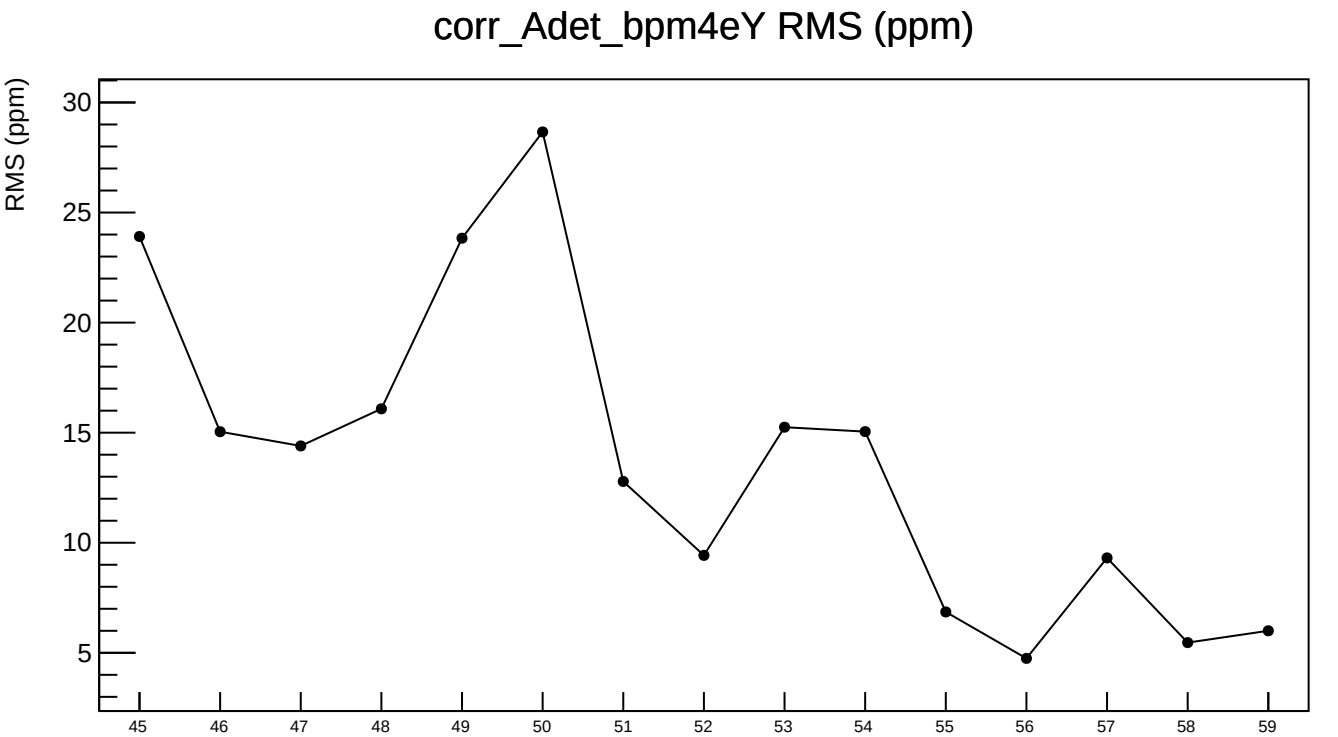

corr_Adet_bpm4eX (ppb)
χ² / ndf 10.7 / 14
p0 −10.54 ± 25.5
300
200
100
0
−100
−200
1.5
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

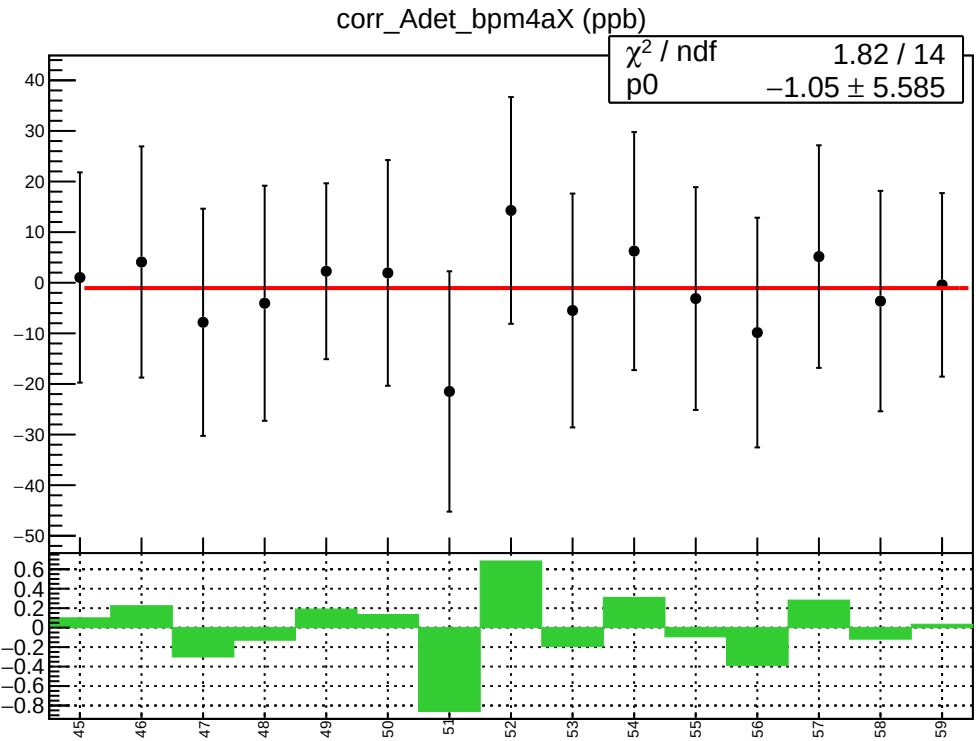

1D pull distribution
Mean −0.0005275 ± 0.218
Std Dev 0.8445 ± 0.1542
Underflow 0
Overflow 0
χ² / ndf 1.835 / 3
Constant 3.056 ± 1.284
Mean −0.02391 ± 0.45061
Sigma 1.042 ± 0.573
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

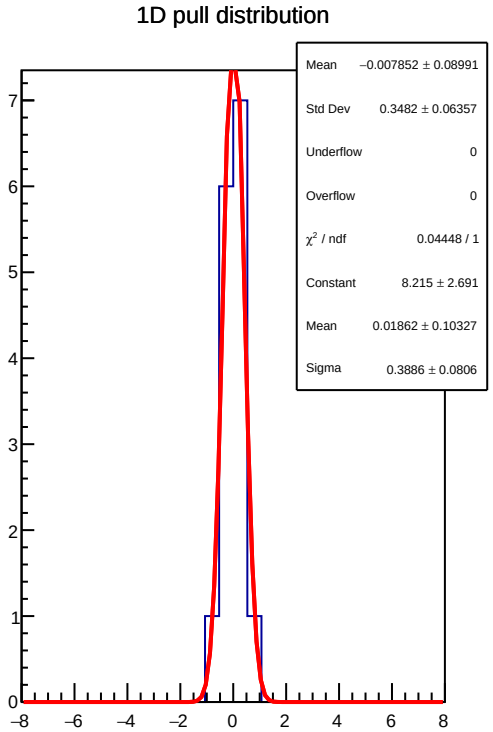

corr_Adet_bpm4eX RMS (ppm)
RMS (ppm)
90
80
70
60
50
40
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

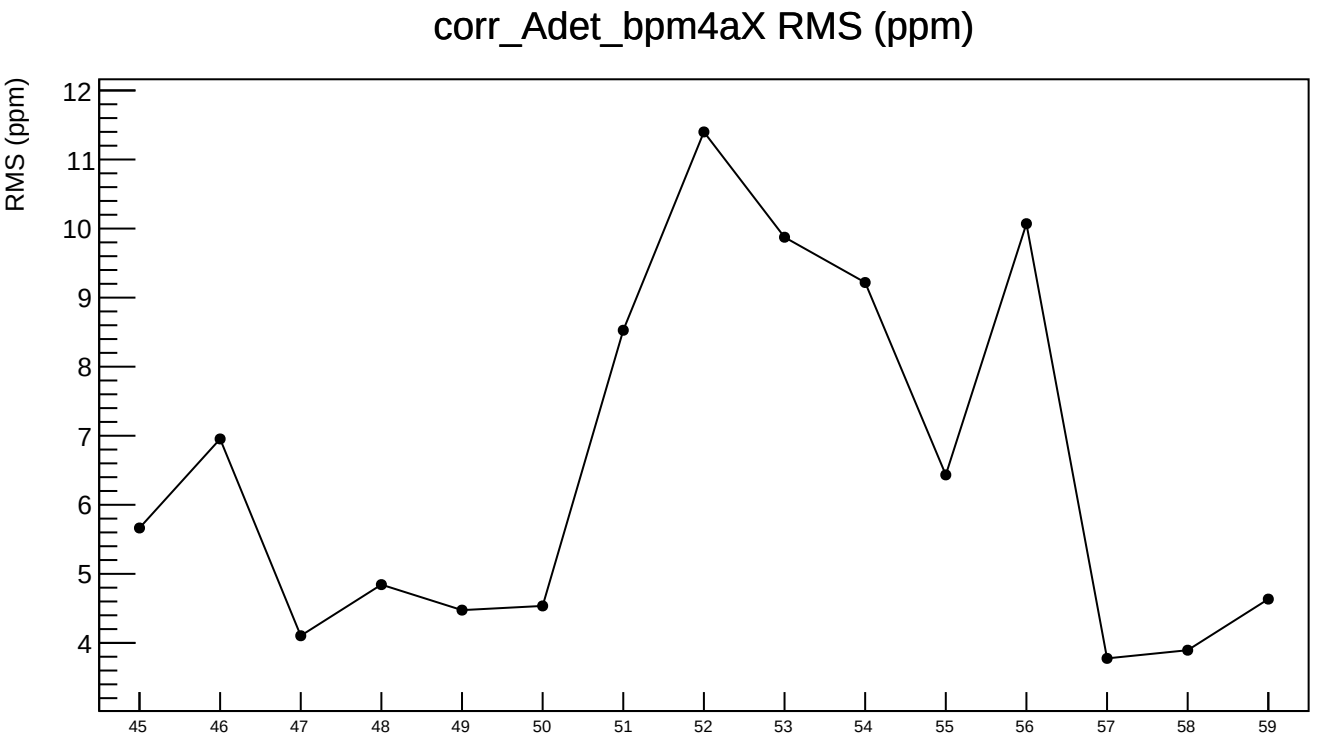

corr_Adet_bpm4eY (ppb)
χ² / ndf 5.24 / 14
p0 3.478 ± 5.669

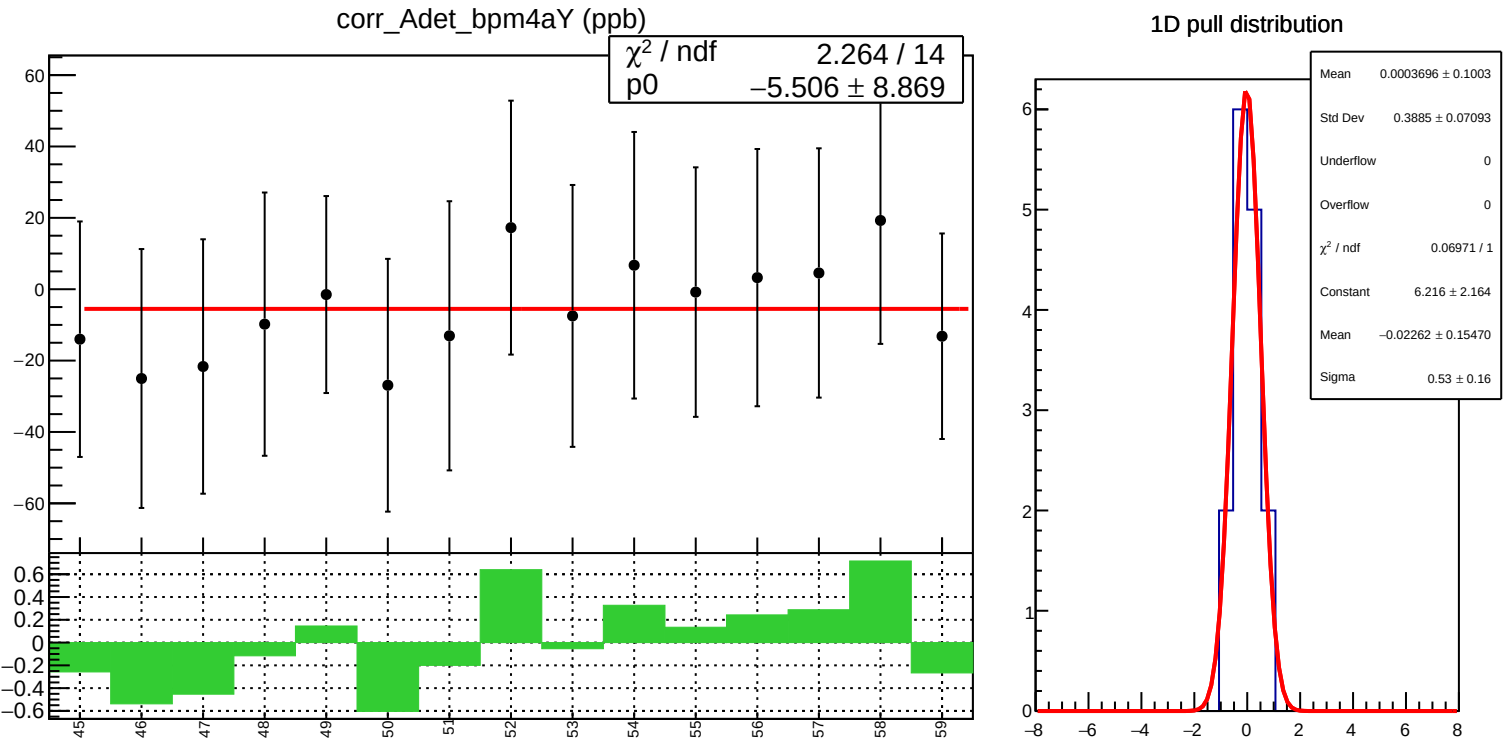

1D pull distribution
Mean 0.004423 ± 0.1526
Std Dev 0.591 ± 0.1079
Underflow 0
Overflow 0
χ² / ndf 0.01596 / 1
Constant 5.236 ± 1.829
Mean 0.1063 ± 0.3257
Sigma 0.8784 ± 0.3550


corr_Adet_bpm4eY RMS (ppm)
RMS (ppm)
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

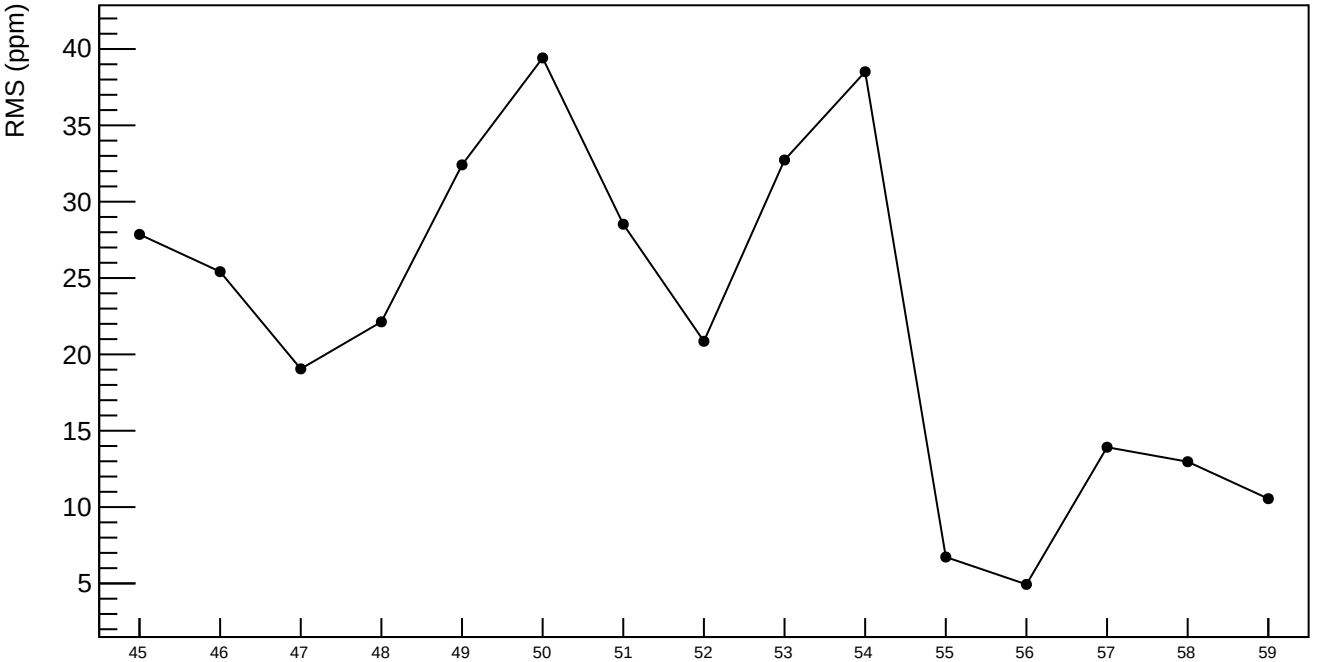

corr_Adet_bpm4aX (ppb)
χ² / ndf 1.82 / 14
p0 −1.05 ± 5.585
40
30
20
10
0
−10
−20
−30
−40
−50
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

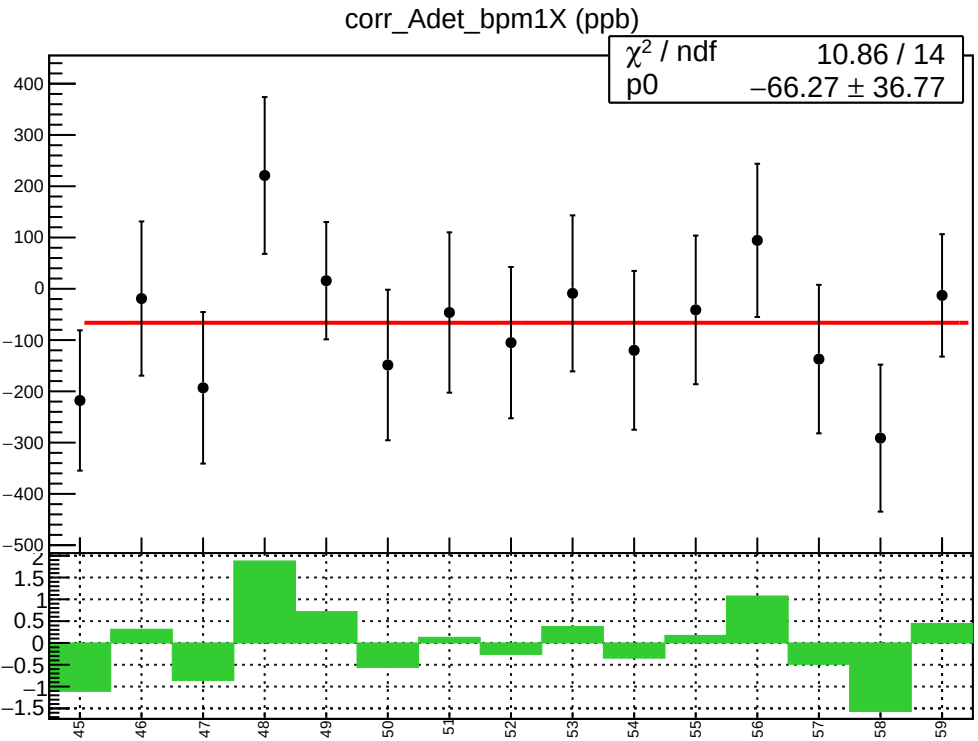

1D pull distribution
Mean −0.007852 ± 0.08991
Std Dev 0.3482 ± 0.06357
Underflow 0
Overflow 0
χ² / ndf 0.04448 / 1
Constant 8.215 ± 2.691
Mean 0.01862 ± 0.10327
Sigma 0.3886 ± 0.0806
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

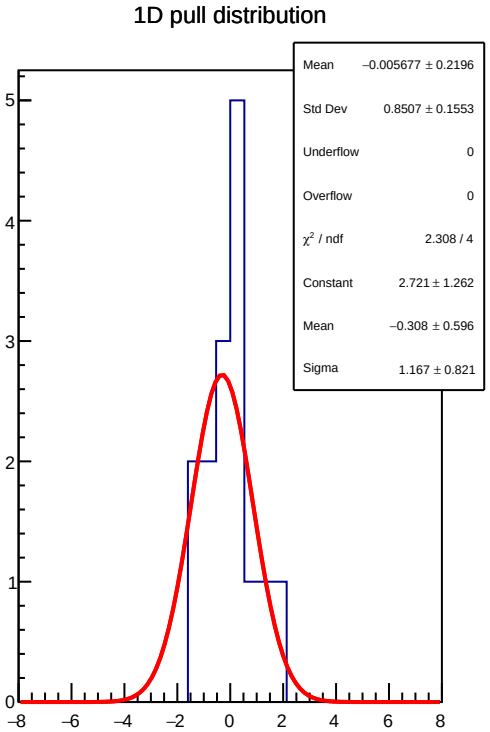

corr_Adet_bpm4aX RMS (ppm)
RMS (ppm)
12
11
10
9
8
7
6
5
4
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


corr_Adet_bpm4aY (ppb)
χ² / ndf 2.264 / 14
p0 −5.506 ± 8.869
1D pull distribution
Mean 0.0003696 ± 0.1003
Std Dev 0.3885 ± 0.07093
Underflow 0
Overflow 0
χ² / ndf 0.06971 / 1
Constant 6.216 ± 2.164
Mean −0.02262 ± 0.15470
Sigma 0.53 ± 0.16

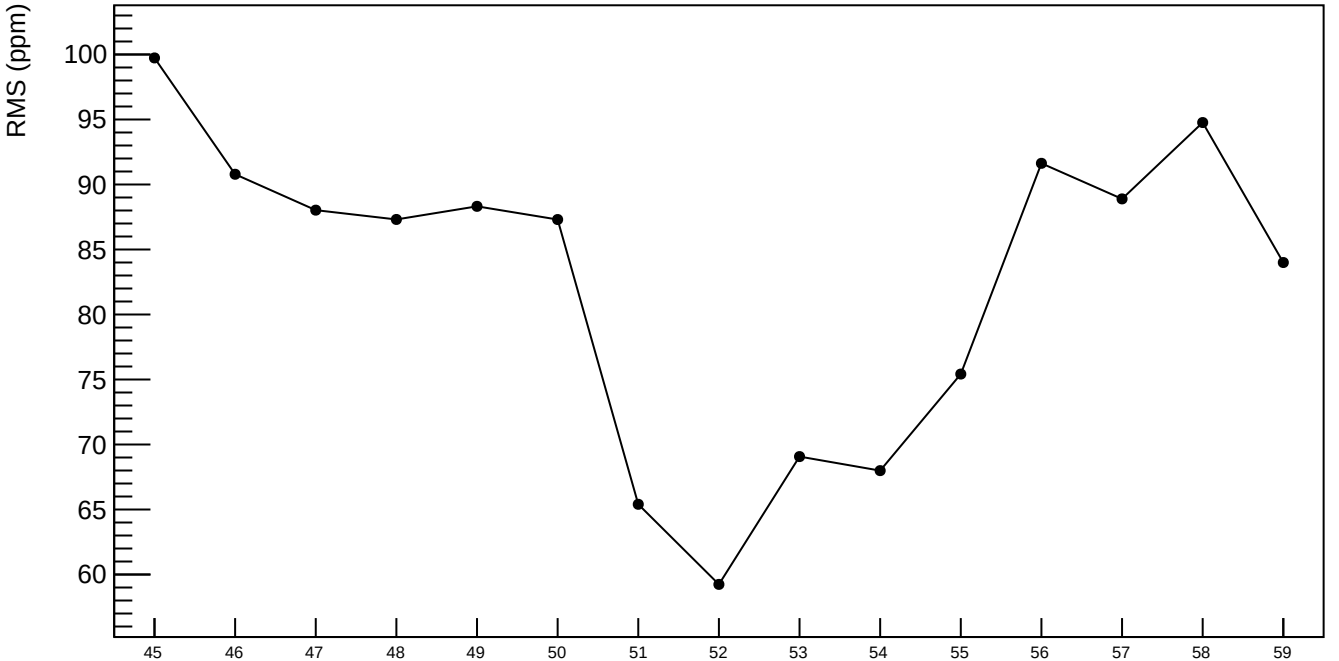
corr_Adet_bpm4aY RMS (ppm)

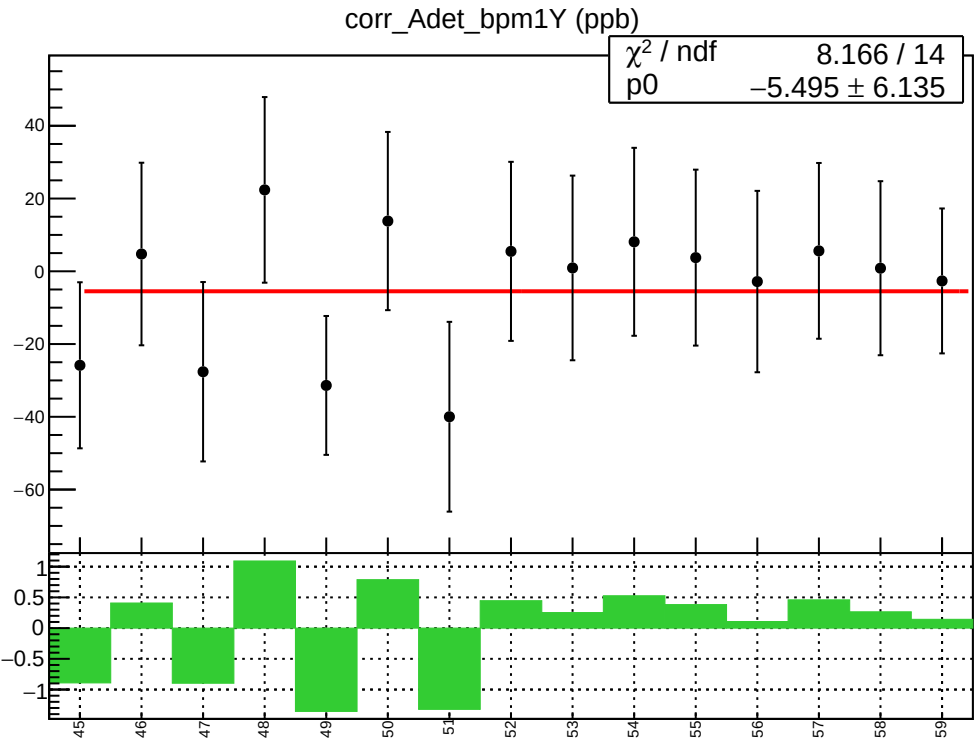


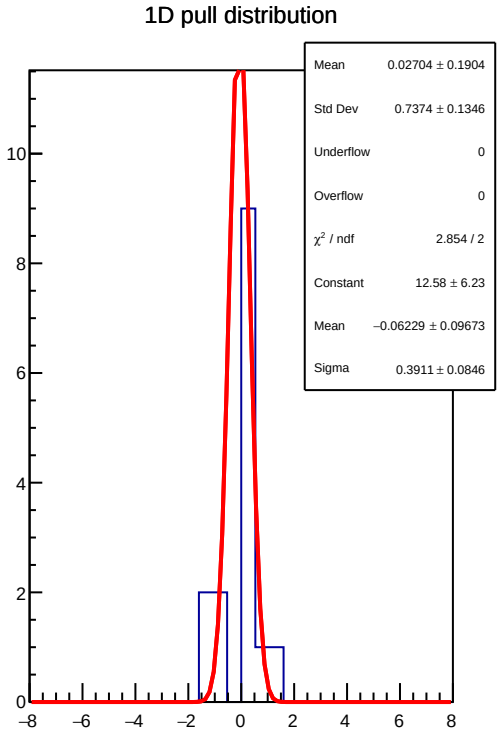

corr_Adet_bpm1X (ppb)
χ² / ndf 10.86 / 14
p0 −66.27 ± 36.77
400
300
200
100
0
−100
−200
−300
−400
−500
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

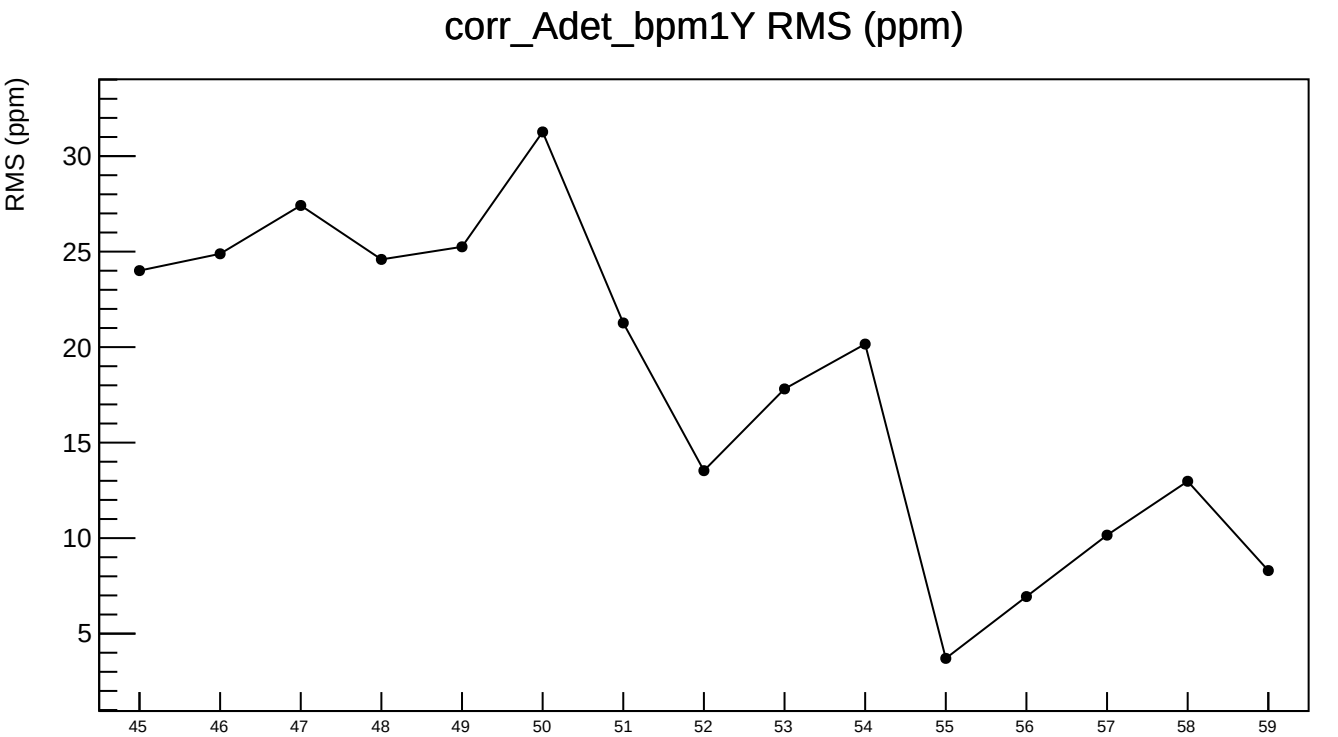

1D pull distribution
Mean −0.005677 ± 0.2196
Std Dev 0.8507 ± 0.1553
Underflow 0
Overflow 0
χ² / ndf 2.308 / 4
Constant 2.721 ± 1.262
Mean −0.308 ± 0.596
Sigma 1.167 ± 0.821
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

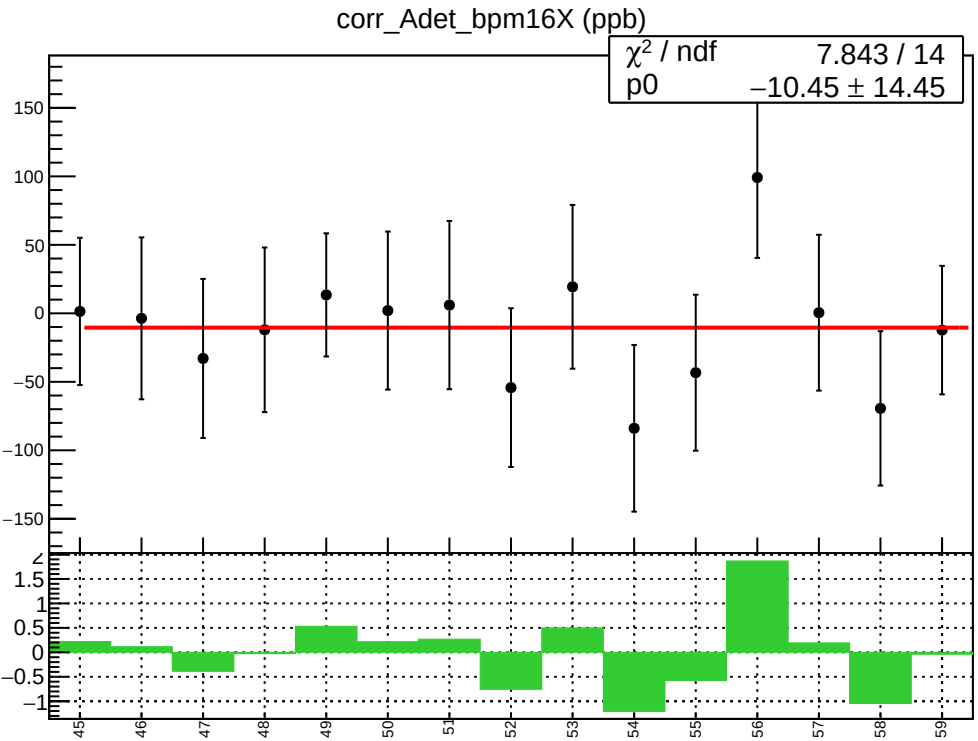
corr_Adet_bpm1X RMS (ppm)

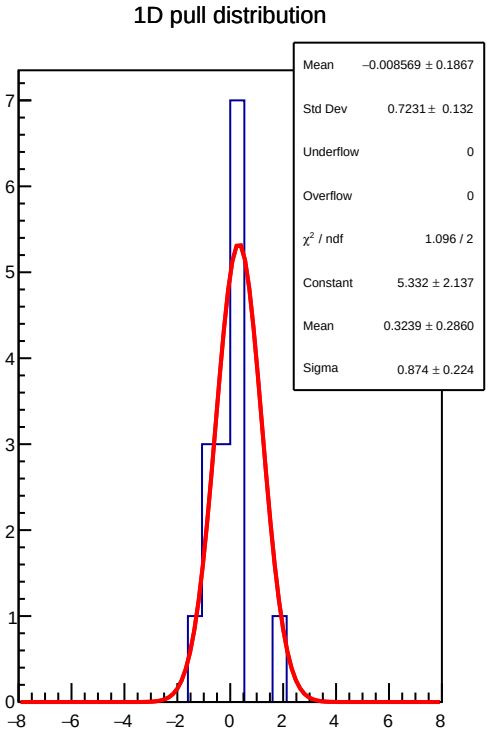


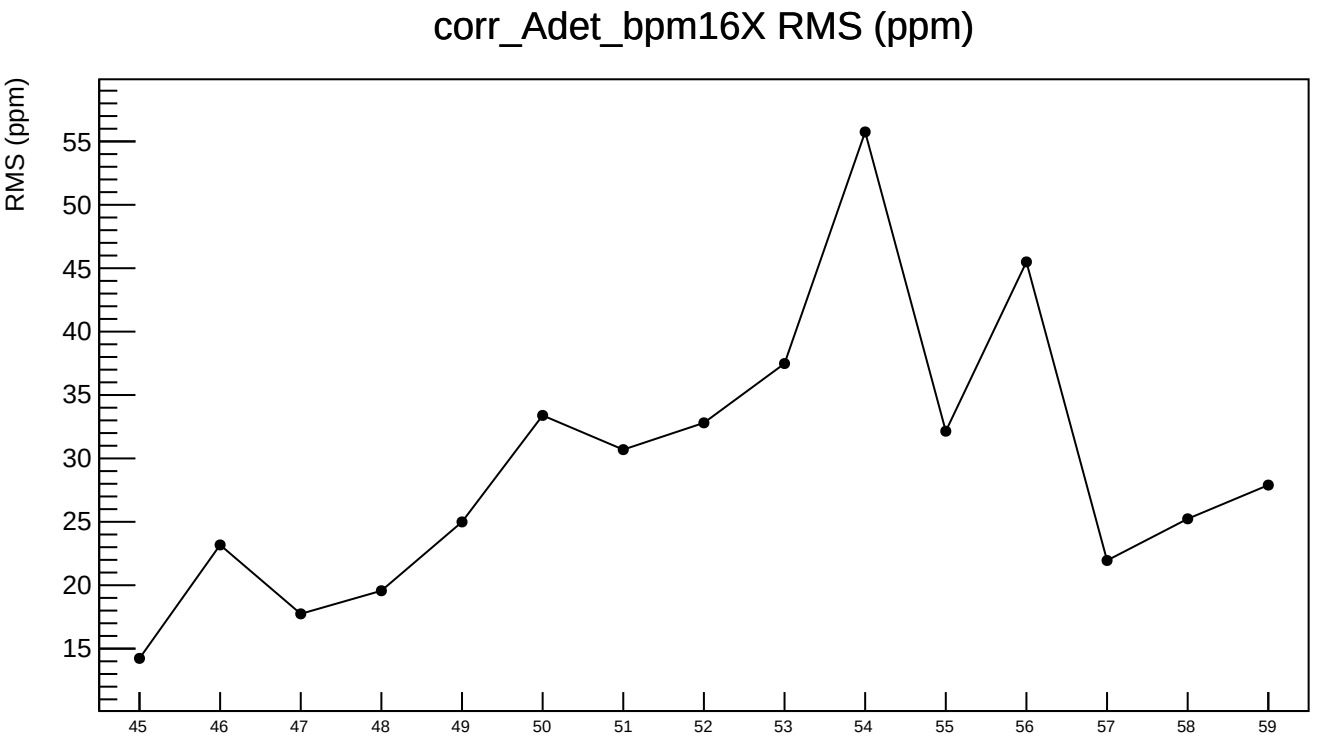

corr_Adet_bpm1Y (ppb)
χ² / ndf 8.166 / 14
p0 −5.495 ± 6.135
40
20
0
−20
−40
−60
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

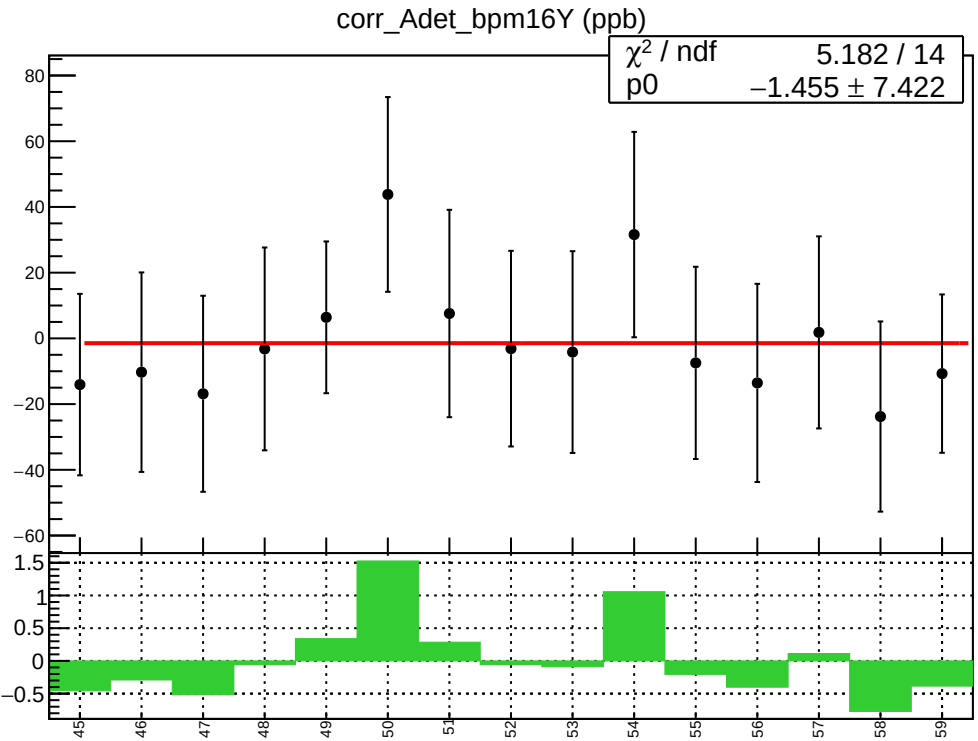

1D pull distribution
Mean 0.02704 ± 0.1904
Std Dev 0.7374 ± 0.1346
Underflow 0
Overflow 0
χ² / ndf 2.854 / 2
Constant 12.58 ± 6.23
Mean −0.06229 ± 0.09673
Sigma 0.3911 ± 0.0846
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

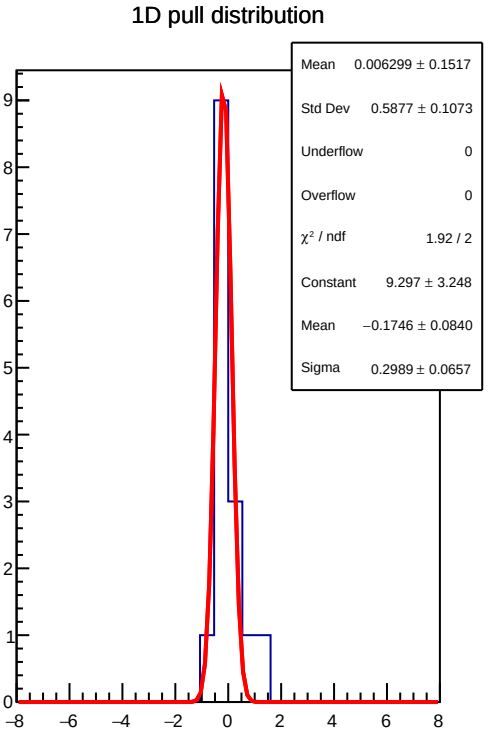

corr_Adet_bpm1Y RMS (ppm)
RMS (ppm)
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

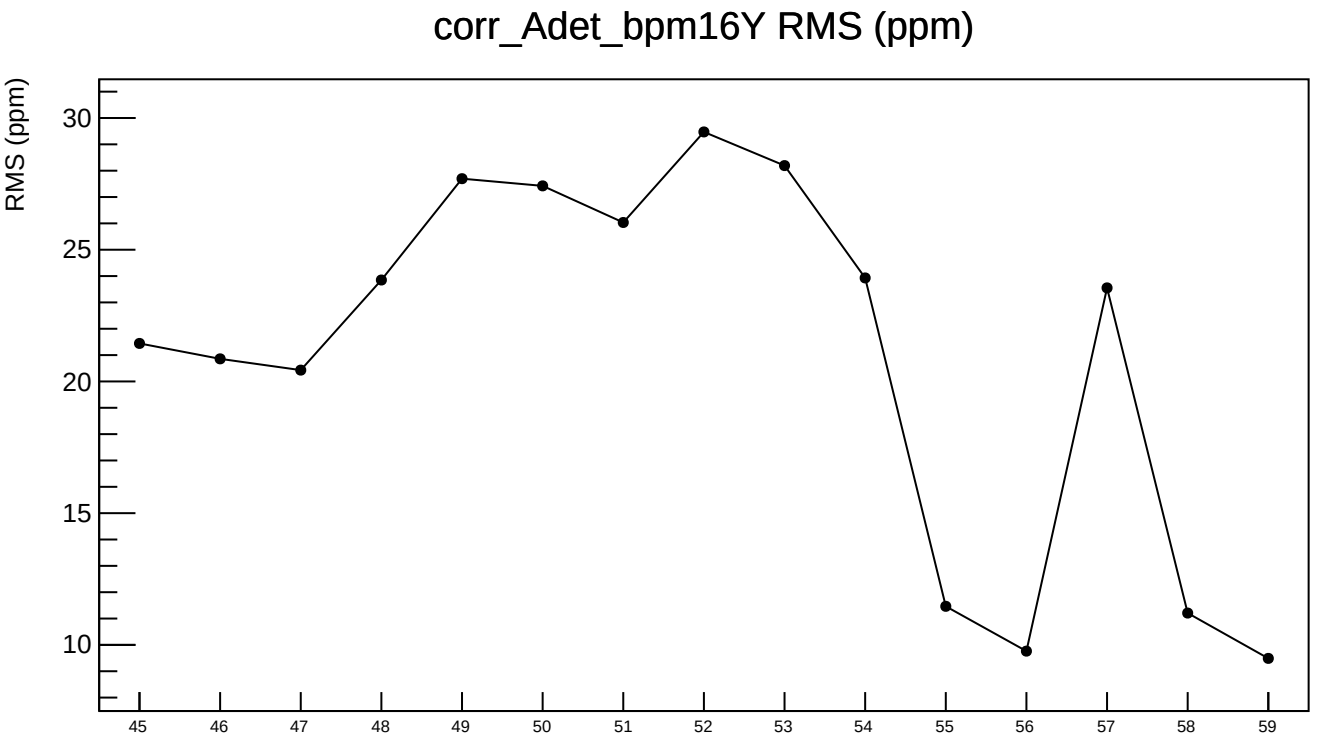

corr_Adet_bpm16X (ppb)
χ² / ndf 7.843 / 14
p0 −10.45 ± 14.45
150
100
50
0
−50
−100
−150
2
1.5
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

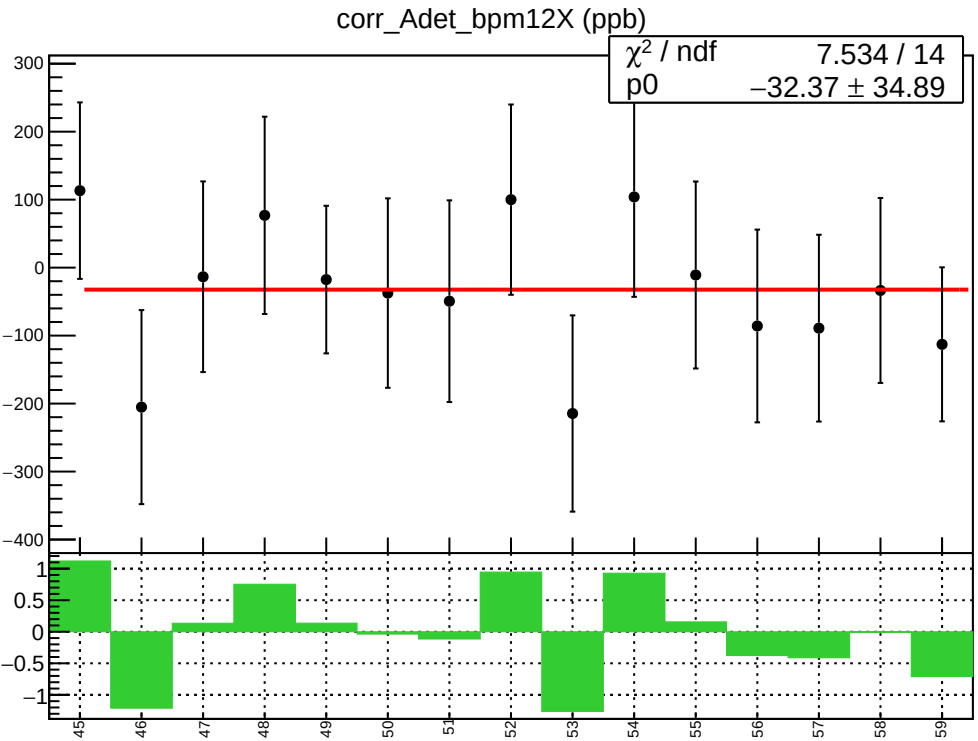

1D pull distribution
Mean −0.008569 ± 0.1867
Std Dev 0.7231 ± 0.132
Underflow 0
Overflow 0
χ² / ndf 1.096 / 2
Constant 5.332 ± 2.137
Mean 0.3239 ± 0.2860
Sigma 0.874 ± 0.224
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

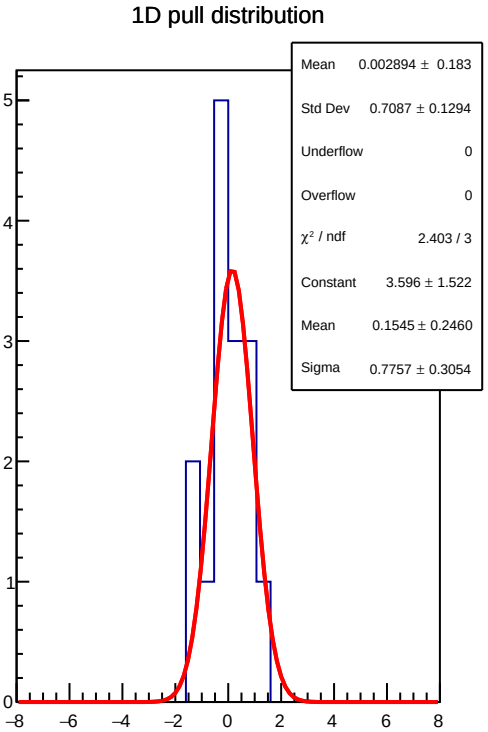

corr_Adet_bpm16X RMS (ppm)
RMS (ppm)
55
50
45
40
35
30
25
20
15
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

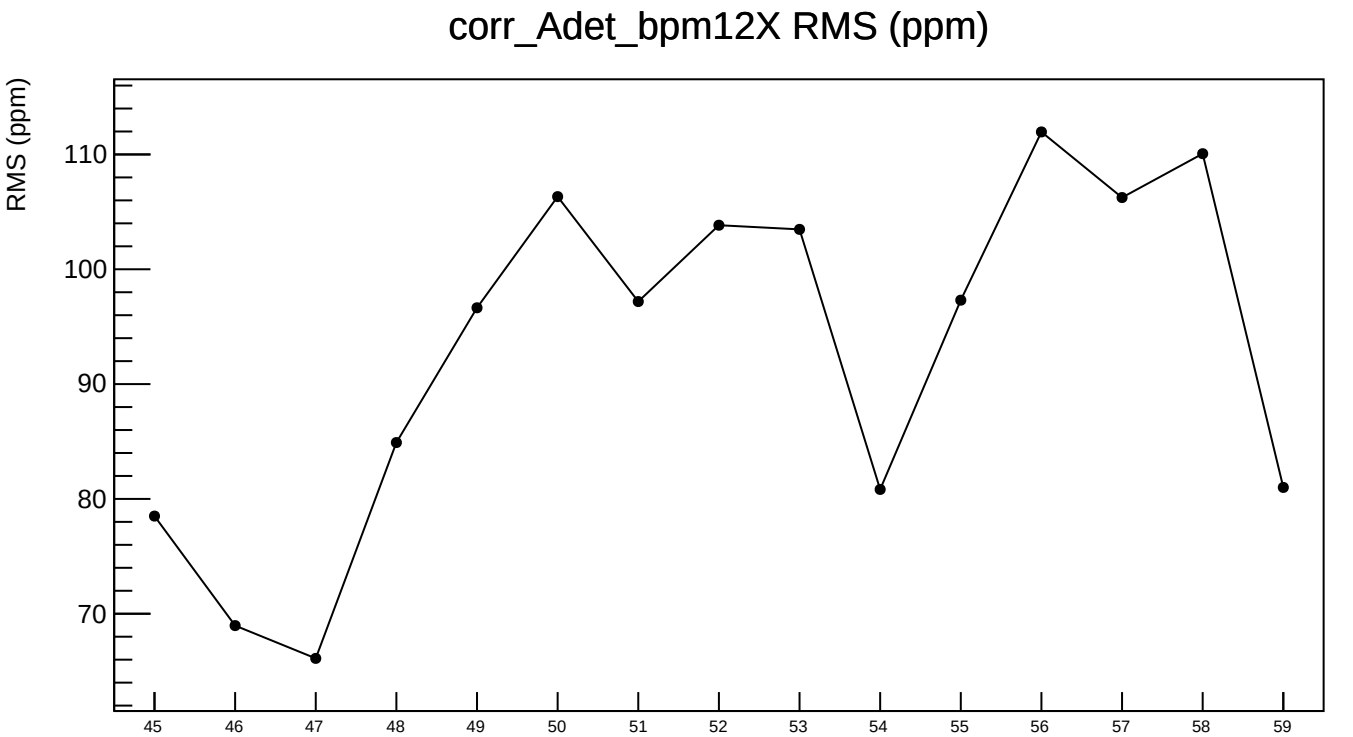

corr_Adet_bpm16Y (ppb)
χ² / ndf 5.182 / 14
p0 −1.455 ± 7.422
80
60
40
20
0
−20
−40
−60
1.5
1
0.5
0
−0.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

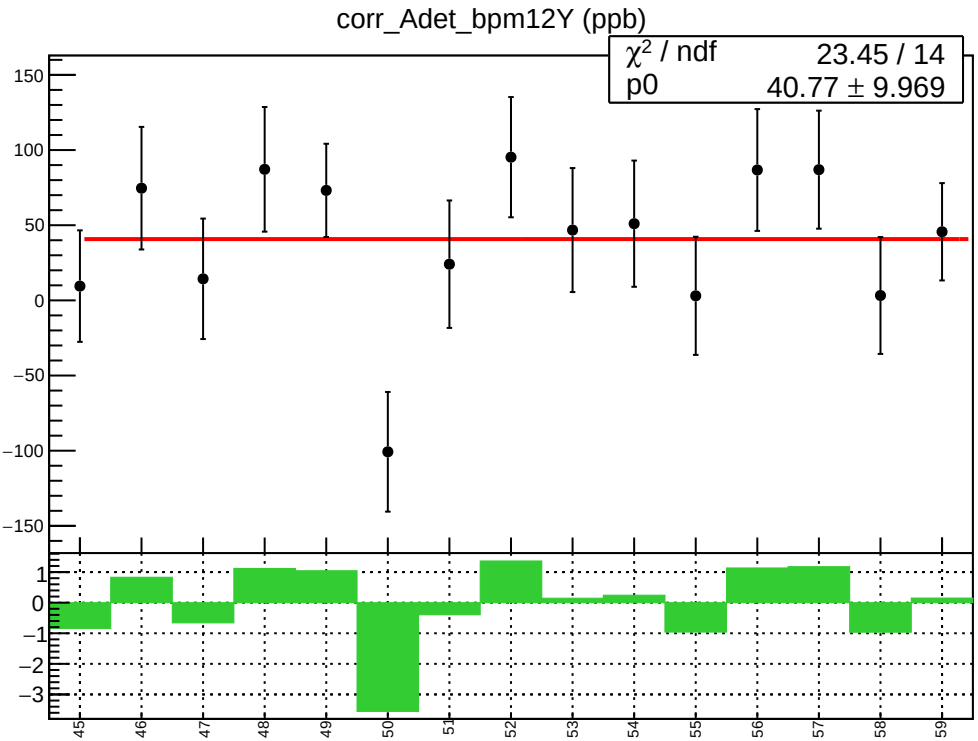

1D pull distribution
Mean 0.006299 ± 0.1517
Std Dev 0.5877 ± 0.1073
Underflow 0
Overflow 0
χ² / ndf 1.92 / 2
Constant 9.297 ± 3.248
Mean −0.1746 ± 0.0840
Sigma 0.2989 ± 0.0657
9
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

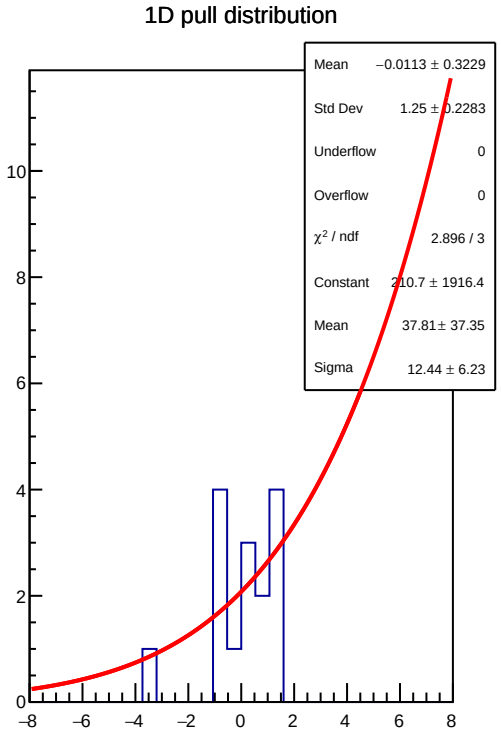

corr_Adet_bpm16Y RMS (ppm)
RMS (ppm)
30
25
20
15
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

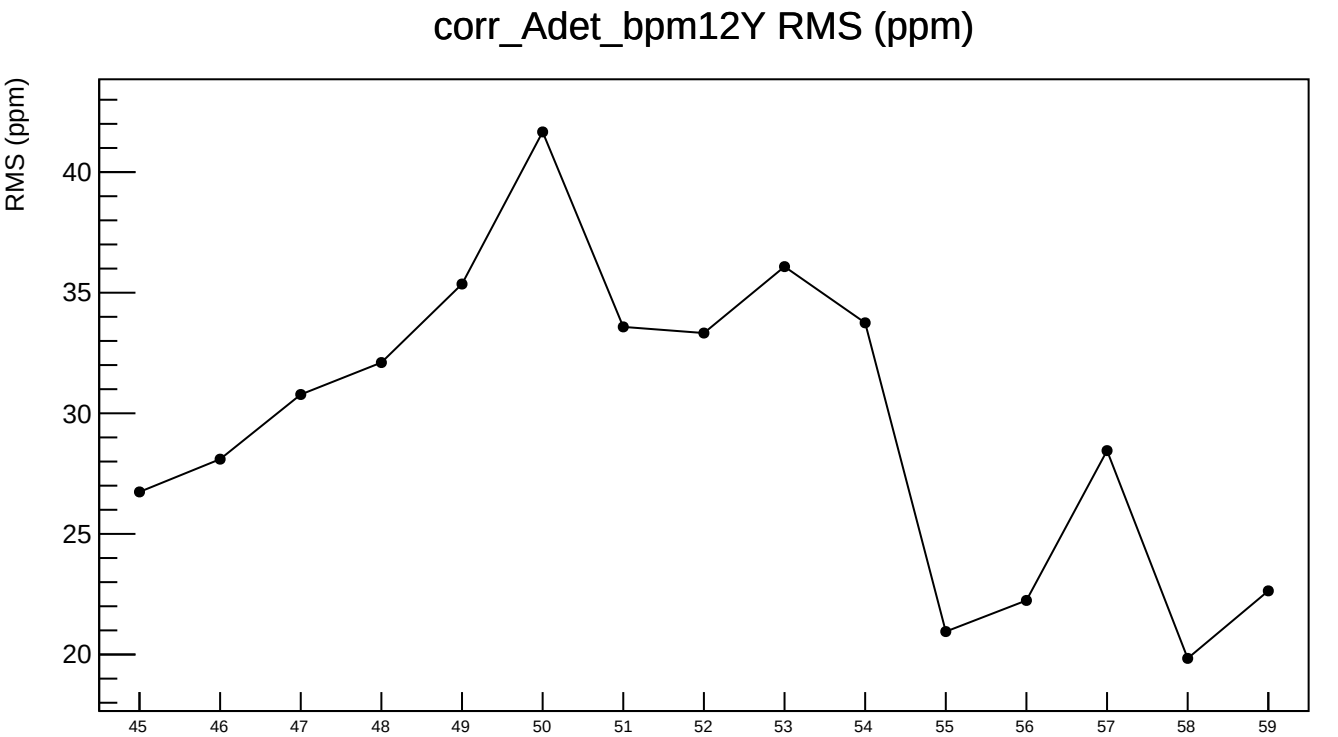

corr_Adet_bpm12X (ppb)
χ² / ndf 7.534 / 14
p0 −32.37 ± 34.89
300
200
100
0
−100
−200
−300
−400
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

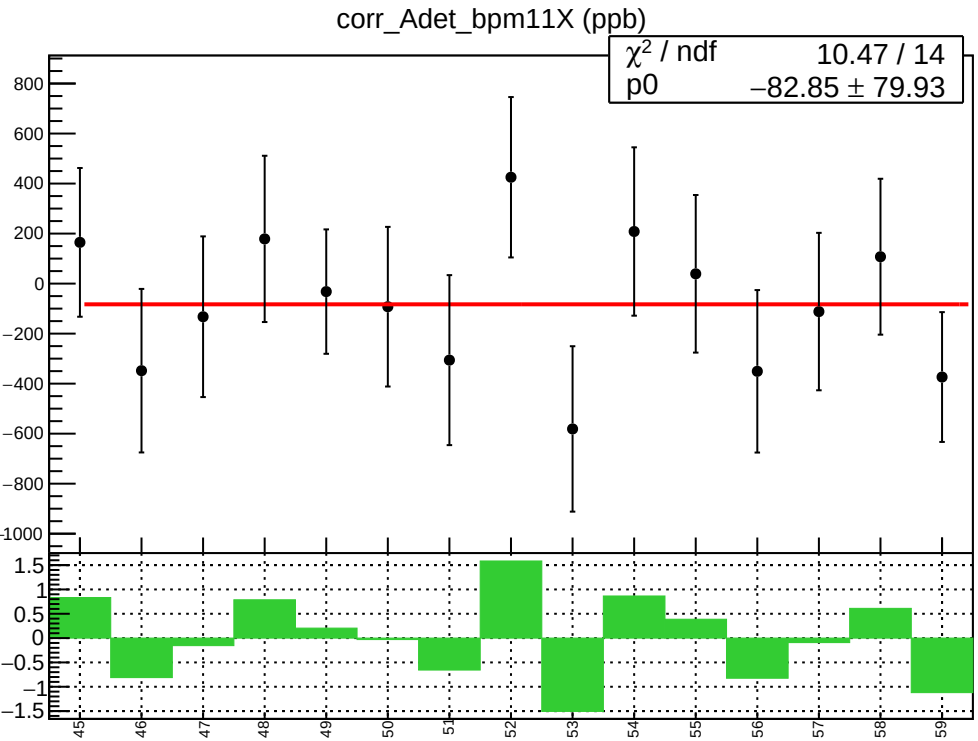

1D pull distribution
Mean 0.002894 ± 0.183
Std Dev 0.7087 ± 0.1294
Underflow 0
Overflow 0
χ² / ndf 2.403 / 3
Constant 3.596 ± 1.522
Mean 0.1545 ± 0.2460
Sigma 0.7757 ± 0.3054
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

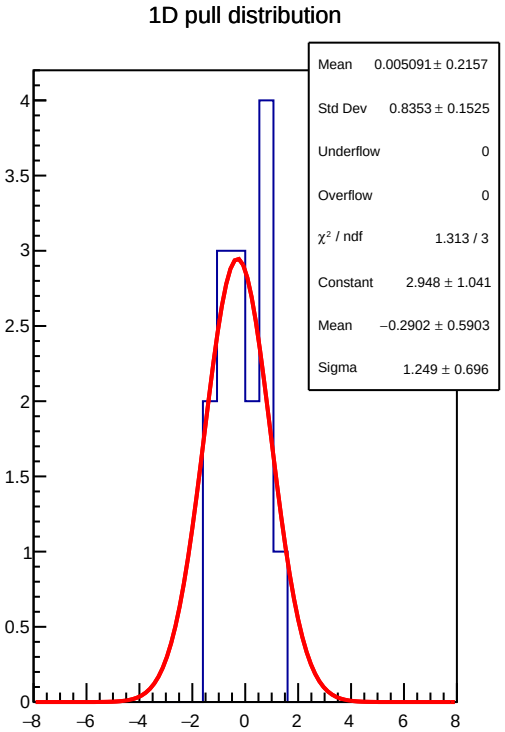

corr_Adet_bpm12X RMS (ppm)
RMS (ppm)
110
100
90
80
70
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

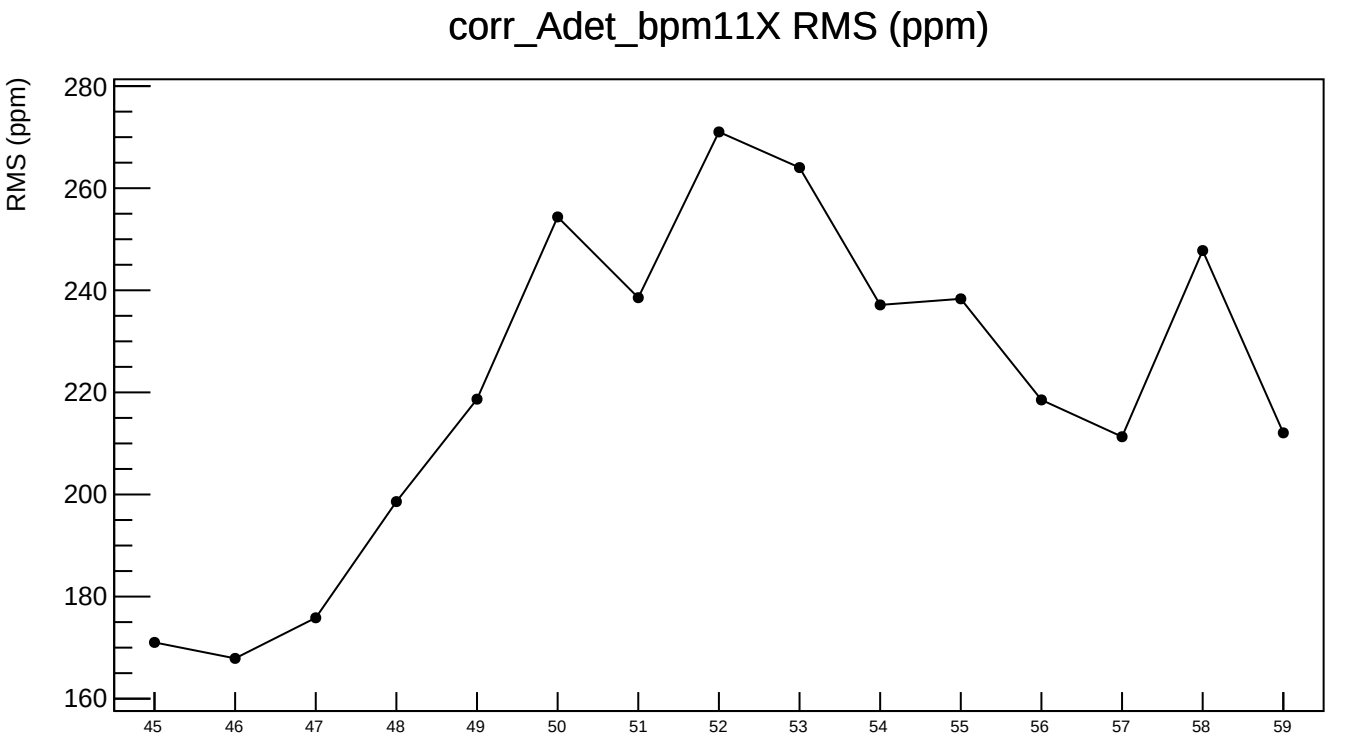

corr_Adet_bpm12Y (ppb)
χ² / ndf 23.45 / 14
p0 40.77 ± 9.969
150
100
50
0
−50
−100
−150
1
0
−1
−2
−3
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

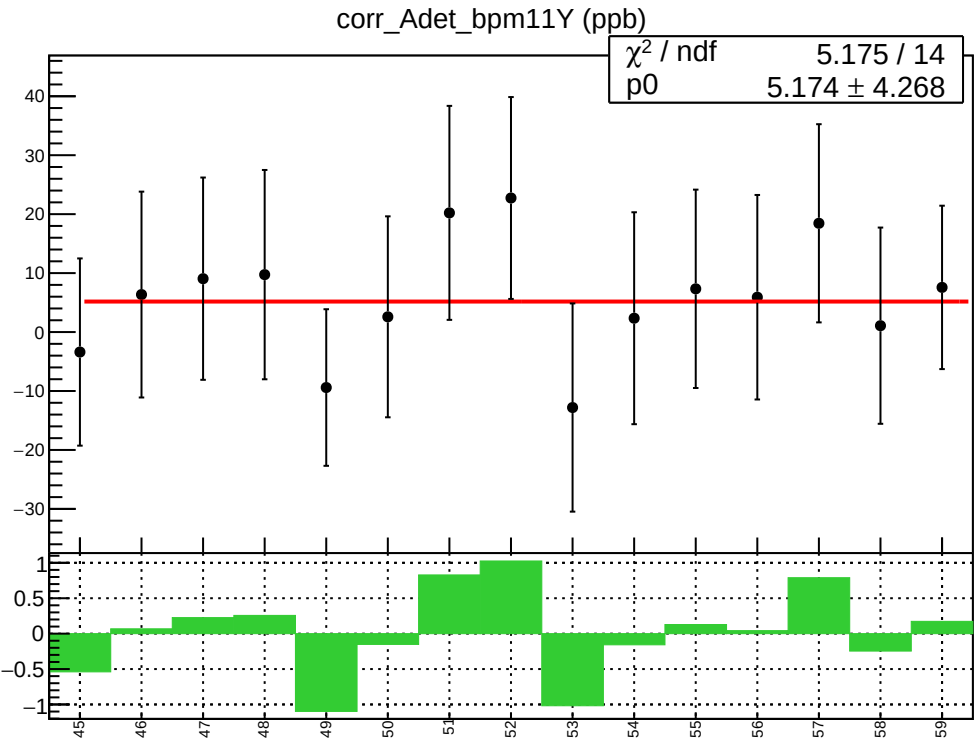

1D pull distribution
Mean −0.0113 ± 0.3229
Std Dev 1.25 ± 0.2283
Underflow 0
Overflow 0
χ² / ndf 2.896 / 3
Constant 210.7 ± 1916.4
Mean 37.81 ± 37.35
Sigma 12.44 ± 6.23
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

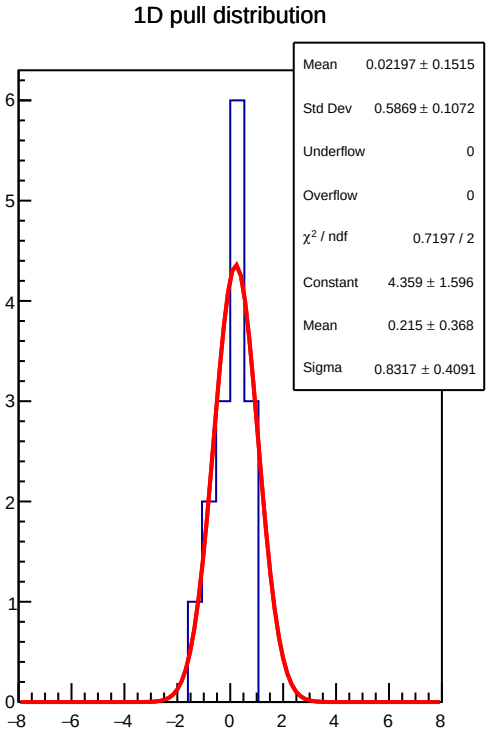

corr_Adet_bpm12Y RMS (ppm)
RMS (ppm)
40
35
30
25
20
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

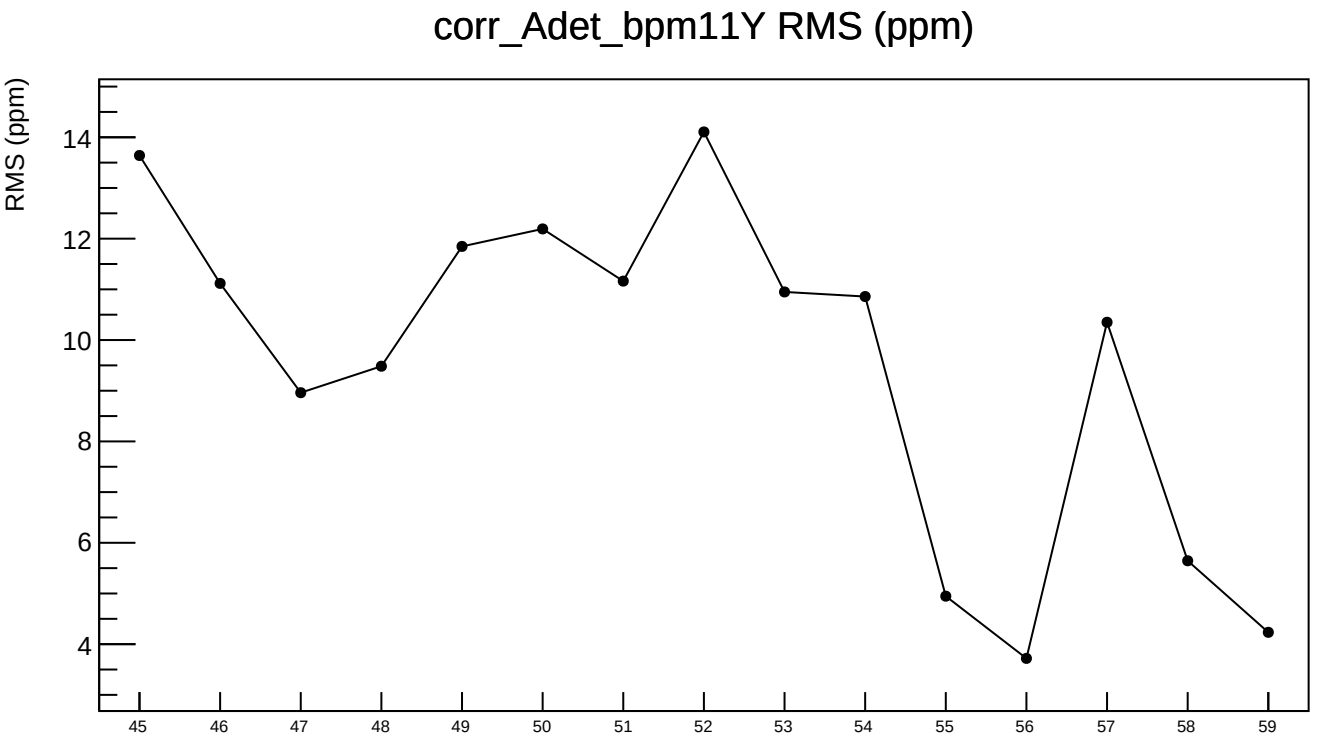

corr_Adet_bpm11X (ppb)
χ² / ndf 10.47 / 14
p0 −82.85 ± 79.93
800
600
400
200
0
−200
−400
−600
−800
−1000
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

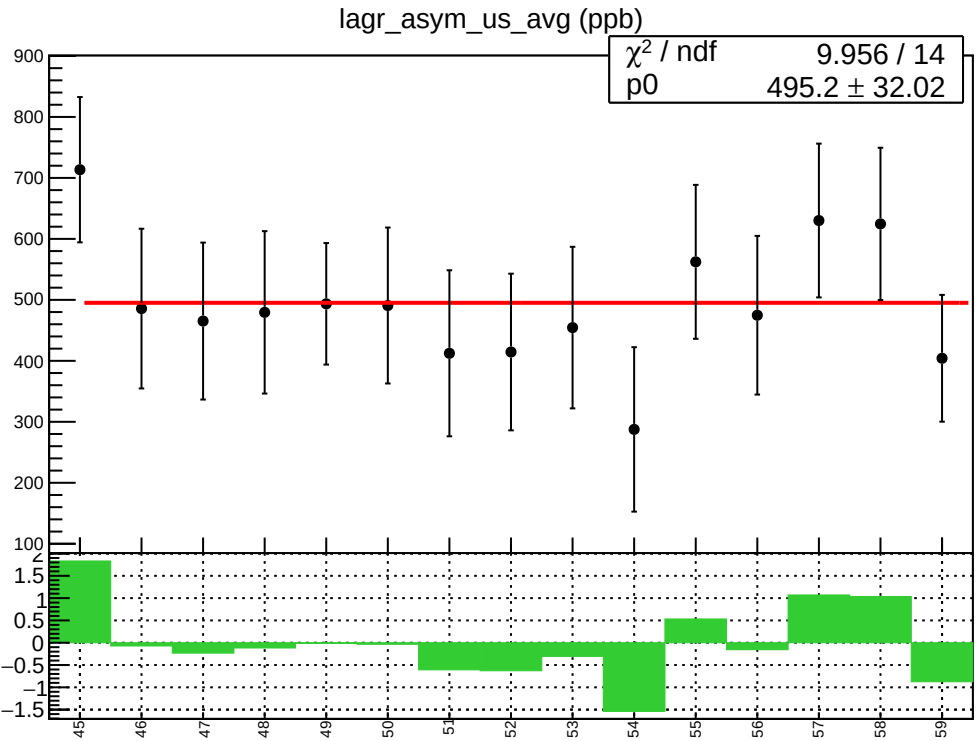

1D pull distribution
Mean 0.005091 ± 0.2157
Std Dev 0.8353 ± 0.1525
Underflow 0
Overflow 0
χ² / ndf 1.313 / 3
Constant 2.948 ± 1.041
Mean −0.2902 ± 0.5903
Sigma 1.249 ± 0.696
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

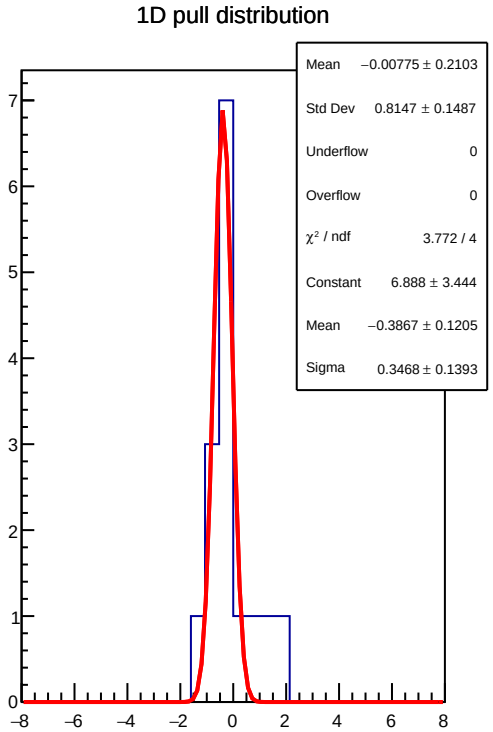

corr_Adet_bpm11X RMS (ppm)
RMS (ppm)
280
260
240
220
200
180
160
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

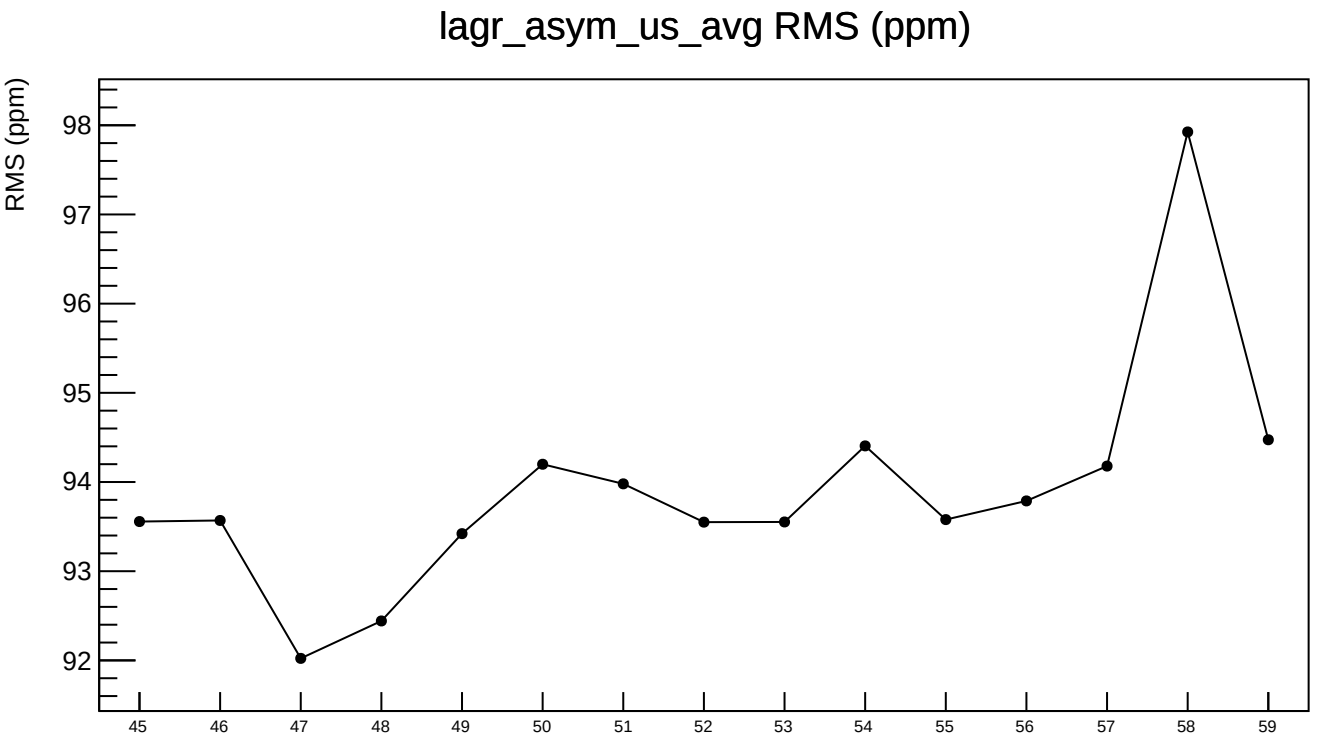

corr_Adet_bpm11Y (ppb)
χ² / ndf 5.175 / 14
p0 5.174 ± 4.268
40
30
20
10
0
−10
−20
−30
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

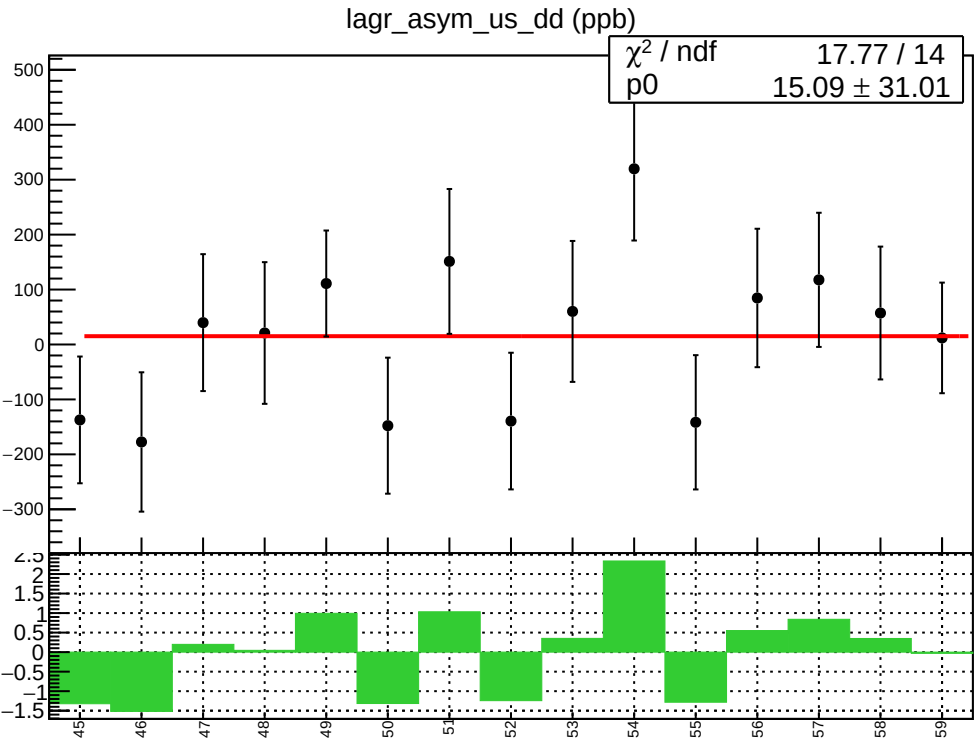

1D pull distribution
Mean 0.02197 ± 0.1515
Std Dev 0.5869 ± 0.1072
Underflow 0
Overflow 0
χ² / ndf 0.7197 / 2
Constant 4.359 ± 1.596
Mean 0.215 ± 0.368
Sigma 0.8317 ± 0.4091
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

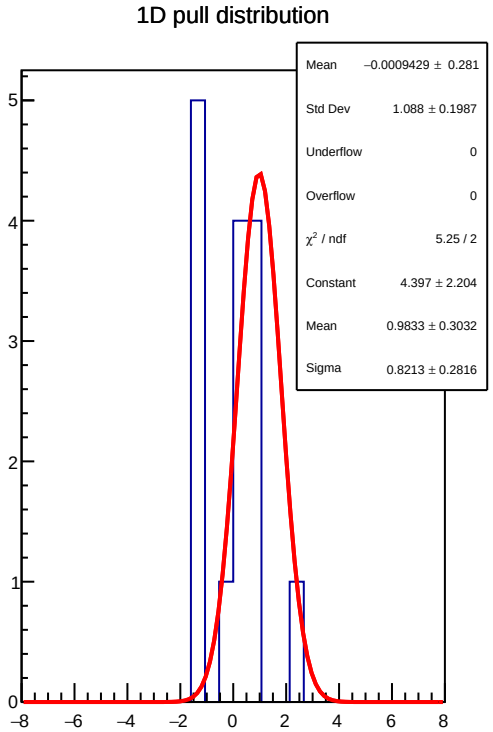

corr_Adet_bpm11Y RMS (ppm)
RMS (ppm)
14
12
10
8
6
4
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

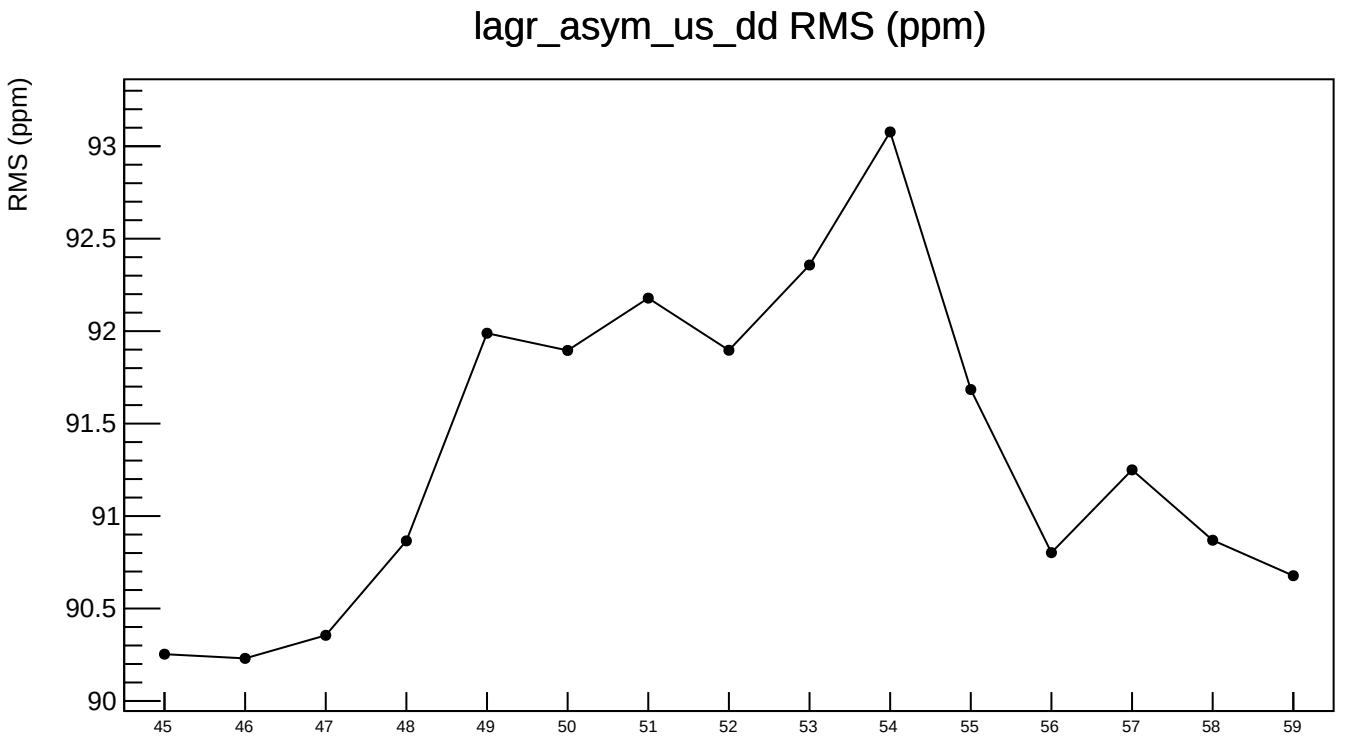

lagr_asym_us_avg (ppb)
χ² / ndf 9.956 / 14
p0 495.2 ± 32.02

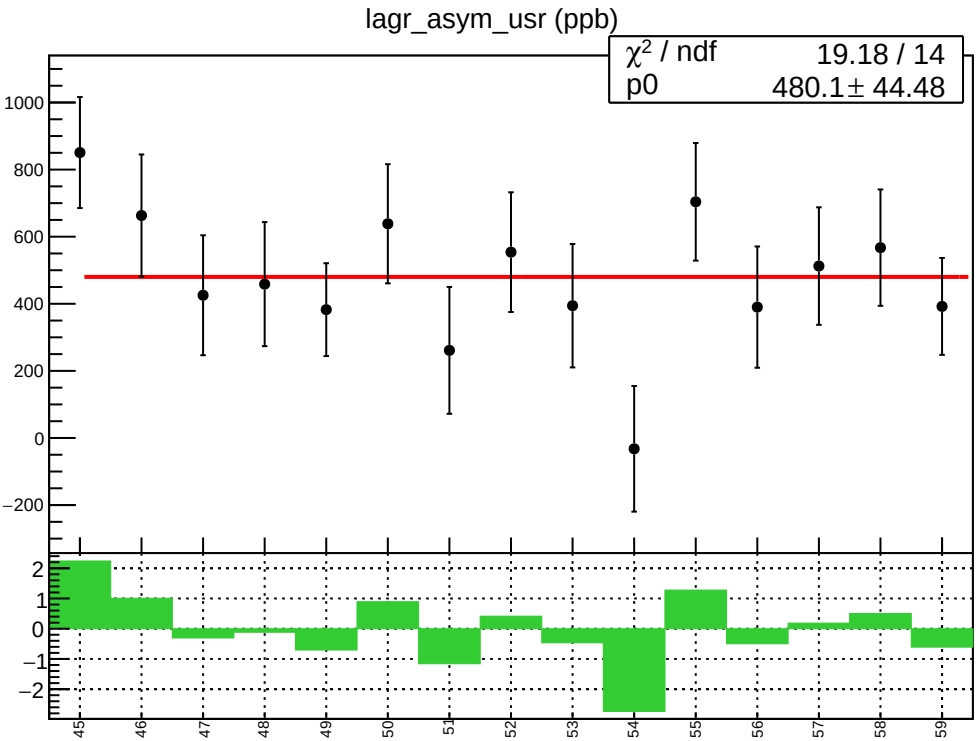

1D pull distribution
Mean −0.00775 ± 0.2103
Std Dev 0.8147 ± 0.1487
Underflow 0
Overflow 0
χ² / ndf 3.772 / 4
Constant 6.888 ± 3.444
Mean −0.3867 ± 0.1205
Sigma 0.3468 ± 0.1393

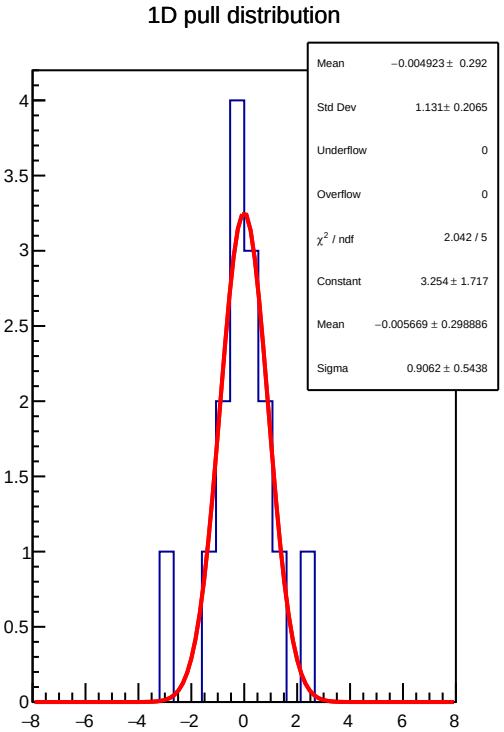

lagr_asym_us_avg RMS (ppm)
RMS (ppm)
98
97
96
95
94
93
92
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

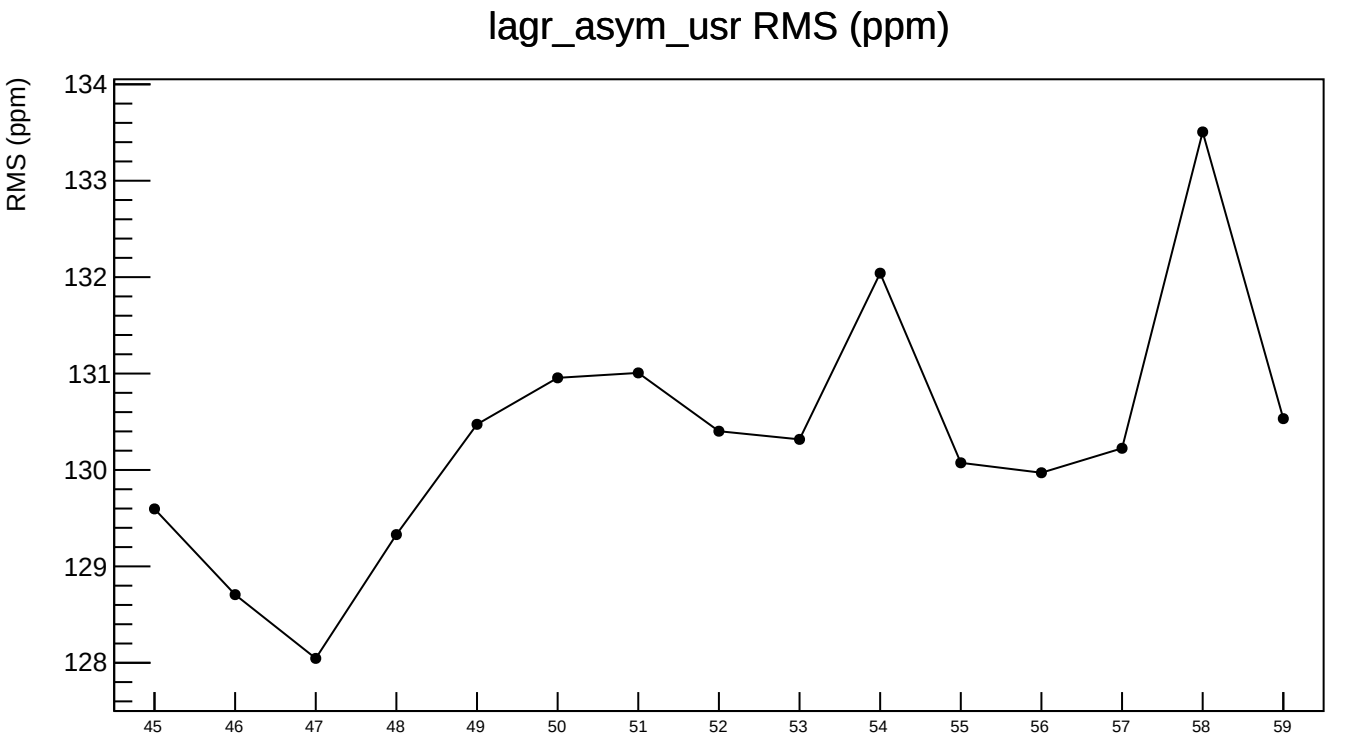

lagr_asym_us_dd (ppb)
χ² / ndf 17.77 / 14
p0 15.09 ± 31.01

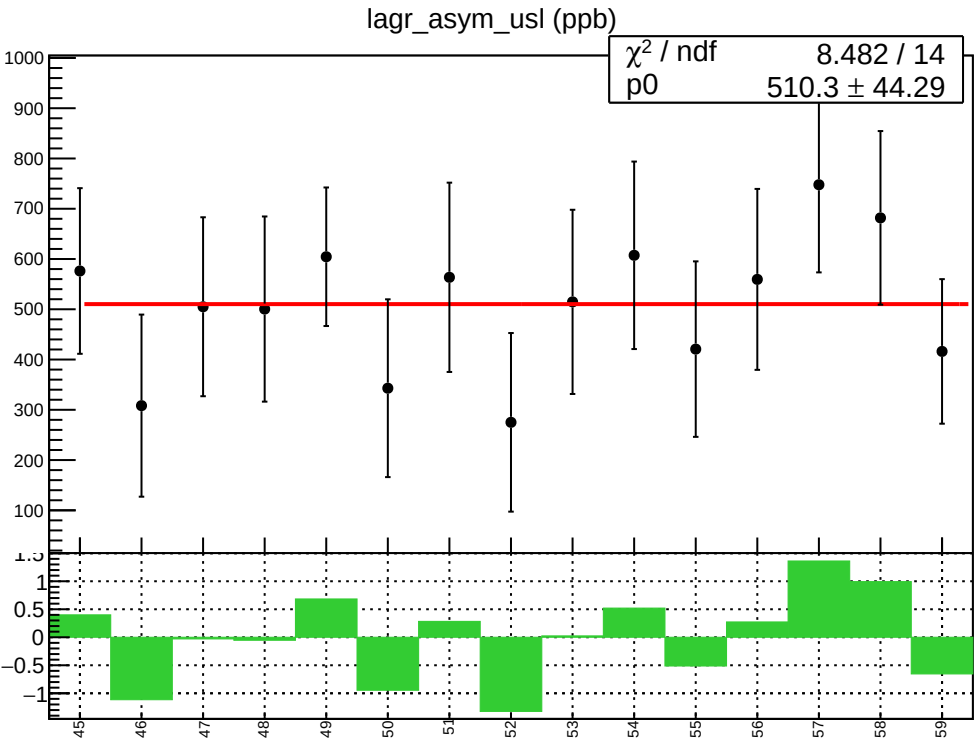

1D pull distribution
Mean −0.0009429 ± 0.281
Std Dev 1.088 ± 0.1987
Underflow 0
Overflow 0
χ² / ndf 5.25 / 2
Constant 4.397 ± 2.204
Mean 0.9833 ± 0.3032
Sigma 0.8213 ± 0.2816

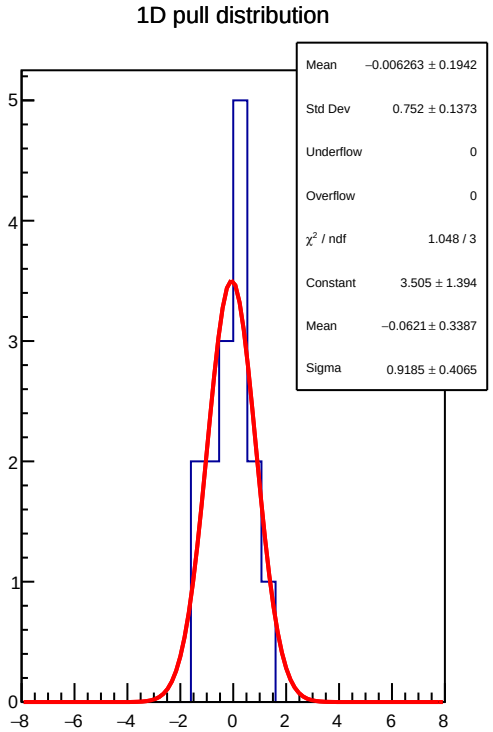

lagr_asym_us_dd RMS (ppm)
RMS (ppm)
93
92.5
92
91.5
91
90.5
90
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

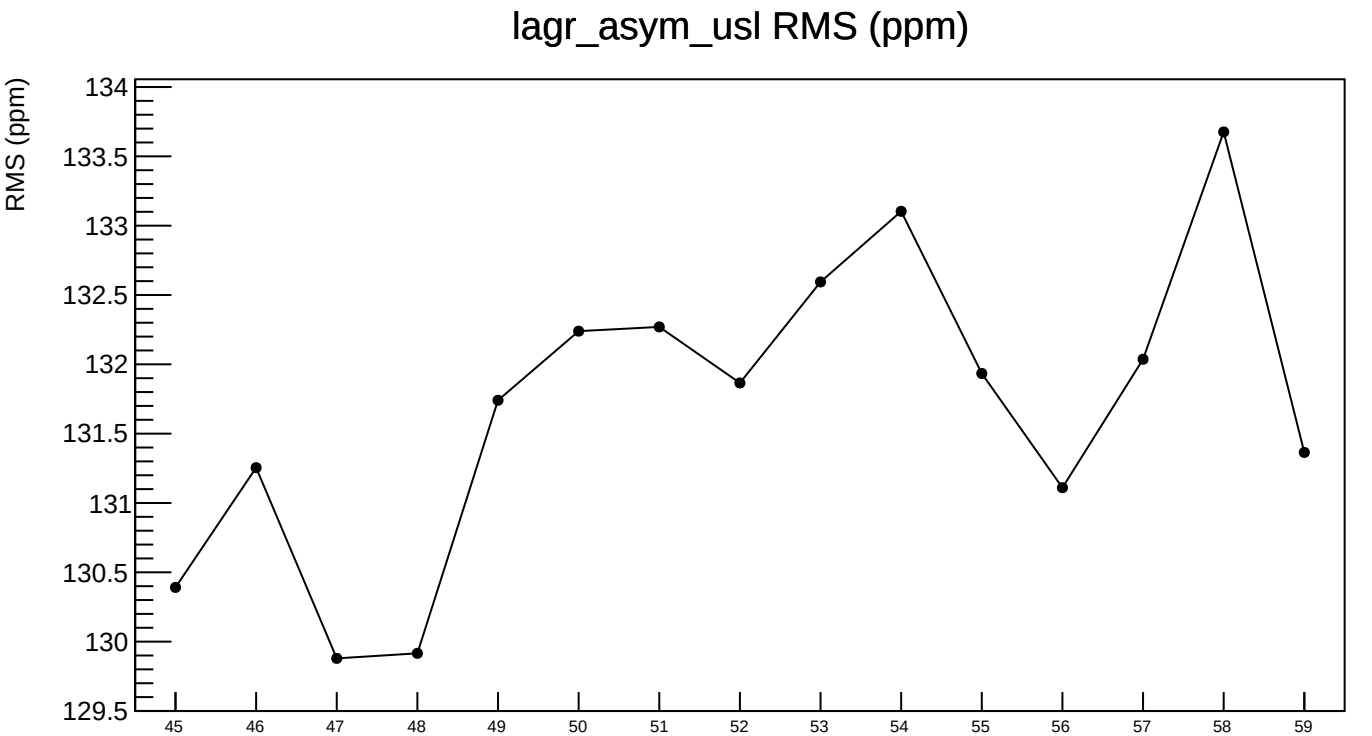

lagr_asym_usr (ppb)
χ² / ndf 19.18 / 14
p0 480.1 ± 44.48
1000
800
600
400
200
0
−200
2
1
0
−1
−2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

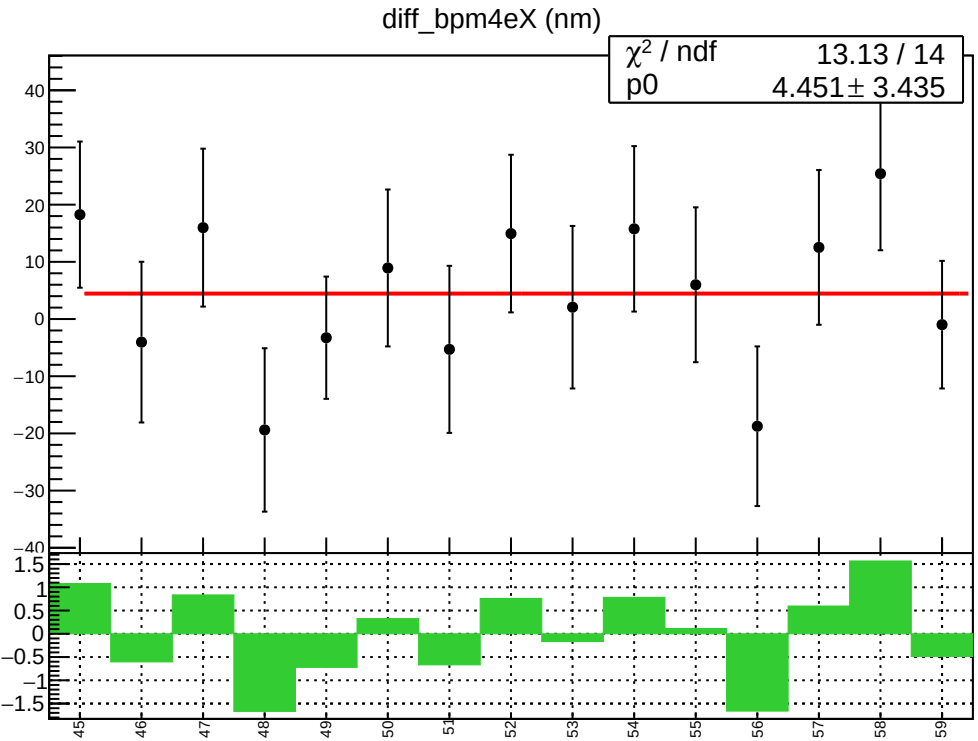

1D pull distribution
Mean −0.004923 ± 0.292
Std Dev 1.131 ± 0.2065
Underflow 0
Overflow 0
χ² / ndf 2.042 / 5
Constant 3.254 ± 1.717
Mean −0.005669 ± 0.298886
Sigma 0.9062 ± 0.5438
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

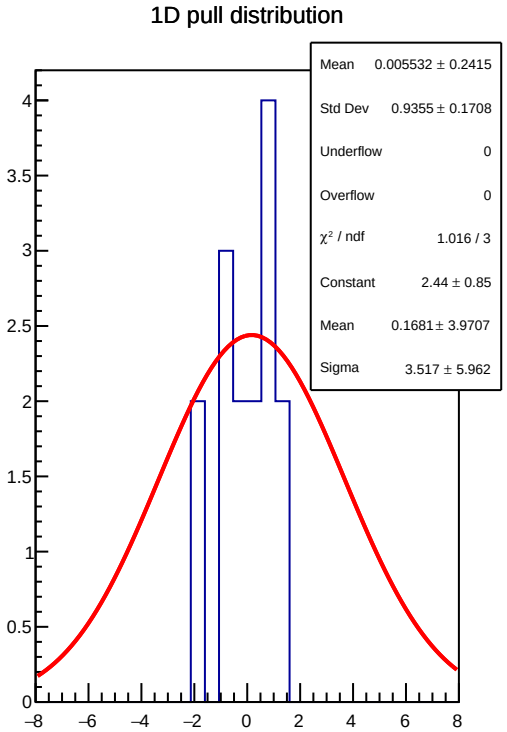

lagr_asym_usr RMS (ppm)
RMS (ppm)
134
133
132
131
130
129
128
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

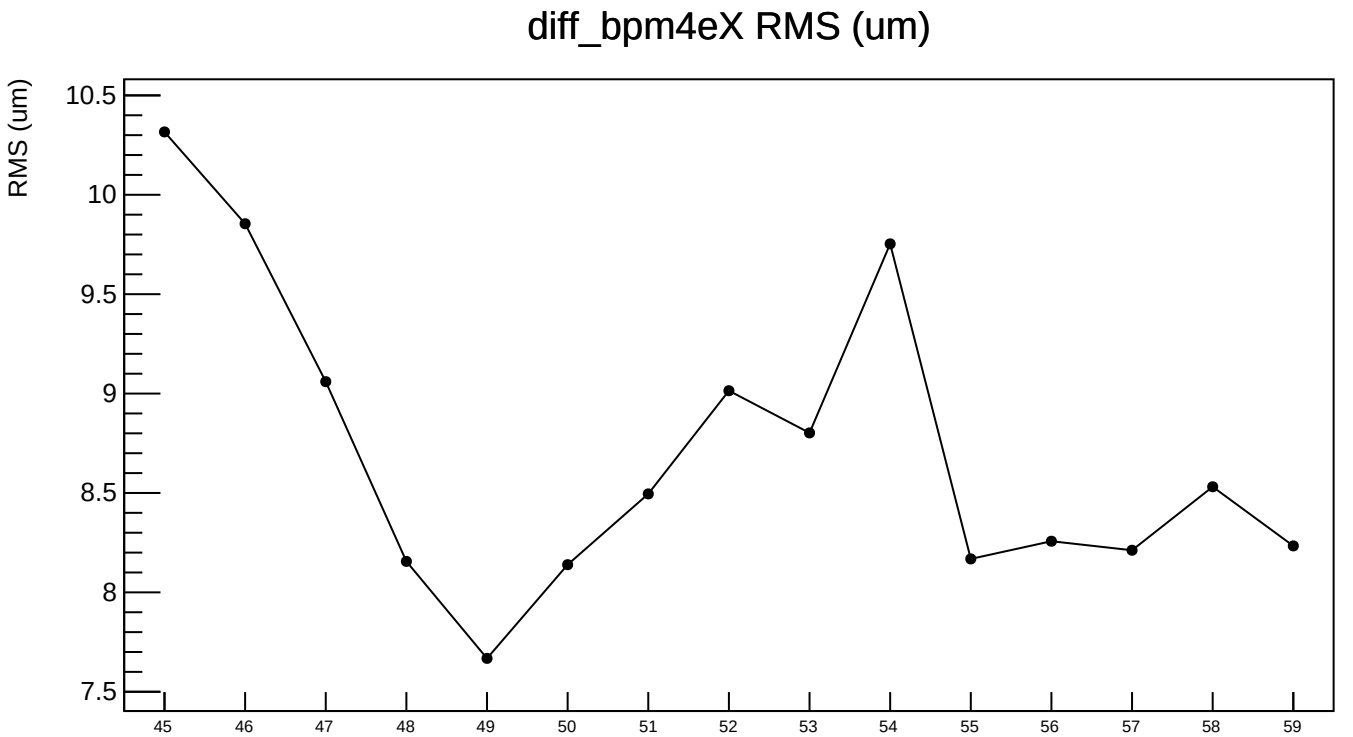

lagr_asym_usl (ppb)
χ² / ndf 8.482 / 14
p0 510.3 ± 44.29

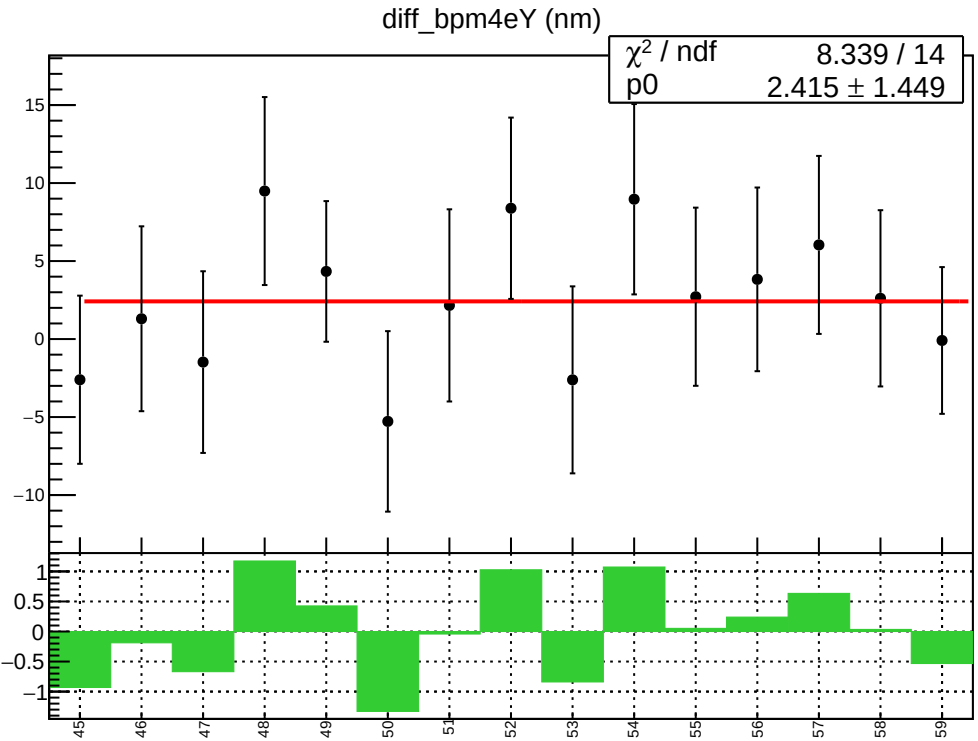

1D pull distribution
Mean −0.006263 ± 0.1942
Std Dev 0.752 ± 0.1373
Underflow 0
Overflow 0
χ² / ndf 1.048 / 3
Constant 3.505 ± 1.394
Mean −0.0621 ± 0.3387
Sigma 0.9185 ± 0.4065

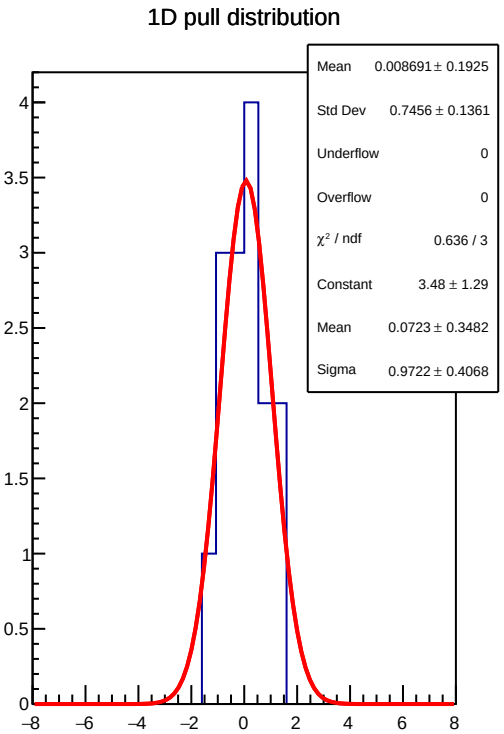

lagr_asym_usl RMS (ppm)
RMS (ppm)
134
133.5
133
132.5
132
131.5
131
130.5
130
129.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

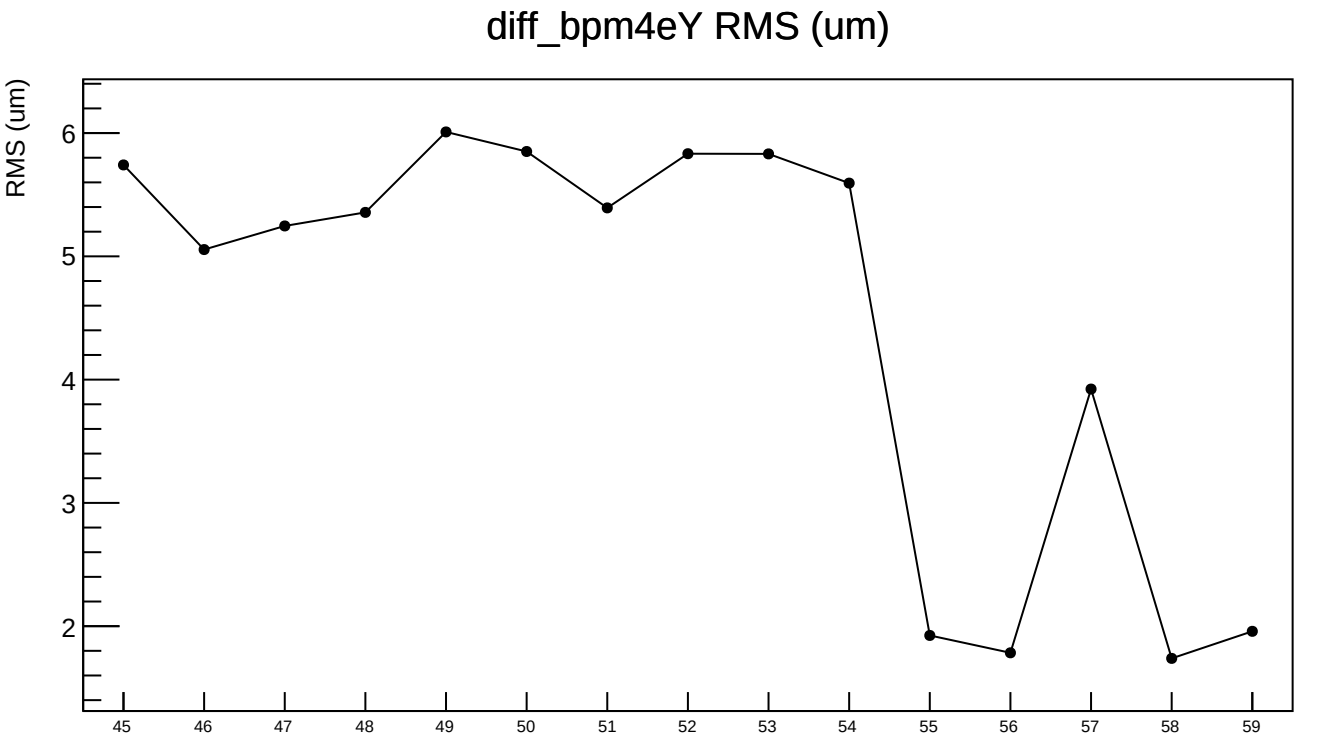

diff_bpm4eX (nm)
χ² / ndf 13.13 / 14
p0 4.451 ± 3.435

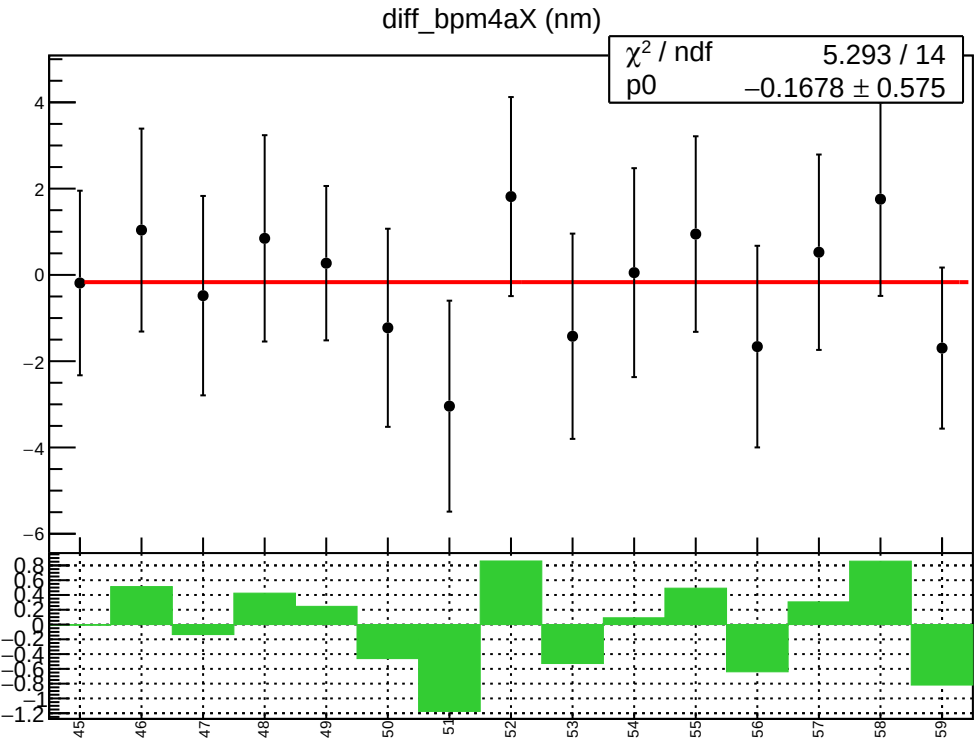

1D pull distribution
Mean 0.005532 ± 0.2415
Std Dev 0.9355 ± 0.1708
Underflow 0
Overflow 0
χ² / ndf 1.016 / 3
Constant 2.44 ± 0.85
Mean 0.1681 ± 3.9707
Sigma 3.517 ± 5.962

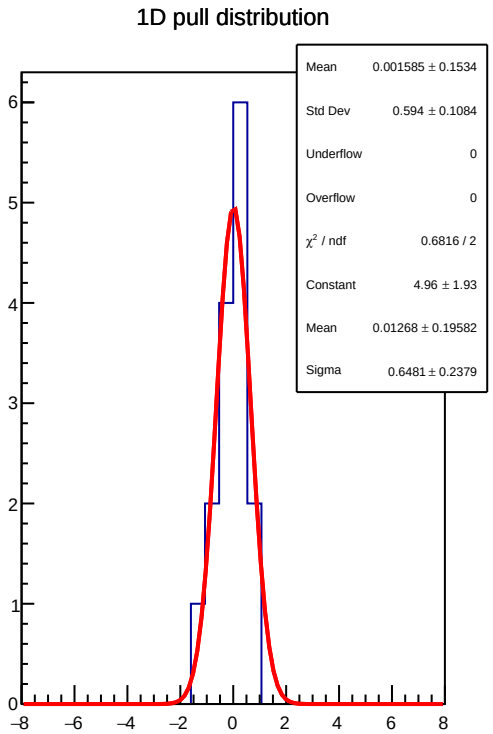

diff_bpm4eX RMS (um)
RMS (um)
10.5
10
9.5
9
8.5
8
7.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


diff_bpm4eY (nm)
χ² / ndf 8.339 / 14
p0 2.415 ± 1.449

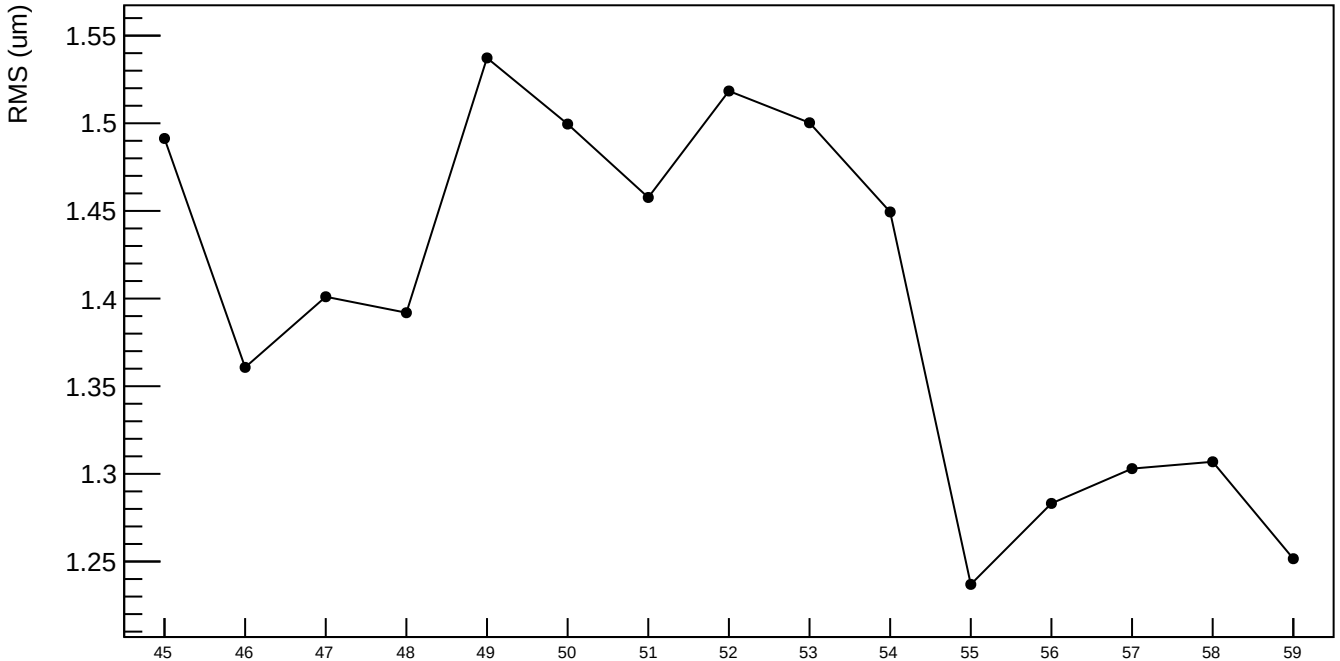

1D pull distribution
Mean 0.008691 ± 0.1925
Std Dev 0.7456 ± 0.1361
Underflow 0
Overflow 0
χ² / ndf 0.636 / 3
Constant 3.48 ± 1.29
Mean 0.0723 ± 0.3482
Sigma 0.9722 ± 0.4068

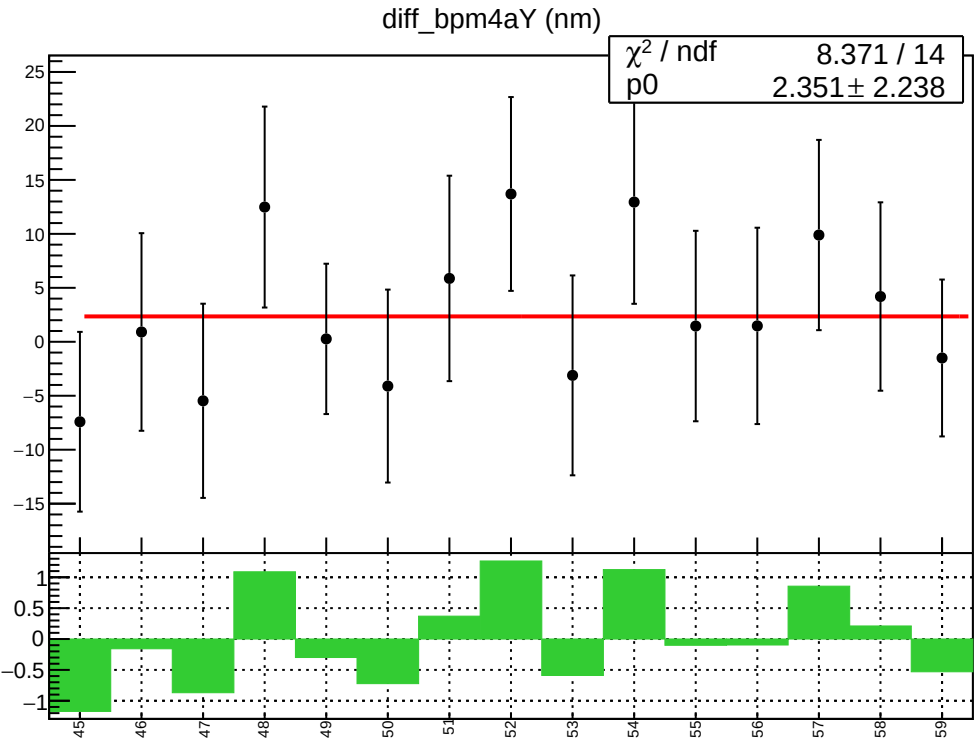

diff_bpm4eY RMS (um)
RMS (um)
6
5
4
3
2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

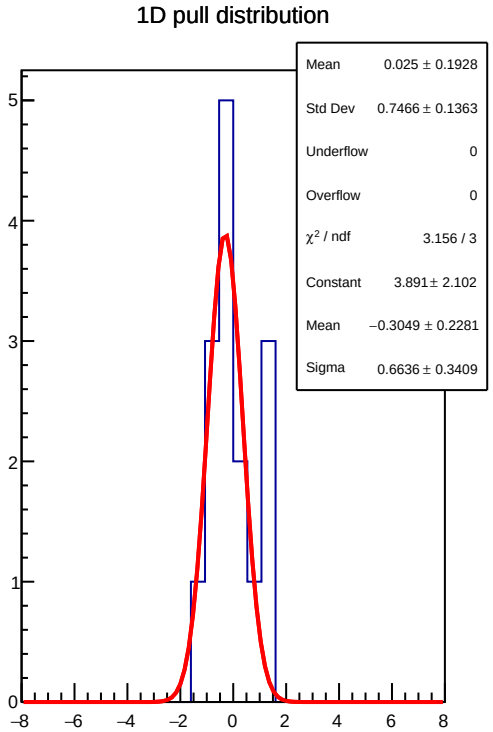

diff_bpm4aX (nm)
χ² / ndf 5.293 / 14
p0 −0.1678 ± 0.575

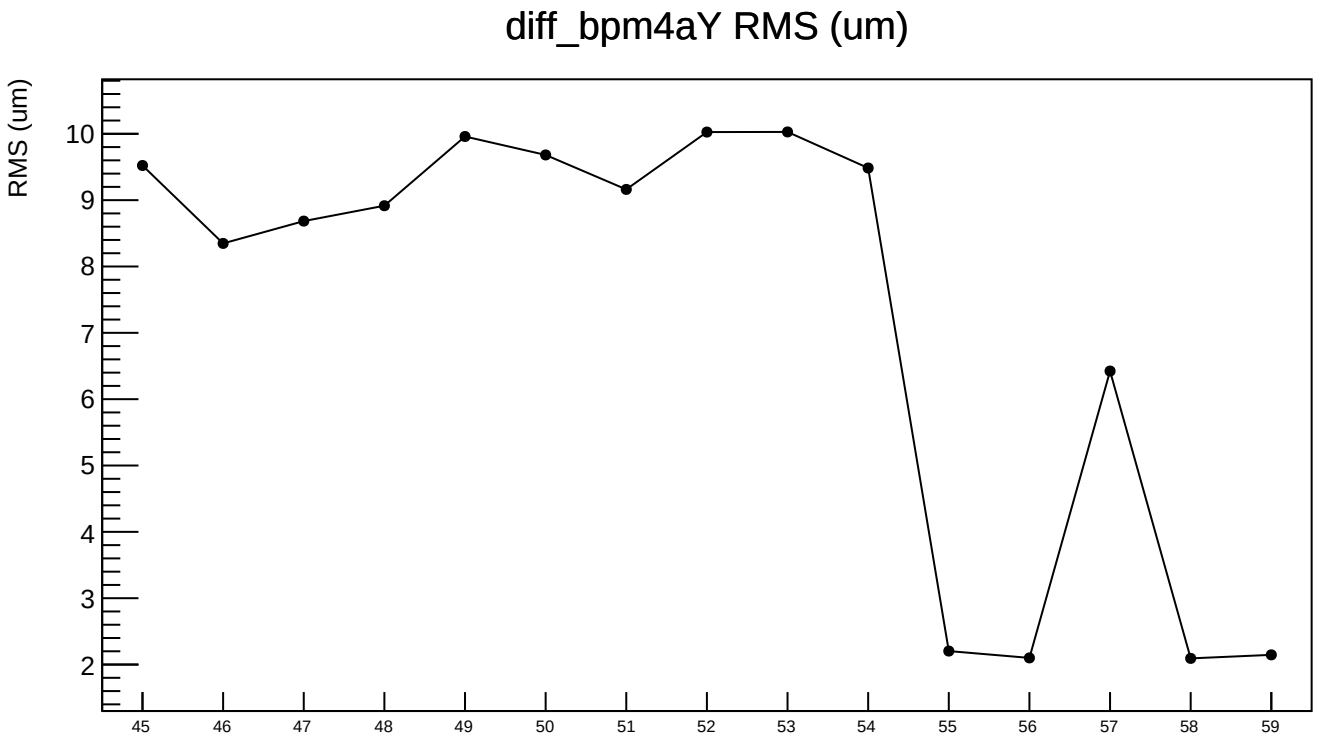

1D pull distribution
Mean 0.001585 ± 0.1534
Std Dev 0.594 ± 0.1084
Underflow 0
Overflow 0
χ² / ndf 0.6816 / 2
Constant 4.96 ± 1.93
Mean 0.01268 ± 0.19582
Sigma 0.6481 ± 0.2379

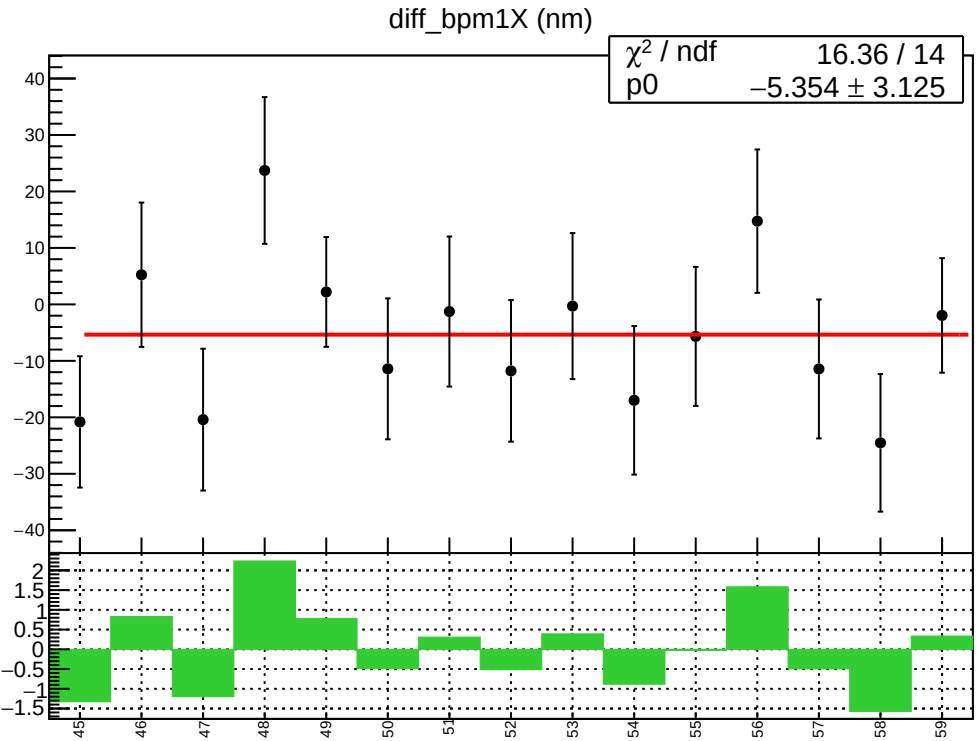
diff_bpm4aX RMS (um)

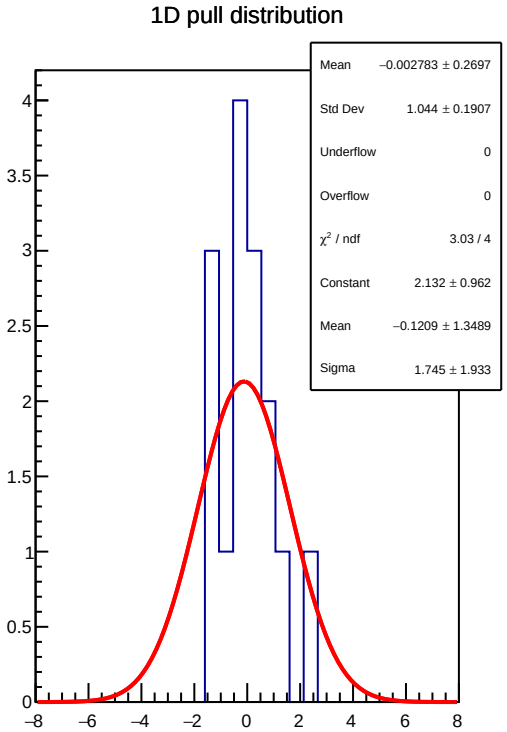


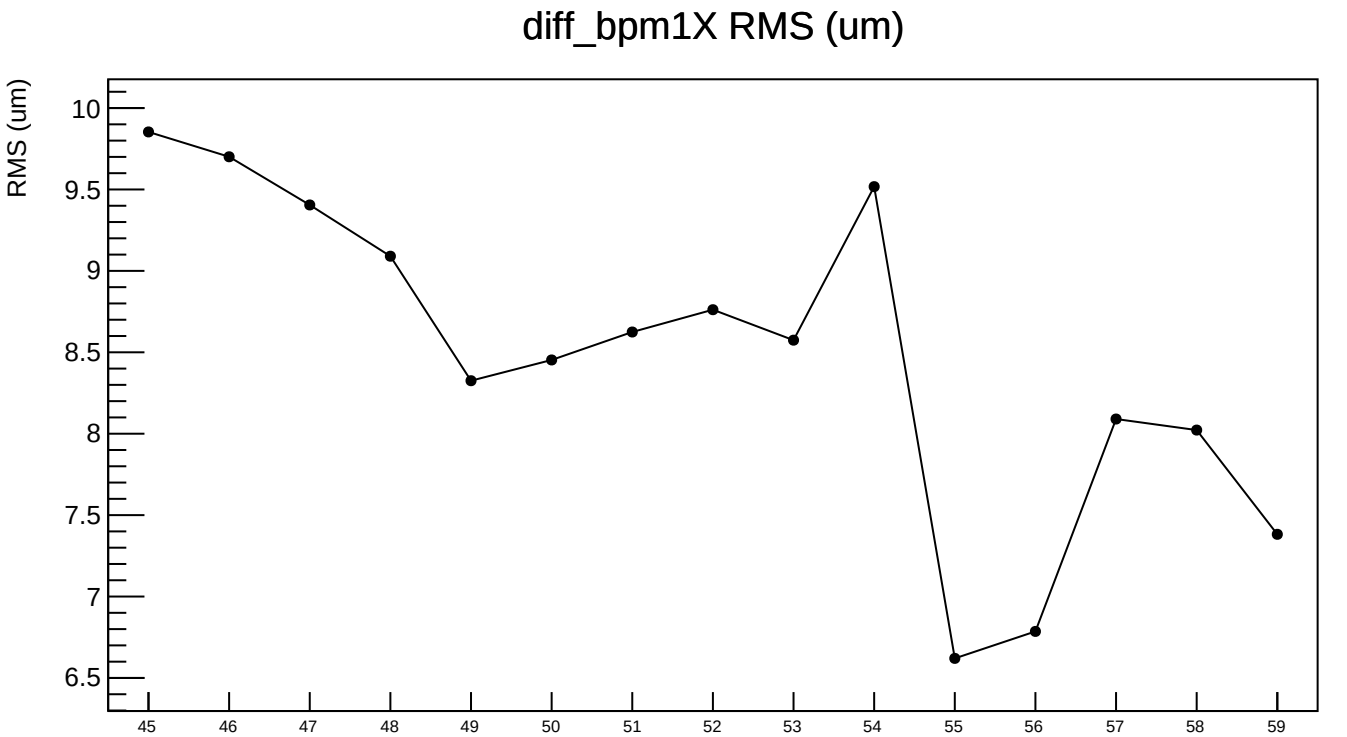

diff_bpm4aY (nm)
χ² / ndf 8.371 / 14
p0 2.351 ± 2.238

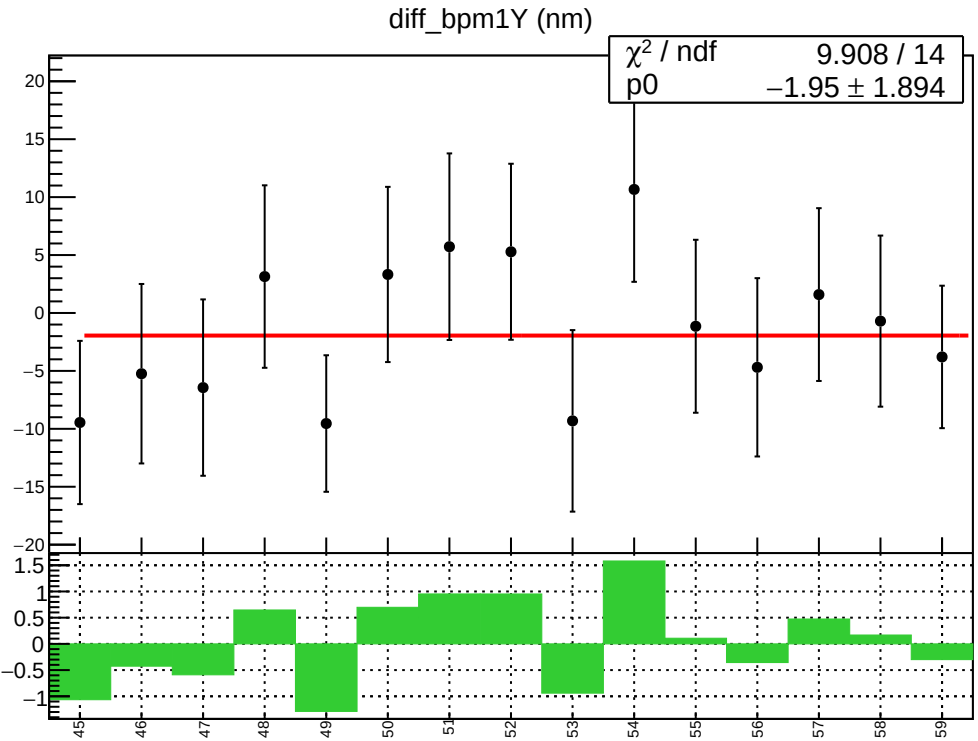

1D pull distribution
Mean 0.025 ± 0.1928
Std Dev 0.7466 ± 0.1363
Underflow 0
Overflow 0
χ² / ndf 3.156 / 3
Constant 3.891 ± 2.102
Mean −0.3049 ± 0.2281
Sigma 0.6636 ± 0.3409

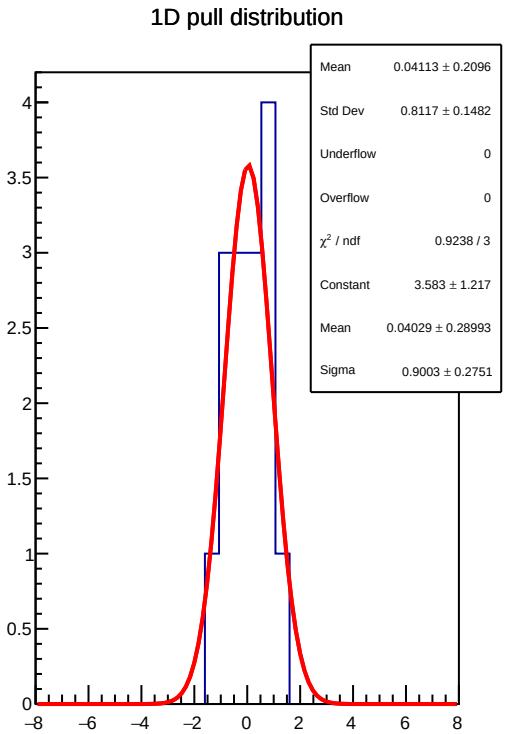

diff_bpm4aY RMS (um)
RMS (um)
10
9
8
7
6
5
4
3
2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

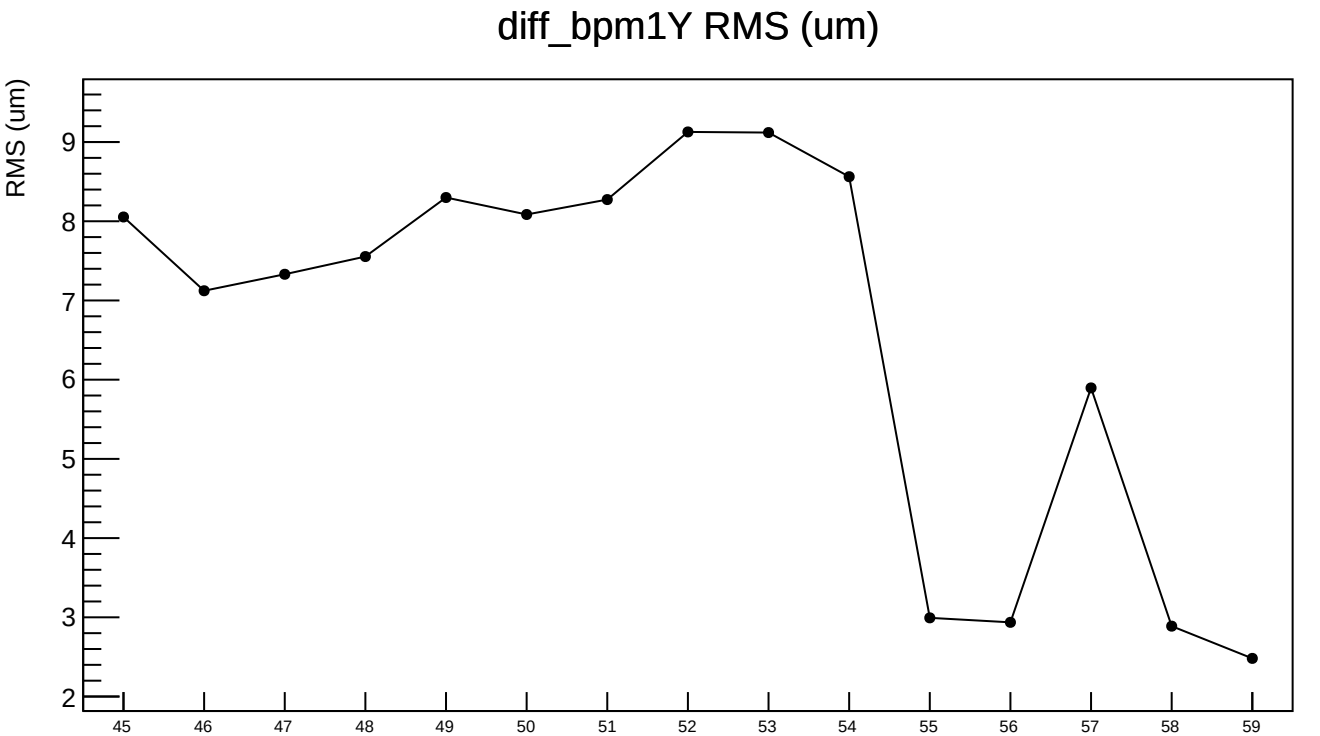

diff_bpm1X (nm)
χ² / ndf 16.36 / 14
p0 −5.354 ± 3.125

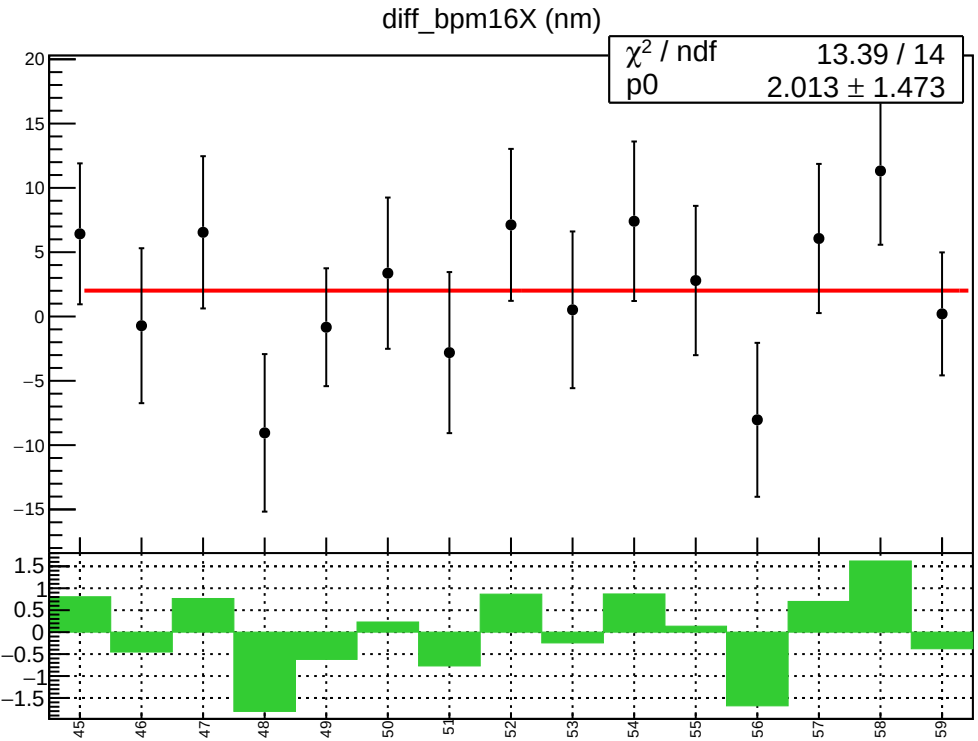

1D pull distribution
Mean −0.002783 ± 0.2697
Std Dev 1.044 ± 0.1907
Underflow 0
Overflow 0
χ² / ndf 3.03 / 4
Constant 2.132 ± 0.962
Mean −0.1209 ± 1.3489
Sigma 1.745 ± 1.933

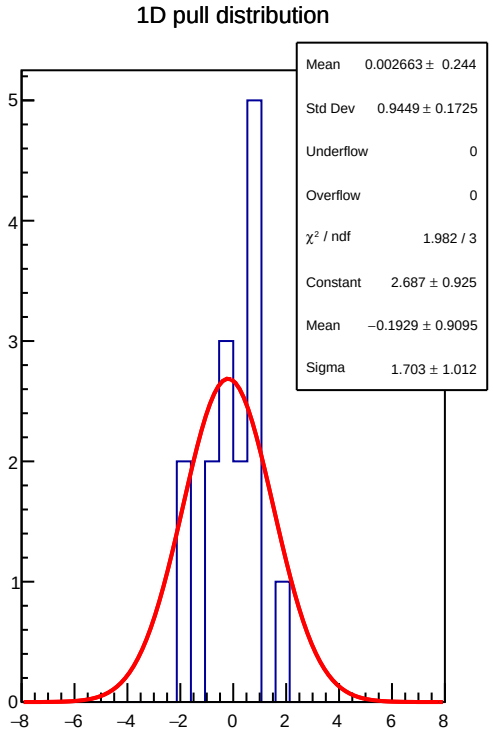

diff_bpm1X RMS (um)
RMS (um)
10
9.5
9
8.5
8
7.5
7
6.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


diff_bpm1Y (nm)
χ² / ndf 9.908 / 14
p0 −1.95 ± 1.894

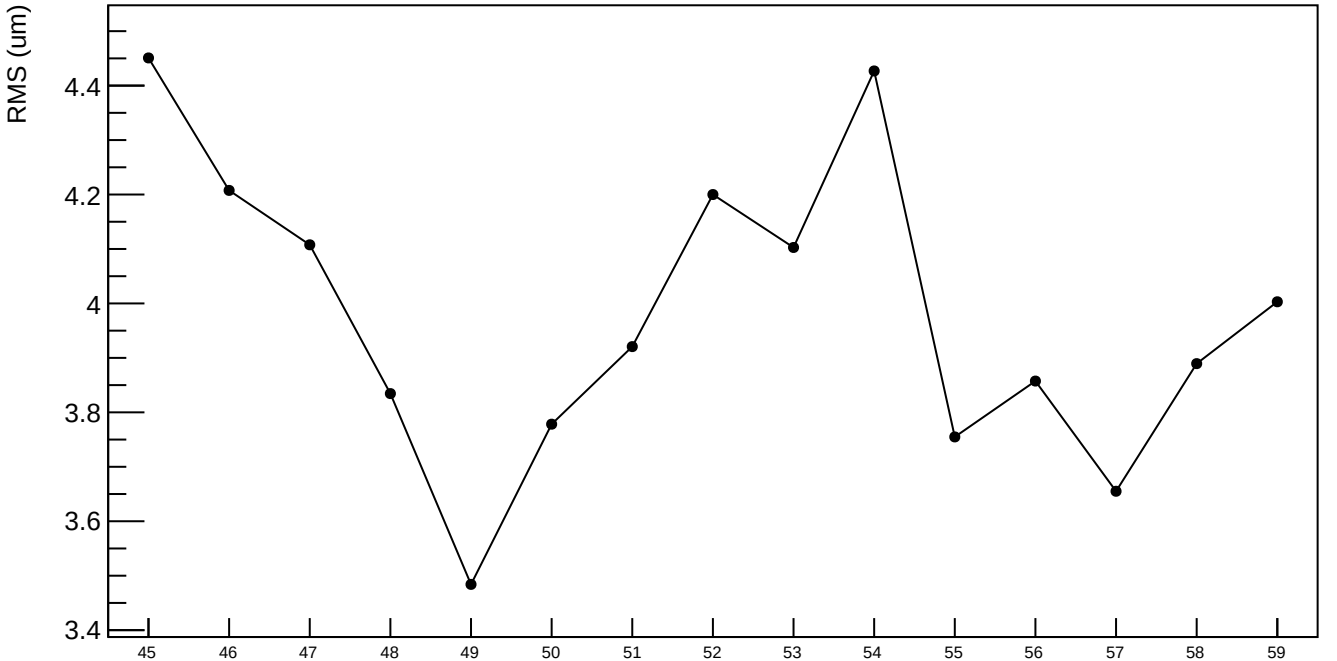

1D pull distribution
Mean 0.04113 ± 0.2096
Std Dev 0.8117 ± 0.1482
Underflow 0
Overflow 0
χ² / ndf 0.9238 / 3
Constant 3.583 ± 1.217
Mean 0.04029 ± 0.28993
Sigma 0.9003 ± 0.2751

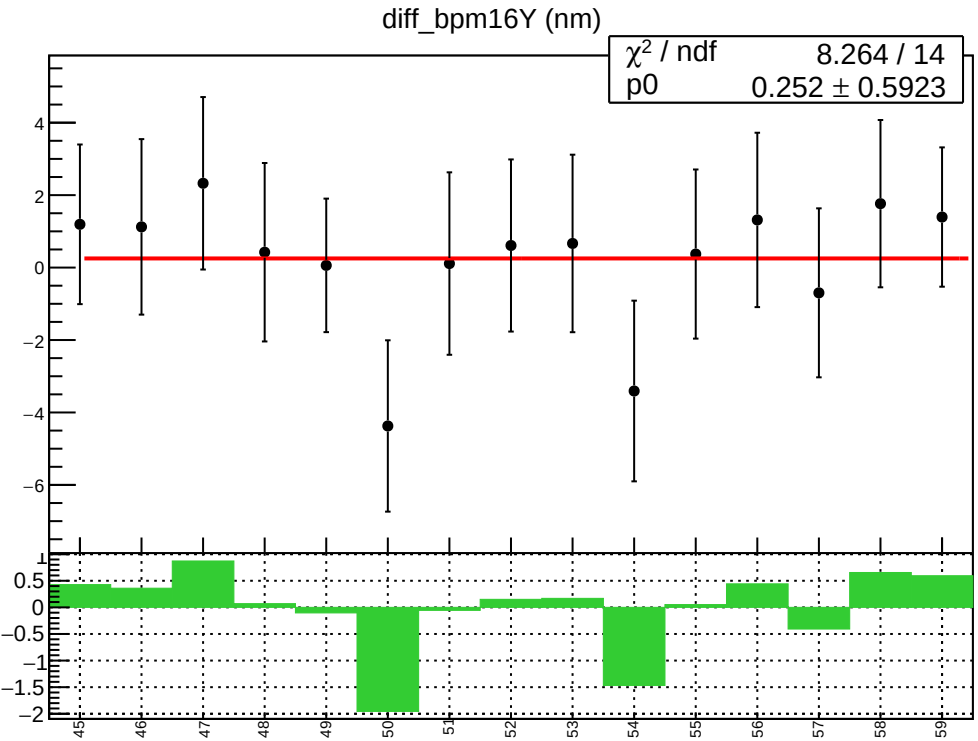

diff_bpm1Y RMS (um)
RMS (um)
9
8
7
6
5
4
3
2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

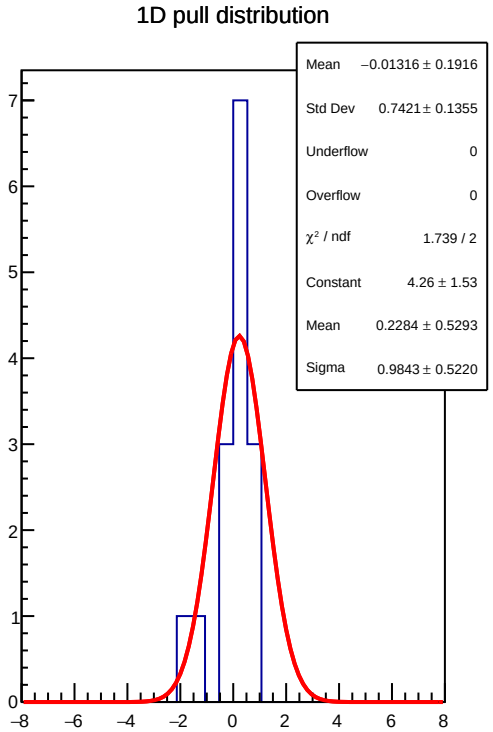

diff_bpm16X (nm)
χ² / ndf 13.39 / 14
p0 2.013 ± 1.473

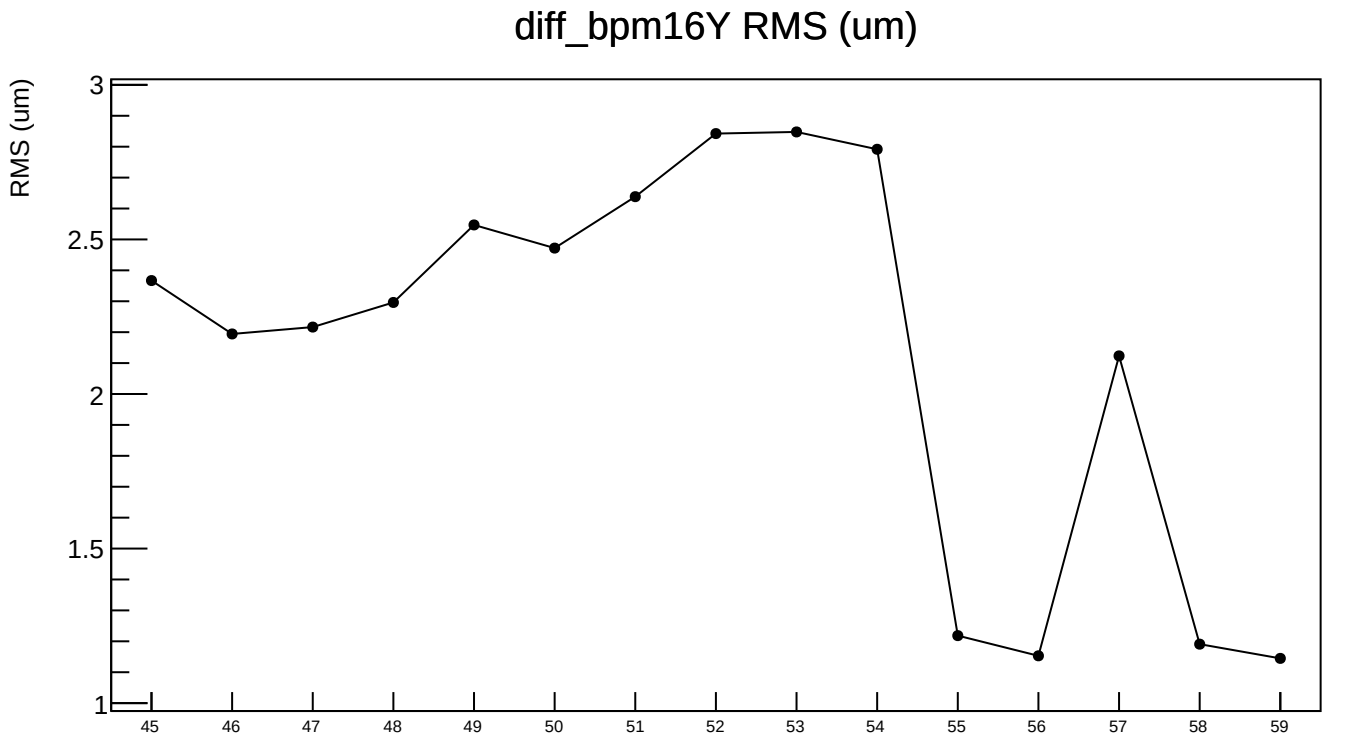

1D pull distribution
Mean 0.002663 ± 0.244
Std Dev 0.9449 ± 0.1725
Underflow 0
Overflow 0
χ² / ndf 1.982 / 3
Constant 2.687 ± 0.925
Mean −0.1929 ± 0.9095
Sigma 1.703 ± 1.012

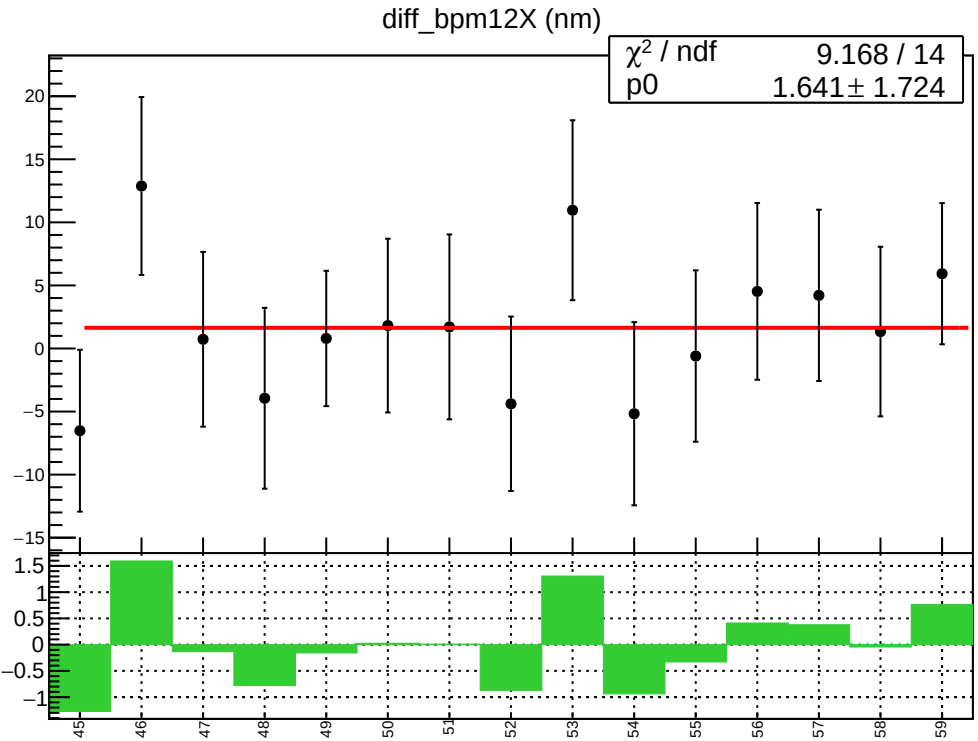
diff_bpm16X RMS (um)

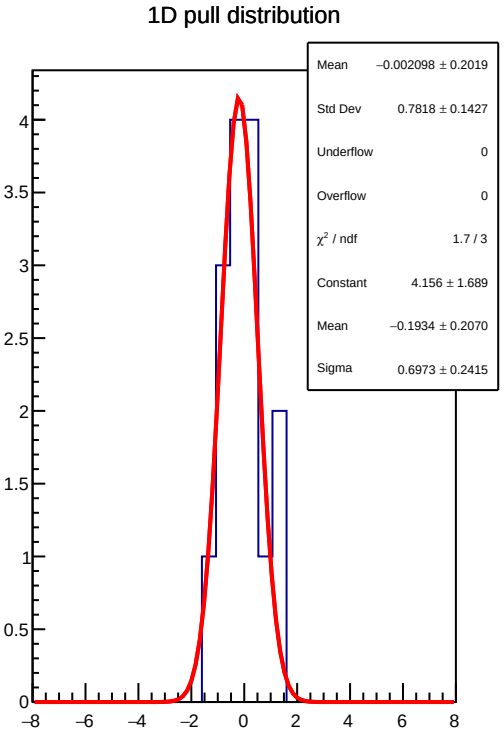


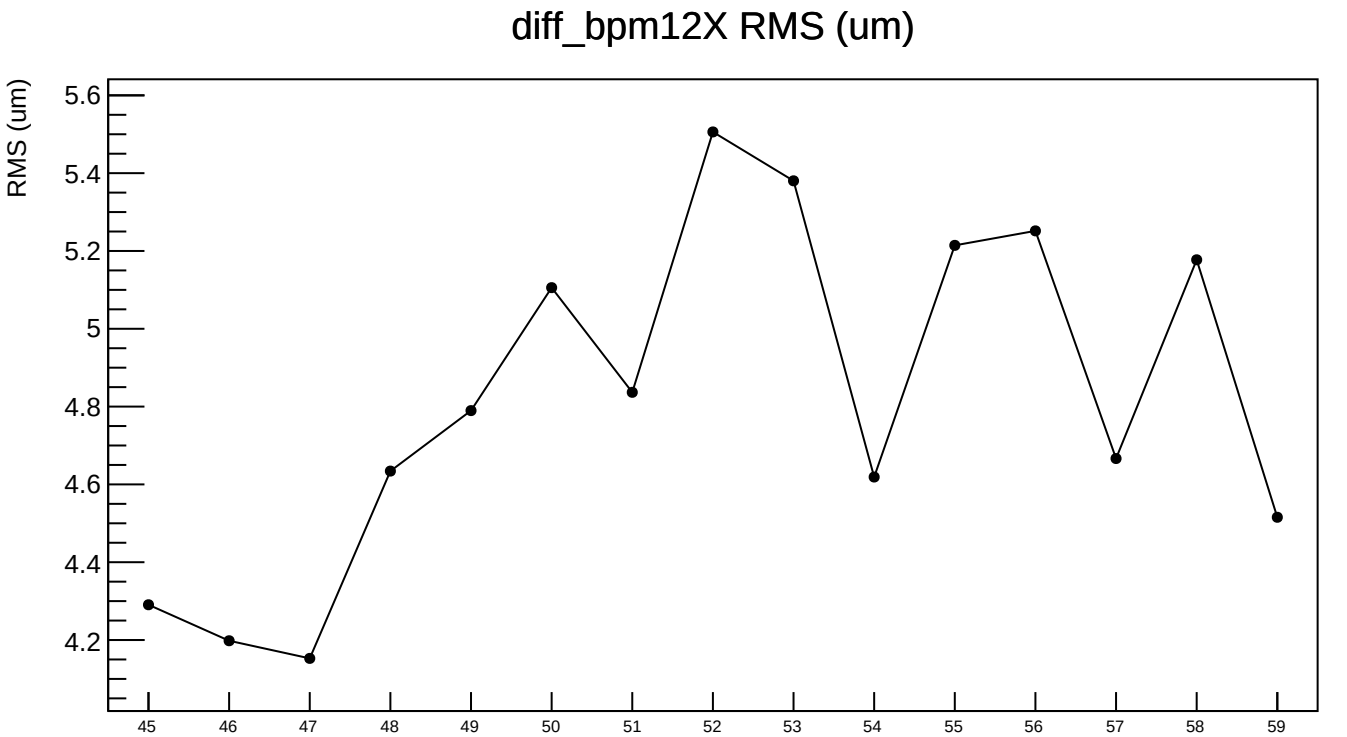

diff_bpm16Y (nm)
χ² / ndf 8.264 / 14
p0 0.252 ± 0.5923

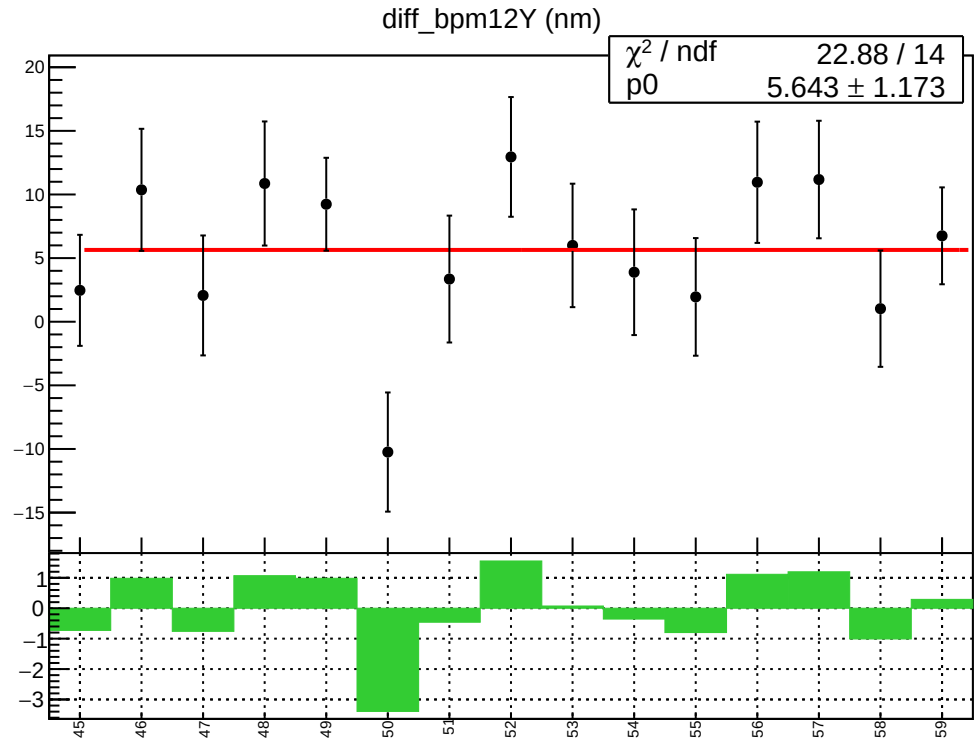

1D pull distribution
Mean −0.01316 ± 0.1916
Std Dev 0.7421 ± 0.1355
Underflow 0
Overflow 0
χ² / ndf 1.739 / 2
Constant 4.26 ± 1.53
Mean 0.2284 ± 0.5293
Sigma 0.9843 ± 0.5220

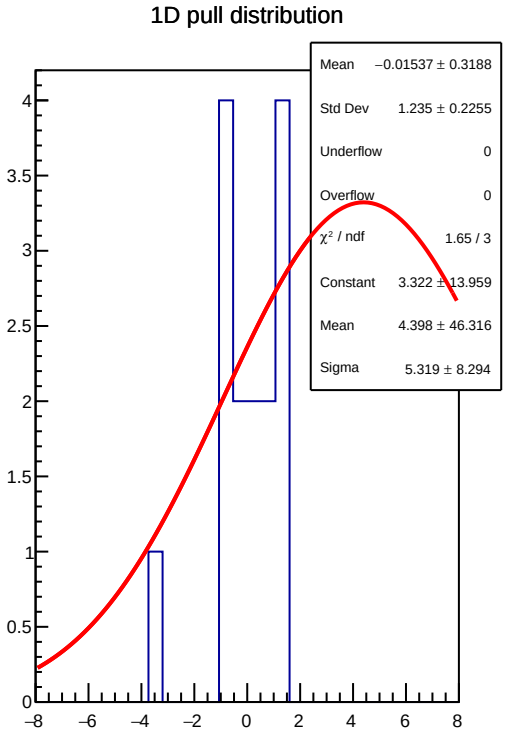

diff_bpm16Y RMS (um)
RMS (um)
3
2.5
2
1.5
1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

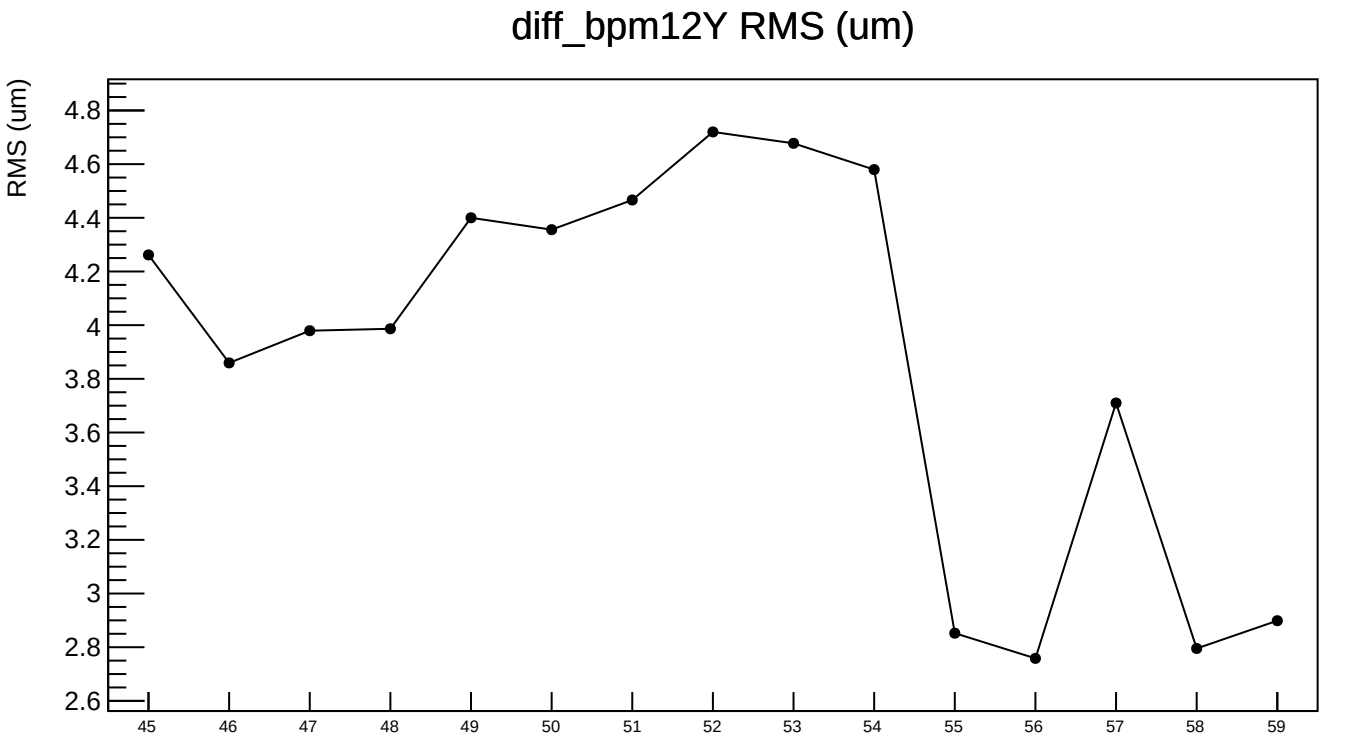

diff_bpm12X (nm)
χ² / ndf 9.168 / 14
p0 1.641 ± 1.724

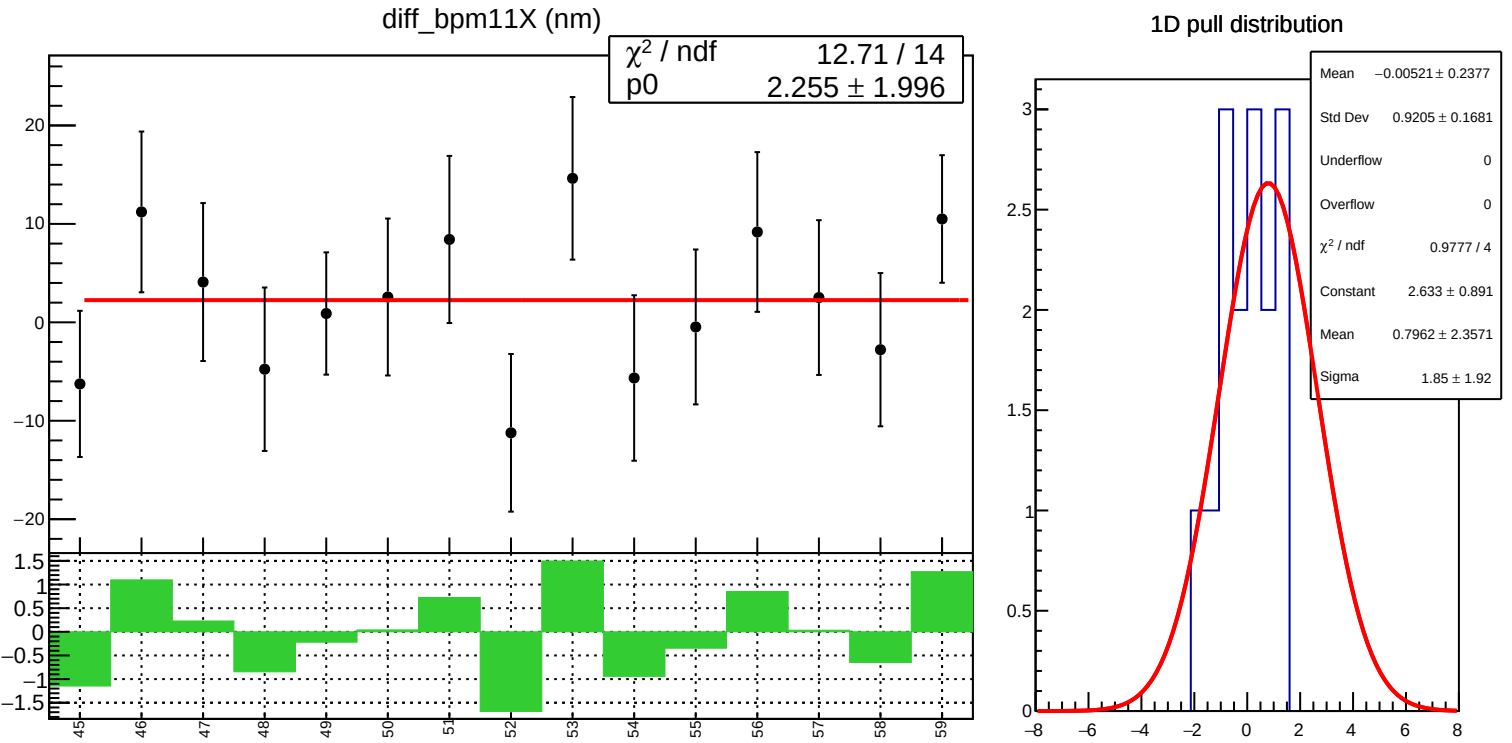

1D pull distribution
Mean −0.002098 ± 0.2019
Std Dev 0.7818 ± 0.1427
Underflow 0
Overflow 0
χ² / ndf 1.7 / 3
Constant 4.156 ± 1.689
Mean −0.1934 ± 0.2070
Sigma 0.6973 ± 0.2415


diff_bpm12X RMS (um)
RMS (um)
5.6
5.4
5.2
5
4.8
4.6
4.4
4.2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

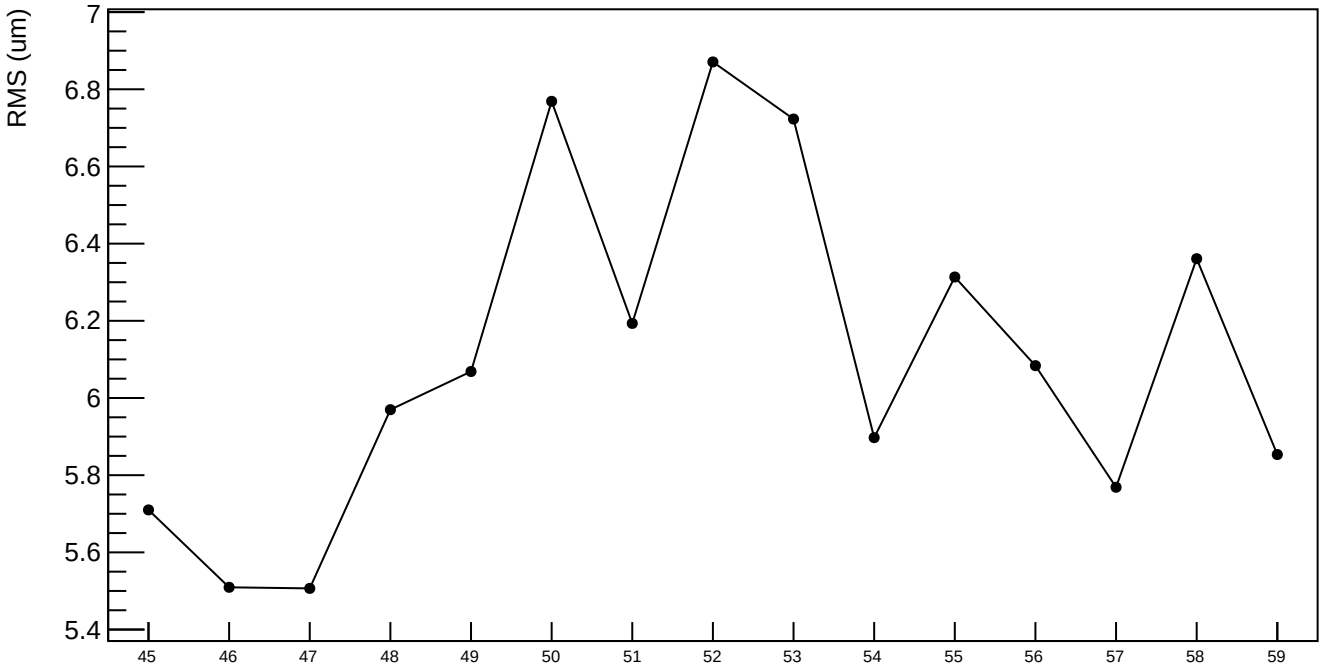

diff_bpm12Y (nm)
χ² / ndf 22.88 / 14
p0 5.643 ± 1.173

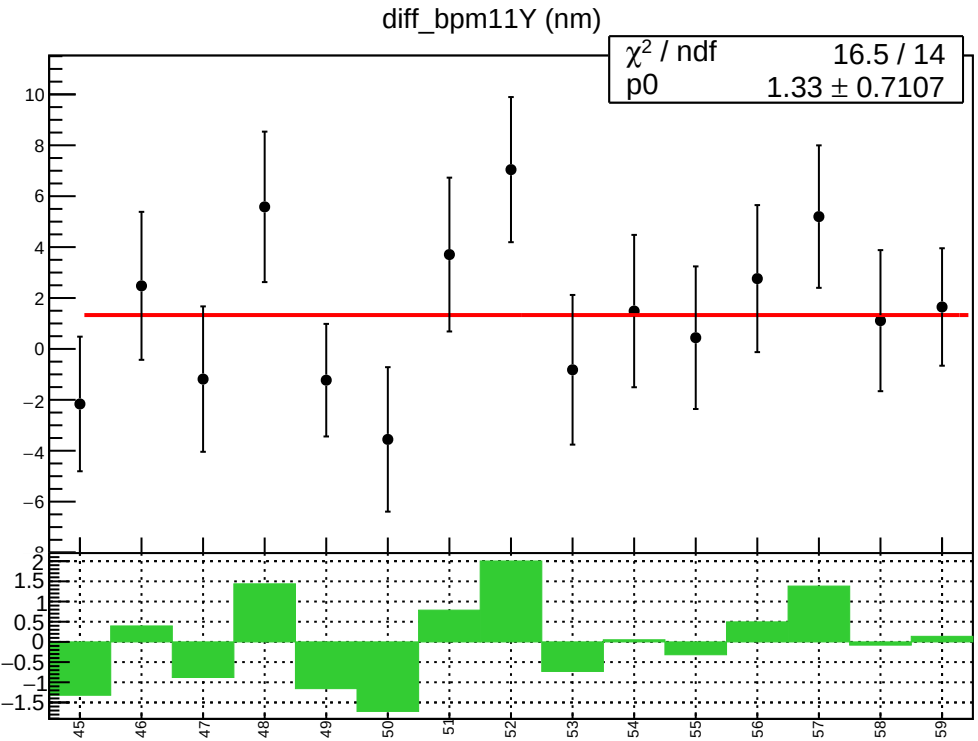

1D pull distribution
Mean −0.01537 ± 0.3188
Std Dev 1.235 ± 0.2255
Underflow 0
Overflow 0
χ² / ndf 1.65 / 3
Constant 3.322 ± 13.959
Mean 4.398 ± 46.316
Sigma 5.319 ± 8.294

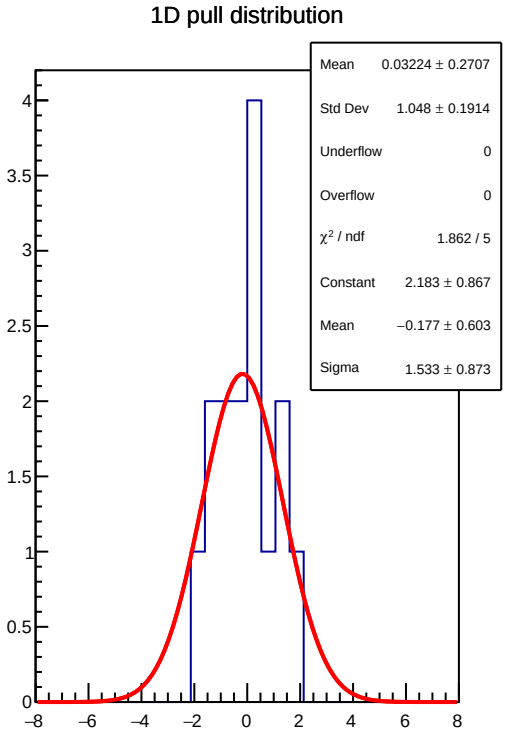

diff_bpm12Y RMS (um)
RMS (um)
4.8
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2
3
2.8
2.6
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

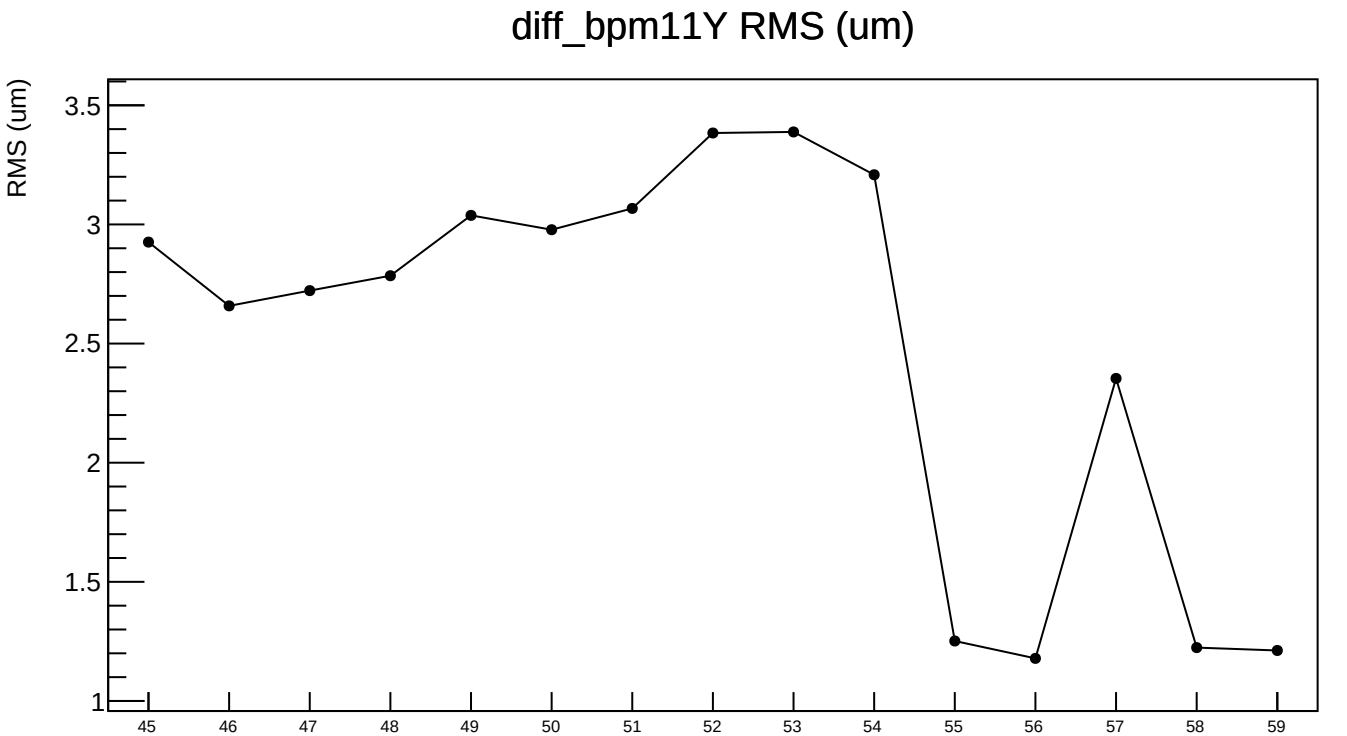

diff_bpm11X (nm)
χ² / ndf 12.71 / 14
p0 2.255 ± 1.996
1D pull distribution
Mean −0.00521 ± 0.2377
Std Dev 0.9205 ± 0.1681
Underflow 0
Overflow 0
χ² / ndf 0.9777 / 4
Constant 2.633 ± 0.891
Mean 0.7962 ± 2.3571
Sigma 1.85 ± 1.92

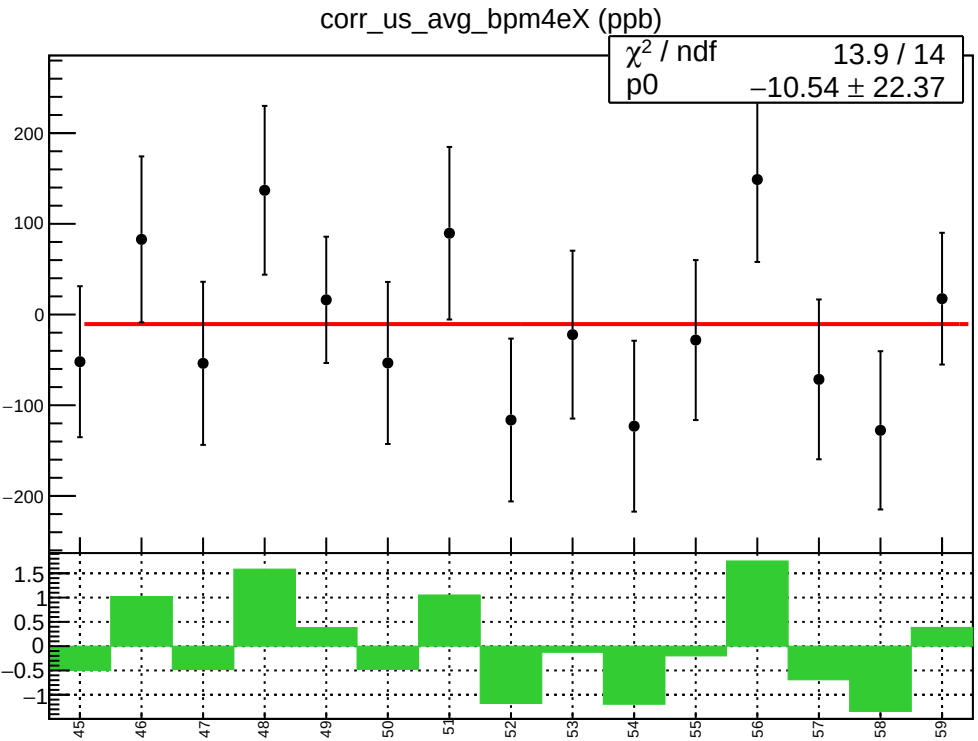
diff_bpm11X RMS (um)

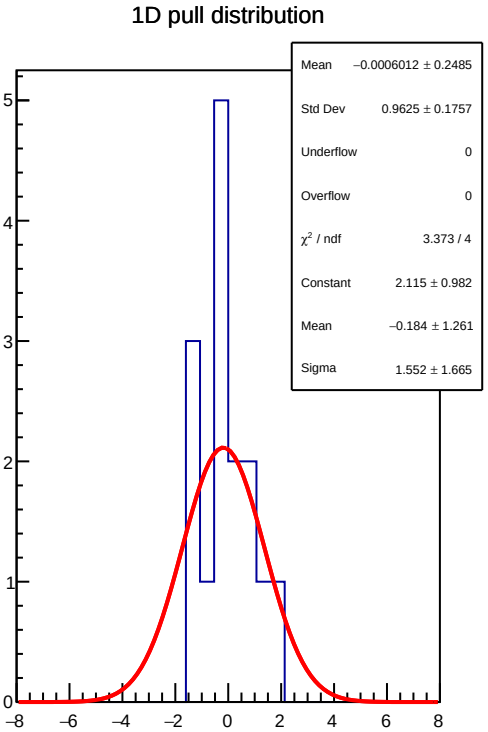


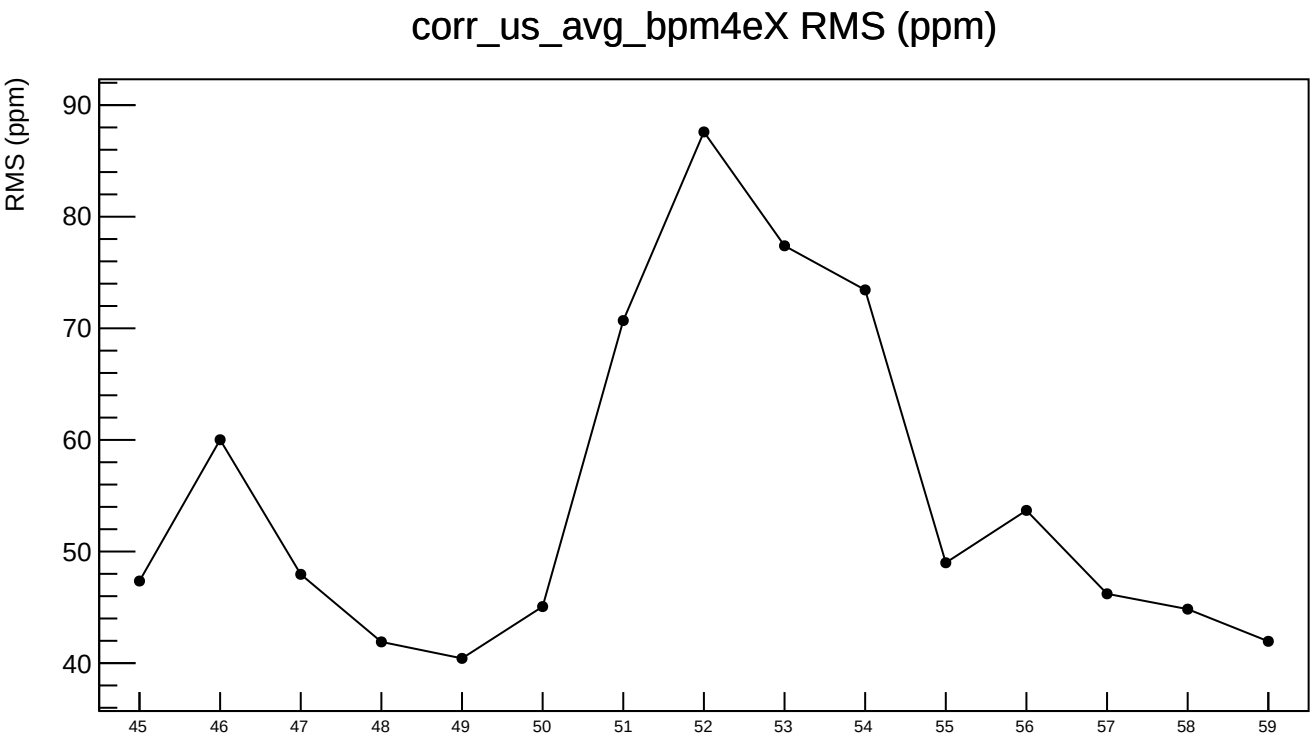

diff_bpm11Y (nm)
χ² / ndf 16.5 / 14
p0 1.33 ± 0.7107

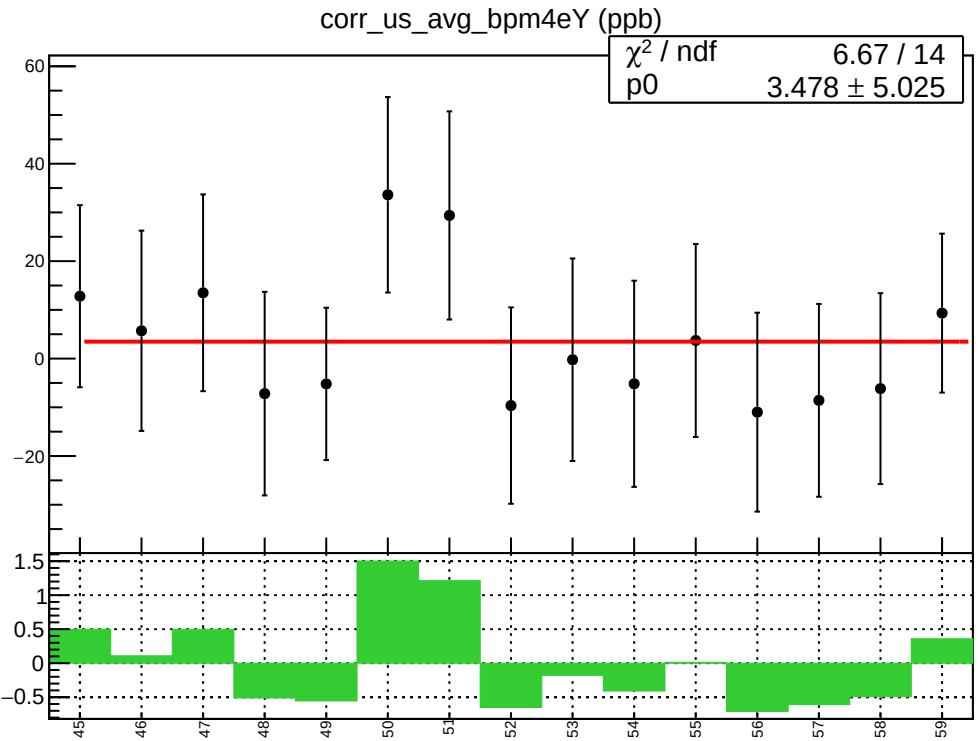

1D pull distribution
Mean 0.03224 ± 0.2707
Std Dev 1.048 ± 0.1914
Underflow 0
Overflow 0
χ² / ndf 1.862 / 5
Constant 2.183 ± 0.867
Mean −0.177 ± 0.603
Sigma 1.533 ± 0.873

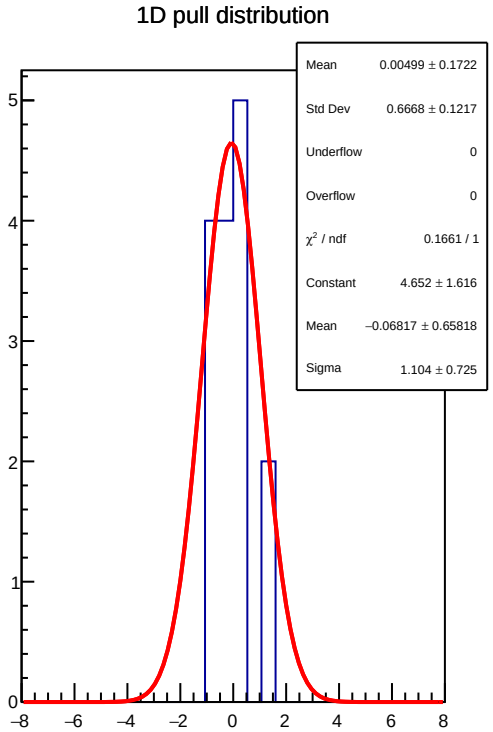

diff_bpm11Y RMS (um)
RMS (um)
3.5
3
2.5
2
1.5
1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


corr_us_avg_bpm4eX (ppb)
χ² / ndf 13.9 / 14
p0 −10.54 ± 22.37
200
100
0
−100
−200
1.5
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

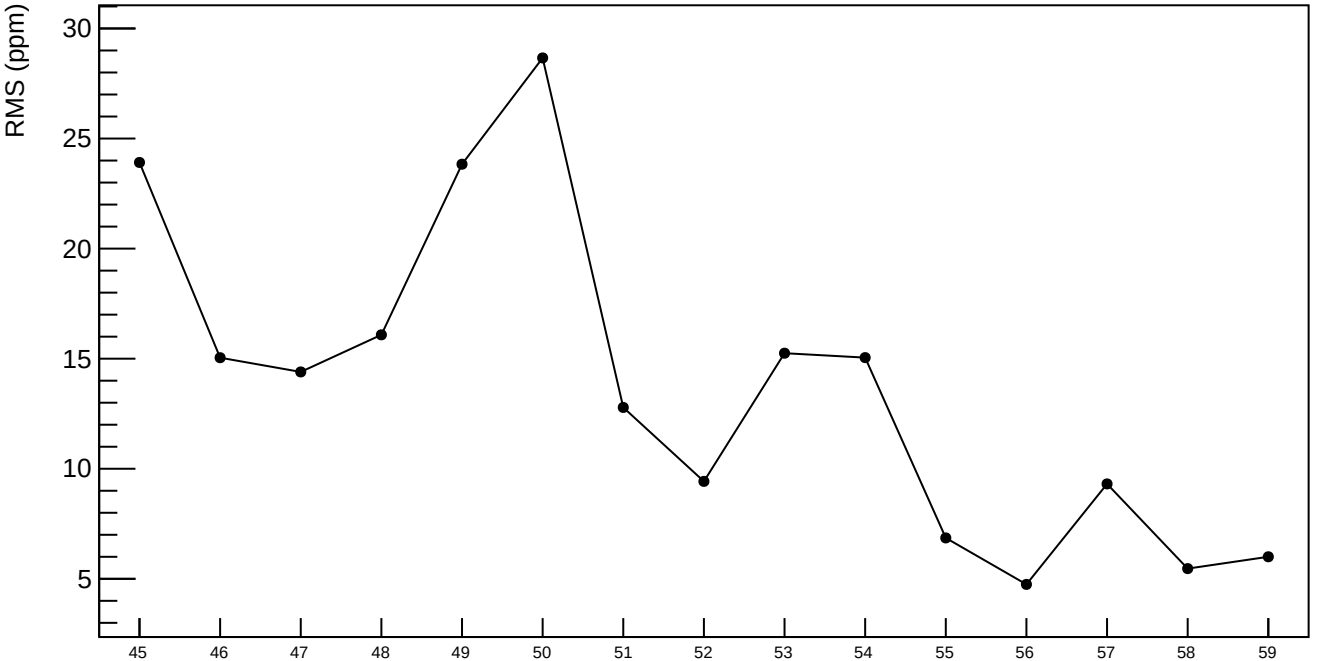

1D pull distribution
Mean −0.0006012 ± 0.2485
Std Dev 0.9625 ± 0.1757
Underflow 0
Overflow 0
χ² / ndf 3.373 / 4
Constant 2.115 ± 0.982
Mean −0.184 ± 1.261
Sigma 1.552 ± 1.665
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

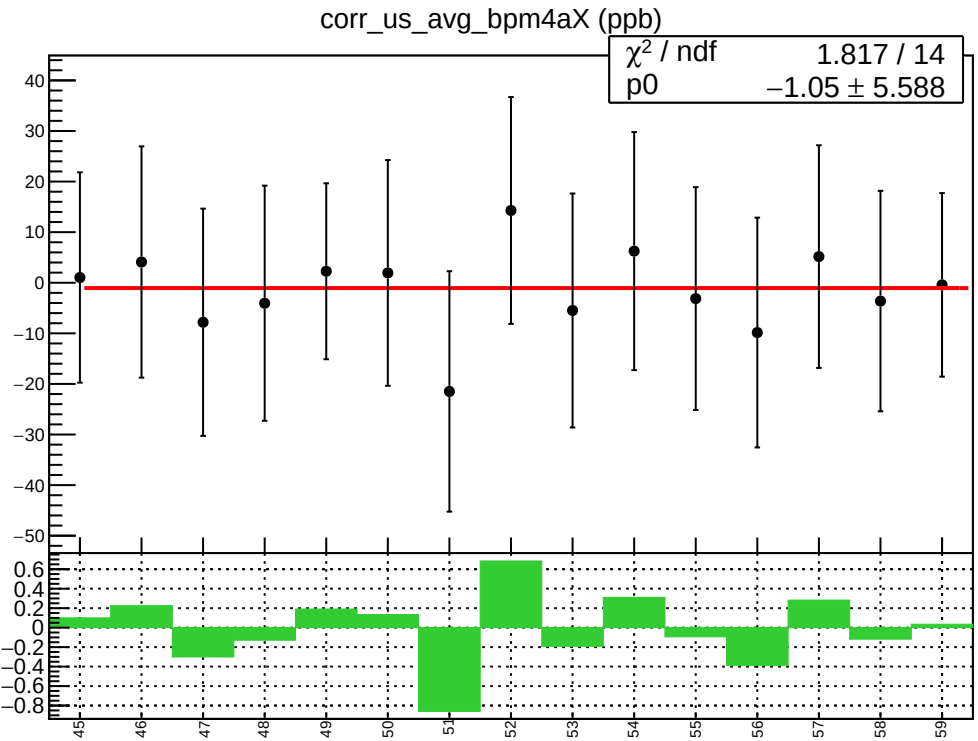

corr_us_avg_bpm4eX RMS (ppm)
RMS (ppm)
90
80
70
60
50
40
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

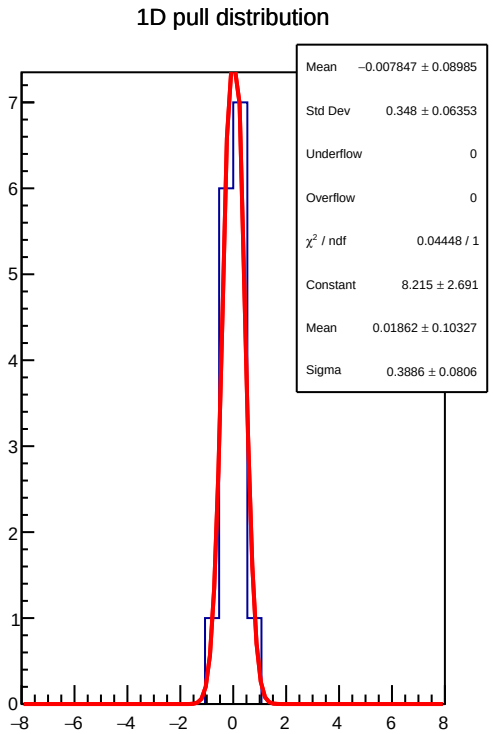

corr_us_avg_bpm4eY (ppb)
χ² / ndf 6.67 / 14
p0 3.478 ± 5.025
60
40
20
0
−20
1.5
1
0.5
0
−0.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


1D pull distribution
Mean 0.00499 ± 0.1722
Std Dev 0.6668 ± 0.1217
Underflow 0
Overflow 0
χ² / ndf 0.1661 / 1
Constant 4.652 ± 1.616
Mean −0.06817 ± 0.65818
Sigma 1.104 ± 0.725
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

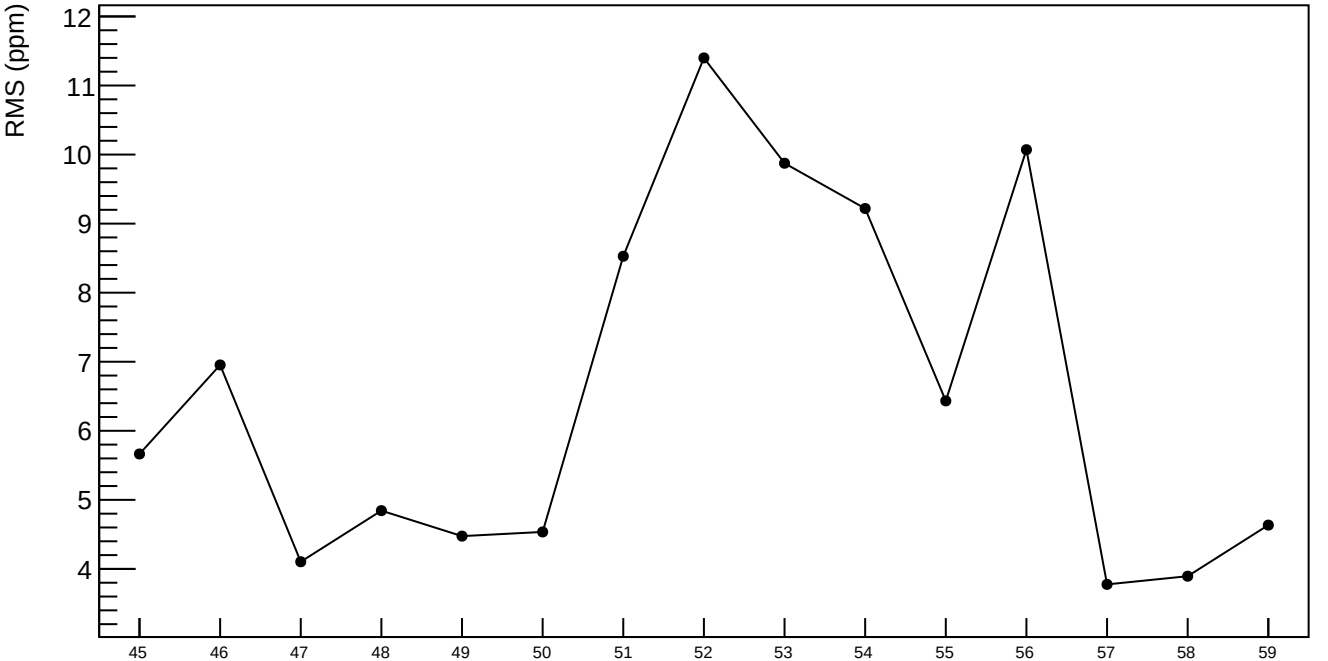
corr_us_avg_bpm4eY RMS (ppm)

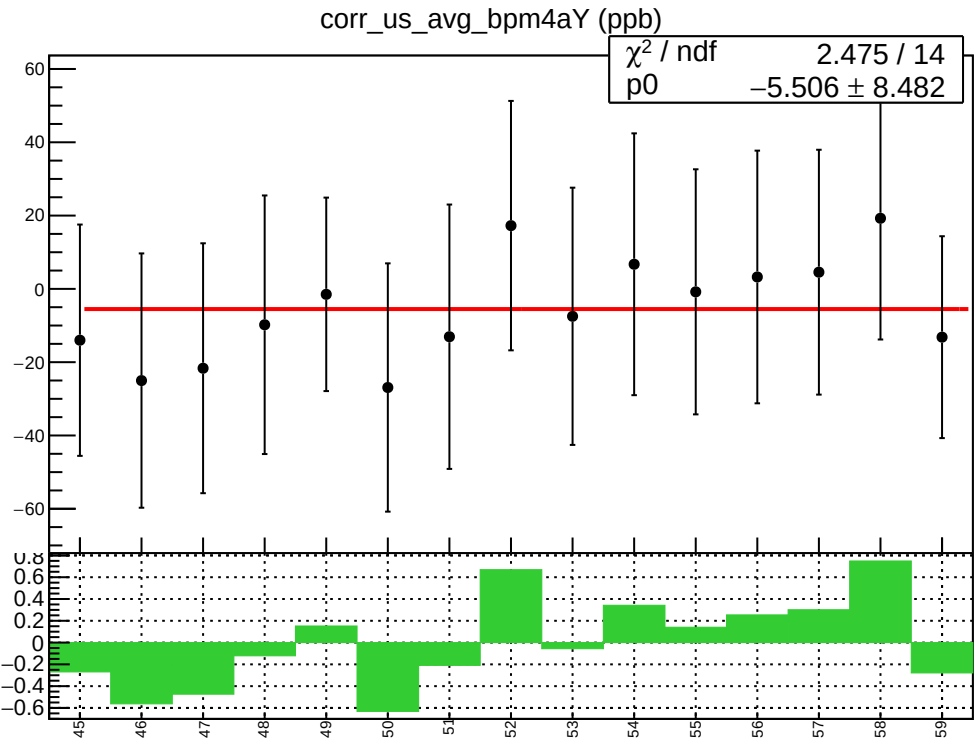


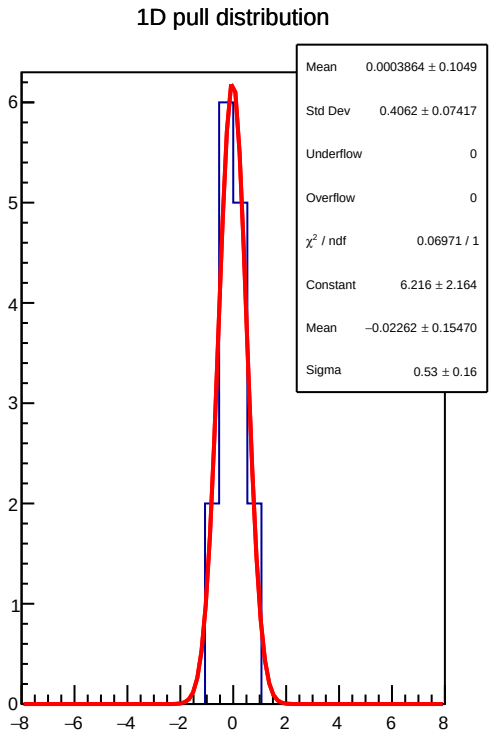

corr_us_avg_bpm4aX (ppb)
χ² / ndf 1.817 / 14
p0 −1.05 ± 5.588

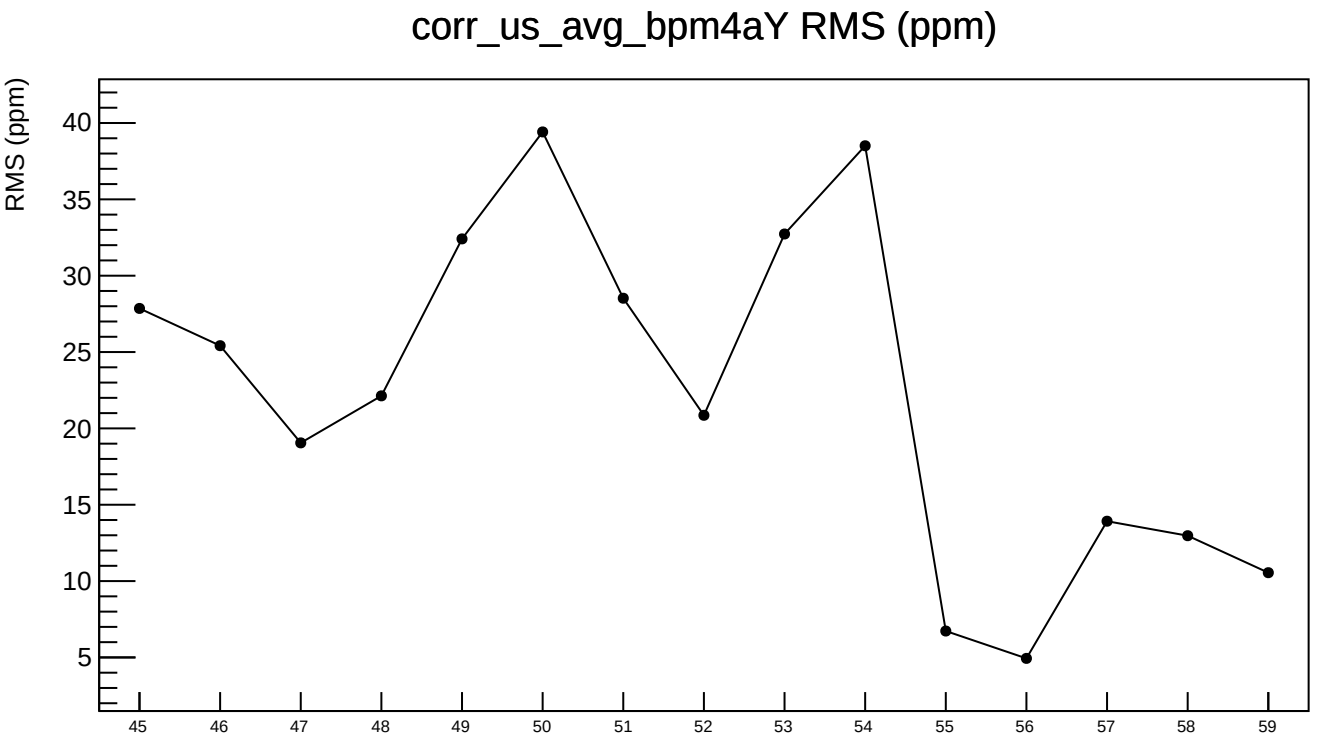

1D pull distribution
Mean −0.007847 ± 0.08985
Std Dev 0.348 ± 0.06353
Underflow 0
Overflow 0
χ² / ndf 0.04448 / 1
Constant 8.215 ± 2.691
Mean 0.01862 ± 0.10327
Sigma 0.3886 ± 0.0806

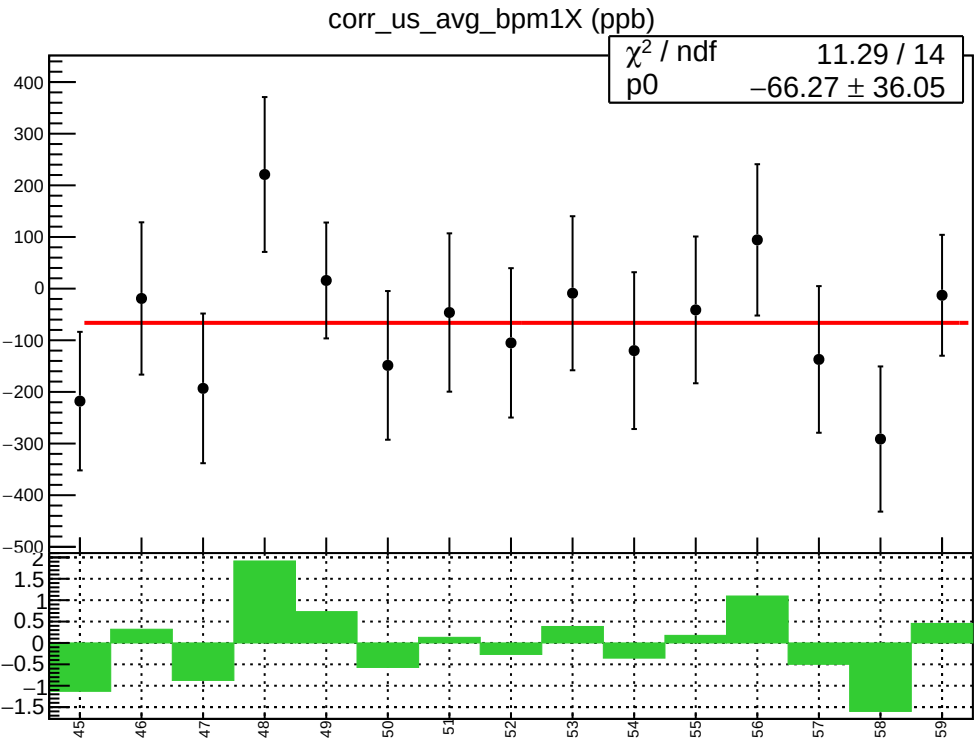
corr_us_avg_bpm4aX RMS (ppm)

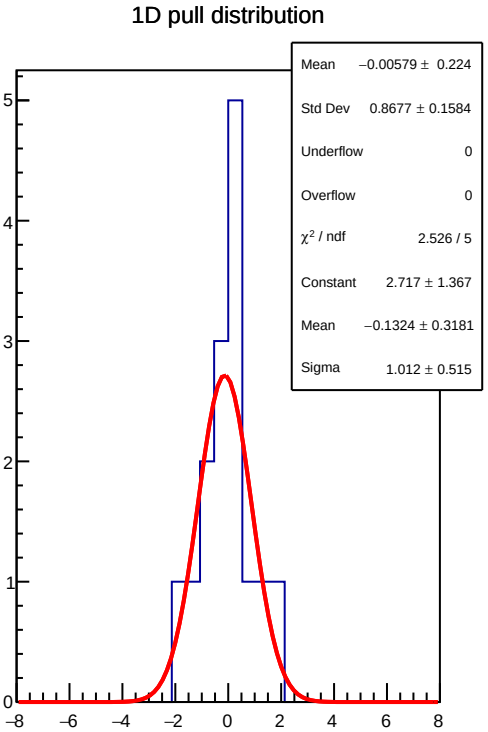


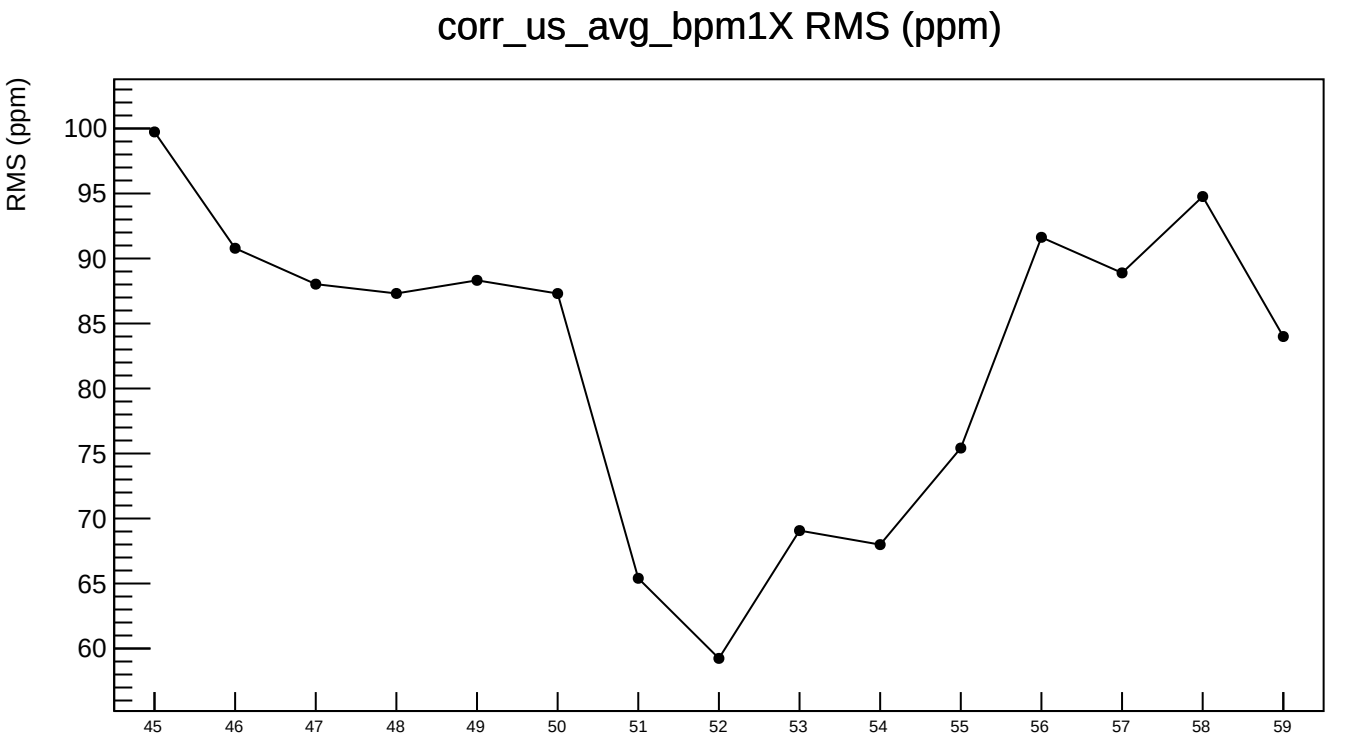

corr_us_avg_bpm4aY (ppb)
χ² / ndf 2.475 / 14
p0 −5.506 ± 8.482

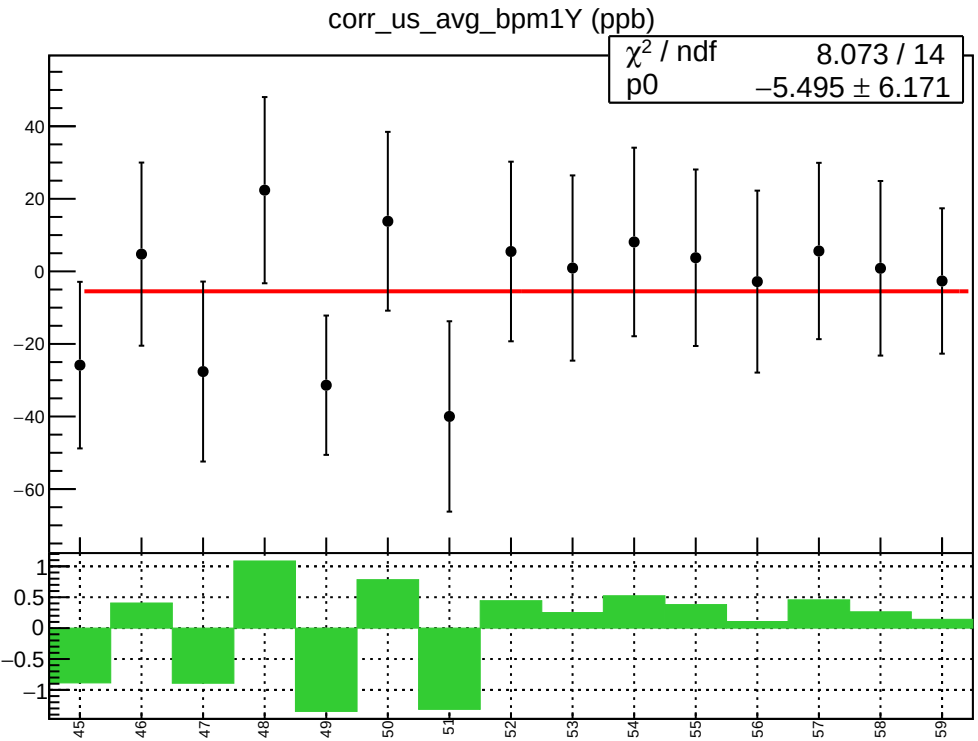

1D pull distribution
Mean 0.0003864 ± 0.1049
Std Dev 0.4062 ± 0.07417
Underflow 0
Overflow 0
χ² / ndf 0.06971 / 1
Constant 6.216 ± 2.164
Mean −0.02262 ± 0.15470
Sigma 0.53 ± 0.16

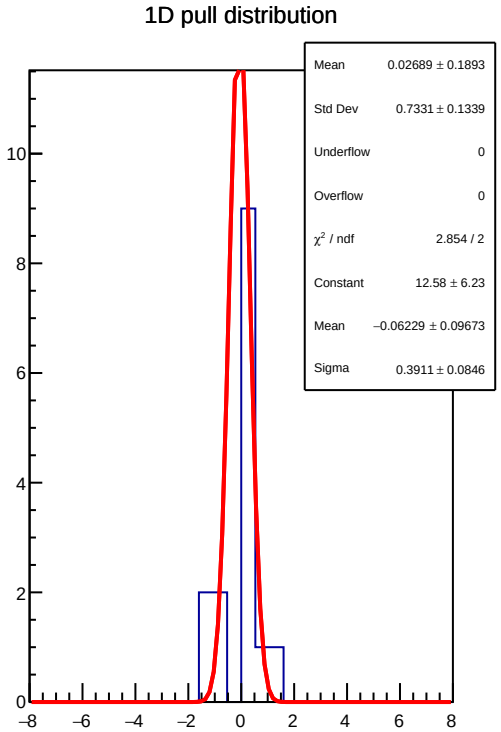

corr_us_avg_bpm4aY RMS (ppm)
RMS (ppm)
40
35
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

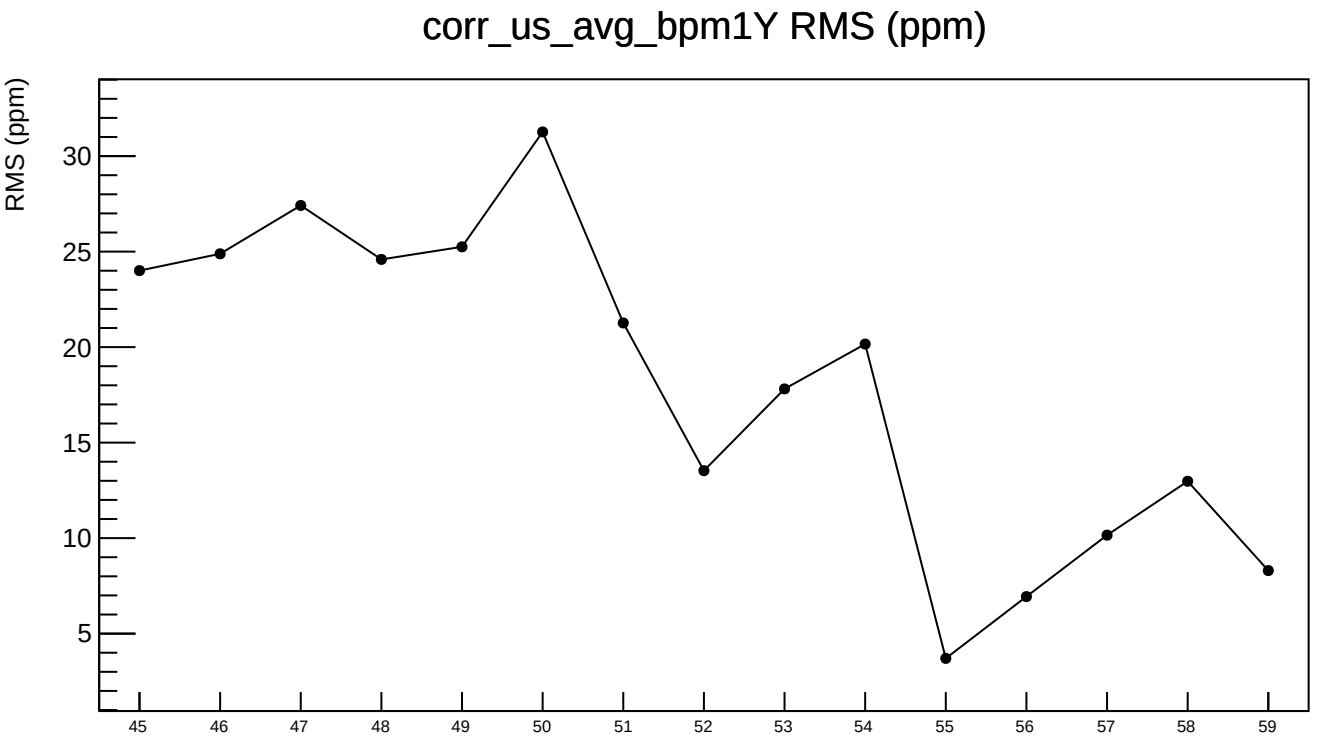

corr_us_avg_bpm1X (ppb)
χ² / ndf 11.29 / 14
p0 −66.27 ± 36.05
400
300
200
100
0
−100
−200
−300
−400
−500
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

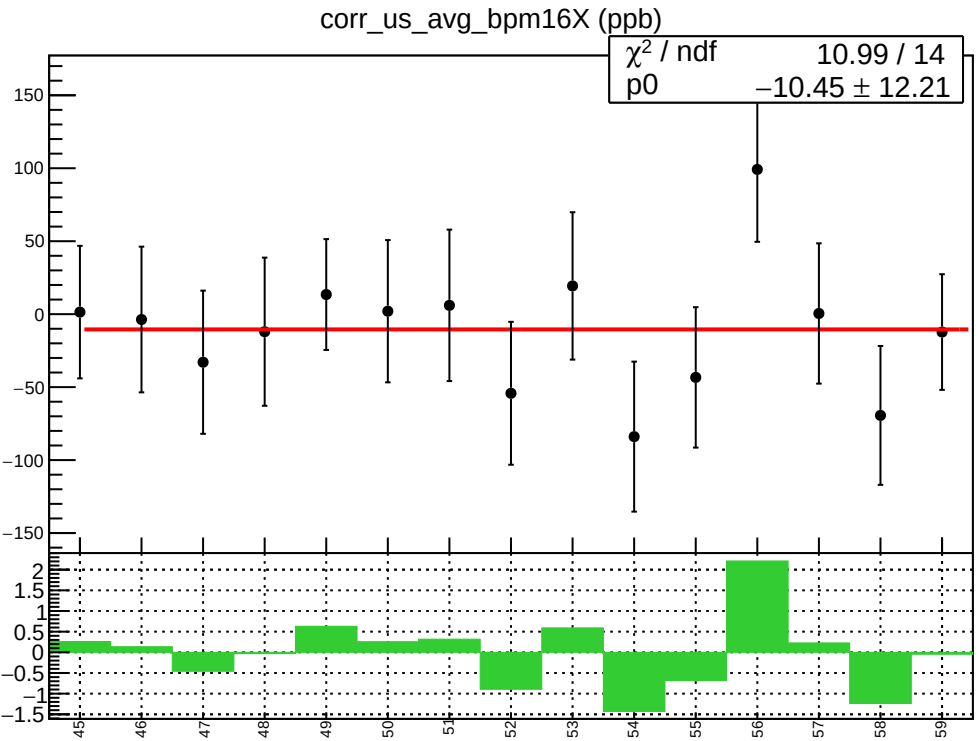

1D pull distribution
Mean −0.00579 ± 0.224
Std Dev 0.8677 ± 0.1584
Underflow 0
Overflow 0
χ² / ndf 2.526 / 5
Constant 2.717 ± 1.367
Mean −0.1324 ± 0.3181
Sigma 1.012 ± 0.515
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

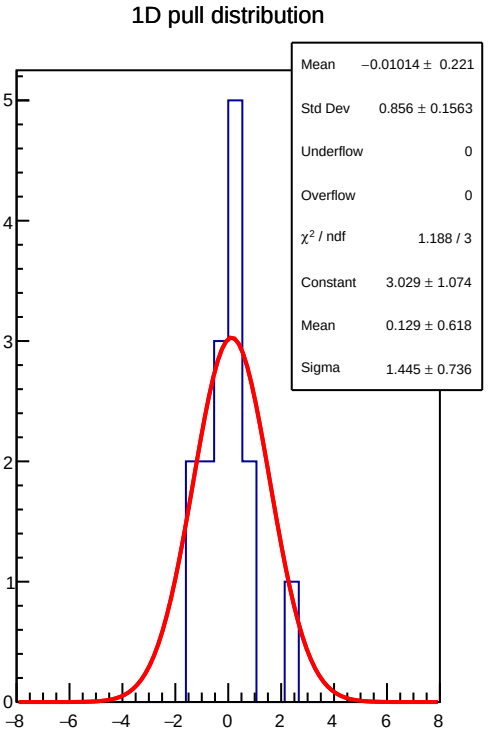

corr_us_avg_bpm1X RMS (ppm)
RMS (ppm)
100
95
90
85
80
75
70
65
60
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

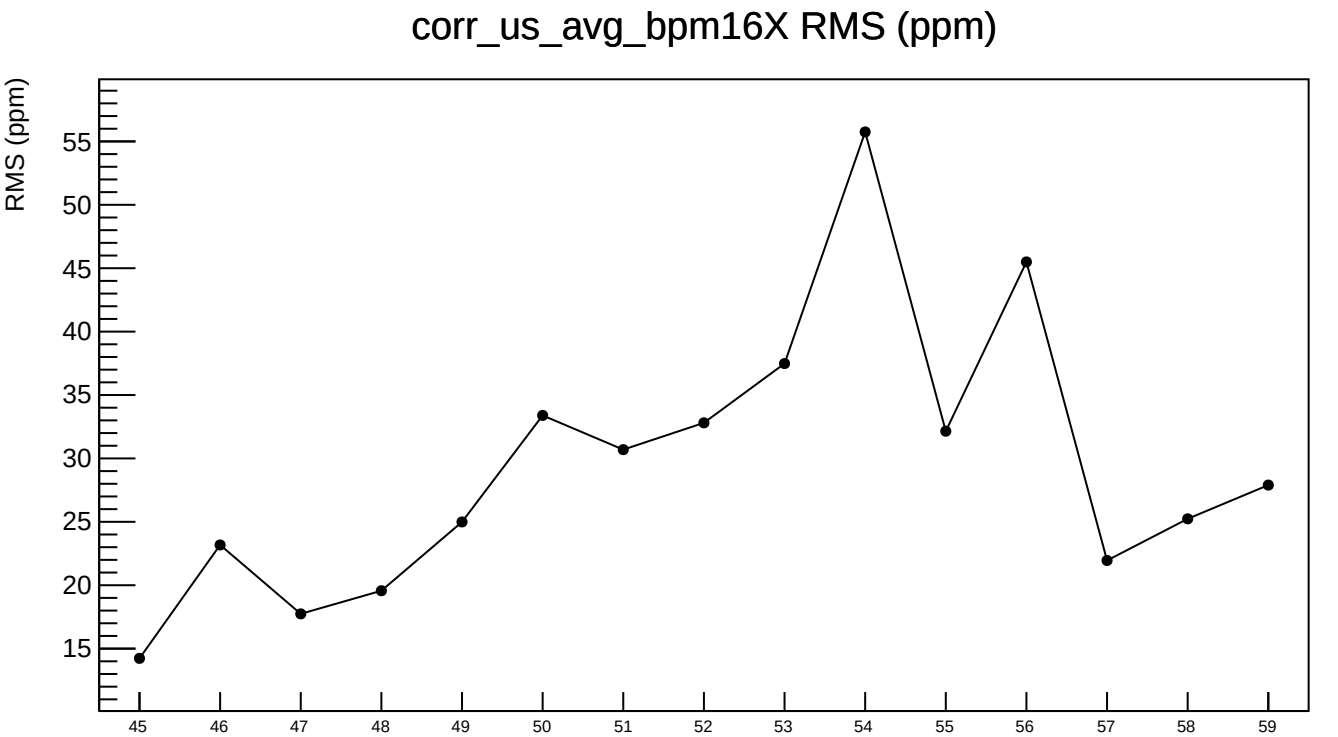

corr_us_avg_bpm1Y (ppb)
χ² / ndf 8.073 / 14
p0 −5.495 ± 6.171
40
20
0
−20
−40
−60
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

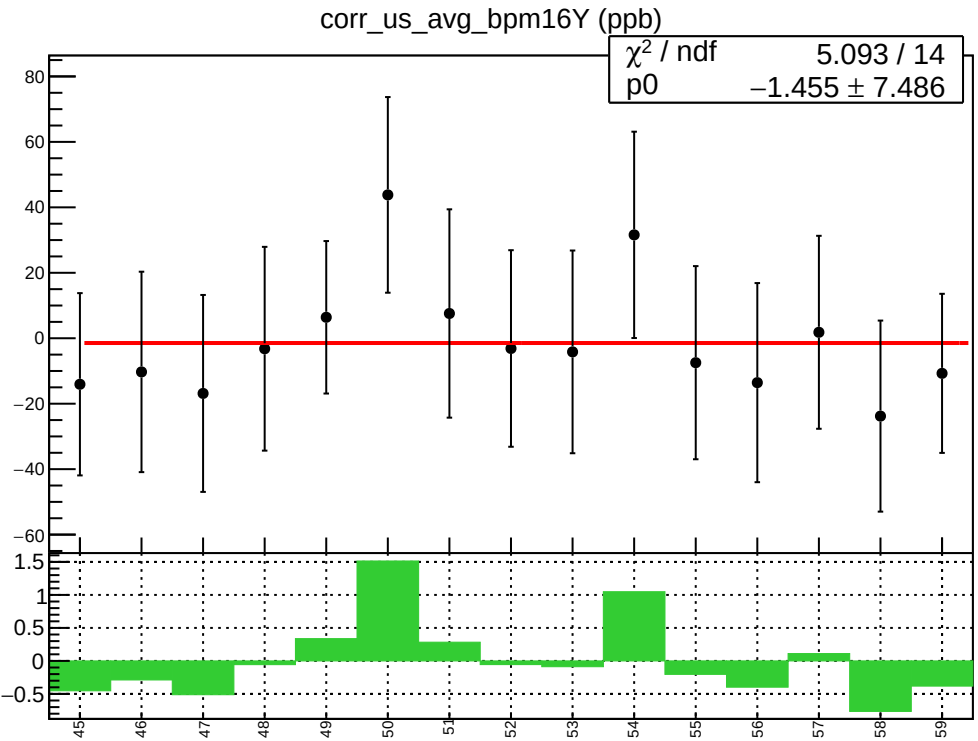

1D pull distribution
Mean 0.02689 ± 0.1893
Std Dev 0.7331 ± 0.1339
Underflow 0
Overflow 0
χ² / ndf 2.854 / 2
Constant 12.58 ± 6.23
Mean −0.06229 ± 0.09673
Sigma 0.3911 ± 0.0846
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

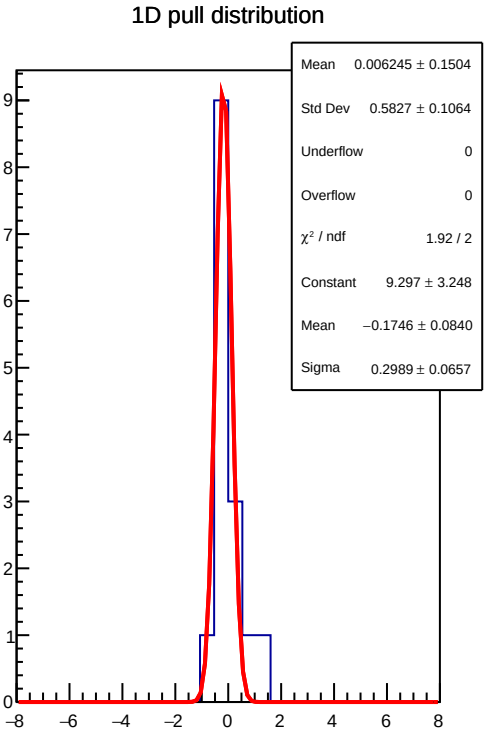

corr_us_avg_bpm1Y RMS (ppm)
RMS (ppm)
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

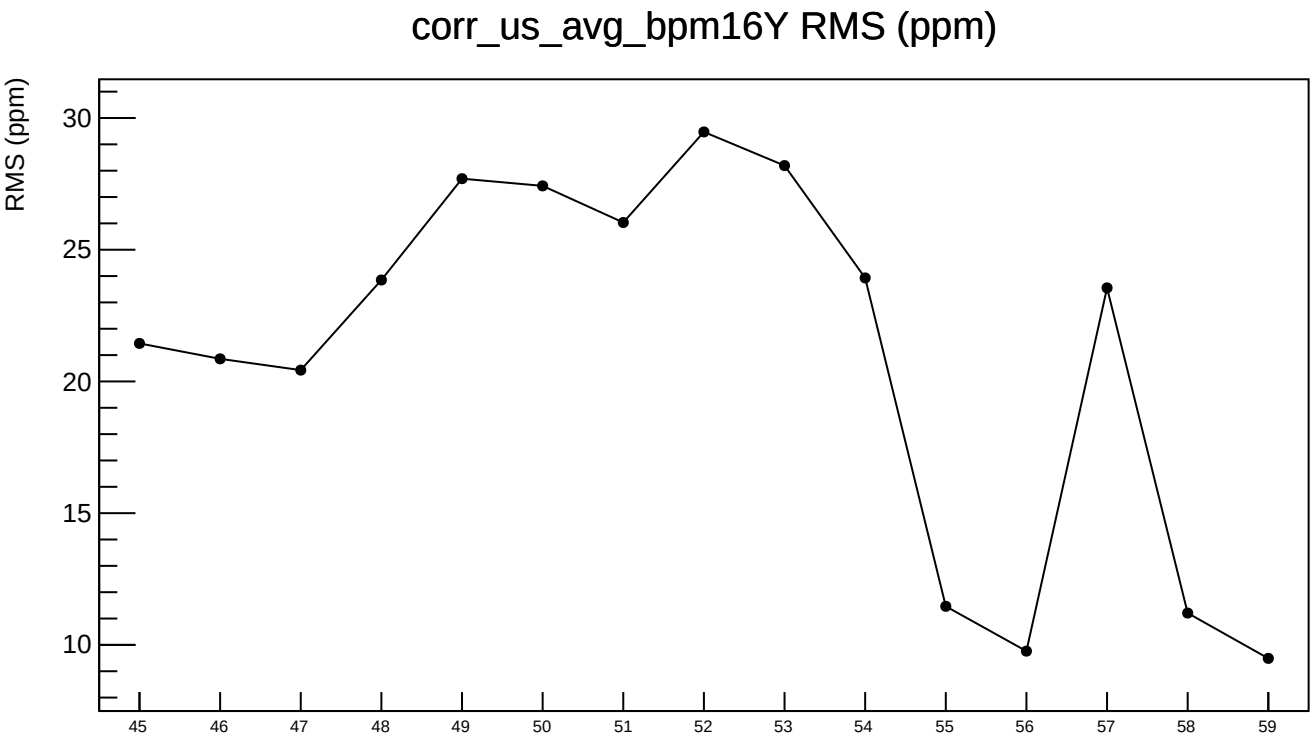

corr_us_avg_bpm16X (ppb)
χ² / ndf 10.99 / 14
p0 −10.45 ± 12.21
150
100
50
0
−50
−100
−150
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

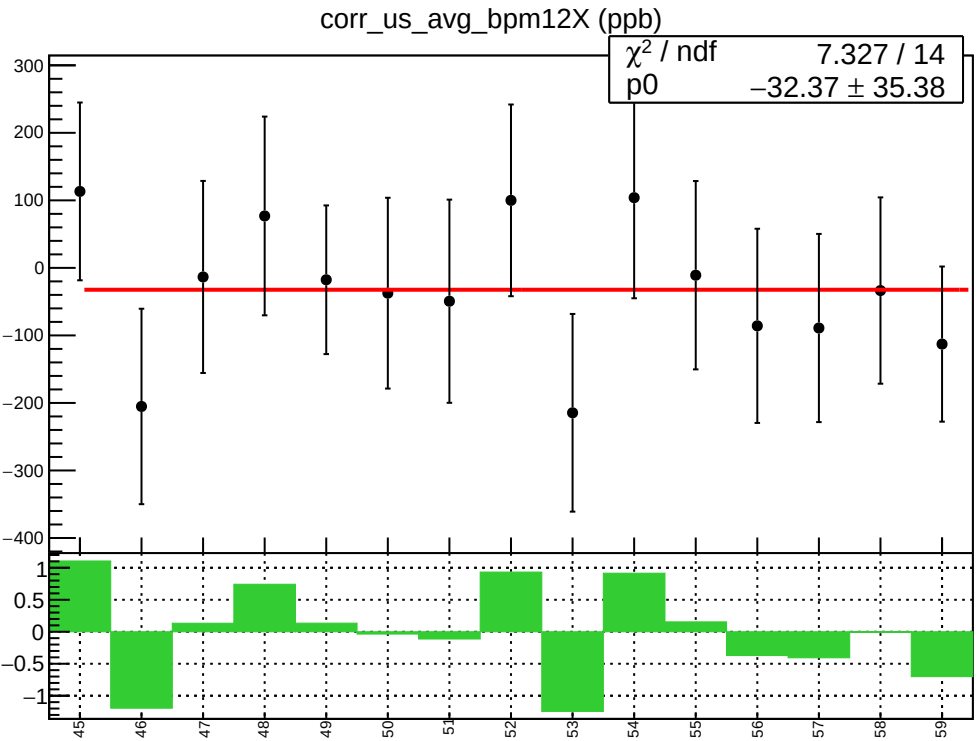

1D pull distribution
Mean −0.01014 ± 0.221
Std Dev 0.856 ± 0.1563
Underflow 0
Overflow 0
χ² / ndf 1.188 / 3
Constant 3.029 ± 1.074
Mean 0.129 ± 0.618
Sigma 1.445 ± 0.736
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

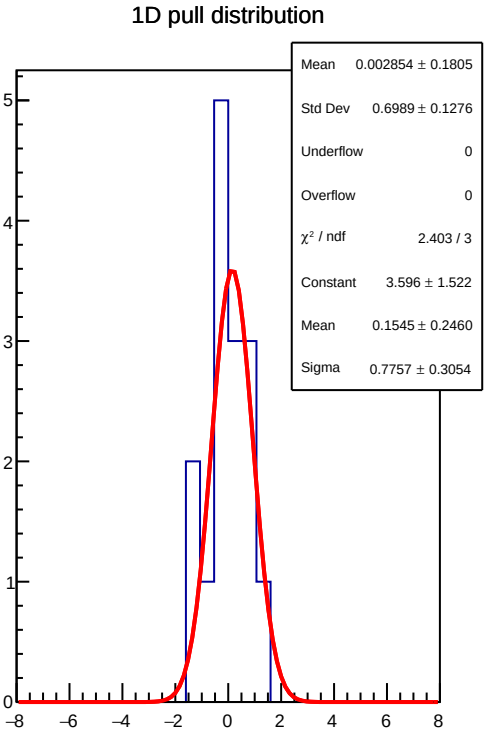

corr_us_avg_bpm16X RMS (ppm)
RMS (ppm)
55
50
45
40
35
30
25
20
15
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

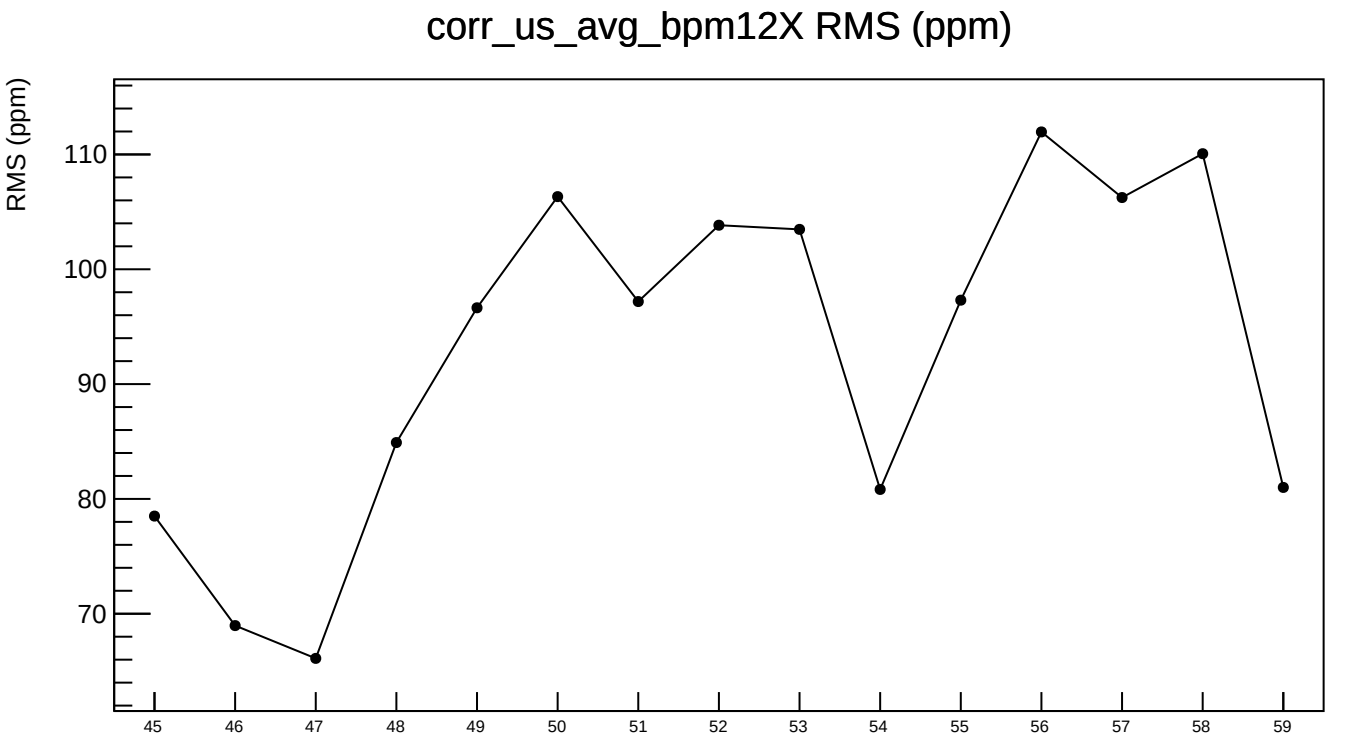

corr_us_avg_bpm16Y (ppb)
χ² / ndf 5.093 / 14
p0 −1.455 ± 7.486
80
60
40
20
0
−20
−40
−60
1.5
1
0.5
0
−0.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

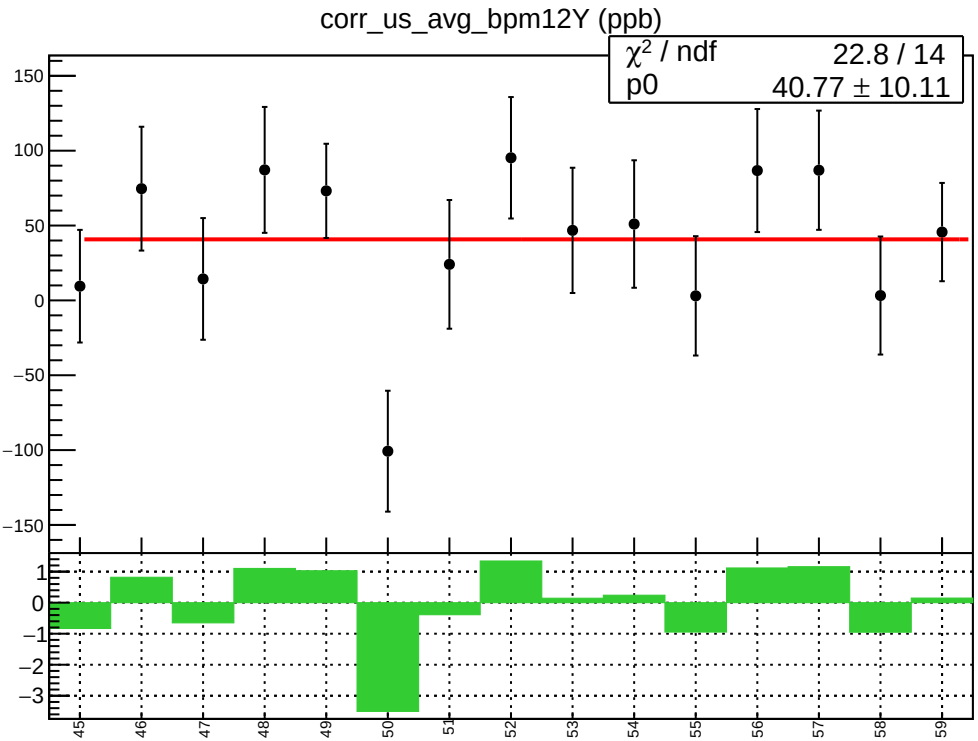

1D pull distribution
Mean 0.006245 ± 0.1504
Std Dev 0.5827 ± 0.1064
Underflow 0
Overflow 0
χ² / ndf 1.92 / 2
Constant 9.297 ± 3.248
Mean −0.1746 ± 0.0840
Sigma 0.2989 ± 0.0657
9
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

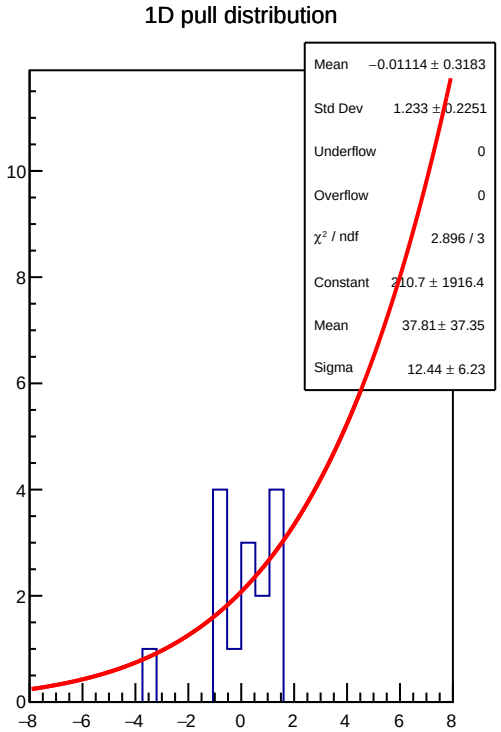

corr_us_avg_bpm16Y RMS (ppm)
RMS (ppm)
30
25
20
15
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

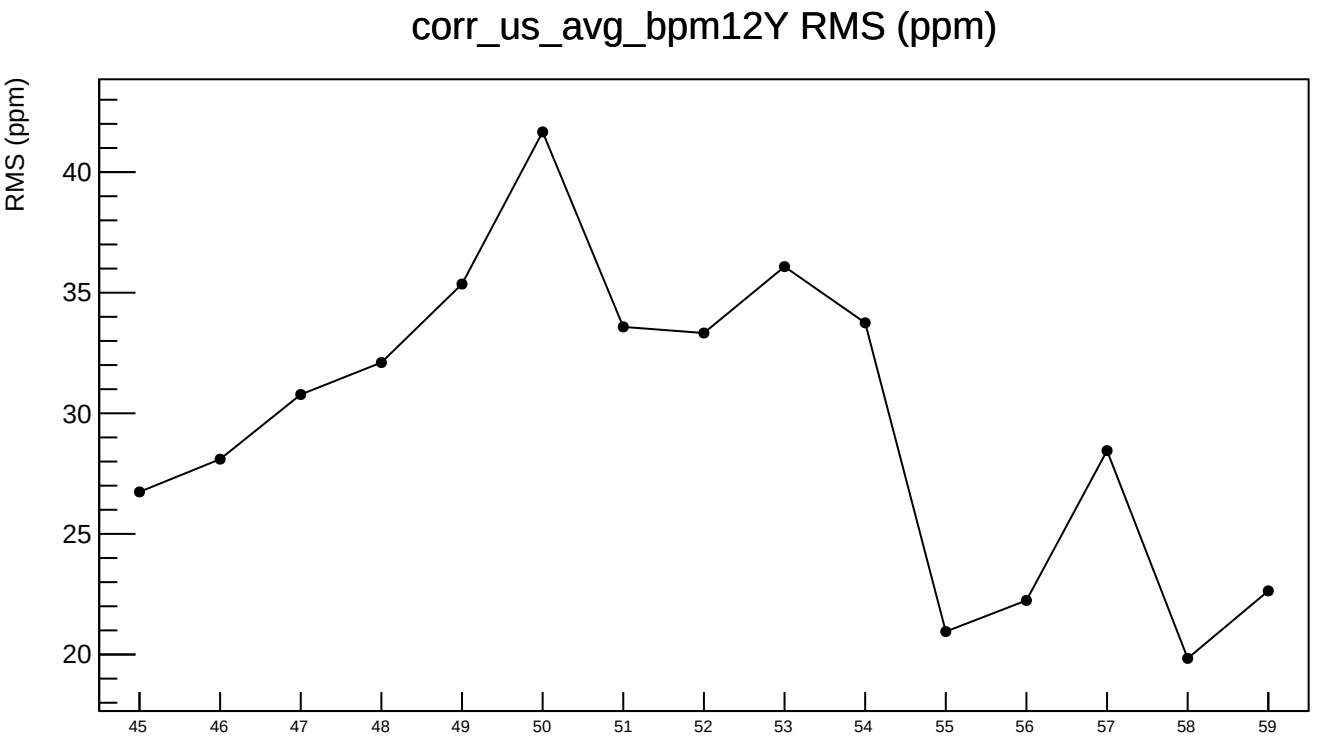

corr_us_avg_bpm12X (ppb)
χ² / ndf 7.327 / 14
p0 −32.37 ± 35.38
300
200
100
0
−100
−200
−300
−400
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

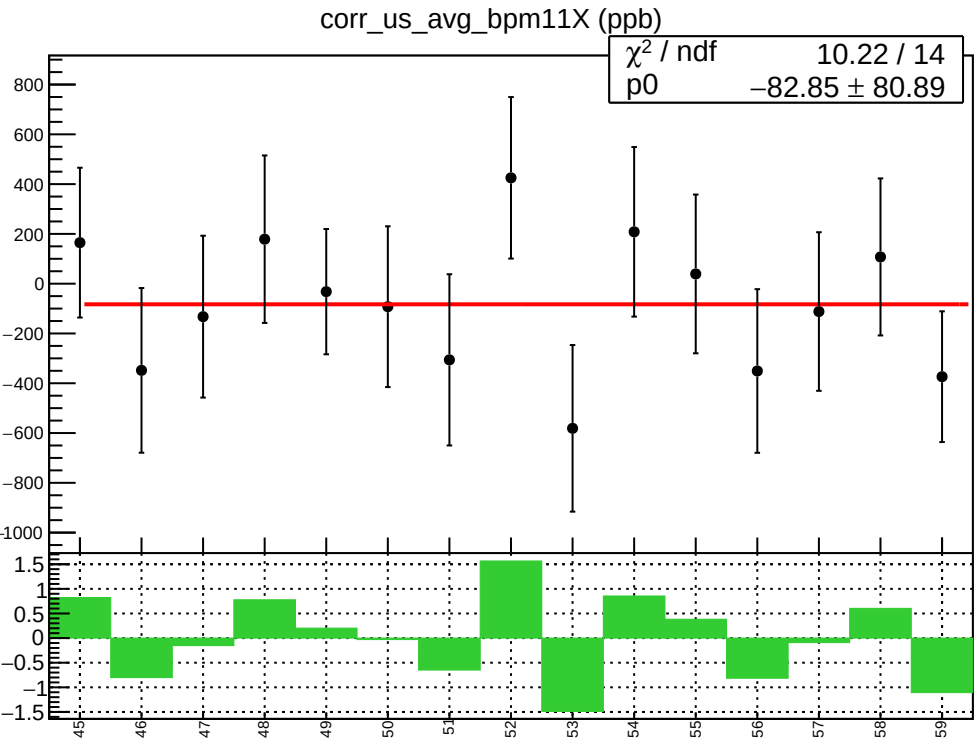

1D pull distribution
Mean 0.002854 ± 0.1805
Std Dev 0.6989 ± 0.1276
Underflow 0
Overflow 0
χ² / ndf 2.403 / 3
Constant 3.596 ± 1.522
Mean 0.1545 ± 0.2460
Sigma 0.7757 ± 0.3054
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

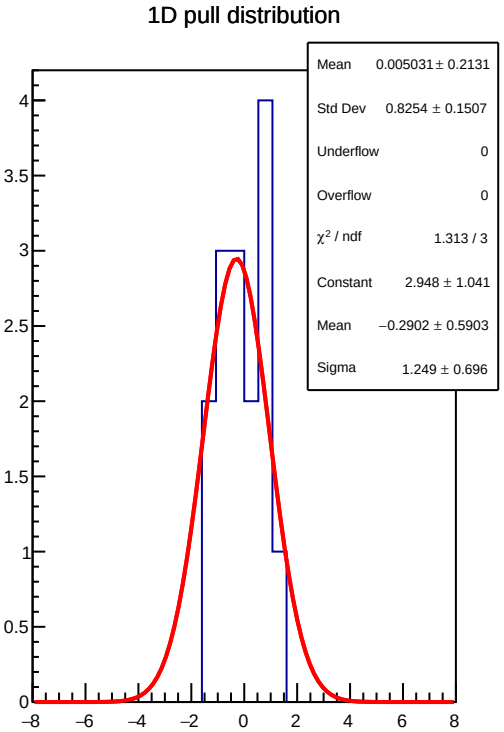

corr_us_avg_bpm12X RMS (ppm)
RMS (ppm)
110
100
90
80
70
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

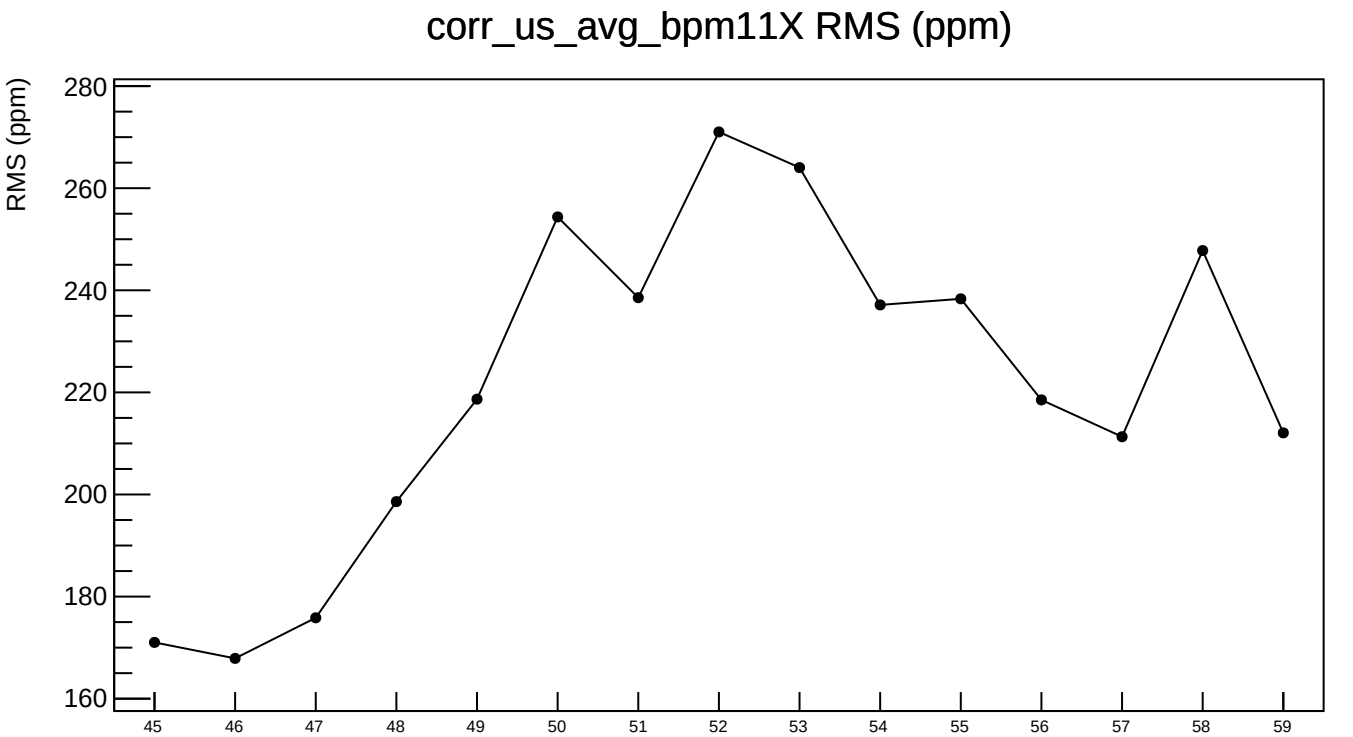

corr_us_avg_bpm12Y (ppb)
χ² / ndf 22.8 / 14
p0 40.77 ± 10.11
150
100
50
0
−50
−100
−150
1
0
−1
−2
−3
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

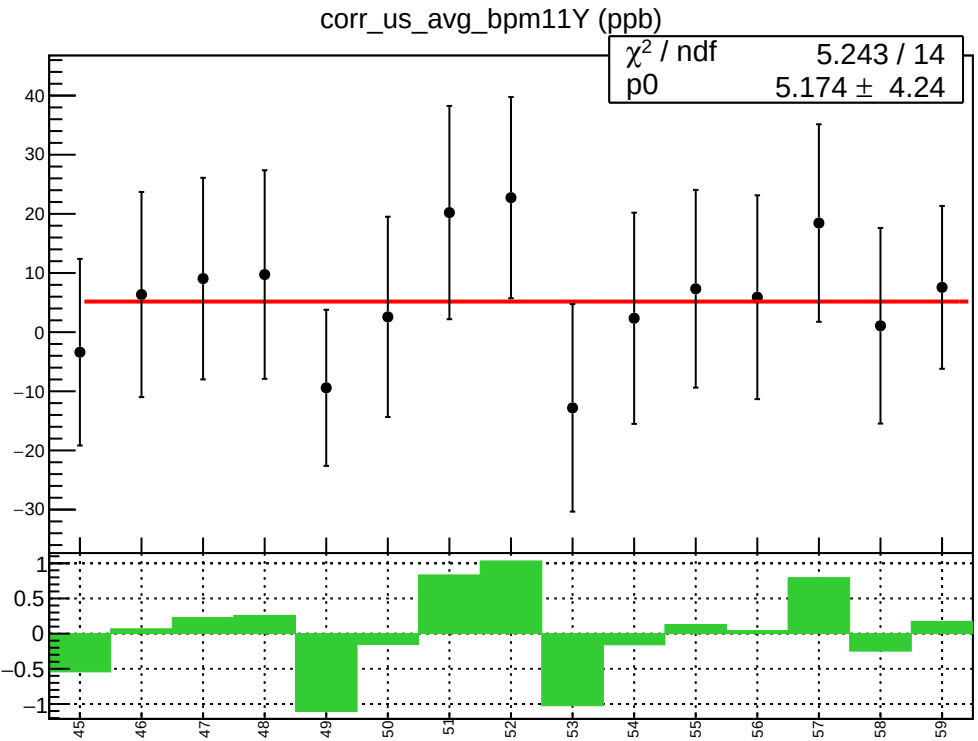

1D pull distribution
Mean −0.01114 ± 0.3183
Std Dev 1.233 ± 0.2251
Underflow 0
Overflow 0
χ² / ndf 2.896 / 3
Constant 210.7 ± 1916.4
Mean 37.81 ± 37.35
Sigma 12.44 ± 6.23
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

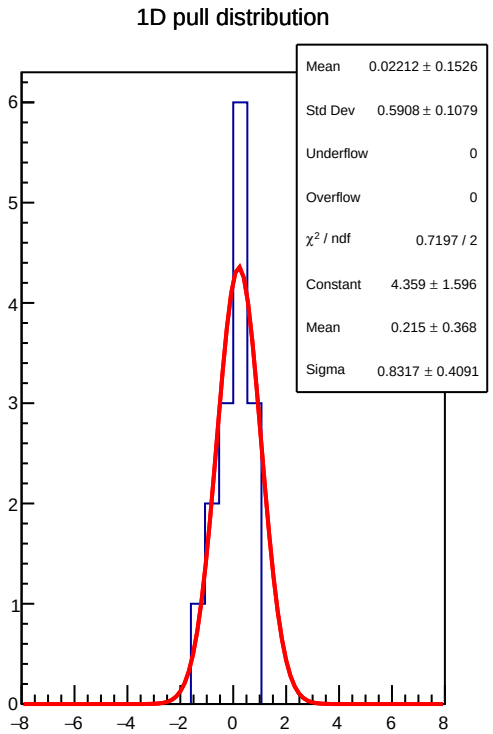

corr_us_avg_bpm12Y RMS (ppm)
RMS (ppm)
40
35
30
25
20
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

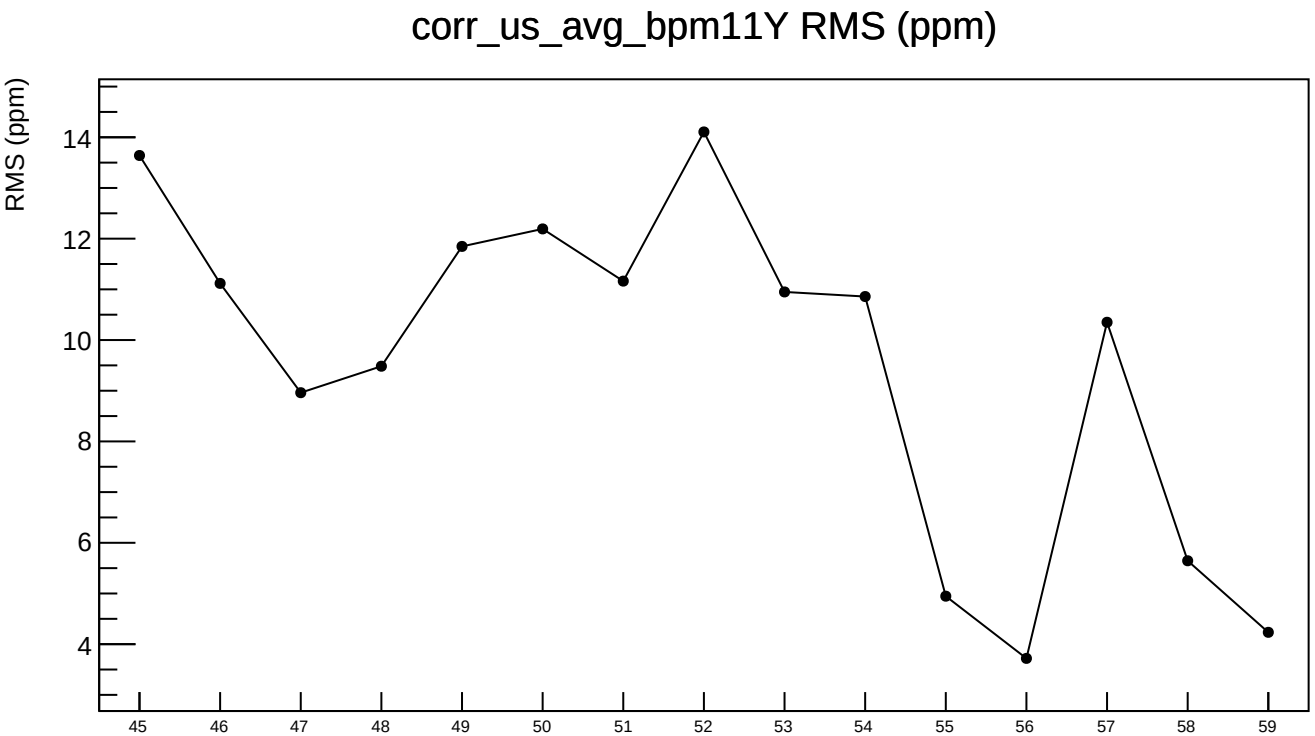

corr_us_avg_bpm11X (ppb)
χ² / ndf 10.22 / 14
p0 −82.85 ± 80.89
800
600
400
200
0
−200
−400
−600
−800
−1000
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

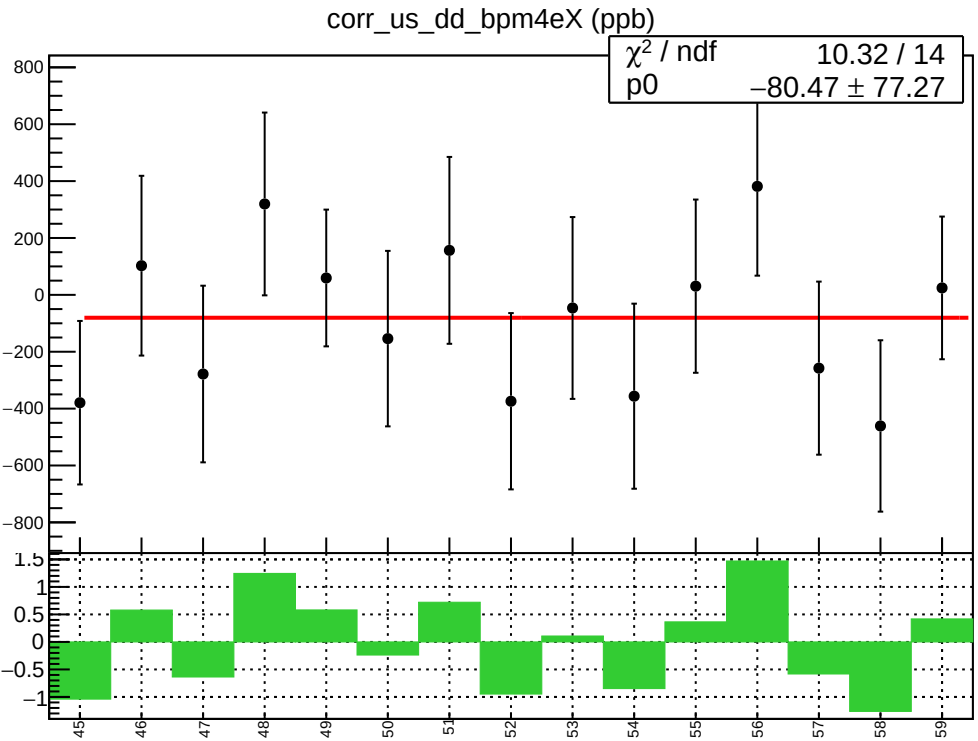

1D pull distribution
Mean 0.005031 ± 0.2131
Std Dev 0.8254 ± 0.1507
Underflow 0
Overflow 0
χ² / ndf 1.313 / 3
Constant 2.948 ± 1.041
Mean −0.2902 ± 0.5903
Sigma 1.249 ± 0.696
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

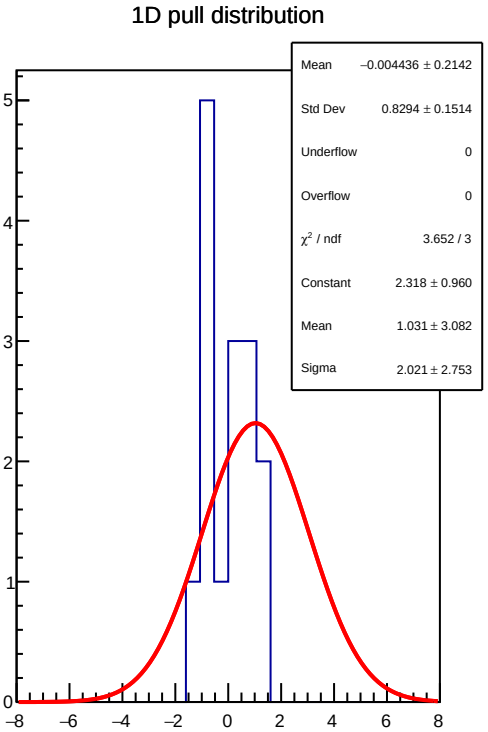

corr_us_avg_bpm11X RMS (ppm)
RMS (ppm)
280
260
240
220
200
180
160
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

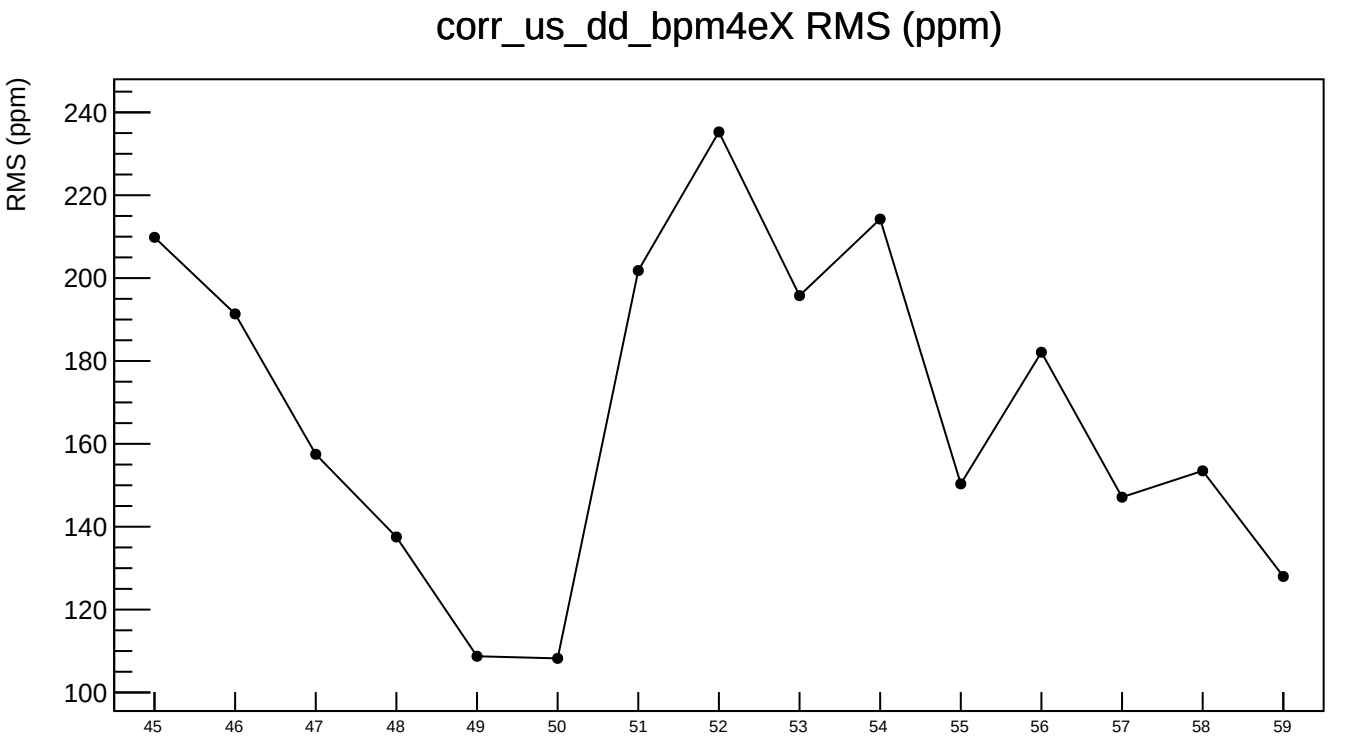

corr_us_avg_bpm11Y (ppb)
χ² / ndf 5.243 / 14
p0 5.174 ± 4.24

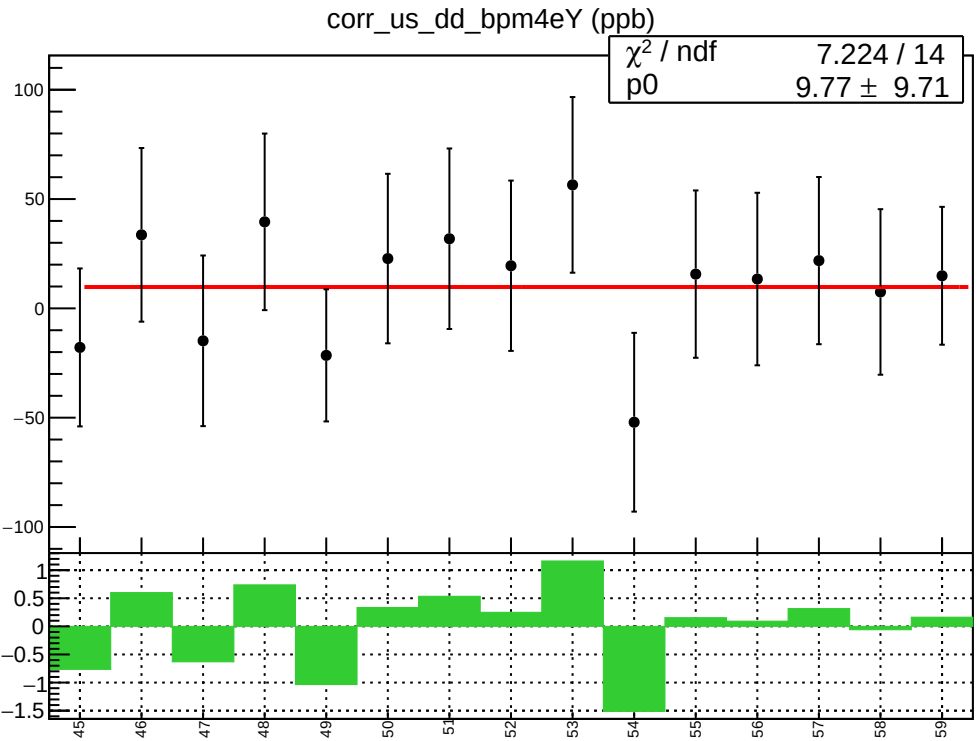

1D pull distribution
Mean 0.02212 ± 0.1526
Std Dev 0.5908 ± 0.1079
Underflow 0
Overflow 0
χ² / ndf 0.7197 / 2
Constant 4.359 ± 1.596
Mean 0.215 ± 0.368
Sigma 0.8317 ± 0.4091

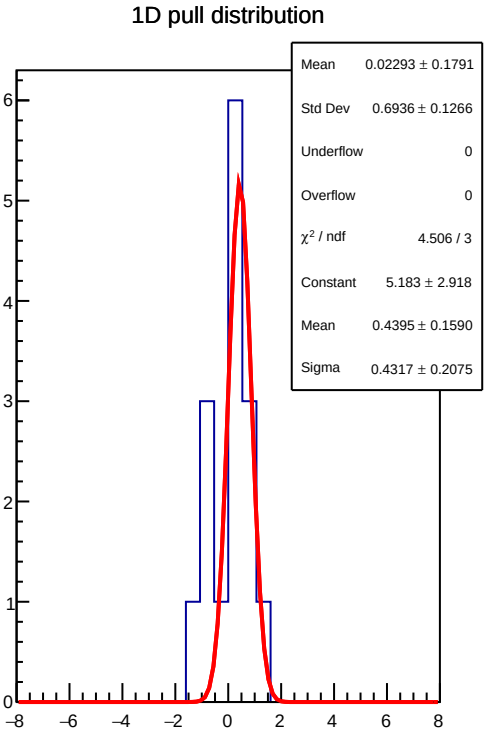

corr_us_avg_bpm11Y RMS (ppm)
RMS (ppm)
14
12
10
8
6
4
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

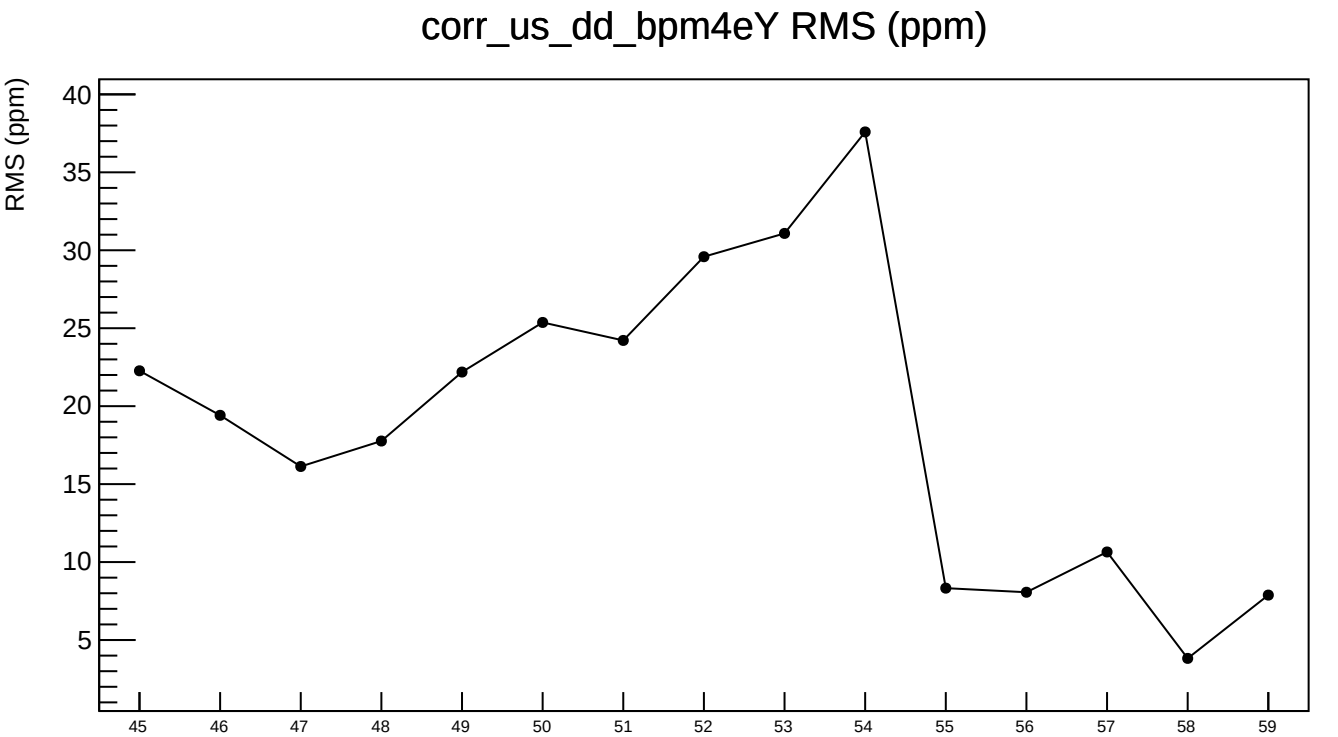

corr_us_dd_bpm4eX (ppb)
χ² / ndf 10.32 / 14
p0 −80.47 ± 77.27
800
600
400
200
0
−200
−400
−600
−800
1.5
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

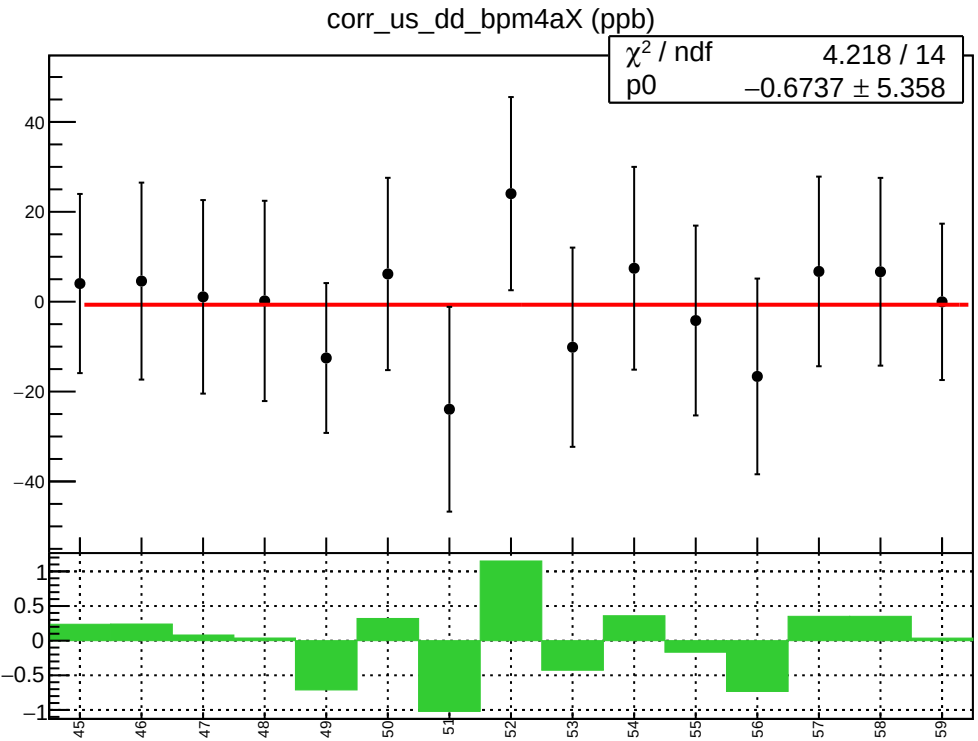

1D pull distribution
Mean −0.004436 ± 0.2142
Std Dev 0.8294 ± 0.1514
Underflow 0
Overflow 0
χ² / ndf 3.652 / 3
Constant 2.318 ± 0.960
Mean 1.031 ± 3.082
Sigma 2.021 ± 2.753
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

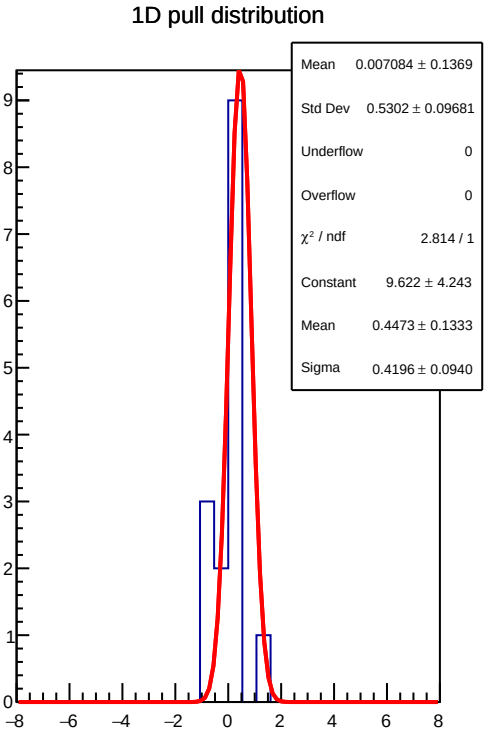

corr_us_dd_bpm4eX RMS (ppm)
RMS (ppm)
240
220
200
180
160
140
120
100
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

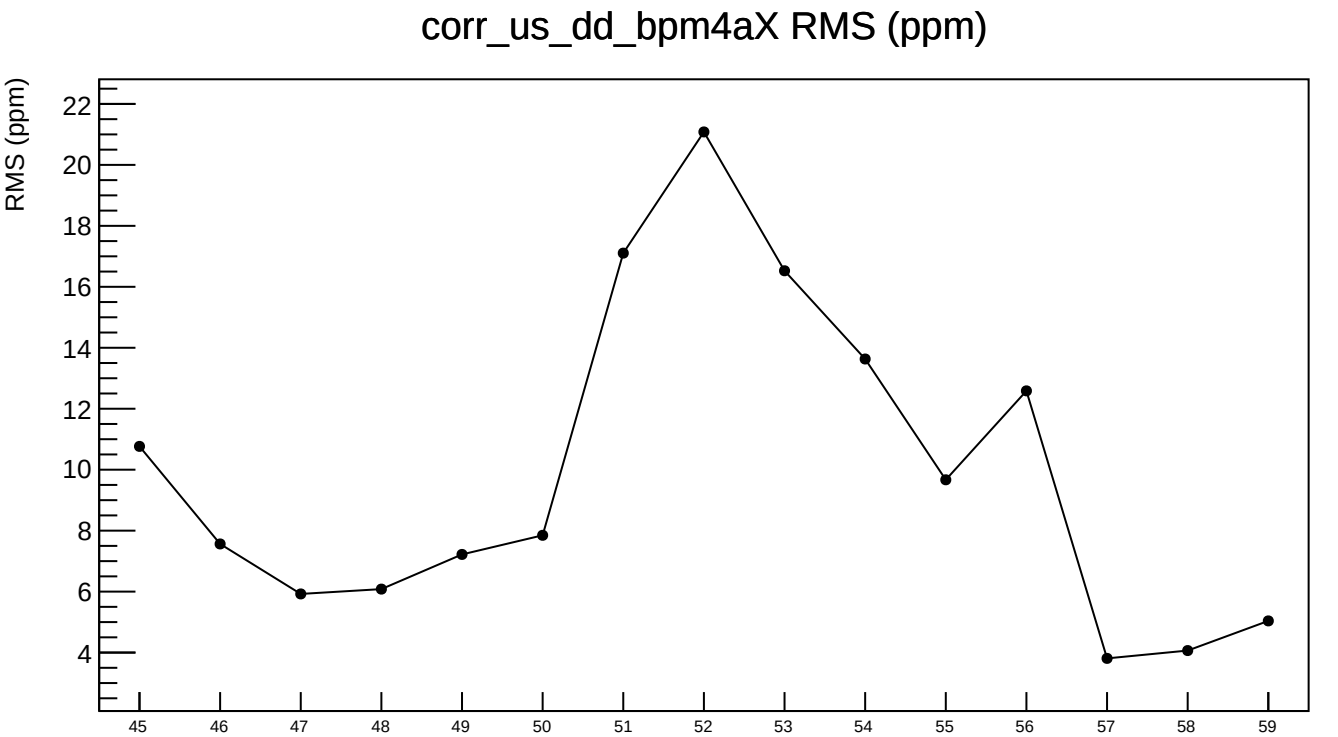

corr_us_dd_bpm4eY (ppb)
χ² / ndf 7.224 / 14
p0 9.77 ± 9.71
100
50
0
−50
−100
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

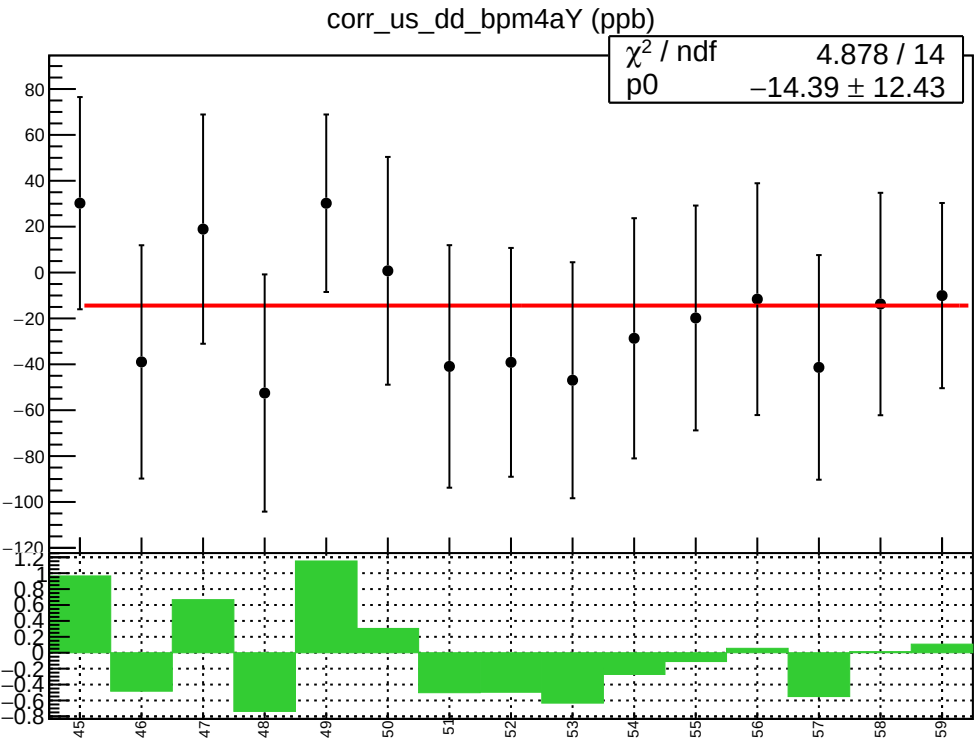

1D pull distribution
Mean 0.02293 ± 0.1791
Std Dev 0.6936 ± 0.1266
Underflow 0
Overflow 0
χ² / ndf 4.506 / 3
Constant 5.183 ± 2.918
Mean 0.4395 ± 0.1590
Sigma 0.4317 ± 0.2075
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

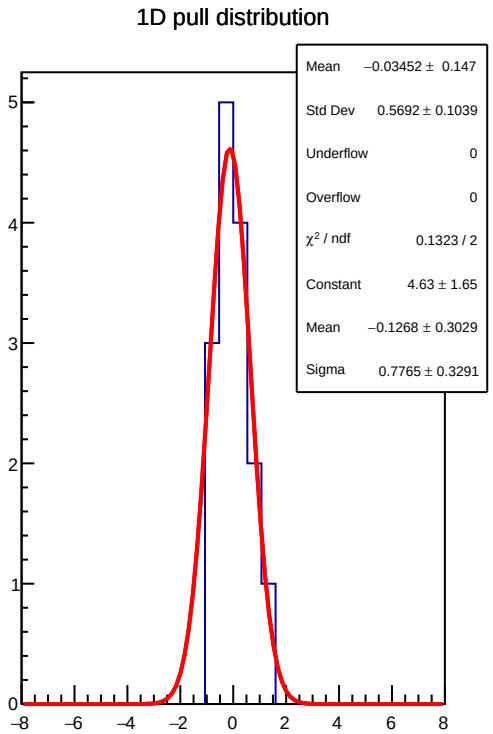

corr_us_dd_bpm4eY RMS (ppm)
RMS (ppm)
40
35
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

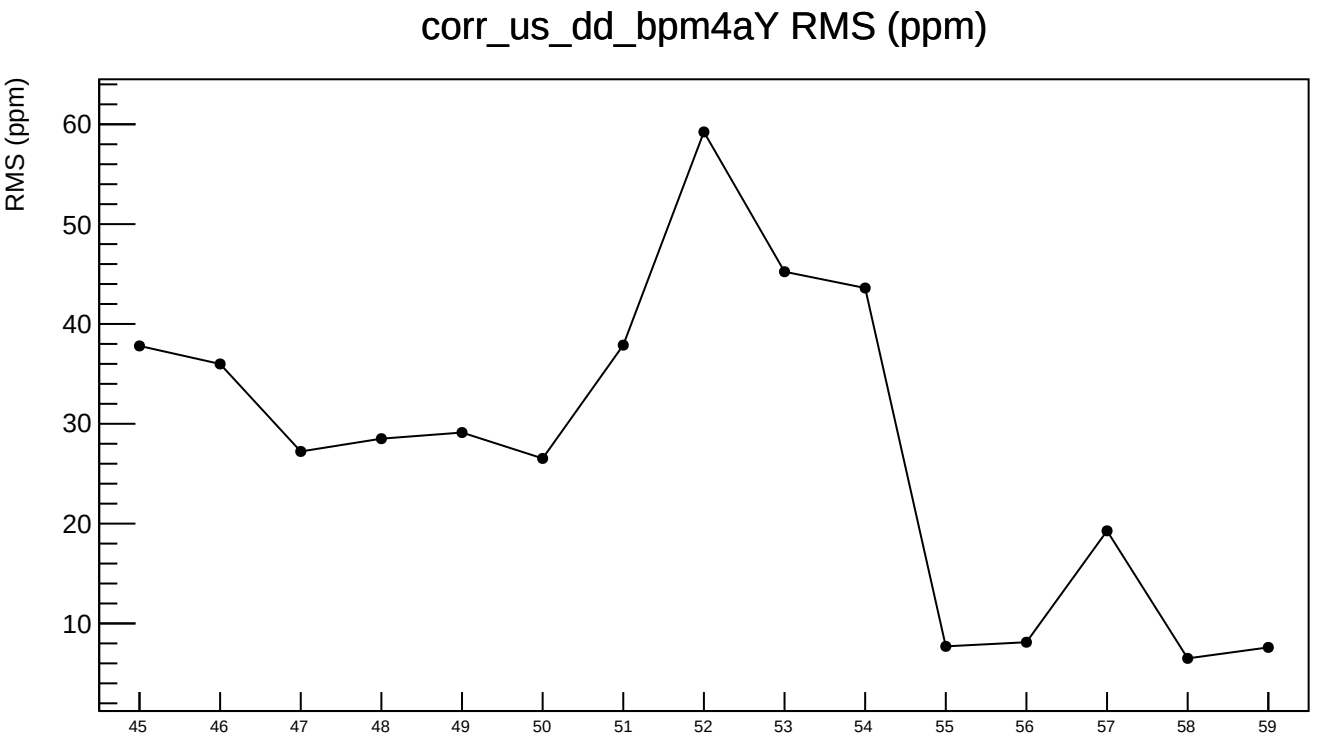

corr_us_dd_bpm4aX (ppb)
χ² / ndf 4.218 / 14
p0 −0.6737 ± 5.358
40
20
0
−20
−40
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

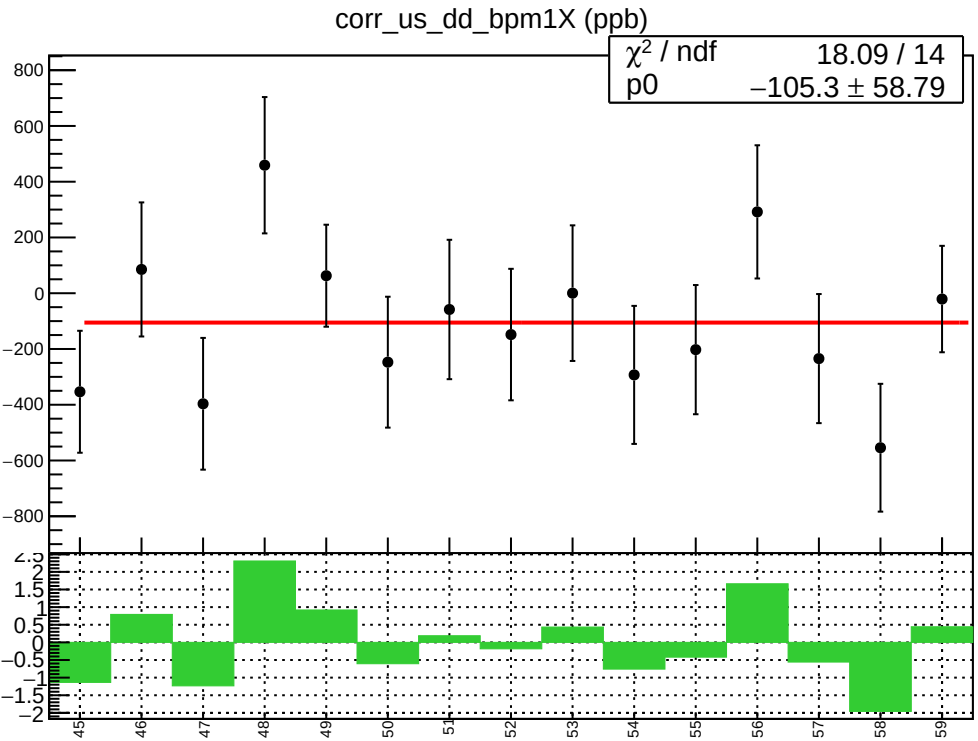

1D pull distribution
Mean 0.007084 ± 0.1369
Std Dev 0.5302 ± 0.09681
Underflow 0
Overflow 0
χ² / ndf 2.814 / 1
Constant 9.622 ± 4.243
Mean 0.4473 ± 0.1333
Sigma 0.4196 ± 0.0940
9
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

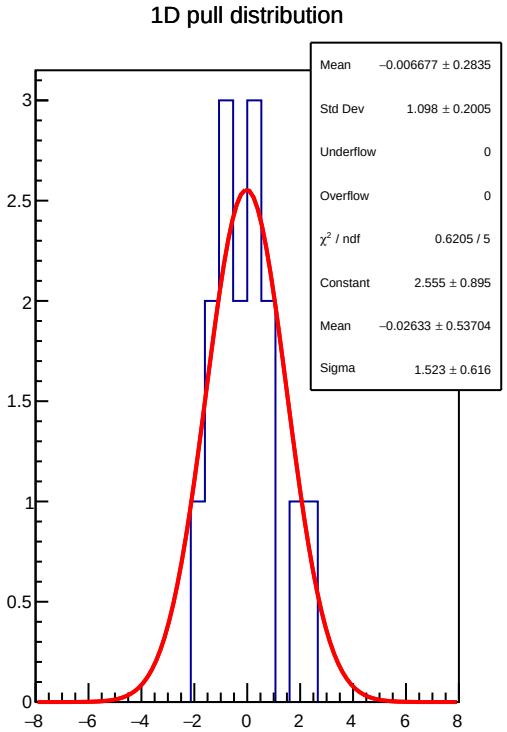

corr_us_dd_bpm4aX RMS (ppm)
RMS (ppm)
22
20
18
16
14
12
10
8
6
4
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

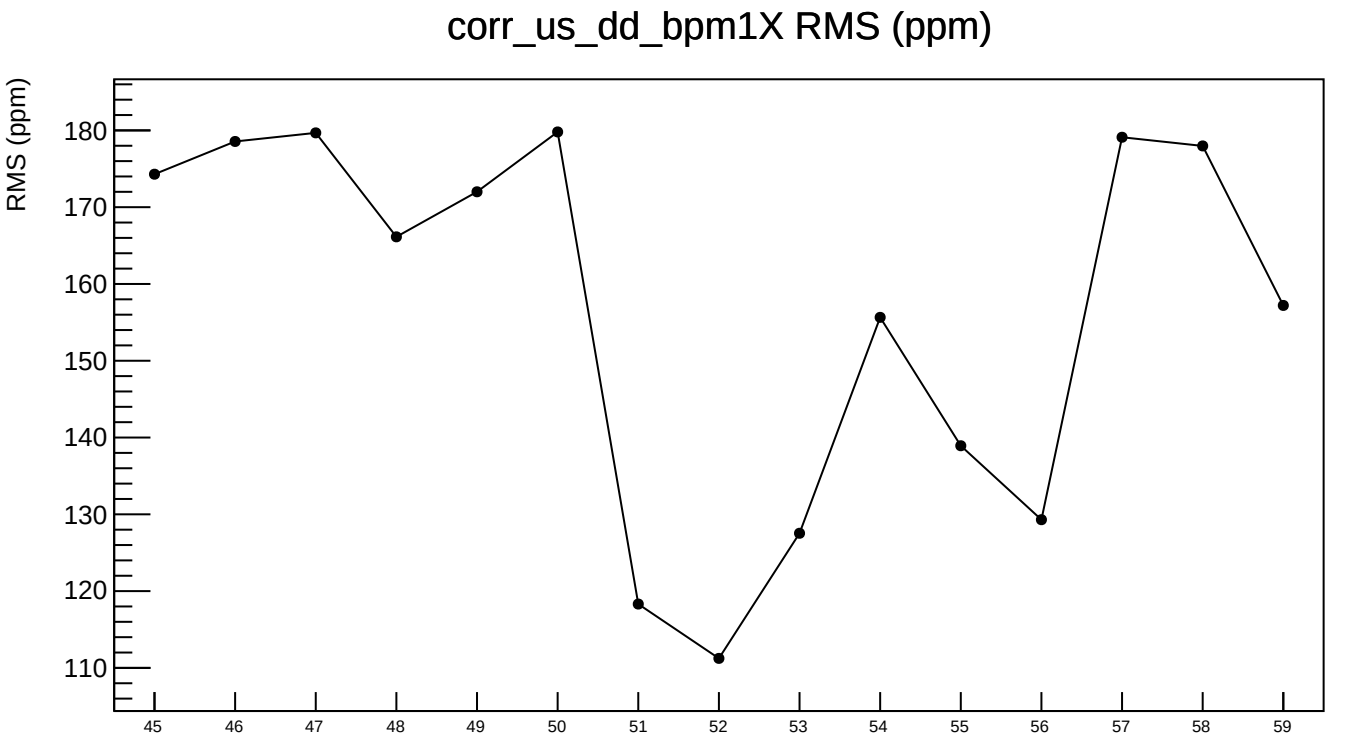

corr_us_dd_bpm4aY (ppb)
χ² / ndf 4.878 / 14
p0 −14.39 ± 12.43

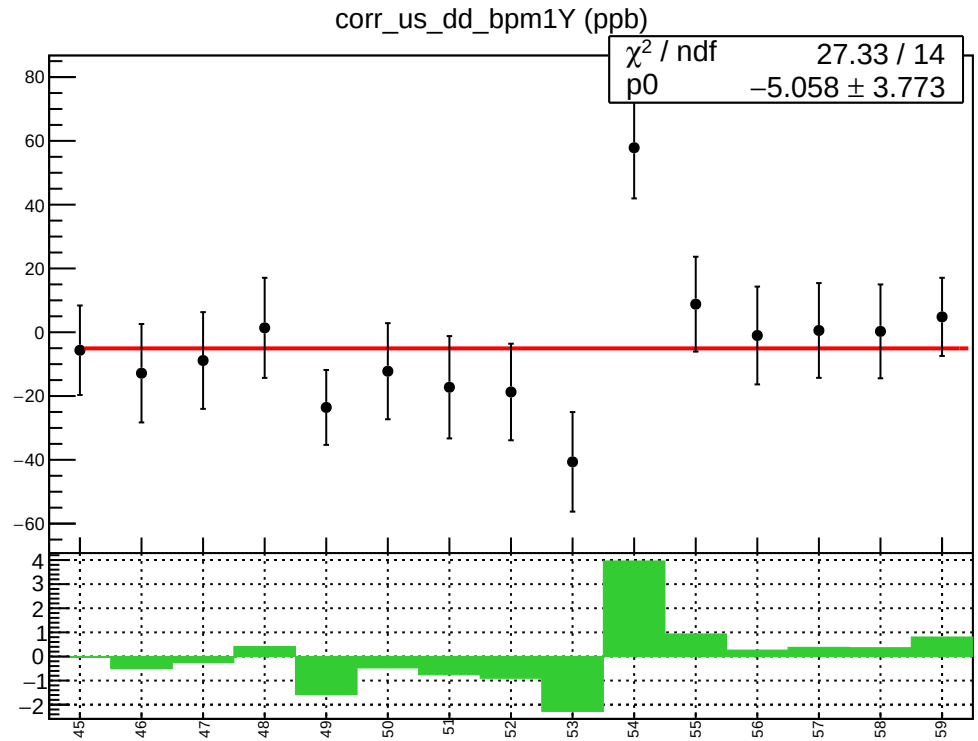

1D pull distribution
Mean −0.03452 ± 0.147
Std Dev 0.5692 ± 0.1039
Underflow 0
Overflow 0
χ² / ndf 0.1323 / 2
Constant 4.63 ± 1.65
Mean −0.1268 ± 0.3029
Sigma 0.7765 ± 0.3291

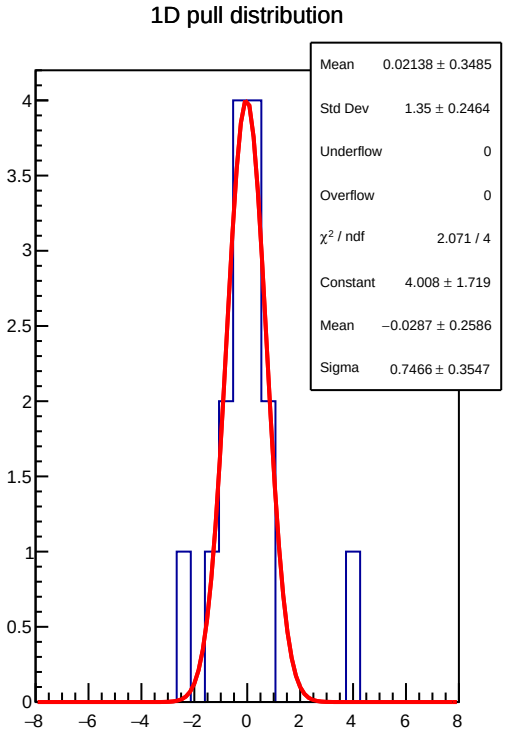

corr_us_dd_bpm4aY RMS (ppm)
RMS (ppm)
60
50
40
30
20
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

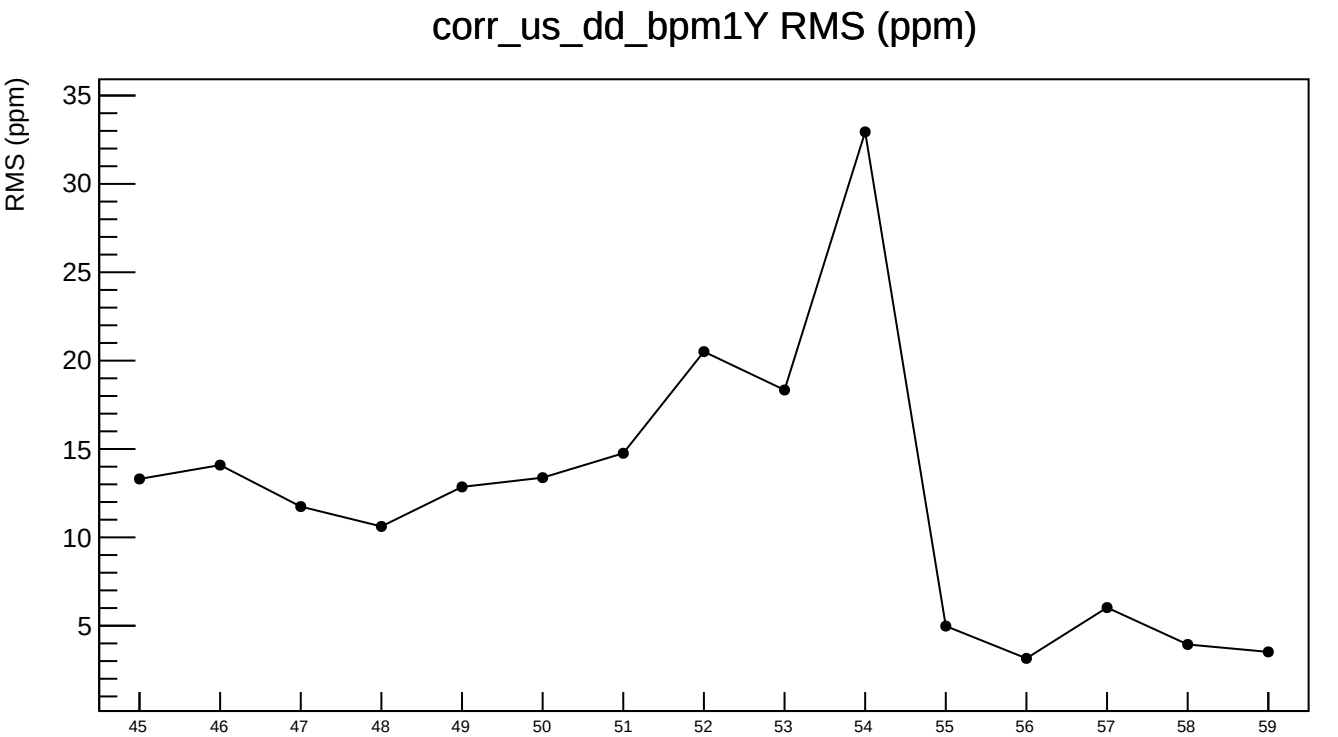

corr_us_dd_bpm1X (ppb)
χ² / ndf 18.09 / 14
p0 −105.3 ± 58.79

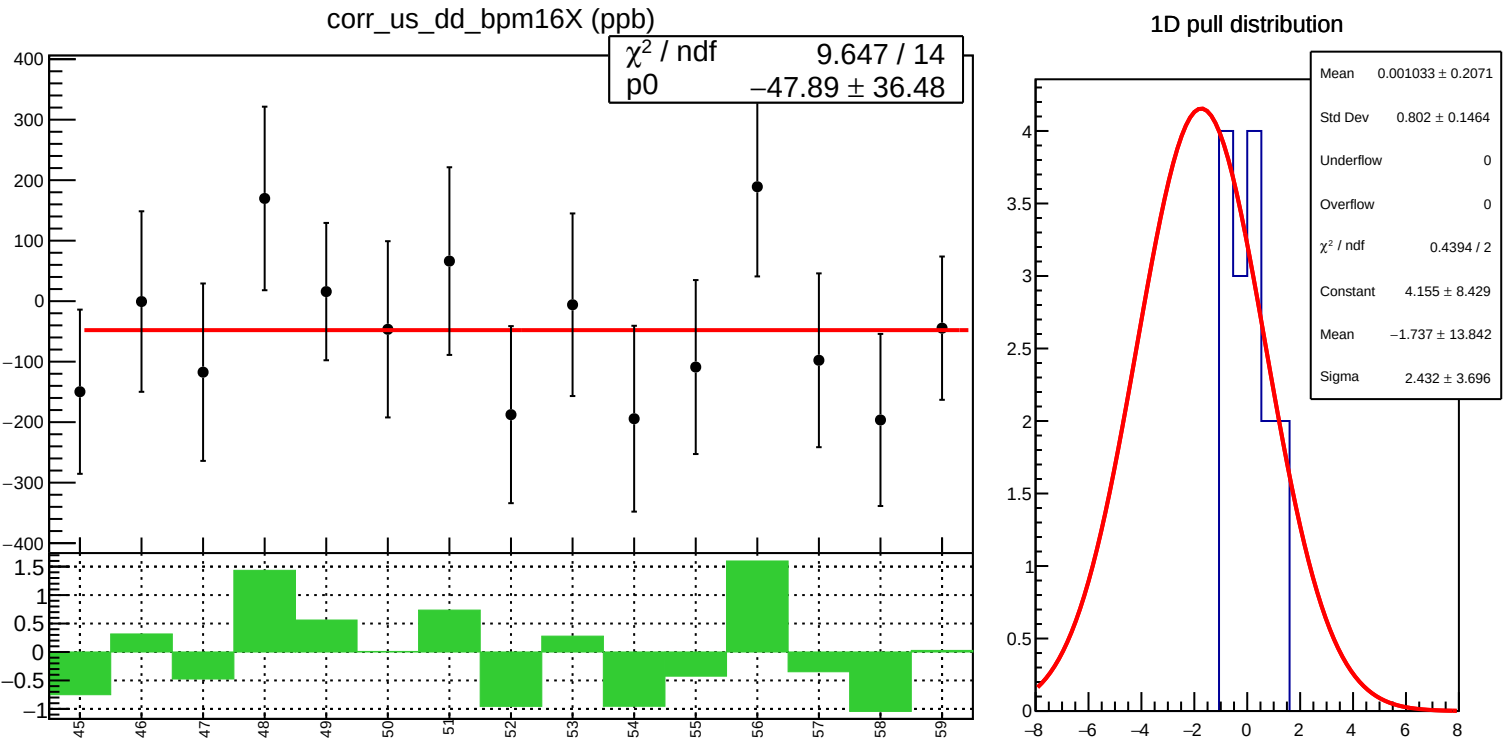

1D pull distribution
Mean −0.006677 ± 0.2835
Std Dev 1.098 ± 0.2005
Underflow 0
Overflow 0
χ² / ndf 0.6205 / 5
Constant 2.555 ± 0.895
Mean −0.02633 ± 0.53704
Sigma 1.523 ± 0.616


corr_us_dd_bpm1X RMS (ppm)
RMS (ppm)
180
170
160
150
140
130
120
110
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

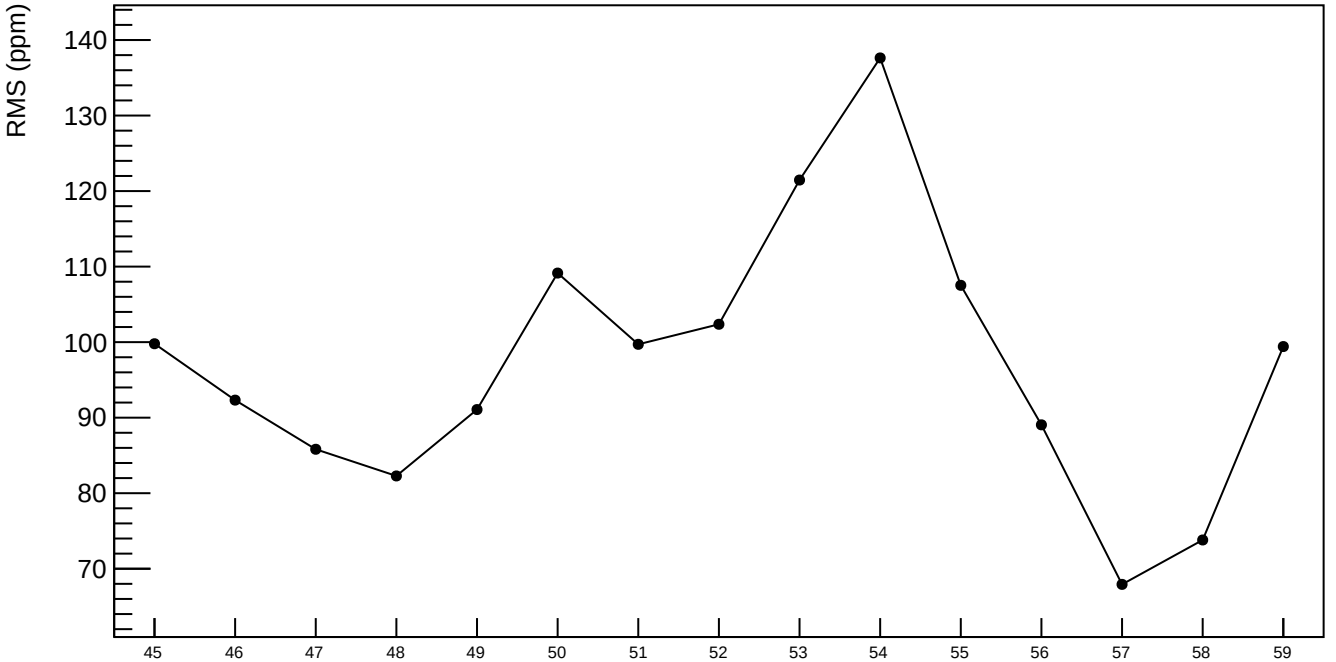

corr_us_dd_bpm1Y (ppb)
χ² / ndf 27.33 / 14
p0 −5.058 ± 3.773

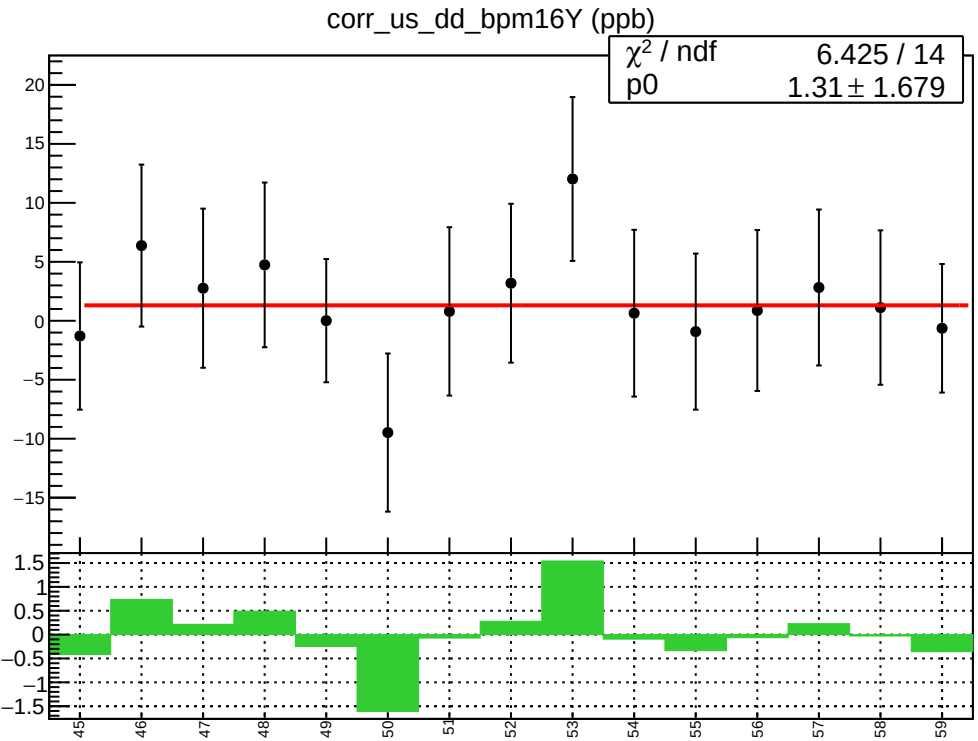

1D pull distribution
Mean 0.02138 ± 0.3485
Std Dev 1.35 ± 0.2464
Underflow 0
Overflow 0
χ² / ndf 2.071 / 4
Constant 4.008 ± 1.719
Mean −0.0287 ± 0.2586
Sigma 0.7466 ± 0.3547

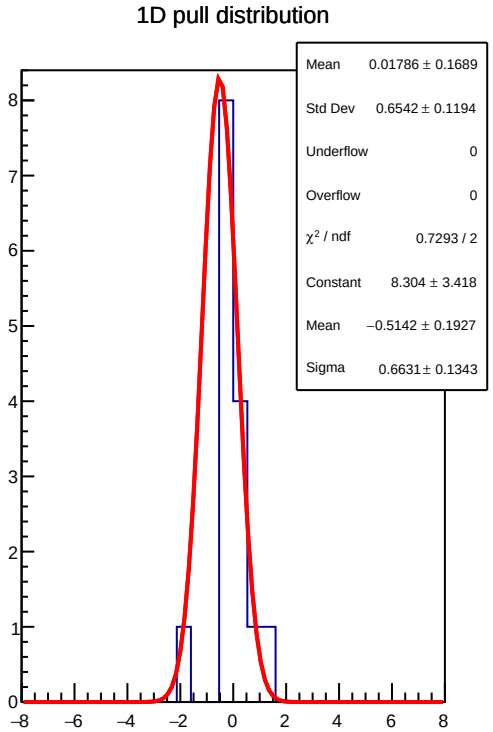

corr_us_dd_bpm1Y RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

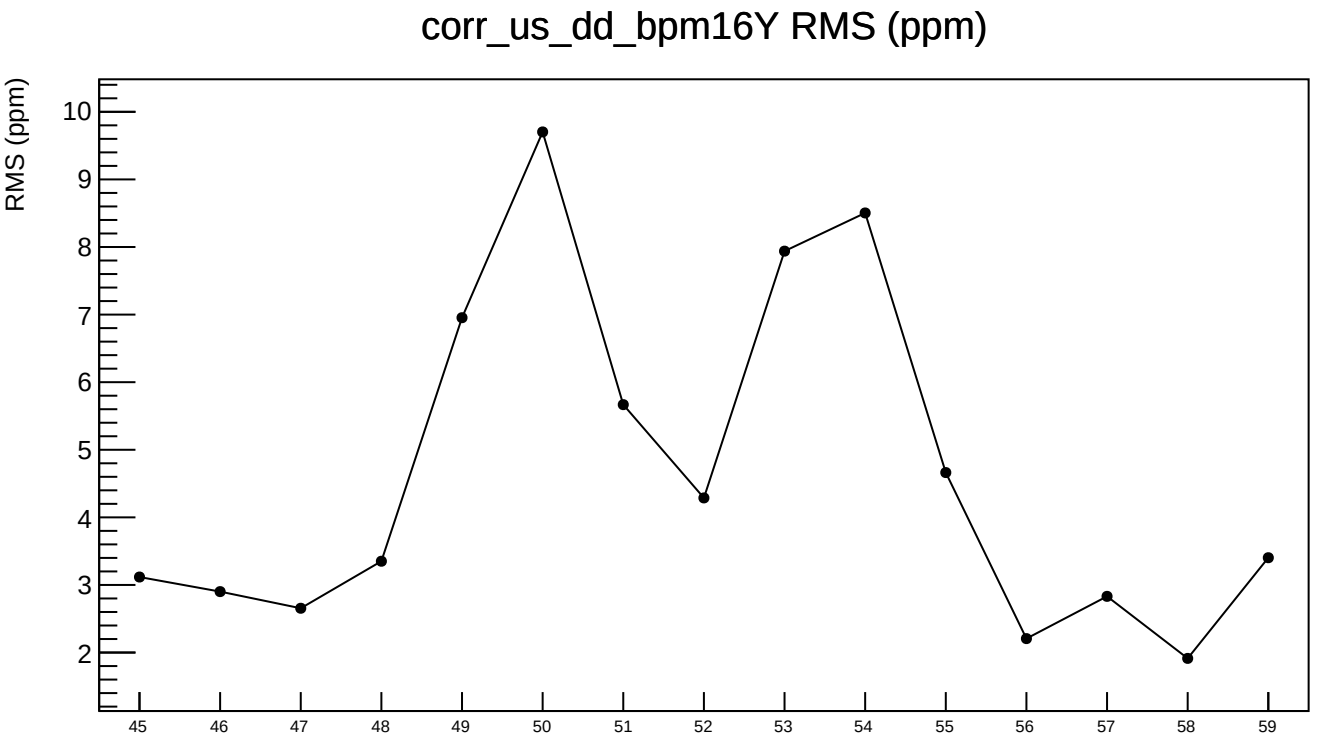

corr_us_dd_bpm16X (ppb)
χ² / ndf 9.647 / 14
p0 −47.89 ± 36.48
1D pull distribution
Mean 0.001033 ± 0.2071
Std Dev 0.802 ± 0.1464
Underflow 0
Overflow 0
χ² / ndf 0.4394 / 2
Constant 4.155 ± 8.429
Mean −1.737 ± 13.842
Sigma 2.432 ± 3.696

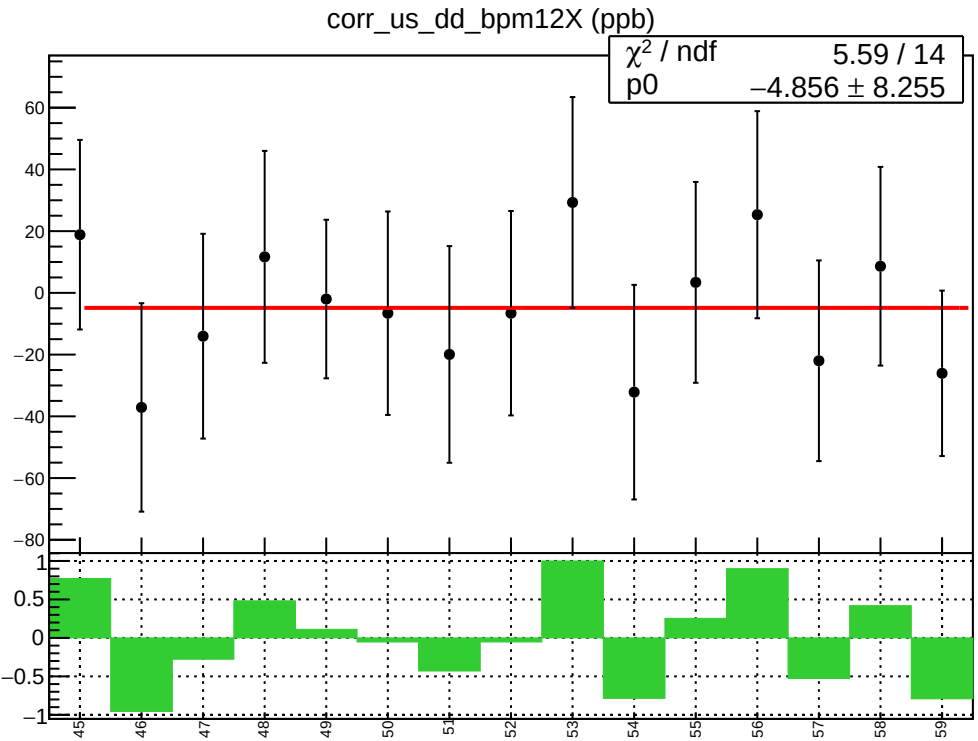
corr_us_dd_bpm16X RMS (ppm)

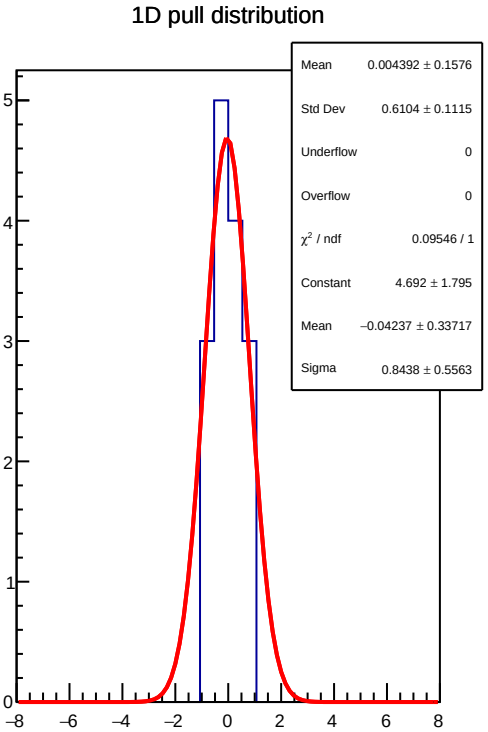


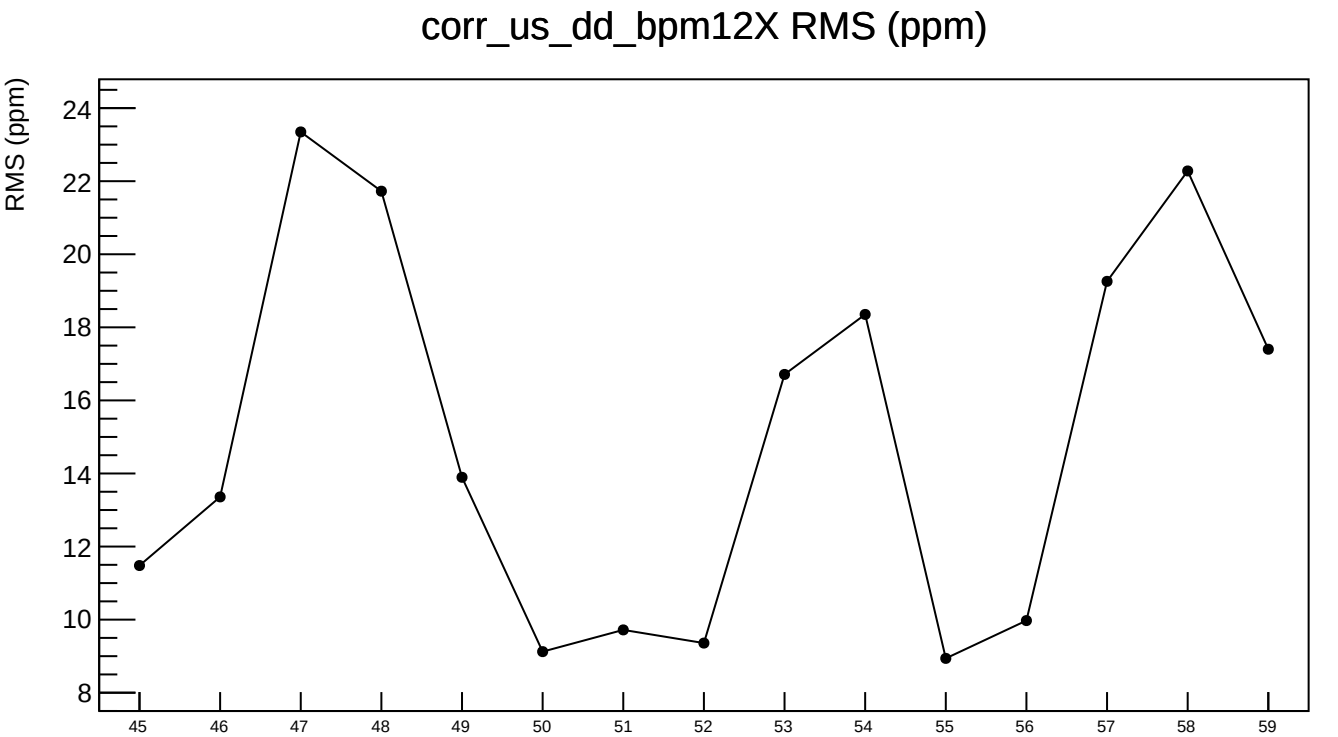

corr_us_dd_bpm16Y (ppb)
χ² / ndf 6.425 / 14
p0 1.31 ± 1.679

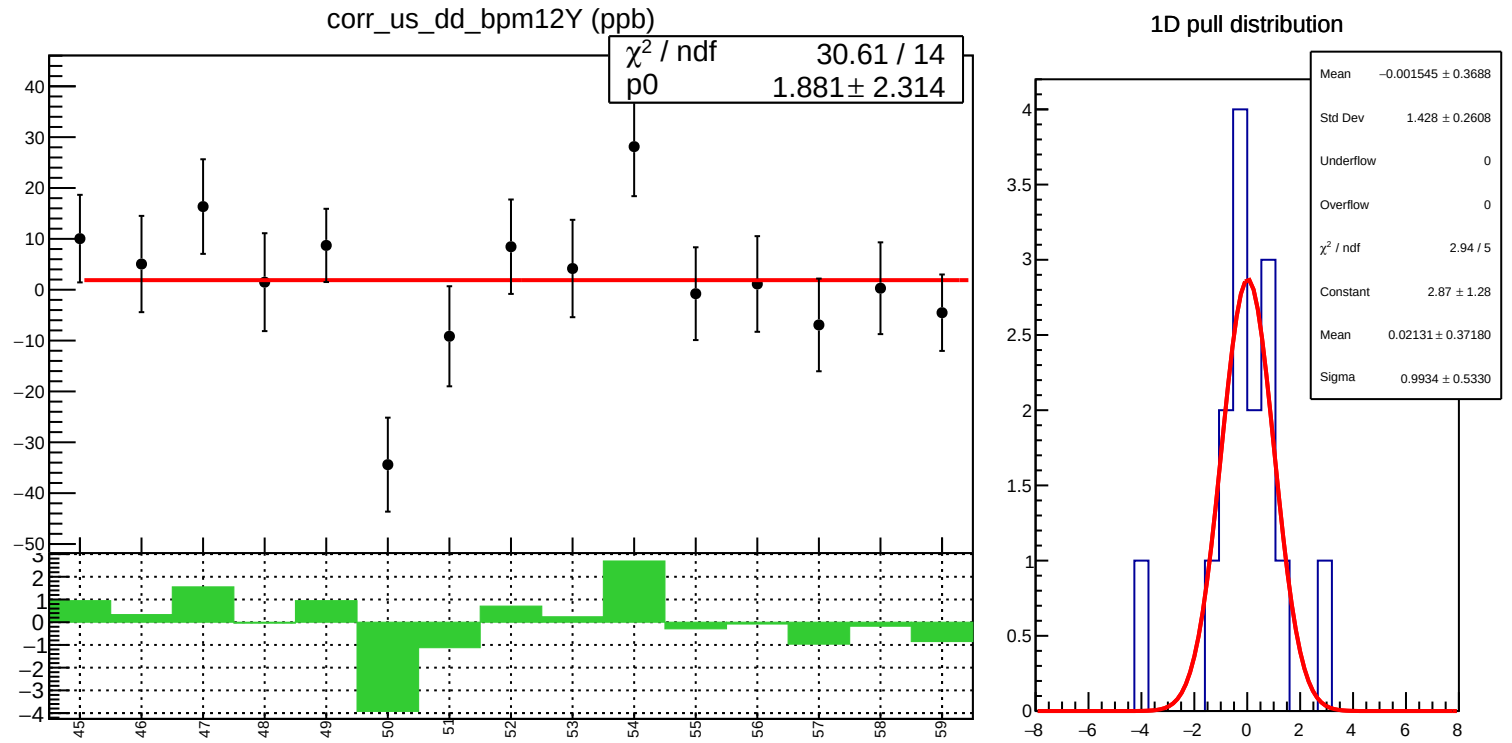

1D pull distribution
Mean 0.01786 ± 0.1689
Std Dev 0.6542 ± 0.1194
Underflow 0
Overflow 0
χ² / ndf 0.7293 / 2
Constant 8.304 ± 3.418
Mean −0.5142 ± 0.1927
Sigma 0.6631 ± 0.1343

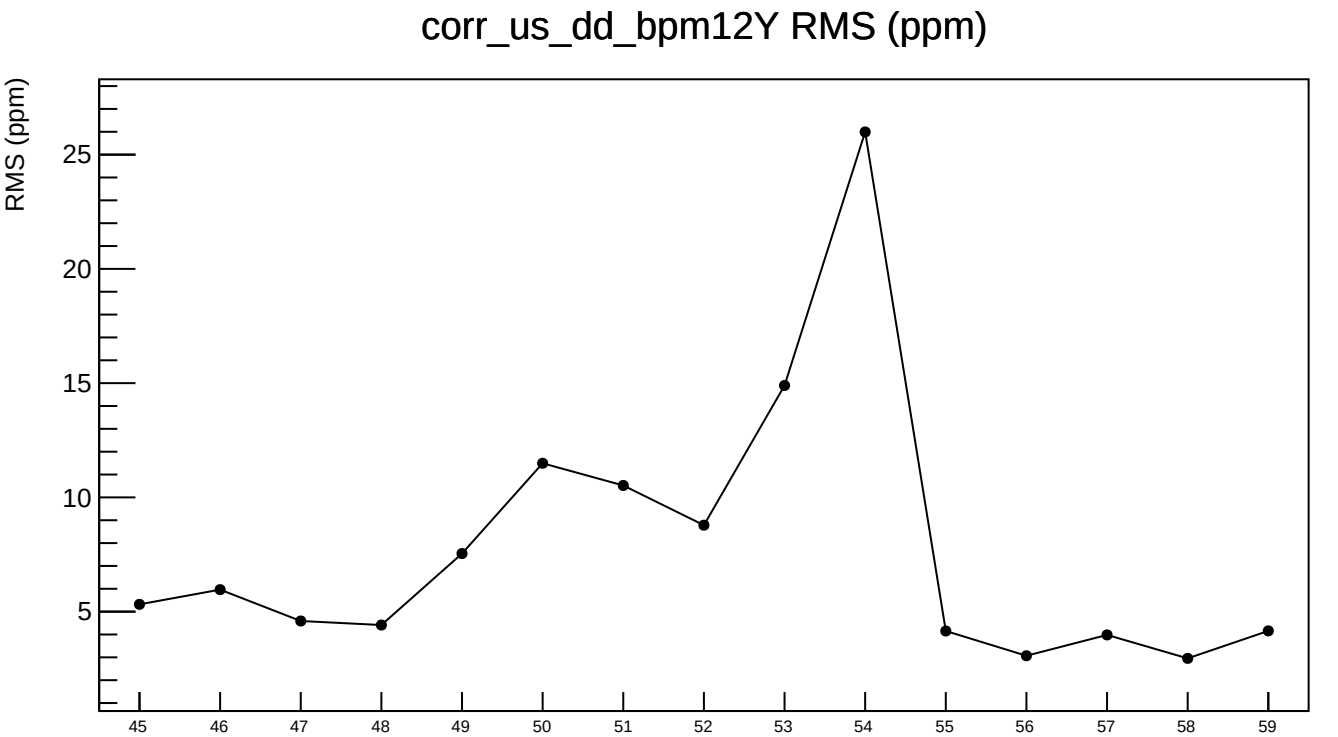

corr_us_dd_bpm16Y RMS (ppm)
RMS (ppm)
10
9
8
7
6
5
4
3
2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

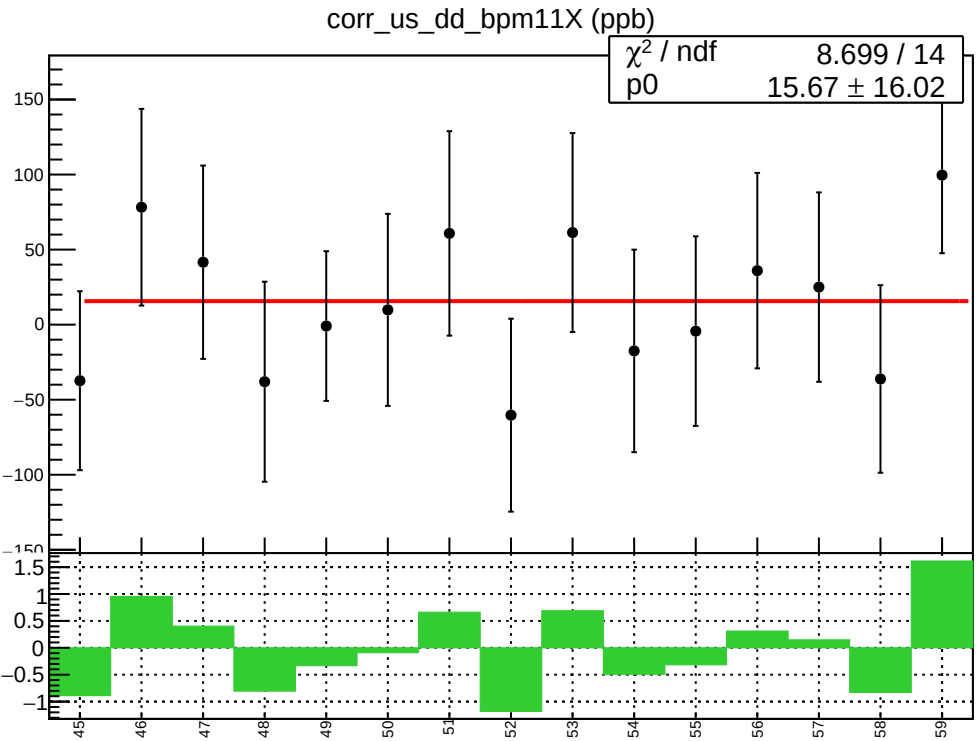

corr_us_dd_bpm12X (ppb)
χ² / ndf 5.59 / 14
p0 −4.856 ± 8.255
60
40
20
0
−20
−40
−60
−80
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

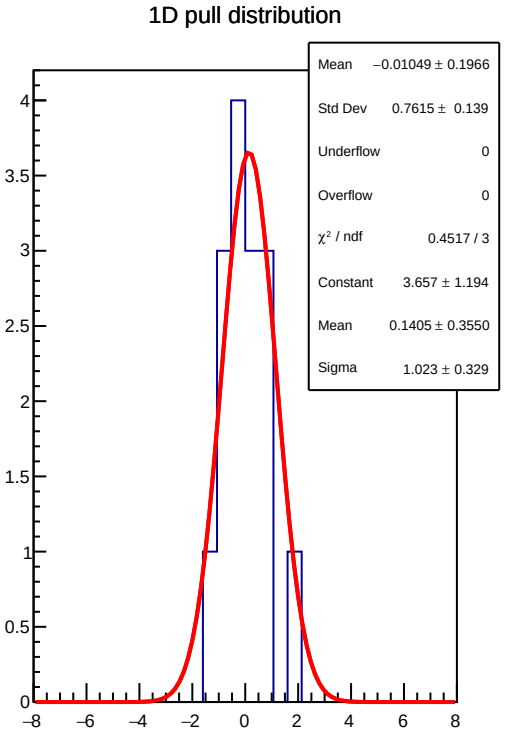

1D pull distribution
Mean 0.004392 ± 0.1576
Std Dev 0.6104 ± 0.1115
Underflow 0
Overflow 0
χ² / ndf 0.09546 / 1
Constant 4.692 ± 1.795
Mean −0.04237 ± 0.33717
Sigma 0.8438 ± 0.5563
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

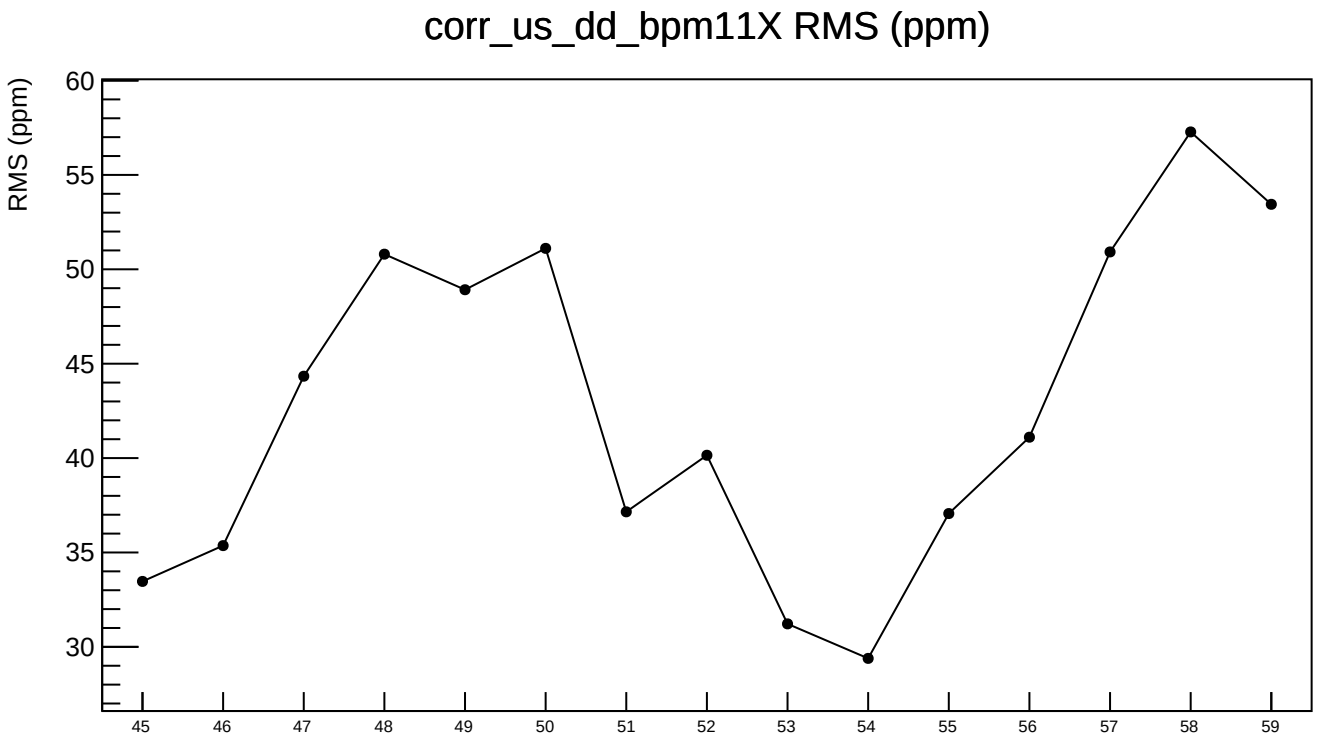

corr_us_dd_bpm12X RMS (ppm)
RMS (ppm)
24
22
20
18
16
14
12
10
8
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

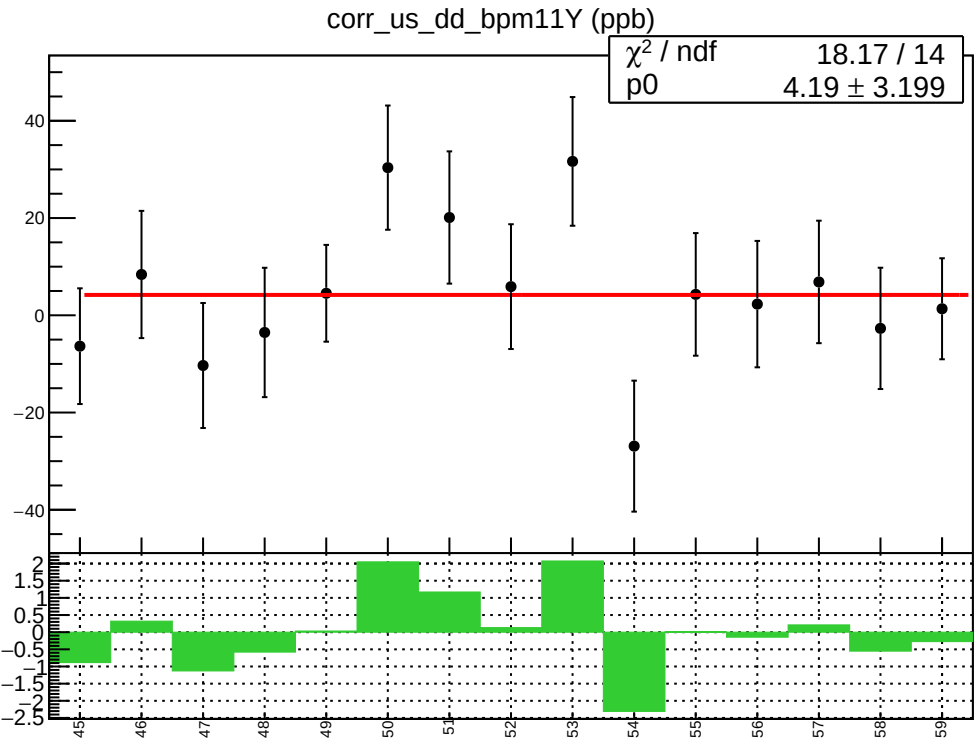

corr_us_dd_bpm12Y (ppb)
χ² / ndf 30.61 / 14
p0 1.881 ± 2.314
1D pull distribution
Mean −0.001545 ± 0.3688
Std Dev 1.428 ± 0.2608
Underflow 0
Overflow 0
χ² / ndf 2.94 / 5
Constant 2.87 ± 1.28
Mean 0.02131 ± 0.37180
Sigma 0.9934 ± 0.5330

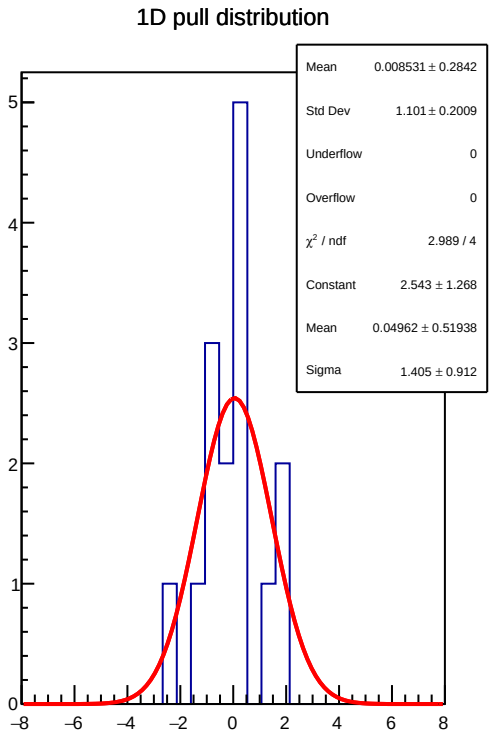

corr_us_dd_bpm12Y RMS (ppm)
RMS (ppm)
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


corr_us_dd_bpm11X (ppb)
χ² / ndf 8.699 / 14
p0 15.67 ± 16.02
150
100
50
0
−50
−100
−150
1.5
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

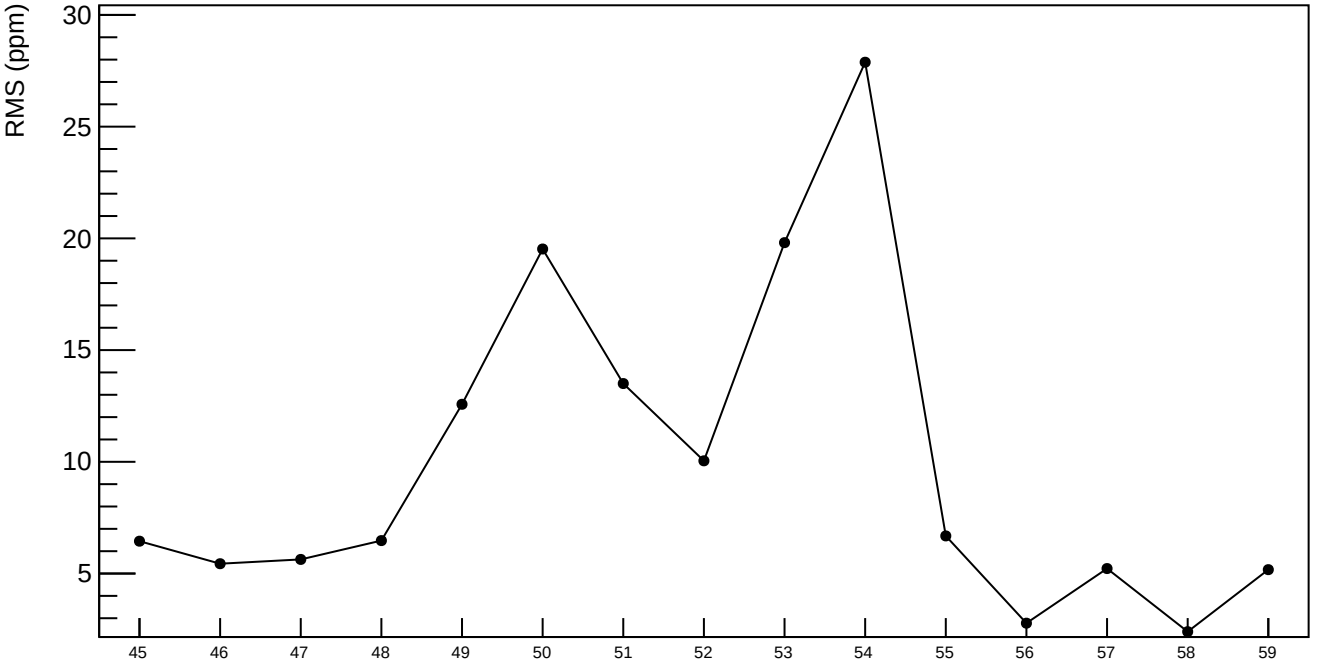

1D pull distribution
Mean −0.01049 ± 0.1966
Std Dev 0.7615 ± 0.139
Underflow 0
Overflow 0
χ² / ndf 0.4517 / 3
Constant 3.657 ± 1.194
Mean 0.1405 ± 0.3550
Sigma 1.023 ± 0.329
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

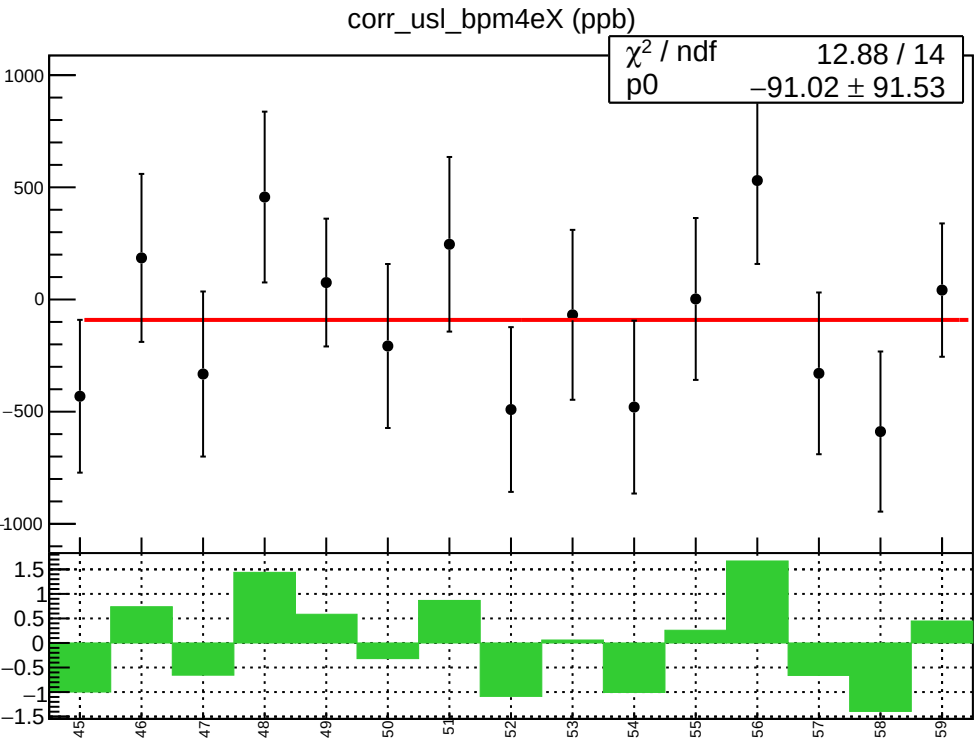

corr_us_dd_bpm11X RMS (ppm)
RMS (ppm)
60
55
50
45
40
35
30
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

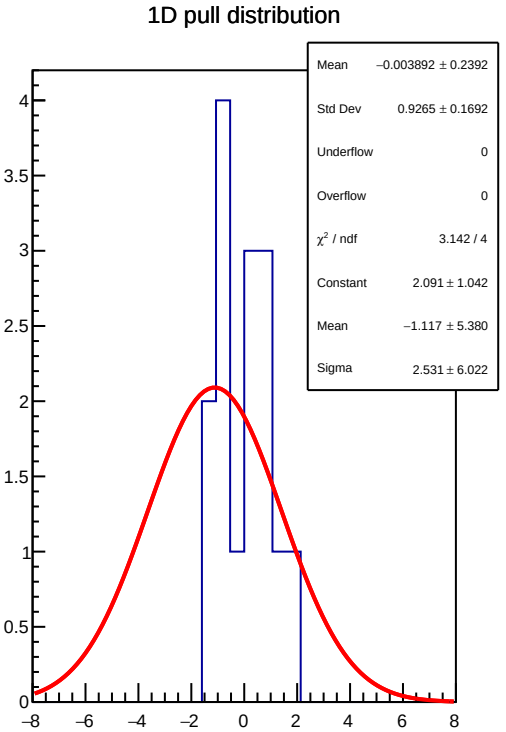

corr_us_dd_bpm11Y (ppb)
χ² / ndf 18.17 / 14
p0 4.19 ± 3.199

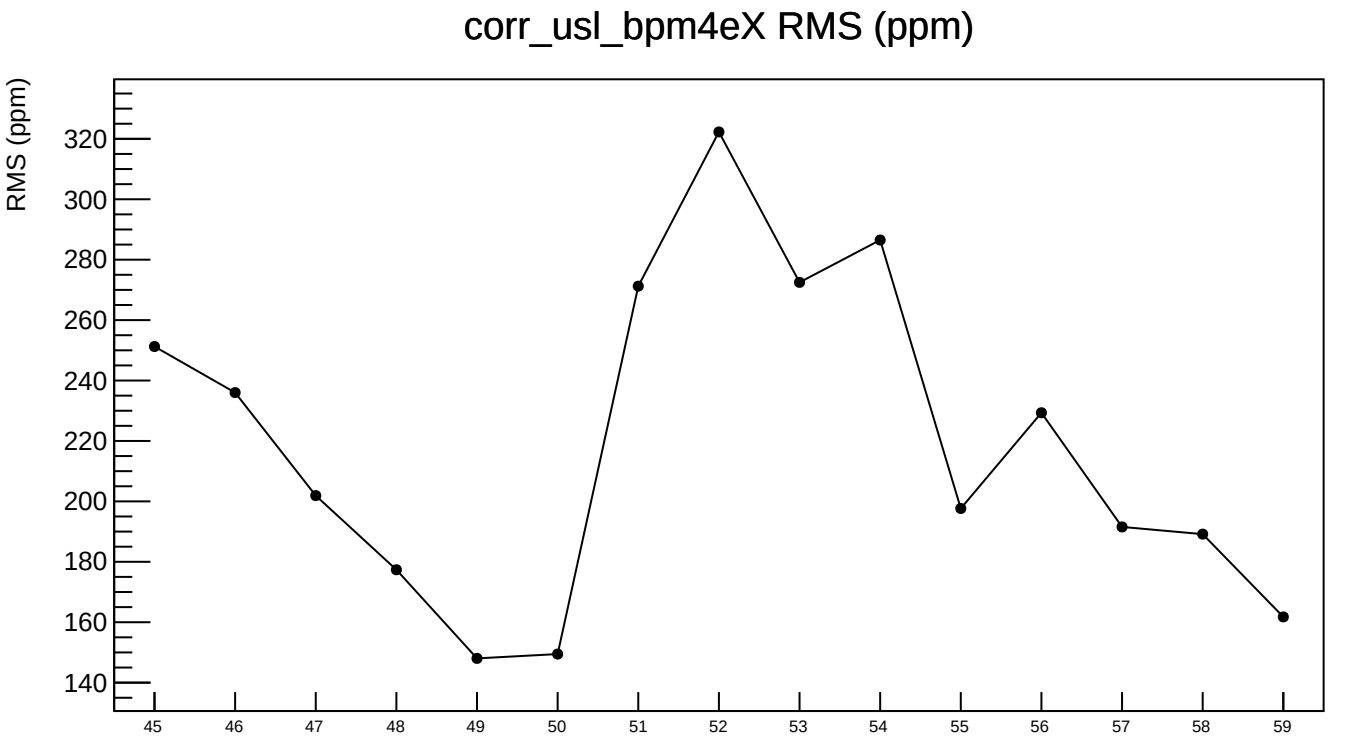

1D pull distribution
Mean 0.008531 ± 0.2842
Std Dev 1.101 ± 0.2009
Underflow 0
Overflow 0
χ² / ndf 2.989 / 4
Constant 2.543 ± 1.268
Mean 0.04962 ± 0.51938
Sigma 1.405 ± 0.912

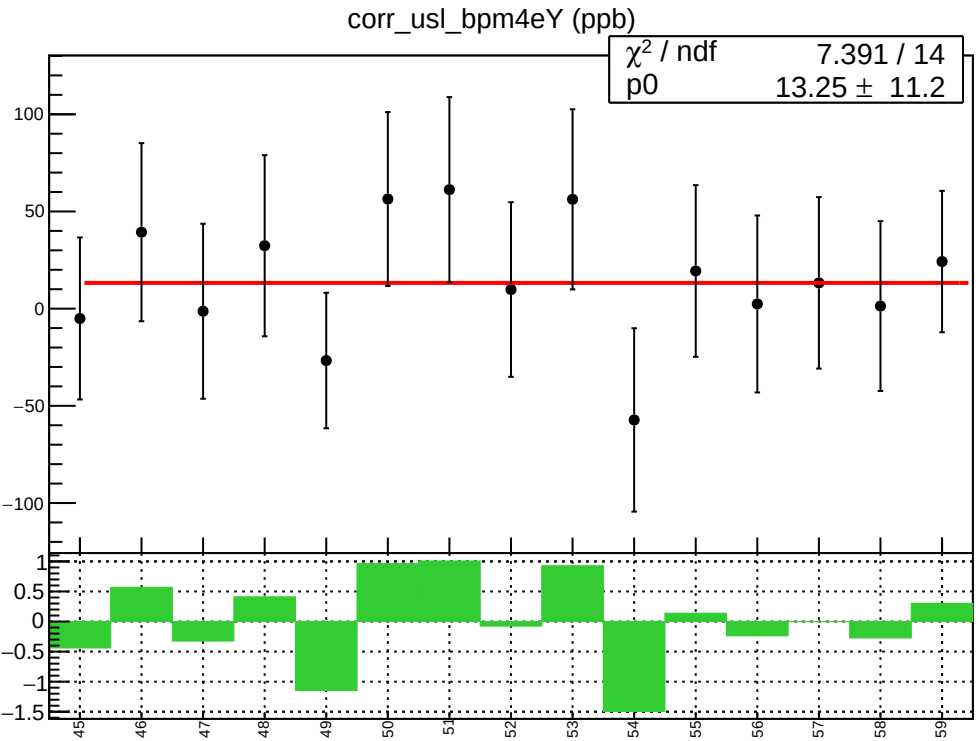
corr_us_dd_bpm11Y RMS (ppm)

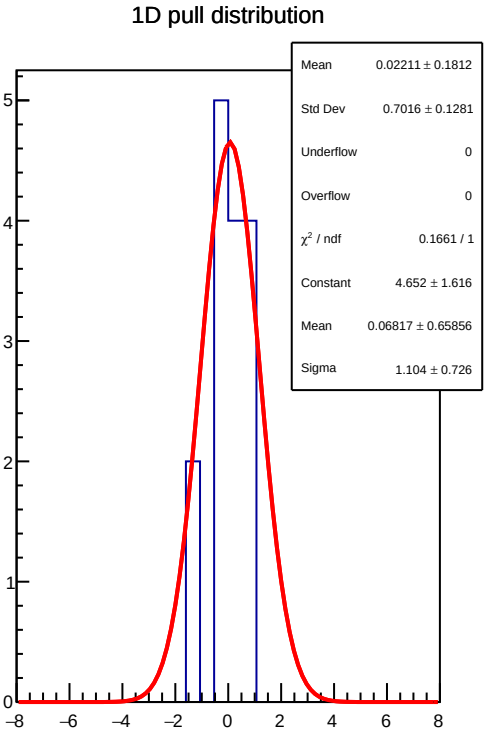


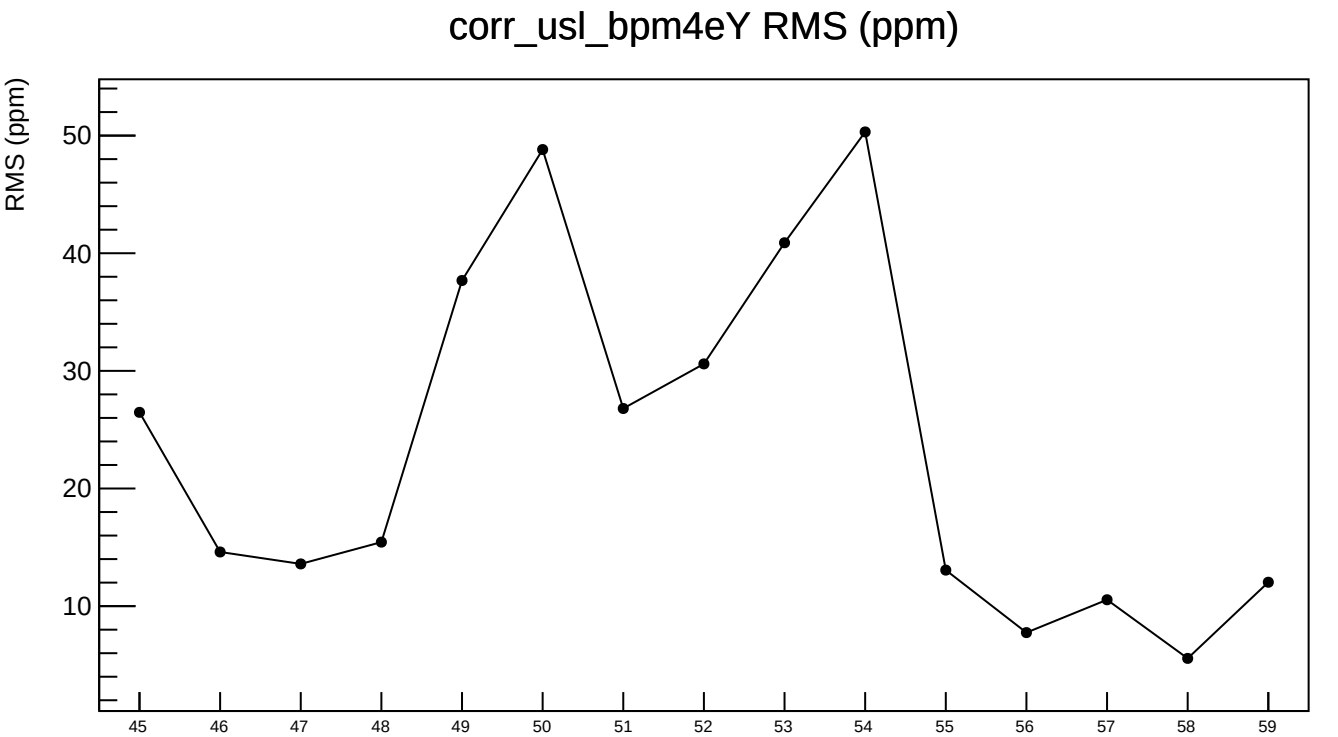

corr_usl_bpm4eX (ppb)
χ² / ndf 12.88 / 14
p0 −91.02 ± 91.53
1000
500
0
−500
−1000
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

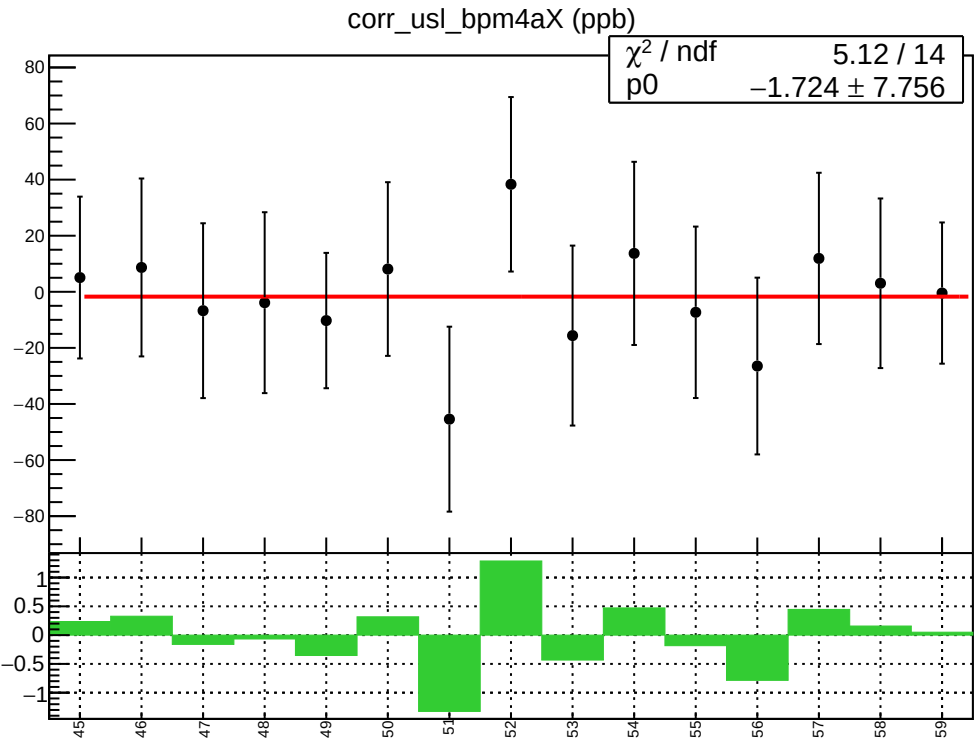

1D pull distribution
Mean −0.003892 ± 0.2392
Std Dev 0.9265 ± 0.1692
Underflow 0
Overflow 0
χ² / ndf 3.142 / 4
Constant 2.091 ± 1.042
Mean −1.117 ± 5.380
Sigma 2.531 ± 6.022
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

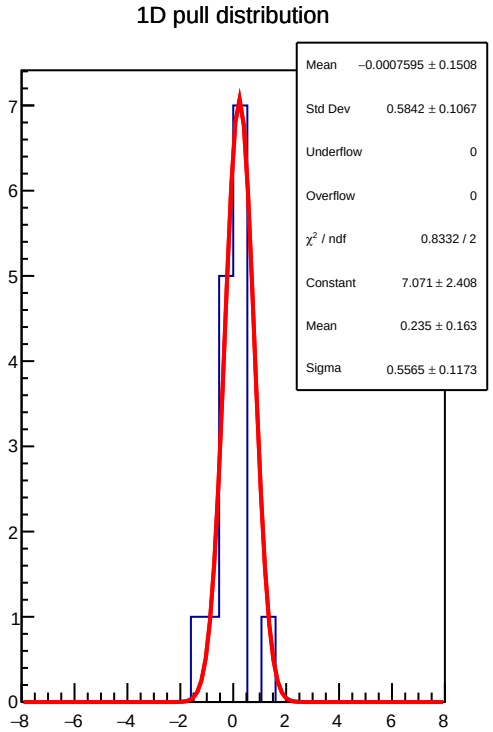

corr_usl_bpm4eX RMS (ppm)
RMS (ppm)
320
300
280
260
240
220
200
180
160
140
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

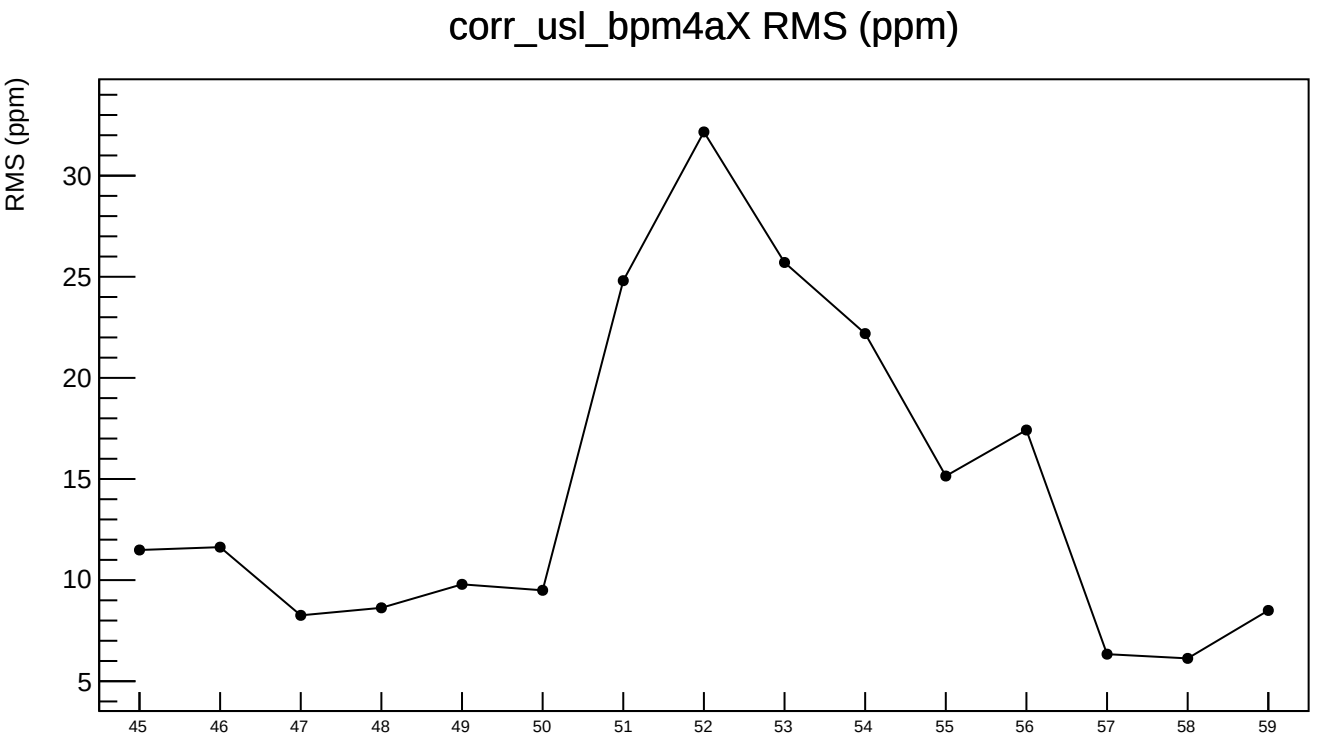

corr_usl_bpm4eY (ppb)
χ² / ndf 7.391 / 14
p0 13.25 ± 11.2
100
50
0
−50
−100
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

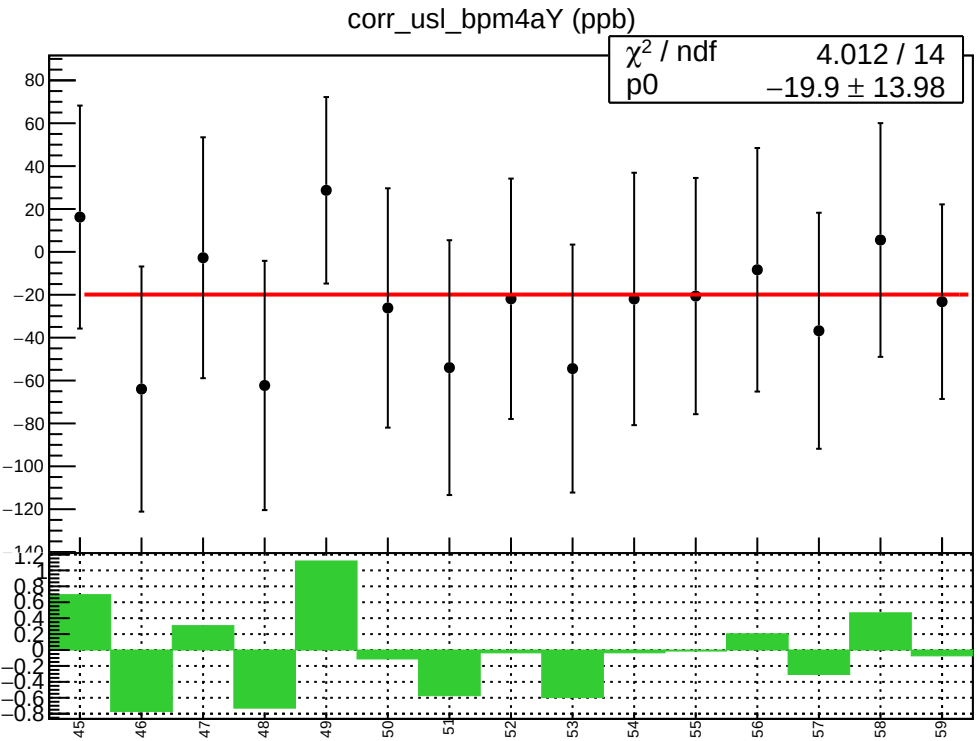

1D pull distribution
Mean 0.02211 ± 0.1812
Std Dev 0.7016 ± 0.1281
Underflow 0
Overflow 0
χ² / ndf 0.1661 / 1
Constant 4.652 ± 1.616
Mean 0.06817 ± 0.65856
Sigma 1.104 ± 0.726
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

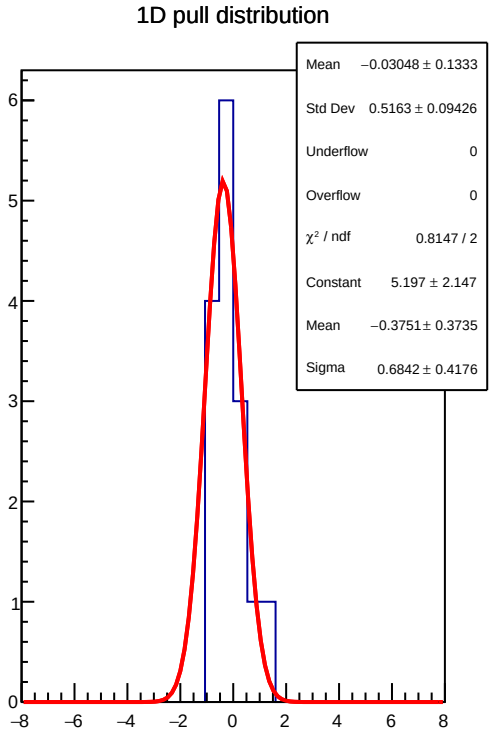

corr_usl_bpm4eY RMS (ppm)
RMS (ppm)
50
40
30
20
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

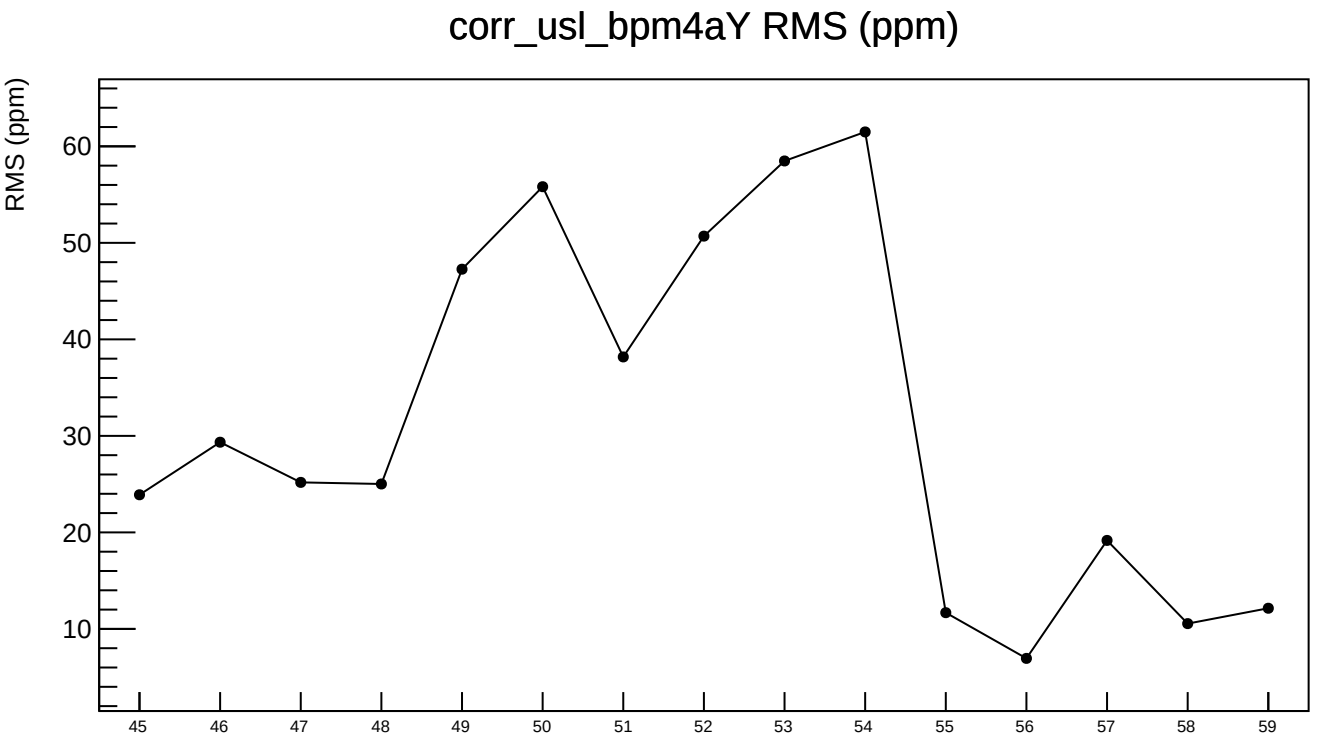

corr_usl_bpm4aX (ppb)
χ² / ndf 5.12 / 14
p0 −1.724 ± 7.756

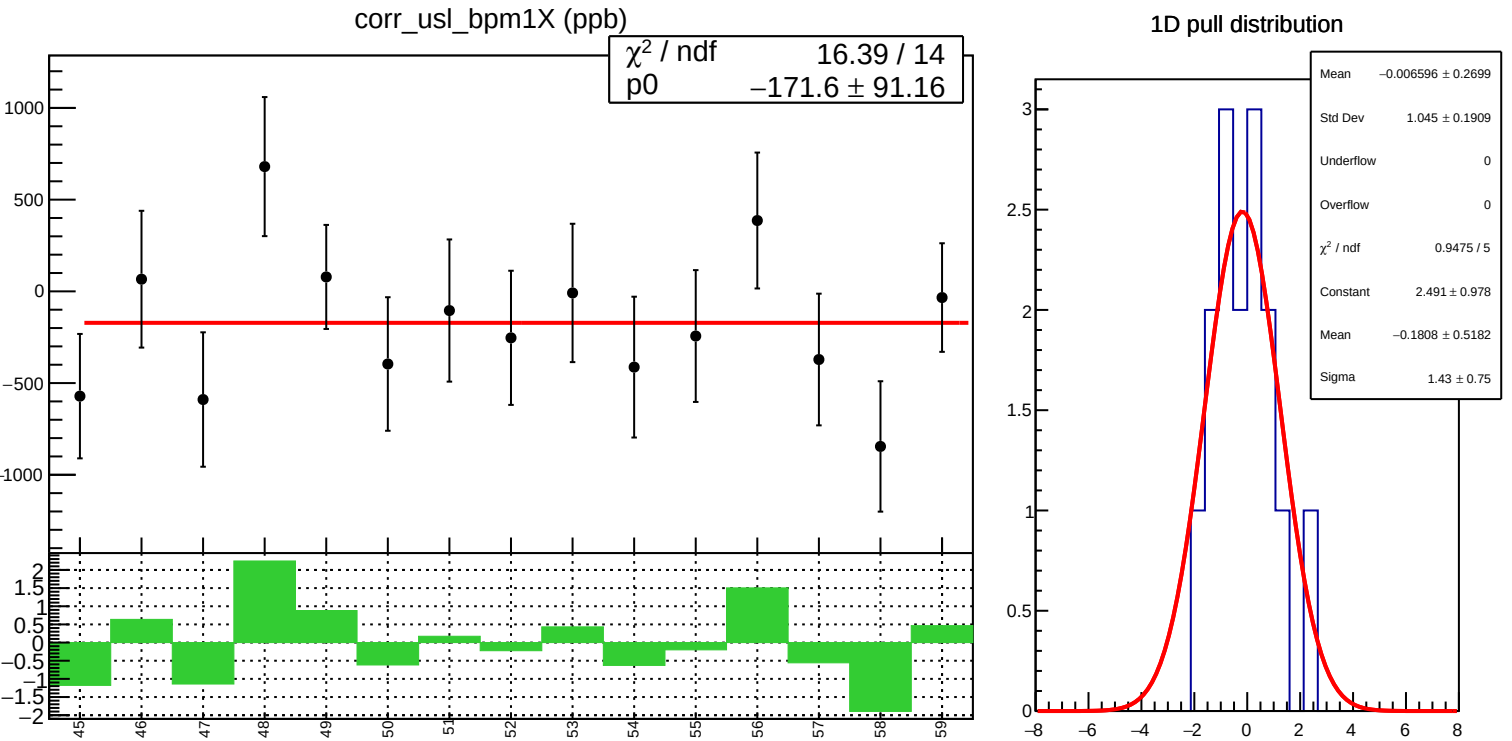

1D pull distribution
Mean −0.0007595 ± 0.1508
Std Dev 0.5842 ± 0.1067
Underflow 0
Overflow 0
χ² / ndf 0.8332 / 2
Constant 7.071 ± 2.408
Mean 0.235 ± 0.163
Sigma 0.5565 ± 0.1173


corr_usl_bpm4aX RMS (ppm)
RMS (ppm)
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

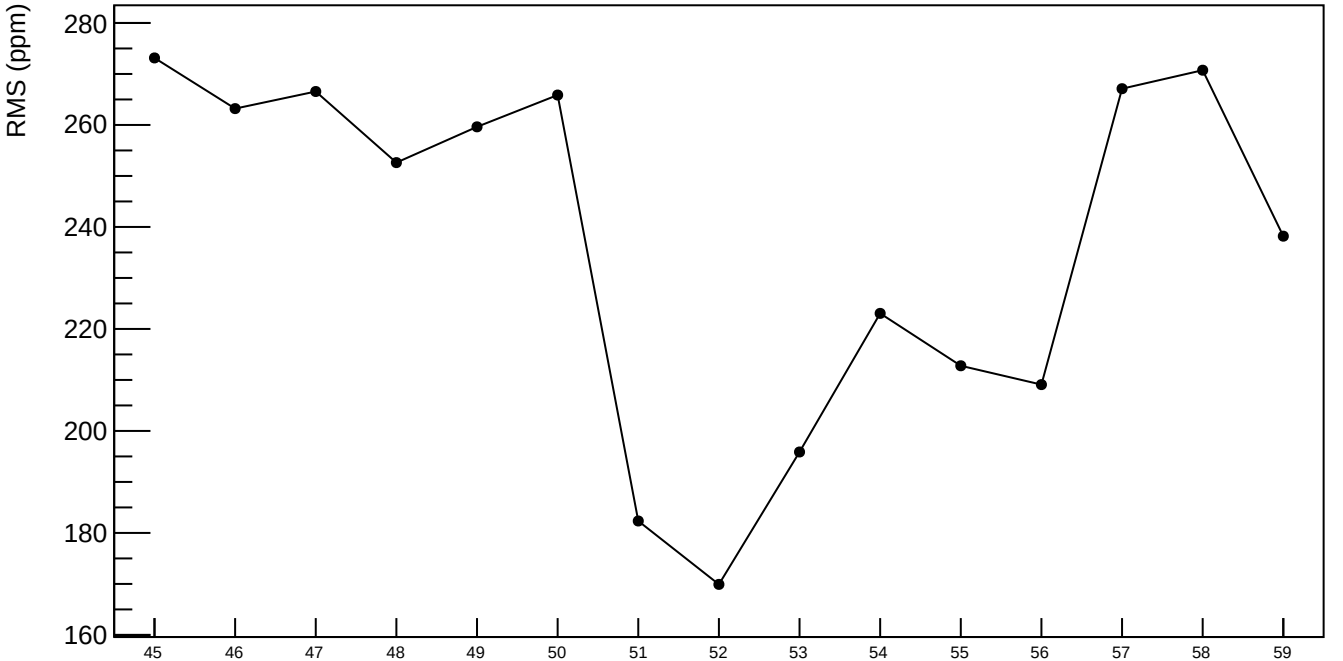

corr_usl_bpm4aY (ppb)
χ² / ndf 4.012 / 14
p0 −19.9 ± 13.98

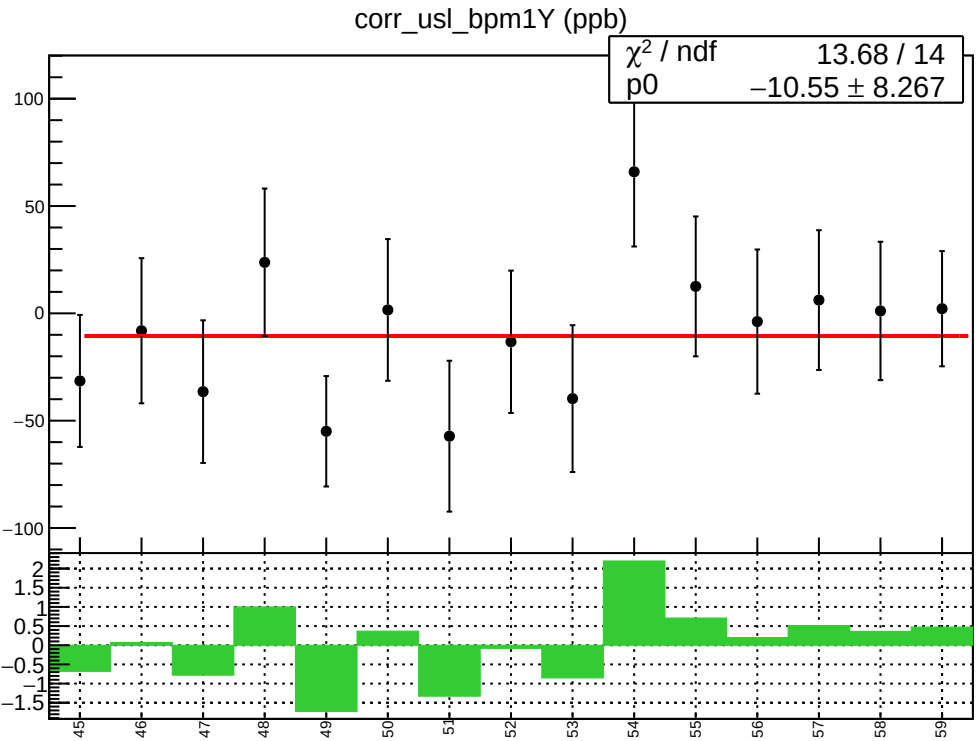

1D pull distribution
Mean −0.03048 ± 0.1333
Std Dev 0.5163 ± 0.09426
Underflow 0
Overflow 0
χ² / ndf 0.8147 / 2
Constant 5.197 ± 2.147
Mean −0.3751 ± 0.3735
Sigma 0.6842 ± 0.4176

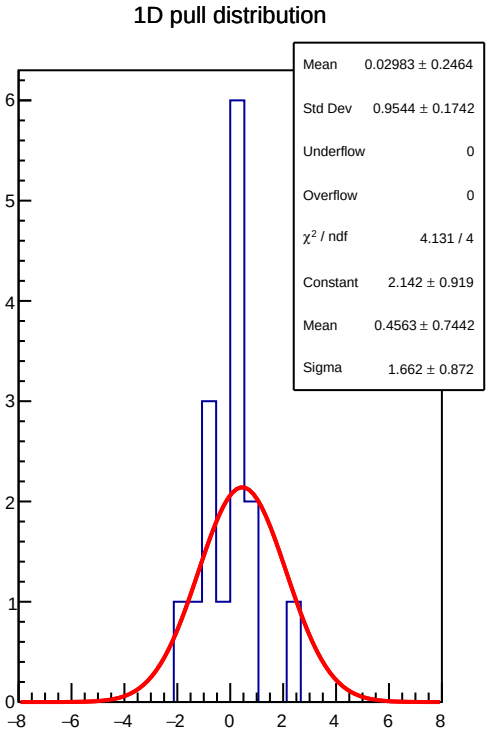

corr_usl_bpm4aY RMS (ppm)
RMS (ppm)
60
50
40
30
20
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

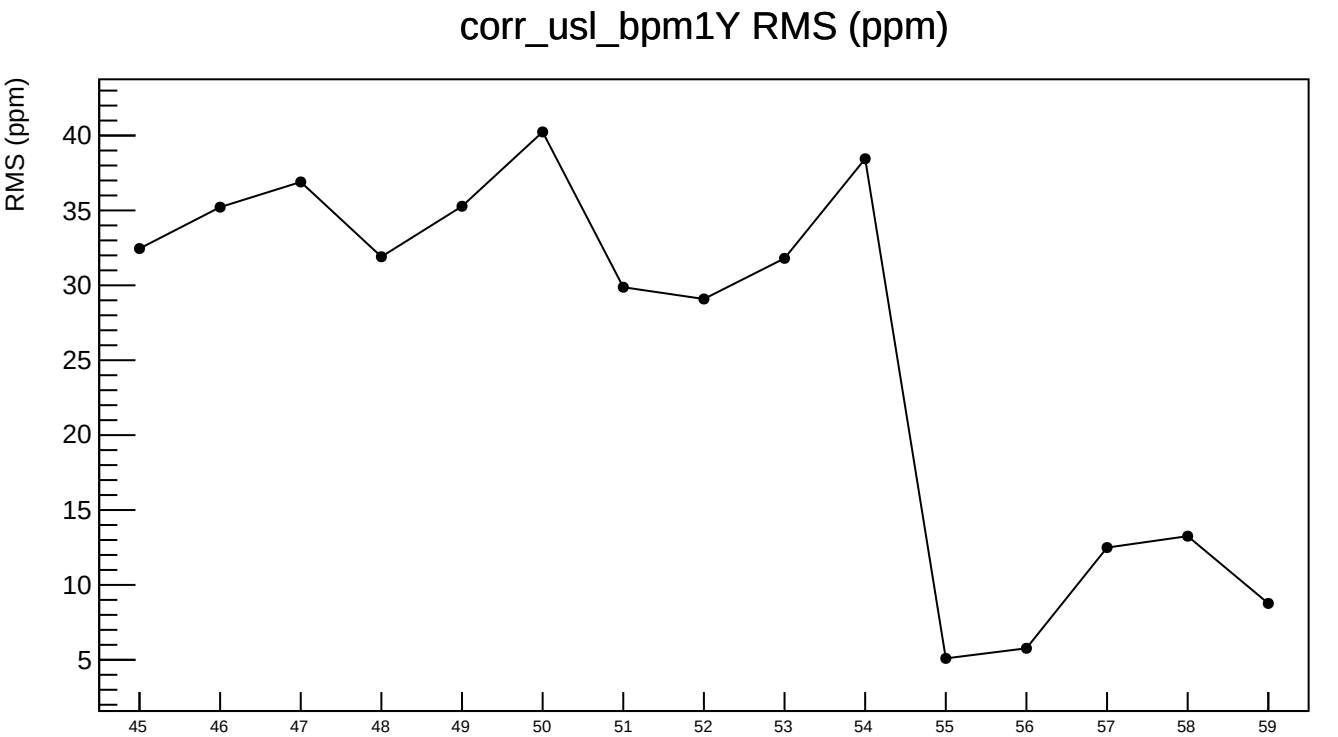

corr_usl_bpm1X (ppb)
χ² / ndf 16.39 / 14
p0 −171.6 ± 91.16
1000
500
0
−500
−1000
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
1D pull distribution
Mean −0.006596 ± 0.2699
Std Dev 1.045 ± 0.1909
Underflow 0
Overflow 0
χ² / ndf 0.9475 / 5
Constant 2.491 ± 0.978
Mean −0.1808 ± 0.5182
Sigma 1.43 ± 0.75
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

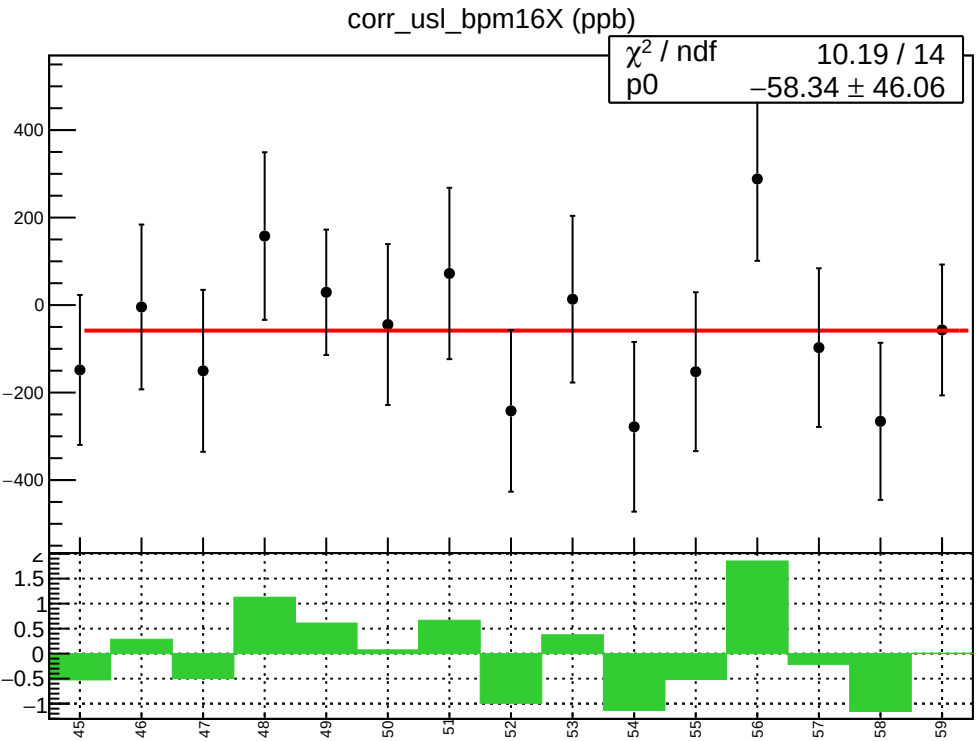
corr_usl_bpm1X RMS (ppm)

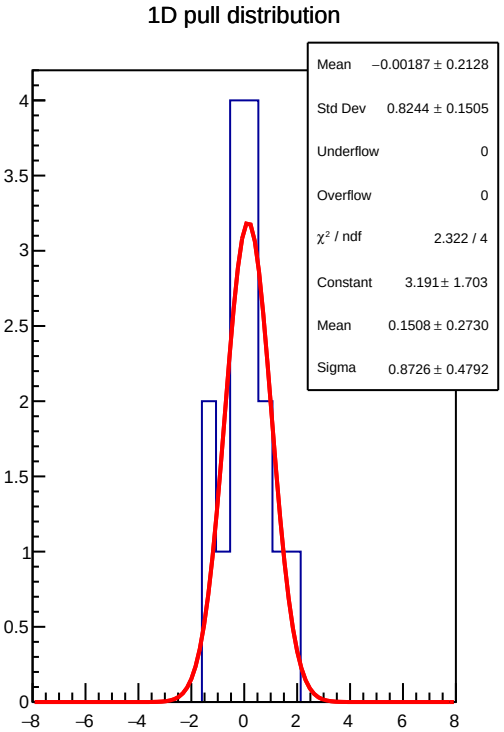



corr_usl_bpm1Y (ppb)
χ² / ndf 13.68 / 14
p0 −10.55 ± 8.267
100
50
0
−50
−100
2
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

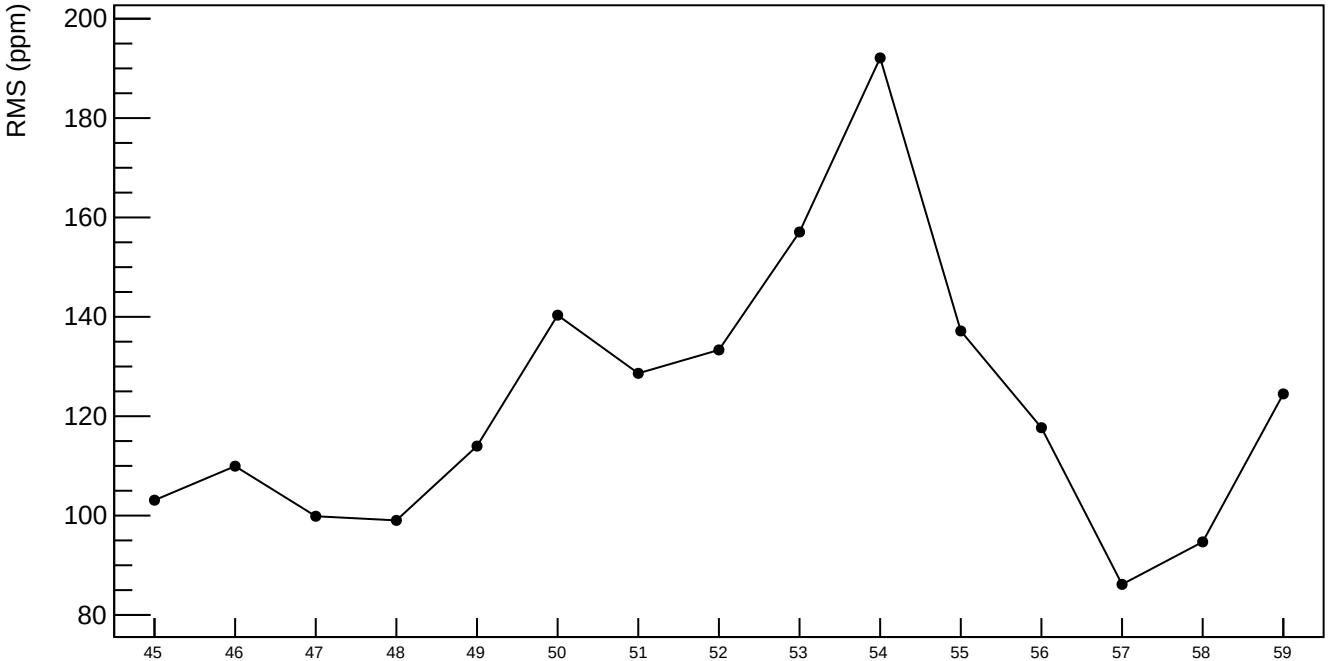

1D pull distribution
Mean 0.02983 ± 0.2464
Std Dev 0.9544 ± 0.1742
Underflow 0
Overflow 0
χ² / ndf 4.131 / 4
Constant 2.142 ± 0.919
Mean 0.4563 ± 0.7442
Sigma 1.662 ± 0.872
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

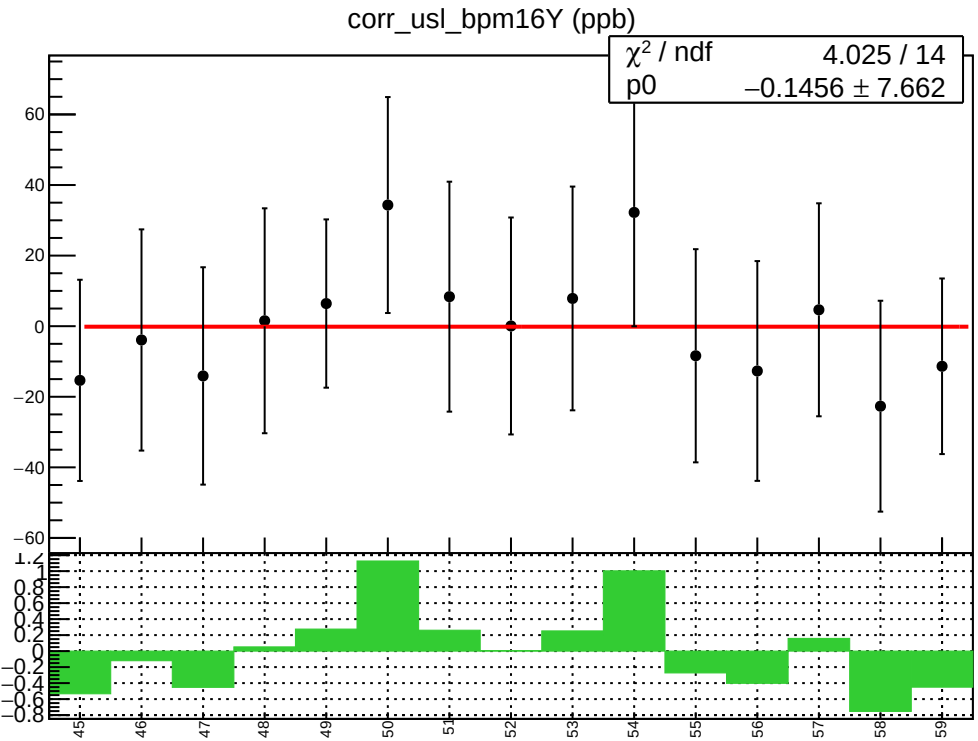

corr_usl_bpm1Y RMS (ppm)
RMS (ppm)
40
35
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

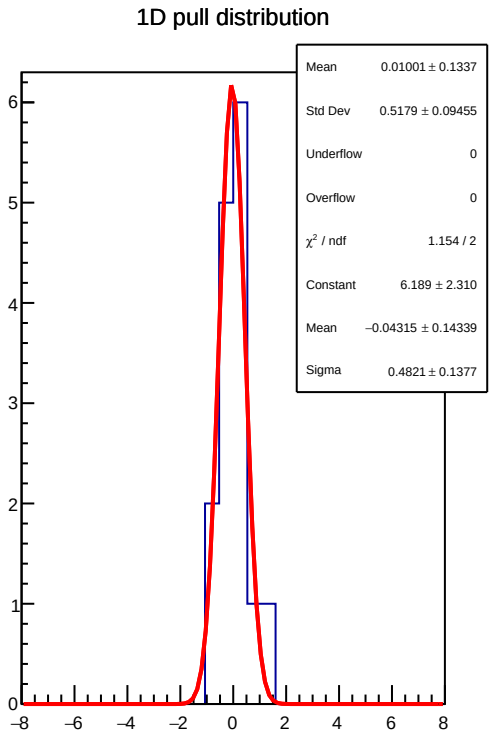

corr_usl_bpm16X (ppb)
χ² / ndf 10.19 / 14
p0 −58.34 ± 46.06
400
200
0
−200
−400
1.5
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

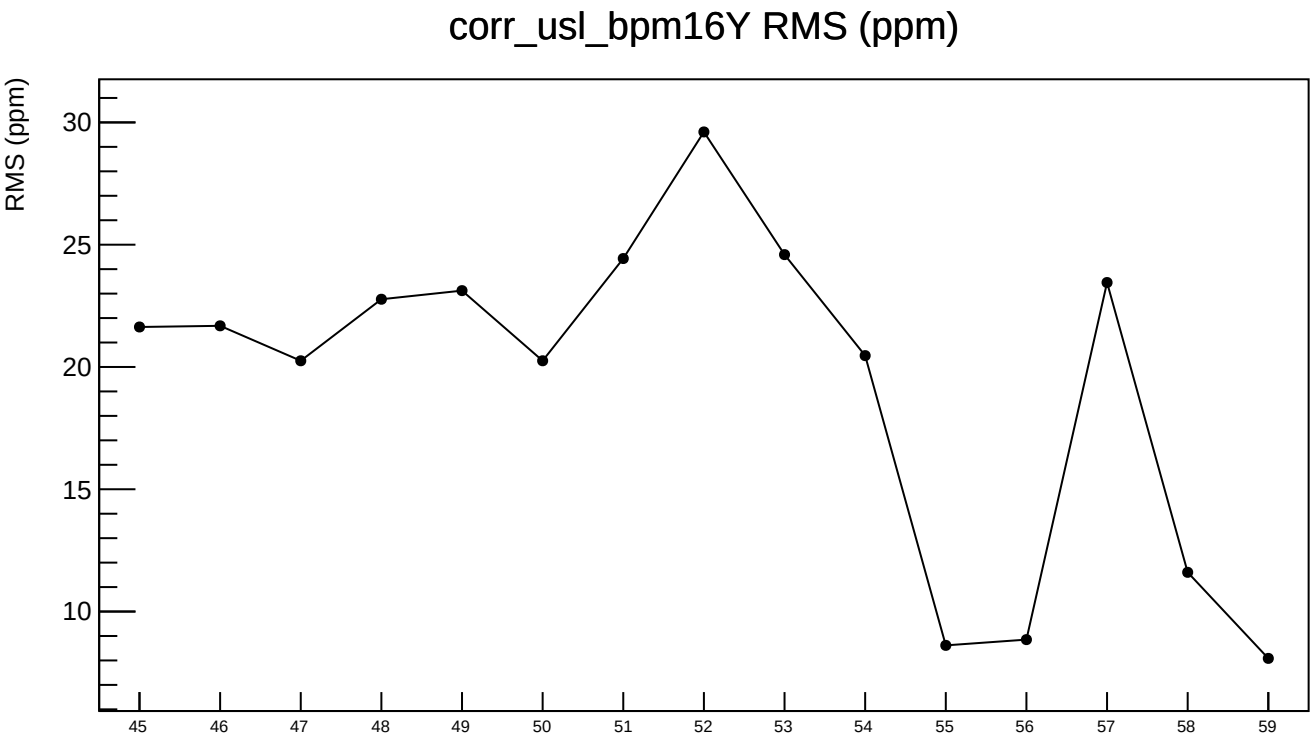

1D pull distribution
Mean −0.00187 ± 0.2128
Std Dev 0.8244 ± 0.1505
Underflow 0
Overflow 0
χ² / ndf 2.322 / 4
Constant 3.191 ± 1.703
Mean 0.1508 ± 0.2730
Sigma 0.8726 ± 0.4792
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

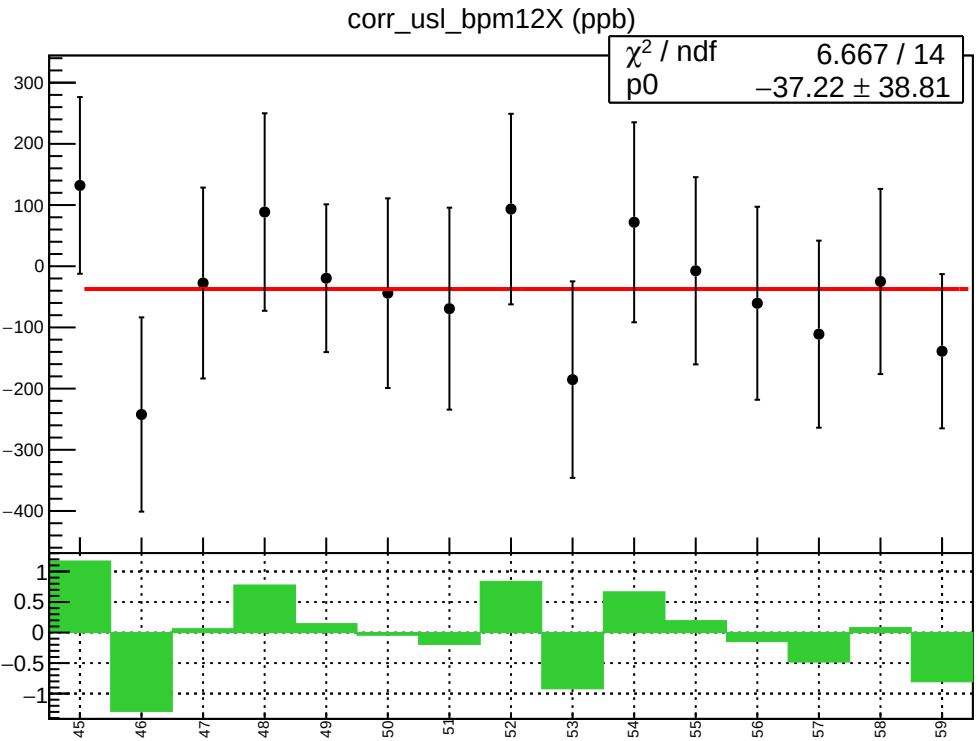
corr_usl_bpm16X RMS (ppm)

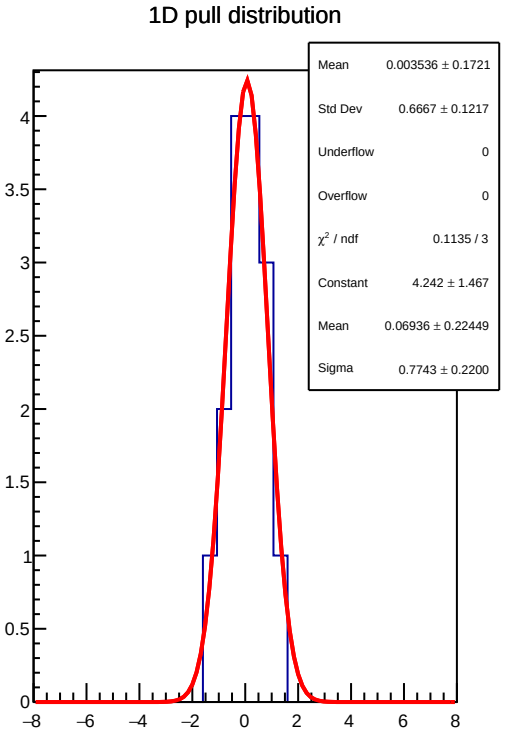



corr_usl_bpm16Y (ppb)
χ² / ndf 4.025 / 14
p0 −0.1456 ± 7.662

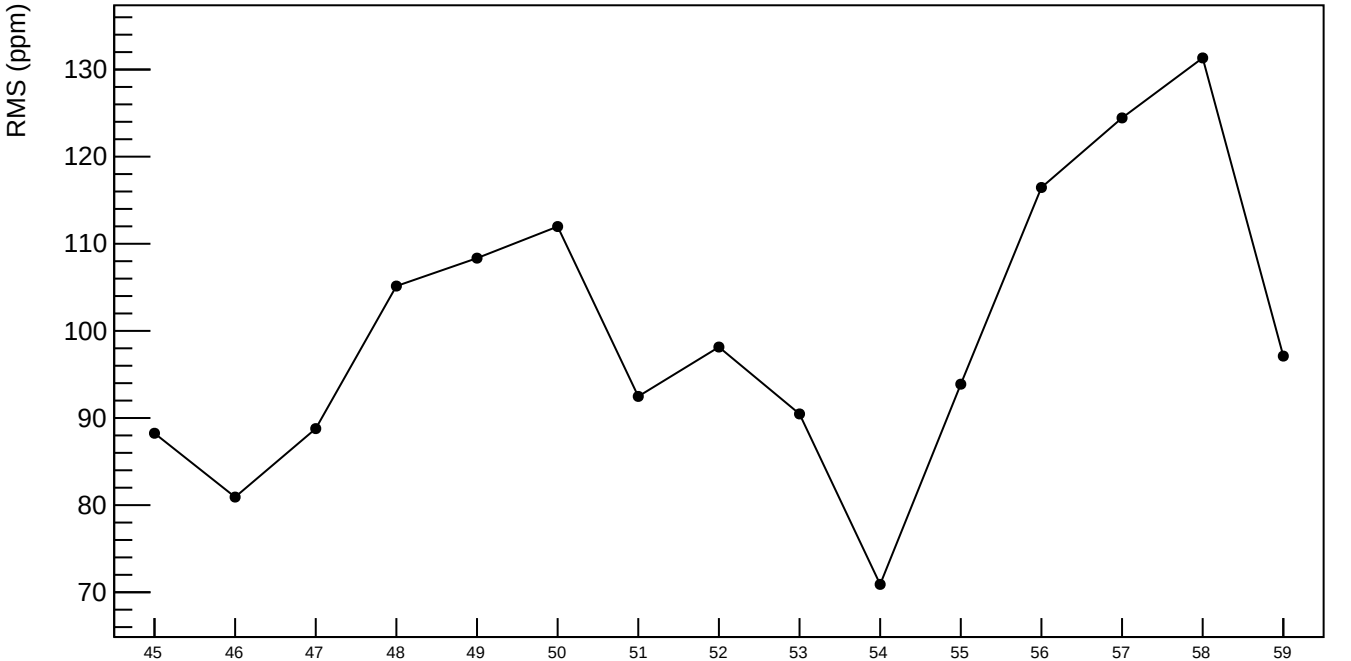

1D pull distribution
Mean 0.01001 ± 0.1337
Std Dev 0.5179 ± 0.09455
Underflow 0
Overflow 0
χ² / ndf 1.154 / 2
Constant 6.189 ± 2.310
Mean −0.04315 ± 0.14339
Sigma 0.4821 ± 0.1377

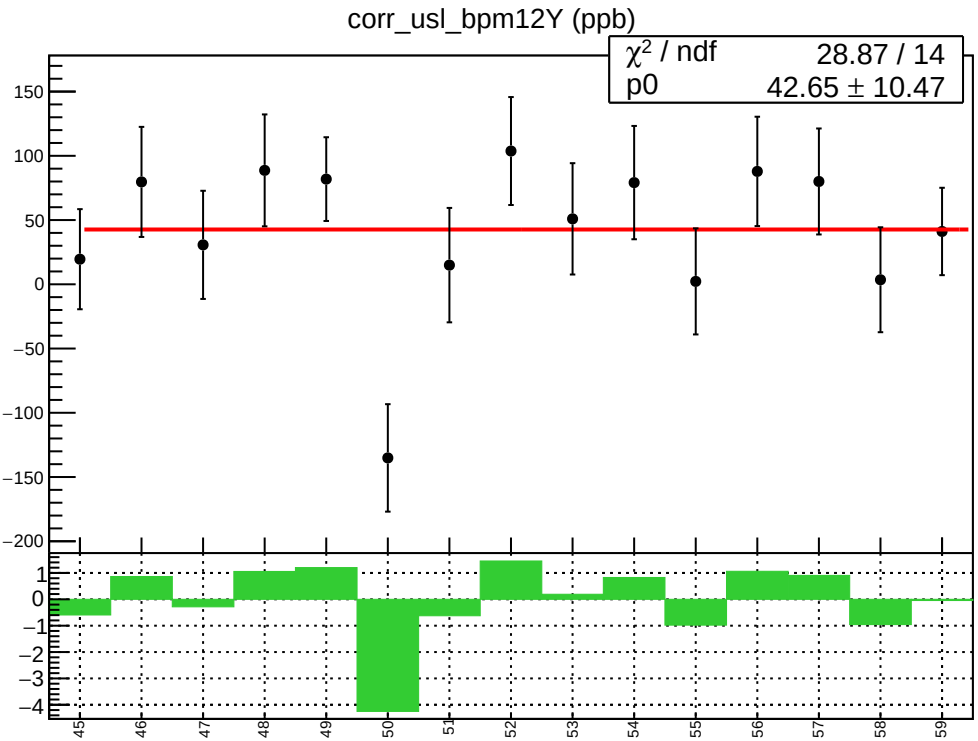

corr_usl_bpm16Y RMS (ppm)
RMS (ppm)
30
25
20
15
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

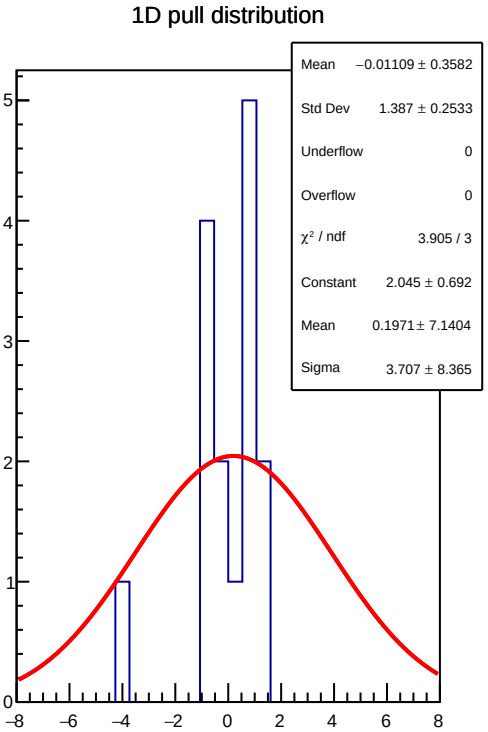

corr_usl_bpm12X (ppb)
χ² / ndf 6.667 / 14
p0 −37.22 ± 38.81
300
200
100
0
−100
−200
−300
−400
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

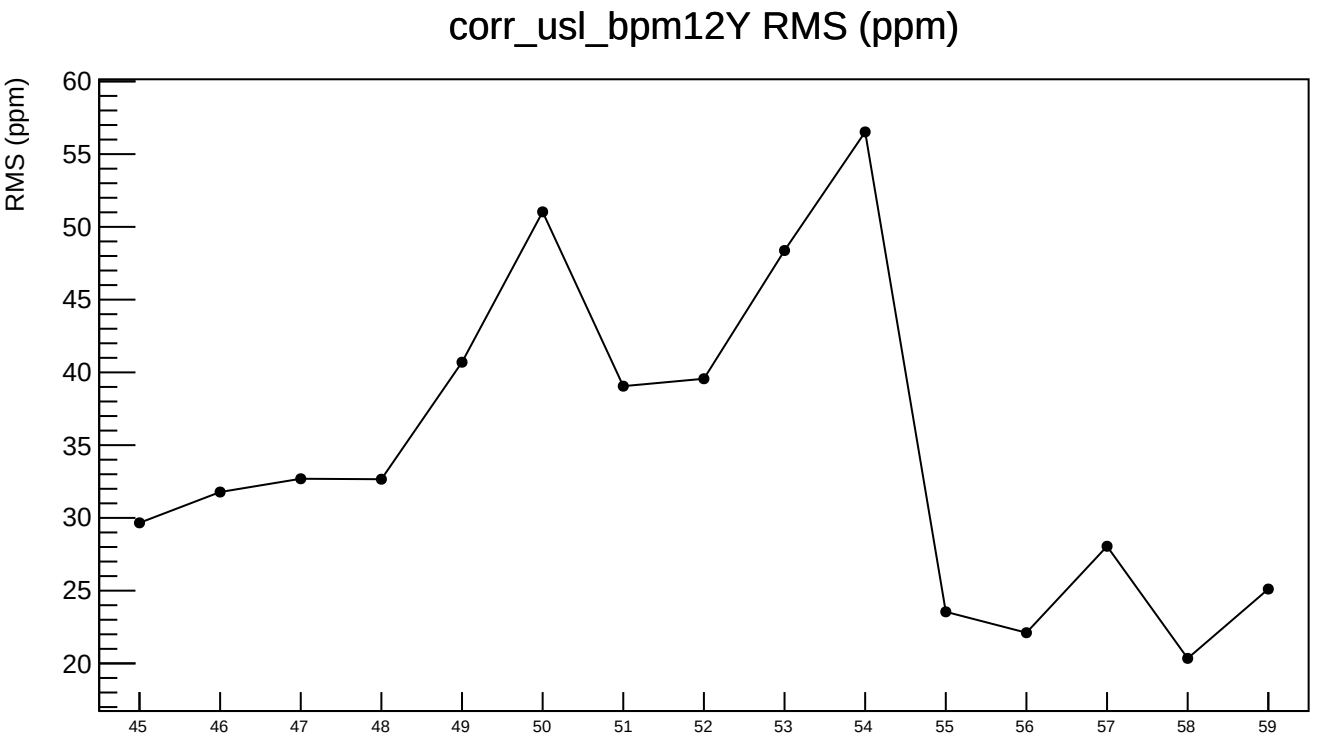

1D pull distribution
Mean 0.003536 ± 0.1721
Std Dev 0.6667 ± 0.1217
Underflow 0
Overflow 0
χ² / ndf 0.1135 / 3
Constant 4.242 ± 1.467
Mean 0.06936 ± 0.22449
Sigma 0.7743 ± 0.2200
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

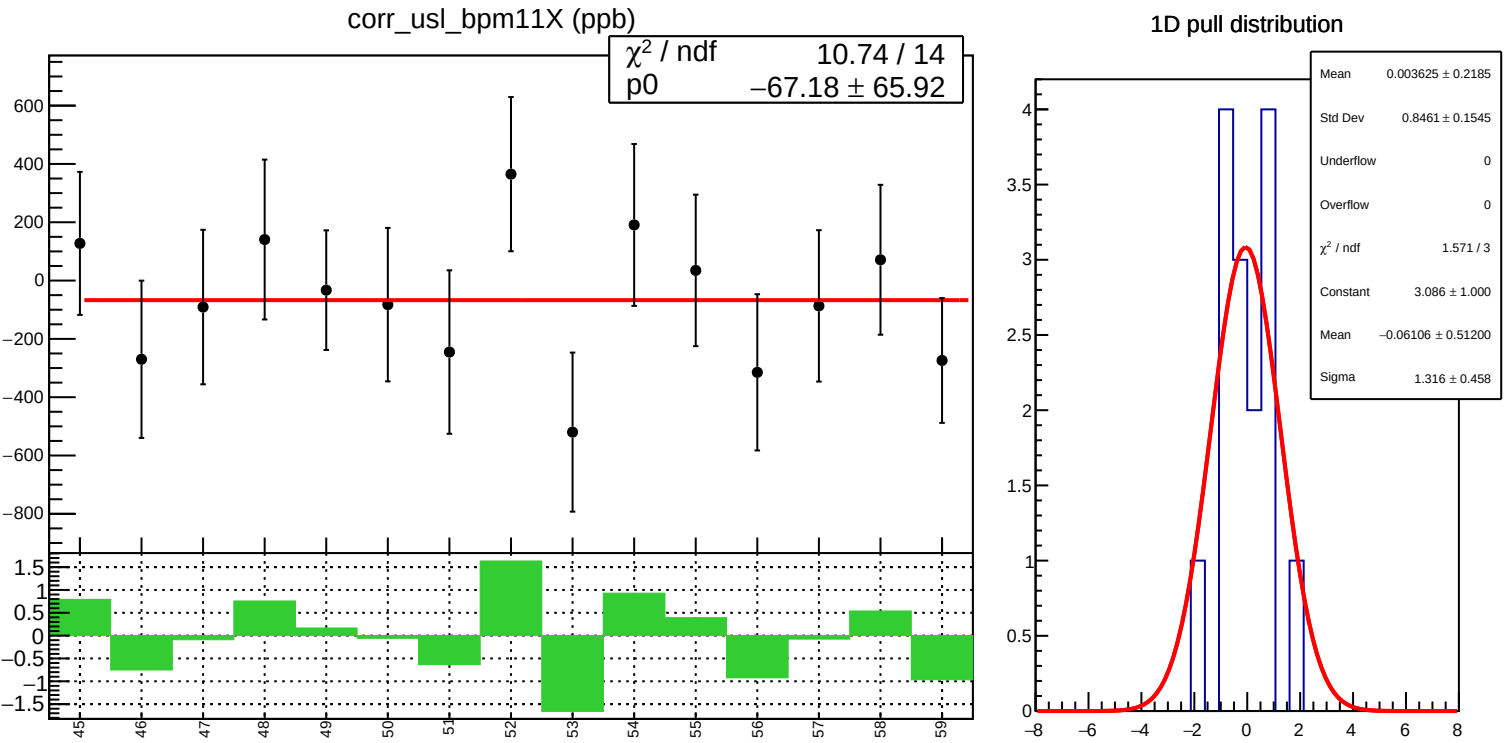
corr_usl_bpm12X RMS (ppm)

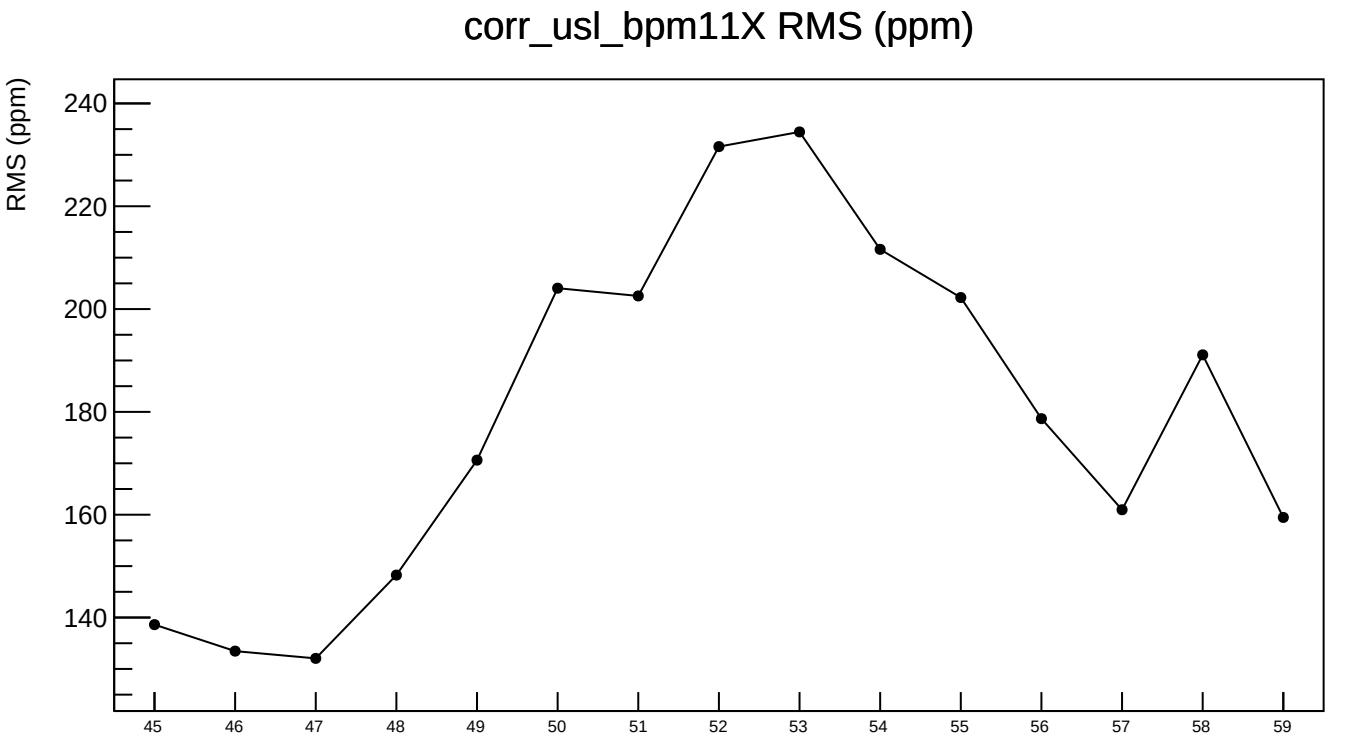


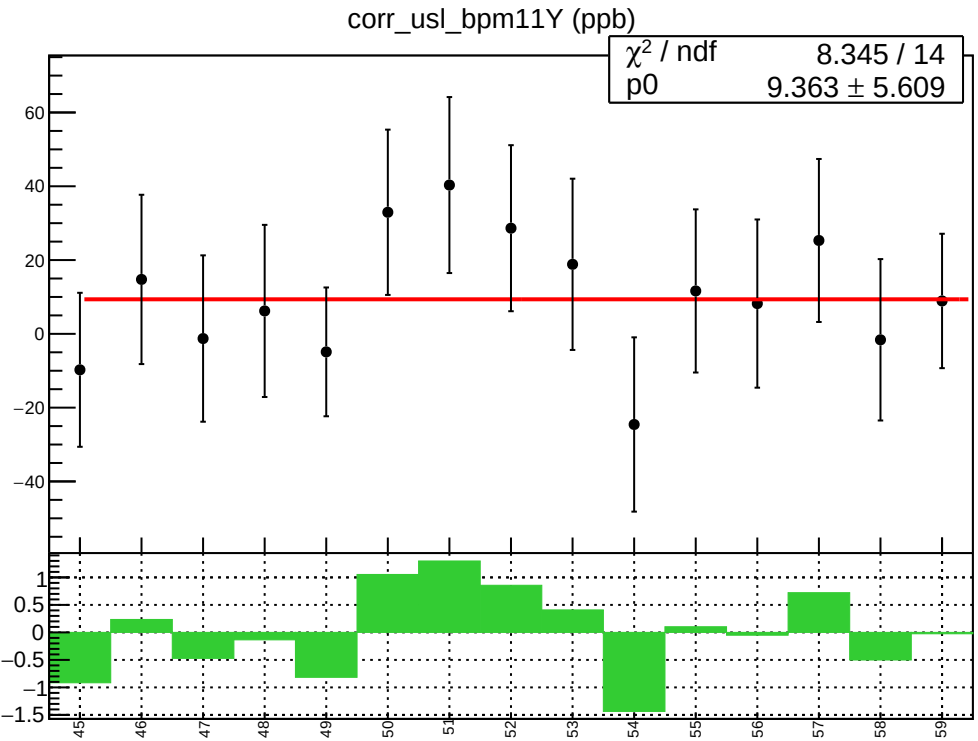

corr_usl_bpm12Y (ppb)
χ² / ndf 28.87 / 14
p0 42.65 ± 10.47
150
100
50
0
−50
−100
−150
−200
1
0
−1
−2
−3
−4
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

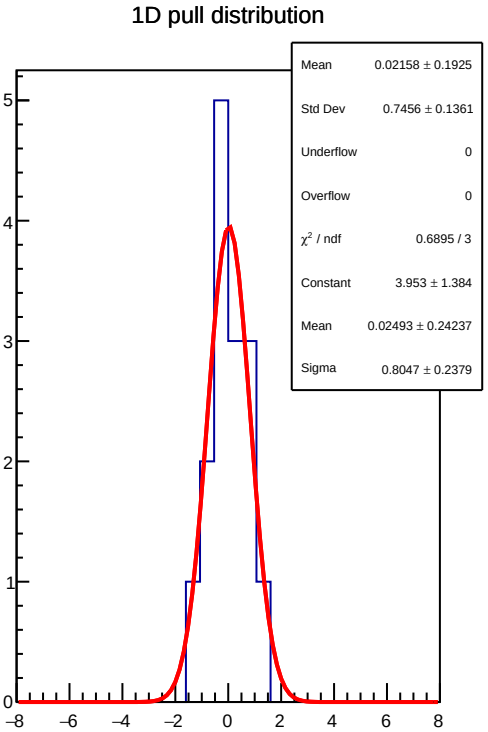

1D pull distribution
Mean −0.01109 ± 0.3582
Std Dev 1.387 ± 0.2533
Underflow 0
Overflow 0
χ² / ndf 3.905 / 3
Constant 2.045 ± 0.692
Mean 0.1971 ± 7.1404
Sigma 3.707 ± 8.365
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

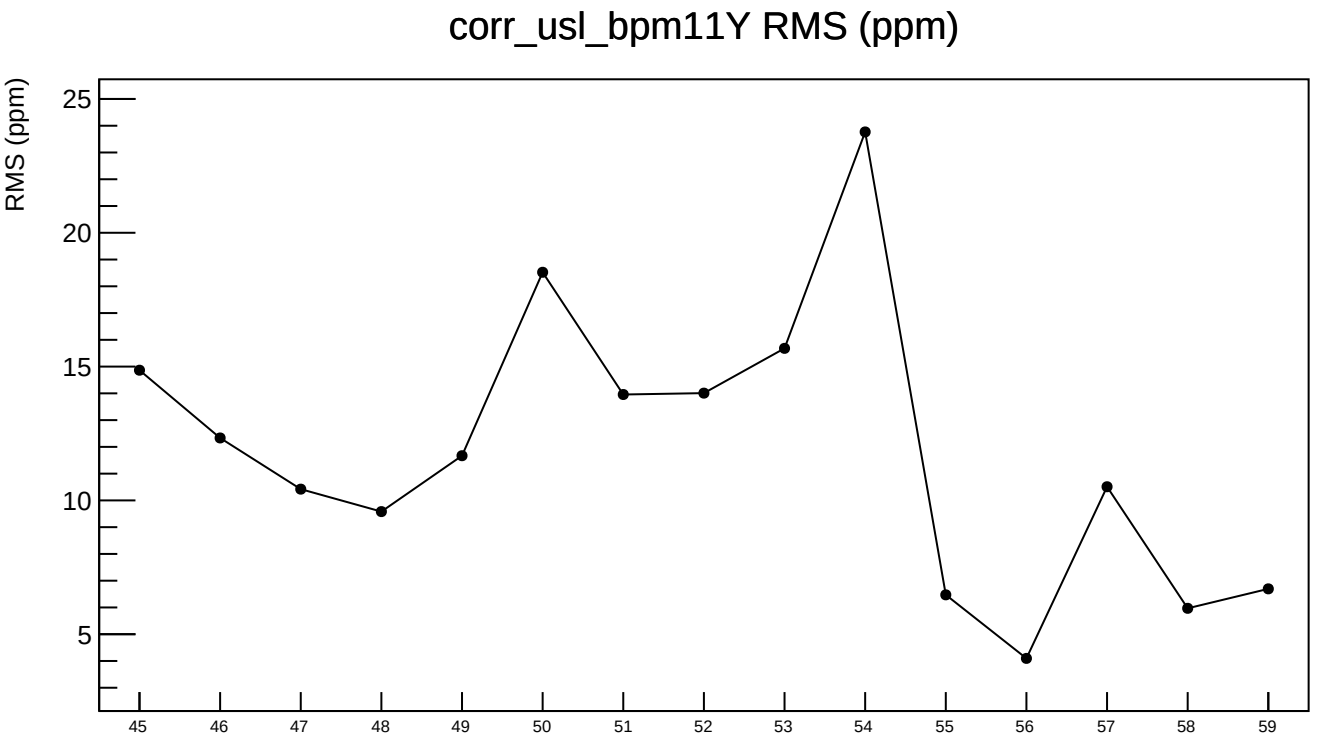

corr_usl_bpm12Y RMS (ppm)
RMS (ppm)
60
55
50
45
40
35
30
25
20
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

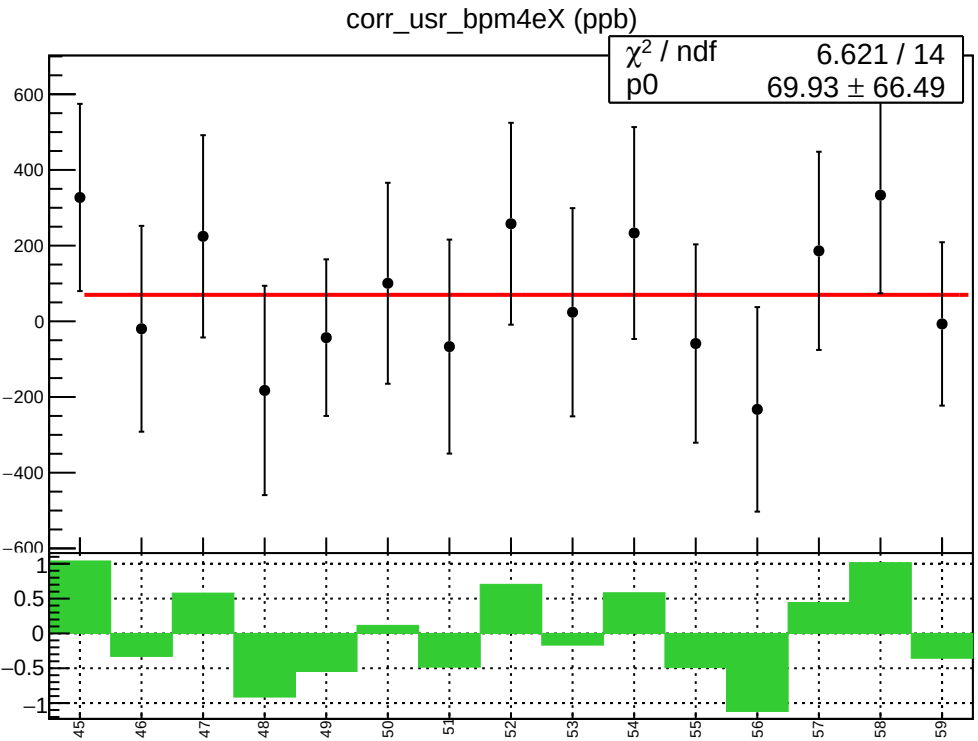

corr_usl_bpm11X (ppb)
χ² / ndf 10.74 / 14
p0 −67.18 ± 65.92
1D pull distribution
Mean 0.003625 ± 0.2185
Std Dev 0.8461 ± 0.1545
Underflow 0
Overflow 0
χ² / ndf 1.571 / 3
Constant 3.086 ± 1.000
Mean −0.06106 ± 0.51200
Sigma 1.316 ± 0.458

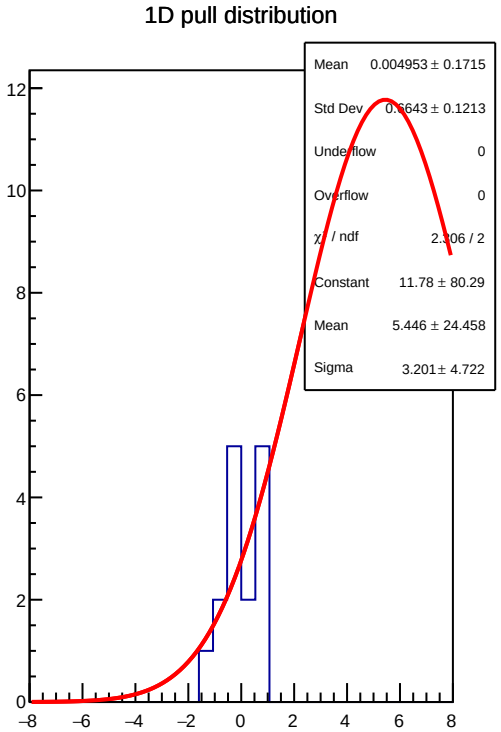

corr_usl_bpm11X RMS (ppm)
RMS (ppm)
240
220
200
180
160
140
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

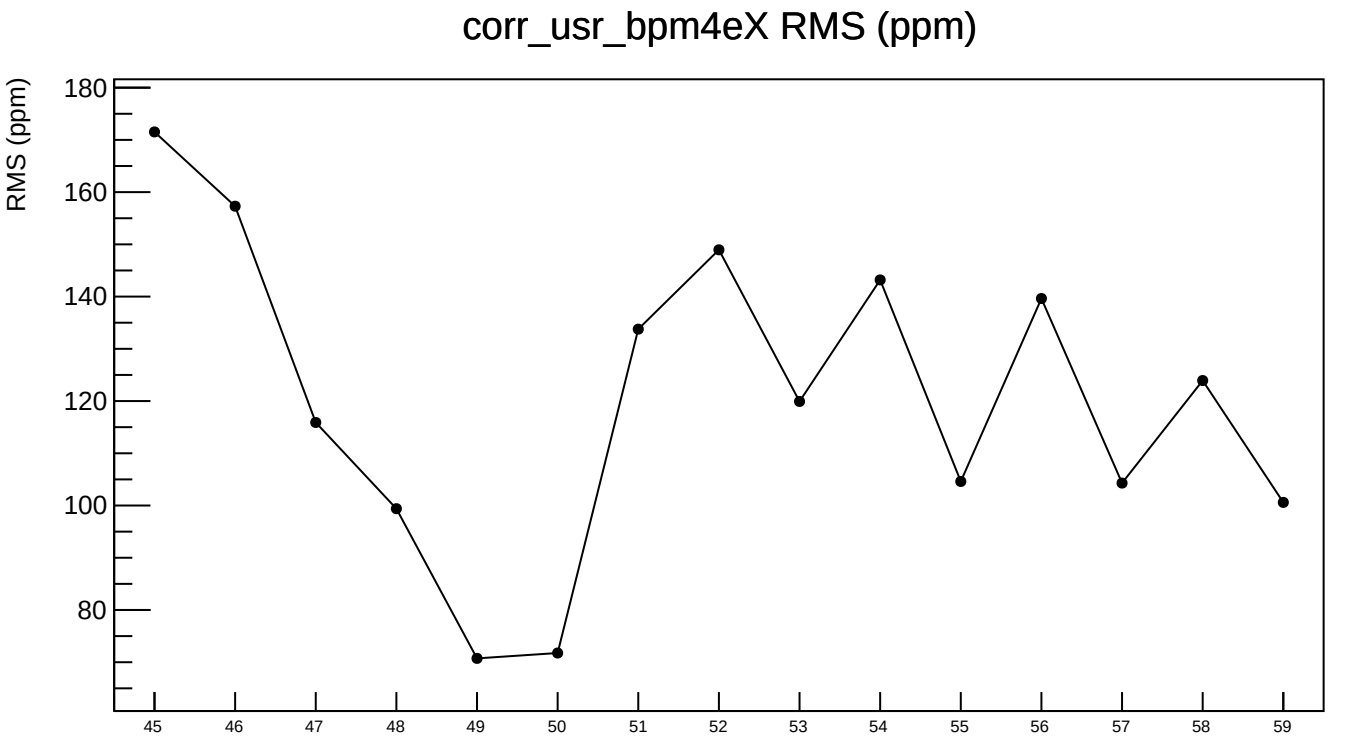

corr_usl_bpm11Y (ppb)
χ² / ndf 8.345 / 14
p0 9.363 ± 5.609
60
40
20
0
−20
−40
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

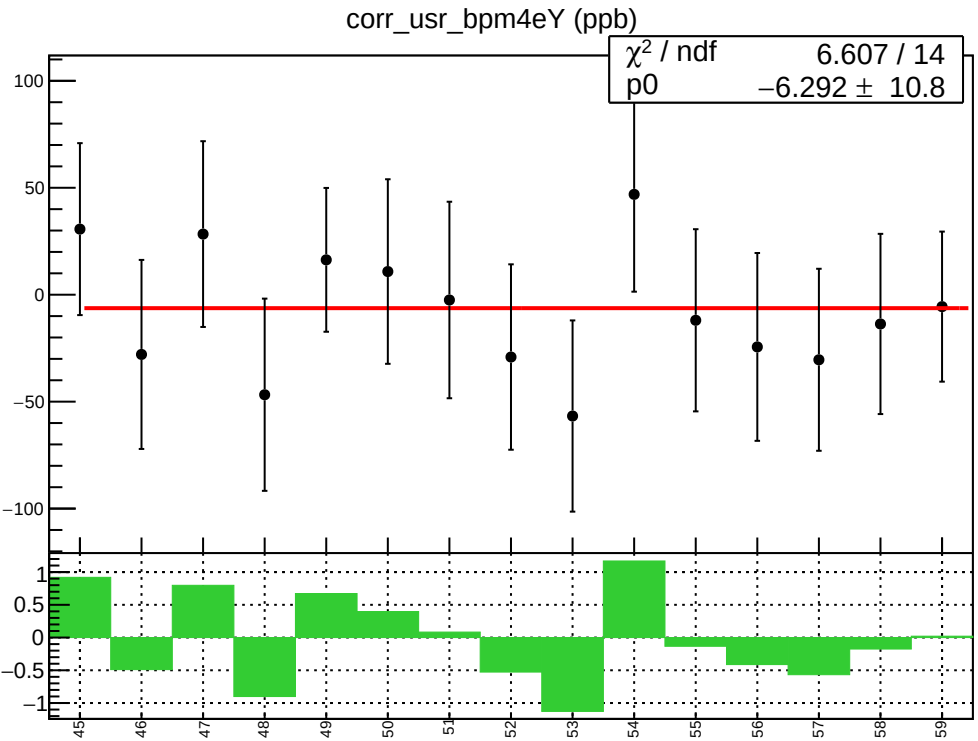

1D pull distribution
Mean 0.02158 ± 0.1925
Std Dev 0.7456 ± 0.1361
Underflow 0
Overflow 0
χ² / ndf 0.6895 / 3
Constant 3.953 ± 1.384
Mean 0.02493 ± 0.24237
Sigma 0.8047 ± 0.2379
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

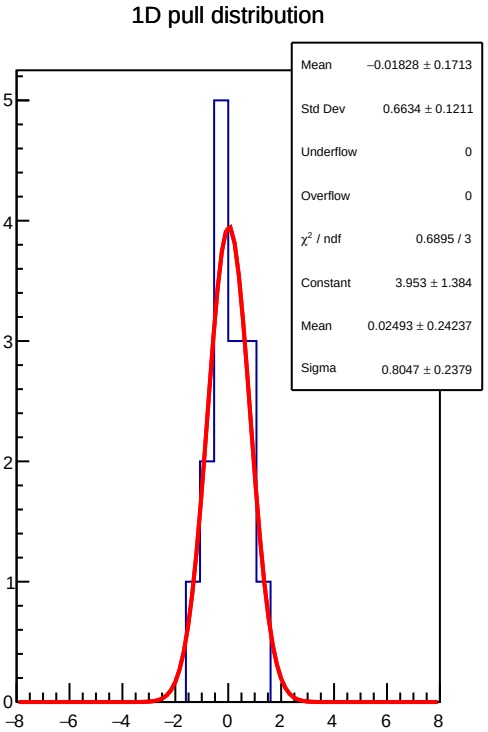

corr_usl_bpm11Y RMS (ppm)
RMS (ppm)
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

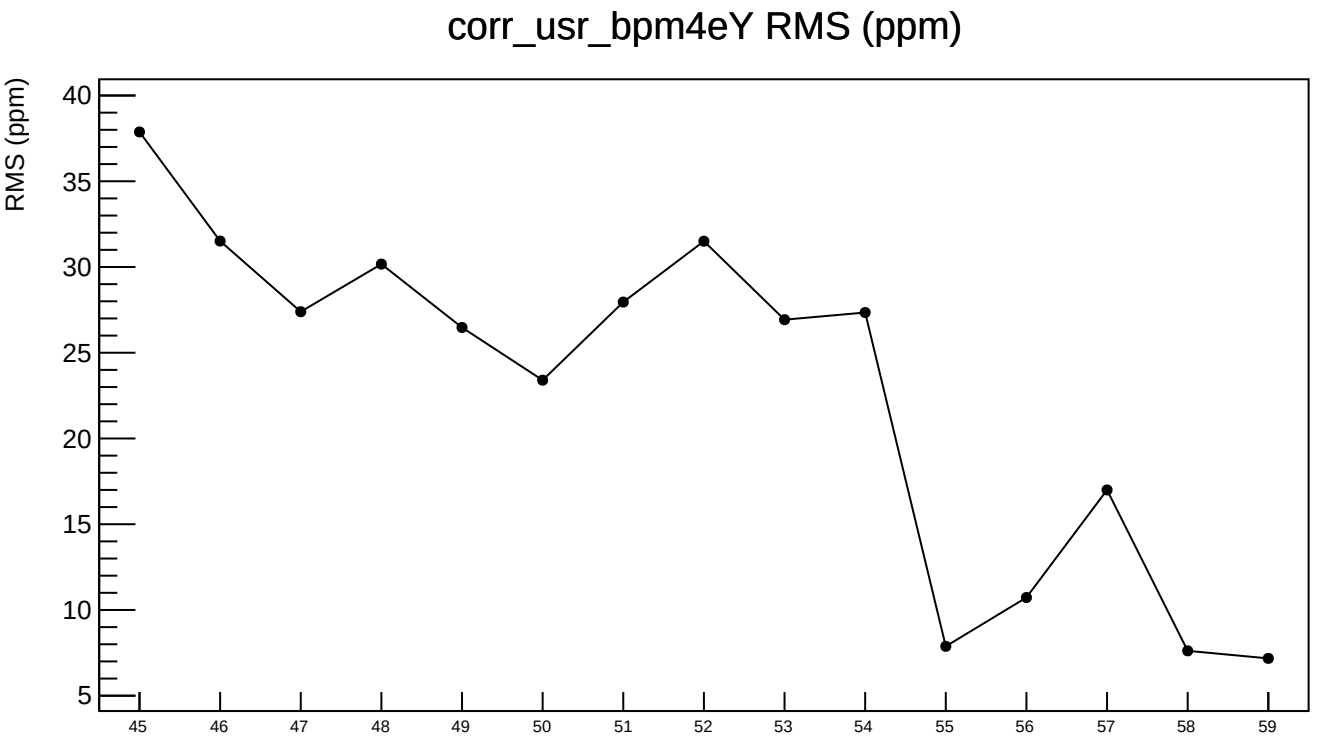

corr_usr_bpm4eX (ppb)
χ² / ndf 6.621 / 14
p0 69.93 ± 66.49
600
400
200
0
−200
−400
−600
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

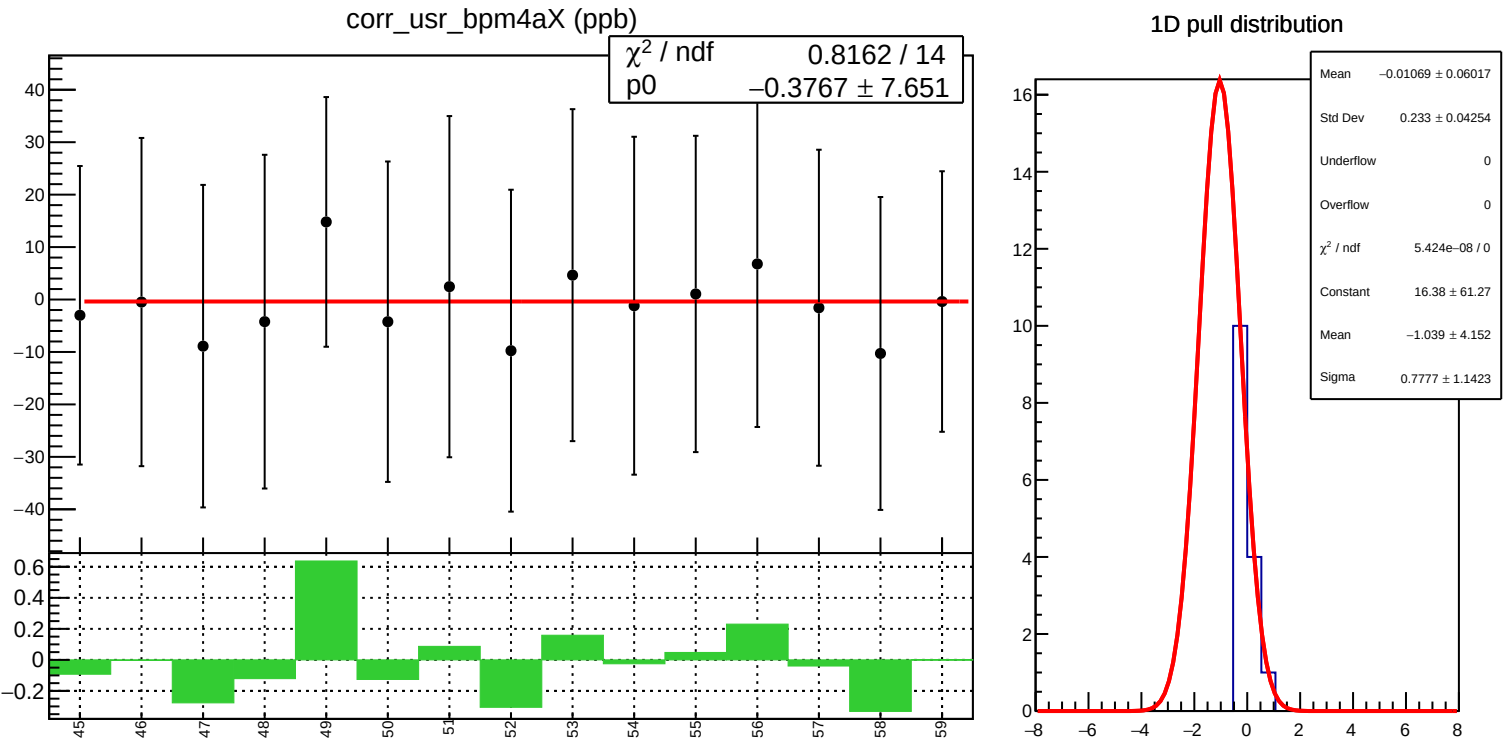

1D pull distribution
Mean 0.004953 ± 0.1715
Std Dev 0.6643 ± 0.1213
Underflow 0
Overflow 0
χ² / ndf 2.306 / 2
Constant 11.78 ± 80.29
Mean 5.446 ± 24.458
Sigma 3.201 ± 4.722
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

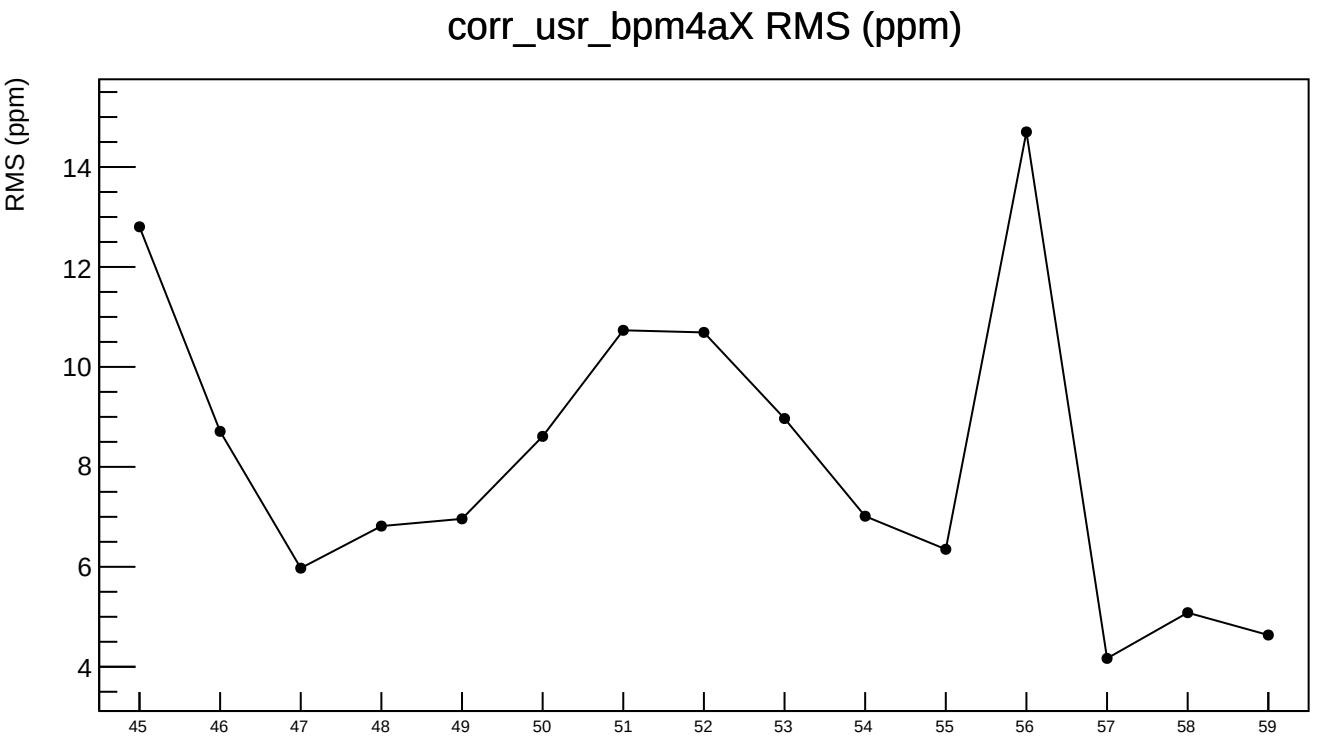

corr_usr_bpm4eX RMS (ppm)
RMS (ppm)
180
160
140
120
100
80
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

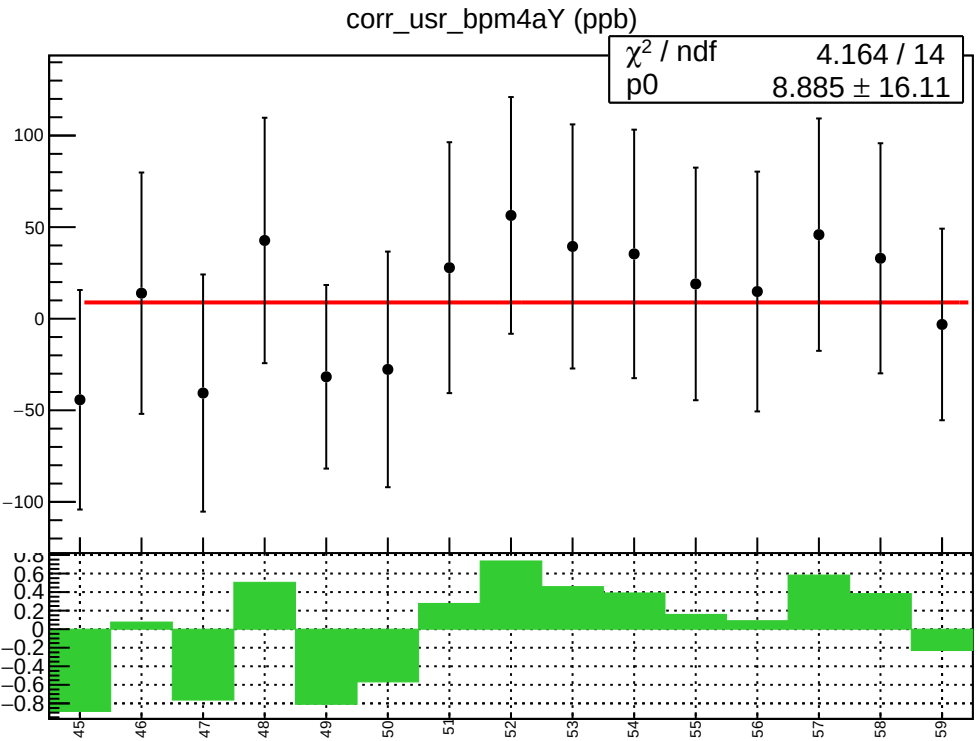

corr_usr_bpm4eY (ppb)
χ² / ndf 6.607 / 14
p0 −6.292 ± 10.8
100
50
0
−50
−100
1
0.5
0
−0.5
−1
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

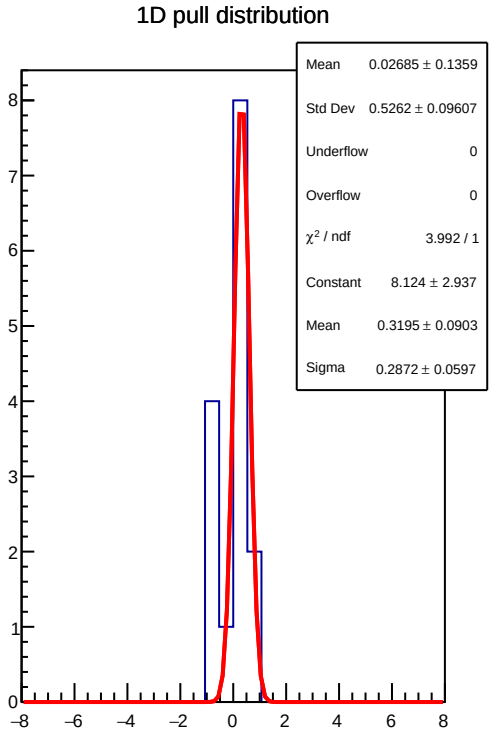

1D pull distribution
Mean −0.01828 ± 0.1713
Std Dev 0.6634 ± 0.1211
Underflow 0
Overflow 0
χ² / ndf 0.6895 / 3
Constant 3.953 ± 1.384
Mean 0.02493 ± 0.24237
Sigma 0.8047 ± 0.2379
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

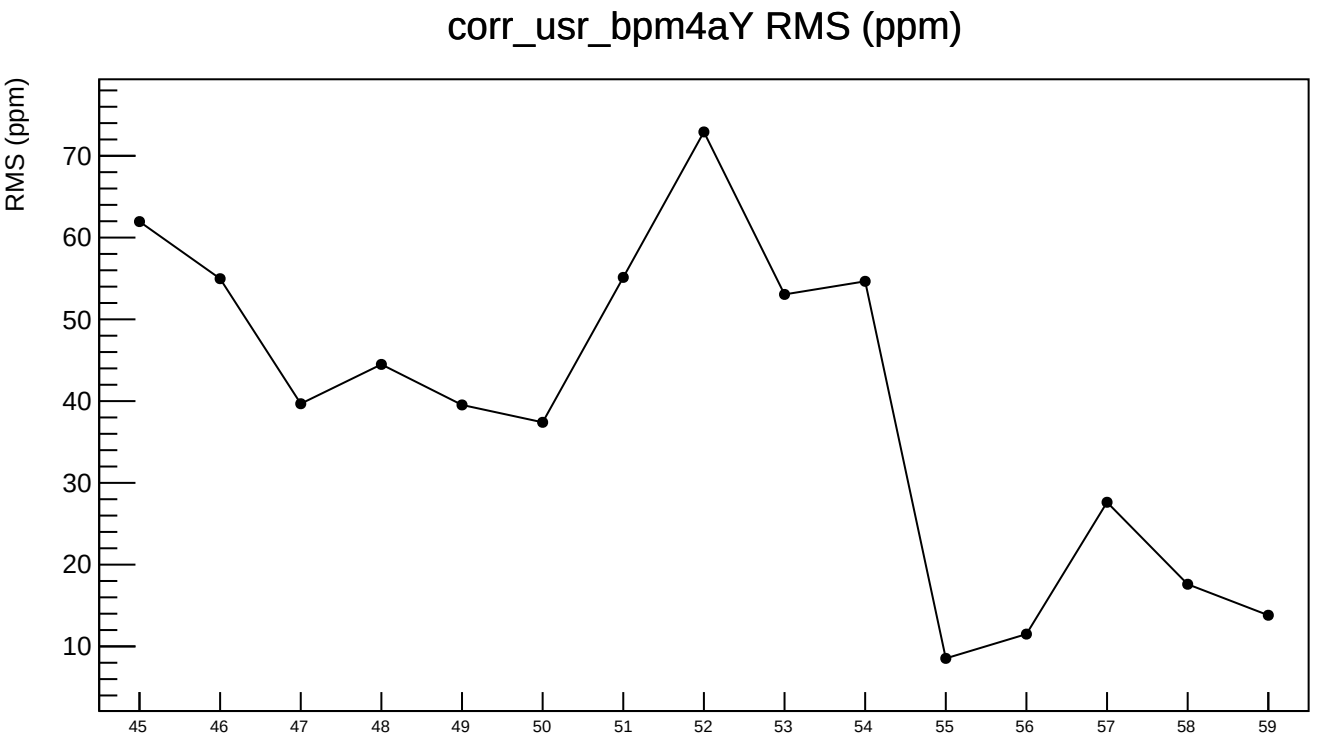

corr_usr_bpm4eY RMS (ppm)
RMS (ppm)
40
35
30
25
20
15
10
5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

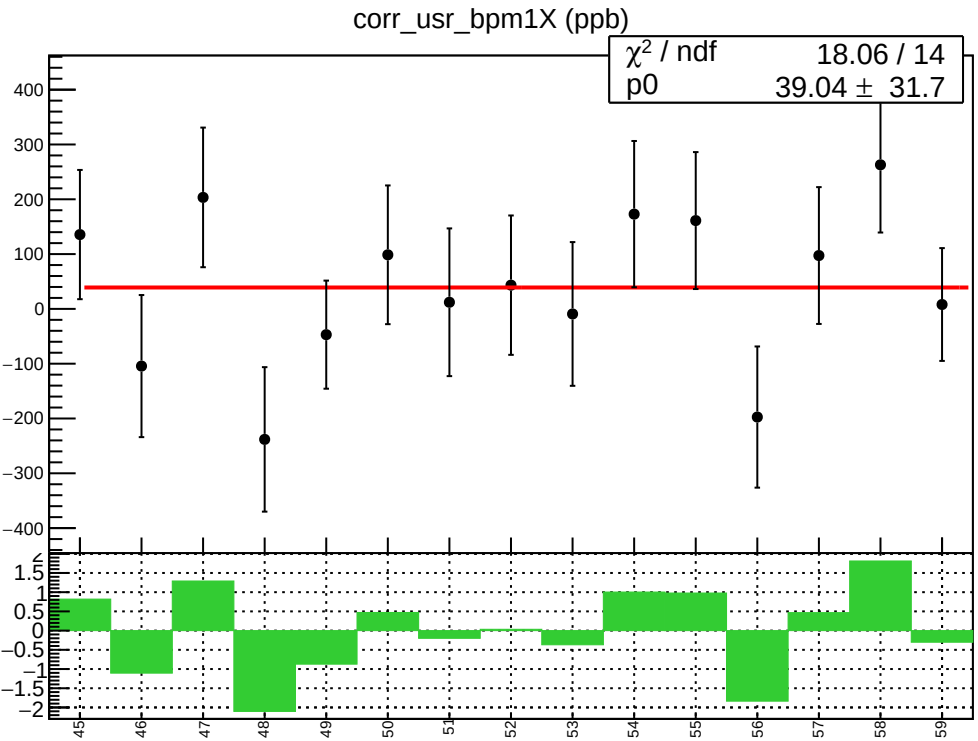

corr_usr_bpm4aX (ppb)
χ² / ndf 0.8162 / 14
p0 −0.3767 ± 7.651
1D pull distribution
Mean −0.01069 ± 0.06017
Std Dev 0.233 ± 0.04254
Underflow 0
Overflow 0
χ² / ndf 5.424e−08 / 0
Constant 16.38 ± 61.27
Mean −1.039 ± 4.152
Sigma 0.7777 ± 1.1423

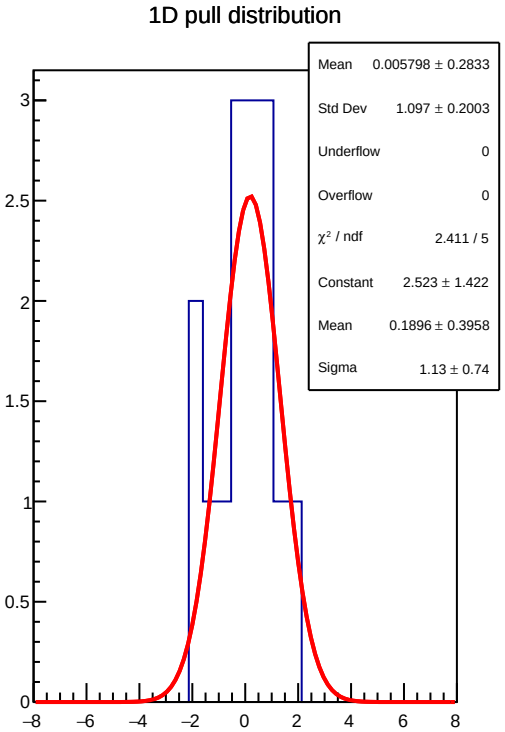

corr_usr_bpm4aX RMS (ppm)
RMS (ppm)
14
12
10
8
6
4
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


corr_usr_bpm4aY (ppb)
χ² / ndf 4.164 / 14
p0 8.885 ± 16.11
100
50
0
−50
−100
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

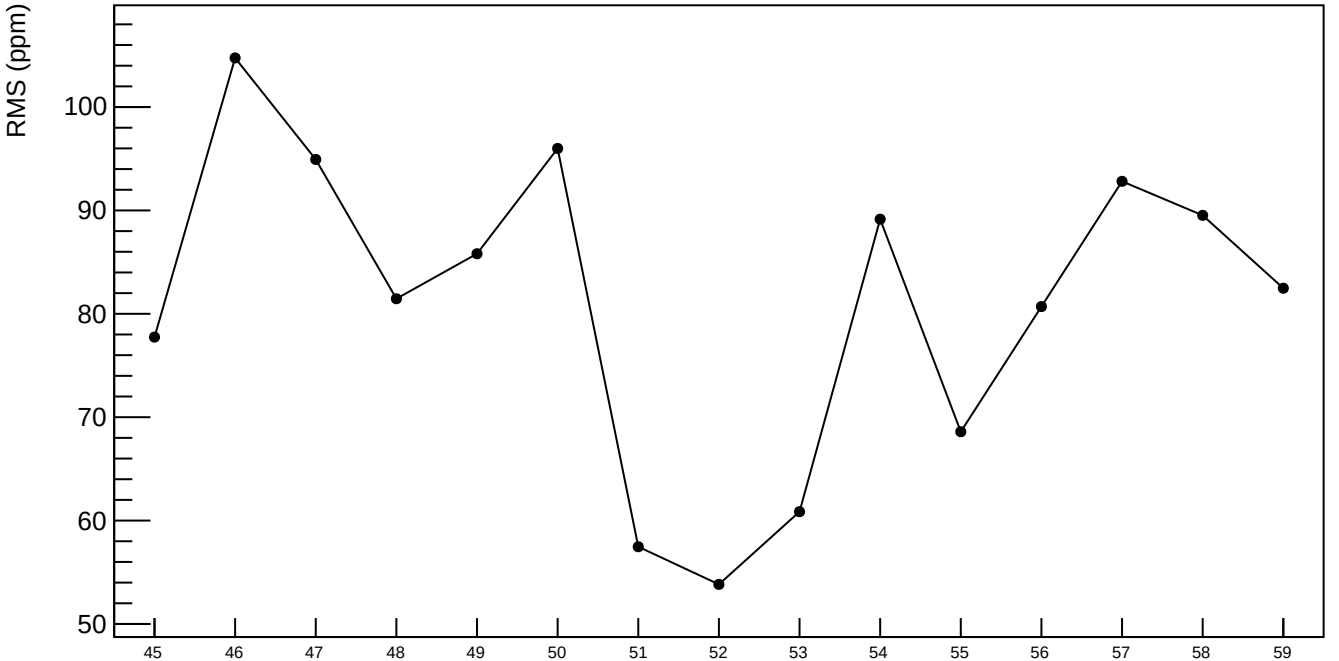

1D pull distribution
Mean 0.02685 ± 0.1359
Std Dev 0.5262 ± 0.09607
Underflow 0
Overflow 0
χ² / ndf 3.992 / 1
Constant 8.124 ± 2.937
Mean 0.3195 ± 0.0903
Sigma 0.2872 ± 0.0597
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

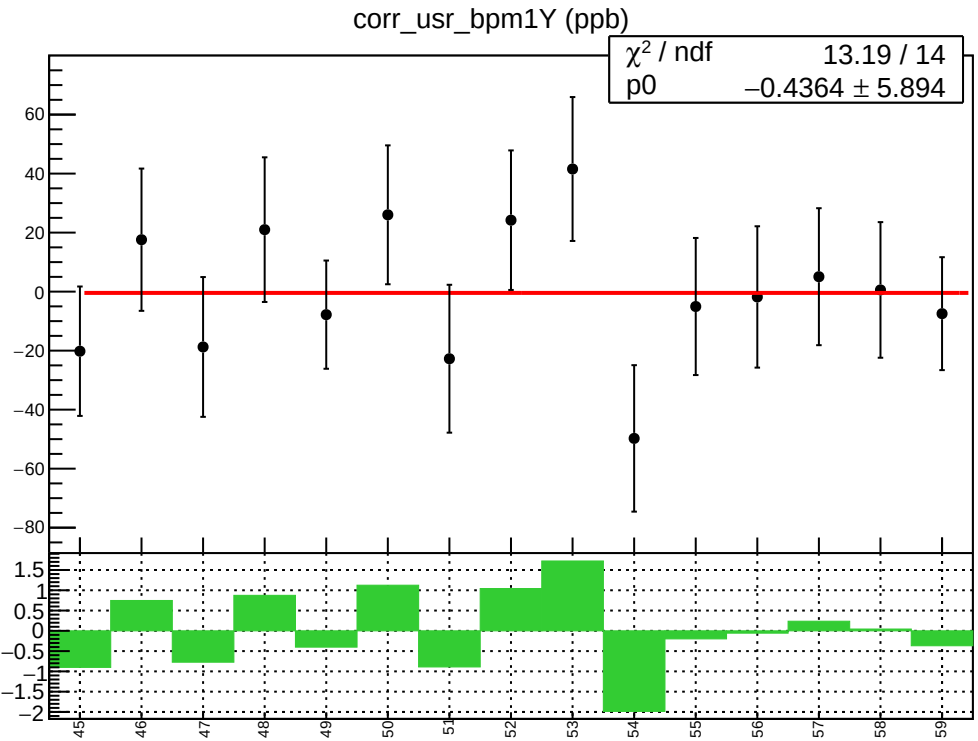

corr_usr_bpm4aY RMS (ppm)
RMS (ppm)
70
60
50
40
30
20
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

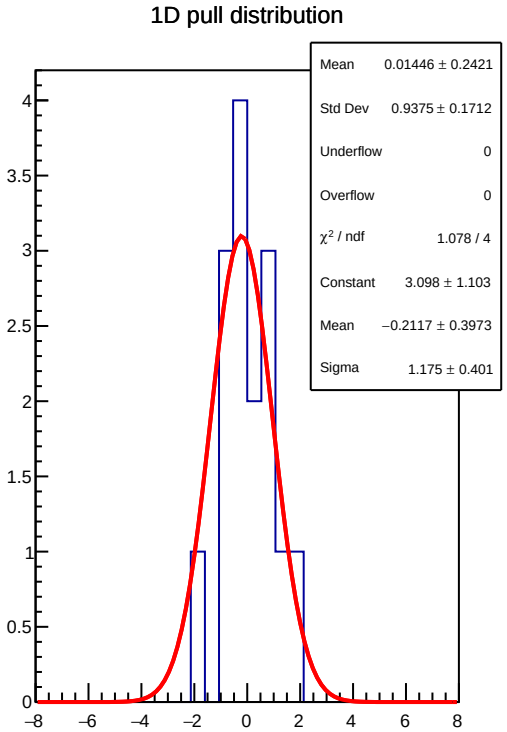

corr_usr_bpm1X (ppb)
χ² / ndf 18.06 / 14
p0 39.04 ± 31.7
400
300
200
100
0
−100
−200
−300
−400
1.5
1
0.5
0
−0.5
−1
−1.5
−2
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


1D pull distribution
Mean 0.005798 ± 0.2833
Std Dev 1.097 ± 0.2003
Underflow 0
Overflow 0
χ² / ndf 2.411 / 5
Constant 2.523 ± 1.422
Mean 0.1896 ± 0.3958
Sigma 1.13 ± 0.74
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

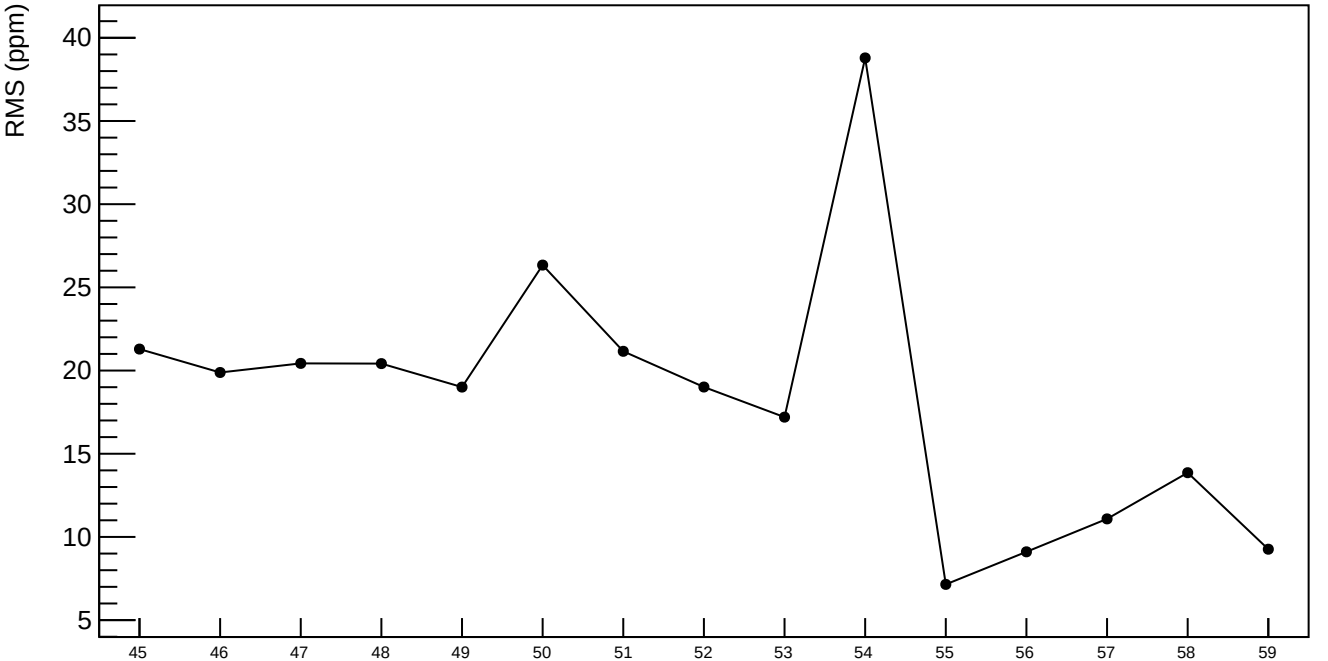
corr_usr_bpm1X RMS (ppm)

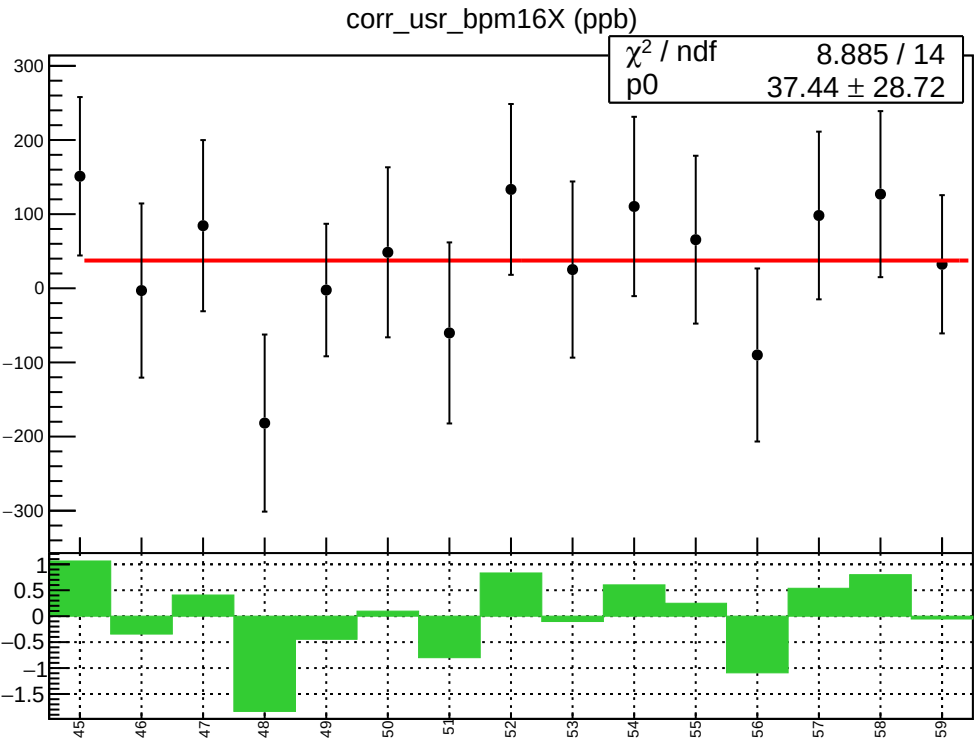


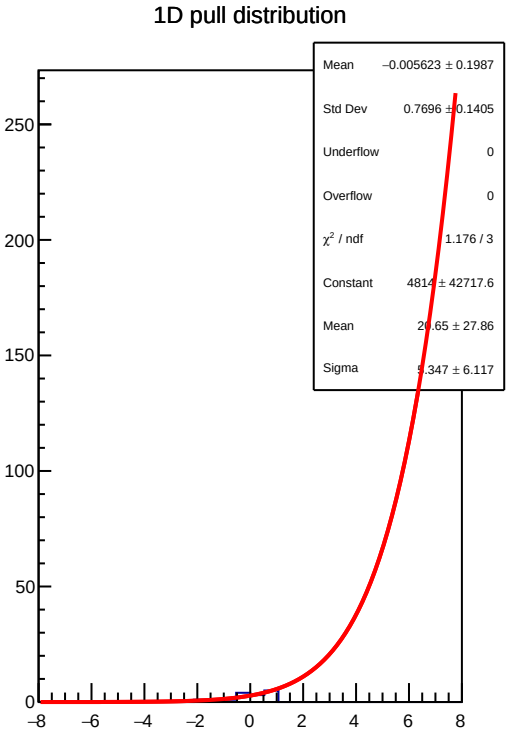

corr_usr_bpm1Y (ppb)
χ² / ndf 13.19 / 14
p0 −0.4364 ± 5.894

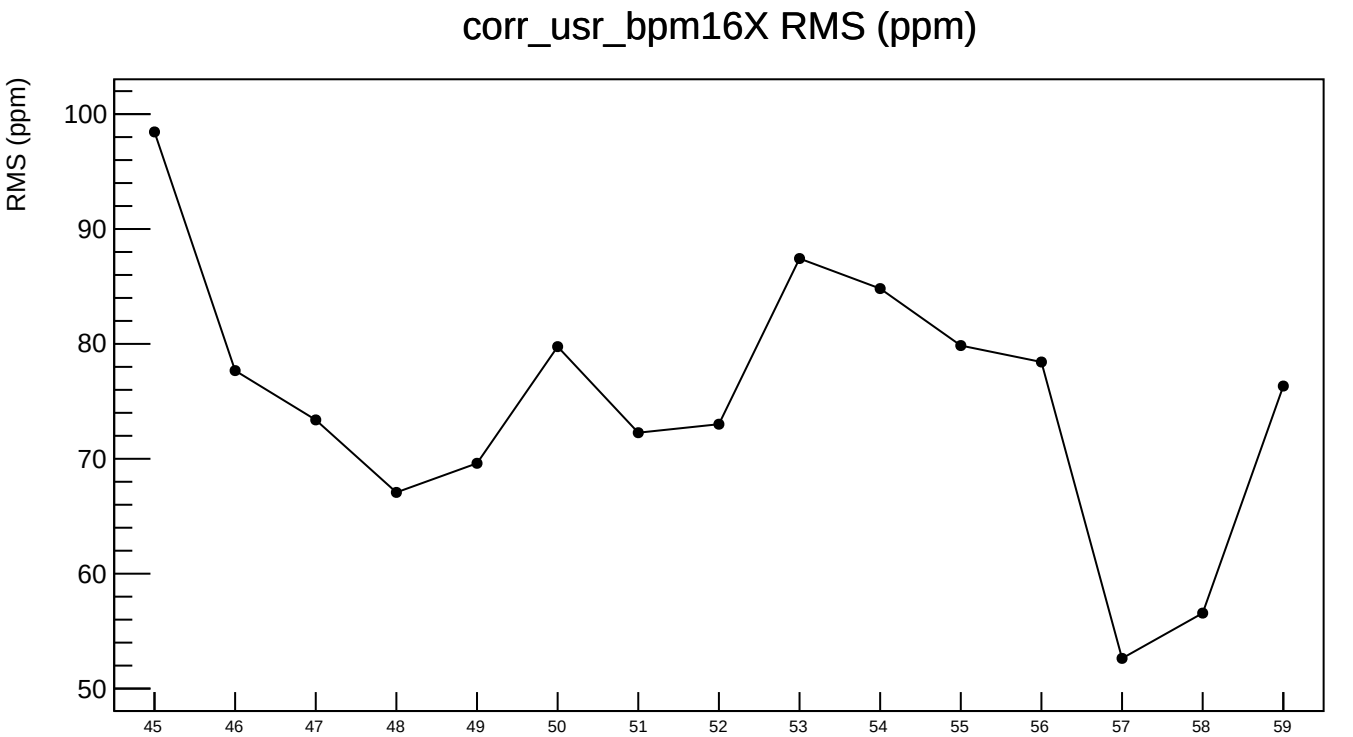

1D pull distribution
Mean 0.01446 ± 0.2421
Std Dev 0.9375 ± 0.1712
Underflow 0
Overflow 0
χ² / ndf 1.078 / 4
Constant 3.098 ± 1.103
Mean −0.2117 ± 0.3973
Sigma 1.175 ± 0.401

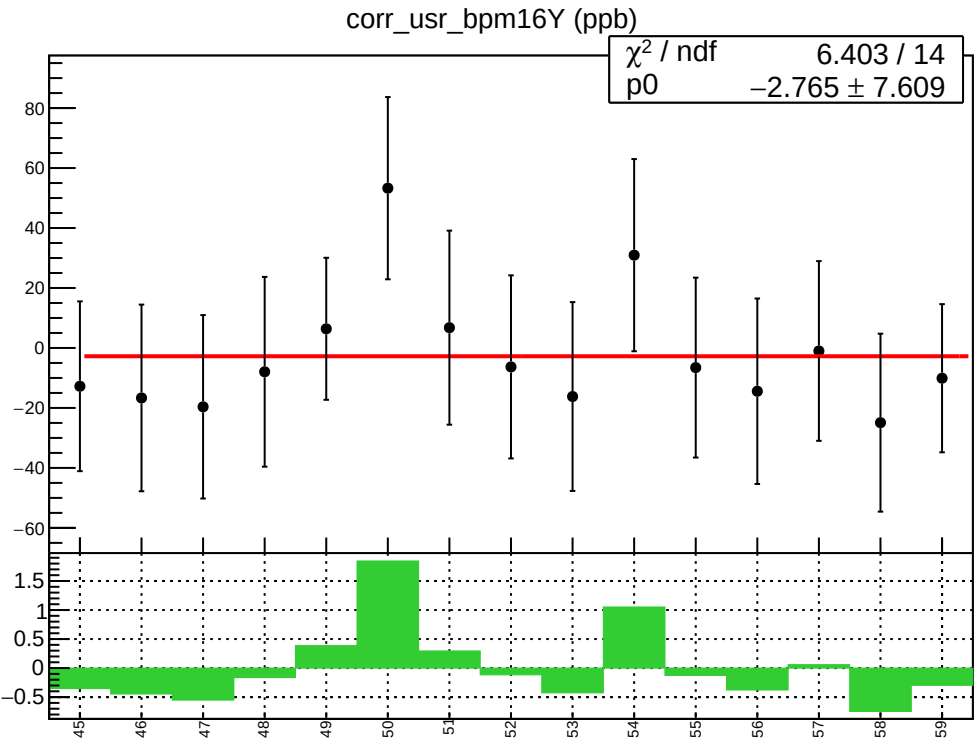
corr_usr_bpm1Y RMS (ppm)

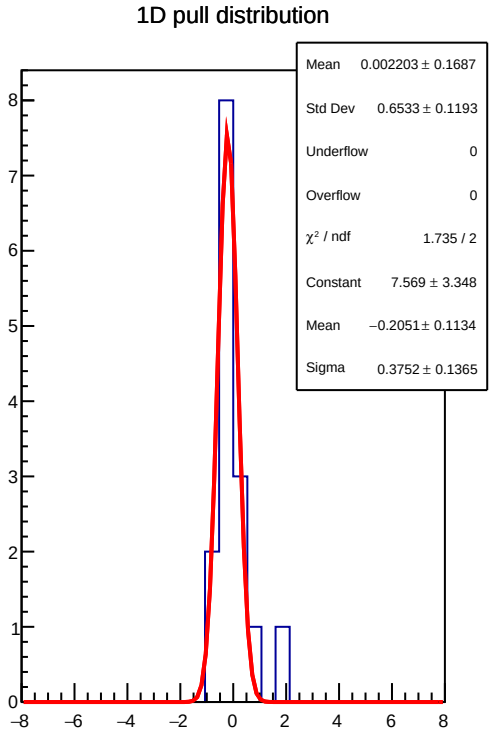


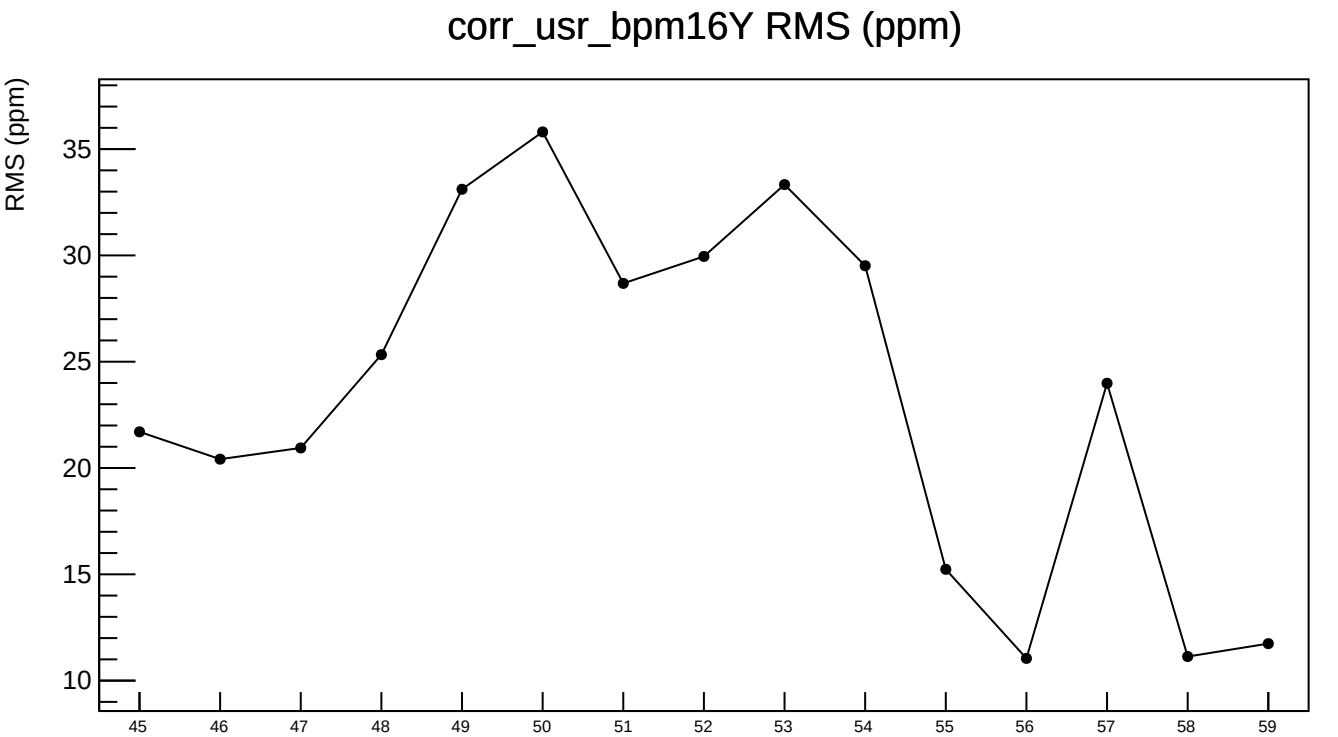

corr_usr_bpm16X (ppb)
χ² / ndf 8.885 / 14
p0 37.44 ± 28.72
300
200
100
0
−100
−200
−300
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

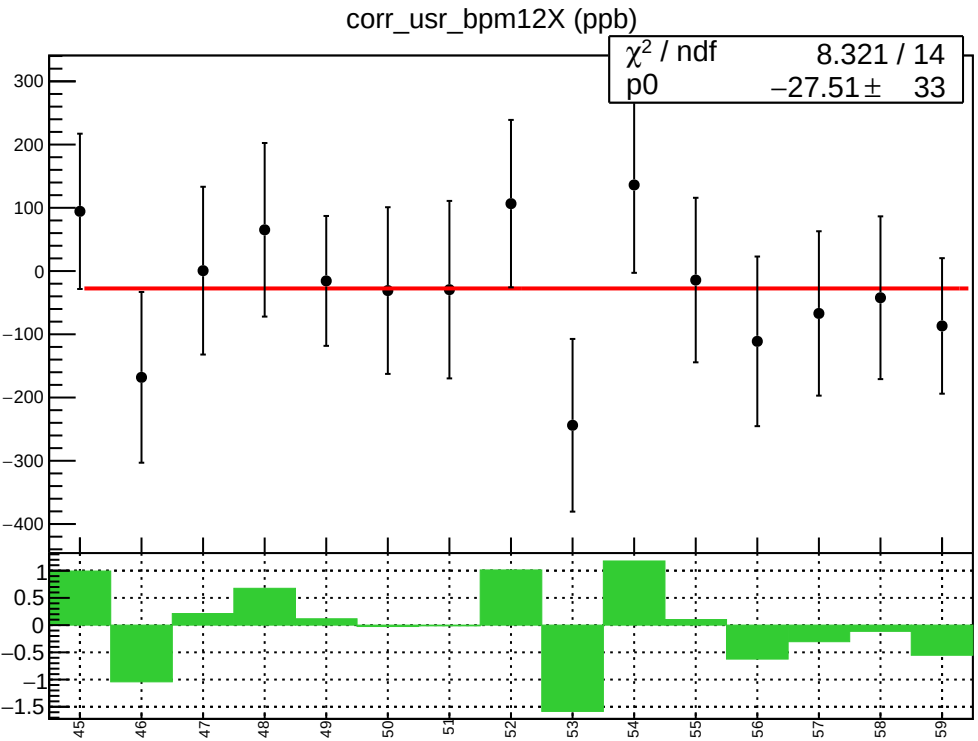

1D pull distribution
Mean −0.005623 ± 0.1987
Std Dev 0.7696 ± 0.1405
Underflow 0
Overflow 0
χ² / ndf 1.176 / 3
Constant 4814 ± 42717.6
Mean 26.65 ± 27.86
Sigma 5.347 ± 6.117
250
200
150
100
50
0
−8
−6
−4
−2
0
2
4
6
8

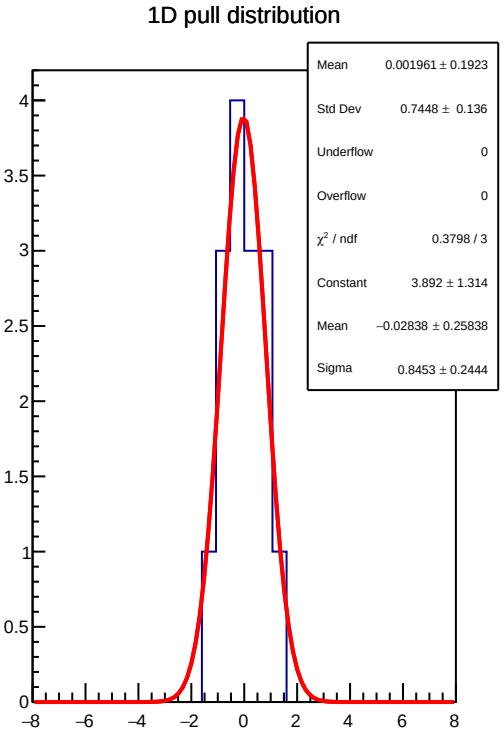

corr_usr_bpm16X RMS (ppm)
RMS (ppm)
100
90
80
70
60
50
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

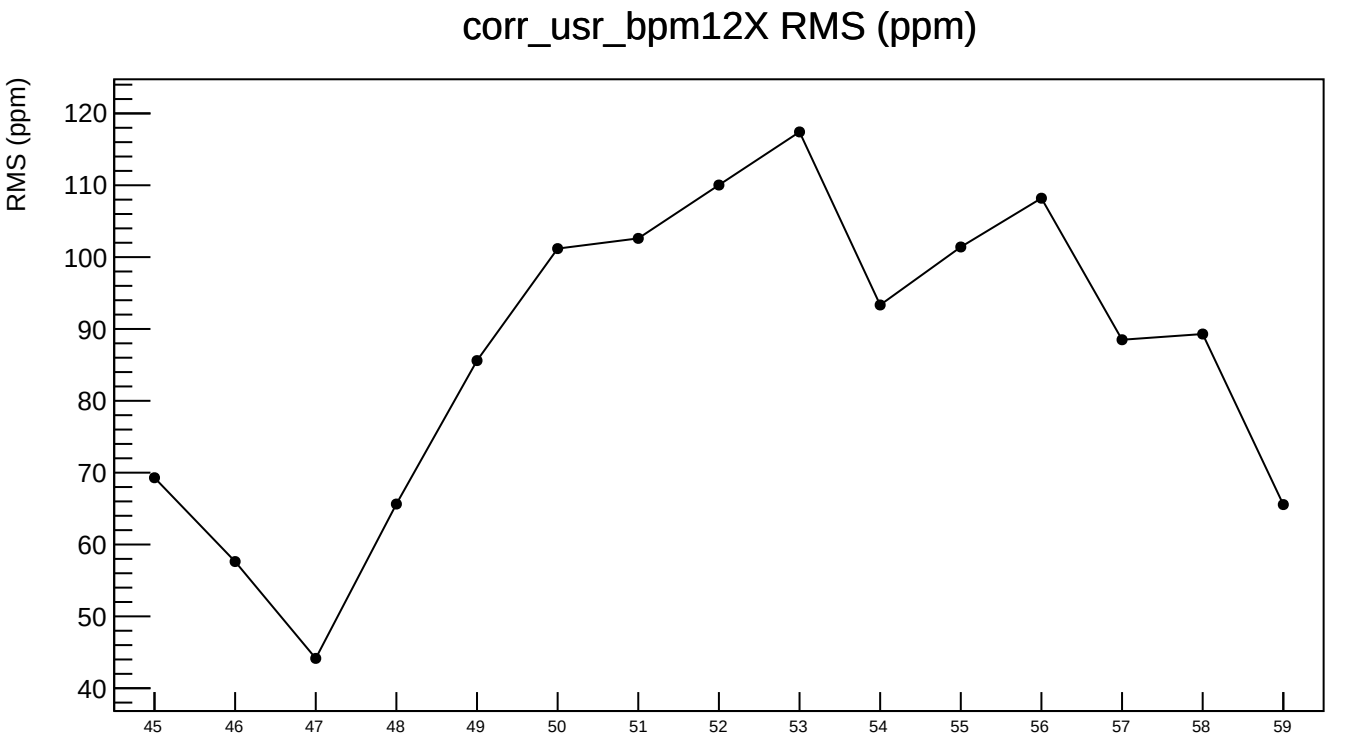

corr_usr_bpm16Y (ppb)
χ² / ndf 6.403 / 14
p0 −2.765 ± 7.609
80
60
40
20
0
−20
−40
−60
1.5
1
0.5
0
−0.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

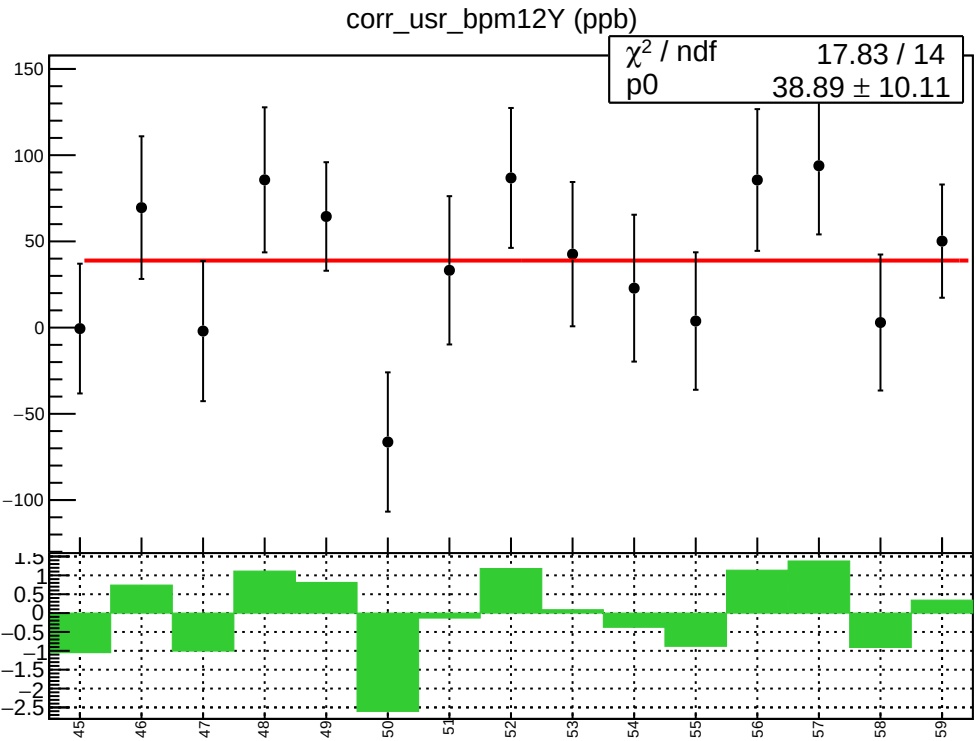

1D pull distribution
Mean 0.002203 ± 0.1687
Std Dev 0.6533 ± 0.1193
Underflow 0
Overflow 0
χ² / ndf 1.735 / 2
Constant 7.569 ± 3.348
Mean −0.2051 ± 0.1134
Sigma 0.3752 ± 0.1365
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

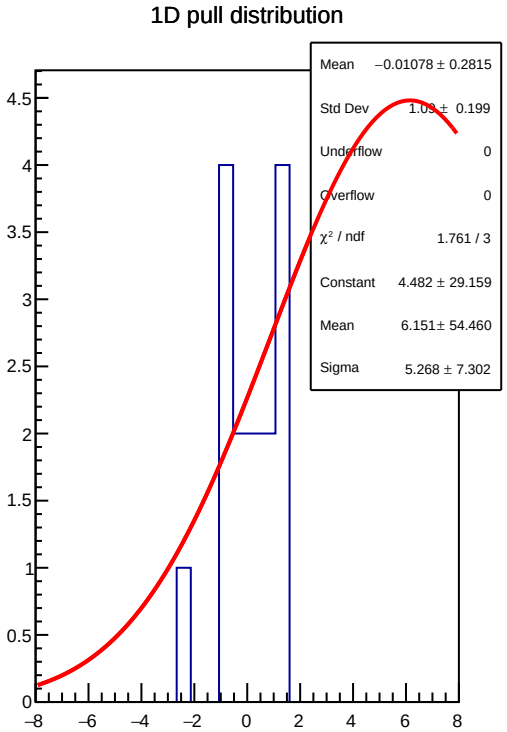

corr_usr_bpm16Y RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59


corr_usr_bpm12X (ppb)
χ² / ndf 8.321 / 14
p0 −27.51 ± 33
300
200
100
0
−100
−200
−300
−400
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

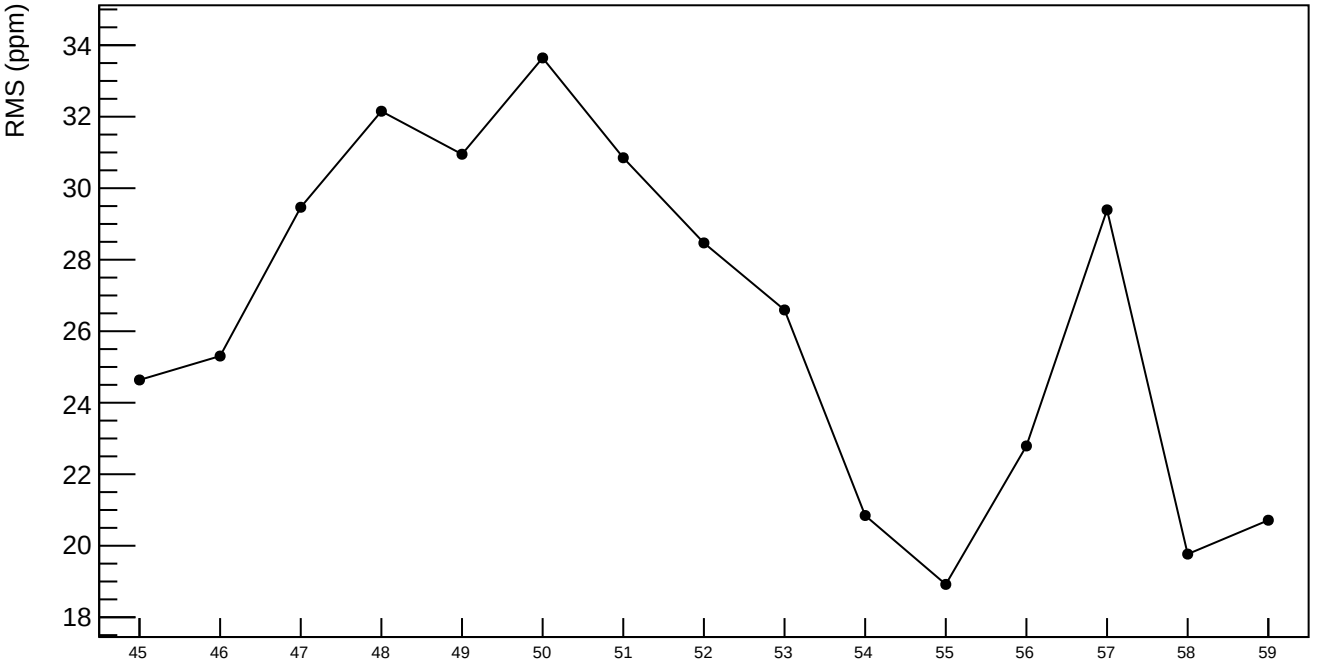

1D pull distribution
Mean 0.001961 ± 0.1923
Std Dev 0.7448 ± 0.136
Underflow 0
Overflow 0
χ² / ndf 0.3798 / 3
Constant 3.892 ± 1.314
Mean −0.02838 ± 0.25838
Sigma 0.8453 ± 0.2444
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

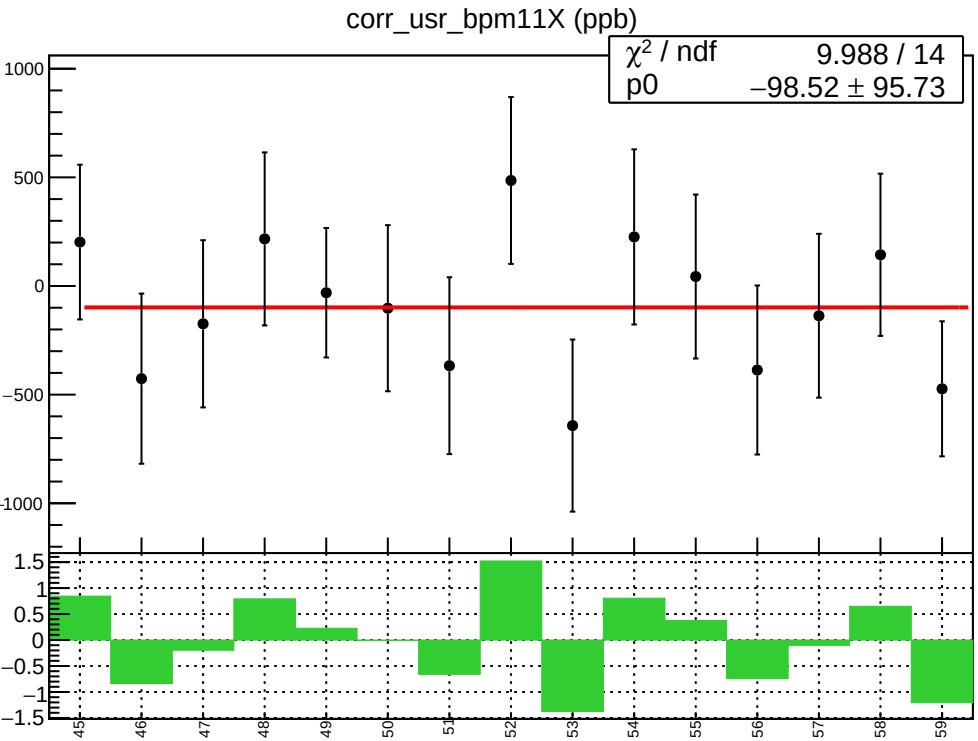

corr_usr_bpm12X RMS (ppm)
RMS (ppm)
120
110
100
90
80
70
60
50
40
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

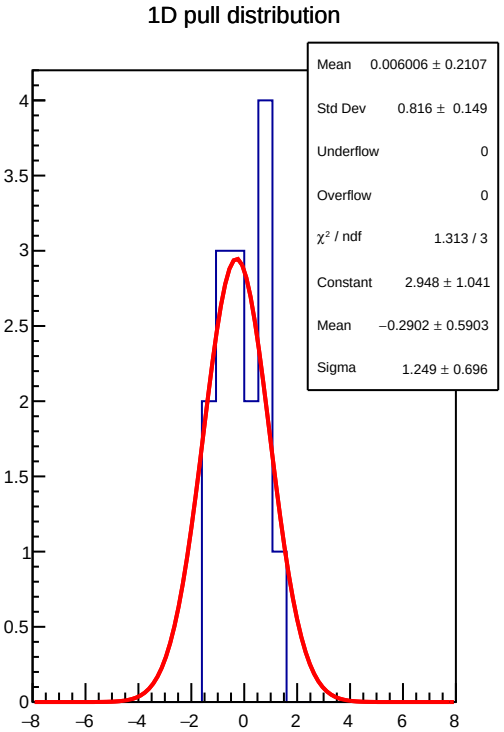

corr_usr_bpm12Y (ppb)
χ² / ndf 17.83 / 14
p0 38.89 ± 10.11


1D pull distribution
Mean −0.01078 ± 0.2815
Std Dev 1.09 ± 0.199
Underflow 0
Overflow 0
χ² / ndf 1.761 / 3
Constant 4.482 ± 29.159
Mean 6.151± 54.460
Sigma 5.268 ± 7.302

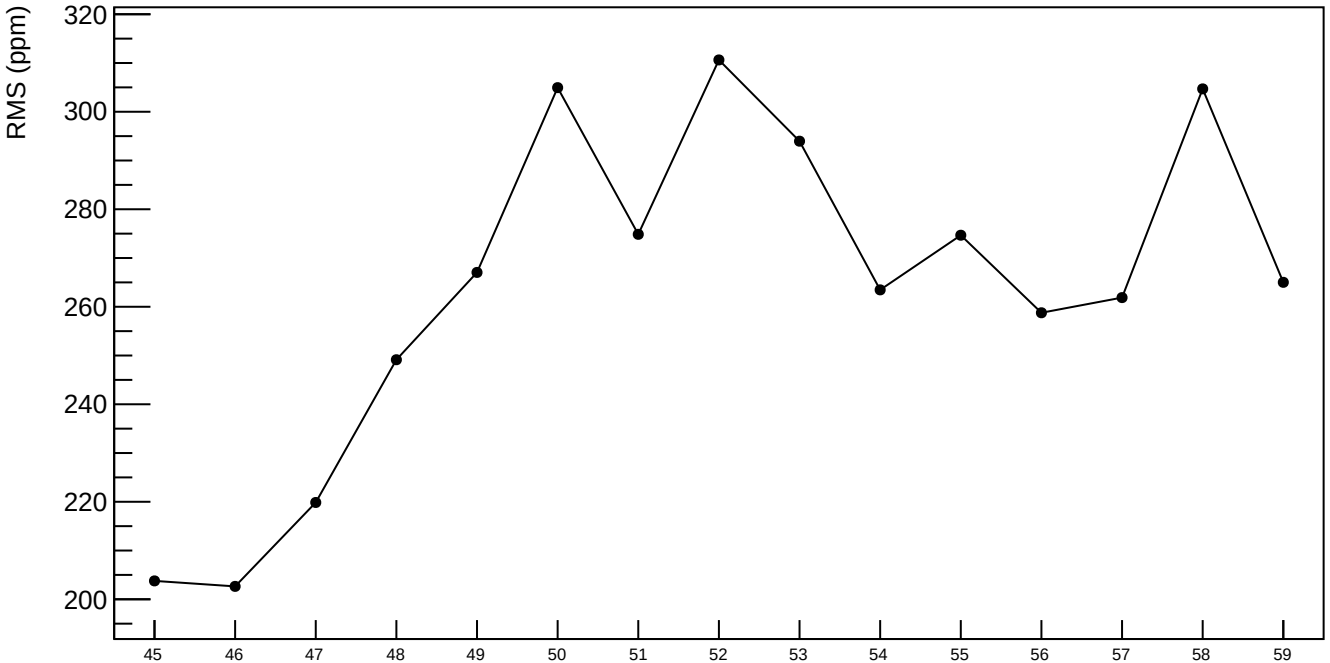
corr_usr_bpm12Y RMS (ppm)

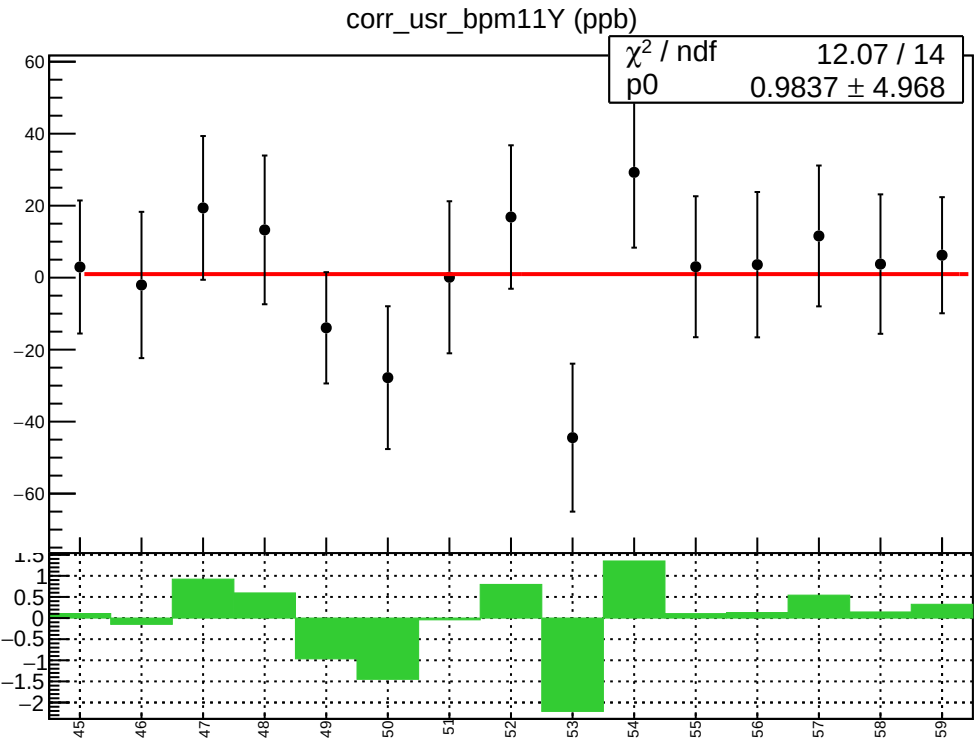


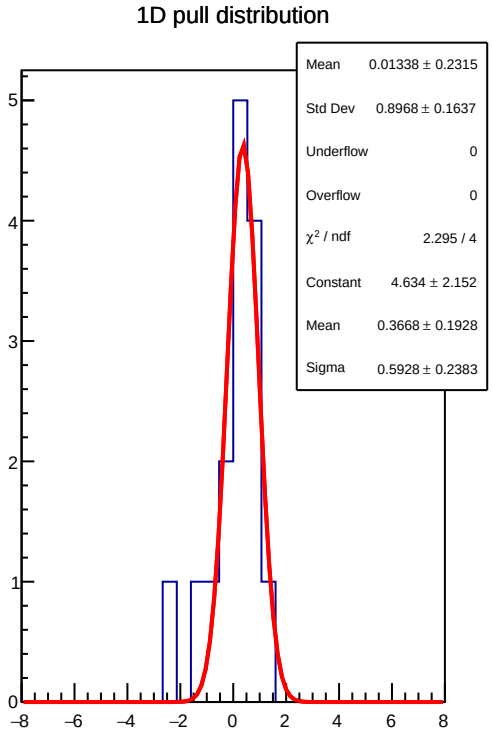

corr_usr_bpm11X (ppb)
χ² / ndf 9.988 / 14
p0 −98.52 ± 95.73
1000
500
0
−500
−1000
1.5
1
0.5
0
−0.5
−1
−1.5
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59

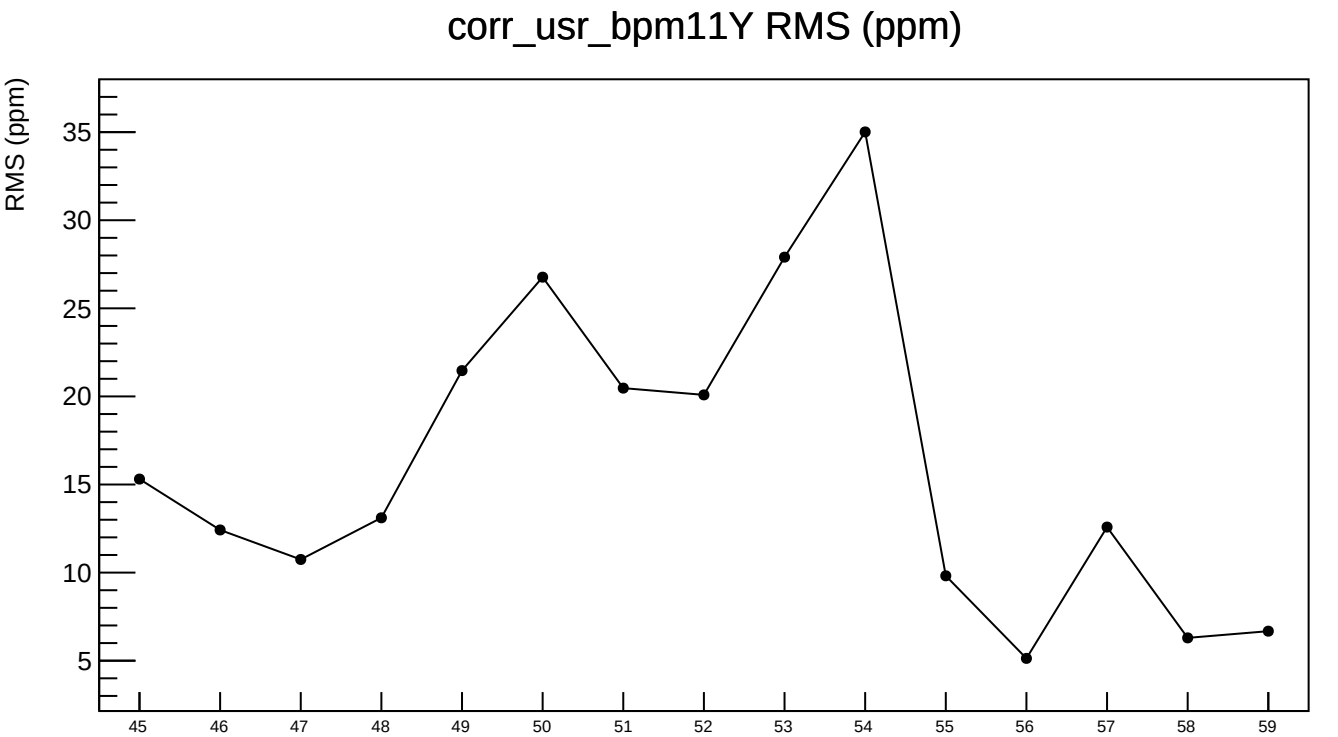

1D pull distribution
Mean 0.006006 ± 0.2107
Std Dev 0.816 ± 0.149
Underflow 0
Overflow 0
χ² / ndf 1.313 / 3
Constant 2.948 ± 1.041
Mean −0.2902 ± 0.5903
Sigma 1.249 ± 0.696
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

corr_usr_bpm11X RMS (ppm)




corr_usr_bpm11Y (ppb)
χ² / ndf 12.07 / 14
p0 0.9837 ± 4.968


1D pull distribution
Mean 0.01338 ± 0.2315
Std Dev 0.8968 ± 0.1637
Underflow 0
Overflow 0
χ² / ndf 2.295 / 4
Constant 4.634 ± 2.152
Mean 0.3668 ± 0.1928
Sigma 0.5928 ± 0.2383


corr_usr_bpm11Y RMS (ppm)
RMS (ppm)
35
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25
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15
10
5
45
46
47
48
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52
53
54
55
56
57
58
59